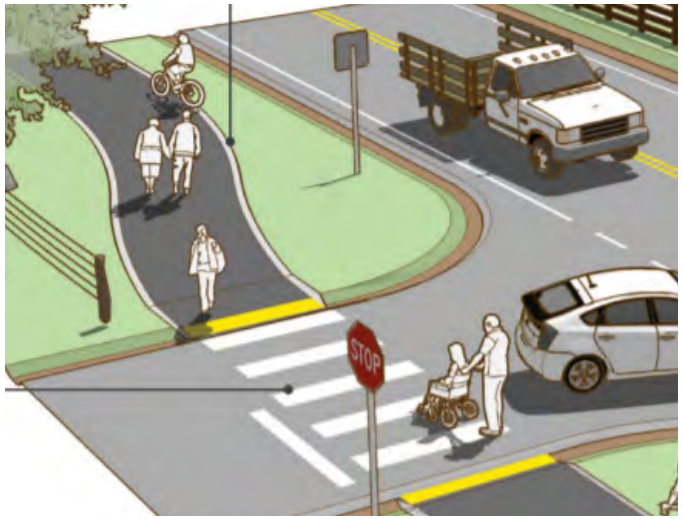

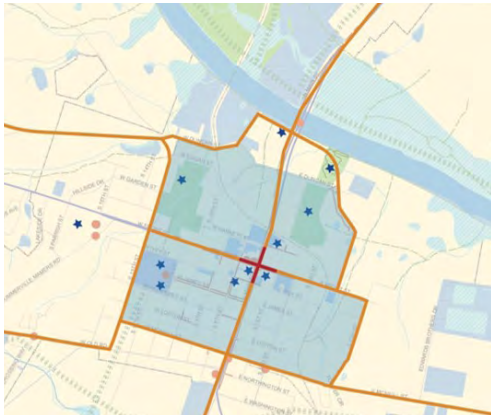

LILLINGTON
North Carolina

BICYCLE AND PEDESTRIAN MASTER PLAN

Final Draft - July 8, 2020

ACKNOWLEDGMENTS

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This plan is made possible through a Bicycle and Pedestrian Planning Grant from the North Carolina Department of Transportation.

contents

Link Lillington's neighborhoods, schools, parks, and town center with an interconnected system of sidewalks, bicycle and pedestrian facilities.

-Plan Vision

CHAPTER ONE

introduction

PROJECT OVERVIEW

In 2019, the Town of Lillington was awarded a grant from the North Carolina Department of Transportation (NCDOT), Division of Bicycle and Pedestrian Transportation (DBPT), to develop a bicycle and pedestrian plan. With the help of a consultant, the plan was intended to analyze and make recommendations for bicycle and pedestrian facilities and programs in Lillington. Such a plan promotes health and wellbeing of citizens by providing safe areas to recreate and travel.

With the aid of a Steering Committee and community input, **this plan identifies and offers bold solutions to barriers that prevent citizens from walking and biking.** Lillington currently has 6.35 miles of existing sidewalks and 4.2 miles of existing trails. This plan looks at how those can be improved through access, infrastructure updates, and extension so that residents and visitors can better utilize them.

PLANNING PROCESS

The planning process began in late summer 2019 with a project kickoff and Steering Committee meeting. This set the stage for project staff to collect data and analyze the existing conditions. Of particular interest was the result of the recent Lillington Downtown Master Plan, which identified several issues and opportunities for improvement to Lillington's bicycle and pedestrian networks. After analysis, staff constructed a draft set of recommendations for improvements based on their findings, past plans, and public outreach. That set of recommendations went through reviews and revisions before being finalized in June of 2020.

STEERING COMMITTEE

A steering committee (SC) met regularly during the drafting of the plan. The committee was composed of public health, parks and recreation, planning and county stakeholders. The committee met four times during the planning process and provided input on priorities and guided the development of recommendations for downtown.

Project Steering Committee

PUBLIC INVOLVEMENT

Thorough public involvement was a key to the creation of this plan. Input on biking and walking in the downtown was coordinated with outreach conducted for the Lillington Downtown Master Plan (DMP). A number of strategies were employed to involve the public. Feedback was then used to shape the ultimate recommendations in the plan.

The project team gathered feedback at the Cape Fear Fest on September 28, 2019 and gave an opportunity for event-goers to engage with staff and familiarize themselves with the project. A large map was provided for attendees to identify improvement locations as well as key destinations in the Town.

A 15-question online survey was also widely distributed early in the project and received 159 responses from September 30, 2019 until December 5, 2019.

Additionally, two public meetings were held. The first public meeting was held during the analysis stage of the project to gather feedback on improving biking and walking in Lillington. This took place on November 21, 2019 at Town Hall. The draft plan was made available in June to give the community a chance to review the infrastructure recommendations in the Draft Plan and provide feedback on the recommended programs and policies.

The project team tabled at the popular Cape Fear Fest event in Lillington to share project information and take public comments about the plan

VISION & GOALS

The overarching vision for the plan is to link Lillington neighborhoods, schools, parks, and town center with an interconnected system of sidewalks, bicycle and pedestrian facilities.

The plan vision and goals are based upon community feedback, input from the steering committee, and take into account general design principles which, when applied, are the building blocks for bikeable and walkable communities. These best practices are the result of research on how the built environment can influence bicycle and pedestrian behavior.

The goals of the Lillington Bicycle and Pedestrian Plan are related to the key challenges as well as the opportunities that can be addressed in order to make Lillington a great place to bike and walk.

The following goals are listed in no particular order of importance:

1. CREATE A PLEASANT AND SAFE WALKING ENVIRONMENT IN DOWNTOWN LILLINGTON

Downtown has concentrated density and a large number of destinations allowing for a big impact with a few projects. Reducing truck traffic on West Front St and enhancing safety at intersections are key improvements.

2. CREATE A CROSS-TOWN NETWORK TO IMPROVE ACCESS TO RECREATIONAL OPPORTUNITIES AND SCHOOLS

Cross-town connectors are needed to link important destinations like schools, the riverfront, parks and neighborhoods. These connections can serve significant regional routes as well.

3. CONNECT COMMUNITY TO AND ACROSS THE CAPE FEAR RIVER

The river creates both a barrier and an opportunity, however, it is one of Lillington's most valuable community assets. Linking the community to the riverfront as well as across the river to services is critically important.

4. CONNECT TOURISTS AND LOCAL TRAIL USERS TO COMMUNITY ASSETS

Enhancements that support the economy include linkages that connect tourism destinations to what downtown has to offer and create an opportunity to support local businesses.

DESIGN PRINCIPLES

TRAFFIC PSYCHOLOGY

The majority of roads in Lillington can feature operating speeds of 20 mph (or lower) without compromising driver comfort. Research has found that drivers will tolerate lower speeds (around 20 mph) for up to 6 minutes, before their patience expires and they should be provided with a faster route.

RELATIVE CONNECTIVITY

Research suggests that there is a positive correlation between pedestrian connectivity and the share of trips made by foot. Neighborhoods where the pedestrian network to nearby destinations was more direct than by car yield the highest number of pedestrian trips, higher even than areas where pedestrian and vehicle connectivity are rated equally. (CMHC, 2008)

20 MPH LOCAL STREETS

Where users of different modes of transportation use the same space, speed must be low enough to ensure that even in case of a collision, the chance of injury is low. This speed is 20 MPH. This speed is also low enough to allow for pedestrian crossings without the inhibition that comes with fast traffic flows. Where operating speeds are 20 mph, or lower, the need for additional separated cycling and walking facilities are limited.

DETOUR FACTORS AND DIRECTNESS

There are two factors of detours and directness that contribute to making the decision to walk or cycle over taking a car:

1. In order to make cycling and walking more attractive than driving, it should be more direct in distance and time.

2. Cyclists and pedestrians are more sensitive to detours than drivers. The slower and self-propelled nature of cycling and walking means that detours have a disproportionate impact on travel time and effort required compared to drivers.

COMMUNITY FEEDBACK

The planning process allowed several opportunities for community feedback. Reaching out to the community revealed preferences regarding facility types, desirable walking and biking destinations within the town, top priorities for improvements, as well as key areas for improvement that shape the recommendations for infrastructure, improvements that would cause respondents to walk or bike more often, and policies and programs.

The following is a high level summary of key elements of the outreach conducted during the planning process.

CYCLING FACILITY PREFERENCE

Community members who took part in the outreach activities indicated support for facilities that separate bicyclists from motor vehicles. Preference was given to traditional bike lanes, protected bicycle lanes and greenways. These results are typical to everyday bicyclists, individuals who are the "interested but concerned" type of bicycle rider, individuals who ride with children and families or the elderly. The following are the facility types that received the most responses to the question, "At What Level of Bicycle Facility do you Feel Comfortable Cycling on With Traffic?"

Grade-separated greenways

Cycle track protected by a physical barrier

Striped Bike Lanes

Separated greenways, protected cycle facilities and striped bicycle lanes were preferred over shared facilitities

TOP PRIORITIES FOR IMPROVEMENTS

Residents were surveyed on ways to improve the walking and bicycling environment in Lillington. They were asked for specific streets, greenways, sidewalks, intersection upgrades or other improvements. Respondents overwhelmingly indicated the top priority for the town is building multi-use paths or greenways, especially those that connect to destinations such as Raven Rock State Park, Campbell University, and along the riverfront. Completing the River Walk at River Park was also called out specifically. Additionally, a safer crossing of the river of US 401/421 was desired to access county services for both bicyclists and pedestrians on a separated facility.

The second highest priority was improved sidewalk infrastructure, especially those in the downtown, and ensuring connections to residential areas, schools, parks and the river. Adding sidewalks to the main thoroughfares (US 421, US 401, Hwy 27, Hwy 210 and McNeill St) to access businesses was indicated specifically within these responses.

Intersection safety was also a high priority for respondents, and a number of street crossing improvements were indicated. Improvements were specifically indicated at Front St and 13th and at Front St and 8th. High volumes of truck traffic present a significant challenge.

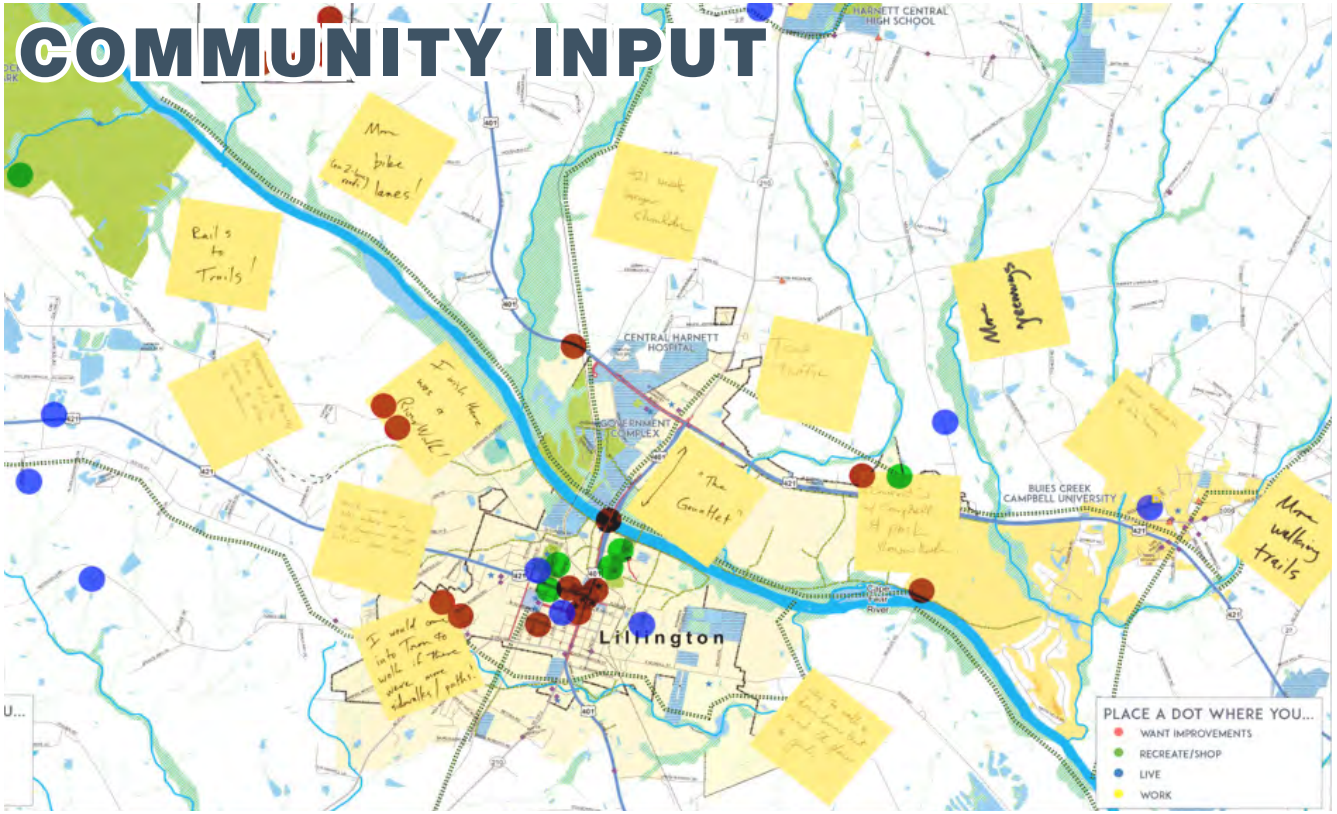
1. Separated Greenways

2. Sidewalks on Main Thoroughfares

3. Improved Street Crossings

The images represent the top three categories for desired improvements from the community feedback which informed the recommendations in the plan.

COMMUNITY INPUT



▲ Feedback collected on the large table map during the public meeting was used in the development of recommendations for the plan

▲ Public input booth set up at Cape Fear Day 2019

▼ Attendees of the first community meeting held for the plan

GREENWAYS

"WALKING IS DIFFICULT IN DOWNTOWN IN GENERAL"

RIVERFRONT

PARKS

IN DISCUSSIONS WITH STAKEHOLDERS CROSSING THE STREET SAFELY WAS REPEATEDLY CITED AS AN OBSTACLE TO A BETTER LILLINGTON.

TRAILS

SIDEWALKS

DOWNTOWN

"EXISTING TRAILS NEED EASIER ACCESS TO NEIGHBORHOODS"

BIKE LANES

◀ Quotes from the Lillington community received during community feedback

IMPROVEMENT LOCATIONS

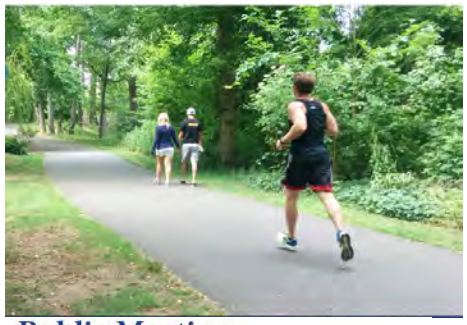
A large format map (shown on the previous page) was used during the Public Meeting to gather location-specific information on where improvements should be made. Location-based information was also gathered from survey-responses. The following is a high-level summary of these locations:

- "Everywhere"
- Major Thoroughfares
- Along the River
- On the Bridge
- Downtown

ACCESS TO DESTINATIONS

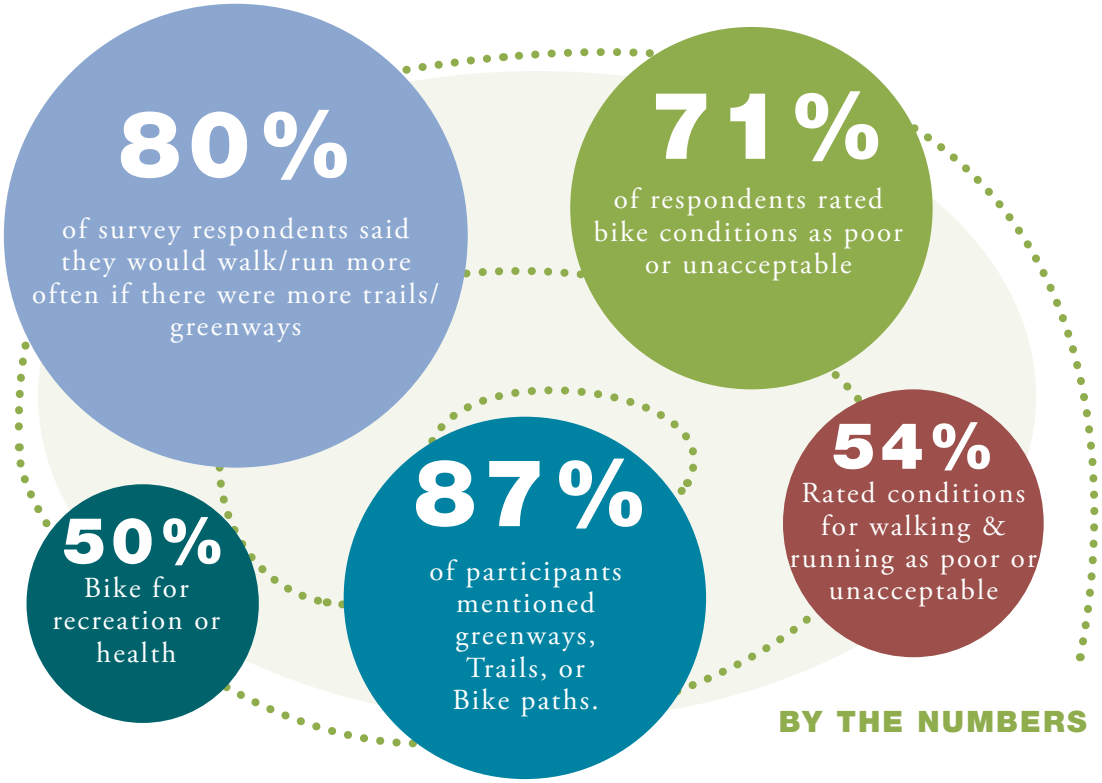
Lillington has a number of destinations for recreation, shopping and daily life that are desired to be accessed by foot and on bicycle. The following is a high-level summary of these locations:

- Downtown
- Recreation Park & River Park
- Community Center & Botanical Trail
- Raven Rock State Park
- Businesses along Major Thoroughfares
- Schools



Public Meeting
Nov. 21st, 2019
Town Hall
6:00-7:30PM

Survey and Public Meeting announcements were used to draw interest and participation to the plan



CHALLENGES & OPPORTUNITIES

The public feedback revealed a number of key issues and opportunities during the plan process. These are considered in the development of recommendations in the next chapter.

CHALLENGES:

- Truck traffic
- Wide roads
- High speeds
- Heavy through volumes
- Unsafe intersections
- Limited crossings on arterial roads
- Bridge over the river hinders connection

OPPORTUNITIES:

- Local network with relatively low volume
- Concentrated density, allowing for big impact with a few key projects
- Ample room for shared side paths
- Reduce wide curb radiuses to shorten pedestrian crossing distances
- Recent growth in recreation opportunities, planned parks and trails

NETWORK PRINCIPLES

The following principles define best practices for developing a successful active transportation network that emphasizes both recreational connections and a walkable bikeable downtown.

General:

- All origins and destinations should be safely accessible in a connected manner
- Traffic traveling at approximately 20mph is significantly safer for cyclists and pedestrians
- Prioritize scenic routes and fine-grained urban environments
- Travel distrance impacts user's mode choice
- Increased distances for bicycle and pedestrian trips have more discouraging implications than increased distances for motor vehicles

Primary Network

- Grid size of ¼ to ½ mile (especially across barriers such as rivers and highways)
- High-quality facilities are safe, comfortable and equitable for all ages and abilities
- Competitive routes at least as direct as the vehicle network, particularly for trips less than 3 miles. Given the size of Lillington this is achievable to all destinations in the ETJ.

Local Network

- Grid size of ≈ 800 feet, primarily applicable to new development. For reference, downtown Lillington is about 400 feet, so in many places, this grid size is met.
- Allows choices for secondary routes on local streets.

STAKEHOLDER FEEDBACK KEY TAKEAWAYS

- Recreation and access to recreation is important to Lillington residents, especially the Riverfront
- Downtown should be safer for walking and biking, particularly at intersections
- Several cross-town connections are needed to important destinations like schools, the riverfront, parks and neighborhoods
- Truck traffic downtown creates unsafe and unpleasant environment
- Motorist compliance towards pedestrians is/feels low
- Connect tourists and local trail users to downtown to enjoy what it has to offer and support local businesses
- Most people find the walking and cycling facilities to be poor. Of the people that do walk or cycle, the majority do so for recreation or pleasure

PLAN BENEFITS

More and more Americans nationwide prefer to live in areas that are served by a variety of transportation options, allowing them to meet their daily travel need whether they are 8 or 80 years old. Communities where residents can walk and bicycle, in particular, are increasingly in demand. In recent years, communities have made considerable progress in building and designing infrastructure for pedestrians and cyclists. They have also disseminated best practices and design strategies. Planning for people who walk or bicycle benefits all users of the transportation system, especially those with the greatest risk of suffering an injury or fatality when involved in a crash. The following are a number of the key benefits of planning for active travel:

DIVERSIFIES TRANSPORTATION OPTIONS FOR CITIZENS

A well-connected network and safe network of bicycle and pedestrian facilities will make cycling and walking more accessible for destinations in and around Lillington, increasing the likelihood that residents will choose them as transportation options.

IMPROVES THE LOCAL ECONOMY

Bicycle and pedestrian investments have proven economic benefits, including those from tourism and increased accessibility to retail near improved areas.

PROVIDES BENEFITS TO THE ENVIRONMENT

As land in Northwest Harnett County continues to be developed, dedicating areas for future greenways can also be employed as a way to protect waterways, wildlife habitat, and natural areas.

CREATES LIVABLE HUMAN-SCALED COMMUNITIES

Livability refers to the overall quality of life in a community, and is made up of several aforementioned factors including environmental factors, economic prosperity, social equity, and culture and recreation. By implementing improvements in each of those factors, this plan will help improve livability in Lillington.

INCREASES TRANSPORTATION EQUITY

People aged 8 to 80 have different transportation needs. The bicycle and pedestrian network created in this plan will decrease barriers for cycling and walking for all Lillington residents. Doing so will increase options and access to recreation, shopping, and other destinations.

IMPROVES HEALTH & SAFETY

By increasing pedestrian and cyclist safety, this plan will help reduce the number of cyclist and pedestrian crashes, injuries, and fatalities experienced in Lillington over time. It will also help provide transportation opportunities that will encourage residents to be more active both during commutes and for recreation.

PREVIOUS PLANNING EFFORTS

This plan builds on previous Lillington and Harnett County plans. Previous plans have looked at topics such as land use, traffic, recreation amenities, and regional cycle infrastructure.

NORTHWEST HARNETT COUNTY SMALL AREA PLAN

2019

This plan pivots off of Grow Harnett County to develop a focused program for the northwest portion of Harnett County, of which Lillington is included. The plan expands the planned regional greenway network making connections across the area. These potential multi-use paths include connections to Lillington from notable destinations such as Raven Rock State Park, Chatham County, Angier, and Campbell University in Buies Creek and a connection to the planned network in Wake County. The plan also makes recommendations for the acquisition and development of recreation access points along the Cape Fear River for blueway use.

GROW HARNETT COUNTY COMPREHENSIVE GROWTH PLAN

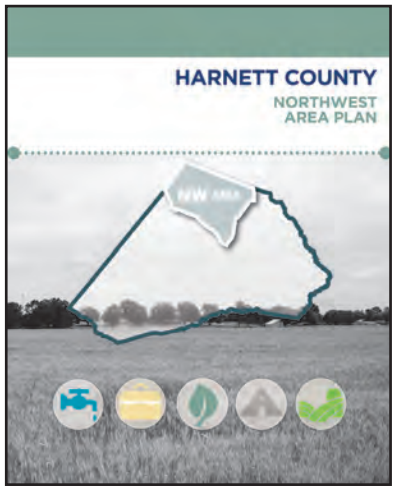
2015

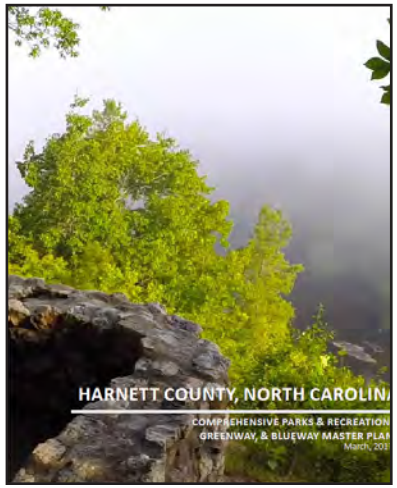
This 2015 comprehensive growth plan was spurred by the dramatic population increase that the county has experienced in recent decades. The plan addresses this population growth by outlining strategies to foster beneficial practices pertaining to land use, utilities, natural resources, transportation and economic development. The plan addresses the need to develop a county-wide greenway system, provide multi-modal transportation options, and provide active and passive recreation opportunities.

HARNETT COUNTY COMPREHENSIVE PARKS & RECREATION, MASTER PLAN

2017

The 2017 plan's recommendations outline greenway and blueway connections in and around Lillington, as well as county-wide programmatic strategies to enhance the effectiveness of providing recreational services to the growing population of Harnett County. The plan also addresses provisions for additional river access points along the Cape Fear and Upper Little Rivers.

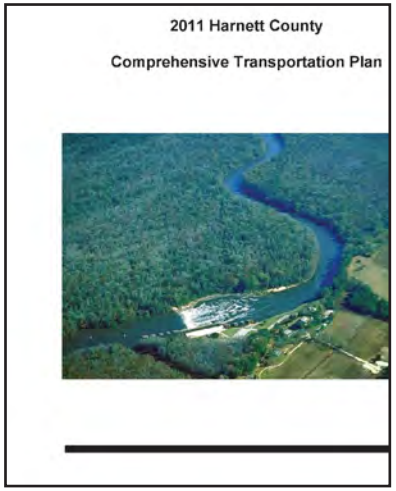




HARNETT COUNTY COMPREHENSIVE TRANSPORTATION PLAN

2011 & 2017 (ADDENDUM)

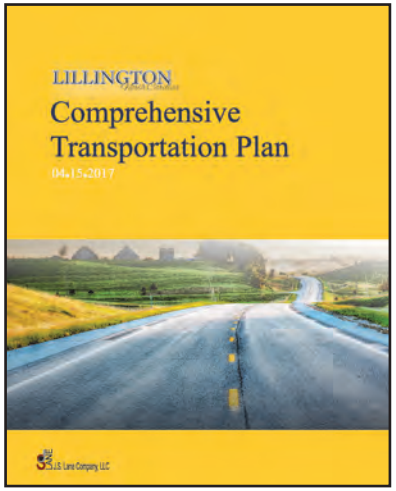
The 2011 Harnett County Comprehensive Transportation Plan (and 2017 addendum) makes long range planning recommendations based on current and future traffic behavior. In addition to motorized traffic, the plan identifies projects to enhance the mobility options for pedestrians and cyclists in the Lillington area. These enhancements include facilities such as bike lanes, sidewalks, and multi use paths.



LILLINGTON COMPREHENSIVE TRANSPORTATION PLAN

2017

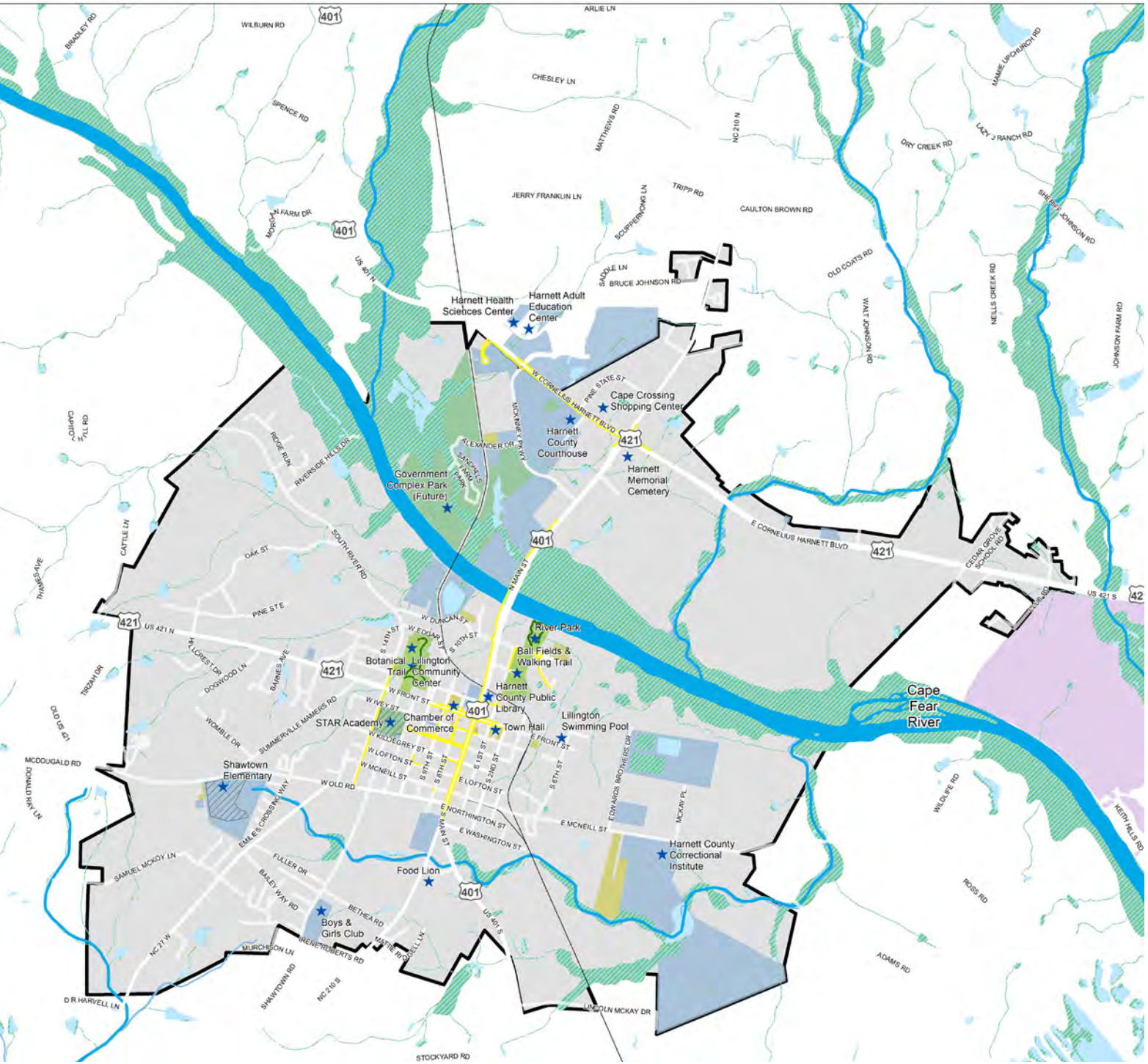
Incorporates citizen input to ensure recommendations encompass the identity of Lillington and improve the character of the town's values. The plan recommends sidewalks on both sides of the Cape Fear River, greenways and sidepaths connecting Lillington to nearby assets, and other bicycle and pedestrian accommodations. Additionally, the plan identifies safety concerns for cyclists and pedestrians within Lillington's downtown.



SANDHILLS REGIONAL BICYCLE PLAN

2019

The 2019 Sandhills Regional Bicycle Plan aims to promote comprehensive bicycle infrastructure in the area. The plan addresses the multifaceted benefits of expanded cycling infrastructure including economic growth, environmental protection, livability, and health. The plan identifies the potential connection between Raven Rock State Park and Downtown Lillington via an abandoned rail corridor, as well as the connection to Campbell University from Lillington via a shared-use path.



EXISTING CONDITIONS OVERVIEW MAP

- Points of Interest
- Existing Sidewalk
- Existing Trails
- Railroad
- Public Schools
- Rivers and Streams
- Lakes
- Wetlands
- Parks
- State or County Property
- Town of Lillington Property
- Extraterritorial Jurisdiction (ETJ)
- Campbell University Property

CHAPTER TWO

existing conditions

OVERVIEW

Chartered in 1903, the picturesque small town of Lillington is not the largest in Harnett County, yet it fulfills the important role of county seat. The county library and other county offices are at home in Lillington, where neighborhoods and districts are graced by scenic views of the Cape Fear River as it meanders through the town. Lillington is made up of approximately 4 square miles with 3,600 residents.

The Cape Fear River border's Lillington's downtown less than a mile to the north. The river, once contested as a strategic asset during the Civil War, now serves as an economic driver as visitors from surrounding urban centers come to enjoy outdoor pleasures including rafting and canoeing on the scenic waters.

View looking North on N Main Street

COMMUNITY CHARACTERISTICS

The population density is 741 people per sq mi which is higher than the North Carolina average. The community character could be described as "Dense Suburban." The community has a distinct urban core on the south side of the Cape Fear River and a number of clustered county services, suburban style commercial development and Campbell University located on the north side of the river. There are also abundant recreational opportunities (both existing and planned) on both the north and the south side of the River. This makes a safe and attractive river crossing a key element of the planning effort.

CURRENT INITIATIVES

RIVER PARK

Lillington received a PARTF Grant in 2019 to begin Phase II and expand offerings at River Park. The grant will provide matching funds to expand nature trails, create a waterfront observation area, build a canopy and stage for the amphitheater, provide a small watercraft launch, and convert an existing gravel trail to the waterfront with a 10'-wide asphalt path.

GOVERNMENT COMPLEX PARK

The first phase of a new county park has broken ground near Sandhills Farm Park on the northern bank of the Cape Fear River within the town of Lillington. This phase will include parking, walking trails, a fishing pier, a wildlife observation deck, sports fields, a canoe portage, and an elevated boardwalk.

SIDEWALK IMPROVEMENTS

The Town has worked with NCDOT recently on a number of accessibility improvements to Front St including the improvement of ADA compliant curb ramps and sidewalk.

Cape Fear River

DEMOGRAPHICS

A number of demographic factors influence the need for biking and walking improvements in Lillington and play a factor in the development of plans for improving infrastructure and how programming and policies should be shaped. The primary factors are steady population growth, low rates of car ownership and household access to a vehicle, higher than average rates of walking to work and an economy that could greatly benefit from increased tourism around active transportation and local workforce opportunities.

POPULATION AND GROWTH

Lillington, NC has a population of 3,604 according to the most recent ACS 5-year estimates. The town is experiencing steady growth, with an average annual growth rate of 1.56% between 2010 and 2018.

The majority of Lillington's population falls within the "Young Adult" age range (25 to 44), although the general area receives many college-aged individuals (18 to 24) due to the presence of Campbell University.

RACE AND ETHNICITY

Lillington is an ethnically-diverse town. The people who call Lillington home describe themselves as belonging to a variety of racial and ethnic groups. The minority population in Lillington combines to just over 50%.

Lillington has a sizable Spanish-Speaking community which should be considered in program, outreach and education efforts. The most recent estimates indicate that approximately 10% of the population speaks Spanish.

COMMUTING TO WORK AND CAR OWNERSHIP

In 2017, the most common method of travel for workers in Lillington, NC was Drove Alone (90%), followed by those who Carpooled (4.75%) and those who Walked (2.71%). Rates for walking are higher than the NC Average (1.8%). There are no public transportation routes that serve Lillington. The average commute time for town residents is 24.3 minutes.

The average car ownership in Lillington is 1 car per household (40%) which is lower than the national average. Within Harnett County, Lillington has the highest percentage of households without access to a vehicle at 17.7 percent

ECONOMY

The largest industries in Lillington, NC are Health Care & Social Assistance, Manufacturing and Educational Service. Median household income in Lillington, NC is $29,390 which is considerably less than the average Median income for Harnett County ($50,323). Further, 26% of the population for whom poverty status is determined in Lillington live below the poverty line, a number that is higher than the national average of 13.1%.

QUICK FACTS

POPULATION

- 3,604 (2018 ACS Population Estimates)
- 1.19% GROWTH (2016-2017)

MEDIAN AGE

- 40.7

MEDIAN HOUSEHOLD INCOME

- $29,390
- 6.22% Growth (2016-2017)

POVERTY RATE

- 26%

MEDIAN PROPERTY VALUE

- $139,600
- 9.23% GROWTH (2016-2017)

NUMBER OF COMPANIES

- 338 (2012 Survey of Business Owners)

EMPLOYMENT

- 1.08% GROWTH (2016-2017)
- 908 Workers Currently in the Labor Force
  (2014-2018 American Community Survey Estimates)
  - Private and Wage Salary Workers (79.6%)
  - Federal State & Local Gov Workers (16.7%)
  - Self-Emplyed Workers (3.4%)

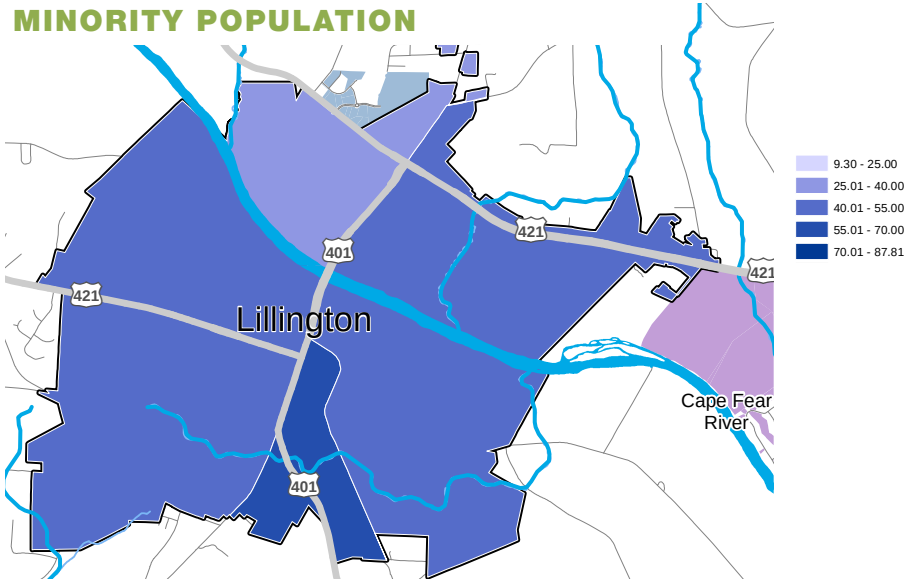
Labor force participation was markedly lower for Lillington residents than for the County and State as a whole. Most (64%) were not in the labor force.

VULNERABLE POPULATIONS

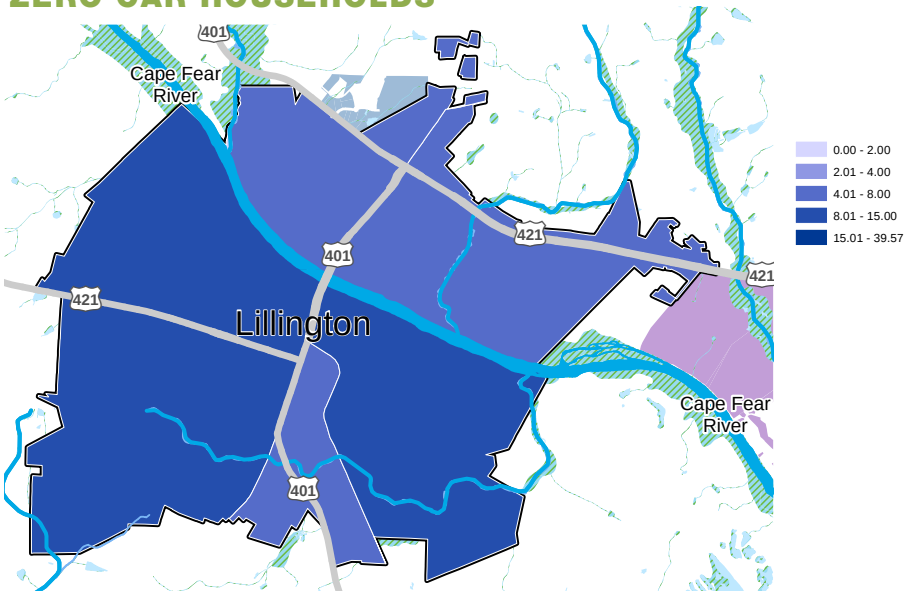
In general, vulnerable populations are not confined to any specific area of Lillington. The maps on this page indicate where the Zero Vehicle Households, Higher Poverty Rate areas and Minority Populations are located. Darker colors indicating higher vulnerability are relatively spread across the Town.

Zero vehicle households, areas of higher poverty and areas with higher rates of minority populations could experience disproportionate barriers to bicycling and waking and are more likely to have an increased need for bicycling and walking facilities. Seniors, youth and persons with disabilities should also be given consideration when planning for vulnerable populations.

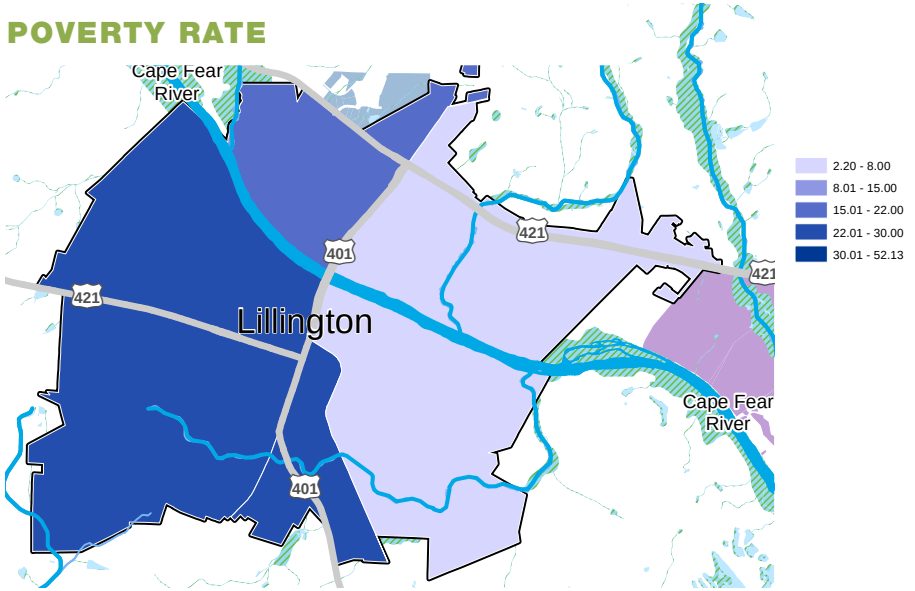
MINORITY POPULATION



ZERO CAR HOUSEHOLDS



POVERTY RATE



PHYSICAL CHARACTERISTICS

OVERALL TRANSPORTATION NETWORK

As the crow flies, the majority of Lillington is within 1.5 miles of the center of town (intersection of Front St. and Main St.). Given the size of Lillington, the average pedestrian at a moderate walking pace would be able to make a one-way trip across town in about thirty minutes. For a typical bicyclist, this trip would take approximately 15 minutes.

Most neighborhood streets are without curbs and are graded toward grass swales that lead to stormwater intakes. There are few sidewalks in these areas. Many of these streets do not pose an issue for shared use as traffic volumes are generally low, but some barriers to accessibility exist. Some minor collector streets also lack sidewalks.

Lillington Botanical Trail

While most streets in Lillington experience relatively low daily traffic volumes, there are several notable exceptions:

- **Main Street (US 401)**, which runs through the town north/south and carries traffic across the Cape Fear River, sees as many as 33,000 vehicles per day on average. Funneling of high volumes of traffic to Main Street, including a high percentage of truck traffic poses a health and safety risk to desired bicycling and walking activities for the town's citizens. A relatively high concentration of vehicular crashes with pedestrians has occurred along this high-volume stretch in Town.
- **US 210 from Angier and US 421 from Buies Creek** each experience an average of 10,000 – 21,000 vehicles per day and intersect with US 401 from Fuquay-Varina (up to 15,000 vehicles per day average) 1.5mi north of downtown Lillington. Main Street (US 401) then branches south, carrying this condensed traffic volume into downtown.
- Southbound traffic can diverge off of **Main Street onto W. Front Street** to carry traffic along US 421 to western Harnett County. Other traffic may diverge onto other state and federal highways just south of downtown.
- While the official truck route for E/W traffic is to divert onto **10th Street**, the town continues to experience issues with through truck traffic which especially affects the downtown intersection of Main and Front.

Sidewalks on S Main Street in Downtown Lillington

RAIL TRANSPORTATION

An active Norfolk Southern rail line divides the town just east of Main Street and bends to the west just north of Front Street before crossing the Cape Fear River. The line creates a number of at-grade rail crossings within the town and generally severs connectivity between downtown Lillington and the Cape Fear River.

EXISTING SIDEWALKS

Lillington has sparse pedestrian infrastructure but the beginnings of a network exist. Existing sidewalks within Lillington exist primarily along Main Street (US 401) as well as within downtown, west of US 401. Sidewalks may also be found between the intersection of US 401/421 and Central Harnett Hospital along US 401 north of the Cape Fear River. New subdivisions require sidewalks with development per the Lillington Unified Development Ordinance (2017). The new development at Falls of the Cape is installing sidewalks that will create a link between River Park and Front Street east of the railroad tracks.

BICYCLING ROUTES AND FACILITIES

There are no designated bike routes, bike lanes or other bicycling facilities within Town Limits.

State Bicycle Route NC 5, the Cape Fear Run, connects Raleigh to Wilmington and travels through neighboring municipalities east of Lillington. Notably, NC 5 is routed through Buies Creek, Lillington's closest municipal neighbor approximately 5 miles to the northeast. Cycling is also a popular recreational activity on the rural roads in the area.

In addition, the East Coast Greenway (ECG) has completed segments running through the Town of Erwin and the City of Dunn. Planned portions of the ECG connect to Fayetteville and Raleigh.

EXISTING GREENWAYS AND NATURAL SURFACE TRAILS

There is a paved walking track around the Lillington Ball Park (approximately 0.8 miles). Plans are underway to expand trails in the River Park on the South side of the River.

The Botanical Trail provides Lillington residents and visitors with a short trail that weaves through a wooded area adjacent to the Lillington Community Center. The complete trail starting at the back of the Lillington Community Center measures one mile. The trail connects to the future home of the Front Street Park.

DID YOU KNOW?

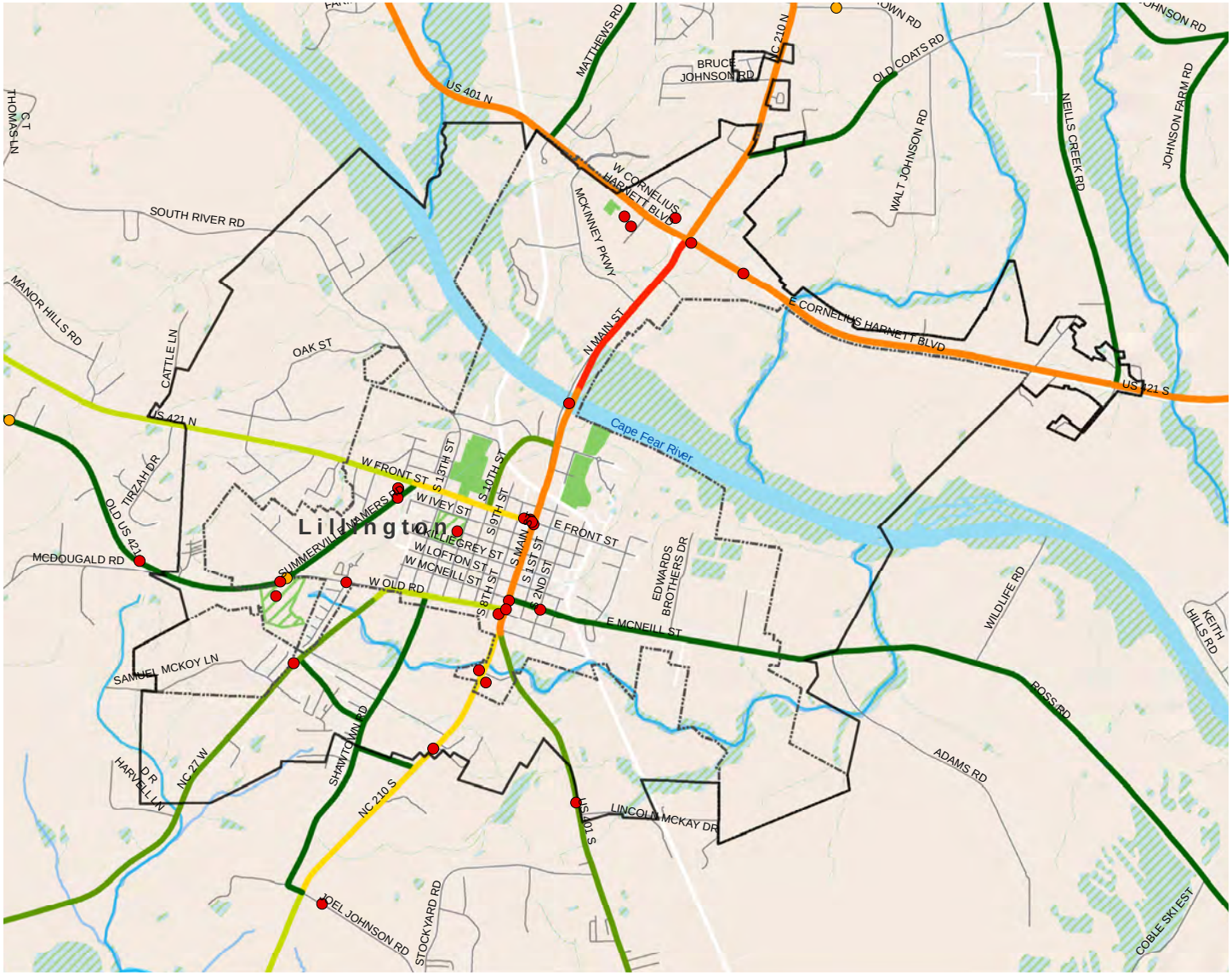
LILLINGTON HAS...

6.6 MILES OF EXISTING SIDEWALK

NEARBY MOUNTAIN BIKING TRAILS AT RAVEN ROCK STATE PARK

Cycling is a popular recreational activity on rural roads in the area

DAILY TRAFFIC COUNTS / BICYCLE & PEDESTRIAN CRASHES



ANNUAL AVERAGE DAILY TRAFFIC (2018 AADT)

- > 5,000
- 5,000 - 8,000
- 8,000 - 9,000
- 9,000 - 10,000
- 10,000 - 30,000
- < 30,000

BICYCLE & PEDESTRIAN INVOLVED CRASHES (2007 - 2016)

- Pedestrian Crashes
- Bicycle Crashes

- Public Schools
- Parks
- TaxParcels
- Extraterritorial Jurisdiction (ETJ)
- Municipal Limits

TRAFFIC AND SAFETY

BICYCLE AND PEDESTRIAN CRASHES

A total of 25 pedestrian crashes and 1 bicycle crash was reported in the Lillington ETJ between 2007 and 2018, of which two were fatal. Both fatal crashes occurred on high volume roadways - one on US421 and the other at the intersection of Main and Front Street.

Unsurprisingly, the highest concentration of bicycle and pedestrian crashes in and around Lillington correspond to locations of concern voiced by residents. These locations which were regarded as dangerous and/or difficult to cross include Main St., Front St., and the bridge across the Cape Fear River.

CAPE FEAR RIVER CROSSING

The highest traffic volumes in the area occur on the bridge crossing of the Cape Fear River where two state highways join together. Considering there are only two crossings of the Cape Fear River in Harnett County, each is highly important as a safe and desirable biking and walking connection. A back of curb sidewalk exists on the roadway bridge that carries southbound traffic. Vehicle volumes, speeds and the percentage of truck traffic using this route means that the existing back of curb sidewalk is not safe or comfortable for people of all ages and abilities.

TRAFFIC VOLUMES

US 401 and US421 are important highways that traverse the state of NC. US 421 is part of the NC Strategic Highway Corridors system. Because of this designation, the state has made numerous changes converting the rural two-lane highway into a major freeway with 4 or more lanes. **Once US 421 reaches the junction with US 401, NC 27, and NC 210, all four routes collect onto a single thoroughfare heading over the Cape Fear River into downtown Lillington.** The 2016 Harnett County Comprehensive Transportation Plan (CTP) shows a bypass of the downtown which could assist active transportation safety by alleviating some of the traffic volume route through the downtown and turning traffic as highways diverge within the Lillington downtown core. The Downtown Plan recommends diverting trucks on an alternative route to bypass the downtown to assist with redevelopment and revitalization efforts and increase pedestrian comfort.

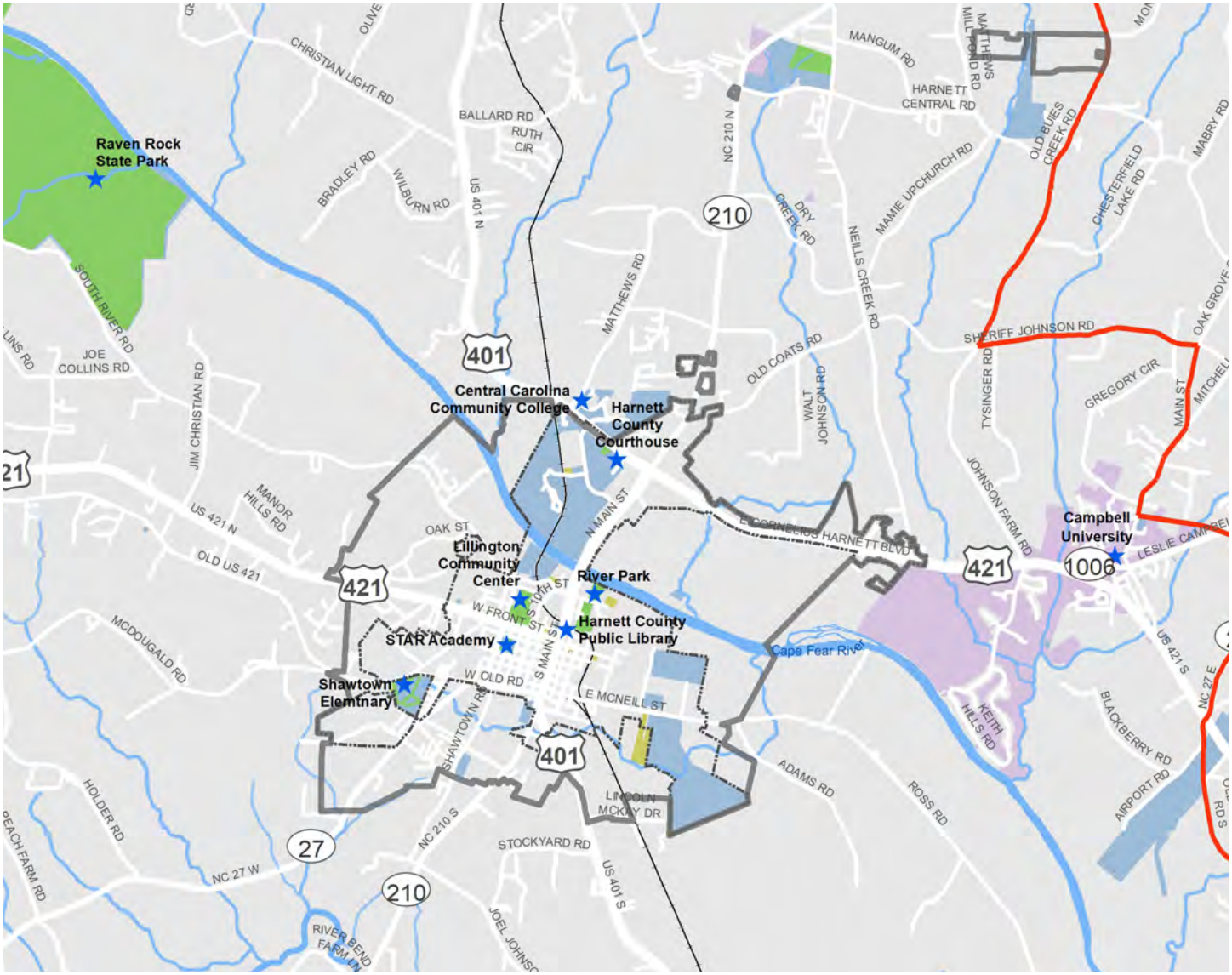
PEDESTRIAN CROSSINGS

The intersection of Front and Main streets in downtown account for 16% of the total pedestrian crashes and the only pedestrian fatality in downtown Lillington within this timeframe. A permissive flashing yellow turn arrow at the intersection of Main and Front Street presents a hazard for pedestrians trying to cross when there is turning traffic, despite motorists being legally required to yield.

There are marked crosswalks in Lillington only on Main Street at the following three locations: W Old Rd, Front Street, and on two sides of US 401. All of these locations are signalized. A marked mid-block crosswalk connects the Ball Field and River Park. Additional crossing locations are desired to increase safety and visibility for pedestrians in the Town.

A map showing the NC Regulated Truck Network. The route through Downtown Lillington on US 401 is available to all truck traffic with no restrictions. This contributes to heavy truck volumes in the downtown..

ORIGINS & DESTINATIONS IN THE LILLINGTON AREA



ORIGINS AND DESTINATIONS

- Regional Points of Interest
- River Access
- Potential Greenways & Trails
- Extraterritorial Jurisdiction (ETJ)
- Municipal Limits
- BikeRoutes
- Cape Fear River
- Rivers and Streams
- Public Schools
- Parks
- Campbell University Property
- State or County Property
- Town of Lillington Property

ORIGINS AND DESTINATIONS

DOWNTOWN CORE

- Downtown Lillington is the municipality's economic and social center. It has numerous restaurants, businesses, government buildings, residences, and as of early 2020, a brewery.
- The Town Hall and Library are also located in the downtown area.

KEY RECREATIONAL FACILITIES

- Lillington River Park, Ballfields and Walking Trail is being developed as a recreation cluster on the south bank of the Cape Fear River. Numerous town-sponsored activities and events are held at this location.
- Lillington Swimming Pool
- The Cape Fear River is a major recreation destination. There are two access points, one at the Cape Fear River Adventures (private) and another at the end of Wildlife Rd (public) which is maintained by the Wildlife Commission of NC. A new access is being developed by the Town at the River Park.
- Community Center and Botanical Trails

RAVEN ROCK STATE PARK

Less than 10 miles Northwest of downtown Lillington, Raven Rock State Park hosts some of Harnett County's most valuable recreational resources. Named after it's iconic 150' rock outcropping, Raven Rock State Park boasts a LEED Certified visitors center with native artifacts, educational spaces and an amphitheater.

With 4500+ acres, over 10 miles of hiking trails, bridle trails, 16 primitive backpack campsites, 11 paddle-in campsites, two sets of whitewater rapids (Fish Traps Rapids: class 1, and Lanier Falls Rapids: class 2), birdwatching, educational opportunities, and mountain bike trails currently under construction, it is not surprising that Raven Rock State Park attracts thousands of visitors each year.

CAMPBELL UNIVERSITY AND BUIES CREEK

Buies Creek is home to Campbell University's main campus and is located five miles northeast of Downtown Lillington. The main campus spans 850 acres and hosts over 3,000 undergraduate students. The majority of undergraduate students are required to live on campus during their first three years. The proximity of Lillington to Campbell University offers great potential to serve as a destination for off-campus life and activities. While there are some wooded trails used primarily for running and walking north of the Cape Fear River, there is currently no complete alternative to US 421 to access Buies Creek from Lillington, making bicycling and walking a dangerous activity.

SCHOOLS

There are 2 schools that provide instruction for school-aged children in Lillington. These schools serve pre-kindergarten through grade five and some students in grades six through twelve.:

- Lillington-Shawtown Elementary (PK-5)*
- STAR Academy (6-12)

In addition, the Central Carolina Community College (CCCC) offers adult educational services. These facilities are all located on the North Side of the Cape Fear River just outside of the ETJ:

- Harnett Adult Education Center (HAEC)
- Harnett Health Sciences Center
- Campbell University

*Adjacent to town limits

Star Academy shares a campus with Harnett County Schools Central Office in Lillington, NC

SUMMARY OF KEY NEEDS

The following conceptual diagrams illutrate at a high level the actions that the Town can take to address bicycle and pedestrian needs in Lillington which relate directy to the Vision and Goals for the plan. Key recommendations are given in the following chapter serve to address these needs.

1. CROSS THE RIVER

Central Carolina Community College facilities, key county services, a new county park and shopping/retail destinations north of the river are cut off from the core of Lillington due to an incomplete sidewalk network and uncomfortable crossing of the US 401/421 bridge over the Cape Fear River. This is one of only two river crossings in all of Harnett County giving it regional importance .

2. CREATE A MINIMUM PEDESTRIAN GRID

There is a need to create a basic sidewalk network connecting key destinations within the Town, including schools, the park and the waterfront. This network needs to connect people across the river and break down the barriers presented by the major street crossings and railroad tracks. The following corridors were identified to could become the "Lillington Loop:" W Front Street, Summerville Mamers Rd, W Old Rd, McNeill St, Shawtown Rd, S Main St, US 401 S, E Duncan St, US 401 N, and US 421.

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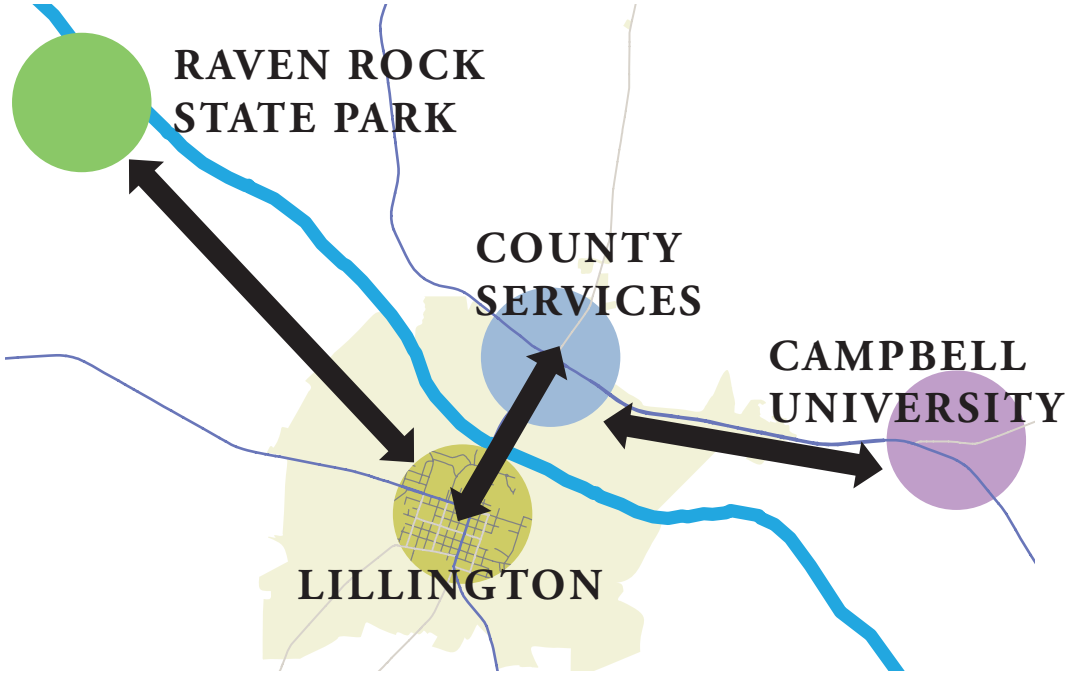


3. ALLEVIATE TRUCK TRAFFIC

In the long-term, Lillington's downtown pedestrian environment will benefit from diverted US 421 truck traffic that currently creates noise and pollution and contributes to safety issues, especially at Main Street and Front Street.

4. ENHANCE THE PEDESTRIAN ENVIRONMENT WITH SPOT IMPROVEMENTS

Downtown has concentrated density and a large number of destinations allowing for a big impact with a few projects. Spot improvements include closure of sidewalk gaps and intersection crossing enhancements are needed to enhance safety at roadway crossings that create the minimum grid.

5. CONNECT TO THE REGION

Lillington is the gateway to visitors who come to the region to enjoy Raven Rock State Park. It affords opportunities for outdoor outings, seasonal events in addition to downtown shopping, restaurants and refueling for weekend getaways. The proximity of Campbell University and the ability to offer outdoor recreation and urban amenities to nearby students is mutually beneficial. Planned greenway corridors that can accommodate bicyclists and pedestrians should be considered to access regional destinations, as distances are farther than a typical walk but are easily traveled by bicycle.

RECOMMENDATIONS OVERVIEW

The recommendations in this chapter are divided into six types of improvements and are shown in a general overview map on the left side of this page. Detailed tables with priorities follow in this chapter.

NETWORK RECOMMENDATIONS OVERVIEW MAP

- LILLINGTON ETJ
- STATE / COUNTY PROPERTY (INC. SCHOOLS)
- TOWN OF LILLINGTON PROPERTY
- PARKS
- PROPOSED LILLINGTON AREA GREENWAY NETWORK
- SIDEPATH / MULTI-USE FACILITY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- BIKE ROUTE
- STREETSCAPE PROJECTS
- INTERSECTION IMPROVEMENT

PROPOSED NETWORK TOTALS

Facility Type	Sidewalk	Multi-Use Sidepath	Greenways	Streetscape Improvements	Other Trails / Natural Surface
Existing Length (Approx)	6.6 Miles	-	-	-	0.8 Miles
New Length (Approx)	14 Miles	10 Miles	28 Miles	1 Mile	-
# Of New Segments	43	17	6	3	-
Proposed Network Total	21 Miles	10 Miles	28 Miles*	1 Mile	0.8 Miles

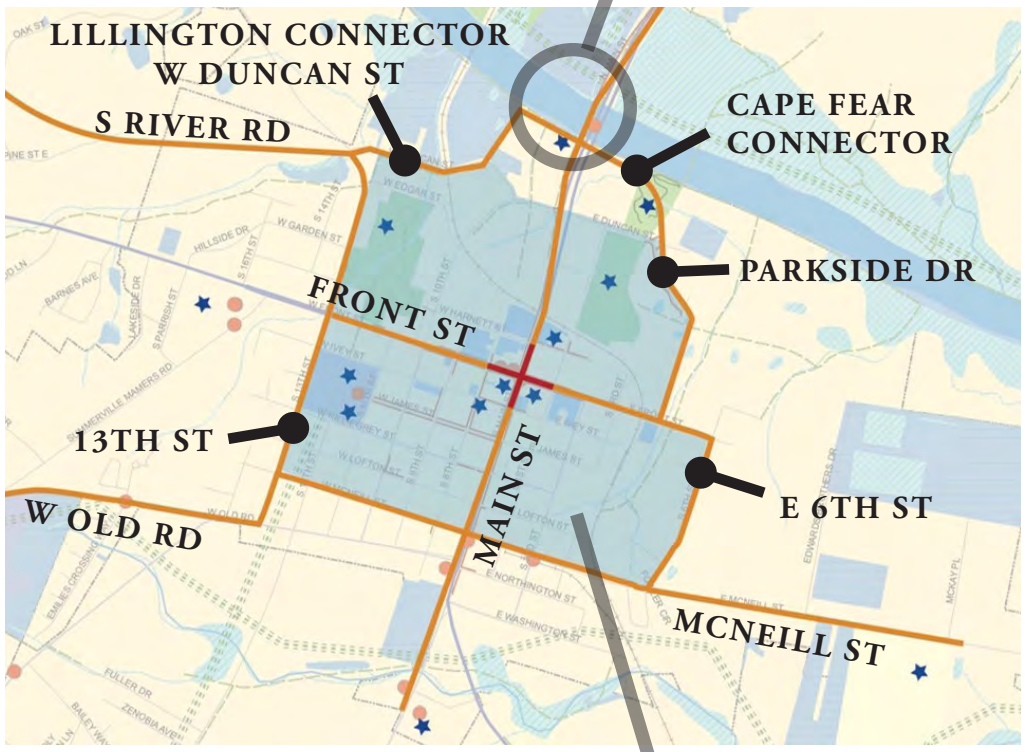
The recommendations in this plan are summed by facility type in the table above. The existing network of approximately 7 miles of primarily sidewalks is envisioned to expand to a total planned network with approximately 60 miles of active transportation facilities. Approximately half of this is greenways that extend into the county in all directions, with a critical connection to and along the north bank of the Cape Fear River. This network is envisioned to be implemented over time, as resources allow and as opportunities become available. The network is prioritized with funding, phasing, partners and implementation steps in the chapters that follow.

*Note: Represents planned greenways in the Lillington ETJ. Portions of priority greenways extend past the ETJ and coordination with Harnett County will be necessary on these projects.

MAJOR RECOMMENDATIONS

- **US 421 Reroute:** Recommendations for a reduction in truck traffic in the downtown business district.
- **Streetscape Improvements:** Changes to overall street appearance, functionality and aesthetics as well as access management.
- **Expanded Sidewalk Network:** An additional 20 miles of sidewalk are recommended over the existing street network to complete sidewalk gaps and expand cross-town connections to important destinations such as schools, shopping and recreation along with the "Lillington Loop" which makes connections throughout the core of Town.
- **Sidepath Improvements:** A separated facility is recommended on the Lillington Area Greenway Network where bicycle and pedestrian improvements are proposed adjacent to existing roadways. Interim upgrades can be made to the street network in advance of physical improvements through traffic calming, wayfinding and preparations at intersections such as wider curb ramps and crosswalks.
- **Lillington Area Greenway Network:** Independent greenway corridors separate from the roadway network.
- **Intersection Improvements:** Key intersections for crossing improvements are recognized in 29 locations across the town. The majority of the intersection improvements are recommended on higher-volume state maintained roadways and state secondary roads.
- **Bicycling Improvements:** Enhancements for bicycling are primarily accomplished through the implementation of the Lillington Area Greenway Network and sidepath improvements, however a few independent projects are proposed - bike lanes and a proposed 20 mile bicycle route to Raven Rock State Park.

A link across the Cape Fear River is critical to achieving connections between destinations on the north and south side of the river.



LILLINGTON CORE CONNECTIONS

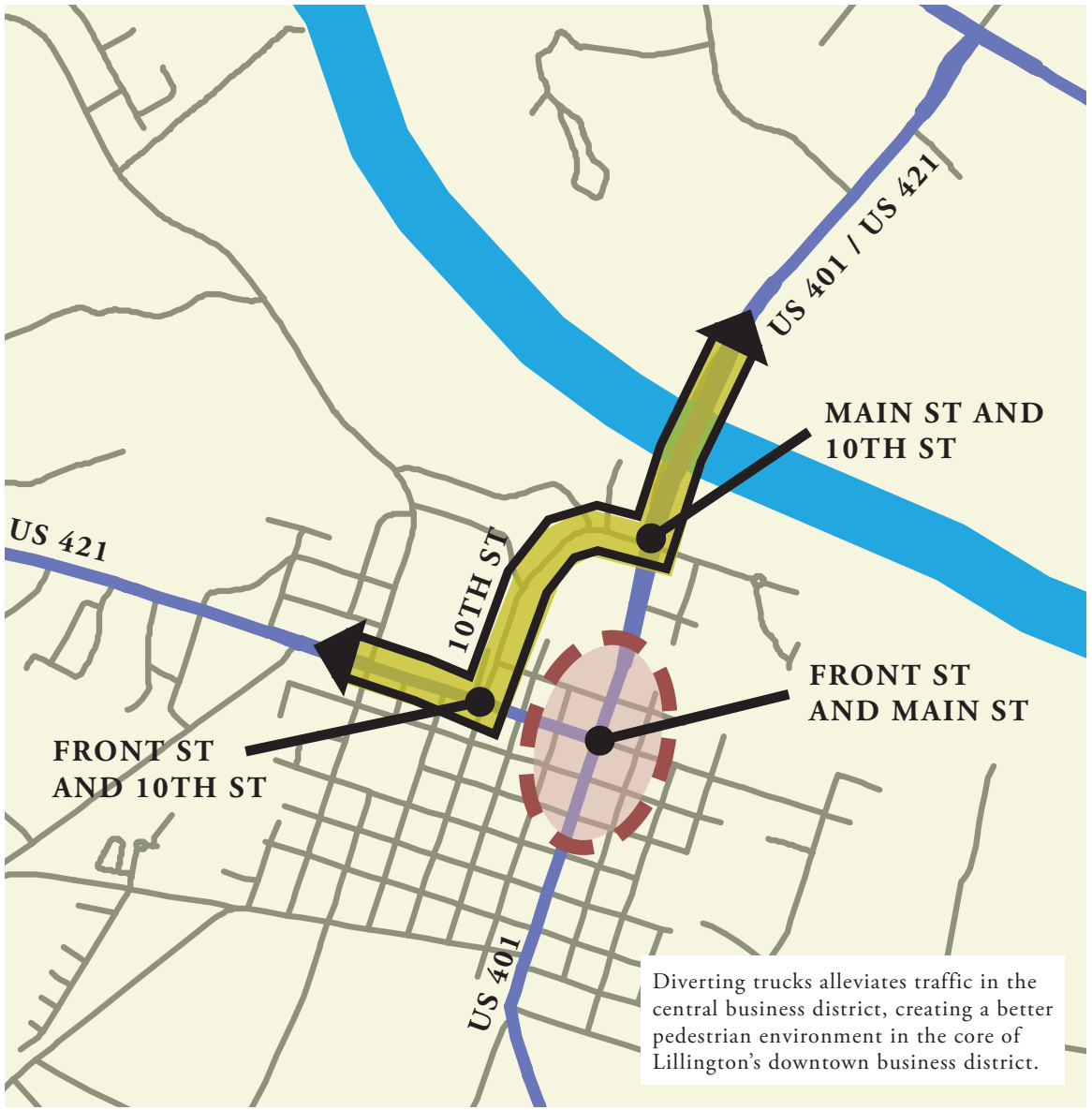
Expand the 20 mph speed limit zone to include the blue shaded area to enhance safety and walkability within the Lillington core. Traffic calming measures should be implemented as needed to achieve this in the inner grid.

US 421 REROUTE

While there are currently no plans to reroute or create a bypass of US 401, downtown Lillington could greatly benefit from reductions in trucks and traffic in the central business core. There is an opportunity to reroute truck and through vehicular traffic on US 421 onto 10th Street and reduce heavy left turn traffic queuing from Front Street onto Main Street by improving signals and design at two intersections:

- Front Street and 10th St: Add additional green time for left turning traffic. Add high visibility pedestrian crosswalk on east side of 10th St.
- Main Street and 10th St: Redesign intersection to allow traffic to turn left from 10th St to US 421. Add pedestrian crossing of US 401/US 421 at 10th St to E Duncan St with redesign.
- Front St and Main St: Remove permissive left turn phase, add automatic lead pedestrian interval for all pedestrian phases.
- See priority intersections 2a and 2b in the Intersection Improvements section of this Chapter.

1,400 TRUCKS PER DAY ON US 401 IN DOWNTOWN LILLINGTON



Diverting trucks alleviates traffic in the central business district, creating a better pedestrian environment in the core of Lillington's downtown business district.

STREETSCAPE IMPROVEMENTS

The following streetscape improvements are meant to improve safety, add additional parking for local businesses and improve the appearance of town streets.

	Project Name	Improvement Type	Implementation / Next Steps
1	W Front Streetscape	Make improvements to intersection of Front Street and Main Street and redesign West Front Street to improve pedestrian safety downtown as shown in the Lillington Downtown Master Plan. • Reduce travel lanes on Front Street • Add Diagonal Parking • Add bulb-outs to intersection to increase pedestrian safety and slow through traffic • Reroute truck traffic from US 421 onto 10 Street	• Develop detailed design and cost estimates • NCDOT coordination on design, phasing and potential funding sources • Reroute Truck Traffic US 421 onto 10th St
2	E Front Streetscape	Make improvements to East Front Street as shown in the Lillington Downtown Master Plan • Repair and expand sidewalk • Reintroduce planted median, formalize parking spaces • Add buffer between sidewalk and parking and travel lanes	• Develop detailed design and cost estimates • Allocate funding to project and/or pursue grant funding
3	West James Street	Redesign West James Street to include improved safety for vehicles, pedestrians and bicyclists. Currently there is 38-40 feet of road width and two lanes. Improvements could include: • Access management improvements (especially on east end) • Addition of on street parking, bike lanes and/or bulb-outs with street trees or other plantings	• Develop design alternatives for street with input from residents and business owners • Consider a temporary installation that tests benefits and impacts of potential improvements
4	East McNeill Street	Redesign East McNeill Street to include sidewalks, bike facilities and/or on-street parking.	• Develop design alternatives for street with input from residents and business owners • Consider a temporary installation that tests benefits and impacts of potential improvements

LOW SPEEDS MATTER. WHY 20 MPH?

Avoiding physical injuries and fatalities in traffic is the key foundation of a safe systems approach. Even small increases in vehicle speed put active users at much greater risk of injury and death. Where transport modes with greatly varying mass use the same space within the roadway, speeds must be low enough to ensure that even in case of a collision, the chance of serious injury is low. **This speed is 20 mph.**

Street design should reflect a low speed to ensure motor vehicles, bicycles, and pedestrians can share the same space. This speed is also low enough that pedestrians can freely cross the street without feeling inhibited by fast traffic. Reducing speed limits alone may decrease vehicle speeds but is more effective when accompanied by engineering, police engagement, and education efforts. Speed enforcement campaigns can be successful in lowering speeds, when targeted speed enforcement focuses on high priority areas with repeated campaigns.

See “Core Connections” Map on P. 29 for the recommended 20mph zone in downtown Lillington.

SIDEWALKS & SIDEPATHS

Sidewalk and sidepath recommendations enhance connectivity, safety and comfort for pedestrians in the Town and create the backbone of the Lillington Loop. Proposed facilities bridge gaps that inhibit walkability. Recommendations focus on connections between residential areas, parks, schools, downtown, offices, shopping, and services.

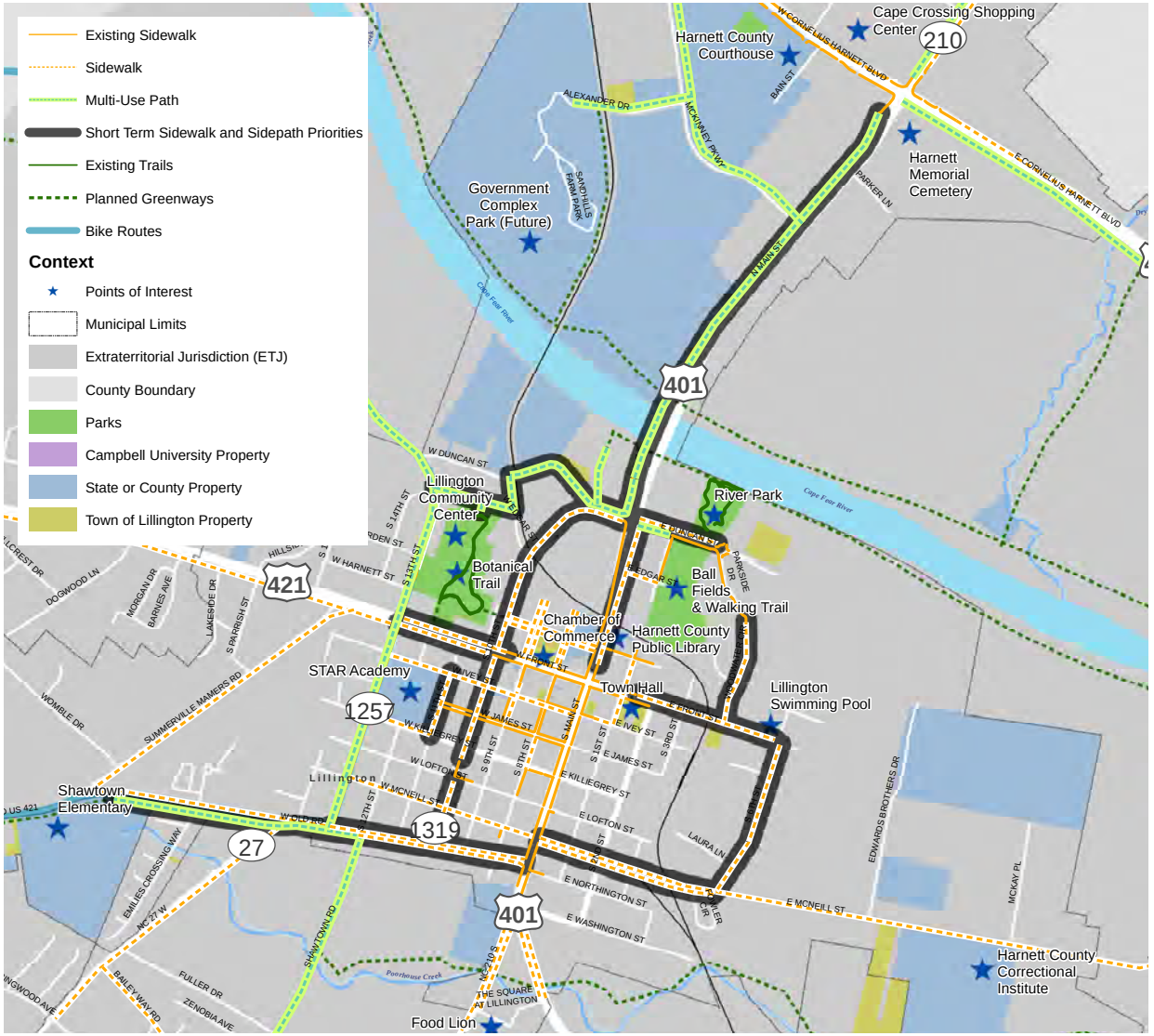
The recommended minimum width of sidewalks is 6 ft to allow space for people to walk side by side or to pass. Sidepaths are recommended where a facility is part of a longer distance greenway connection. Best practice is for multi-use paths to be a minimum of 10 ft wide to accommodate bicyclist and pedestrian travel. Wider greenways or separation between user types should be provided where heavy use is expected.

Lighting is recommended along urban facilities, at street crossings, along trails in the urban environment and at all trail street crossings.

SIDEWALK AND SIDEPATH PRIORITIES

Higher priority was given to those that make up the core of the minimum grid network or Lillington Loop. Sidepaths are prioritized where they are part of the minimum core network. The notes indicate which Greenway, where applicable, that the segment will become a part of as the network is built out.

SIDEWALKS AND SIDEPATH PRIORITY PROJECTS



SHORT-TERM SIDEWALK PRIORITIES

Note: Location #s do not indicate priority

Location #	Street Name	Start	End	Side	Length (Ft)	Notes
1	East Duncan St	S Main St	River Park	North	965	Gap Connection
2	South 10th St	S Main St	8th St	North	252	Gap Connection
3	South 10th St	S Main St	W Old Rd	South / East	2,523	Redevelopment Opportunity (DMP)
4	E McNeill Street	W McNeill St	S 6th St	Study Needed	4,378	Road Diet / Complete Street
5	South Main St	E Front St	E Duncan St	East	1,733	
6	West Front St	S 13th St	S 10th St	Both	2,428	Parking lane both sides
7	West Old Rd	13th St	S Main St	North	2,357	
8	East Front St	E Front St	S 6th St	North	1,722	
10	West Front St	S 13th St	Oak St	South	4,937	On-Street Parking: Yes (2 sides)
12	South 6th St	E Front St	E McNeilll St	East	1,940	
13	South Parkside Dr	Falls of the Cape Subdiv	E Front St	West	1,246	Subdivision under construction
14	South 11th St	W Ivey St	W Killiegrey St	West	772	School, parking lot reconfiguration may be needed
15	NC 210	S Main St	The Square at Lillington	East	1,255	

SHORT-TERM SIDEPATH PRIORITIES

Location #	Street Name	Start	End	Side	Length (Ft)	Notes
1	W Duncan St	RR	S 8th St	Study Needed	1,272	Lillington Connector
2	W Edgar St	Community Center	W Duncan St	West / North	789	Lillington Connector
3	S 8th St	S 10th St	Cape Fear Connector	Study Needed	707	Lillington Connector
4	W Edgar St	S 13th St	Community Center	Study Needed	718	Raven Rock Rail Trail
5	North Main Street	E Cornelius Harnett Blvd	Lillington Connector	West	5,307	Cape Fear Connector
5	13th St	W Edgar St	W Old Rd	West	4,232	Heart of Harnett Trail
6	Lillington-Shawtown Elem Conn	Shawtown Elementary	Shawtown Rd	South	3,739	Raven Rock Ramble

Notes: Location Numbers do not indicate priority
Length = Total Length of Proposed New Sidewalk (linear feet on both sides of roadway included if new sidewalk is proposed on both sides of a road)
DMP = Downtown Master Plan

LONG-TERM SIDEWALK PRIORITIES

The remaining gaps in the network exist as longer-term priorities for the Town. These projects can be completed as opportunities present themselves and with redevelopment opportunities. Long-term funding strategies as part of the capital budget could also be considered.

Improvement	Street Name	Start	End	Side	Length (Ft)	Notes
Sidewalk	Bailey Way Rd	NC 27 W	Shawtown Rd	South	2,227	
Sidewalk	NC 210	The Square at Lillington	Irene Roberts Rd	Both	2,721	
Sidewalk	West Killiegrey St	S 13th St	S 11th St	North	766	School
Sidewalk	West Harnett St	S 10th St	S Main St	South	1,082	Redevelopment Opportunity (DMP)
Sidewalk	West Ivey St	S 13th St	S Main St	South	2,310	School
Sidewalk	South 8th St	W James St	W Killiegrey St	West	384	
Sidewalk	South 8th St	W Front St	W Harnett St	West	338	Proposed Public Space (DMP)
Sidewalk	NC 210	US 401	The Square at Lillington	West	1,142	
Sidewalk	Old US 421	W Front St	W Old Rd	South	3,881	
Sidewalk	West Harnett St	S 10th St	S Main St	North	1,097	Redevelopment Opportunity (DMP)
Sidewalk	West Old Rd	Old US 421	13th St	North	2,918	
Sidewalk	South 9th St	W James St	BB&T	East	497	Gap Connection
Sidewalk	East McNeill St	S Main St	Poorhouse Creek Gwy	North	7,272	
Sidewalk	West McNeill St	S 13 St	S Main St	North	2,300	Connect through to E McNeill St
Sidewalk	East Ivey St	S 1st St	Lillington Fire Dept	North	211	Gap Connection
Sidewalk	South 9th St	W Front St	RR	Both	1,444	Public Space / Redevelopment Opportunity (DMP)
Sidewalk	South 8th St	W Harnett St	RR	Both	1,340	Redevelopment Opportunity (DMP)
Sidewalk	South 1st St	E Ivey St	E Harnett St	East	827	
Sidewalk	Irene Roberts Rd	Shawtown Rd	NC 210 S	North	1,490	
Sidewalk	South Main St	E Washington St	The Square at Lillington	Both	2,202	
Sidewalk	East Edgar St	S Main St	E 1st St	South	406	

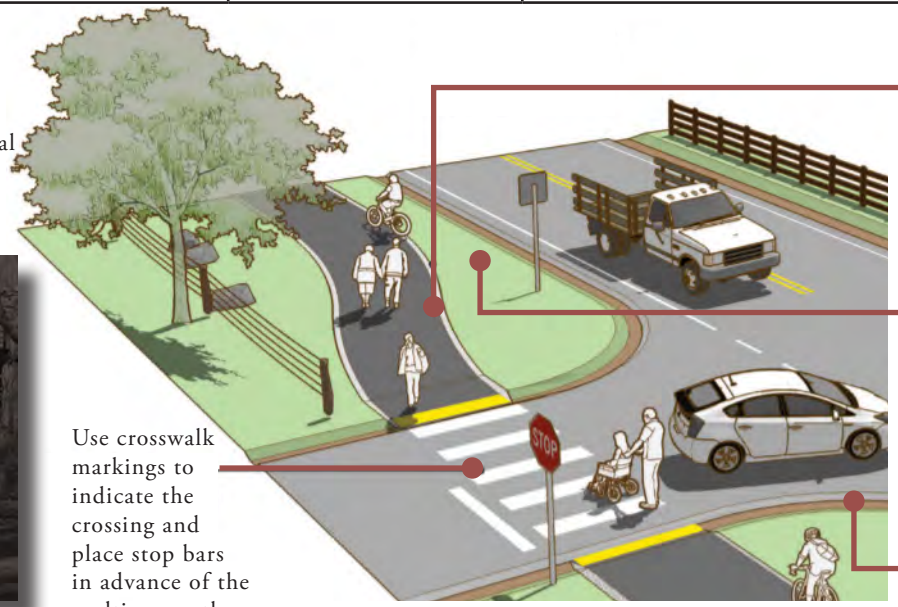
Notes: Location Numbers do not indicate priority
Length = Total Length of Proposed New Sidewalk (linear feet on both sides of roadway included if new sidewalk is proposed on both sides of a road)
DMP = Downtown Master Plan

LONG-TERM SIDEWALK AND SIDEPATH PRIORITIES (CONTINUED)

Improvement	Street Name	Start	End	Side	Length (Ft)	Notes
Sidewalk	North 13th St	W Edgar St	Lillington Comm Ctr	East	977	Community Center
Sidewalk	US 421	East of North Main St	Town Limits	North	1,891	
Sidewalk	North Main St	US 421	Old Coats Rd	West	2,087	
Sidepath	South River Rd	W Edgar St	Riverside Hills Dr	Study Needed	4,504	Raven Rock Rail Trail
Sidepath	Shawtown Rd	W Old Rd	Irene Roberts Rd	East	4,130	Heart of Harnett Trail
Sidepath	McKinney Parkway	Alexander Dr	N Main St	North	2,172	
Sidepath	McKinney Parkway	US 401 N	Alexander Dr	North	2,119	Harnett Cross County Trail
Sidepath	US 421	N Main St	Campbell Campus Connector	South	3,512	US 421 Sidepath
Sidepath	Alexander Dr	McKinney Pkwy	Government Complex Park (Future)	North	2,695	Harnett Cross County Trail
Sidepath	US 401 N	Harnett Cross County Trail	Brightwater Dr	North	1,655	Harnett Cross County Trail
Sidepath	East Duncan St	S Main St	S 1st St	South	402	Connect to Ballfields Path
Sidepath	NC 27 West	W Old Rd	Springwood Ave	South	3,541	
Sidepath	NC 210	McDonalds	Harnett Central Rd	West	16,325	Connect to Schools

SIDEPATH DESIGN

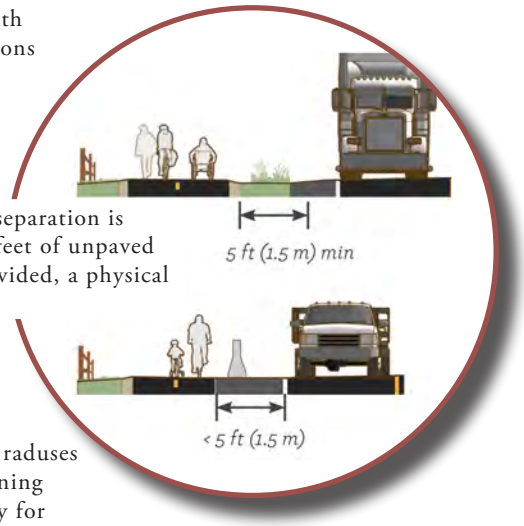
The Small Town ad Rural Multimodal Networks guide is a great resource for facility design.



Use crosswalk markings to indicate the crossing and place stop bars in advance of the multi-use path.

Increasing the separation between the multi-use path and roadway at intersections improves visibility.

A minimum of 5 feet of separation is recommended. Where 5 feet of unpaved separation cannot be provided, a physical barrier may be used.



The use of small turning raduses will limit fast vehicle turning speeds and improve safety for bicyclists and pedestrians.

IMPROVING INTERSECTIONS

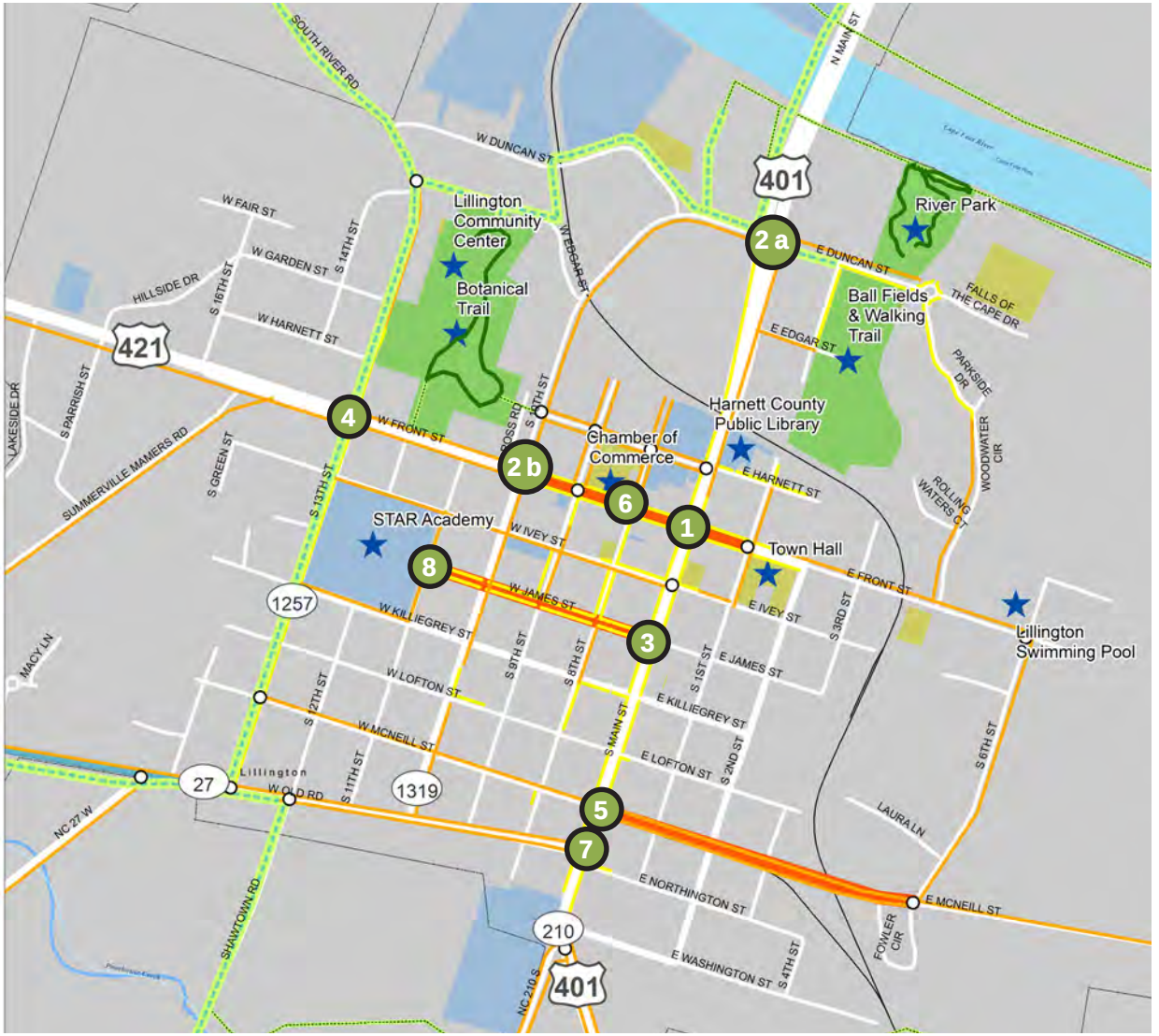
Crossing the street safely is an important issue to be addressed in this plan. The majority of intersections and routes considered part of the biking and walking network need intersection improvements. Twenty-nine intersections are identified in this plan. Primary adjustments include:

- Decreasing curb raduses
- Limiting right-turn-on red movements
- Increase opportunities to cross major thoroughfares with crosswalks
- Adding refuges
- Adding curb ramps and ensuring ADA Compliance
- Adding pedestrian-scale lighting at roadway crossings for safety and security

INTERSECTION IMPROVEMENTS

- INTERSECTION IMPROVEMENT
- PRIORITY INTERSECTION
- PROPOSED LILLINGTON AREA GREENWAY NETWORK
- SIDEPATH / MULTI-USE FACILITY
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- STREETSCAPE PROJECTS

INTERSECTION IMPROVEMENTS



SHORT TERM INTERSECTION PRIORITIES

Eight intersections are selected as short-term priorities for the Town and are described here in greater detail. The first seven are on higher volume roadways and are critical in making safe connections within the minimum grid network for active transportation. The eighth is selected because it is a key school crossing.

1 FRONT ST AND MAIN ST

This intersection is the highest priority for improvement from Public Involvement and the steering committee and is within the heart of the Central Business District. Recommendations for this intersection include:

- Curb extensions on all corners to reduce crossing distance with high visibility crosswalks and pedestrian-scale lighting.
- Inhibit truck traffic to the extent possible
- Integrate improvements with recommendations from the Downtown Plan to include angled parking and streetscape improvements
- Eliminate permissive yellow left turn arrow for motor vehicles to reduce conflicts
- Eliminate right-turn-on red
- Add lead pedestrian interval for all crossing and modify pedestrian phase to automatically recall with all signal phases

2a N MAIN ST AND 10TH ST/DUNCAN ST

To implement the US 421 reroute, it would be necessary to reconfigure this intersection to allow left turning traffic from 10th St onto S Main St. The intersection is currently complex to navigate and does not have crossing facilities. This will become an important detour during anticipated Cape Fear River flooding events on the Lillington Connector

- Improvements should be made in conjunction with US421 reroute
- Add two-stage pedestrian crossing with pedestrian level lighting, yield bars and pedestrian crossing signage across S Main St.
- Relocate curb ramps and provide pedestrian crossing on S 10th St.
- Reduce turning raduses on all corners not served by the truck route.

2b FRONT ST AND 10TH ST

In combination with 2a, this intersection will serve the proposed truck re-route and see an increase in left-turning traffic onto S 10th St. Truck movements will be accommodated with left-turns and encroaching right turns. This may inhibit pedestrian movement on the west side. Improvements for pedestrians at this intersection include:

- Curb extension and crosswalk on the east side of W Front St. Stop bars and pedestrian-level intersection lighting. These improvements will improve pedestrian safety, and visibility and serve as a visual cue for trucks to turn left prior to the gateway into downtown.
- Curb ramps on all corners and close sidewalk gaps
- Truck route signage from 10th St and from Front St approaches.

3 JAMES ST AND S MAIN ST

This intersection is an important crossing between Star Academy and Main Street. It is important as a visual cue to motorists to expect pedestrians in this core downtown intersection.

- Add pedestrian signal heads with lead pedestrian interval and pedestrian-level intersection lighting
- Add curb extensions and stripe high-visibility crosswalks
- Upgrade curb ramps where ADA Accessibility is not met
- Improve access management on James St to clearly delineate driveways versus public space. (2017 CTP)

4 13TH ST AND WEST FRONT ST

This intersection improvement is vital for connectivity of Downtown and schools to the Community Center. Improvements should compliment the sidepath proposed for this street.

- Install pedestrian signal heads
- Add sidepath crossing on West side of intersection
- Install high visibility crosswalks and move stop bars behind crosswalks
- Restripe lanes on Front Street and install pedestrian refuge islands

5 W MCNEILL STREET AT S MAIN ST

Due to hindrance of traffic from W McNeill to Main St, this route is an optimal east-west bicycle/pedestrian route because it has less traffic.

- Create short sidewalk linkage with ADA compliant curb ramps in the W McNeill St right-of-way to link S Main St to W McNeill St.
- Install crosswalk with ADA compliant curb ramps on Main St to align with new sidewalk on McNeill St and restripe stop bars.
- Install pedestrian signal heads and pedestrian-level lighting.

6 8TH ST AND WEST FRONT ST

Improvements to this intersection are tied to the recommendations in the Lillington Downtown Plan to connect development opportunities and open space on N 8th St to the parking and businesses on S 8th St. With these improvements, 8th St will be an ideal location for events and festivals.

- Limit full turning movements at this intersection in favor of providing a median refuge island.
- Install high visibility crosswalks with pedestrian crossing signage, yield markings and pedestrian-level lighting.

7 W OLD ROAD AND S MAIN ST

An important gateway intersection on the south side of Lillington. Improvements will provide safe access to businesses on S Main and S 210.

- Add median crossing island on S Main St to shorten crossing distance of US 401/421
- Improve crosswalk to high visibility
- Reduce curb radiuses to encourage slow turns

8 S 11TH ST AND W JAMES ST

An important intersection due to it's adjacency to the school. Upgraded pedestrian facilities are recommended here and supported by the 2017 CTP.

- Install high-visibility crosswalks, including school driveway and ADA compliant curb ramps on all corners; avoid drainage grates
- Install stop bars at all stop signs

PRIORITIZING PEDESTRIANS

WHAT IS A LEAD PEDESTRIAN INTERVAL?

A Leading Pedestrian Interval (LPI) typically gives pedestrians a 3–7 second head start when entering an intersection with a corresponding green signal in the same direction of travel. LPIs enhance the visibility of pedestrians in the intersection and reinforce their right-of-way over turning vehicles, especially in locations with a history of conflict.

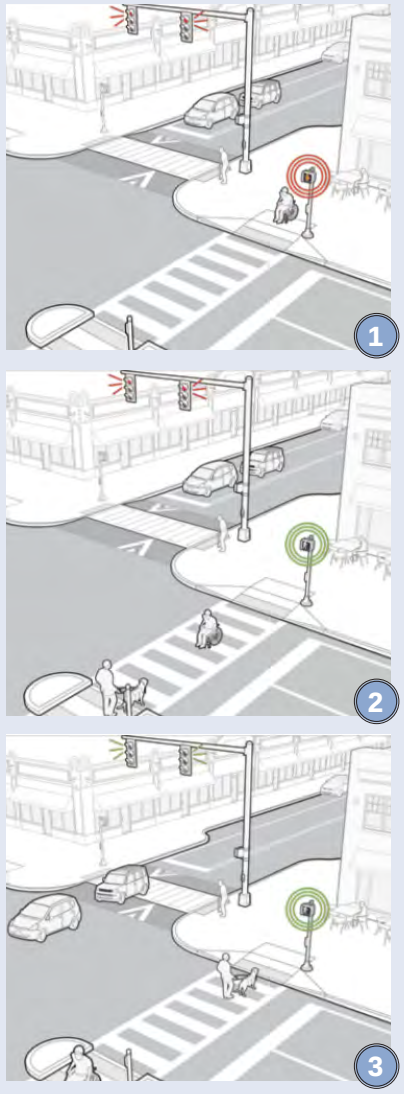
Leading Pedestrian Interval Phases

1st Phase: Pedestrians have a Don't Walk Signal and Traffic has a Red Signal.

2nd Phase: Pedestrian Walk Signal activates and Traffic Signal remains Red.

3rd Phase: Traffic signal turns Green. Pedestrian walk signal remains active. Traffic yields to pedestrians who have started crossing.

LPIS HAVE BEEN SHOWN TO REDUCE PEDESTRIAN-VEHICLE COLLISIONS AS MUCH AS 60% AT INTERSECTIONS.

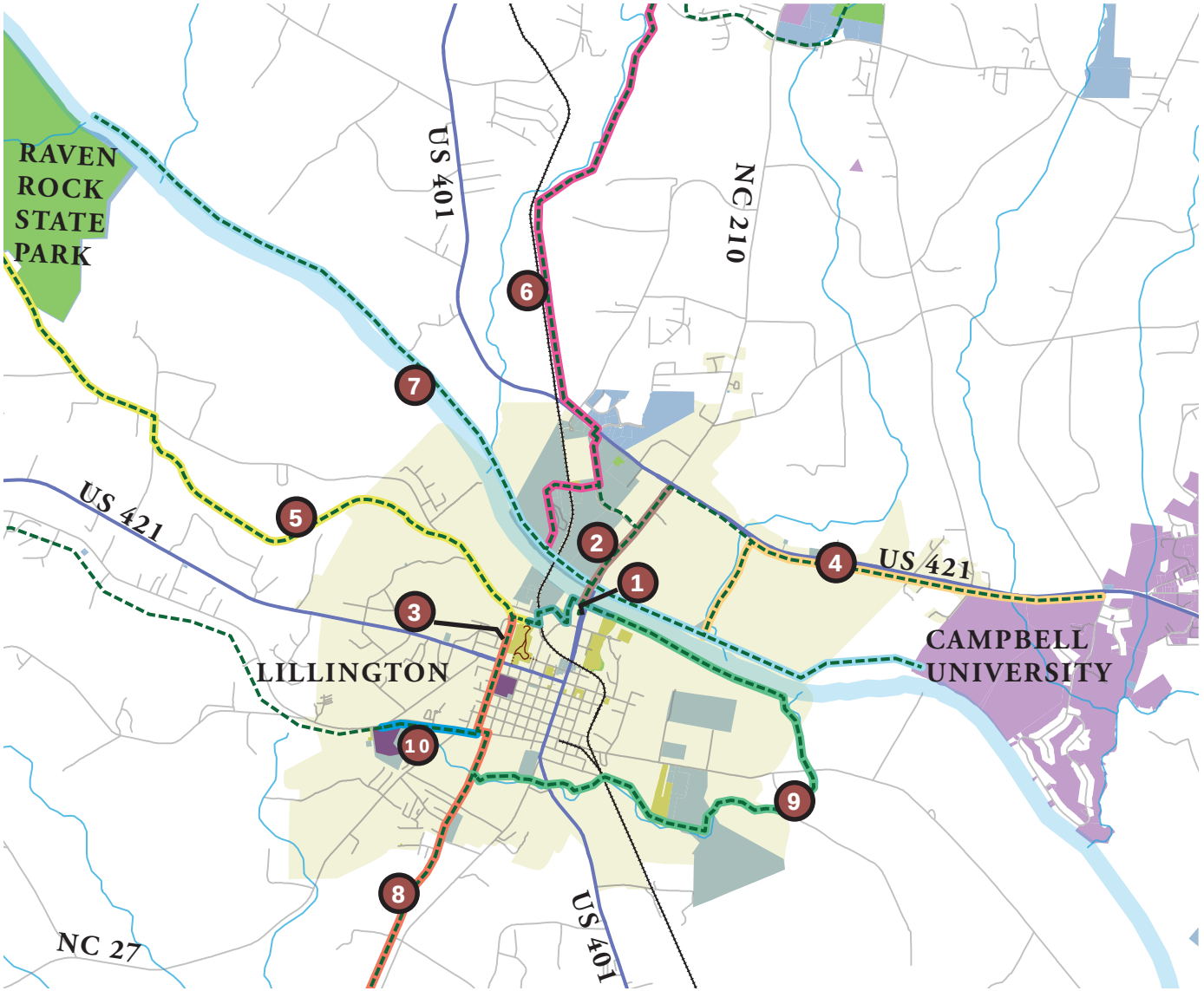


LONG TERM INTERSECTION PRIORITIES

The remaining intersections that require improvements are listed below. These intersections may have less need or may require more long-term planning or are best implemented with longer-term improvements with roadway upgrades/changes.

Location	Notes
Front & 10th St	Crosswalks, Curb Ramps, Sidewalk Gap
W Old Rd & 13th St	Crosswalks with sidewalk
Front & 6th	Crosswalks with Sidewalk
E McNeil & 6th	Crosswalks with Sidewalk
US 210 & S Main	Crosswalks
Hwy 27 & W Old Rd	Crosswalks
US 421 & Northington St	Add sidewalk, Realignment
N Main St & McKinney Pkwy	Redesign and add crossing with shared use path
US 401 / US 421 & 210	Redesign with shared use path crossing - refuges
McKinney Pkwy & Alexander Dr	Crosswalks
US 401 & Brightwater Dr	Redesign with shared use path crossing - refuges
Main & Harnett St	Enhanced Crosswalks
Main & Ivey St	Enhanced Crosswalks
Front & 1st St	Curb Ramps, Crosswalks
Harnett & 8th St	Crosswalks
Harnett & 9th St	Crosswalks
Harnett & 10th St	RRFB, Crosswalks, Curb Ramp, Trail Connection
Front & 9th St	Enhanced Crosswalks
W Old Rd & Warner Dr	Crosswalks

LILLINGTON AREA GREENWAY NETWORK



LILLINGTON ETJ

STATE / COUNTY PROPERTY

TOWN OF LILLINGTON PROPERTY

PARKS

SCHOOLS

PROPOSED GREENWAYS

Shows connections outside Lillington ETJ that are important for growth areas and regional connectivity

3,600 1,800 0 3,600 Feet

GREENWAYS & TRAILS

It is worth reiterating that greenways were the most highly requested improvement to enhance bicycling and walking. Greenways require a more detailed planning and design process, and may require phasing over time or be built in coordination with development. Distances are approximate and depend on detailed design.

SHORT-TERM GREENWAY PRIORITIES

	Name	Type	Begin	End	Distance	Description / Key Points of Interest
1	Lillington Connector	Varies	River Park	Lillington Community Center	0.8 Miles	Creates a grade-separated riverwalk between the east and west side of Lillington underneath US401/421. Provides access between Lillington River Park with new boat launch and River Access, Lillington Ball Fields and the Community Center.
2	Cape Fear Connector (River Crossing)	Bridge and Connections	Lillington Connector	W Main and Cornelius Harnett Blvd	1.0 Miles	Connects the north and south bank of the Cape Fear River. Critical to establishing regional connections between Lillington with trails, growth areas, businesses and recreational opportunities on the North side of the River. Trails making connections to the east are recommended with redevelopment.
3	Botanical Trail Connectors	Natural Surface Trail	Lillington Community Center	Harnett St	0.12 Miles	Provide 2 new access points to the Botanical Trail and Community Center. Link between redevelopment areas in the Lillington Downtown Plan to Harnett St to the east and through the new park property to Front Street to the south.
4	Campbell Connector	Multi-Use Sidepath	Cape Fear River Trail	Campbell University	3.1 Miles	Connects County Services, North Lillington area businesses, and new recreation areas on the North side of the Cape Fear River to Campbell University

LONG-TERM GREENWAY PRIORITIES

	Name	Type	Begin	End	Distance	Description / Key Points of Interest
5	Raven Rock Rail Trail	Rail Trail	Lillington Community Center	Raven Rock State Park	7.0 Miles	Formerly used by the Atlantic and Western Railroad between Lillington, Broadway and Sanford, this line has been abandoned since 1961 and is a great opportunity to link Lillington with Raven Rock State Park and destinations beyond.
6	Harnett Cross County Trail	Riparian / Greenway	Government Complex Park (Future)	East Angier	7.9 Miles	Connection along Neills Creek between the Cape Fear River on the north side of Lillington and East Angier where the trail will ultimately connect to the Wake County Greenway System through Fuquay Varina.
7	Cape Fear River Trail	Riparian / Greenway	Lillington	Chatham County Line	7.0 Miles	Multi-use path connection along the northern bank of the Cape Fear River connecting Lillington, Raven Rock State Park, and Campbell University. Planned route/length does not include a connection through Raven Rock State Park)
8	Heart of Harnett Trail	Sidepath	Raven Rock Rail Trail	Upper Little River	3.4 Miles	Ultimately envisioned in the NW Harnett Area Plan as a long distance connection to Fayetteville, this portion of the trail connects Lillington to the Upper Little River along US 210.
9	Poorhouse Creek & South Bank Greenway	Riparian / Greenway	Heart of Harnett Trail / US 210	Cape Fear River	4.6 Miles	Recreation loop along Poorhouse Creek on the east side of Lillington, connecting to the River Park on the south bank of the Cape Fear River.
10	Lillington Shawtown Elementary Connector	Sidepath	W Old Rd and 13th St	Shawtown Elementary	0.64 Miles	Connection between 13th St and Lillington Shawtown Elementary along W Old Rd. Part of the greater Raven Rock Ramble greenway trail connecting Lillington with Raven Rock State Park.

BICYCLING

Many bicycling facility improvements have already been covered in sidepath recommendations, proposed greenways and strategies discussed for implementing an improved crossing of the Cape Fear River Policy recommendations for traffic calming and intersection improvements detailed in the plan will also go a long way to improve conditions for bicycling in Lillington.

Two complimentary projects are highlighted on the following pages to improve bicycling conditions in the network and to afford better access to outdoor recreation, services and employment.

BICYCLING FACILITY TYPES

When considering what type of facility to implement, one goal is to reduce stress experienced by the active user. Motor vehicle volumes (the number of vehicles using a street) and speeds have a direct relationship with stress experienced by bicyclists. The majority of cyclists on roads with higher volumes and higher speeds tend to report feeling less comfortable and less safe than on roads with lower volumes and lower speeds.

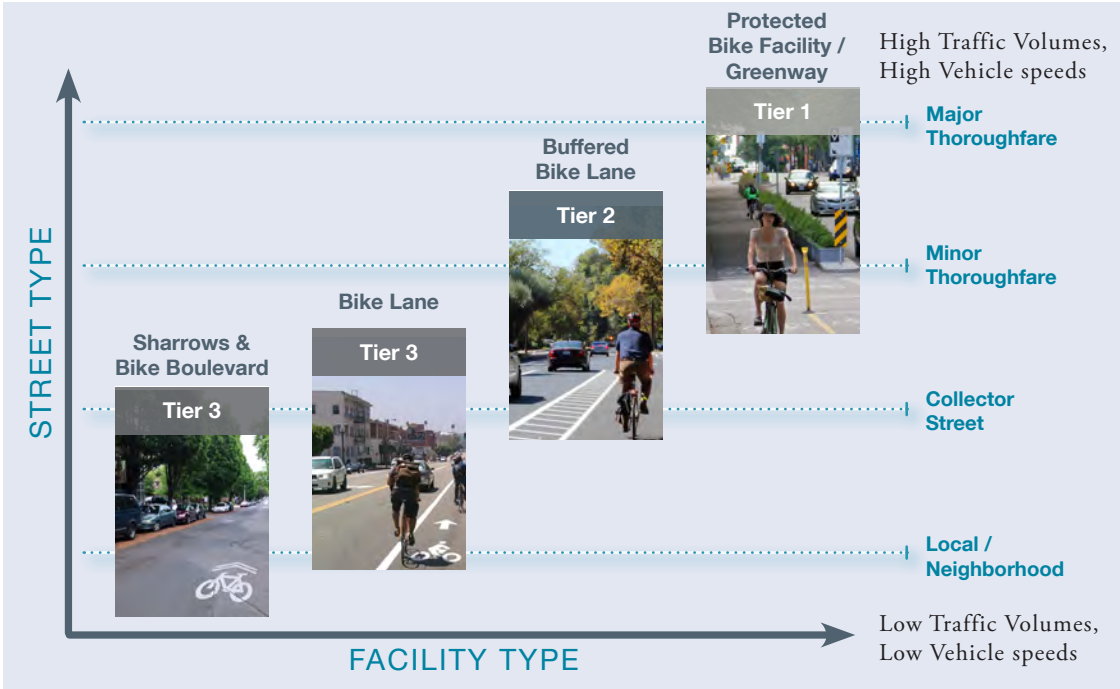
With a variety of bicycling facility types, designers can prescribe an appropriate level of protection and separation between bicyclists and motor vehicles to achieve a comfortable, low-stress experience. In some instances, it is not feasible to provide facilities with high levels of protection due to the physical and functional design constraints of the roadway or right-of-way. Highly protected facility types can cost more to design, construct and implement than the facility types which provide lower levels of separation.

Strategic investments should be focused on providing high-protection facilities along key corridors complemented by lower protection facilities where appropriate to deliver safe, cost-effective, and low-stress bicycle networks for users of all ages and abilities.

Example of a Two-Way Bicycle Facility separated from traffic by bollards and a buffered space

Sidepaths are preferred on thoroughfares and where greenway links are desired

RECOMMENDED FACILITY TYPE / STREET TYPE RELATIONSHIP

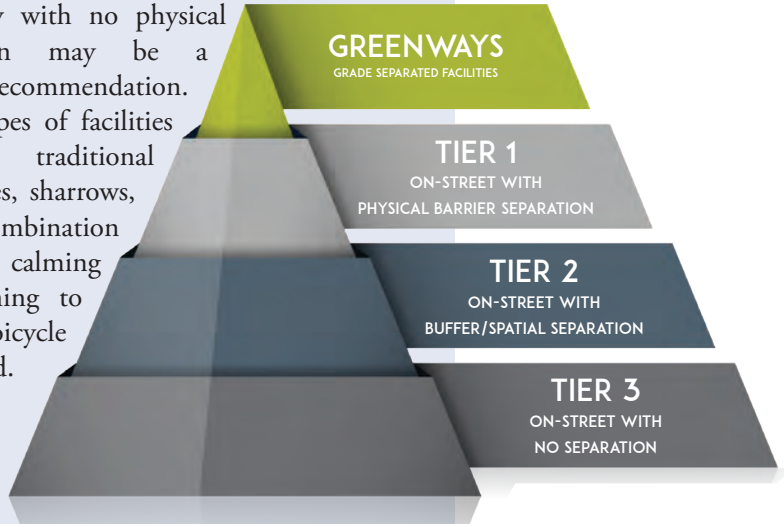


FOUR TIERS OF BICYCLING FACILITIES

In a tiered system, higher stress roadways, such as thoroughfares and some collector streets, are given a "higher tier" infrastructure recommendation such as a Greenway or Tier 1 facility. These facility types are physically separated from motor vehicle traffic by a barrier or by a curb.

On moderate stress roadways, such as minor thoroughfares and collector streets, a Tier 2 facility providing a buffer or spatial separation may be recommended.

Low stress roadways (such as collector streets or neighborhood streets) do not require "top tier" or protected facilities to achieve low stress roadways On these streets, a Tier 3 facility with no physical separation may be a suitable recommendation. These types of facilities include traditional bike lanes, sharrows, or a combination of traffic calming and signing to create a bicycle boulevard.



PROJECT #1 -

E MCNEILL ST IMPROVEMENTS

Paralleling the Cape Fear River, E McNeill St carries approximately 4,000 vehicles per day (2018 AADT). It serves as a connection to Erwin and the future East Coast Greenway, as well as local destinations for recreation, employment and services:

- Lillington Boating Access Area (Wildlife Rd)
- DMV Driver's License Office
- Harnett Correctional Institution
- Harnett County Animal Shelter
- SAAB Barracuda Manufacturing
- Poorhouse Creek Greenway (Proposed)

A) Protected Bicycle Facility on E McNeill St

Begin: S Main Street

End: McKay Pl

A separated two-way bikeway on the south side of E McNeill St is proposed. This improvement will require a lane reallocation of the existing roadway and a reduction from 4 travel lanes to 3 or fewer.

Note: Sidewalk and primary crossing location at S 6th St are proposed and noted in the recommendations tables.

B) Sidepath on E McNeill St / Ross Rd

Begin: McKay Pl

End: Wildlife Rd

The cross-section changes at McKay Pl with ≈ 16-18 feet of right-of-way available to construct a multi-use path on the south side of the roadway.

In 2016, a new state law was passed requring motorists give cyclists at least four feet when passing. Drivers are allowed to change lanes to pass, as long as they can do so safely. Where low-volume roadways are signed as part of a bicycling route, it is best practice to post signage indicating motorists responsibility. Studies have shown incrased motorist comprehension which means safer passing behavior.

PROJECT #2 -

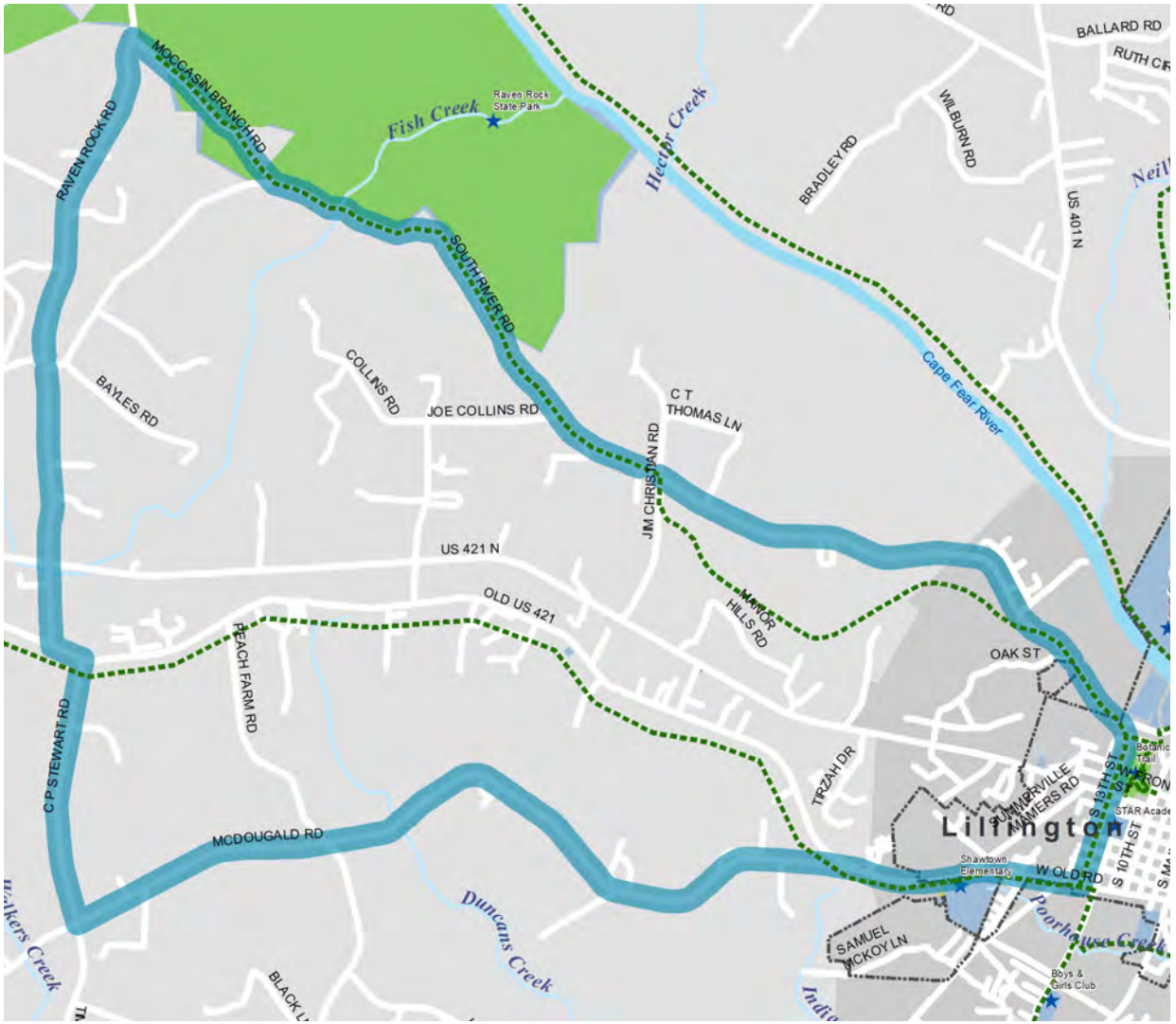
SIGNED BIKE ROUTE TO RAVEN ROCK STATE PARK

While a rail-trail project to Raven Rock State Park could take years to plan, design, fund and construct, an interim phase would be to create a signed bike route that directs cyclists on rural back roads.

Starting at the Community Center, a proposed route uses S River Rd, Moccasin Branch Rd, Raven Rock Rd and McDougald Rd, CP Stewart Rd and S 13th St to complete a recreational loop that is approximately 20 miles. All roads on the route have low motor vehicle volumes.

▼ A signed bike route (short-term) to Raven Rock State Park would appeal to recreational bicyclists and serve as an interim step until a greenway can be constructed (long-term).

BIKE ROUTE TO RAVEN ROCK



PROPOSED BIKE ROUTE

Source: Flickr user Brett VA

Redesigned streetscape with proper planning and design a downtown can improve it's pedestrian environment and overall vitality. This image shows curb extensions, pedestrian scale lighting, and distinct zones for parking, street furniture, pedestrians and building frontage.

IMPLEMENTATION STRATEGY

In this Chapter, we present strategies to achieve the goals of the plan and to complete the projects described in the recommendations chapter. This chapter includes:

- Steps for plan adoption
- Key partners in implementation
- Detailed information on funding strategies and recommendations for project budgeting
- Policies and programs that will lead to successful implementation
- Project Cut sheets with cost estimates for ten projects selected from the priority lists in the plan

PLAN ADOPTION

The first step in the implementation is to adopt the Lillington Bicycle and Pedestrian Plan. By adopting this plan and the detailed maps and tables associated with the plan priorities Lillington will be able to shape planning and development actions to fit within the goals of this plan. The Town can also use the adopted plan to apply for and secure funding. Adopting the plan does not mean Lillington commit all of the funds necessary for completing projects, but it indicates intent to achieving a bikeable and walkable Lillington over time, with costs and priorities given as guidance for future decision-making.

PLAN IMPLEMENTATION FRAMEWORK

KEY PARTNERS

To realize the vision and goals of the Lillington Bicycle ad Pedestrian Plan, the city will need to put its plans into action. The best success will be realized through collaboration with regional and state agencies, the private sector and non-profit organizations. These include business owners, developers, state agencies including NCDOT and NCDCR, environmental agencies, and community-based organizations. Finally, the most successful initiatives find ways to harness energy and accommodate citizen-led proposals.

Partner	Roles
Aministration and Planning	• Oversee implementation of the Plan and coordinate action steps. • Take the lead on funding, including any changes to the town budgeting process. • Lead update of development regulations to support walking and biking facilities. • Ensure inclusion of sidewalks, sidepaths, multi-use paths, lighting and bicycle parking in development projects • Keep updated GIS Data on planned and developed projects • Coordinate with NCDOT Division 6 to leverage local funding on specific projects. • Coordinate with NCDOT Division 6 to include intersection improvements and restriping during roadway reconstruction and resurfacing. • Monitor and evaluate progress on plan implementation and give annual report to council on plan progress • Support citizen-led or community-based initiatives and programs, including but not limited to low-cost, temporary changes to the built environment (i.e., Better Blocks, Tactical Urbanism), open streets initiatives, or community events. • Send an official letter to NCDOT Division 6 to request that the Division coordinate with the town on the scheduled maintenance/restriping/resurfacing of state-maintained roadways on an annual basis at a minimum. This communication will allow the town to take advantage of opportunities to implement the facility recommendations of the Plan.
Public Works	• Begin to implement the Facility Recommendations • Work closely with planning staff on development of greenways, trailheads and access points and connections with parks and schools • Provide support infrastructure such as restrooms and water bottle refilling stations in key locations and supplement with appropriate wayfinding • Increase resources for maintenance of greenways as the network is built
Parks and Recreation	• Engage in recommendations for encouragement, education programs including Safe Routes to School Events

Partner	Roles
NCDOT Division 6 and Mid-Carolina RPO	• Provide early notification to regional planning organizations (MPOs, RPOs, COGs) and municipalities of maintenance/restriping/resurfacing and facility improvement schedules. Annual meetings should be held when updated schedules are released to allow for face to face conversation between Lillington staff and NCDOT Division staff. This information allows the local governments an opportunity to provide input regarding their needs and support for bicycle and pedestrian accommodation. • Recognize that projects that involve complete streets elements will inherently "complicate" project development and delivery, as they include balancing a local funding match, may involve more comprehensive public involvement, and also because they may require the balancing of additional trade-offs in design. The NCDOT is currently developing strategies to address challenges in Complete Streets implementation. • Recognize outdated policies and design standards and allow cross-sections, treatments and intersection design that reflect modern standards for multi-modal and urban projects. FHWA has supported the use of NACTO Urban Street Design Guide and Urban Bikeway Design Guide since 2014 and has since published the Small Town and Rural Multimodal Networks (2016) which expands the use of many design treatments into the rural context. • Establish relationship between recently formed position of Planning Engineer at the NCDOT Division office and town staff to assist with planning and implementation of projects and safety improvements in the Plan. This position is responsible for serving as a liaison between the division office, RPO and local agency. • Explore opportunities to use STBG-DA (Surface Transportation Block Grant) and HSIP (Highway Safety Improvement Program) funding for facilities and intersection improvements • Coordinate updates to the Harnett County CTP and long-range transportation plans to include facility recommendations in this plan • Work with staff on inclusion of projects into SPOT (Strategic Prioritization) in the Division Needs category. Identify regional projects that can improve bicycle and pedestrian experience (i.e. US 401/421 reroute, sidepaths on corridors) • Coordinate on projects for Local Points Public Meetings • Ensure criteria and weights for project scoring will allow bicycle and pedestrian projects to advance for funding
Harnett County	• Coordinate on connections with county campuses and park areas on the North side of Lillington • Coordinate greenway/sidepath planning and expansion to other parts of the county outside of municipal ETJ, especially developing areas to the north and to Campbell University • Partner on engagement, education, and encouragement programs

Partner	Role
Campbell University	• Coordinate on campus connection to Lillington, including facilities to and across the Cape Fear River • Partner and show support and collaboration on grants and funding applications
NC Division of Natural and Cultural Resources (Dept of Parks and Recreation)	• Coordinate on regional greenway connections, including those to Raven Rock State Park and Mountain Laurel Loop and if applicable, options for crossing the Cape Fear River • Partner and show support and collaboration on grants and funding applications
Police Department	• Engage in Speed Enforcment Campaigns and Let's Go NC! Education • Engage in best practices for ensuring bicycle and pedestrian safety
Developers & Private Sector	• Cultivate partnerships in implementation of projects through development of multi-use path connections, street infrastructure adjacent to a project, increased neighborhood connectivity through community design and provision of facilities required during development • Actively seek private donations to support greenway infrastructure. By providing healthy, affordable, and enjoyable transportation options, high-quality facilities add significant value to a community. • Provide selective sponsorship of programs and events
NCDOT – Division of Bicycle and Pedestrian Transportation	• Guidance on program and project funding • Provide support through department program initiatives: Vision Zero, Watch for Me NC, Complete Streets Trainings, and Let's Go NC
Citizens, Business Owners, and Community Based Organizations and Advocacy Groups Examples:: Friends of Raven Rock State Park Lillington Chamber of Commerce Harnett Health Local bicycle clubs & event organizers Three Rivers Land Trust	• Provide feedback at public involvement opportunities, • Let elected officials and decision-makers know that there is support for the improvements in the plan and where applicable, apply for funding for community-based initiatives. • Lead and organize events and activities to promote biking and walking • Network allies to implement the plan

FUNDING

Equally critical, and perhaps more challenging, is meeting the need for recurring sources of revenue to implement infrastructure projects. Even small amounts of local funding are useful and beneficial when matched with outside sources. Local leaders should anticipate budgeting 20% of project cost to match federal and state dollars. Smaller projects can be taken on independently by the Town due to administrative burdens.

Two important references are included in the Appendix of this document:

- Pedestrian and Bicycle Funding Opportunities: Projects categorized under 15 federal programs with program specific notes indicating requirements and eligibility
- Bicycle and Pedestrian Obligations FY 1992 -2019: Shows which programs contribute to the highest levels of bicycle and pedestrian project funding at the federal level

The following funding strategies are the outcome of a thorough review of Lillington's potential bicycle and pedestrian funding mechanisms, a review of best practices, and peer comparison.

TOWN BUDGET

Within the town budget, a focus area could be created around expanding the non-motorized network to achieve the short-term projects in this plan. It is recommended that the Town consider creating a specific annual budget for this item with recurring funding. Annual funding of $10,000 per year is recommended to establish funding for larger scale sidewalk and sidepath priorities. Greenways will require additional funding to meet short-term goals.

MICROGAP PROGRAM

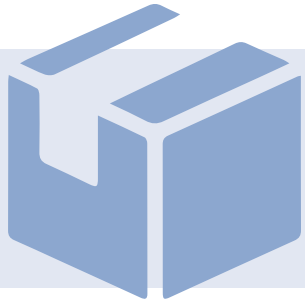
In some cases, gaps in the sidewalk network may be only short segments, less than 500 feet in length or may require smaller scale ADA upgrades and retrofits. These small gaps are often easier to fill by Town field staff in the Public Works Department, without need for design or major site preparation. The Town is recommended to establish a line of funding in the annual operating budget to fund microgap sidewalk projects.

POWELL BILL FUNDS

The town receives ≈ $100,000 through two annual distributions for state street-aid. While it is noted funds are primarily for the purpose of resurfacing streets within municipal corporate limits, they may be used for maintaining, repairing, constructing, reconstructing or widening of local streets that are in addition to the planning, construction and maintenance of bikeways, greenways, or sidewalks.

PROJECT PACKAGING

Packaging projects in a thoughtful manner can assist with funding request and also result in benefits and cost savings in design, bidding, mobilization and construction. Where the Town anticipates a need to outsource construction, it is advised to package these projects to improve multiple locations at the same time.



These funds may be leveraged as a local match for some types of federally funded projects, though eligibility is subject to change.

OTHER STATE AND FEDERAL FUNDING SOURCES

TRANSPORTATION ALTERNATIVES PROGRAM (TAP) AND STBG-DA APPLICATION

TAP is the single largest federal source of funding for walking and bicycling projects and Lillington has recieved TAP funding in the recent past. It is recommended Lillington, NCDOT Division 6 and the Mid-Carolina RPO meet prior to the call for projects to determine the best avenue for the town to submit plan projects and leverage TAP funds.

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

Reviewing data on HSIP submissions back to 2010, roadway locations and intersections have been submitted on an annual basis, however no locations in Harnett County have been submitted as "Potentially Hazardous Bicycle and Pedestrian Intersection Locations." It is recommended intersection projects in this plan be reviewed with Division 6 for potential to develop them into highway safety improvements that result in the curb ramps, sidewalk improvements, and signal upgrades recommended in this plan.

NCDOT STRATEGIC TRANSPORTATION INVESTMENTS (STI)

The following eligibility requirements help determine which projects could be considered for STI. Many greenway and shared use path projects have been funded.

- Minimum total project cost = $100,000
- Eligible costs include right-of-way, preliminary engineering, and construction
- Local government must provide 20% of total cost (Note: Powell Bill funds may be used)
- Project must be in an adopted plan, not limited to bicycle/pedestrian plans. It may also be in a Comprehensive Plan, Long Range Transportation Plan or Safe Routes to School Action Plan

BUILD GRANT

Rural NC Communities have recently done very well in the competitive process for obtaining funds from the BUILD Program. As an example, Hickory was recently awarded a project from the USDOT through the BUILD program. The $17 million-dollar grant was given to develop an approximately 1.7-mile bicycle and pedestrian trail and a bridge over US 321 and construct a 1.2-mile complete streetscape loop in downtown Hickory that will add designated space for bicycles and pedestrians. While a BUILD Grant application is a large commitment of resources, streetscape and greenway projects could be packaged with other roadway improvements and economic development strategies in Lillington to compete for a future grant cycle.

PARKS AND RECREATION TRUST FUND (PARTF)

The North Carolina Parks and Recreation Trust Fund (PARTF) is a state funded grant program for land acquisition and development of parks. PARTF is the primary source of funding to build and renovate facilities in the state parks as well as to buy land for new and existing parks. The PARTF program provides dollar-for-dollar grants to local governments. Recipients use the grants to acquire land and/or to develop park and recreational projects that serve the general public The town should continue to pursue PARTF funding for trails.

NORTH CAROLINA TRAILS PROGRAM

Recreational Trails Program (RTP) Grant is a Federal program designed to help states provide and maintain recreational trails for both motorized and non-motorized recreational trail use. The program is administered by the U.S. Department of Transportation's Federal Highway Administration. RTP is a reimbursement grant program. Funds must be spent and then reimbursed upon completion of deliverables. Local government agencies are eligible.

POLICIES AND PROGRAMS

AMEND UDO AND DEVELOPMENT REGULATIONS AND ESTABLISH MECHANISMS FOR ACQUIRING RIGHT-OF-WAY

Policy recommendations are given as a way to reinforce active transportation within land use and transportation plans to be implemented over time. The following are recommended:

- Require greenway easements for new development in areas shown with planned greenways in this Plan. A minimum width of 25 feet is recommended to allow for a 10' wide trail tread, trail shoulders plus room on either side for maintenance
- Modify future sewer easement width to support greenway trail development
- New sidewalks in the downtown areas (see Lillington Core Connections Map) should meet minimum standards indicated in the Downtown Master Plan (6ft width)
- Where street interconnectivity is not provided within new site plans (cul-de-sacs, stubs, dead end streets, etc.), the developer would be required to construct paved paths ten-foot (10') wide public access and maintenance easement to increase non-motorized connectivity, including where necessary to cross a stream or creek.
- Pursue funding for improvements in the plan (i.e. sidewalks, greenways and intersection improvements).
- Reduce speed limits on parts of US 421 and US 401 approaching downtown.

ABOUT 2/3

OF PEDESTRIAN FATALITIES OCCUR UNDER

LOW LIGHT

CONDITIONS.

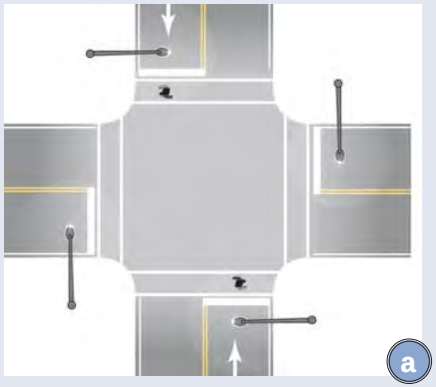
STREET LIGHTING FOR PEDESTRIANS

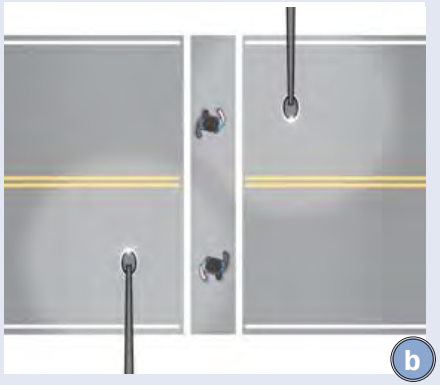
Street lighting is a critical factor in the quality of the nighttime pedestrian environment. Pedestrian-scale lighting enhances sidewalk and trail crossing safety and security. The following examples highlight best practices in lighting design:

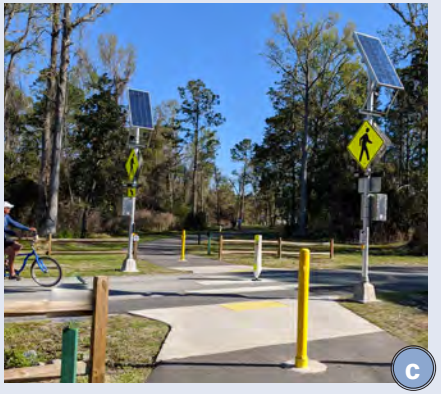
a) Placement of lighting before the stop bar illuminates the side of the pedestrian to enhance visibility as a vehicle approaches.

b) Lighting design for midblock crosswalks, placing the light to illuminate the side of the pedestrian and crossing assembly at the vehicle approach.

c) An example of a mid-block crossing assembly for a shared use path, showing lighting and trail-user activated rectangular rapid flashing beacons.







Note: extending the existing 20mph zone farther out may help calm traffic.

- Install lighting with sidepath, sidewalk and greenway improvements with projects within municipal limits.
- Improve existing sidewalk (6.6 miles), curb ramps, crosswalks and signals to achieve ADA compliance.
- Consider a bike parking requirement for new development and meet the needs for bike parking and existing locations.

COORDINATE DEVELOPMENT PLANS

Ensure that the recommended greenways and sidepaths in this plan are included in future developments

- Coordinate with new development to construct portions of trails and/or amenities associated with trails (i.e. signage, parking, etc.) and safe roadway crossings.
- Require new development to fill sidewalk gaps in areas noted as proposed sidewalk on the planned facilities map.
- Coordinate development plans.

Small connections can mean big improvements to reduce barriers to connectivity. Requiring easements to maintain access for non-motorized travelers on cul-de-sacs and limited connectivity streets. The photo shows an example in Apex, NC.

MANAGE ROADWAY ACCESS

Access management attempts to balance good mobility for through traffic with the requirements for reasonable access to adjacent land uses. Access management improves the safety and experience for bicyclists and pedestrians, especially along high-volume roadways

- The Town should consider adding access management language to areas for future development and high-volume corridors, especially in commercial areas and in areas where sidepaths are recommended adjacent to existing roadways.
- NCDOT has published guidance in the "Policy for Street and Driveway Access to NC Highways (July 2003)" that can be used as a reference.

NCDOT's WatchForMe Campaign provides a variety of safety program materials to participating communities to educate and support enforcement and education efforts. NCDOT also offers a free one-day training course for police officers to learn how to stage enforcement events to improve bicycle and pedestrian safety

COMMUNITY PROGRAMS AND INITIATIVES

Infrastructure alone doesn't create change in communities. Beyond the built environment a number of strategies are proposed to increase awareness, promote and educate residents and Town departments about biking and walking. These programs can be implemented as infrastructure takes shape.

COMMUNITY SAFETY AND ENGAGEMENT APPROACHES

- Enforce existing speed limits (i.e. 20 mph section downtown)
- Install speed feedback signs on Main Street (US 401) or Front Street (US 421) to reduce speeds entering downtown Lillington
- Apply to NCDOT to establish the WatchForMe Campaign in the Town. The Watch for Me NC program involves two key elements: 1) safety and educational messages directed toward drivers, pedestrians and bicyclists, and 2) high visibility enforcement efforts by area police to reduce violations of traffic safety laws. Communities are selected through a competitive application process.
- Consider a crosswalk enforcement effort in downtown to educate and inform drivers and pedestrians of the responsibilities. Conduct pedestrian crosswalk enforcement operations at key intersections where driver compliance is low.

Teaching kids safety skills for bicycling, walking and riding the bus can be accomplished through a school-aged curriculum called Let's Go NC! (left) Kids can then apply their skills by participating in a Walk or Bike to School Day (right) hosted annually across the nation each year. Be sure to register your school!

EDUCATION AND ENCOURAGEMENT

- Sign a circulator bike + walk route to take advantage of crossing improvements and/or other facility improvements. Create a map of the "Lillington Loop" accessible from the town's website.
- Coordinate with downtown businesses to develop collateral for patronizing downtown businesses and other destinations (i.e. library, town hall, etc.) Material could help with locating parking and advertise "park once" options.
- Partner with Harnett County for Bike Month activities could include lessons from Let's Go NC!, a bike rodeo, a bike breakfast, fundraiser, a fun ride around town or a ride with elected officials.
- Work with schools to host a Bike to School Day (May) and Walk to School Day (October) event
- Consider steps needed to become a Bicycle Friendly Community with the League of American Bicyclists
- Promote and host trail-related events and activities as segments are built

PROJECT CUT SHEETS

While the recommendations chapter lists all of the short-term projects by project type, the following ten projects have been identified as needing additional detail in clarifying project components, key issues, intersections and routing. Actual development of facilities may differ according to site conditions, project funding, easement acquisition, landowner coordination and factors unforeseen at the time this plan was developed. These cut-sheets can be used to communicate the individual projects to stakeholders involved in implementation, such as local staff and officials, NCDOT staff, potential funding agencies, and interested citizens.

Plan level cut sheets are provided on the pages that follow for the following projects:

1. WEST FRONT
2. EAST FRONT ST
3. W HARNETT ST
4. CAPE FEAR CONNECTOR
5. LILLINGTON CONNECTOR
6. RAVEN ROCK RAIL TRAIL
7. US 210 SIDEPATH
8. CAMPBELL CONNECTOR / CAPE FEAR RIVER TRAIL
9. GOVERNMENT COMPLEX CONNECTION
10. LILLINGTON SHAWTOWN ELEMENTARY CONNECTOR

UNDERSTANDING THE CUT SHEETS

PROJECT INFORMATION

Key elements essential to understanding the project, what makes the project importatn, key connections, issues and opportunities are given on each cut sheet. A summary of the project extent and short description is given in the table.

PROJECT STAKEHOLDERS

A list of stakeholders is provided for coordination on projects. Stakeholder lists are not exhaustive and additional engagement should occur during the project planning and design.

PROJECT DETAIL

The information listed contains a recommendation with quanity details that are then further divided into the cost inputs and phasing.

COST INPUTS / PHASING NOTES

Each cut sheet offers a set of cost inputs determined for each individual project based on conceptual planning for a project. Phasing is also presented where projects may need to be broken down into smaller or unique segments for completion. As projects are selected for implementation, cost estimates should be developed with the most current tools available. A cost table is presented here to highlight the ranges in costs for various project elements included in this plan. Additionally,

NCDOT has developed a Bicycle-Pedestrian Cost Estimation Tool (P6.0) which is easy to use with the cost inputs presented here and can assist with developing project costs for the State Transportation Improvement Program (STIP) when the Town is ready to submit a project. As projects are selected for implementation, cost estimates should be developed with the most current tools available.

NEXT STEPS

A number of next steps are listed on each cut sheet to help with initiation of the project. Each project will involve more detailed design and coordination with state, county and local partners. Early outreach, close coordination and regular communication as projects progress and develop is necessary. In addition, identifying budget sources for local match will be critical to their success.

PROJECT MAP

A visual representation of the project elements described in the 'Project Detail.' These maps are intended to serve as guidance for developing projects and to show how each project fits in with adjacent recommendations such as sidewalks, greenways, sidepaths and how projects link to destinations. A legend has been developed specific to each map.

DEVELOPING COST ESTIMATES

The following cost table highlights cost ranges for project elements presented in this plan. Variability in costs is due to a variety of factors, including the complexity of the project and whether work is performed in-house or contracted. Refinement of costs occurs during the project design. Additionally, NCDOT has developed a Bicycle-Pedestrian Cost Estimation Tool (PBCE P6.0) which can assist the Town with developmet of projects through the State Transportation Improvement Program (STIP).

Pedestrian Facility Improvements	
Crosswalk	$2,290 - $3710 Each
Pedestrian Signal Heads	$650 - $3,180 Each
Signing	$0.12 - $19 per Linear Foot
Median Island	$258 - $267 per Square Yard
Accessible Curb Ramp	$127 - $2,375 Each
Pavement Marking	$0.12 - $100 per Linear Foot
Curb & Gutter	$7.63 - $46 per Linear Foot
Sidewalk widening	$25 - $110 per Square Yard
Sidewalk, Sidepath and Multi-use Path	
Concrete Sidewalks (5-8' wide)	$40-75 per Linear Foot / $200,000-400,000 per Mile
Asphalt Mulit-use Path (10' wide)	$150-400 per Linear Foot / $800,000-2,200,000 per Mile
Other Cost Considerations	
Preliminary Engineering / Design Cost	Typically, 10%-20% of Construction Cost
Right-of-Way / Land Acquisition Cost	Varies, Requires detailed design
Construction Engineering & Inspection Cost	Typically, 10%-15% of Construction Cost
Contingency	30%, accounts for uncertainty
NCDOT Oversight Costs	$5000 or 5% whichever is greater
Special Constraints	Construction access (narrow corridors with limited points of entry), utilities (water, sewer, gas and power), weather impacts, historic features, wetlands and endangered species
Maintenance & Operations	Typically tied to annual budget allocation. Varies by trail surface and environmental factors (i.e. flooding frequency)

PROJECT CUT SHEET:
1. WEST FRONT STREET

Front Street is the heart of Lillington's Downtown. It has many active businesses but also heavy truck traffic. Community feedback supported a reduction in traffic to improve the Downtown experience. The downtown plan recognizes pedestrian improvements as critical to revitalization strategies in this district. A re-route of trucks coupled with modifications to the roadway environment, will create a safer, more pleasant environment for pedestrians and businesses, and have the side effect of slowing traffic. Improvements on Front Street should be coordinated with intersection modifications for 10th Street, 8th St & Main.

Key elements:

- Reduce travel lanes from four lanes to three lanes and reduce speed limit to 20 mph
- Add and define diagonal parking areas
- Add curb extensions to intersection to increase pedestrian safety and slow traffic
- Add Lead Pedestrian Interval (LPI),change to automatic recall for pedestrian phase (remove actuation) and add a right-turn-on-red restriction for right-turning traffic
- Increase pedestrian crossing opportunities

Project Information	
Extent	West Front Street between S Main St and S 10th St
Short Description	Reroute truck traffic and knit together the pedestrian environment between S Main St and S 10th St. Create enhanced intersection at Main St and Front St.
Stakeholders	
	Town of Lillington North Carolina Department of Transportation Lillington Parks and Recreation

Next steps:

- Work with NCDOT on an implementation plan for the truck re-route
- Coordinate with NCDOT on speed limit reduction starting at S 10th St
- Complete a detailed design for West front street between 10th St and Main St

Project Detail	
	Pedestrian Facility Improvements, Sidewalk Construction, Signal Upgrades and Signage
Cost Inputs / Phasing Notes	
Pedestrian Facility Improvements	Curb Extensions (15) Marked Crosswalks (14) Lighting Poles Est 60 foot spacing w/ 5 poles per block face (30) Median Islands (2)
Sidewalk Construction 3,680 Ft, 6 Ft	Sidewalk 10th St (680 feet) Sidewalk Park parcel (1,000 feet) Sidewalk to E Duncan w 1 RR crossing (2,000 feet)
Signs and Signals	Signal timing adjustment for lead pedestrian interval and automatic recall for pedestrian phase (1 intersection) No right-turn-on red signage (4) Reduced speed limit signage (2)

A visualization of West Front Street from the Lillington Downtown Master Plan

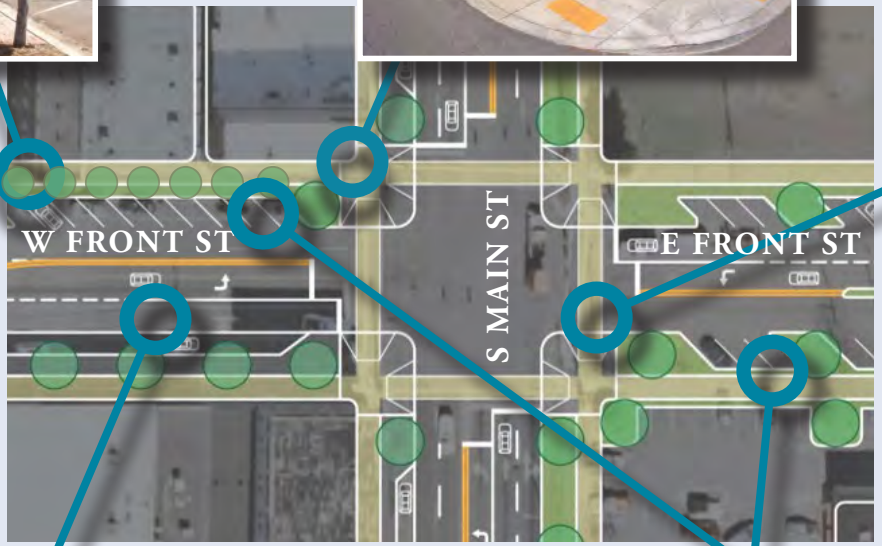

W HARNETT ST
S 10TH ST
S 9TH ST
S 8TH ST
W FRONT ST
A
B
C
D
E
F
G
H
A Dedicated left-turn phase for traffic continuing onto 10th St. Pedestrian crossing on east side with curb extensions. Begin lane reduction and speed limit reduction on Main Street
B High-visibility pedestrian crossing on all four corners with curb extensions
C Improved Pedestrian crossing on all four corners with curb extensions
D Enhanced intersection at Main Street with high visibility crosswalks, curb extensions, lighting, lead pedestrian interval and lane reduction
E Lane Reduction, speed limit reduction and pedestrian-scale lighting between S 10th St and Main St
F Construct sidewalk on 10th St
G Complete sidewalk gap around block bordered by 8th st and 9th st (future park space)
H Construct sidewalk on S Main St to E Duncan St
CURB EXTENSION
HIGH VISIBILITY CROSSWALK
SIDEWALK
MEDIAN CROSSING ISLAND

FRONT ST & MAIN ST INTERSECTION DETAIL

STREET TREES & LIGHTING

CURB EXTENSIONS

CROSSING IMPROVEMENTS



LANE REDUCTION

DEFINED PARKING

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PROJECT CUT SHEET:
2. EAST FRONT STREET

NCDOT ownership of E Front Street ends just east of the intersection with Main Street. The East Front St streetscape project extends the improvements made at the intersection and continues them to the east. Goals are to formalize the streetscape, improve street function, re-introduce a planted island in this area, increase pedestrian safety, formalize the parking spaces and provide a buffer between the sidewalk and motor vehicles.

Key elements:

- Improved streetscape appearance
- Crossing improvements
- Clearly delineate and define diagonal parking spaces and consider accessible parking near curb ramps
- Adding a planted median
- Filling sidewalk gaps
- Pedestrian-scale lighting
- Consider a knee wall to address topography issues on the south side of the street

Next Steps:

- Begin design for East Front St Streetscape Project
- Design 1st St sidewalk project

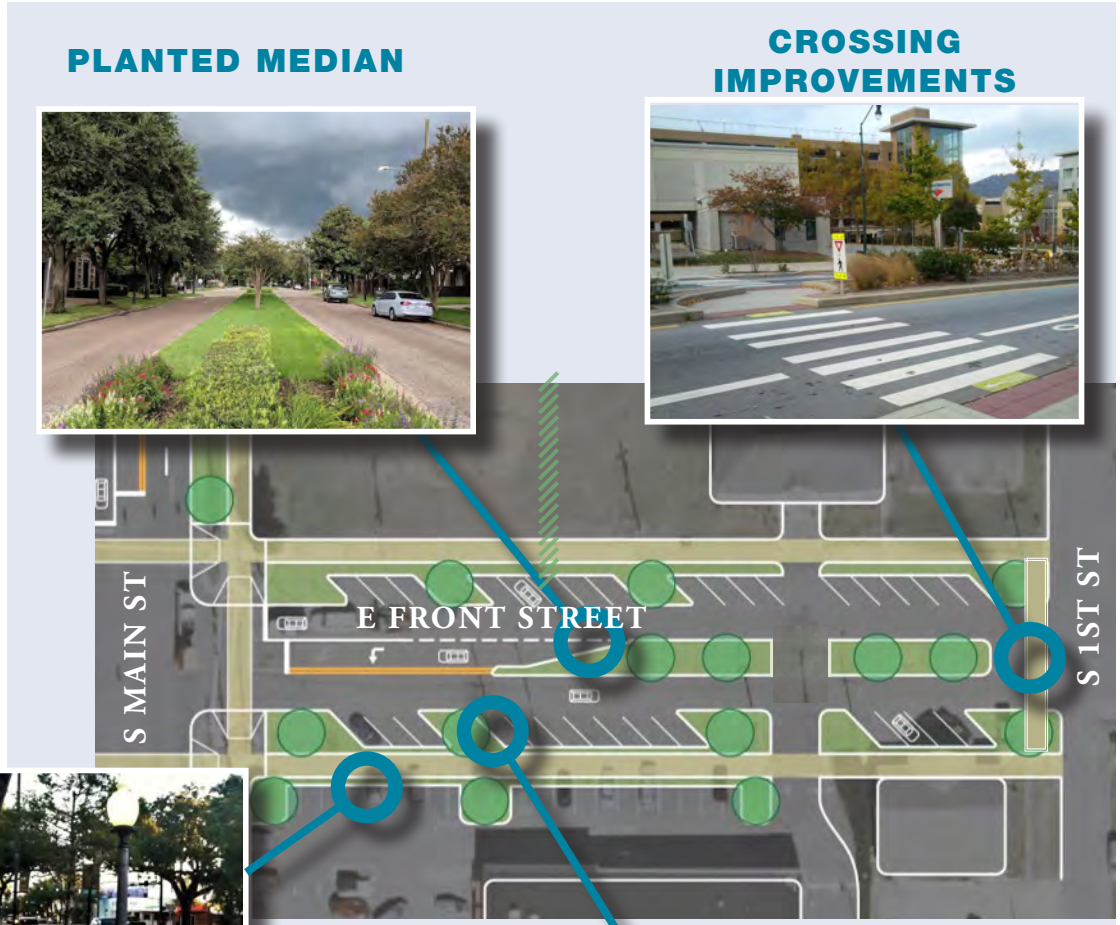
Project Information	
Extent	East Front Street between S Main St and S 10th St
Short Description	Extend downtown feel east of S Main St by improving streetscape, pedestrian environment and parking areas
Stakeholders	
	Town of Lillington North Carolina Department of Transportation

Project Detail	
	Pedestrian Facility Improvements and Sidewalk Construction, Knee wall could be considered on S side
Cost Inputs / Phasing Notes	
Pedestrian Facility Improvements	Curb Extensions (4) Marked Crosswalks (4) Lighting Poles Estimated 60 foot spacing with 5 poles per block face (10) Median Islands (2)
Sidewalk Construction 6 ft width	Sidewalk - S 1st St (700 feet)

A visualization of East Front Street from the Lillington Downtown Master Plan showing a reintroduced median.

CURB EXTENSION
PROPOSED SIDEWALK
PLANTED MEDIAN ISLAND
HIGH VISIBILITY CROSSWALK

E FRONT ST DETAIL



PROJECT CUT SHEET:
3. WEST HARNETT STREET

West Harnett St is a revitalization area within Lillington to create a new downtown centerpiece. With new development and adaptive reuse of existing buildings, gaps in the sidewalk network will adhere to new standards (min. 6' width) with ramp type driveways with an emphasis on activating the street.

A pedestrian connection between the Harnett St district and the Lillington Community Park could be created to bookend the west end of Harnett Street. Depending on desired alignment, an easement may need to be obtained.

Key elements:

- Improved streetscape appearance
- Crossing improvements
- Clearly delineate and define diagonal parking spaces and consider accessible parking near curb ramps
- Adding a planted median
- Filling sidewalk gaps
- Pedestrian-scale lighting

Next Steps:

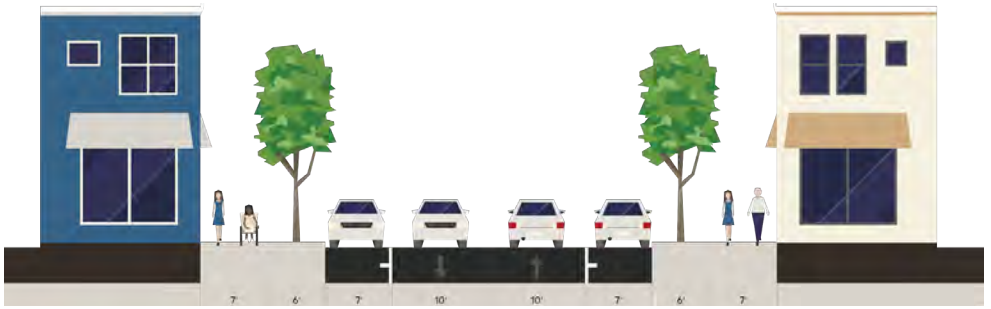
- Look at options for Park Connector
- Coordinate with redevelopment efforts
- Plan and budget for pedestrian facility improvements and lighting

Project Information	
Extent	West Harnett Street between S Main St and S 10th St
Short Description	Six city blocks bordered by 10th St, Front St and S Main St envisioned to be mixed use with public space, activated block faces and a streetscape that encourages pedestrian activity (street trees, street furniture, outdoor dining and plazas).
Stakeholders	
	Town of Lillington Lillington Parks and Recreation Private developers Chamber of Commerce

Project Detail	
	Pedestrian Facility Improvements and Connector to Lillington Community Center
Cost Inputs / Phasing Notes	
Pedestrian Facility Improvements	Marked Crosswalks (16) Lighting Poles Est 60 foot spacing with 5 poles per block face (30)
Park Connector	Est 250 feet 10 ft asphalt trail (Easement required)
Sidewalk Construction 6 ft width	With development

The six blocks that make up the Harnett St mixed-use redevelopment district from the Lillington Downtown Master Plan

Proposed Street Cross-section for West Harnett St



PROJECT CUT SHEET:
4. CAPE FEAR RIVER CROSSING

Crossing the Cape Fear River is a critical part of the active transportation network in NW Harnett County, facilitating north-south travel in Lillington, connecting growth areas and linking proposed greenways. A minimum 10-foot wide space separated from traffic is a best practice for vehicle volumes and speeds on the bridge. Without significant investment to expand the southbound bridge deck it is not possible to maintain comfortable separation for bike/ped travel.

INTERIM OPTION

The north section of the bridge is constrained to ~33 feet. The bridge itself is wider with ~37 feet of ROW. The cross section to the right shows a lane modification to reallocate shoulder space on the bridge and approach. In this scenario, if a 3-ft buffer can be maintained, a vertical barrier could be installed. The interim options requires alterations to the shoulder space on the approach and bridge.

The vertical barrier and buffer zone between the travel lanes on US 401/421 increases comfort and safety for bicyclists and pedestrians. until a more permanent solution can be found.

LONG TERM SOLUTIONS

A feasibility study is recommended to determine the best long-term solution to provide a safe crossing of the river. The following four options could be pursued as a part of a feasibility study:

1. Existing US 401/421 Bridge Widening: Perform drainage, hydraulic and no-rise analysis to determine if existing bridge can be widened to allocate additional barrier-separated space.

2. New Location Bridge Adjacent or Parallel to Existing US401/421 Bridge: Look at options to achieve a no-rise in the floodplain. Will likely require a 600 foot single-span (suspension, cable-stayed or similar) bridge over the floodplain.

3. New Location Bridge West of Existing US 401/421 Bridge toward Raven Rock State Park: Look at crossing locations between Lillington and Raven Rock State Park to determine if there is a viable option that meets connectivity goals.

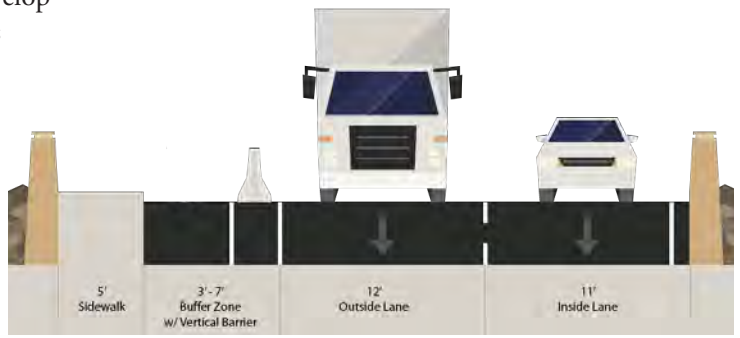
4. New Location Bridge East of US 401/421 toward Campbell University: Explore crossing locations between Lillington and Campbell University, including Wildlife Road.

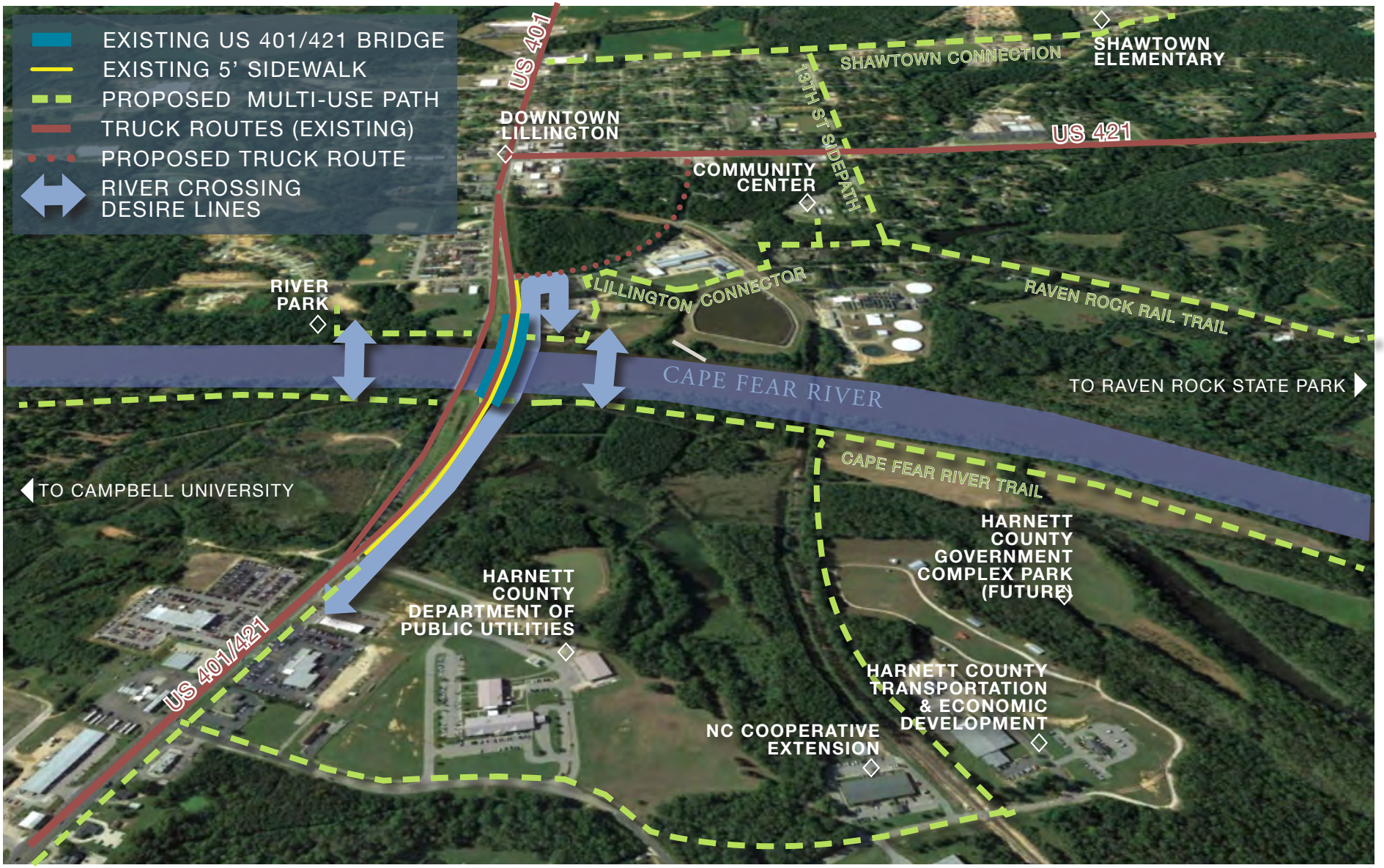
Next Steps:

- Work with Mid-Carolina RPO to develop feasibility study Request for Proposals

Project Information	
Extent	Cape Fear River between Raven Rock State Park and Wildlife Rd
Short Description	Bicycle/Pedestrian multi-use crossing of the Cape Fear River
Stakeholders	
	Mid-Carolina RPO Town of Lillington Lillington Parks and Recreation North Carolina Department of Transportation Raven Rock State Park Campbell University Harnett County
Cost Inputs / Notes	
Feasibility Study	Estimate of cost to perform Feasibility Study with public involvement, utility and Right-of-Way Analysis

An interim option to provide a vertical barrier and buffer space between the sidewalk and travel lanes could increase safety for bicyclists and pedestrians in the short-term:




EXISTING US 401/421 BRIDGE
EXISTING 5' SIDEWALK
PROPOSED MULTI-USE PATH
TRUCK ROUTES (EXISTING)
PROPOSED TRUCK ROUTE
RIVER CROSSING DESIRE LINES
US 401
SHAWTOWN CONNECTION
SHAWTOWN ELEMENTARY
13TH ST SIDEPATH
DOWNTOWN LILLINGTON
US 421
COMMUNITY CENTER
RIVER PARK
LILLINGTON CONNECTOR
RAVEN ROCK RAIL TRAIL
CAPE FEAR RIVER
TO RAVEN ROCK STATE PARK
TO CAMPBELL UNIVERSITY
CAPE FEAR RIVER TRAIL
HARNETT COUNTY GOVERNMENT COMPLEX PARK (FUTURE)
HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES
US 401/421
HARNETT COUNTY TRANSPORTATION & ECONOMIC DEVELOPMENT
NC COOPERATIVE EXTENSION

PROJECT CUT SHEET:
5. LILLINGTON CONNECTOR

The Lillington Connector represents a short but vital connection for the Town. The following attributes make it an important public project:

1. The trail connects the town from East to West: The town is bisected by two US Highways that serve as truck routes which carry ~28,000 vehicles per day (2018 AADT, NCDOT) on US 401/421. A short connection completes a link under the highway bridge, will represent the safest connected path for walkers and bikers between the east and west side of Lillington. This will provide access to the new public river access and recreational amenities including walking trails at the Lillington River Park and Ballfields. It is a segment of the proposed minimum grid for active transportation in the town.

2. The trail makes a key connection to pedestrian facilities that cross the Cape Fear River: This crossing of the Cape Fear River is one of only two river crossings in Harnett County. From a statewide perspective, it represents the only crossing of the Cape Fear River in the state of North Carolina with a pedestrian facility.

3. The trail will link to other recreation facilities: At the east end the trail connects with the new River Park and proposed terminus of the Poorhouse Creek Greenway. At the west end, it will link to the Botanical Trails at the Community Center. The trail will link to the sidewalk that connects over the US 421/401 bridge to the new County Government Complex Park on the northern side of the river.

The Town has submitted a pre-application to fund the design and construction for the first phase of the trail between River Park and 8th St. The intersection at 10th St is an important secondary connection and needs to be upgraded with pedestrian facilities due to the fact that it will become a primary route when flooding occurs. The Town should plan to budget for regular maintenance and sweeping of the trail after storm events.

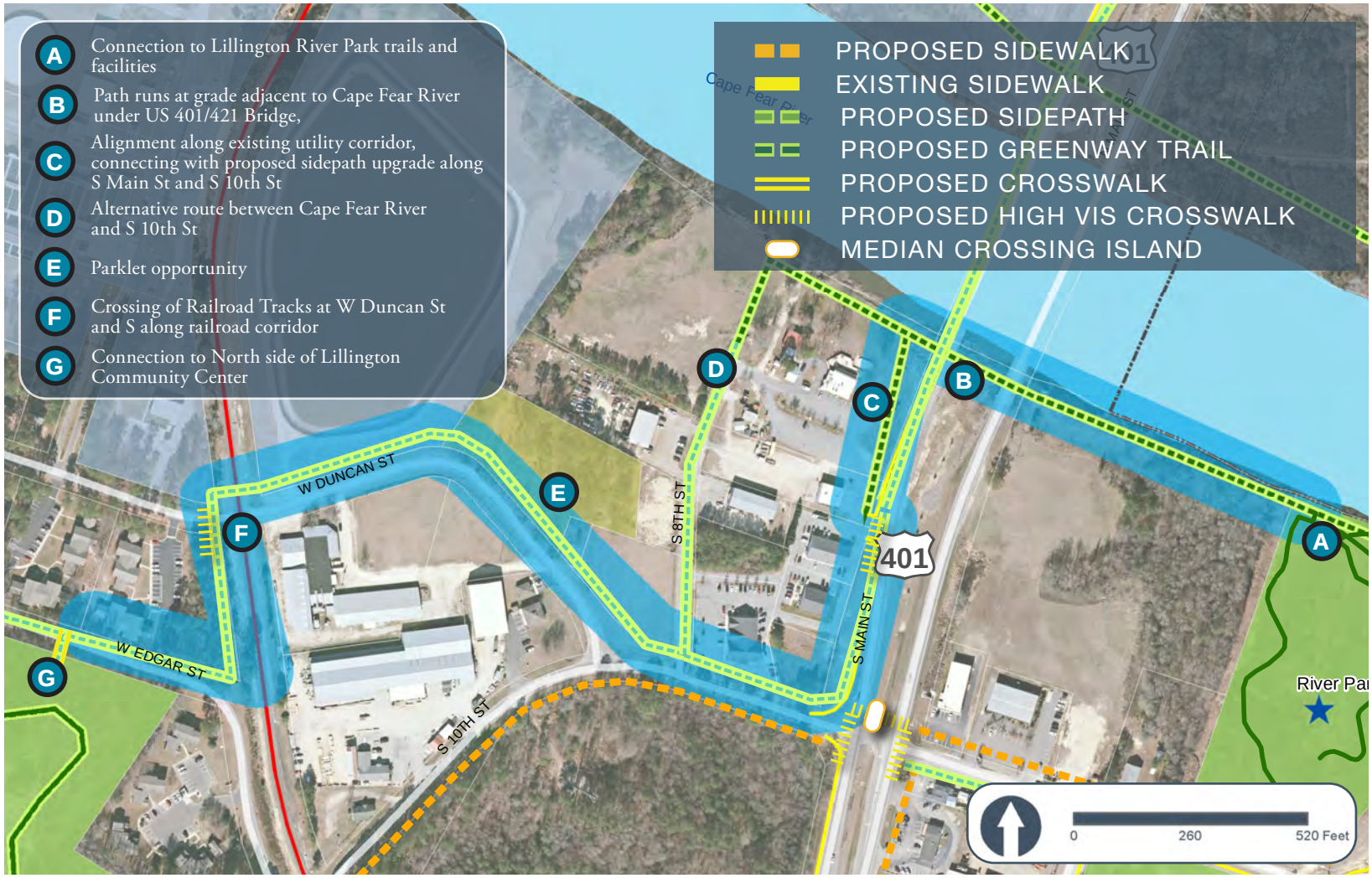
Next Steps:

- Finalize NC Trails Grant
- Budget Local Match for Phase I

Key Partners:

- Lillington Parks and Recreation
- North Carolina Department of Transportation

Project Information	
Extent	River Park to the Community Center
Short Description	Trail connection under US 401/421 between River Park and Lillington Community Center along the Cape Fear River, S 8th St, S 10th St, W Duncan Stand W Edgar St
Stakeholders	
	Town of Lillington Lillington Parks and Recreation North Carolina Department of Transportation Norfolk Southern
Project Detail	
	Pedestrian Facility Improvements, Sidepath and Multi-Use path
Cost Inputs / Phasing Notes	
Phase 1: Multi-Use Path 10 ft width	Cape Fear River Frontage (1600 ft)
Phase 2: Sidepath 2,675 ft 10 ft width	S 8th St (670 ft) S 10th St (150 ft) W Duncan St (1000 ft) Railroad Corridor (325 ft) W Edgar St (530 ft) At Grade Railroad Crossing (1)
Pedestrian Facility Improvements	Lighting Poles, est 175 ft spacing (25) Marked Crosswalks (6) Pedestrian Refuge Island (1) Wayfinding Station (2)


A Connection to Lillington River Park trails and facilities
B Path runs at grade adjacent to Cape Fear River under US 401/421 Bridge,
C Alignment along existing utility corridor, connecting with proposed sidepath upgrade along S Main St and S 10th St
D Alternative route between Cape Fear River and S 10th St
E Parklet opportunity
F Crossing of Railroad Tracks at W Duncan St and S along railroad corridor
G Connection to North side of Lillington Community Center
PROPOSED SIDEWALK
EXISTING SIDEWALK
PROPOSED SIDEPATH
PROPOSED GREENWAY TRAIL
PROPOSED CROSSWALK
PROPOSED HIGH VIS CROSSWALK
MEDIAN CROSSING ISLAND
Cape Fear River
W DUNCAN ST
W EDGAR ST
S 8TH ST
S 10TH ST
S MAIN ST
401
0
260
520 Feet

PROJECT CUT SHEET:
6. RAVEN ROCK RAIL TRAIL

Harnett County has recently acquired easment for the portion of the rail between River Rd and Jim Christensen Rd. This important greenway connects downtown Lillington to Raven Rock State Park utilizing an old railroad bed. The project is highly supported in stakeholder involvement and public feedback and planning efforts, including:

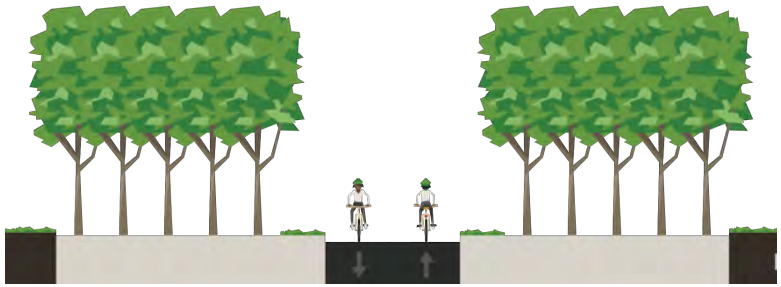
- Sandhills Regional Bike Plan
- Northwest Harnett County Future Land Use Plan (2019)
- Harnett County CTP (2016)

Next Steps:

-
- Coordinate with NCDOT to complete sidepath along S River Rd (SR 1257) and complete sidepath connections to Community Park on S 13th St and W Edgar St (Town-Maintained)
- Partner with Harnett County to pursue funding and design for the trail and trailhead
- Coordinate with NC State Parks shared goals such as a trailhead, paved trail access to the east side of the park for safety/emergencies situations and community connections to Raven Rock State Park.

Project Information	
Extent	Lillington Community Center to Raven Rock State Park
Short Description	Conversion of the old railroad corridor into a multi-use path to connect Raven Rock State Park, Mountain Laurel Loop, future Trailhead and the Town.
Stakeholders	
	Lillington Parks and Recreation, North Carolina State Parks, North Carolina Department of Transportation Harnett County

Project Detail	
	Sidepath (~24,650 feet) Multi-Use Path (~13,130 feet) Intersections (3) Stream Crossing (1)
Cost Inputs / Phasing Notes	
Phase 1	W Edgar and S River Rd Sidepath (~1 mile) with intersection improvements at S 13th St and Community Center access
Phase 2	Conversion of former rail bed to multi-use path (~2.5 miles) and intersection improvement at Jim Christan Rd and S River Rd *Consider parking and trailhead at Jim Christan Rd and S River Rd
Phase 3	S River Rd and Moccasin Branch Rd Sidepath (~3.7miles)




A Connection to Community Park
B Sidepath from Edgar St to the old railroad corridor along S 13th St and S River Rd
C Covert railroad corridor to multi-use path
D County-owned land / Trailhead Opportunity at SE Corner of Jim Christian Rd and S River Rd
E Coordinate with NCDOT to construct sidepath on S River Rd and Lower speed limit to 35MPH
F Coordinate with Raven Rock State Park on trailhead in this area that could support both Mountain Laurel Loop Trail and recreational trail use on the Raven Rock Rail Trail
G Coordinate with Raven Rock State Park on alignment alts between River Rd and the Visitor Center. Explore opportunities to coordinate a crossing of Fish Creek in conjunction with the proposed Fish Creek/ Cedar Rock Trail.
Raven Rock State Park
MOCCASIN BRANCH RD
SOUTH RIVER RD
COLLINS RD
JOE COLLINS RD
BAYLES RD
FULTON
JIM CHRISTIAN RD
C T THOMAS LN
US 421 N
MANOR HILLS RD
CATTLE LN
OAK ST
OLD US 421
MCDOUGALD RD
TIRZAH DR
W FRONT ST
S 13TH ST
S 10TH ST
S MAIN ST
RUTH CIR
401
421
Government Complex Par (Future)
STAR Academy
PROPOSED SIDEWALK
EXISTING SIDEWALK
PROPOSED SIDEPATH
PROPOSED GREENWAY TRAIL
0
2,550
5,100 Feet

PROJECT CUT SHEET:
7. SIDEPATH US 210 TO HARNETT CENTRAL RD

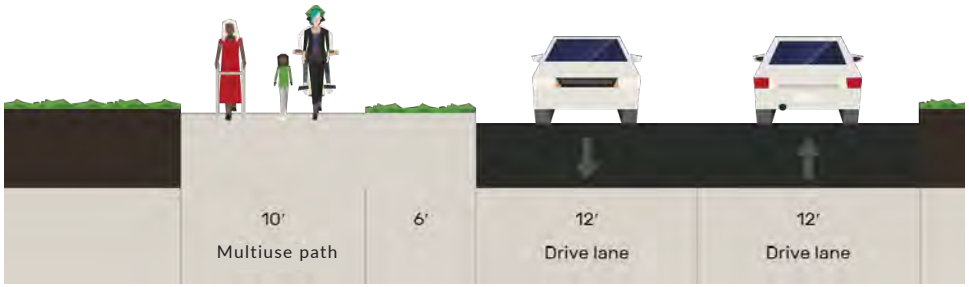
There is a primary growth area in Lillington on the North Side of the Cape Fear River. A sidepath of approximately 3 miles in length is recommended along US210 to link Lillington commercial areas on Cornelius Harnett Boulevard with new housing and the Harnett Central Middle & High School at Harnett Central Rd. Opportunities to link neighborhood greenways with the sidepath along US 210 should be pursued with new development.

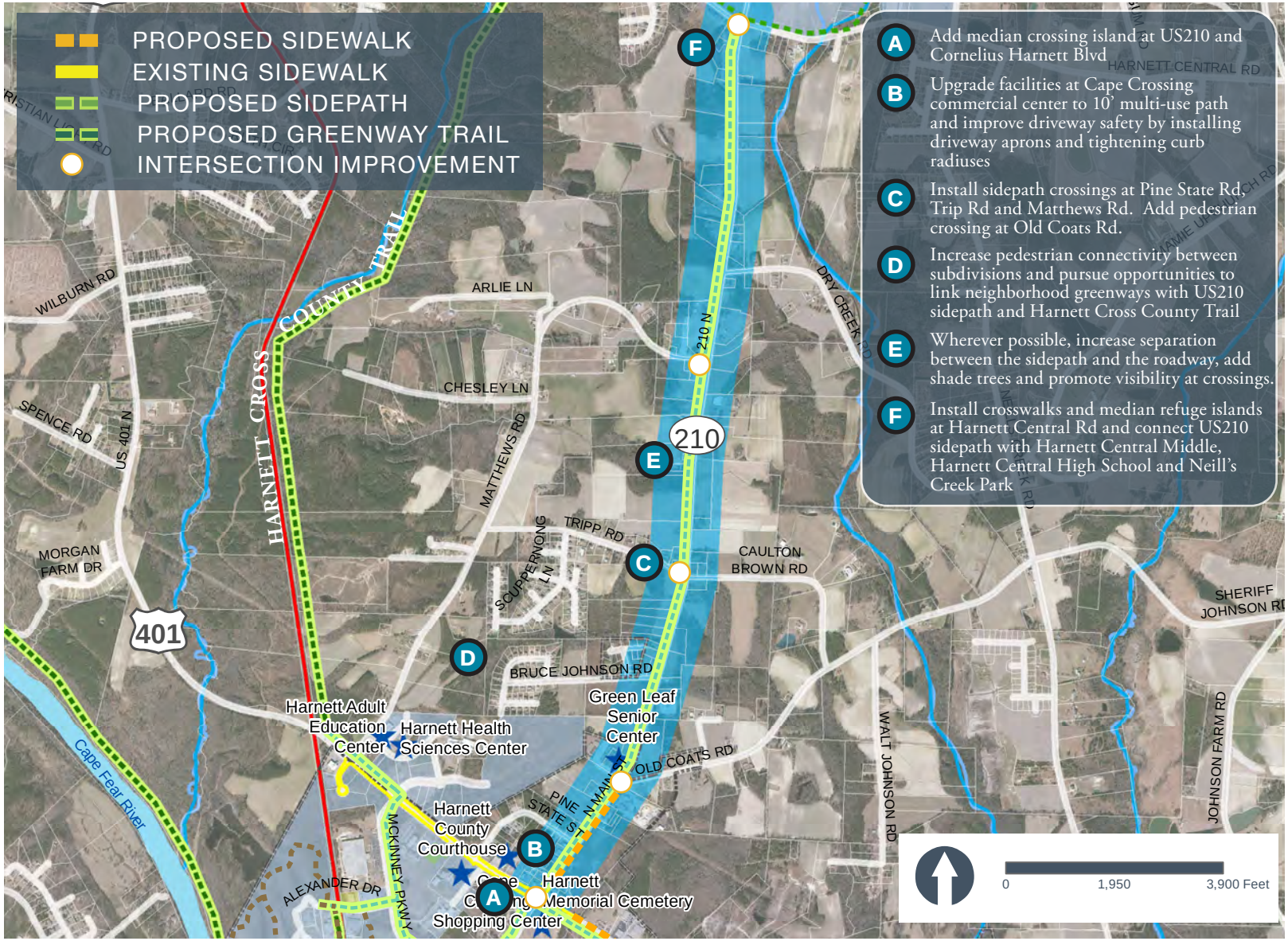
Next Steps:

- Coordinate with NCDOT on proposed US210 improvements

Project Information	
Extent	Cornelius Harnett Blvd to Harnett Central Rd
Short Description	Sidepath of approximately 3 miles connecting commercial areas along Cornelius Harnett Blvd to neighborhoods, schools and recreation areas in North Lillington.
Stakeholders	
	Lillington Parks and Recreation, North Carolina Department of Transportation Harnett County Schools Developers US210 Businesses

Project Detail	
	Sidepath with Pedestrian Facility Intersection Improvements Commercial Strip Improvements
Cost Inputs / Phasing Notes	
Pedestrian Facility Improvements with Sidepath	Sidepath Curb & Gutter Section (920 ft) Sidepath Swale Section (14,750 feet) Minor Intersections (3) Major Intersetions (2)
Commercial Strip Improvements	Sidewalk widening (145 ft)




PROPOSED SIDEWALK
EXISTING SIDEWALK
PROPOSED SIDEPATH
PROPOSED GREENWAY TRAIL
INTERSECTION IMPROVEMENT
A Add median crossing island at US210 and Cornelius Harnett Blvd
B Upgrade facilities at Cape Crossing commercial center to 10' multi-use path and improve driveway safety by installing driveway aprons and tightening curb radiuses
C Install sidepath crossings at Pine State Rd, Trip Rd and Matthews Rd. Add pedestrian crossing at Old Coats Rd.
D Increase pedestrian connectivity between subdivisions and pursue opportunities to link neighborhood greenways with US210 sidepath and Harnett Cross County Trail
E Wherever possible, increase separation between the sidepath and the roadway, add shade trees and promote visibility at crossings.
F Install crosswalks and median refuge islands at Harnett Central Rd and connect US210 sidepath with Harnett Central Middle, Harnett Central High School and Neill's Creek Park
HARNETT CROSS COUNTY TRAIL
WILBURN RD
ARLIE LN
CHESLEY LN
SPENCE RD
US 401 N
MATTHEWS RD
TRIPP RD
SCUPPERNONG LN
MORGAN FARM DR
401
210
210 N
DRY CREEK RD
HARNETT CENTRAL RD
CAULTON BROWN RD
SHERIFF JOHNSON RD
BRUCE JOHNSON RD
Harnett Adult Education Center
Harnett Health Sciences Center
Green Leaf Senior Center
OLD COATS RD
N MAIN ST
PINE STATE ST
Harnett County Courthouse
Harnett Memorial Cemetery
Shopping Center
MCKINNEY PKWY
ALEXANDER DR
Cape Fear River
WALT JOHNSON RD
JOHNSON FARM RD
0
1,950
3,900 Feet

PROJECT CUT SHEET:
8. CAMPBELL CONNECTOR / CAPE FEAR RIVER TRAIL

The Campbell Connector provides a non-motorized link giving transportation options between Campbell University, Harnett County and City of Lilington. It provides access to recreation areas, services, higher education and businesses along the route. This connection is a high priority for the town.

- The trail starts at the new Government Complex Park and travels under the US 421/401 bridge east toward Buies Creek. A constraint to construction will include routing the trail under the existing Norfolk Southern railroad bridge.
- A section of multi-use greenway along Dry Creek, including a creek crossing is proposed with future development.
- The alignment along US 421 / E Cornelius Harnett Blvd is proposed to link with Campbell Univeristy/Buies Creek. Campbell University lies just outside of the Lillington Jurisdiction beyond Neills Creek Road. Best practices include maximum separation between the trail and the roadway, providing shade where possible. There is an opportunity on the corridor to link with the CCCC Harnett Main Campus on the north side of the roadway.

Project Information	
Extent	W McNeill St to 6th St
Short Description	"Complete Street" on E McNeill St to fill the SE gap in the core network
Stakeholders	
	North Carolina Department of Transportation Norfolk Southern Harnett County Campbell University Harnett County Community College

- Note: this project also include a short section of the Cape Fear River Trail which runs along the banks of the Cape Fear River.

Next Steps:

- Coordinate with NCDOT, Campbell University and Harnett County on Phase 1. Ensure design coordination and best practices with future development.

Project Detail	
	Sidepath (~7,920 feet) Multi-Use Path (~7,920 feet) Intersections (2) RR Crossings (1) Stream Crossings (2)
Cost Inputs / Phasing Notes	
Phase 1	E Cornelius Blvd Sidepath (~1.5 miles) Neills Creek Rd high visibility crossing
Phase 2	Goverment Complex to Dry Creek Greenway (~1.5 miles) with crossing under railroad and US 401/421


A Connection with Government Complex Park and proposed trails
B Connect trail under Norfolk Southern railroad bridge
C Connetion under US 401/421 bridge
D Trail aligment approximately parallel to Dry Creek with stream crossing. Proposed construction with future development.
E Trail aligment to connect between Cape Fear River and Campbell University south of US 421 with maximum separationwhere trail is adjacent to roadway. Link trail to CCCC Main Campus.
F Install High Visibility crossing at Club Rd / Neills Creek Rd.
G Coordinate with Campbell University on extension of trail outside of Lillington Jurisdiction beyond Neills Creek Rd, West Buies Creek Stream Crossing.
Cape Crossing Shopping Center
Harnett County Courthouse
Harnett Memorial Cemetery
Government Complex Park (Future)
Lillington Community Center
River Park
Botanical Trail
Chamber of Commerce
Ball Fields & Walking Trail
Harnett County Public Library
Town Hall
Lillington Swimming Pool
CCCC Harnett Main Cam
Campbell University
Cape Fear River
Harnett County Correctional Institute
ALEXANDER DR
MCKINNEY PKWY
N MAIN ST
E CORNELIUS HARNETT BLVD
US 421 S
PEARSON RD
WILDLIFE RD
ROSS RD
ADAMS RD
401
421
PROPOSED GREENWAY TRAIL
PROPOSED SIDEPATH
PROPOSED SIDEWALK
EXISTING SIDEWALK
PROPOSED HIGH VIS CROSSWALK
EXISTING/PROPOSED TRAILS
0
1,800
3,600 Feet

PROJECT CUT SHEET:
9. GOVERNMENT COMPLEX CONNECTION

This project serves an important linkage tying together a number of trails and services, including the Cape Fear Connector, Cape Fear River Trail, Harnett Cross County Trail, county government services and the future County Government Complex Park.

The crossing distance at W Cornelius Harnett Blvd is approximately 100 feet, making it difficult for users of all ages and abilities to cross safely. It is recommended that this crossing be broken into a two-stage crossing with a greenway median island in the excess right of way between the northbound left turn lane and the southbound travel lanes.

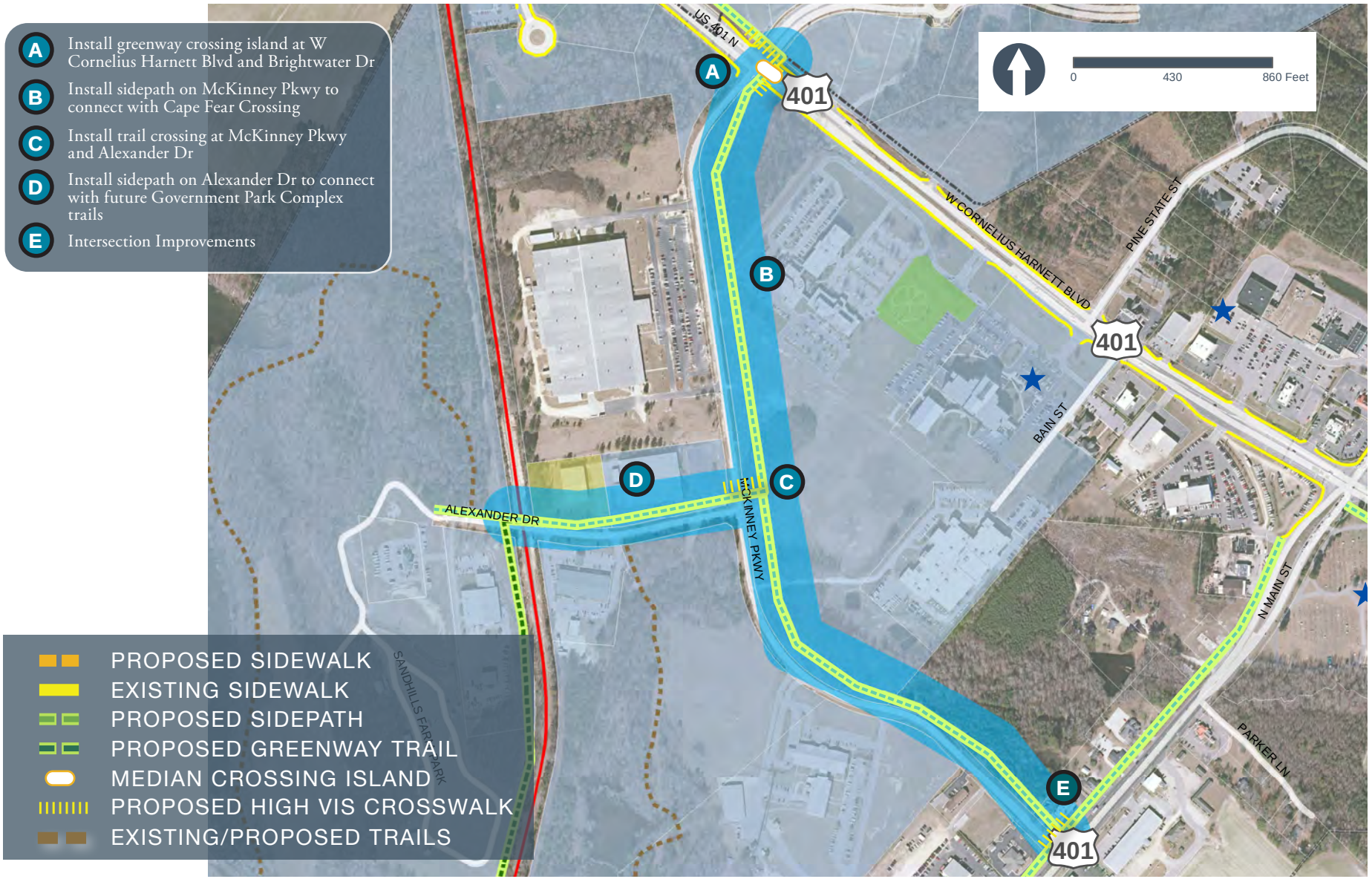
The Government Complex Park is under development and proposed trails are shown in the cut sheet map. Future connections with the Cape Fear River Trail and Harnett Cross County Trail make this an important recreational hub.

Next Steps:

- Coordinate with Harnett County and developers on trail connections in this area
- Coordinate with Harnett County on connections to Government Complex Park and trailhead opportunities

Project Information	
Extent	W Cornelius Harnett Blvd to US 401/421 and Alexander Dr
Short Description	Sidepath along McKinney Pkwy and Alexander Dr to make regional greenway connections with Cape Fear Connector and Government Complex Park
Stakeholders	
	North Carolina Department of Transportation Harnett County Mid-Carolina RPO

Project Detail	
	Sidepath and Pedestrian Facility Intersection Improvements
Cost Inputs / Phasing Notes	
Sidepath	Sidepath McKinney Pkwy (4,000 ft) Sidepath Alexander Dr (950 ft) Minor Intersections (1) Crosswalks (4) Railroad Crossing (1)
Pedestrian Facility Improvements	Lighting (4) Crossing Islands (1)


A Install greenway crossing island at W Cornelius Harnett Blvd and Brightwater Dr
B Install sidepath on McKinney Pkwy to connect with Cape Fear Crossing
C Install trail crossing at McKinney Pkwy and Alexander Dr
D Install sidepath on Alexander Dr to connect with future Government Park Complex trails
E Intersection Improvements
0 430 860 Feet
US 401 N
401
W CORNELIUS HARNETT BLVD
PINE STATE ST
BAIN ST
ALEXANDER DR
MCKINNEY PKWY
N MAIN ST
PARKER LN
SANDHILLS FARM PARK
PROPOSED SIDEWALK
EXISTING SIDEWALK
PROPOSED SIDEPATH
PROPOSED GREENWAY TRAIL
MEDIAN CROSSING ISLAND
PROPOSED HIGH VIS CROSSWALK
EXISTING/PROPOSED TRAILS

PROJECT CUT SHEET:
10. LILLINGTON SHAWTOWN ELEMENTARY CONNECTOR

A sidepath is proposed to connect Lillington with Shawtown Elementary along W Old Rd carries approximately 8,400 vehicles per day (2018 AADT, NCDOT) between S Main St and NC 27. In addition to serving the school, the project serves as a key part of the core non-motorized network for the Town and completes a portion of the SW section of the Lillington Loop, p. 30.

Design of the intersection of S Main St and W Old Rd presents opportunities to add pedestrian enhancements to create an improved crossing of US401/421 on the Lillington Loop between the Sunoco Gas Station Driveway and the right-of-way for W Old Rd. There is ample space to add a wide pedestrian median island in this area and shorten the crossing distance. A more detailed design is needed.

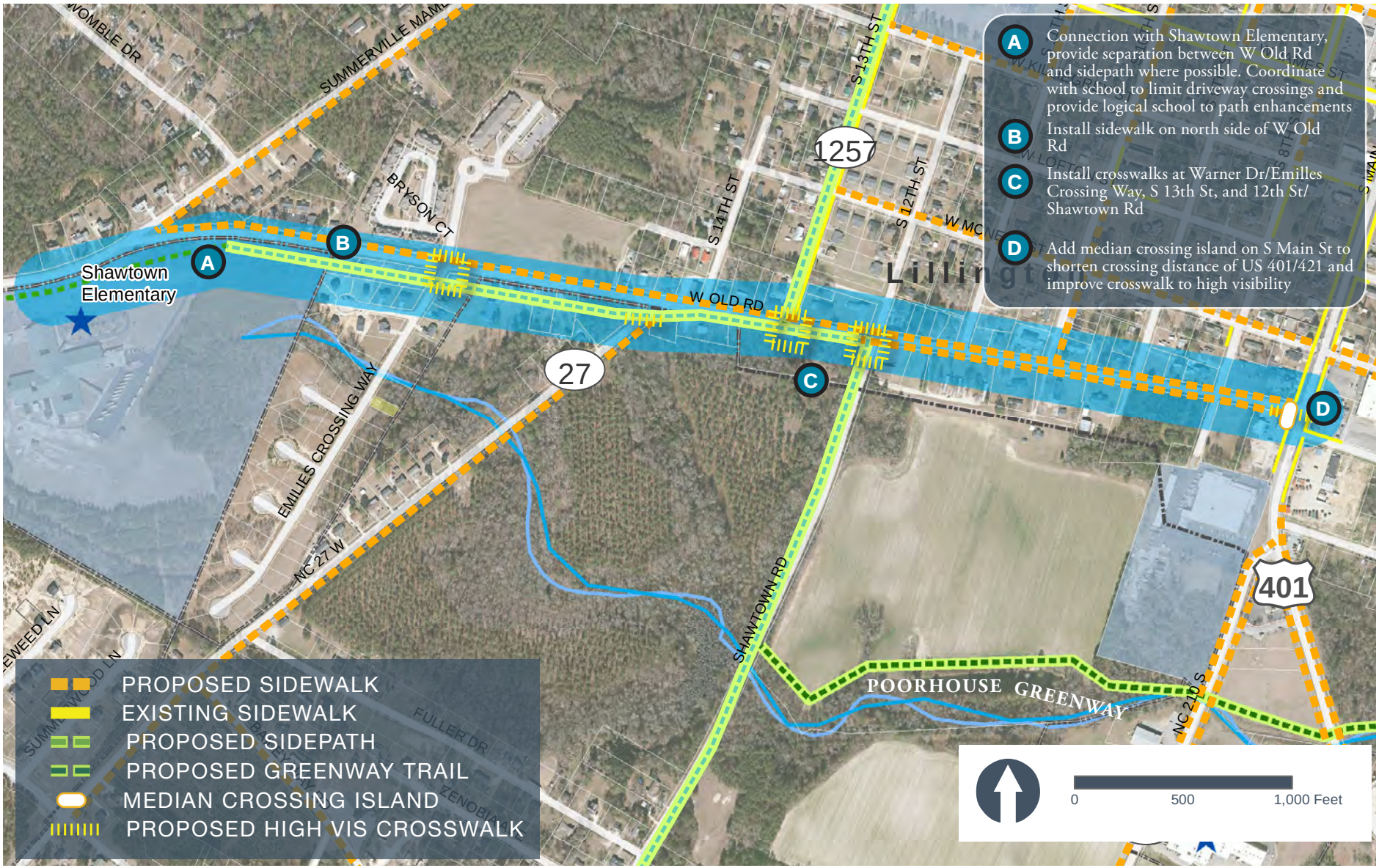
Crosswalks are recommended along the corridor at intersections to provide additional visibility to children that are using this route to access the school, including a crosswalk on Warner Dr/Emilles Crossing Way at the Fairview Pointe Apartments.

Next Steps:

- Coordinate with Harnett County Schools on the sidepath connection with Lillington Shawtown Elementary facilities
- Coordinate with NCDOT on the proposed intersection improvement at US 401/421

Project Information	
Extent	S Main St to Shawtown Elementary School
Short Description	Sidepath connection along W Old Rd
Stakeholders	
	North Carolina Department of Transportation Harnett County Schools

Project Detail	
	Sidepath and Pedestrian Facility Improvements
Cost Inputs / Phasing Notes	
Sidepath	Sidepath (5,000 ft) Minor Intersections (2) Major Intersections (2)
Pedestrian Facility Improvements	Crosswalks (13) Median Crossing Island (1) Lighting est 175 ft spacing (28)


A
Connection with Shawtown Elementary, provide separation between W Old Rd and sidepath where possible. Coordinate with school to limit driveway crossings and provide logical school to path enhancements
B
Install sidewalk on north side of W Old Rd
C
Install crosswalks at Warner Dr/Emilles Crossing Way, S 13th St, and 12th St/ Shawtown Rd
D
Add median crossing island on S Main St to shorten crossing distance of US 401/421 and improve crosswalk to high visibility
Shawtown Elementary
W OLD RD
S 13TH ST
S 14TH ST
S 12TH ST
BRYSON CT
EMILIES CROSSING WAY
SHAWTOWN RD
NC 27 W
NC 210 S
1257
27
401
POORHOUSE GREENWAY
PROPOSED SIDEWALK
EXISTING SIDEWALK
PROPOSED SIDEPATH
PROPOSED GREENWAY TRAIL
MEDIAN CROSSING ISLAND
PROPOSED HIGH VIS CROSSWALK
0
500
1,000 Feet

APPENDIX CONTENTS

- FEDERAL FUNDING OPPORTUNITIES
- TABLE OF SELECT ROADWAYS

FEDERAL FUNDING OPPORTUNITIES

Pedestrian and Bicycle Funding Opportunities
U.S. Department of Transportation Transit, Highway, and Safety Funds

Revised August 9, 2018

This table indicates potential eligibility for pedestrian and bicycle projects under U.S. Department of Transportation surface transportation funding programs. Additional restrictions may apply. See notes and basic program requirements below, and see program guidance for detailed requirements. Project sponsors should fully integrate nonmotorized accommodation into surface transportation projects. Section 1404 of the Fixing America's Surface Transportation (FAST) Act modified 23 U.S.C. 109 to require federally-funded projects on the National Highway System to consider access for other modes of transportation, and provides greater design flexibility to do so.

Key: $ = Funds may be used for this activity (restrictions may apply). ~$ = Eligible, but not competitive unless part of a larger project. $* = See program-specific notes for restrictions.

	Pedestrian and Bicycle Funding Opportunities U.S. Department of Transportation Transit, Highway, and Safety Funds															
Activity or Project Type	BUILD	INFRA	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTTP
Access enhancements to public transportation (includes benches, bus pads)	$	~$	$	$	$	$		$	$	$						$
ADA/504 Self Evaluation / Transition Plan									$	$	$		$			$
Bicycle plans				$					$	$		$	$			$
Bicycle helmets (project or training related)									$	$SRTS		$		$*		
Bicycle helmets (safety promotion)									$	$SRTS		$				
Bicycle lanes on road	$	~$	$	$	$	$	$	$	$	$		$				$
Bicycle parking	~$	~$	~$	$	$	$		$	$	$	$	$				$
Bike racks on transit	$	~$	$	$	$	$			$	$						$
Bicycle repair station (air pump, simple tools)	~$	~$	~$	$	$	$			$	$						$
Bicycle share (capital and equipment; not operations)	$	~$	$	$	$	$		$	$	$						$
Bicycle storage or service centers (example: at transit hubs)	~$	~$	~$	$	$	$			$	$						$
Bridges / overcrossings for pedestrians and/or bicyclists	$	~$	$	$	$	$*	$	$	$	$	$	$				$
Bus shelters and benches	$	~$	$	$	$	$		$	$	$						$
Coordinator positions (State or local)						$ 1 per State			$	$SRTS		$				
Crosswalks (new or retrofit)	$	~$	$	$	$	$*	$	$	$	$	$	$				$
Curb cuts and ramps	$	~$	$	$	$	$*	$	$	$	$	$	$				$
Counting equipment				$	$		$	$	$	$	$	$	$*			$
Data collection and monitoring for pedestrians and/or bicyclists				$	$		$	$	$	$	$	$	$*			$
Historic preservation (pedestrian and bicycle and transit facilities)	$	~$	$	$	$				$	$						$
Landscaping, streetscaping (pedestrian and/or bicycle route; transit access); related amenities (benches, water fountains); generally as part of a larger project	~$	~$	~$	$	$			$	$	$						$
Lighting (pedestrian and bicyclist scale associated with pedestrian/bicyclist project)	$	~$	$	$	$		$	$	$	$	$	$				$
Maps (for pedestrians and/or bicyclists)				$	$	$			$	$		$	$*			
Paved shoulders for pedestrian and/or bicyclist use	$	~$	$			$*	$	$	$	$		$				$

Key: $ = Funds may be used for this activity (restrictions may apply). ~$ = Eligible, but not competitive unless part of a larger project. $* = See program-specific notes for restrictions.																
	Pedestrian and Bicycle Funding Opportunities U.S. Department of Transportation Transit, Highway, and Safety Funds															
Activity or Project Type	BUILD	INFRA	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTTP
Pedestrian plans				$					$	$		$	$			$
Recreational trails	~$	~$	~$						$	$	$					$
Road Diets (pedestrian and bicycle portions)	$	~$	$				$	$	$	$						$
Road Safety Assessment for pedestrians and bicyclists							$		$	$			$			$
Safety education and awareness activities and programs to inform pedestrians, bicyclists, and motorists on ped/bike safety									$SRTS	$SRTS		$	$*	$*	$*	
Safety education positions									$SRTS	$SRTS		$		$*		
Safety enforcement (including police patrols)									$SRTS	$SRTS		$		$*	$*	
Safety program technical assessment (for peds/bicyclists)									$SRTS	$SRTS		$	$*	$		
Separated bicycle lanes	$	~$	$	$	$	$	$	$	$	$		$				$
Shared use paths / transportation trails	$	~$	$	$	$	$*	$	$	$	$	$	$				$
Sidewalks (new or retrofit)	$	~$	$	$	$	$	$	$	$	$	$	$				$
Signs / signals / signal improvements	$	~$	$	$	$	$	$	$	$	$		$				$
Signed pedestrian or bicycle routes	$	~$	$	$	$	$		$	$	$		$				$
Spot improvement programs	$	~$	$	$			$	$	$	$	$	$				$
Stormwater impacts related to pedestrian and bicycle projects	$	~$	$	$	$		$	$	$	$	$	$				$
Traffic calming	$	~$	$	$			$	$	$	$		$				$
Trail bridges	$	~$	$			$*	$	$	$	$	$	$				$
Trail construction and maintenance equipment									$RTP	$RTP	$					
Trail/highway intersections	$	~$	$			$*	$	$	$	$	$	$				$
Trailside and trailhead facilities (includes restrooms and water, but not general park amenities; see program guidance)	~$*	~$*	~$*						$*	$*	$*					$
Training						$	$		$	$	$	$	$*	$*		
Training for law enforcement on ped/bicyclist safety laws									$SRTS	$SRTS		$			$*	
Tunnels / undercrossings for pedestrians and/or bicyclists	$	~$	$	$	$	$*	$	$	$	$	$	$				$

Abbreviations

ADA/504: Americans with Disabilities Act of 1990 / Section 504 of the Rehabilitation Act of 1973
BUILD: Better Utilizing Investments to Leverage Development Transportation Discretionary Grants
INFRA: Infrastructure for Rebuilding America Discretionary Grant Program
TIFIA: Transportation Infrastructure Finance and Innovation Act (loans)
FTA: Federal Transit Administration Capital Funds
ATI: Associated Transit Improvement (1% set-aside of FTA)
CMAQ: Congestion Mitigation and Air Quality Improvement Program
HSIP: Highway Safety Improvement Program
NHPP: National Highway Performance Program
STBG: Surface Transportation Block Grant Program
TA: Transportation Alternatives Set-Aside (formerly Transportation Alternatives Program)
RTP: Recreational Trails Program
SRTS: Safe Routes to School Program / Activities
PLAN: Statewide Planning and Research (SPR) or Metropolitan Planning funds
NHTSA 402: State and Community Highway Safety Grant Program
NHTSA 405: National Priority Safety Programs (Nonmotorized safety)
FLTTP: Federal Lands and Tribal Transportation Programs (Federal Lands Access Program, Federal Lands Transportation Program, Tribal Transportation Program, Nationally Significant Federal Lands and Tribal Projects)

Program-specific notes: Federal-aid funding programs have specific requirements that projects must meet, and eligibility must be determined on a case-by-case basis.

- BUILD: Subject to annual appropriations. See https://www.transportation.gov/BUILDgrants for details.
- INFRA: See https://www.transportation.gov/buildamerica/infragrants for details. Focus on projects that generate national or regional economic, mobility, and safety benefits.
- TIFIA: Program offers assistance only in the form of secured loans, loan guarantees, or standby lines of credit, but can be combined with other grant sources, subject to total Federal assistance limitations.
- FTA/ATI: Project funded with FTA transit funds must provide access to transit. See Bicycles and Transit and the FTA Final Policy Statement on the Eligibility of Pedestrian and Bicycle Improvements under Federal Transit Law.
  - Bicycle infrastructure plans and projects funded with FTA funds must be within a 3 mile radius of a transit stop or station, or if further than 3 miles, must be within the distance that people could be expected to safely and conveniently bike to use the particular stop or station.
  - Pedestrian infrastructure plans and projects funded with FTA funds must be within a ½ mile radius of a transit stop or station, or if further than ½ mile, must be within the distance that people could be expected to safely and conveniently walk to use the particular stop or station.
  - FTA funds cannot be used to purchase bicycles for bike share systems.
  - FTA encourages grantees to use FHWA funds as a primary source for public right-of-way projects.
- CMAQ projects must demonstrate emissions reduction and benefit air quality. See the CMAQ guidance at www.fhwa.dot.gov/environment/air_quality/cmaq/ for a list of projects that may be eligible for CMAQ funds. Several activities may be eligible for CMAQ funds as part of a bicycle and pedestrian-related project, but not as a highway project. CMAQ funds may be used for shared use paths, but may not be used for trails that are primarily for recreational use.
- HSIP projects must be consistent with a State's Strategic Highway Safety Plan and (1) correct or improve a hazardous road location or feature, or (2) address a highway safety problem.
- NHPP projects must benefit National Highway System (NHS) corridors.
- STBG and TA Set-Aside: Activities marked "$SRTS" means eligible only as an SRTS project benefiting schools for kindergarten through 8th grade. Bicycle transportation nonconstruction projects related to safe bicycle use are eligible under STBG, but not under TA (23 U.S.C. 217(a)).
- RTP must benefit recreational trails, but for any recreational trail use. RTP projects are eligible under TA and STBG, but States may require a transportation purpose.
- SRTS: FY 2012 was the last year for SRTS funds, but SRTS funds are available until expended.
- Planning funds must be used for planning purposes, for example:
  - Maps: System maps and GIS;
  - Safety education and awareness: for transportation safety planning;
  - Safety program technical assessment: for transportation safety planning;
  - Training: bicycle and pedestrian system planning training.
- Federal Lands and Tribal Transportation Programs (FLTTP) projects must provide access to or within Federal or tribal lands:
  - Federal Lands Access Program (FLAP): Open to State and local entities for projects that provide access to or within Federal or tribal lands.
  - Federal Lands Transportation Program: For Federal agencies for projects that provide access within Federal lands.
  - Tribal Transportation Program: available for federally-recognized tribal governments for projects within tribal boundaries and public roads that access tribal lands.
- NHTSA 402 project activity must be included in the State's Highway Safety Plan. Contact the State Highway Safety Office for details: http://www.ghsa.org/html/about/shsos.html
- NHTSA 405 funds are subject to State eligibility, application, and award. Project activity must be included in the State's Highway Safety Plan. Contact the State Highway Safety Office for details: http://www.ghsa.org/html/about/shsos.html

Cross-cutting notes

- FHWA Bicycle and Pedestrian Guidance: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/
- **Applicability of 23 U.S.C. 217(i) for Bicycle Projects:** 23 U.S.C. 217(i) requires that bicycle facilities "be principally for transportation, rather than recreation, purposes". However, sections 133(b)(6) and 133(h) list "recreational trails projects" as eligible activities under STBG. Therefore, the requirement in 23 U.S.C. 217(i) does not apply to recreational trails projects (including for bicycle use) using STBG funds. Section 217(i) continues to apply to bicycle facilities other than trail-related projects, and section 217(i) continues to apply to bicycle facilities using other Federal-aid Highway Program funds (NHPP, HSIP, CMAQ). The transportation requirement under section 217(i) is applicable only to bicycle projects; it does not apply to any other trail use or transportation mode.
- There may be occasional DOT or agency incentive grants for specific research or technical assistance purposes.
- Aspects of DOT initiatives may be eligible as individual projects. Activities above may benefit safe, comfortable, multimodal networks; environmental justice; and equity.

Federal-Aid Highway Program Funding for Pedestrian and Bicycle Facilities and Programs
FY 1992 to 2018 Obligations by Funding Category (Millions of Dollars)

Year	New Projects	Total Obligations	CMAQ	CMAQ %	TA/TAP	TA/TAP %	STP TE	STP TE %	STBG/STP Other	STBG STP Other %	SRTS NTPP	SRTS NTPP %	HSIP STP Safety	HSIP STP Safety %	RTP	RTP %	All Other Funds	All Other Funds %
2018	1,123	$915.80	$185.86	20.29%	$361.38	39.46%	$19.45	2.12%	$212.33	23.19%	$30.85	3.37%	$16.54	1.81%	$26.31	2.87%	$63.09	6.89%
2017	1,205	$970.20	$170.50	17.58%	$411.90	42.45%	$39.90	4.12%	$197.70	20.37%	$28.50	2.94%	$28.90	2.97%	$30.50	3.15%	$62.30	6.42%
2016	1,511	$859.80	$152.20	17.70%	$306.60	35.65%	$112.50	13.08%	$148.40	17.25%	$38.60	4.49%	$15.10	1.76%	$21.30	2.48%	$73.10	7.59%
2015	1,562	$833.70	$118.50	14.22%	$157.60	18.91%	$186.40	22.36%	$155.10	18.60%	$83.30	9.99%	$30.10	3.61%	$29.60	3.55%	$72.70	8.77%
2014	2,485	$820.50	$125.70	15.32%	$125.40	15.29%	$161.50	19.69%	$128.40	15.64%	$96.80	11.79%	$14.90	1.82%	$22.40	2.73%	$145.40	17.72%
2013	2,424	$676.10	$58.80	8.70%	$52.10	7.70%	$205.10	30.34%	$97.60	14.43%	$137.30	20.33%	$8.90	1.32%	$11.80	1.75%	$104.50	15.46%
2012	2,248	$853.70	$156.50	18.33%			$293.20	34.34%	$76.70	8.99%	$169.30	19.83%	$5.30	0.63%	$18.80	2.21%	$133.90	15.68%
2011	2,763	$790.90	$97.40	12.32%			$265.70	33.60%	$90.60	11.46%	$131.00	16.57%	$5.80	0.74%	$30.60	3.87%	$169.90	21.48%
2010	3,007	$1,036.60	$68.40	6.59%			$283.10	27.31%	$86.00	8.30%	$117.20	11.30%	$8.70	0.84%	$18.20	1.75%	$455.00	43.89%
2009	3,010	$1,188.30	$115.50	9.72%			$292.10	24.57%	$70.10	5.89%	$118.20	9.94%	$6.50	0.55%	$21.40	1.79%	$564.50	47.50%
2008	1,817	$540.90	$69.50	12.85%			$249.90	46.19%	$45.60	8.43%	$91.20	16.86%	$1.80	0.33%	$11.00	2.04%	$71.90	13.30%
2007	1,584	$564.00	$57.30	10.15%			$287.20	50.93%	$43.40	7.69%	$45.70	8.11%	$0.90	0.16%	$15.90	2.82%	$113.60	20.14%
2006	1,320	$394.90	$29.20	7.39%			$232.60	58.91%	$13.60	3.43%	$17.50	4.42%	$3.50	0.91%	$16.50	4.19%	$82.00	25.21%
2005	1,077	$400.00	$41.40	10.34%			$240.70	60.18%	$48.70	12.18%			$1.10	0.28%	$14.70	3.68%	$53.30	13.33%
2004	1,226	$426.10	$44.90	10.54%			$272.70	63.85%	$46.10	10.99%			$2.40	0.57%	$16.20	3.79%	$43.80	10.25%
2003	1,237	$430.10	$35.00	8.15%			$278.10	64.65%	$36.60	8.51%			$2.90	0.67%	$9.10	2.11%	$68.40	15.91%
2002	1,287	$433.70	$46.50	10.72%			$265.00	61.11%	$36.90	8.51%			$3.30	0.77%	$10.80	2.49%	$71.20	16.41%
2001	1,081	$339.20	$44.30	13.08%			$224.30	66.13%	$34.80	8.84%					$1.30	0.32%	$34.50	10.55%
2000	971	$296.60	$34.40	11.61%			$217.50	73.29%	$19.40	5.82%					$3.30	1.11%	$22.00	8.54%
1999	724	$204.10	$12.60	6.19%			$153.90	75.37%	$20.00	9.36%					$2.90	1.41%	$14.70	8.63%
1998	681	$216.60	$15.90	7.33%			$151.50	69.96%	$16.10	6.49%							$33.10	15.28%
1997	715	$238.80	$25.00	10.48%			$179.20	75.04%	$14.00	5.86%							$20.60	8.62%
1996	706	$197.10	$19.30	9.78%			$153.90	78.07%	$15.40	7.83%							$8.50	4.32%
1995	778	$178.70	$9.00	5.01%			$150.70	84.42%	$13.60	7.62%							$5.40	3.00%
1994	461	$112.60	$2.70	2.43%			$96.90	86.10%	$7.00	6.19%							$6.00	5.29%
1993	163	$33.60	$3.30	9.75%			$23.80	70.86%	$2.30	6.87%							$4.20	12.52%
1992	50	$22.90	$0.00	0.00%			$13.10	57.21%	$6.40	27.94%							$3.40	14.84%
Total	37,216	$13,975.50	$1,739.66	12.45%	$1,414.98	10.12%	$5,049.95	36.13%	$1,682.83	12.04%	$1,105.45	7.91%	$156.64	1.12%	$332.61	2.38%	$2,500.99	17.90%

Source: FHWA Fiscal Management Information System (FMIS)

TABLE OF SELECT ROADWAYS

Road Name	Predominant Roadway Widths (LF)	Number of Lanes	Annual Average Daily Traffic	Speed Limit (MPH)	Curb and Gutter
US 401 (W. Cornelius Harnett Blvd)	24 - 68	2 - 4	125,000 - 150,000	35 - 55	Varies
US 401 (E. Washington St. to ETJ)	28	2	8,000	35 - 55	No
US 421 (E. Cornelius Harnett Blvd.)	48 - 64	4	210,000	35 - 55	Varies
US 421 (E. Cornelius Harnett Blvd.)	48 - 64	4	210,000	35 - 55	Varies
US 421 (W. Front Street)	24 - 68	2 - 4	8,500 - 9,400	20 - 55	Varies
E. Front St.	20 - 42	2			No
Main St. (Cornelius Harnett Blvd. to E. Washington St.)	28 - 68	4	8,500 - 330,000	20 - 45	Varies
US 210 (E. Washington St. to ETJ)	24	2	9,200	35 - 55	Varies
S. 10th St.	24	2	5,400	35	No
E. McNeill St. (to McKay Pl.)	48	4	4,000	35	Varies
Ross Rd.	20	2	1,700	35 - 55	No
W. Old Rd.	20 - 25	2	4,000 - 8,600	35 - 45	No
Old US Hwy 421 (Summerville Mamers Rd.)	20	2	3,100 - 4,000	35 - 45	No
S. River Rd.	18 - 20	2		35 - 55	No
E. Duncan St. (Main St. to Parkside Dr.)	20	2			No
Parkside Dr.	20	2			No
13th St.	20 - 24	2			No
James St.	20 - 40	2			Varies
NC 27(South of W. Old Rd.)	25	2	5,700 - 6,600	55	No
Bailey Way Rd.	20	2		35 - 55	No
Irene Roberts Rd.	20	2			No