



TOWN OF
CARRBORO
UPDATED
BIKE PLAN
2020





ACKNOWLEDGEMENTS

Thank you to the local residents, community leaders, and government staff that participated in the development of this Plan through meetings, workshops, events, comment forms, and plan review. Special thanks to those who participated as steering committee members, listed below.

PROJECT STEERING COMMITTEE

The Steering Committee was made up of local residents, government staff, and community members.

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- Lisa Brown, Carrboro Northern Transition Area Advisory Committee
- Becki Cleveland, Carrboro Recreation and Parks Commission
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Cover art adapted from the League of American Bicyclists' Bicycle Friendly Community Program

Prepared by Alta Planning + Design

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EXECUTIVE SUMMARY



Photo Credit: Galen Poythress

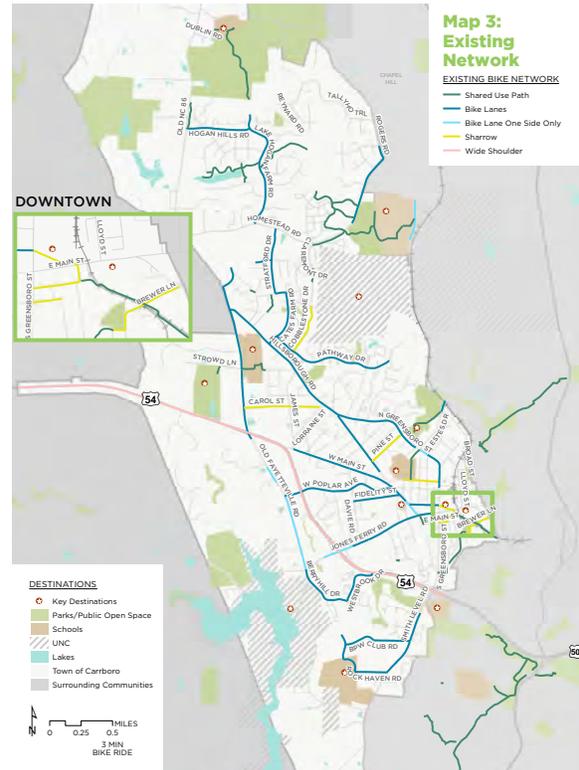
PROJECT VISION & INTRODUCTION

This 2020 Updated Bicycle Plan for the Town of Carrboro is based on the 2009 Bicycle Plan. A new vision statement, which was developed with input from the plan's Steering Committee reads:

“Envisioning Carrboro as a place where biking is accessible, safe, and convenient for everyone between the ages of 8 to 80.”

The process for this plan included engaging an active steering committee of local community members as well as other stakeholders; developing an equity framework to ensure all residents are considered; recommending projects that embrace the “8 to 80” vision; and presenting a final plan that is a reflection of community needs and best practices. The goals which underpin this vision include increasing ridership, enhancing connectivity, generating positive economic impact, protecting the environment, advancing equity, enhancing health, and increasing safety and livability.

Carrboro started with a bike network of about 3 miles in 1985, and has since grown to a network of 27 miles in 2020. About 11 miles of that growth (~50%) has occurred in the past 15 years. The current bicycle network is shown here. Further assessment of existing conditions through the planning process covered equity (race, poverty, vehicle access, English proficiency, education, and age), safety (crash data), and identification of key destinations and analysis of current on road conditions for cyclists through the use of the Level of Traffic Stress methodology.



There are a number of opportunities and constraints which affect the development of the bicycle network in Carrboro. While the majority of streets have moderate levels of traffic and speed, NC Hwy 54 poses a considerable physical barrier to travel by non-automobile modes both due to the size of the facility but also the speed and volume of traffic. Topography presents another challenge in Carrboro, even on the low-speed and low-volume residential streets, which can serve as low-stress bicycle routes. Despite these challenges, there are a number of regional connections both north and west into Orange County but also south into Chatham County. Because of these, Carrboro often serves as a popular staging area for long distance group rides. Carrboro also has a compact development pattern, which can help facilitate travel by bicycle.

COMMUNITY INPUT & SUPPORTING FRAMEWORK

Community input was a continuous effort throughout the planning process. The steering committee was the first element, which included both local community members and regional transportation partners from other public agencies. A public input survey was developed and debuted at the 2019 Carrboro Open Streets event. Throughout the course of plan development, over four-hundred responses were received. Additional outreach was conducted to a wide array of groups including: local bike advocates, local middle school biking teams, long-time Carrboro residents, the Rogers Road community, the Karen and Burmese-speaking community (with translation). El Centro Hispano hosted a Spanish-language survey for a period of two months and received over 50 responses.

The survey and public outreach helped assess the confidence of local residents (from Strong and Fearless to No Way, No How) which, along with the LTS analysis, helps inform the types of facilities that are recommended in the bicycle network plan.



Support from our key partners as well as Town programs and policies are also needed to supplement the infrastructure projects recommended. Key local partners include the Town of Chapel Hill, as well as local Bike Advocacy Groups, local bike shops, the broader business community, as well as non-profit organizations.

A number of key strategic priorities have been identified to support the infrastructure project recommendations. These are:

- » **Expand Bike Parking** - High quality and convenient bike parking is needed to encourage ridership. Carrboro will work on expanding these requirements.
- » **Shared Mobility Policy** - Shared Mobility is a new topic including both bikeshare and scooters. A specific policy is needed in order to be able to regulate properly the operations of shared mobility providers within Carrboro.
- » **Tactical Urbanism** - A process should be developed to allow for the piloting of new infrastructure projects championed by local community members.
- » **Bicycle Wayfinding** - Enhancing wayfinding for bicycle routes is an efficient and effective way to designate bicycle routes and make it easier for people on bicycles to navigate around Carrboro.
- » **Safe Routes to School** - Carrboro should continue work from the 2012 SRTS plan with the aim of increasing the number of students who bike to school.

NETWORK RECOMMENDATIONS & PRIORITIES

The culmination of the planning process is the set of network recommendations for improvements throughout Carrboro. These are based on a number of factors, including: previous plans, public input & survey results, staff input, guidance from NCDOT, input from the plan's Steering Committee, fieldwork, plus equity, safety and LTS analysis. Facility types in the recommended bike network include Shared Use Paths, Bike Lanes, Separated Bike Lanes, Neighborways, and Private Connections.

From the recommended bikeway network, the strategic priorities are identified based on crash data, network connectivity, demand, gap closures, racial equity, and low stress opportunities. These are:

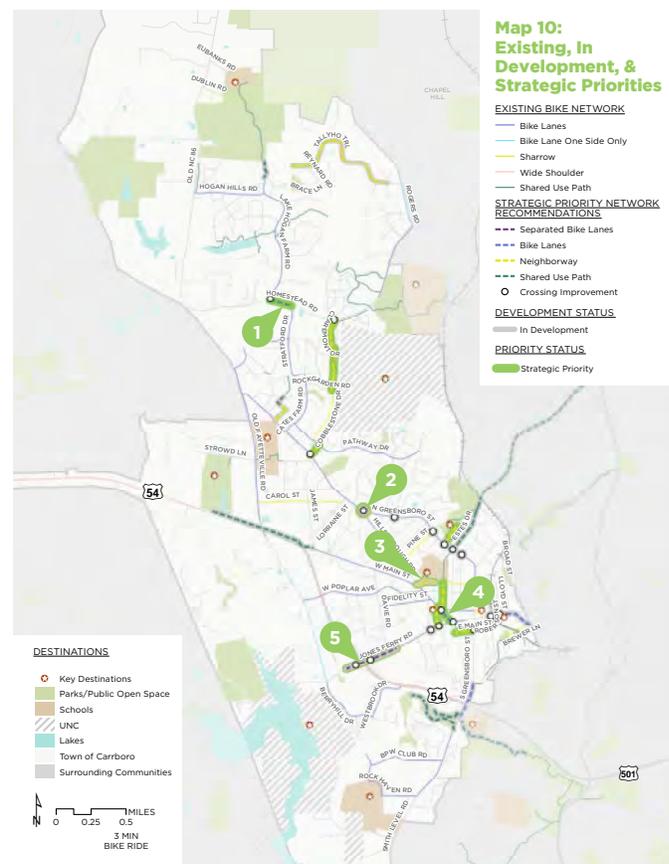
1. **Homestead Road** - A low stress facility, such as a sidepath, with crossing improvements is needed to connect the Lake Hogan Farms network with the central network. Long-term recommendations extend this path further east, into Chapel Hill.
2. **Hillsborough Road at N Greensboro Street** - Crossing improvements such as conflict markings, curb radii modification, marked crosswalk and signalization are needed.
3. **Shelton Street** - A contraflow lane can be used to provide connectivity from Hillsborough Road to Carrboro Elementary School. Long-term recommendations extend this connection eastward, to the Frances Shetley Bike Path.
4. **W Main Street between W Weaver Street and Jones Ferry Road** - There is a gap in the bike lane network that needs to be filled, and can be done by reallocating existing roadway space. Long-term recommendations

include additional improvements such as bike boxes, intersection conflict markings, and curb separated bike lanes.

5. **Jones Ferry Road** - Coordination with NCDOT on the installation of a protected bike lane here can help provide a framework for installation in other parts of Town. The long-term recommendation is curb separated bike lanes in both directions.

Five other strategic priorities (not ordered) are also identified due to their ease of implementation. All of these priority projects are neighborways.

- » **Cobblestone Drive-Colfax Road**
- » **Laurel Avenue**
- » **West Carr Street**
- » **Williams Street**
- » **Elm Street**



LOOKING TOWARD IMPLEMENTATION

There is lots to be done in working to implement the plan. The Town's Transportation Advisory Board (in coordination with other Boards) will play a role in identifying local priorities beyond the strategic priorities. Town Staff should work with NCDOT and the DCHC MPO to help identify potential funding sources and programs, whether they be state or federal. Local residents can use the plan to understand what to look forward to and can even work among their neighbors to help champion projects they support. Potential funding sources or avenues to implementation are outlined below.

- » **Federal Sources for bicycle/pedestrian projects** such as the Transportation Alternatives Program (TAP), the Surface Transportation Program (STPDA), Congestion Mitigation and Air Quality (CMAQ), the Highway Safety Improvement Program (HISP), and the Recreational Trails Program (RTP).
- » **State prioritization is a data driven process** by which NCDOT evaluates and ranks projects to be considered for funding. NCDOT begins this process every two to three years to develop the State Transportation Improvement Program (STIP), a ten-year transportation investment plan. Since state DOTs administer federal funds, the STIP provides the main source of funding for local transportation projects. It is a multi-step competitive process.
- » **NCDOT's Complete Streets policy** can also be a route to implementation for bicycle projects along an existing roadway. It is crucial to note that the policy only applies to highway projects that receive funding through the State Transportation Improvement

Program (STIP). Carrboro should consider the tradeoffs of submitting a highway project, as the associated improvements are generally focused on enhancing the capacity of the roadway. Adding more lanes can both induce new driving demand and make for a less inviting experience for people biking and walking along the street.

- » **Grants from other organizations**, such as non-profits, can provide other smaller sources of funding for local projects.
- » The Town should use its **Capital Improvement Plan** and budget to fund local projects. Additional revenues may be found from development impact fees.
- » Local neighborhoods and other advocacy groups could look at organizing **fundraising campaigns** to help support implementation of projects.

The goals outlined in the first chapter of the plan are also reflect in the performance metrics. These metrics are bicycle counts, bicycle travel time, sales tax receipts, motor vehicle trips, housing & transportation index, % of children & adults who meet physical activity recommendations, crash data, and jobs accessible within 15 minutes by bike.

The plan ends with five key priorities to look towards as Carrboro moves into the implementation phase:

1. **Keep momentum on projects that are underway;**
2. **Use equity to inform local priorities;**
3. **Focus on strategic priority projects;**
4. **Build incrementally over time;**
5. **Work with partners to implement new policies.**



Photo Credit: Rachel Heggen



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THE VISION



Photo Credit: The Town of Chapel Hill

2020 VISION STATEMENT:

“Envisioning Carrboro as a place where biking is accessible, safe, and convenient for everyone between the ages of 8 to 80.”

PROJECT BACKGROUND

The Town of Carrboro is a bikeable community because of its long-standing commitment to biking as a safe and efficient form of transportation. The 2020 Carrboro Bicycle Plan is a new plan, based on the 2009 Bicycle Plan, showing the Town's continued commitment. The new Vision Statement is a simplification of the 2009 vision.

While Carrboro is one of the most bikeable places in North Carolina today, the Town is dedicated to evaluating opportunities for improvement to ensure biking in Carrboro is safe, fun and accessible for all ages and abilities. Furthermore, this “8 to 80” vision is one which was fully embraced by the Steering Committee and truly reflects what Carrboro is aiming to accomplish.

This ‘8 to 80’ vision is representative of the desire for maximum participation across the age and ability spectrum. There will always be outliers, whether that is a 90 year old who still rides a bike, or the 50 year old who is injured and unable to. The vision isn’t so much about setting goals for specific age groups, rather it is more about making biking inclusive to people of all ages and abilities.

The graphic below illustrates the planning process for this Updated Bike Plan. This plan aims to:

- » **Engage** an active steering committee of stakeholders to guide the planning process;
- » **Develop** an Equity Framework to ensure all residents are considered;
- » **Recommend** projects and programs that embrace the “8 to 80” vision but acknowledge difficulties that may arise with implementation;
- » **Present** a final plan that is a reflection of community needs and national best practices.

Public Involvement

Steering Committee, Town Council, Stakeholders, and General Public





REFLECTION ON THE 2009 PLAN

The previous Carrboro Bicycle Plan, adopted in 2009, was the first of its kind for the Town. Despite having bike lanes since the 1970s, bicycle infrastructure was largely implemented as opportunities arose and policies developed incrementally rather than through a comprehensive vision. This process was guided by a clear vision statement, which also outlined the goals and objectives of the Bicycle Plan. The vision proposed for this updated Plan (p5) is effectively a distillation of that previous statement shown below.

Despite the benefits of such a vision, the rate of growth of Carrboro's bicycle network has slowed in recent years. This could be due to any number of factors including the implementation of easier projects first, the difficulty associated with installing bicycle facilities on roads which are not maintained by the town, and changes to funding mechanisms. This updated Plan reassesses the existing conditions, identifies new projects, and provides updated design standards to account for advancements in bicycle facility design which have occurred over the past 10 years.

“Carrboro will be a place that is bicycle-friendly; where people have an accessible, safe, and convenient option of bicycling for transportation, recreation, and health; where bicycle lanes and greenways provide a connected system within and outside Town; where future development provides access and facilities for bicyclists; where bicycle transportation is the easy choice; and where programs educate, inspire, and encourage residents and enforce safe bicyclist and motorist behavior.”

EXISTING PLANS AND DOCUMENTS

The following plans and documents, both local and regional, have been reviewed as part of the updated Plan. More information about these plans can be found in the Appendix.

- » **CONNECT 2045 (2019)** - The Triangle's Metropolitan Transportation Plan
- » **NC 54 Safety Study (2019)** - Bike-Ped Safety analysis in Carrboro-Chapel Hill
- » **NC 54 W Corridor Study (2018)** - Carrboro-Graham Corridor Assessment
- » **203 S Greensboro Project (2018)** - Orange Co. Southern Branch Library
- » **Carrboro Economic Sustainability Plan (2017)**
- » **Carrboro Downtown Parking Plan (2017)**
- » **Carrboro Community Climate Action Plan (2017)**
- » **Carrboro Bicycle Program Review (2016)**
- » **Carrboro Bike Parking Ordinance (2015)**
- » **Carrboro Affordable Housing Goals and Strategies (2014)**
- » **Carrboro Safe Routes to School Plan (2012)**
- » **Morgan Creek Greenway Study (2010)**
- » **Bolin Creek Greenway Concept Plan (2009)**
- » **Carrboro Bicycle Plan (2009)**
- » **Residential Traffic Management Plan (2006)**
- » **Downtown Traffic Circulation Study (2005)**
- » **Carrboro Vision 2020 Plan (2000)**

PLAN GOALS

These goals build upon the vision statement and help to inform this Plan's analysis and recommendations. As shown below, there is no other single type of investment in Carrboro that could support this many issues related to quality of life.



INCREASE BICYCLE RIDERSHIP

Increase bicycle ridership to further encourage people to bike.



ENHANCE CONNECTIVITY

Create a network of bike routes that allow Carrboro residents and visitors to access activity centers and surrounding communities by bike.



CREATE A POSITIVE ECONOMIC IMPACT

Recognize the economic benefits of a bicycle-friendly community, and capitalize on the return on investment for bike infrastructure.



PROTECT THE ENVIRONMENT

Reduce the level of transportation-related greenhouse gas emissions in Carrboro by increasing the share of people who commute to work by bike.



ADVANCE EQUITY

Create a network of bike routes that allow ALL Carrboro residents to safely and easily access parks and activity centers by biking and strive to make Carrboro a place where cycling rates are not predictable by race.



ENHANCE HEALTH

Provide transportation options and recreational opportunities that promote an active lifestyle.



INCREASE SAFETY

Address the safety and level of comfort of the transportation system for people who bicycle; Reduce the number of bicycle crashes, injuries, and fatalities over time.



INCREASE LIVABILITY

Implement complete street solutions which will incorporate all modes, including bicycles, to support healthy, safe, and bikeable neighborhoods.

BENEFITS OF INCREASED BICYCLING

By increasing the rates of bicycling, we can help to improve people's health and fitness, increase the livability of our community, decrease automobile dependency, improve environmental conditions by reducing greenhouse gas emissions, and develop a greater sense of community.

The following section outlines the many benefits of bicycling and this Plans main themes: connectivity, economic benefit, environment, equity, health, and safety.



Photo credit: BikeCarrboro



Photo credit: Carrboro Recreation and Parks Department



Connectivity

Almost all of Carrboro falls within a 2-mile radius of its town center (roughly at Town Hall), meaning that many of the Town’s centers of employment, recreation, education, shopping, and culture are within a reasonable bicycling distance of one another.

Similarly, nearby destinations such as UNC Chapel Hill, the Town of Chapel Hill, and rural Orange County are all within a similar bicycling distance. The challenge becomes making safe, comfortable, and convenient bikeways and greenways across these distances, which is a goal of this Plan.

60% of all driving trips **made in the U.S.** are shorter than five miles (see chart below), indicating an opportunity to shift those trips to bike trips with a connected, low-stress network.

26% of young people **nationally** (aged 16 to 34) don’t have a driver’s license and rely on other means of transportation according to the National Household Travel Survey.

United States Daily Trip Distances

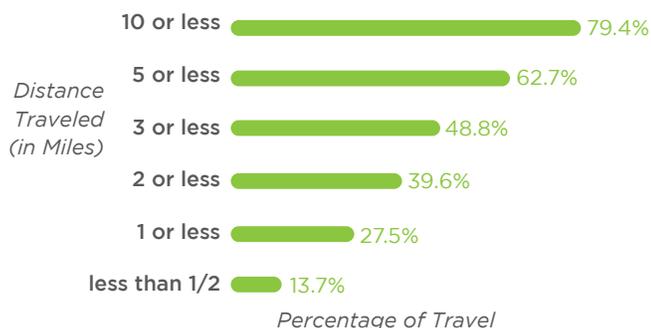
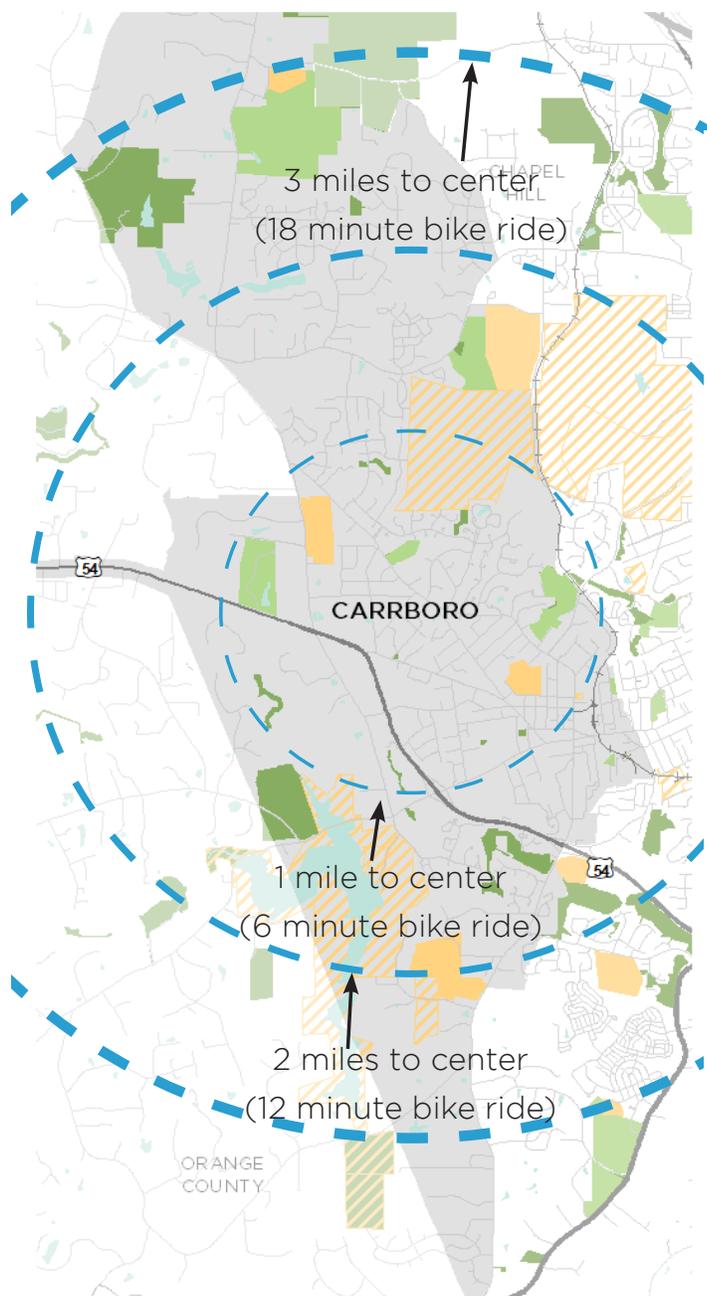


Chart from the Bicycle and Pedestrian Information Center, www.pedbikeinfo.org

MAP 1: EXAMPLE TRIP DISTANCES & BICYCLE RIDE TIMES IN THE CARRBORO AREA





Economic Impact

There are many economic benefits of biking in the form of tourism, development and maintenance of facilities, increased property values, commercial activity, and infrastructure savings.

Below are some key economic trends related to bicycling and greenway trails:

- » In North Carolina, every \$1.00 of initial trail construction supports \$1.72 annually from sales revenue, sales tax revenue, and benefits related to health and transportation.*
- » A study of the behavioral effects of completing a critical link in the American Tobacco Trail (ATT) found that with the connection installed over I-40, use of the ATT increased by 133%, with an additional \$3.7 million spent annually on goods and services for those using the trail.*
- » Nationally, cities report higher retail sales along bicycling corridors. In San Francisco, 66% of merchants reported increased sales after bike lanes were installed on Valencia Street.**
- » The raw cost for the installation and maintenance of bicycle facilities is negligible compared to those same costs for cars and highways, although bicycle projects do require local match with NCDOT.
- » Bicycling, when it can be used in a community as a viable form of transportation, can at least partially replace car ownership and maintenance, keeping household disposable income available for other important wants and needs.

*Institute of Transportation Research and Education, 2017.

**People for Bikes

“Trails can be associated with higher property value, especially when a trail is designed to provide neighborhood access and maintain residents’ privacy. Trails, like good schools or low crime, create an amenity that commands a higher price for nearby homes. Trails are valued by those who live nearby as places to recreate, convenient opportunities for physical activity and improving health, and safe corridors for walking or cycling to work or school.”

- Headwaters Economics
(www.headwaterseconomics.org/trail)



*Carrboro’s identity as a bicycle-friendly town influences the businesses in the area.
Photo credit: Open Eye Cafe/Carrboro Coffee Roasters*



Environment

Bicycle facilities, greenways, and other trails can help increase rates of bicycling (and walking) to reduce rates of driving and thus reduce greenhouse gas emissions; a goal of the Town's climate action plan. Off-road facilities, like greenways, eliminate most opportunity for conflicts with motorized vehicles, which can help encourage newer people bicycling to leave their cars at home. With careful design, greenways can be incorporated into natural areas and act as natural buffer zones that protect streams, rivers, and lakes by filtering pollutants, minimizing runoff from impervious surfaces and limiting soil erosion. Greenways and trails also help guide movement of people walking and bicycling through natural areas and preserve sensitive areas.

Simultaneously, these can provide the community with safe and appealing opportunities to access the outdoors can spur environmental stewardship and the appreciation of the natural beauty in Carrboro and the surrounding region. Increased time spent outdoors in nature has been shown to increase wellbeing and provide health benefits, both physically and mentally.

Based on data from the EPA, doubling the share of people who commute by bike, from 5% to 10% (and assuming that all this increase came from people who drive alone) Carrboro can reduce emissions from the Transportation sector by 4.2% (or a 1.3% reduction in total emissions).

ENVIRONMENTAL HEALTH BENEFITS OF WALKABLE AND BIKEABLE COMMUNITIES

CURRENT U.S. ENVIRONMENT & HEALTH STATISTICS



ASTHMA IS THE LEADING CHRONIC DISEASE IN CHILDREN

and the number one reason for missed school days

(CDC)



Exposure to **TRAFFIC EMISSIONS**

is linked to exacerbation of **ASTHMA, REDUCED LUNG FUNCTION, ADVERSE BIRTH OUTCOMES** and childhood **CANCERS**

(CDC)



40% OF ALL TRIPS in the U.S. are **TWO MILES OR LESS**, and two-thirds of them happen in cars

(NHTS, 2009)

ENVIRONMENT & HEALTH BENEFITS



A minimum of **20 MINUTES OF PHYSICAL ACTIVITY, 3X WEEK, STRENGTHENS THE LUNGS**, including those of individuals living with asthma

(US National Lib of Medicine)



IF **8% MORE CHILDREN LIVING WITHIN 2 MILES OF A SCHOOL* WERE TO WALK OR BIKE TO SCHOOL**, the air pollution reduced from not taking a car would be **EQUAL TO REMOVING 60,000 CARS FROM THE ROAD** for one year

(Pedrosa, 2008, SRTS)



BIKING 2 MILES, rather than driving, **AVOIDS EMITTING 2 lbs OF POLLUTANTS**, which would take 1.5 months for one tree to sequester.

(EPA, 2000 and NC State, 2001)

*for all schools across the United States



Equity

According to the American Community Survey, about 8% of Carrboro households do not have access to an automobile (2017). Of the households without an automobile, 43% are of minority race/ethnicity (2015). Households without access to vehicles are not well-served by auto-oriented transportation solutions and require walking, bicycling, and transit infrastructure.

Similarly, children under 16, seniors who no longer drive, and people with disabilities who cannot drive deserve safe ways to access community destinations without depending on an automobile.

Automobile dependent communities in the United States spend over \$8,500 of their household income on transportation compared to households living in communities with more accessible land use and more multi modal systems. In those communities, it was found that approximately \$5,500 of household income went to transportation costs according to a 2000 study.¹

¹ Barbara McCann (2000), Driven to Spend; The Impact of Sprawl on Household Transportation Expenses, STPP (www.transact.org)



Photo credit: Scott Scala



Photo credit: BikeCarrboro



Health

A growing number of studies show that the design of our communities—including neighborhoods, towns, transportation systems, parks, trails and other public recreational facilities—affects people's ability to reach the recommended daily 30 minutes of moderately intense physical activity (60 minutes for youth).

CURRENT U.S. HEALTH STATISTICS



80% of Americans **DO NOT ACHIEVE** the recommended 150 minutes per week of **MODERATE EXERCISE**

(CDC)



2/3 of Americans **ARE OVERWEIGHT OR OBESE**

(CDC)



CARDIOVASCULAR DISEASES are the **#1 CAUSE OF DEATH** in the United States

(American Heart Association)



61% of American adults 65 years or older **HAVE AT LEAST ONE ACTIVITY-BASED LIMITATION**

(CDC)



1 in 5 Americans report their **STRESS LEVELS AS EXTREME**

(American Psychological Association)



On average, **CHILDREN** spend more than **7.5** hours per day **IN FRONT OF A SCREEN**

(Kaiser Family Foundation)

HEALTH BENEFITS



Residents of **WALKABLE AND BIKEABLE COMMUNITIES** are as **LIKELY TO MEET PHYSICAL ACTIVITY GUIDELINES** compared to those who do not live in walkable neighborhoods

(Frank, 2005)



For every **0.6 MILE WALKED** there is a **5% REDUCTION IN THE LIKELIHOOD OF OBESITY**

(Frank, 2004)



20 MINUTES WALKING OR BIKING each day is associated with

21% LOWER RISK OF HEART FAILURE FOR MEN and **29% LOWER RISK FOR WOMEN**

(Rahman, 2014 and 2015)



PHYSICAL ACTIVITY HELPS PREVENT OR DELAY ARTHRITIS, OSTEOPOROSIS AND DIABETES, while helping maintain balance, mental cognition, and independence

(NIH-National Institute on Aging)



BIKE COMMUTERS REPORT LOWER STRESS LEVELS compared to auto commuters

(New Economics Foundation)



Youth who engage in **60 MINUTES** of moderate to vigorous **PHYSICAL ACTIVITY** daily have **BETTER COGNITIVE PROCESSING, ATTENTION SPANS, ACADEMIC PERFORMANCE AND SELF-ESTEEM**

(Institute of Medicine)



Safety

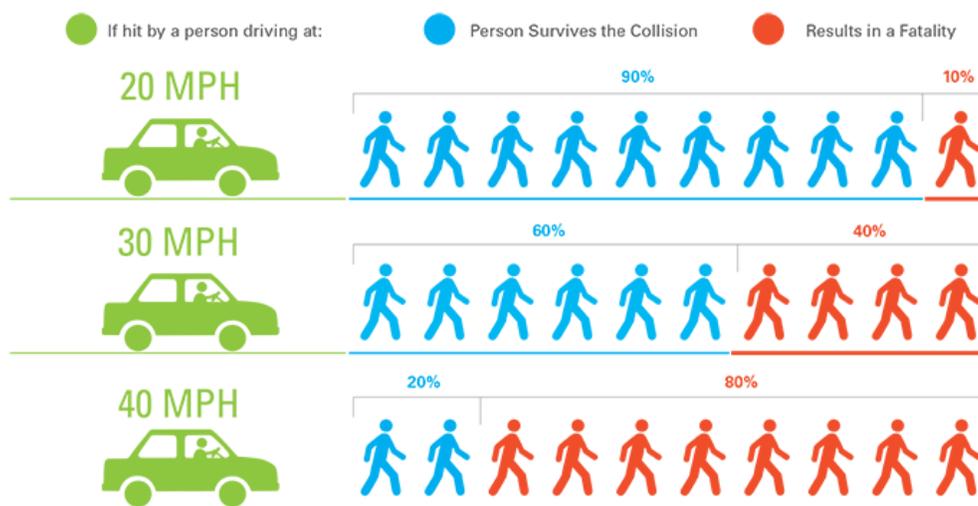
There are many factors that influence the safety, both perceived and actual, that people who bicycle experience.

The following is an example of different safety strategies:

- » Before and after studies of bicycle lane installations show a crash reduction of 35 percent (CMF ID: 1719) for vehicle/bicycle collisions after bike lane installation.
- » Simply getting more people on bicycles is in itself a safety measure. Shifts from driving to active modes tend to reduce total per capita crash rates in an area, thus providing a safety benefit.
- » Straightforward reduction of speed limits can have a profound effect on safety, and comfort for people who bicycle or walk (as seen in the graphic below).

From 2012 through 2016, Carrboro had an average of 4 reported bike crashes per year. During those 5 years, the lowest number of reported bike crashes was in 2016 with 1 crash and the highest number of reported bike crashes was in 2015 with 7 crashes.

Statewide, North Carolina had an average of 935 bike crashes per year during those same 5 years. (North Carolina Pedestrian and Bicycle Crash Data Tool, pedbikeinfo.org)



Source: SFMTA Vision Zero, Institute of Transportation Engineers, US Dept. of Transportation
<https://www.ite.org/technical-resources/topics/speed-management-for-safety/speed-as-a-safety-problem/>



2 BIKING IN CARRBORO TODAY



Photo Credit: The Recyclery NC

PROGRESS SINCE THE 2009 BIKE PLAN

The Town of Carrboro's 2009 Bike Plan included a list of implementation action steps, the results of which are listed below.

Completed Action Steps

- » Expanded bike parking requirements in Land Use Ordinance
- » Added multiple on-road bikeways, completing several priority projects
- » Formation of the Carrboro Bicycle Coalition
- » Worked to ensure people who bicycle are incorporated into future transit service planning and design
- » Continued "Basics of Bicycling" course
- » Promoted Bike Month and created additional activities
- » Continued school crossing guard program and expansion evaluation
- » Used Census Data to determine new mode share
- » Create a maintenance request system for bicycle-specific facilities

On-Track Action Steps

- » Hosted training sessions for Town engineers and planners
- » Partnered with DCHC MPO and other organizations for training programs
- » Ensured bike facilities are part of new bridge design
- » Improved signage and mapping
- » Launched traffic calming public education program targeting all roadway users
- » Enhanced enforcement of unsafe behavior
- » Developed educational bike map
- » Applied for additional Safe Routes to School funding
- » Developed bicycle rodeos, summer bike camps, and other bike events
- » Used greenways and bike facilities for events
- » Supported the ReCYCLERY program
- » Enforced illegal actions by people who drive related to bike safety
- » Created bike patrol positions
- » Regularly reviewed and updated bicycle-related policies
- » Completed updated Plan with 5-10 years
- » Reach out to Spanish-speaking population

Incomplete Action Steps

- » Develop brochures, articles, newsletters, and billboards
- » Initiate training sessions for local-law enforcement
- » Increase number of League Cycling Instructors
- » Host own bike riding tours/races
- » Research crashes and initiate crash reduction programs
- » Measure new facilities as constructed and report on facility quality
- » Create bicycle ambassador program
- » Provided incentives for employees who commute by bike

MAP 2: BIKEWAY NETWORK GROWTH



2019 NETWORK MILEAGE BY FACILITY TYPE

Shared Use Path



5 miles

Bike Lanes



16 miles

Sharrow



2 miles

Wide Shoulder



4 miles



CARRBORO BIKEWAYS TODAY

Smith Level Road - 2009



Smith Level Road - 2009 Vision



Smith Level Road - Today



Estes Drive



Wilson Park Trail



Libba Cotton Bikeway



Weaver Street



N Greensboro Street



Map 3: Existing Network

EXISTING BIKE NETWORK

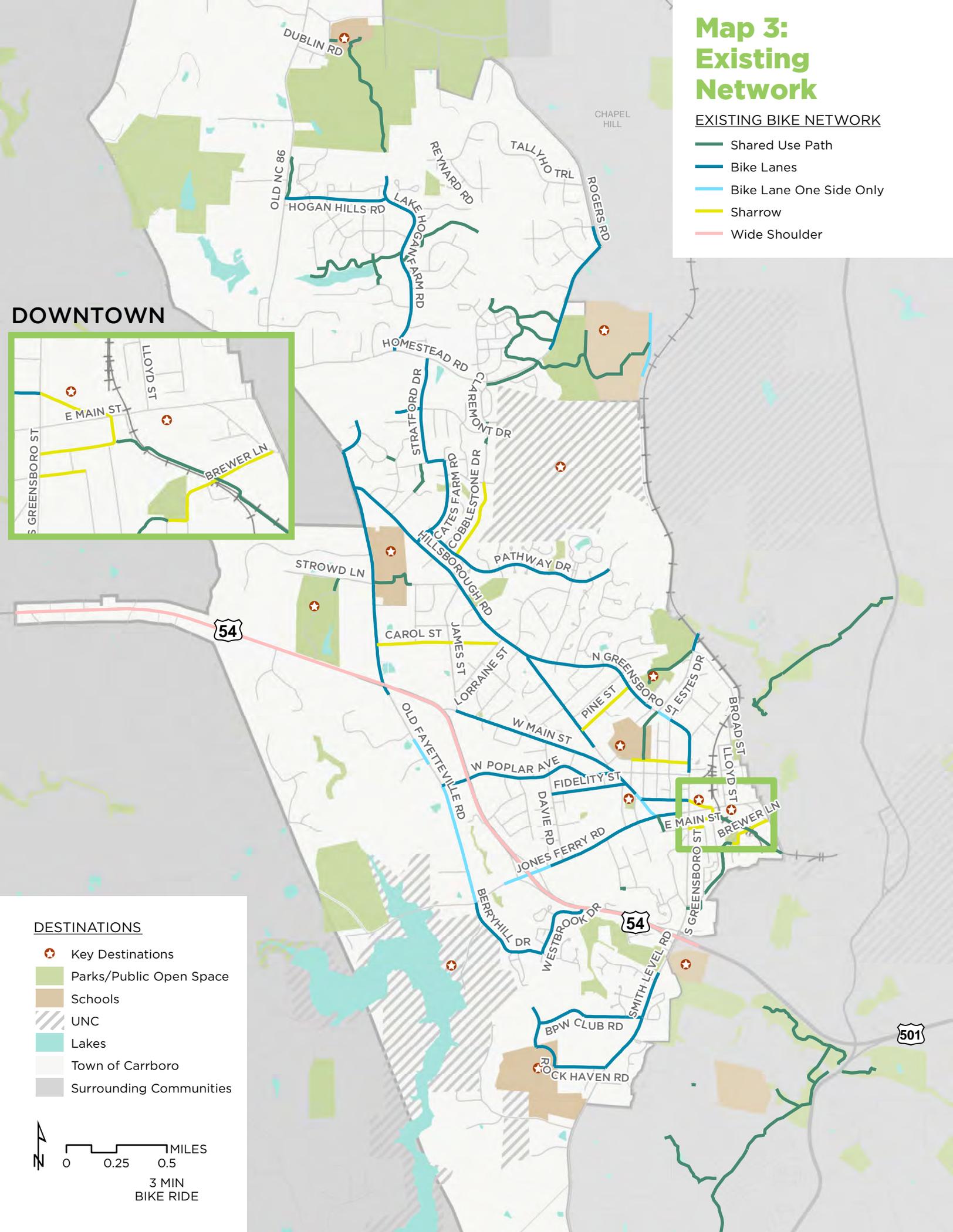
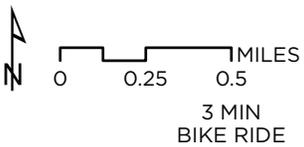
- Shared Use Path
- Bike Lanes
- Bike Lane One Side Only
- Sharrow
- Wide Shoulder

DOWNTOWN



DESTINATIONS

- ★ Key Destinations
- Parks/Public Open Space
- Schools
- ▨ UNC
- Lakes
- Town of Carrboro
- Surrounding Communities



Map 4: Existing and In Development Network

EXISTING BIKE NETWORK

- Shared Use Path
- Bike Lanes
- Bike Lane One Side Only
- Sharrow
- Wide Shoulder

IN DEVELOPMENT NETWORK

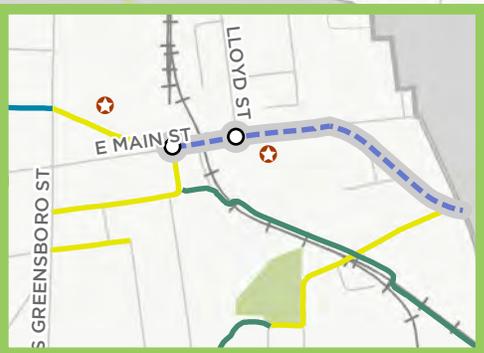
- Separated Bike Lanes
- - - Bike Lanes
- - - Neighborway
- - - Shared Use Path
- Crossing Improvement

DEVELOPMENT STATUS

- In Development

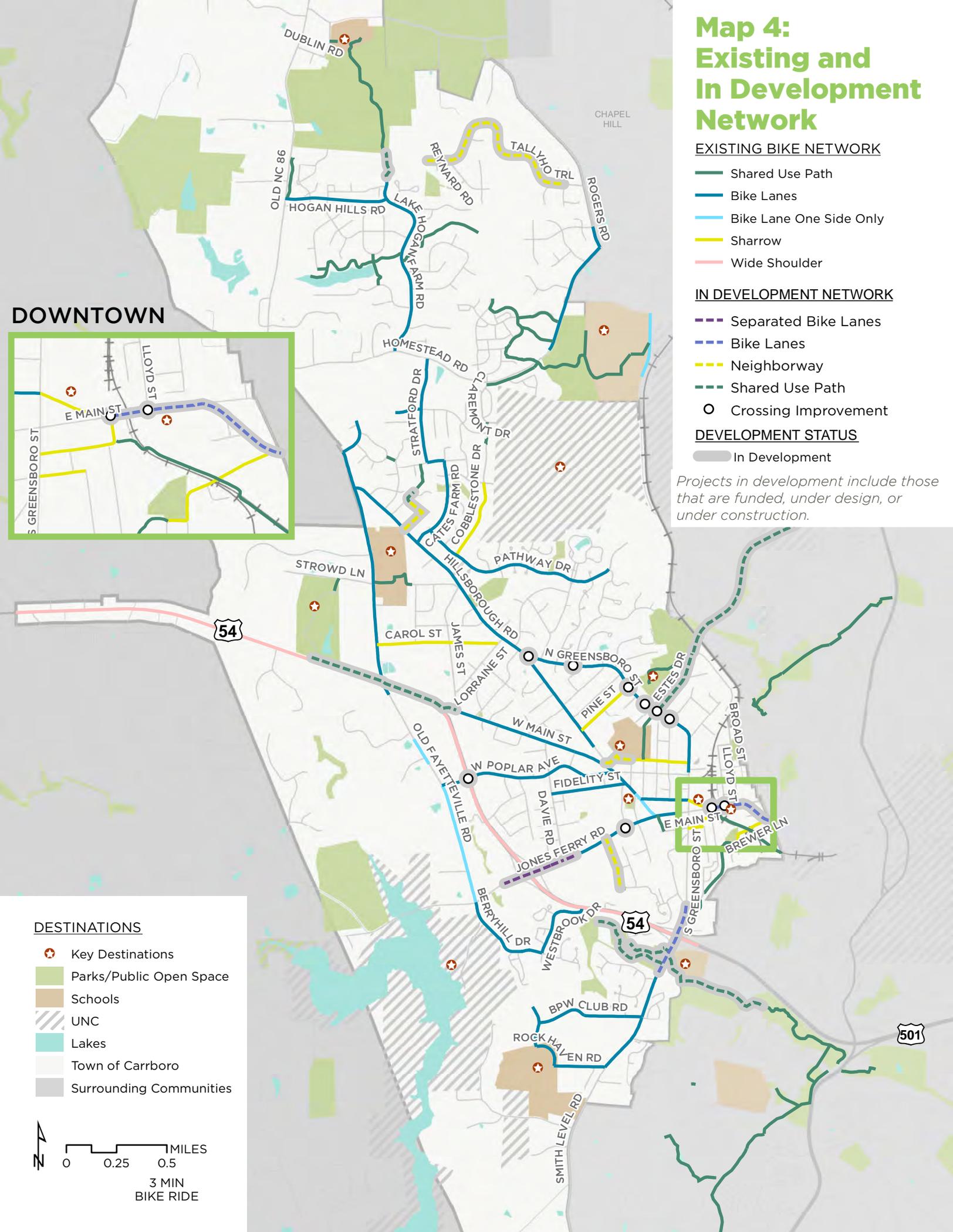
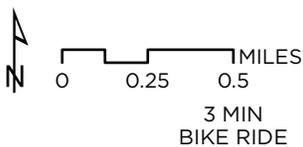
Projects in development include those that are funded, under design, or under construction.

DOWNTOWN



DESTINATIONS

- ★ Key Destinations
- Parks/Public Open Space
- Schools
- UNC
- Lakes
- Town of Carrboro
- Surrounding Communities



EQUITY ANALYSIS

Without access to transportation, people in Carrboro will have a harder time getting to work, buying healthy food, seeing a doctor, going to school, or connecting with others.

The equity analysis considers populations that may experience poor financial, health, and housing circumstances, and/or physical or communication limitations that prevent fulfilling basic needs without safe, convenient transportation options.

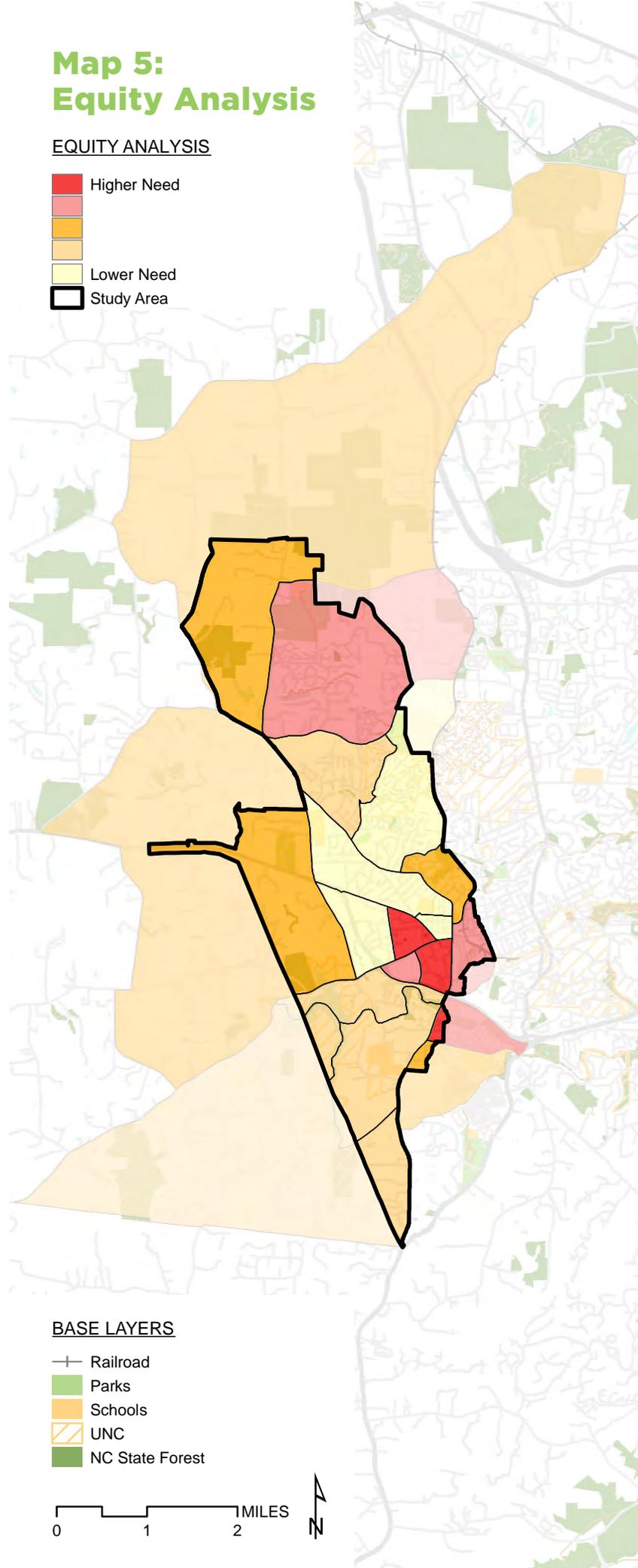
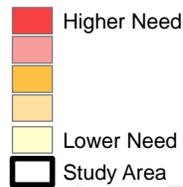
The map to the right reflects the average of six equity indicators with higher concentrations of:

- » Households living below or near the poverty line
- » Households without access to a vehicle
- » Non-White populations
- » People with limited English proficiency
- » People without a high school diploma
- » Children and senior citizens

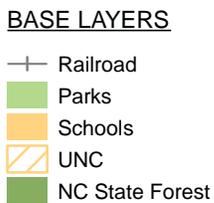
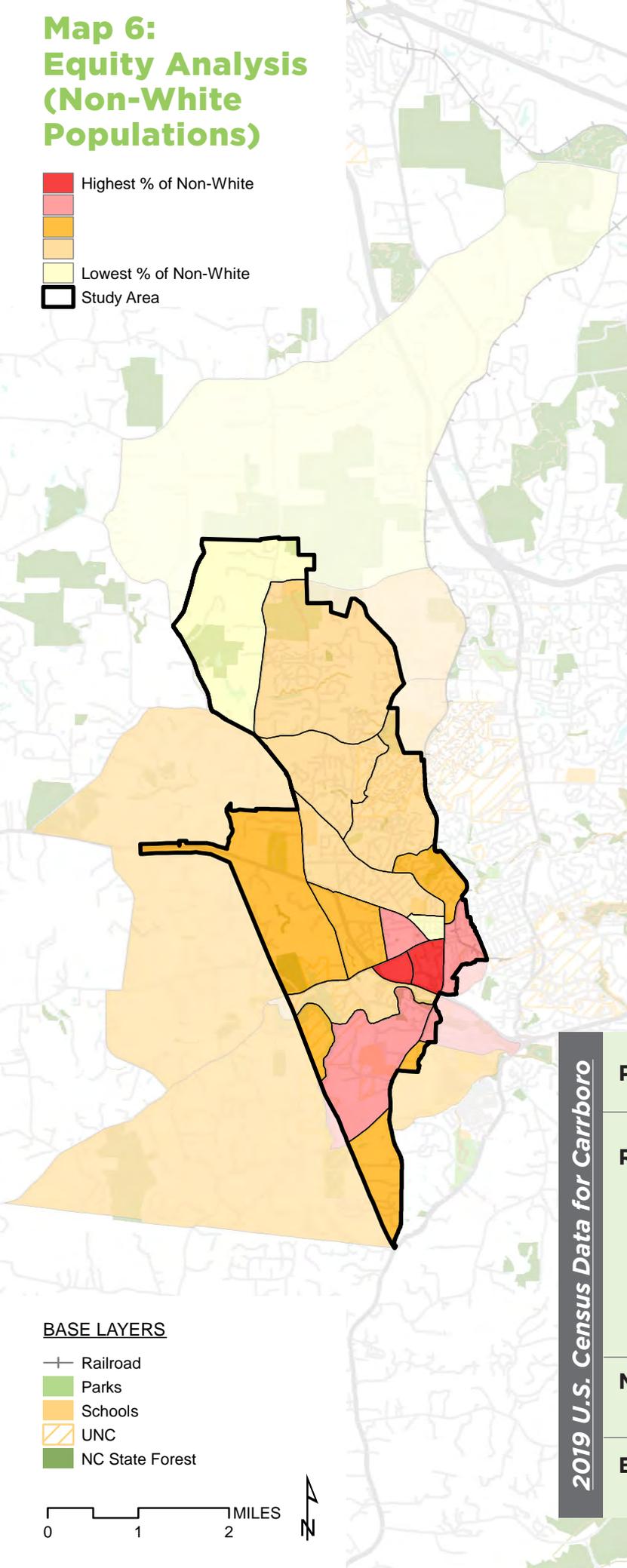
These groups are more likely to be dependent on multimodal transportation such as bicycling, walking, or taking public transit thus resulting in a greater need for active transportation resources. Integrating this equity analysis into the development of the bicycle network and the prioritization of the network will further Carrboro's efforts of being a welcoming and inclusive environment that enhances the overall social, physical and mental well-being of the community.

Map 5: Equity Analysis

EQUITY ANALYSIS



Map 6: Equity Analysis (Non-White Populations)

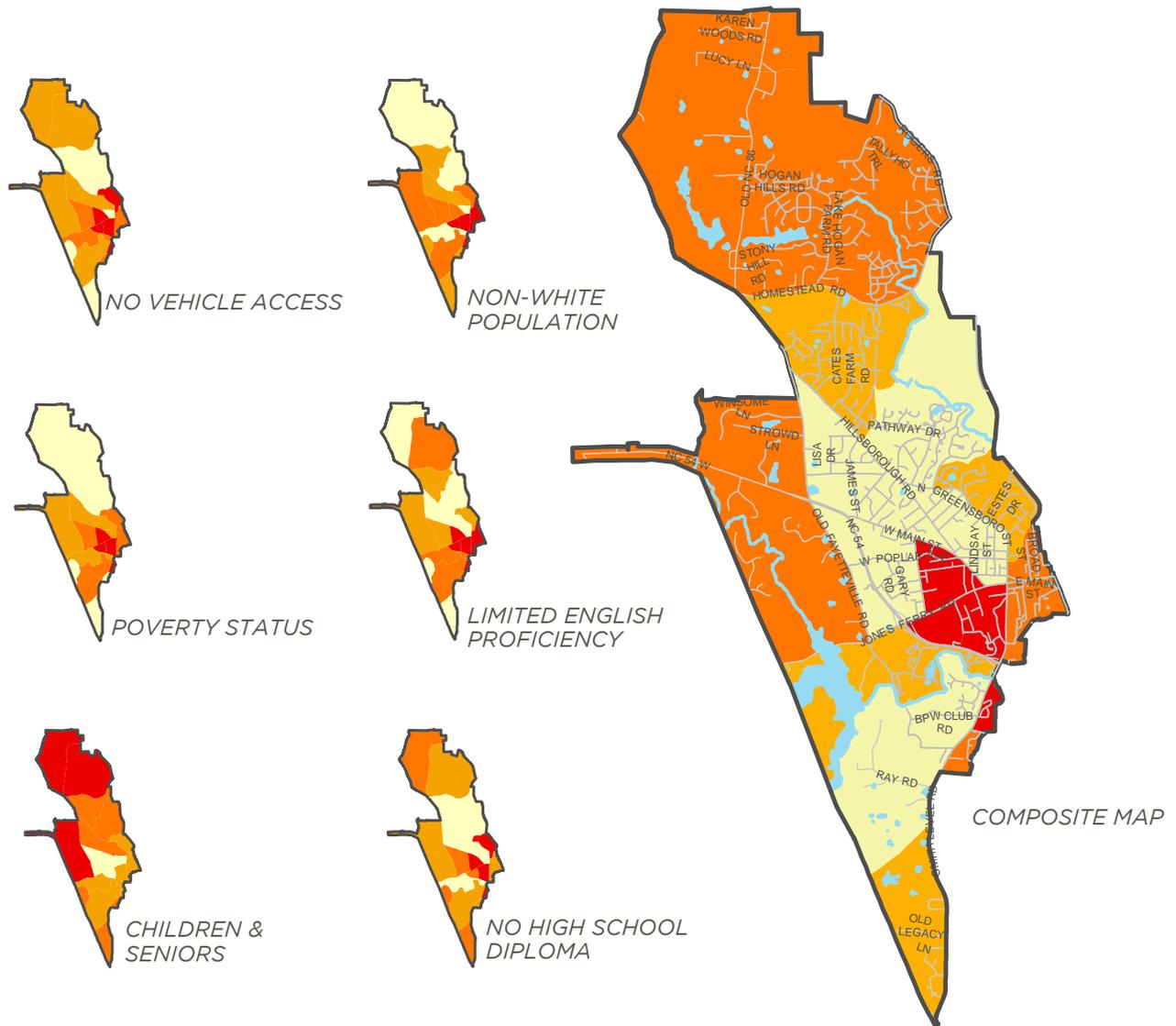


The Town of Carrboro is also a committed member of the Government Alliance on Race and Equity (GARE), a national network of government working to achieve racial equity and advance opportunities for all. GARE members make a commitment of achieving racial equity, focus on the power and influence of their own institution, and work in partnership with others. This commitment seeks to put racial equity at the forefront of all policies and decision-making including those involving bicycle infrastructure and associated programs.

A key wrinkle in the assessment of demographic data within Carrboro is that Census Block Groups which over low density areas tend to be quite large. Because of this, they do not fall entirely within Carrboro's Town Limits and assuming that the data for the block group is perfectly analogous to the area within Carrboro may or may not be true.

2019 U.S. Census Data for Carrboro	Population	21,190
	Race	White (70%); Black or African-American (11.8%); American Indian and Alaska Native (0.9%); Asian (10.6%); Two or More Races (4.3%); Hispanic or Latino (8.1%)
	Median Age	32.3
	Bicycle Mode Share	4.8% (2018 ACS)

COMPOSITE MAP INPUTS



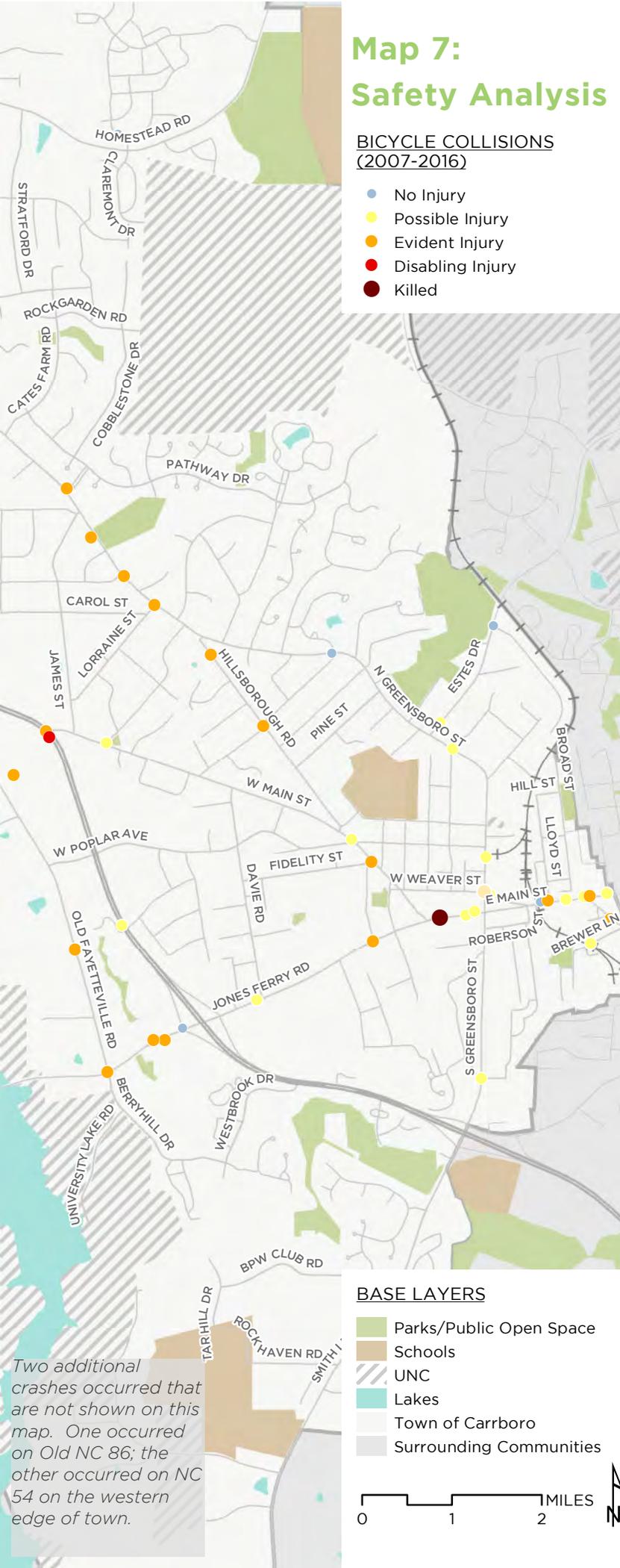
The figure above displays all six component maps (Poverty Rate, Vehicle Access, Non-white Populations, Limited English Proficiency, People without a HS Diploma, and Young and Old People). These individual maps were provided in the interest of transparency, as it can be somewhat challenging to understand the inputs for the composite map, shown on p22.

The key takeaways from the individual maps are that there are block groups with a high concentration of 5 out of 6 indicators near the center of Carrboro. The exception is Young and Old People, which tend to have higher concentrations in the north and west areas of the Town. This is reflected in the Composite map as 5 of the 6 block groups in the top two need tiers are within a mile of the center of Town. More details on the Equity Analysis can be found in the appendix.

Map 7: Safety Analysis

BICYCLE COLLISIONS (2007-2016)

- No Injury
- Possible Injury
- Evident Injury
- Disabling Injury
- Killed



Two additional crashes occurred that are not shown on this map. One occurred on Old NC 86; the other occurred on NC 54 on the western edge of town.

SAFETY SUMMARY

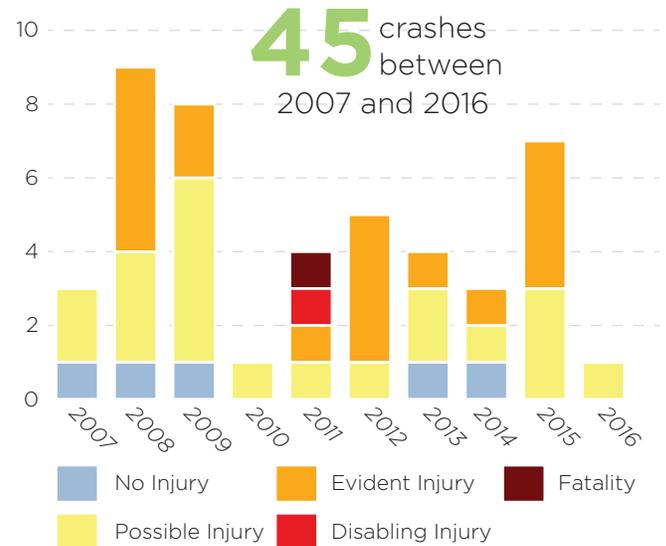
Crash data for the 10-year period from 2007 through 2016 indicates that all of the recorded accidents involving a person on a bike occurring within the downtown commercial district and surrounding residential neighborhoods.

The following corridors have the highest frequency of bicycle related crashes in Carrboro:

- » Jones Ferry Road
- » Hillsborough Road
- » West Main Street
- » W Rosemary Street
- » N Greensboro Street
- » Estes Drive

48% of all bicycle crashes occurred in or immediately adjacent to areas of Town with the highest need (top two of the five tiers as expressed in the equity analysis on p22). This represents only 25% of the land area of the Town.

REPORTED BICYCLE CRASHES BY YEAR



LEVELS OF TRAFFIC STRESS (LTS)

The level of traffic stress for people who bicycle is determined based on factors including posted speed limit, street width, and the presence and character of bicycle lanes. The pictures to the right generalize the scale of the four levels of traffic stress.

Generally, lower stress roadways can be found in the downtown core and in residential areas.

The greater number of lanes and higher posted speeds impact the ability of bicycle lanes to decrease stress. Where possible, separation should be considered, especially along high-stress corridors such as:

- » Old Fayetteville Road
- » Main Street
- » Hillsborough Road
- » N Greensboro St
- » Jones Ferry Road
- » Smith Level Road
- » Homestead Road

LTS 1: Strong separation from all except low speed, low volume traffic. Simple crossings. Suitable for children.

LTS 2: Except in low speed / low volume traffic situations, people on bikes have their own place to ride that keeps them from having to interact with traffic except at formal crossings. Physical separation from higher speed and multilane traffic. Crossings that are easy for an adult to negotiate. Tolerable for the “Interested but concerned” group (see page 33)

LTS 3: Involves interaction with moderate speed or multilane traffic, or close proximity to higher speed traffic. Tolerable for the “enthused and confident”

LTS 4: Involves interaction with higher speed traffic or close proximity to high speed traffic. Only for the “strong and fearless”

LTS 1



Comfortable for all ages and abilities

LTS 2



Comfortable for most adults

LTS 3



Comfortable for people who bicycle confidently

LTS 4



Uncomfortable for most

LTS ratings and table directly from the 2012 Mineta Transportation Institute Report 11-19: Low-Stress Bicycling and Network Connectivity

Map 8: Level of Traffic Stress

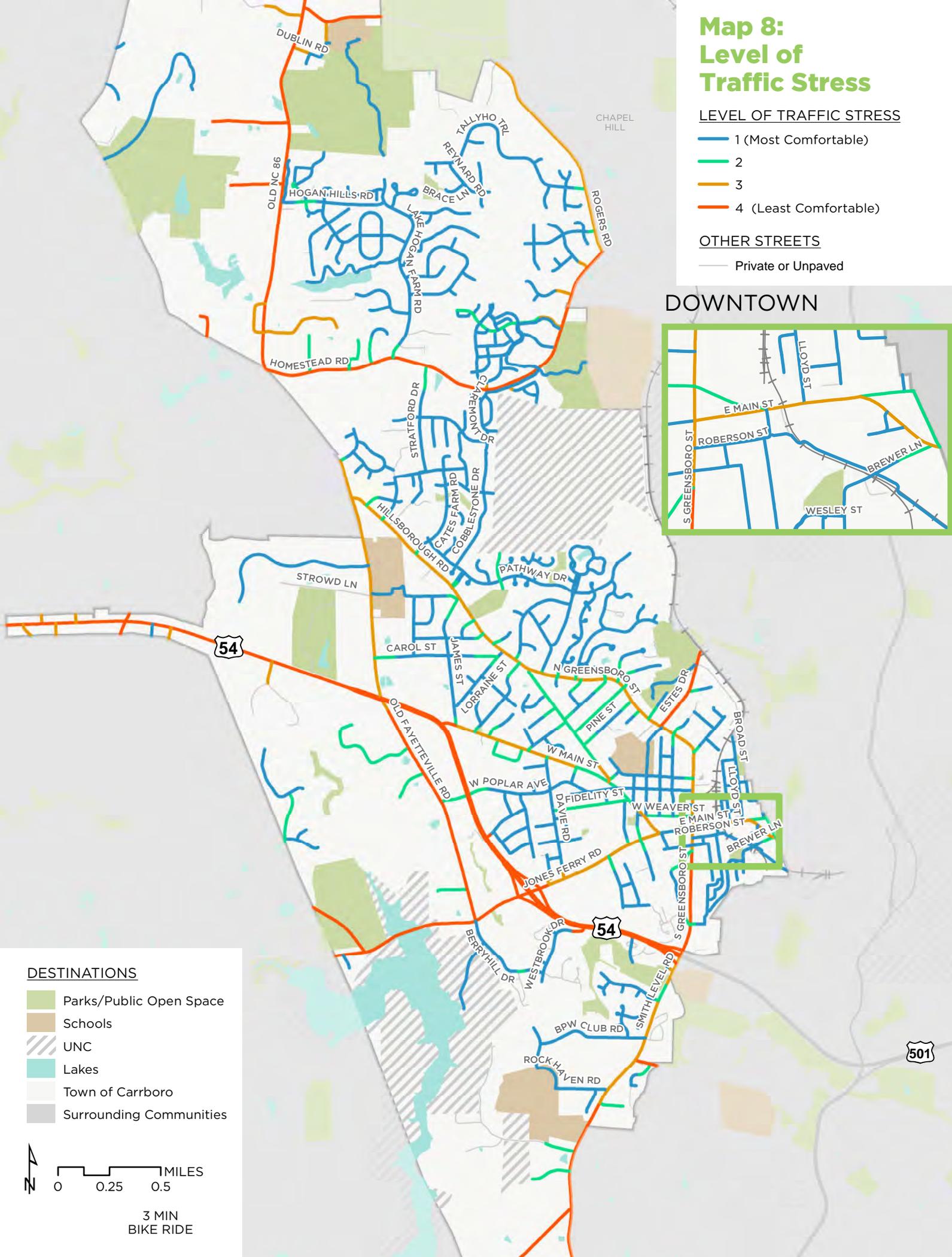
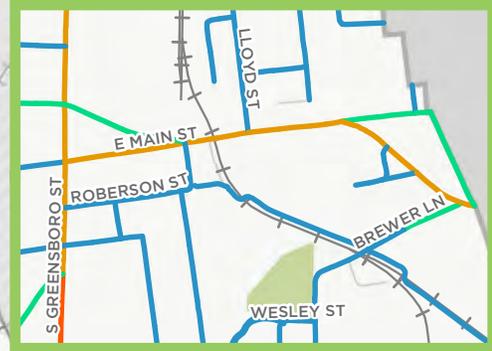
LEVEL OF TRAFFIC STRESS

- 1 (Most Comfortable)
- 2
- 3
- 4 (Least Comfortable)

OTHER STREETS

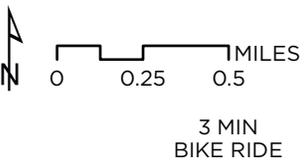
- Private or Unpaved

DOWNTOWN



DESTINATIONS

- Parks/Public Open Space
- Schools
- UNC
- Lakes
- Town of Carrboro
- Surrounding Communities



KEY OPPORTUNITIES & CONSTRAINTS

A variety of physical opportunities and constraints either improve conditions for people on bikes or present barriers, respectively.

» **Overall Transportation Network:**

The majority of streets have low to moderate traffic, with notable exceptions, such as NC 54 and Main Street. The busiest section of roadway is NC 54, from Jones Ferry Road to S. Greensboro Street, with over 34,000 vehicles per day.

» **Physical Barriers:** A major barrier to bicycle travel is NC 54, as a high-traffic volume 4-lane divided state highway, with limited access to people bicycling and walking. Additionally, Jones Ferry Road and Main Street intersect in the heart of downtown Carrboro and feed traffic to E Main Street and onto W Franklin Street, the main corridor in Chapel Hill. The railroad that runs north/south through the eastern side of Town is also challenging to bicycle connectivity.

» **Topography:** The presence of steep or challenging terrain may discourage some bicycle riders. Roads such as Estes Drive, Spring Valley Road, Cates Farm Road, Cobblestone Drive, S Greensboro Street, and Barrington Hill Road have challenging topography.

» **Regional Connectivity:** Orange County offers a variety of biking experiences including several bike routes suitable for day rides. Primary routes near Carrboro include Old Greensboro Road and Dairyland Road. The opportunity exists for Carrboro to develop a bikeway connection to both the Town of Chapel Hill and the Town of Hillsborough. NC 2 (Mountains to Sea State Bike Route) connects through downtown Carrboro as well.



NC 54 through Carrboro



Steep hills on Cates Farm Rd



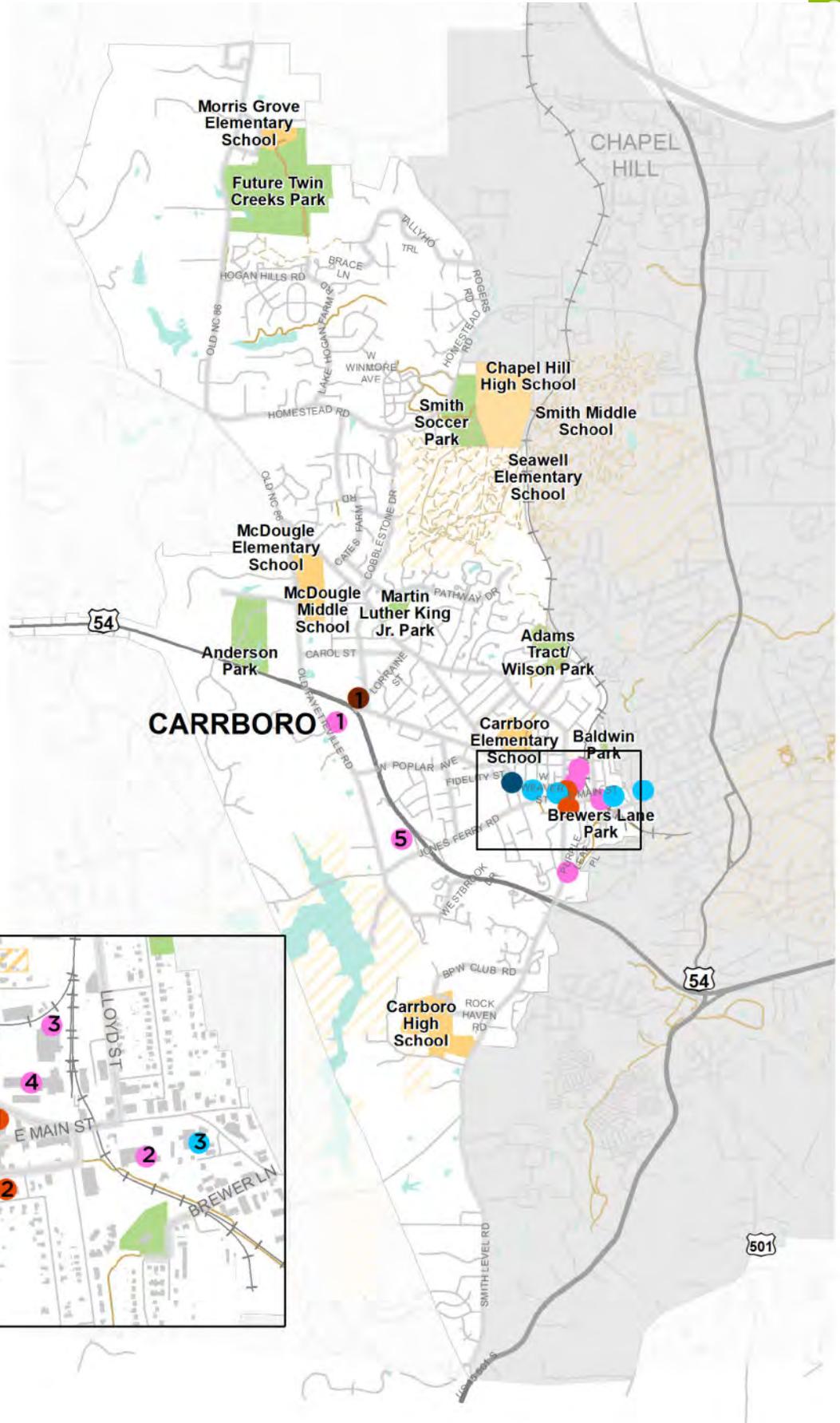
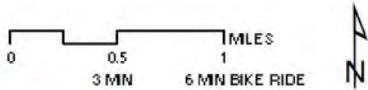
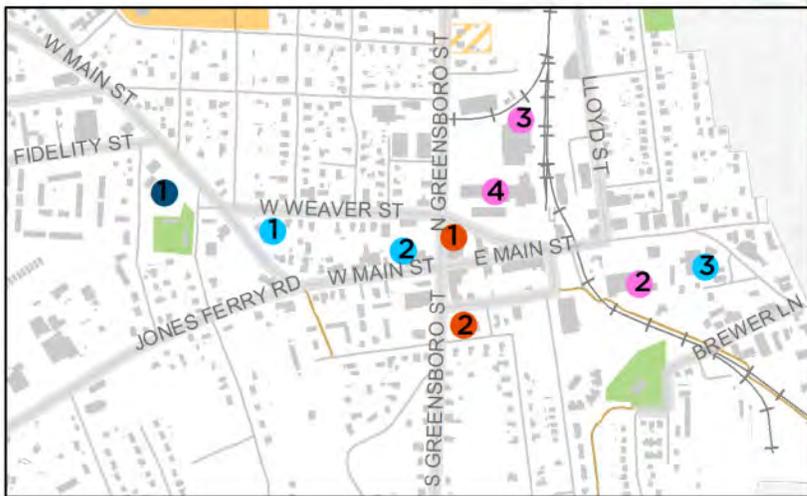
Connections to County and State Bike Routes

Map 9: Destinations

DESTINATIONS

- **Bike Shop**
 - 1 - PARcycles, Inc
 - 2 - The Clean Machine
 - 3 - Back Alley Bikes
- **Shopping Center**
 - 1 - Carrboro Plaza
 - 2 - 300 E Main
 - 3 - Harris Teeter
 - 4 - Weaver Street Market/ Carr Mill Mall
 - 5 - Food Lion/ Willow Creek Shopping Center
- **Library**
 - 1 - OC Public Library/ Century Center
 - 2 - OC Southern Branch Library (Future)
- **Points of Interest**
 - 1 - Carrboro Town Hall
- **Post Office**
 - 1 - Carrboro Post Office

- Lakes
- Parks
- Schools
- UNC
- Railroad
- Streets



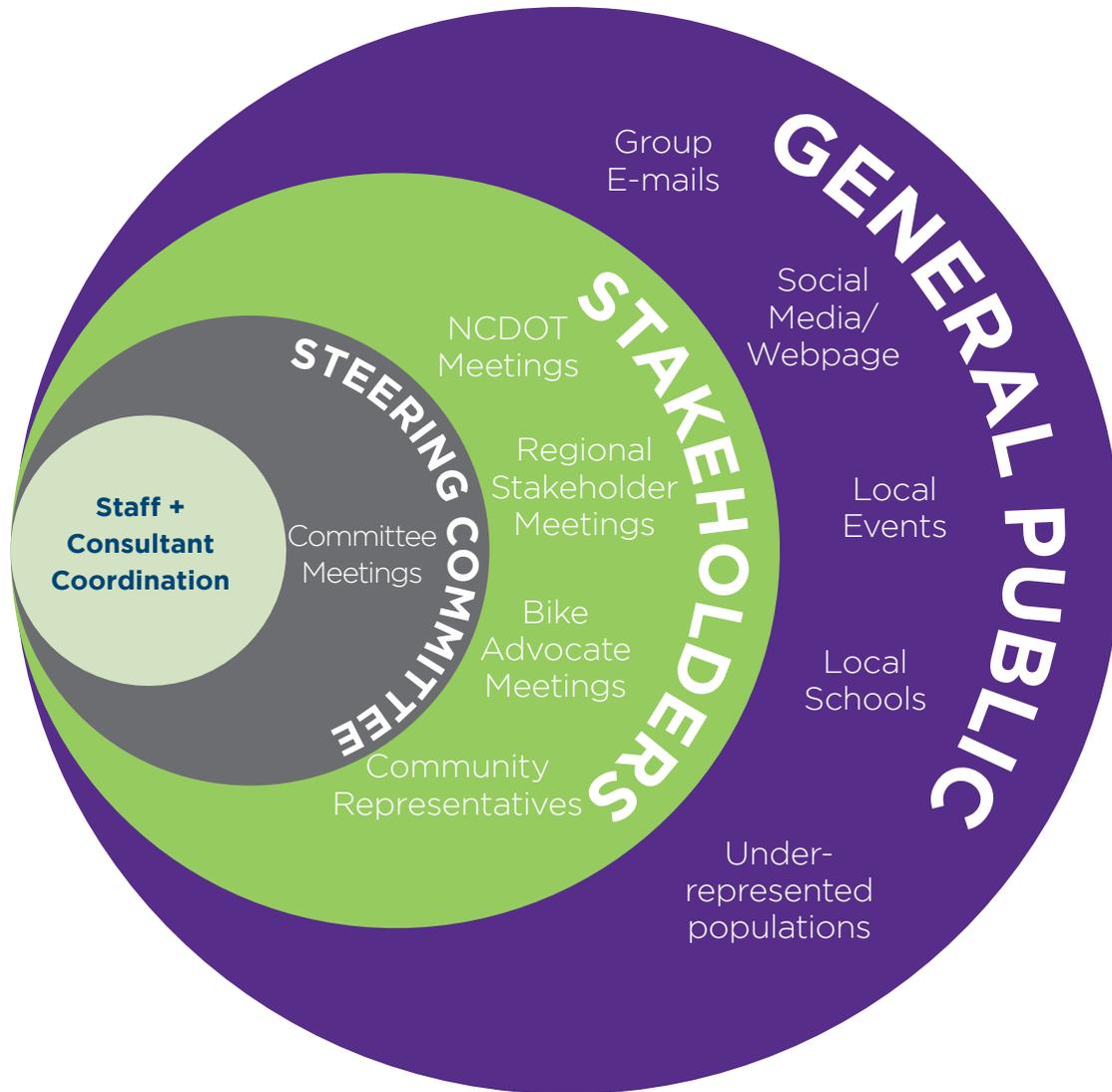


3 WHAT WE HEARD





PUBLIC PROCESS OVERVIEW



- 5 STEERING COMMITTEE MEETINGS**
- 4 OUTREACH SESSIONS AT LOCAL EVENTS**
- 7 STAKEHOLDER INTERVIEWS**
- 30 STEERING COMMITTEE MEMBERS**
- 439 PUBLIC COMMENT FORMS**

STAKEHOLDER INPUT

Local residents, bicycle advocates, community leaders, and government staff were selected to help guide the public input process. The thirty-person committee met on four separate occasions to provide input and direction on the elements of this Plan including recommendations for priority projects.

Stakeholder interviews (listed to the right) were conducted to gain specific insights into Carrboro’s diverse range of communities. For the Spanish-speaking community, it was determined that the best way to gather input was to host a Spanish language survey at El Centro Hispano during the months of August and September of 2019, and garnered over 30 responses.

Stakeholder interviews were conducted with:

- » NCDOT
- » Regional Stakeholders
- » Karen/Burmese Community
- » Youth Council
- » Bike Advocates
- » 20+ Year Carrboro Residents



The steering committee meetings were interactive to encourage idea sharing during each meeting.

BIKE SHOP POSTERS

Project materials were placed at the Clean Machine, a local Carrboro bike shop, to allow an easy way for the community to share their ideas and thoughts. Participants marked up a map with their network ideas, shared information on their comfort level bicycling and their preferred facility type. Separated bicycle lanes received the most votes, with buffered bicycle lanes close behind.

Bicycle Program Ideas

The public voted with dots for their favorite bicycle program ideas. The top three programs were:

- 1 Bike **wayfinding signs** with distances to destinations
- 2 Bike lane **sweeping** (for future bike lanes)
- 3 **Bike-to-school** events & bike education/encouragement at schools



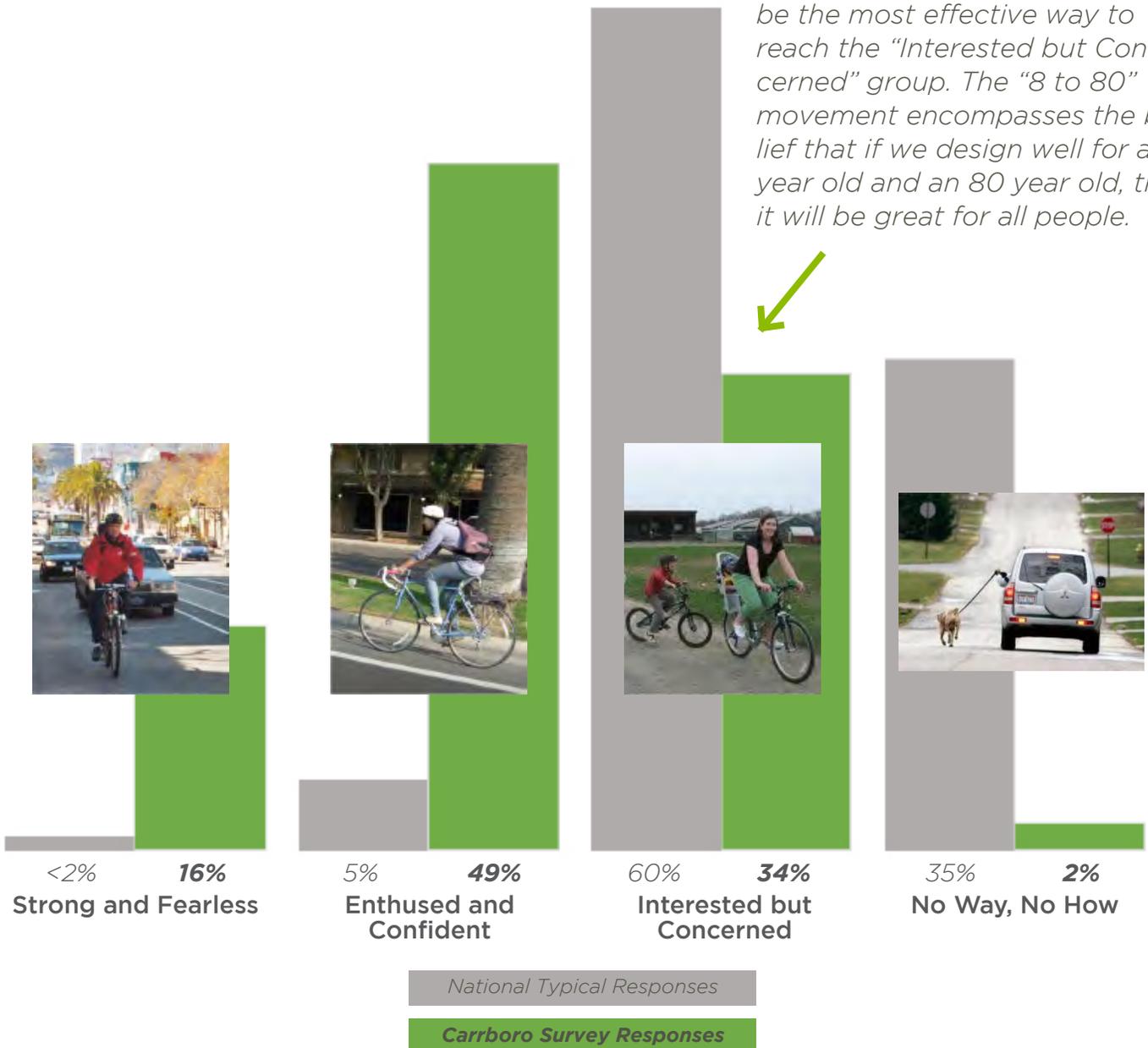
TYPES OF PEOPLE WHO BICYCLE IN CARRBORO

Although some people who bicycle will ride on any road, regardless of an available bikeway (“strong and fearless”), a much larger portion of the population will ride only where there is a high-quality bikeway (“interested but concerned” population). Understanding this concept has led communities to

design more low-stress bikeways that provide the high-quality experience the majority of people who bicycle desire.

The chart below shows a “typical” national distribution of people who bicycle compared to the survey results of this planning effort.

Designing for ages 8 to 80 will be the most effective way to reach the “Interested but Concerned” group. The “8 to 80” movement encompasses the belief that if we design well for an 8 year old and an 80 year old, then it will be great for all people.



WHAT WE HEARD

A significant portion of feedback was taken from the community survey that was developed for this Plan. Over 400 responses from all segments of the community were gathered and the project team took every effort to ensure a representative sampling of the community was reached. The responses below are taken directly from the responses received, hence some inconsistent wording.

My favorite place to bike in Carrboro is....

- » the awesome trails like:
 - » Libba Cotten Bikeway
 - » Frances Shetley Bikeway
 - » Wilson Park Trail
 - » Carolina North Forest trails
- » the existing bike lanes on Greensboro Street, West Main Street, and Hillsborough Road
- » on low-traffic neighborhood roads
- » to Downtown Carrboro and destinations like Weaver Street Market and the Farmers' Market
- » to elementary schools, such as:
 - » Carrboro Elementary School
 - » Morris Grove Elementary School
- » to Maple View Farms!
- » the streets that have bike lanes!
- » everywhere!

The most difficult place to bike in Carrboro is...

- » intersections! Especially:
 - » Weaver Street at North Greensboro Street
 - » Weaver Street at Main Street
 - » Estes Drive Extension at North Greensboro Street
- » crossing NC 54 and the lack of bike infrastructure on S Greensboro Street to Smith Level Road
- » streets with no separated bike lanes like:
 - » Old Fayetteville Road
 - » E Main Street
 - » Homestead Road
 - » Hillsborough Road
- » when the bike lane ends
- » riding over railroad tracks
- » going to school
- » going to Weaver Street Market



Weaver Street Market bike racks are often full.



NC 54 is challenging for many people who bicycle.
Photo Credit: NC 54 Corridor Safety Study

I would bike more if...(Responses from survey & comment form)

There were better routes connecting Carrboro and Chapel Hill. Taking Main street onto Rosemary or Franklin is unpleasant and dangerous, not to mention disjointed in terms of cycling "facilities". The Cotten Bike path is nice, but Cameron Ave doesn't take me to many of the places I want to go.

There were more separated trails or physically separated lanes. I have young children and while I'm comfortable biking on roads myself, I'm scared to take my kids on the roads since they are lower down and less visible in the bike trailer or tandem bike attachment.

Bikes had a clearer route through intersections.

The roads were cleared more quickly of debris after storms and after people put their leaves and tree branches in them - it is dangerous to have to go into the street to avoid them

The bikeable network was connected. Often one unsafe stretch will prevent me from biking at all.

There were more bike lanes and more green trails (or green trails connected by bike lanes). As a family with 2 kids and 4 bikes, we enjoy recreational riding - but it tends to be more a case of drive to a place, for example to the community center, to take the Bolin creek trail, or to the Northern Forest to the pumpkin loop. I would probably bike more as a commuter, if it were safe, and more lanes.

Motorists were educated about how to avoid dangerous situations when passing people bicycling.

The #1 thing that would make me bike more is more people bicycling on the road. The critical mass and the natural visibility of a lot of people bicycling is the best encouragement.



4 THE FRAMEWORK



*Mayor's Bike Ride
Photo Credit: The Town of Carrboro*

INTRODUCTION

While transportation infrastructure – roads, bikeways, trails – are critical for improving bicycling, other components must also be used to create a truly bike-friendly Carrboro. This Plan incorporates these strategies to make bicycling safe, comfortable, and fun.

Non-infrastructure recommendations are organized according to two distinct categories:



Policies

Policies add political backing and institutionalize recommendations and design guidelines into town codes. Policies may be specific to infrastructure elements or may be broad and include multiple jurisdictions and stakeholders.



Programs

Programs can engage the broader community to encourage more people to bike, educate community members on rights and responsibilities, and enforce traffic laws to improve safety for all modes.

KEY PARTNERS

Numerous partners, ranging from public to private to non-profit, will be essential for rolling out a variety of programs. Some of these are shown below:

- » Town of Chapel Hill
- » GoChapelHill
- » BikeCarrboro
- » The Bicycle Chain/Clean Machine
- » The ReCYCLERy
- » Orange County
- » The YMCA
- » Chapel Hill-Carrboro City Schools
- » Back Alley Bikes
- » Carrboro Business Alliance
- » Parcycles, Inc



*Helmet Fitting & Bike Maintenance Event organized by BikeCarrboro and the Clean Machine
Photo Credit: Molly De Marco*



POLICIES

STRATEGIC PRIORITIES

Expand Bike Parking Requirements

High quality and convenient bike parking is a necessary component to encourage bike ridership.

Shared Mobility Policy

The Town will need to stay up-to-date on trends related to bike share, scooter share, and the like and ensure policies reflect community goals.

Tactical Urbanism Policy

Create a streamlined permitting process to allow community partners to collaborate on pilot projects.

CONTINUOUS

Maintenance

Ensuring facilities is clear of debris is important to increase ridership and increase safety. Establish new maintenance protocols to ensure fix-it stations remain in working order.

LONG TERM

Expand Enforcement

Police support for the safety of people bicycling, including encouraging reporting, provides the data for the Town to fully evaluate countermeasures.

Speed Enforcement for Hot Spots

Using bicycle crash data and public feedback to identify hot spots and perform targeted enforcement can help prevent future crashes.

Dedicated Funding

A dedicated funding stream would allow for more reliable and consistent long term bicycle planning and implementation.

Allocation of Bicycle Program Tasks

Dedicate more staff hours to research, implementation and outreach. Ensure coordination and accountability of tasks



PROGRAMS

STRATEGIC PRIORITIES

Tactical Urbanism

Provides the ability to test new infrastructure and allows for immediate public feedback and early detection of obstacles before making large investments. The Town’s future traffic calming policy includes some specifics for Tactical Urbanism.

Continue Safe Routes to School Efforts + Partnerships

Continue work from the adopted 2012 plan in order to increase the number of students who bike to or at school.

Bicycle Wayfinding

Wayfinding elements such as signage, pavement markings, and mile markers will help to draw visitors, help users identify the best routes, and enhance their ability to access major destinations.

LONG TERM

Regional Map/Mobile App

Ensure that the Town of Carrboro is represented and supported by the developing DCHC/CAMPO regional app that provides an easily accessible resource to plan bicycle routes, identify maintenance issues, and report safety issues.

Expand Options for Skills Training + Social Rides in Diverse Neighborhoods

Making cycling accessible and enjoyable for all who bicycle, including the “interested but concerned” riders, should be a priority (current Town effort ongoing).

Encouragement Campaign

Building off of Watch for Me, NC - a targeted encouragement campaign that fits within the culture and brand of Carrboro, would help educate users and encourage more bike trips.

Advocacy Ambassador Program

Support and partner with Carrboro’s existing bicycle advocates to help with public outreach and bike plan implementation.

Expand Count Program

Counts are collected along state-maintained roads; the Town is working to expand counts along local roads and greenways. Accurate count information allows the Town to identify trends and determine where investment should be made.

Education of People on bikes and People in vehicles on Rules of the Road

Ensure that educational opportunities about rules of the road are available for youth and adults.



Policy Spotlight: Shared Mobility Policy

BACKGROUND

Shared mobility programs are designed to provide cost-effective, environmentally-friendly and convenient travel options for short trips within a city or region. The systems consist of a fleet of user-friendly and durable bicycles, electric power-assisted bicycles or lightweight electric scooters (e-scooters) intended to be driven while standing. Both bike or scooter share programs are relatively inexpensive and quick to launch—compared to highway and transit projects—and can provide an extension to Carrboro’s public transportation system.

As more success has been realized, larger cities are expanding shared mobility into lower density and lower income areas, and mid-size and smaller cities have launched successful bike share and scooter share systems. Bike share and scooter share have been transformative transportation system offerings for many cities in North America. They can provide sustainable transportation options, infill first/last mile connectivity (extend the reach of transit), create jobs, reduce reliance on private automobiles, and improve the health of Carrboro residents.

POLICY RECOMMENDATIONS

Cities and towns have had some challenges in implementing bike share and/or scooter share systems in recent years. In some cases, private vendors have dropped scooters in a city without any advanced warning. Today, cities are becoming better prepared with their own policies to effectively manage systems that work for them. Some specific policy areas for the Town to consider are:

- » **Fleet Size** - Communities piloting shared mobility for the first time may opt for deploying a limited fleet in the interest of gauging public interest in the service and observing modal interaction between e-scooters, people on bikes, people walking, and motor vehicles. Other communities using static fleet caps may have determined the designated number of units is an appropriate or manageable amount for a community of their size, land-use pattern, or traffic conditions. *The Town of Carrboro should set an initial fixed fleet size with immediate demand-based expansion and reduction procedures within a set pilot period. This approach gradually integrates shared mobility devices into the streetscape.*
- » **Speed Limits** - Shared Mobility devices are most compatible with designated bike lanes and low-to-mid speed travel lanes (under 25 MPH). Most municipalities regulating shared mobility systems require that vendors cap device speed at 15 MPH, a suitable speed for bike lanes, shared use paths and local streets. Some jurisdictions are exploring requirements to cap device speeds in high-traffic areas, such as downtown centers or in public parks. *To start, the Town of Carrboro should clearly state in its permit regulations that all electric devices should be*

equipped to achieve a speed of no more than 15 MPH throughout the designated service area.

- » **Sidewalk Use** - Most municipalities strongly discourage, if not outright prohibit the use of shared mobility devices on sidewalks to avoid posing unnecessary danger and discomfort to people walking. On sidewalks, people walking and especially people with disabilities have the clear right of way. Therefore, sidewalk riding by shared scooters should be actively discouraged or prohibited to ensure access, comfort, and safety where people walking have the right of way *The Town may consider prohibiting sidewalk use throughout all service areas, with potential exceptions in discrete areas where traffic speeds are high and pedestrian traffic is low.*
- » **Parking Policy** - Improper parking procedures are another challenge, in that scooters and bikes can create hazards for people traveling on the sidewalk, particularly those people in wheelchairs, with visual impairments or ambulatory disabilities. While systems have long encouraged users to park in the “furnishing zone” of sidewalks (where bike racks, benches, trees and signage are located), some cities have enhanced the formality and enforceability of scooter parking policy. Formalizing the relationship between device parking standards and pedestrian accessibility begins with setting a minimum sidewalk clearance requirement that riders are required to obey when parking. “Drop zones” are an emerging tactic aimed at reducing improper parking procedures. Drop zones are small designated parking areas for dockless bikes or e-scooters within the public right of way, identified with paint and/or signage. *If a bike or scooter share system is established, the Town should mandate shared mobility parking areas/drop zones in busy pedestrian areas and elsewhere, to mitigate blocked sidewalks and clutter. The Town should also include incentives in its scooter or bike share pilot program regulations.*
- » **Accessible Bike Rentals** - While bikeshare and other shared mobility systems have become increasingly popular over the past few years there is still a lack of accessible devices (such as tricycles or handcycles). There are some examples of cities partnering with local bicycle shops or accessibility advocates to provide an accessible bike rental service so that a system is available to people of all abilities.

Examples of accessible rental programs and partnerships include:

Portland, OR and KerrBikes:

www.adaptivebiketown.com

Eugene, OR Parks & Rec Dept:

www.eugene-or.gov/134/Adaptive

Detroit and Adaptive MoGo:

www.mogodetroit.org/mogo-for-all/adaptive-mogo/

Milwaukee, WI and Bublrbikes:

<https://bublrbikes.org/adaptive>

San Francisco and Bay Area Outdoor Recreation Partnership:

<https://www.lyft.com/bikes/bay-wheels/adaptive-bike-share>





Policy Spotlight: Bicycle Parking Policy

TODAY'S EFFORTS

The Town of Carrboro's bicycle parking regulations and guidelines are integrated in the Town's 2009 Bike Plan and Land Use Ordinance (Article XVIII Parking). The Land Use Ordinance outlines the location requirements, recommended design elements, space requirements, trade-offs, and deviations for Carrboro business owners and developers. The Town is currently working towards linking to the APBP bike parking guidance in the Land Use Ordinance.

RECOMMENDATIONS

Creating a document, based on the APBP bike parking guidance, with easy to understand information and visuals tied to the Land Use Ordinance would allow Carrboro business owners, developers, and other interested parties to know what is required of them. Providing more resources and incentives will help support the expansion and enhancement of bicycle parking in Carrboro, which in turn encourages ridership.

CASE STUDY: CHARLOTTE, NC

Charlotte Department of Transportation created a City of Charlotte Bicycle Parking document, which provides direct guidance and graphics for recommended bike rack styles and the benefits of providing bicycle parking in the city right-of-way. This document's primary purpose is to help businesses apply to the Bicycle Rack Partnership Program. It details the application process and provides inverted "U" Rack specifications and other guidance for Charlotte businesses.

GOOD SHORT-TERM BICYCLE PARKING EXAMPLES

Seattle Department of Transportation (SDOT) has a similar document with helpful graphics.

Showing photos of bike racks helps users understand how to meet requirements. Photo Credit: SDOT



On-street bike corral near an intersection in Ballard (Photo: Alta Planning + Design)



Racks are protected under building cover at Swedish First Hill (Photo: Alta Planning + Design)



Racks under a shelter with lighting & repair station at UW (Photo: MIG|SvR)



Multiple public racks at a high demand location at the University Stadium Light Rail Station (Photo: MIG|SvR)



Rail type rack with space for a cargo bike on Greenwood Ave N (Photo: MIG|SvR)



On-street racks in leftover space from angle parking on Terry Ave (Photo: MIG|SvR)



Program Spotlight: Wayfinding

TODAY'S EFFORTS

As of writing, Carrboro is developing a branded wayfinding system, which will include a variety of new signs around town. These include bike parking signs, “bike trailblazer” signs, and bike share signs. Future options can be developed to include a separate sign for other forms of micromobility devices.

RECOMMENDATIONS

This new wayfinding signage system should be applied to the proposed neighborway network (see Chapter 5) as a low-cost, quick action item. The town’s bike maps should also be updated with this new information so people who bicycle can plan routes both before and during rides.



Photo Credit: Axia Consulting

CASE STUDY: TRAVELERS REST, SC

The City of Travelers Rest, SC, population 4,600, has transformed itself into a “trail town” with careful planning and incremental implementation. A large part of this transformation has been its wayfinding system. By using branded, clear wayfinding signage, not only was it safer and more enjoyable for people who bicycle to find their way around town and to the surrounding trails, but also promoted a sense of place.

Signs, such as the ones in these images, create a sense of identify and place within a town for people who bicycle.





Program Spotlight: Tactical Urbanism

TODAY'S EFFORTS

The Town of Carrboro has experience with both pedestrian- and bicycle-focused tactical urbanism projects, such as the painted crosswalk on Weaver Street and a traffic calming pilot project on Cobblestone Drive.

RECOMMENDATIONS

Due to Carrboro's enthusiastic bicycle community, bicycle-focused tactical urbanism projects would be a great option for the Town. These short, relatively quick interventions using low-cost materials allow the Town to experiment, gather data, and receive immediate feedback on bikeway projects before making large investments in permanent infrastructure. The Town can complement their own programs with creating policies to allow community groups to initiate their own bicycle-focused tactical urbanism projects.

CASE STUDY: MORGAN HILL, CA

Alta Planning + Design worked with Town of Morgan Hill staff, Morgan Hill's Downtown Association, and Street Plans Collaborative to create a demonstration project utilizing tactical urbanism techniques for a six-month pilot project. Meetings were held with city staff, stakeholders, and residents to determine the two favorite alternatives which would be built in the three-day pop-up event. After the pop-up event, buffered bike lanes were chosen by the public and were installed for six months.



CASE STUDY: RALEIGH, NC



Raleigh's city government and local advocacy group Oaks & Spokes installed a pop-up, two-way cycle track for three blocks in downtown Raleigh for a weekend. Cones and donated planters were used as temporary protection for the cycle track. Because of its success, a permanent cycle track will be implemented.



Program Spotlight: Bicycle Count Programs

TODAY'S EFFORTS

Currently, the Town of Carrboro has bicycle counters on the Libba Cotten Bikeway and on Old NC 86 north of Hillsborough Road.

RECOMMENDATIONS

Adding more counters in new locations will provide data for evaluation of bicycle facilities and for future bicycle infrastructure decisions. The data collected from counters can also help quantify the benefits of biking and make bicycle projects more competitive for funding opportunities.

CASE STUDY: SAN DIEGO, CA

The County of San Diego Health and Human Services Agency, San Diego Association of Governments, and San Diego State University collaborated to install automated bicycle counters throughout the region using grant funding. Data is collected every 15 minutes and uploaded daily to the SANDAG website.

CASE STUDY: SAN FRANCISCO, CA

San Francisco has a multi-pronged approach to bicycle counting. While they have “invisible bike counters” that are installed in the pavement, they also have installed digital bike counters. Digital bike counters were placed on San Francisco’s busiest biking streets to not only gather data on ridership, but also to send a message to people that bicycle and the public that people who bicycle count. The digital signs display the weather, the count of people bicycling that day, and a bar indicating the number of people bicycling that year.



Digital bicycle counters gather data and are also a form of encouragement for people who bicycle.

Photo Credit: SFMTA



5 THE NETWORK

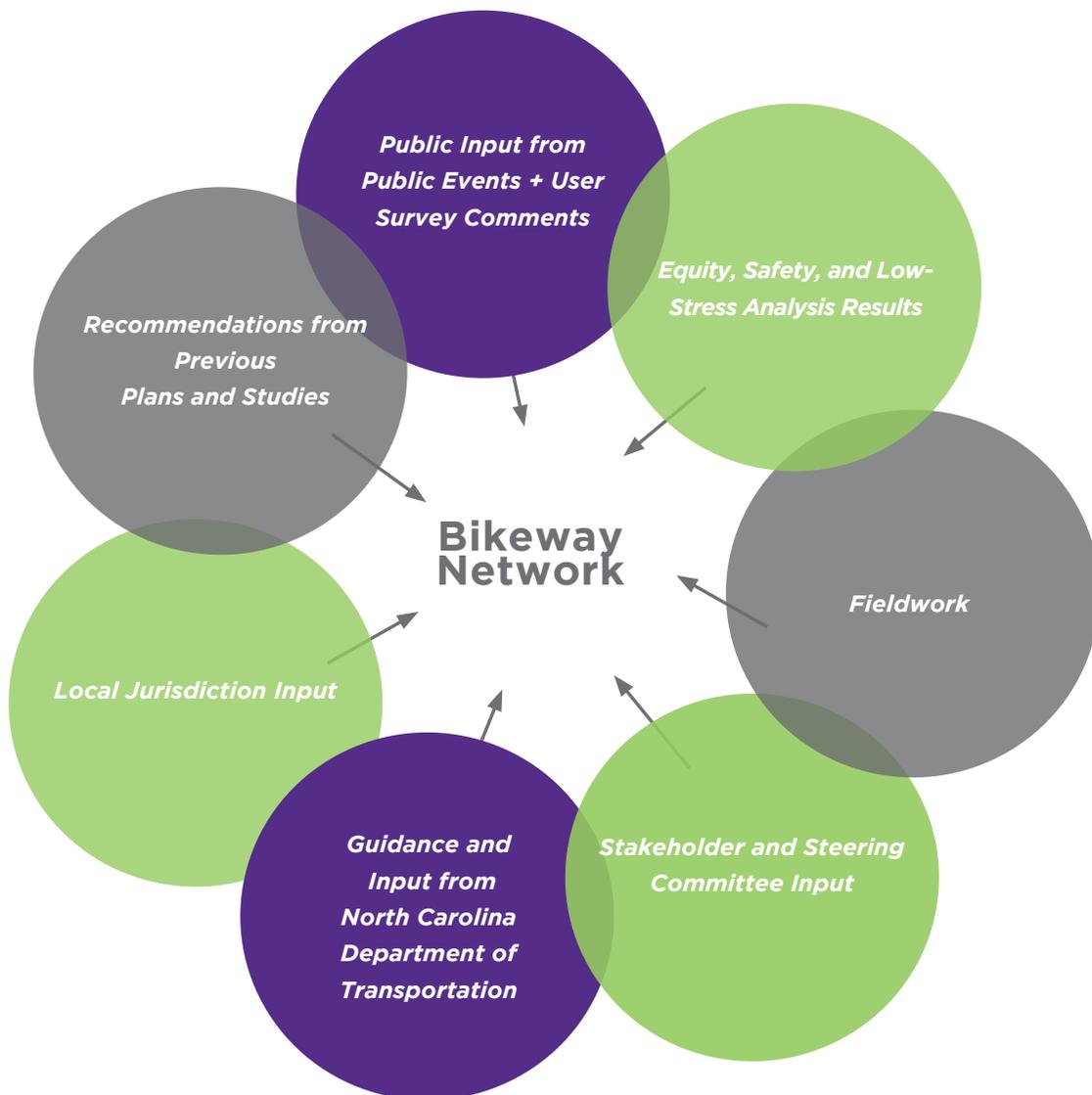


People on bikes in Carrboro

CARRBORO'S APPROACH

The proposed network seeks to:

- » Reflect our vision and goals
- » Address the needs of all ages and abilities in Carrboro
- » Balance the transportation system with safety as the #1 priority for all roadway users
- » Integrate seamlessly with future development and land uses



TYPES OF BIKEWAYS



Shared Use Path

Shared Use Paths are completely separated from motorized vehicular traffic and are constructed in their own corridor, often within an open-space area. Shared Use Paths can be paved and should be a minimum of 10' wide. Pavement widths of 12-, 14-, and even 16-feet are appropriate in high-use urban situations.



Private Connections

A private connection includes the development of a public bike facility on a privately owned street or land. The recommendations found here include shared use paths taking advantage of privately owned open space and shared use neighborways on privately owned residential streets. These facilities are often kept short to minimize impacts on private property but are critical components to a well-connected network.



Separated Bike Lanes

This updated Plan defines a separated bike lane as a bicycle facility that is physically separated from motor vehicle traffic within a street corridor. For this Plan, this includes cycle tracks and buffered bike lanes, in addition to the City's shared-use path and greenway network. The on-road physical separation can be achieved through parked cars, curbs, medians, bollards/traffic posts, planters, or marked buffered space between the bike lane and adjacent travel lane.



Bike Lanes

A bike lane is a portion of the roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of people who bicycle. Bike lanes are almost always located on both sides of the road (except one way streets), and carry people who bicycle in the same direction as adjacent motor vehicle traffic. In some cases, climbing bicycle lanes (on uphill side) can be paired with shared-lane markings on the downhill section. The minimum width for a bike lane is 4 feet; five- and six-foot bike lanes are typical for collector and arterial roads.



Neighborways

In residential neighborhoods, neighborways—also known as bicycle boulevards—improve travel for people who bicycle while calming traffic and greening neighborhoods. Neighborways are shared by automobiles and bicycles, but at speeds that make travel more comfortable for people who bicycle. Typical treatments along neighborways may include mini-circles, chicanes, wayfinding signage, and shared-lane markings.



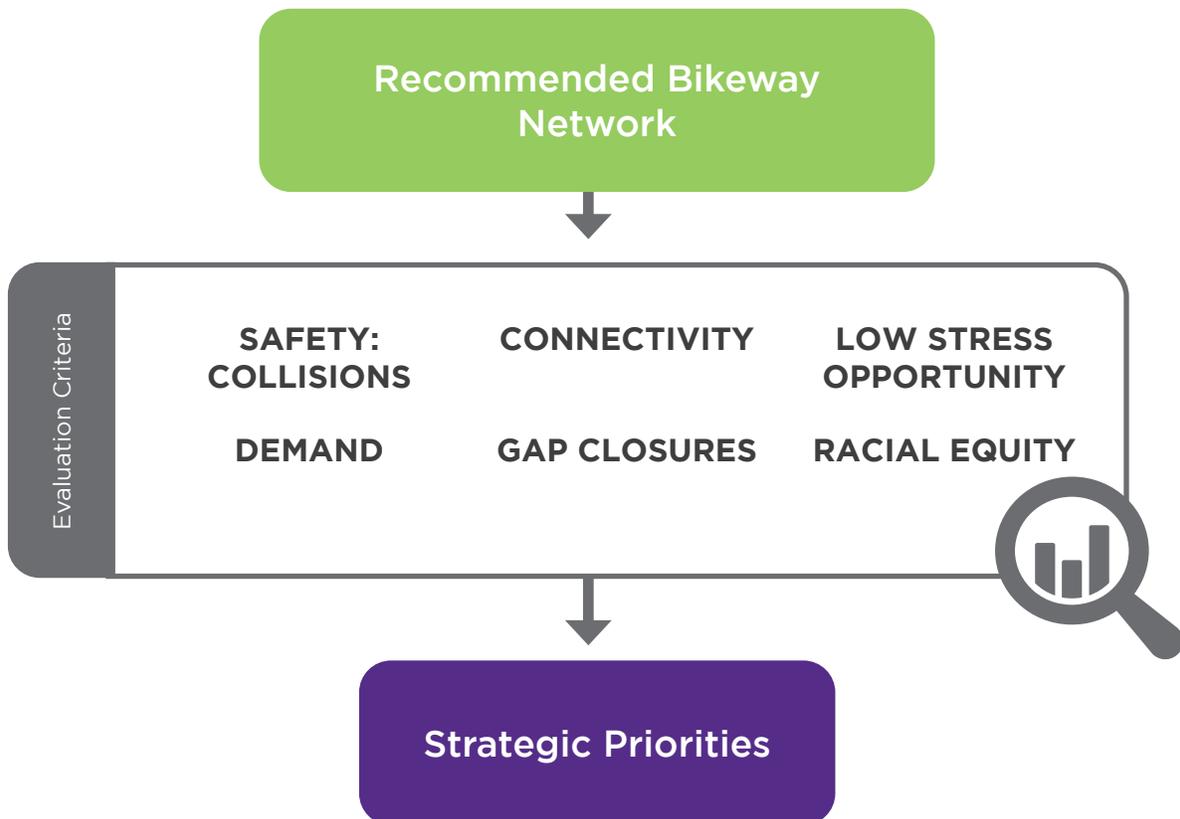
IDENTIFYING STRATEGIC PRIORITIES

This Plan is designed to serve as a short-term call to action document that identifies projects that provide critical connections yet are feasible and realistic to implement. Full implementation of the long term network will take many years and require a significant amount of investment.

The projects were selected using the evaluation criteria displayed in the graphic below and also through feedback from the public, the steering committee, and town staff.

There are 10 total strategic priorities that are recommended by this Plan. More details for five of the strategic projects start on page 50. These were selected to provide implementation techniques for a variety of facility types. They were also the most highlighted by the Steering Committee and general public. The additional five projects not described on the following pages are:

- » Claremont/Cobblestone Neighborway
- » Parkview Avenue Neighborway
- » Williams Street Neighborway
- » Elm Street/ Laurel Avenue Neighborway
- » West Carr Street Neighborway



Map 10: Existing, In Development, & Strategic Priorities

EXISTING BIKE NETWORK

- Bike Lanes
- Bike Lane One Side Only
- Sharrow
- Wide Shoulder
- Shared Use Path

STRATEGIC PRIORITY NETWORK RECOMMENDATIONS

- Separated Bike Lanes
- - - Bike Lanes
- - - Neighborway
- - - Shared Use Path
- Crossing Improvement

DEVELOPMENT STATUS

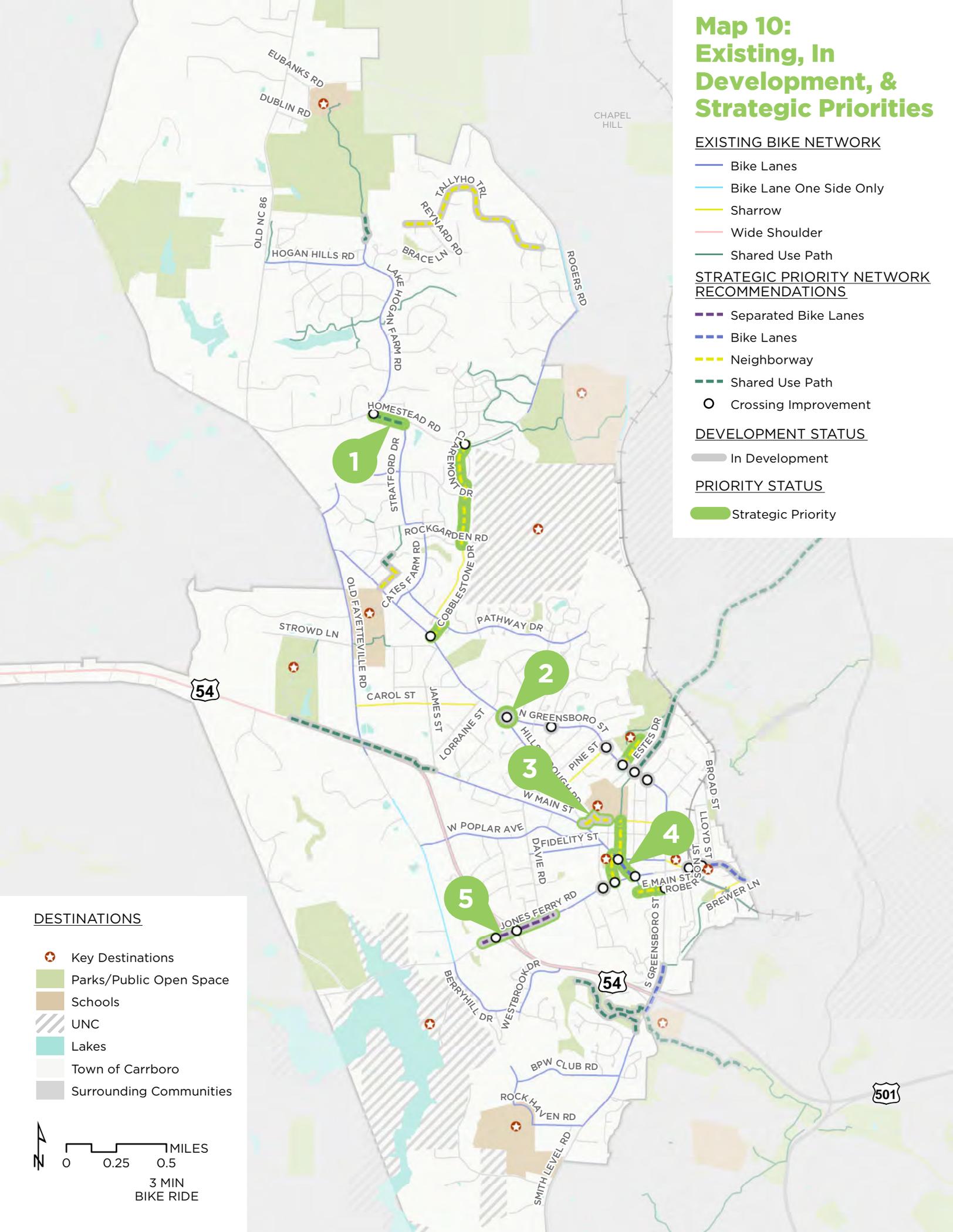
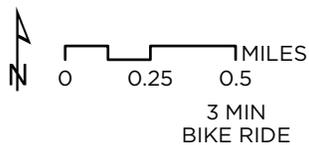
- In Development

PRIORITY STATUS

- Strategic Priority

DESTINATIONS

- ★ Key Destinations
- Parks/Public Open Space
- Schools
- UNC
- Lakes
- Town of Carrboro
- Surrounding Communities



**1 HOMESTEAD RD
SIDEPATH LINK**pg. **52**

This project will connect large residential hubs and fill a gap from north Carrboro to downtown by connecting bike lanes along Lake Hogan Farm Rd and Stratford Dr.

**2 HILLSBOROUGH ST AND
N GREENSBORO ST
INTERSECTION
IMPROVEMENTS**pg. **54**

This is a an unsignalized intersection along a critical bike route. Improving the intersection will increase safety and comfort for all users.

**3 SHELTON ST
CONTRAFLOW BIKE
LANE**pg. **56**

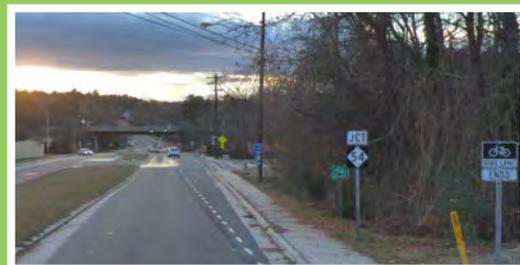
The Shelton St contraflow bike lane will fill an important gap between the Hillsborough St bike lanes and Carrboro Elementary.

**4 WEST MAIN ST
BIKE LANES &
INTERSECTION
IMPROVEMENTS**pg. **58**

Intersection improvements and bike lanes on both sides of the street (filling gaps) will improve bike access to downtown along West Main St.

**5 JONES FERRY RD
SEPARATED BIKE LANES**pg. **62**

Separated bike lanes along Jones Ferry Rd will bring much-desired safety benefits to this heavily used commuter corridor.



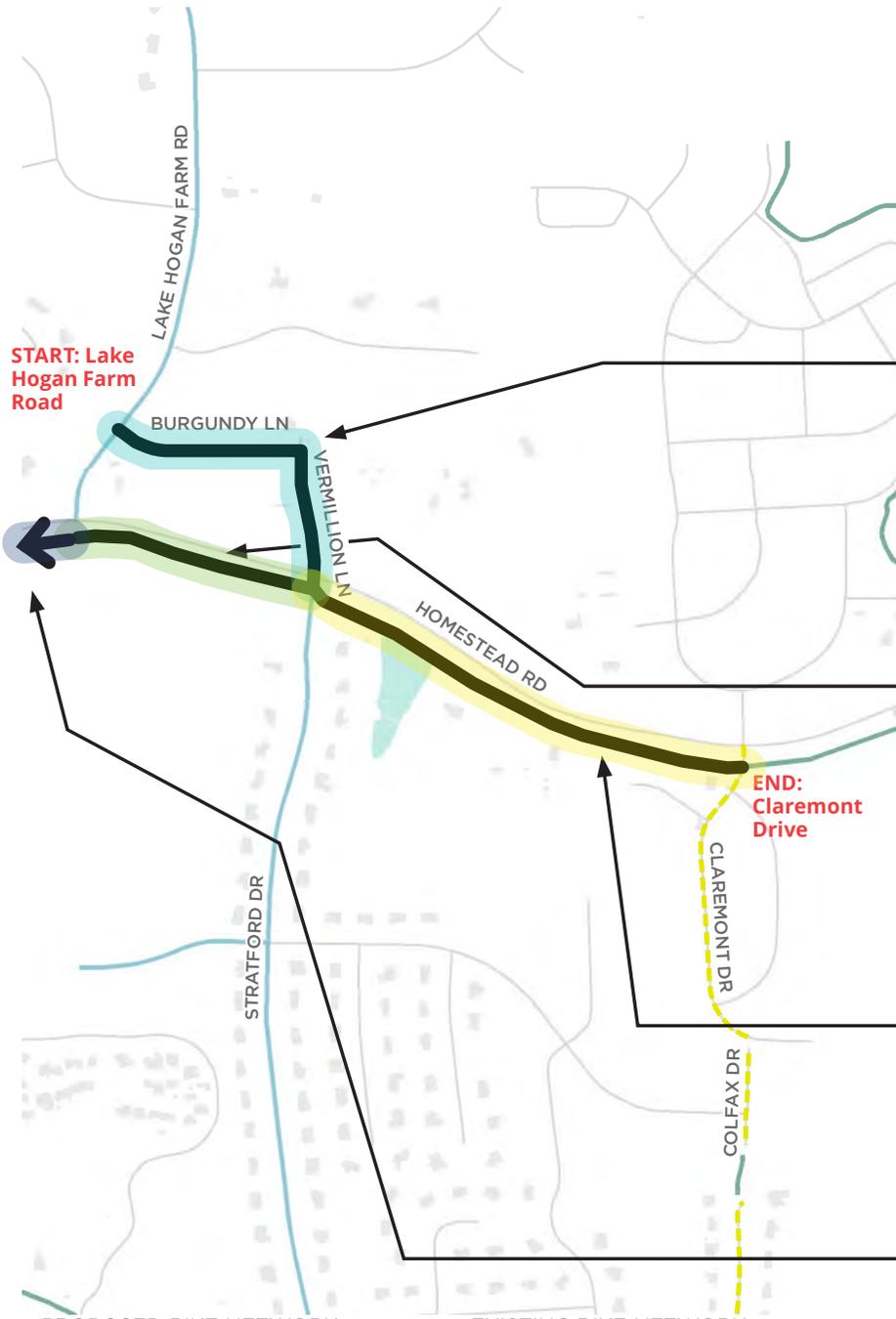
1 - HOMESTEAD RD SIDEPATH LINK



FROM:
Lake Hogan Farm Road

TO:
Stratford Drive

LENGTH:
1,200 Feet



It is recommended that a corridor/alignment study be conducted. The study should consider completing this priority project in three phases:

PHASE 1: Implement **neighborway** treatments through Burgundy Ln and the short segment of Vermillion Ln. Construct a short **shared use path** segment from the southern terminus of Vermillion Ln to the Stratford Dr intersection, connecting the existing bike lanes on Lake Hogan Farm Rd to the Stratford Dr bike lanes. Coordination will be needed with the property owners between Vermillion Ln and Homestead Rd.

PHASE 2: Construct **sidepath** along south side of Homestead Rd from Lake Hogan Farm Rd to Stratford Dr.

PHASE 3: Construct a **sidepath** along the south side of Homestead Rd from the proposed phase 2 sidepath terminus at Stratford Dr to the recently constructed sidepath extending east from Claremont Dr. 1,500' east of Claremont Dr, the existing sidepath connects to the Claremont/Chapel Hill High School greenway.

LONG-TERM: Continue **sidepath** west to Old NC 86 and east to High School Road.

PROPOSED BIKE NETWORK

- Neighborway
- Priority Project

EXISTING BIKE NETWORK

- Shared Use Path
- Bike Lanes





The recommendations are conceptual at this stage. While these ideas and design features represent best practices for bicycling, they don't represent actual design. Once a design process begins, input from the community, adjacent property owners, other internal departments, and NCDOT will likely lead to adjustments that will be made based on what is feasible, desirable, and realistic.

TRIP GENERATORS:

- Chapel Hill High School
- Smith Middle School
- Seawell Elementary School
- Carolina North Forest
- Claremont Greenway
- Adjacent neighborhoods

POTENTIAL PARTNERSHIPS:

- NCDOT
- Town of Carrboro
- Wexford Home Owners Association
- Burgundy Lane property owners
- Other adjacent property owners

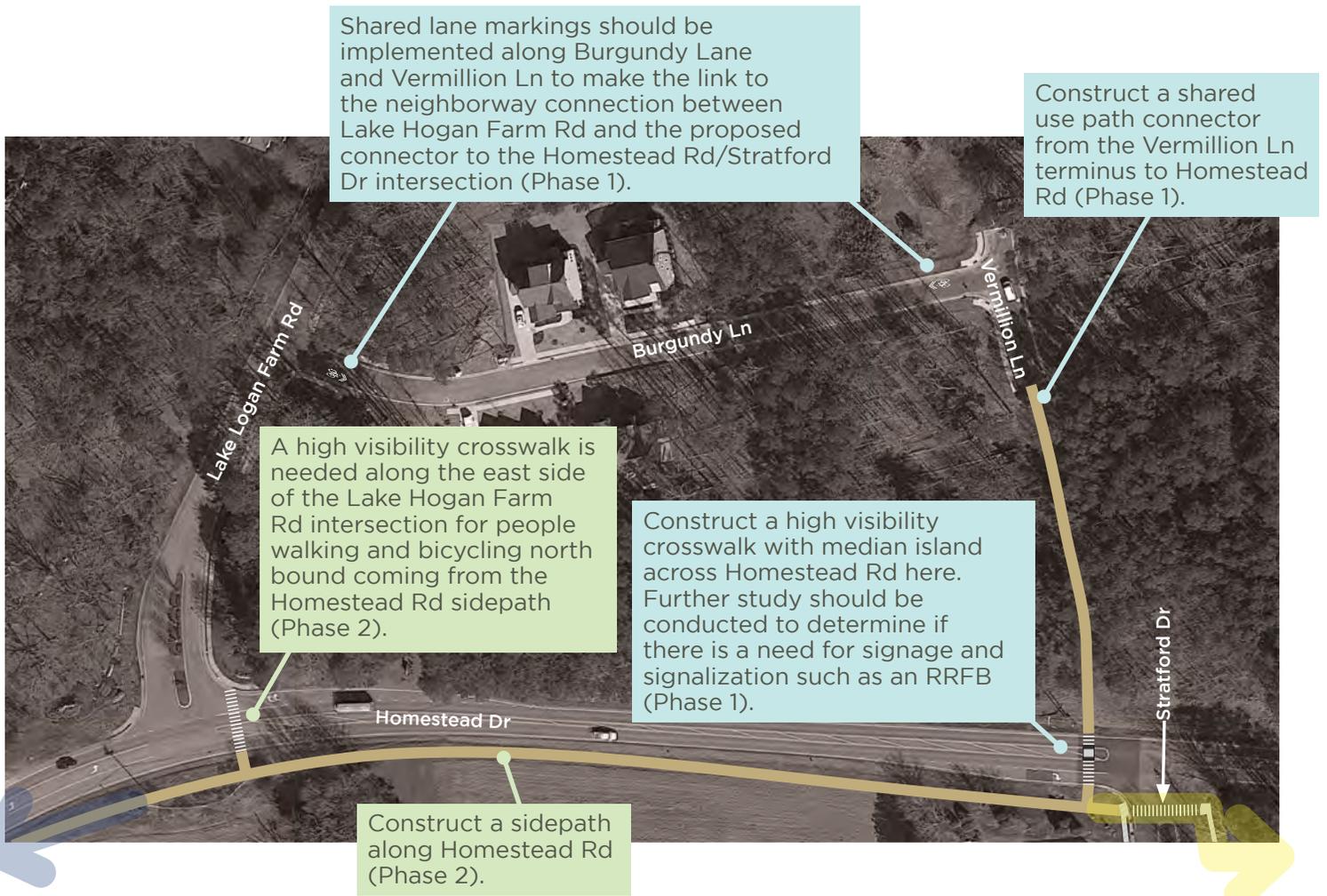
POTENTIAL ROW NEEDS:

- Additional ROW needed along Homestead Rd for sidepath construction as well as for the shared use path connector between Homestead Rd and Vermillion Ln.

OPINION OF TOTAL CONSTRUCTION COST (2019) FOR PHASE 1: \$168,740

OPINION OF TOTAL CONSTRUCTION COST (2019) FOR PHASE 2: \$367,510

PHASE 1 & 2: CONNECTING STRATFORD DR BIKE LANES TO LAKE HOGAN FARM RD BIKE LANES



2 - HILLSBOROUGH RD & N GREENSBORO ST INTERSECTION IMPROVEMENTS



The intersection at Hillsborough Road and North Greensboro Street is a key link in the network. However, in its current state, the intersection feels uncomfortable for many and lacks clear delineation of movement.

The recommended improvements will increase safety and comfort for all users by defining the space, slowing movement, and reducing confusion.

OPINION OF TOTAL CONSTRUCTION COST (2019):

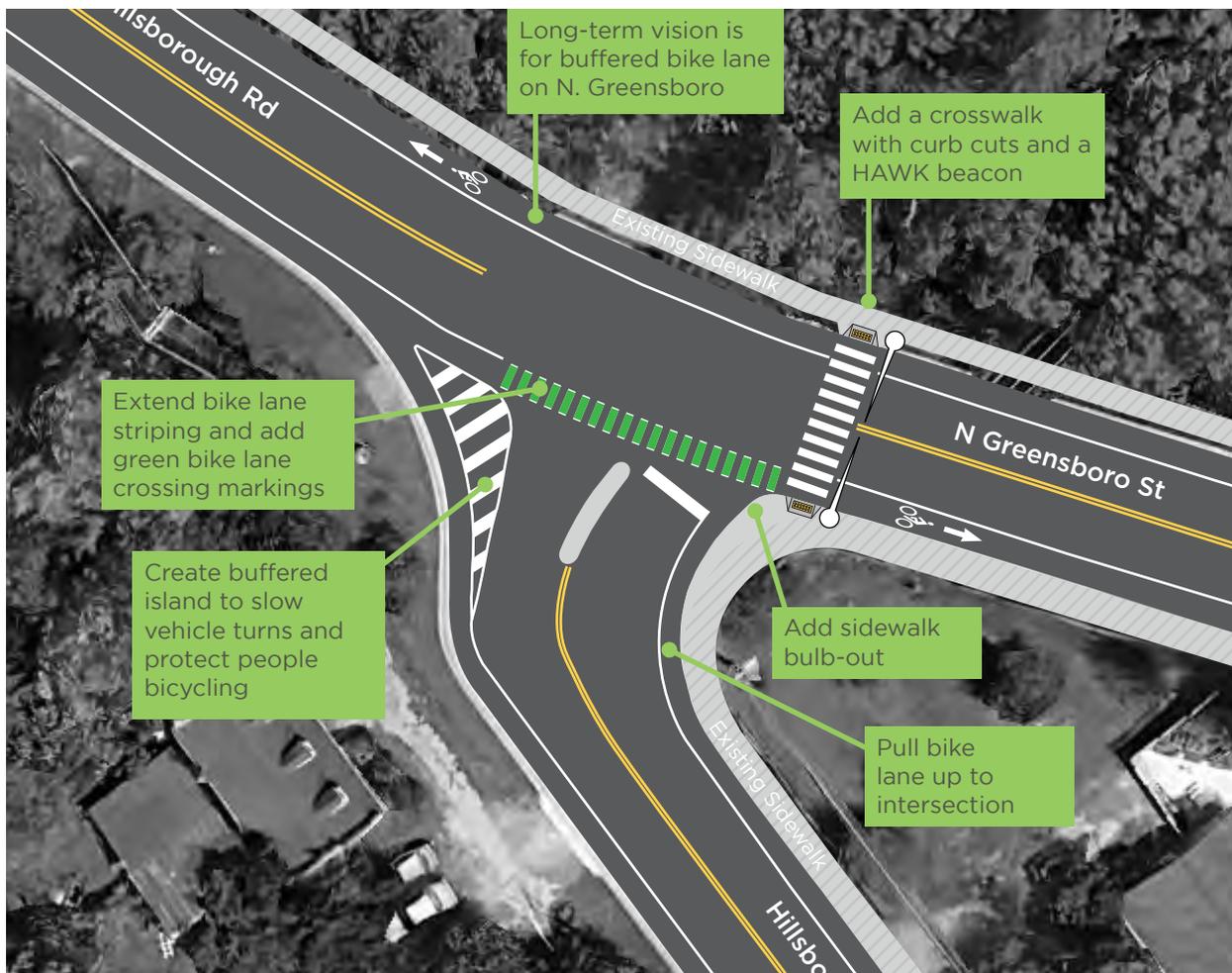
\$253,110*

TRIP GENERATORS:

- Carrboro Elementary
- Carrboro United Methodist Church
- Residences adjacent to the corridor
- Charles Herman Wilson Park
- Martin Luther King Jr. Park & Carrboro Community Garden
- Downtown Carrboro
- Adjacent property owners/neighborhood associations

POTENTIAL PARTNERSHIPS:

- Town of Carrboro
- Adjacent property owners/neighborhood associations



**Eliminating the HAWK beacon and the associated utility relocation would substantially reduce the project cost but would also reduce the potential safety impacts.*

The recommendations are conceptual at this stage. While these ideas and design features represent best practices for bicycling, they don't represent actual design. Once a design process begins, input from the community, adjacent property owners, other internal departments, and NCDOT will likely lead to adjustments that will be made based on what is feasible, desirable, and realistic.

DESIGN GUIDANCE FOR COLORED BIKE LANES:

Colored pavement within a bicycle lane increases the visibility of the facility, identifies potential areas of conflict, and reinforces priority to people who bicycle in conflict areas and in areas with pressure for illegal parking. Color can be applied along the entire corridor or as a spot improvement at intersections.

Currently, NCDOT does not have Interim Approval for the application of green paint for bicycle lanes - but that likely will change. Carrboro does have this interim approval and can install green paint through encroachment agreements provided the Town include a copy of the approval letter as an exhibit.

The following required features and maintenance considerations are provided from the *NACTO Urban Bikeway Design Guide*.

REQUIRED FEATURES:

- The color green shall be used to minimize confusion with other standard traffic control markings.
- Color shall be applied to the road surface to delineate space, increase visibility, and emphasize proper vehicle priority.
- Normal white bike lane lines shall be provided along the edges of the colored lane to provide consistency with other facilities and to enhance nighttime visibility.

MAINTENANCE:

- Colored pavement requires varying levels of maintenance depending on materials.
- Because the effectiveness of markings depends entirely on their visibility, maintaining markings should be a high priority.
- Colored facilities should be maintained to be free of potholes, broken glass, and other debris.



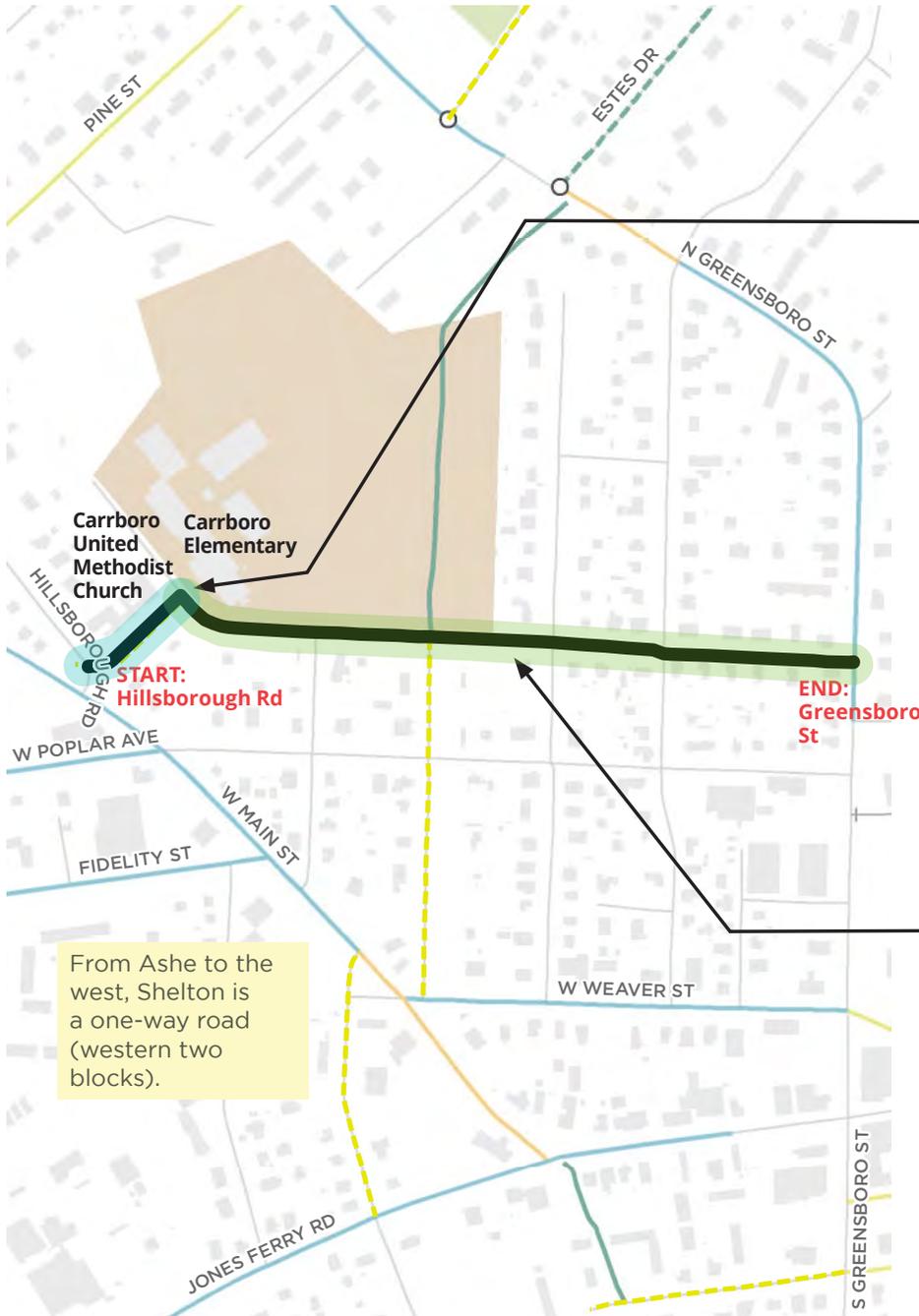
3 - SHELTON ST CONTRAFLOW BIKE LANE



FROM:
Hillsborough Road

TO:
N Greensboro Street

LENGTH:
2,300 Feet



From Ashe to the west, Shelton is a one-way road (western two blocks).

PHASE 1: Shelton St from Hillsborough Rd to Carrboro Elementary should be reconfigured to include a **contraflow bike lane**. Ideally, parking would be removed on one side of the street to allow for the greatest separation between people on bikes and in cars. It is possible to keep parking on both sides of the street - see City of Durham example (Watts St) on the following page. Watts St in Durham has nearly the same pavement width as Shelton St and parking on both sides.

LONG-TERM: Consider implementing dedicated bicycle facilities along Shelton St from Carrboro Elementary to Greensboro St. Bus circulation, school pick-up/drop-off circulation, and the needs of residents along the corridor will need to be closely examined. Currently, shared lane markings are included along Shelton St from Ashe St to Greensboro St.

The Town of Carrboro, Carrboro Elementary, and residents along the corridor should meet to discuss options that balance all needs.

Options to consider include the following:

- Shared Use Path within existing pavement with one-way conversion
- Advisory Shoulders
- No change - keeping shared lane markings

PROPOSED BIKE NETWORK

- Shared Use Path
- Neighborway
- Priority Project

EXISTING BIKE NETWORK

- Bike Lanes
- Bike Lane One Side Only
- Sharrow



The recommendations are conceptual at this stage. While these ideas and design features represent best practices for bicycling, they don't represent actual design. Once a design process begins, input from the community, adjacent property owners, other internal departments, and NCDOT will likely lead to adjustments that will be made based on what is feasible, desirable, and realistic.

TRIP GENERATORS:

- Carrboro Elementary
- Carrboro United Methodist Church
- Residences adjacent to the corridor
- Businesses along Greensboro St as well as Hillsborough Rd and Main St

POTENTIAL PARTNERSHIPS:

- Carrboro Elementary
- Carrboro United Methodist Church
- Town of Carrboro
- Adjacent property owners/neighborhood associations

POTENTIAL ROW NEEDS:

- None (unless option to construct shared use path outside of the existing Shelton St pavement width is selected)

OPINION OF TOTAL CONSTRUCTION COST (2019) PHASE 1: \$24,310

CONTRAFLOW BIKE LANE DESIGN CONSIDERATIONS:

Several requirements and options for contraflow bike lane signage are shown below. See the NACTO Urban Bikeway Design Guide for further design considerations for contraflow bike lanes - <https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/contra-flow-bike-lanes/>.



A "ONE WAY" sign (MUTCD R6-1, R6-2) with "EXCEPT BIKES" plaque shall be posted along the facility and at intersecting streets, alleys, and driveways informing drivers to expect two-way traffic.



A "DO NOT ENTER" sign (MUTCD R5-1) with "EXCEPT BIKES" plaque should be posted along the facility to only permit use by bicycles.



Warning signage, such as a modified "TWO WAY" sign (MUTCD W6-3) may be posted along the facility to inform people in cars to expect two-way traffic.

The short section of Shelton St from Hillsborough Rd to Carrboro Elementary has nearly the same pavement width (slightly more) and parking configuration of an existing contraflow bike lane in Durham, NC (Street view of Watts St pictured to the right and below). See the NACTO Urban Bikeway Design Guide for further design considerations for contraflow bike lanes - <https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/contra-flow-bike-lanes/>.



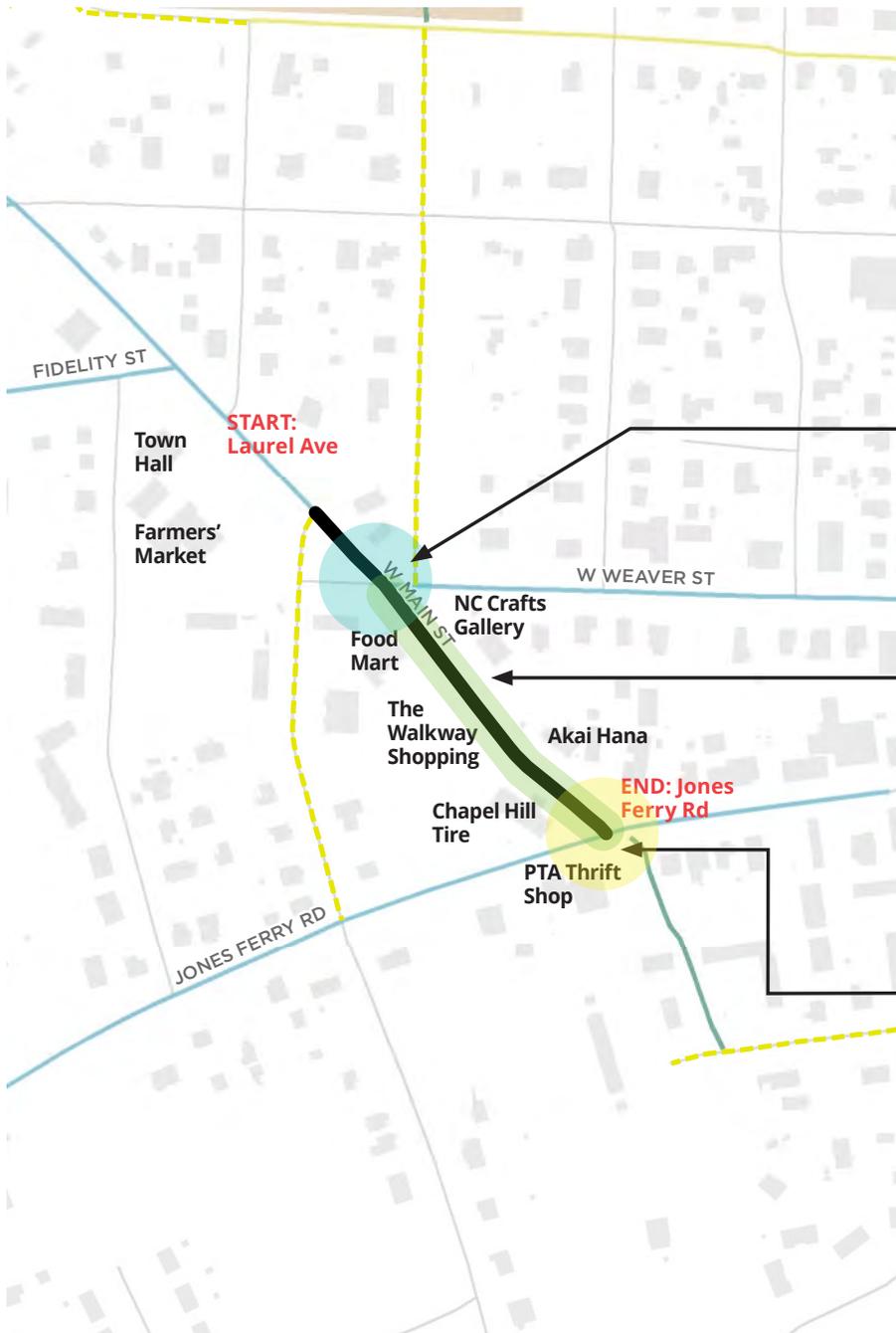
4 - W MAIN ST BIKE LANES & INTERSECTION IMPROVEMENTS



FROM:
Laurel Avenue

TO:
Jones Ferry Road

LENGTH:
800 Feet



PHASE 1: Fill in bike lane gaps, improve intersections, and develop a consistent southbound bike lane from Laurel Ave to Jones Ferry Rd. With an existing pavement width of 35'-43', this can be accomplished within the existing curbs.

The Weaver St, Laurel Ave, and Main St intersection should be improved to better delineate spaces and create room for a **southbound bike lane** from Laurel Ave to Jones Ferry Rd (detail on following page).

A LONG-TERM VISION includes restricting vehicular left turn movements from Main St to Weaver St. The space currently used for a dedicated turn lane could be used for a **separated bike lane** between Laurel Ave and Jones Ferry Rd.

The Jones Ferry Rd and Main St intersection should be improved as a **protected intersection**. This would also require curb modification (helping alleviate current accessibility issues on the south side of the intersection). In the short term, conflict markings should be painted through the intersection).

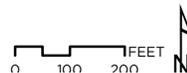
The recommendations are conceptual at this stage. While these ideas and design features represent best practices for bicycling, they don't represent actual design. Once a design process begins, input from the community, adjacent property owners, other internal departments, and NCDOT will likely lead to adjustments that will be made based on what is feasible, desirable, and realistic.

PROPOSED BIKE NETWORK

- Neighborway
- Priority Project

EXISTING BIKE NETWORK

- Shared Use Path
- Bike Lanes
- Sharrow



TRIP GENERATORS:

- Town Hall
- Farmers' Market
- Downtown Carrboro
- Businesses and residences along/near the corridor

POTENTIAL ROW NEEDS:

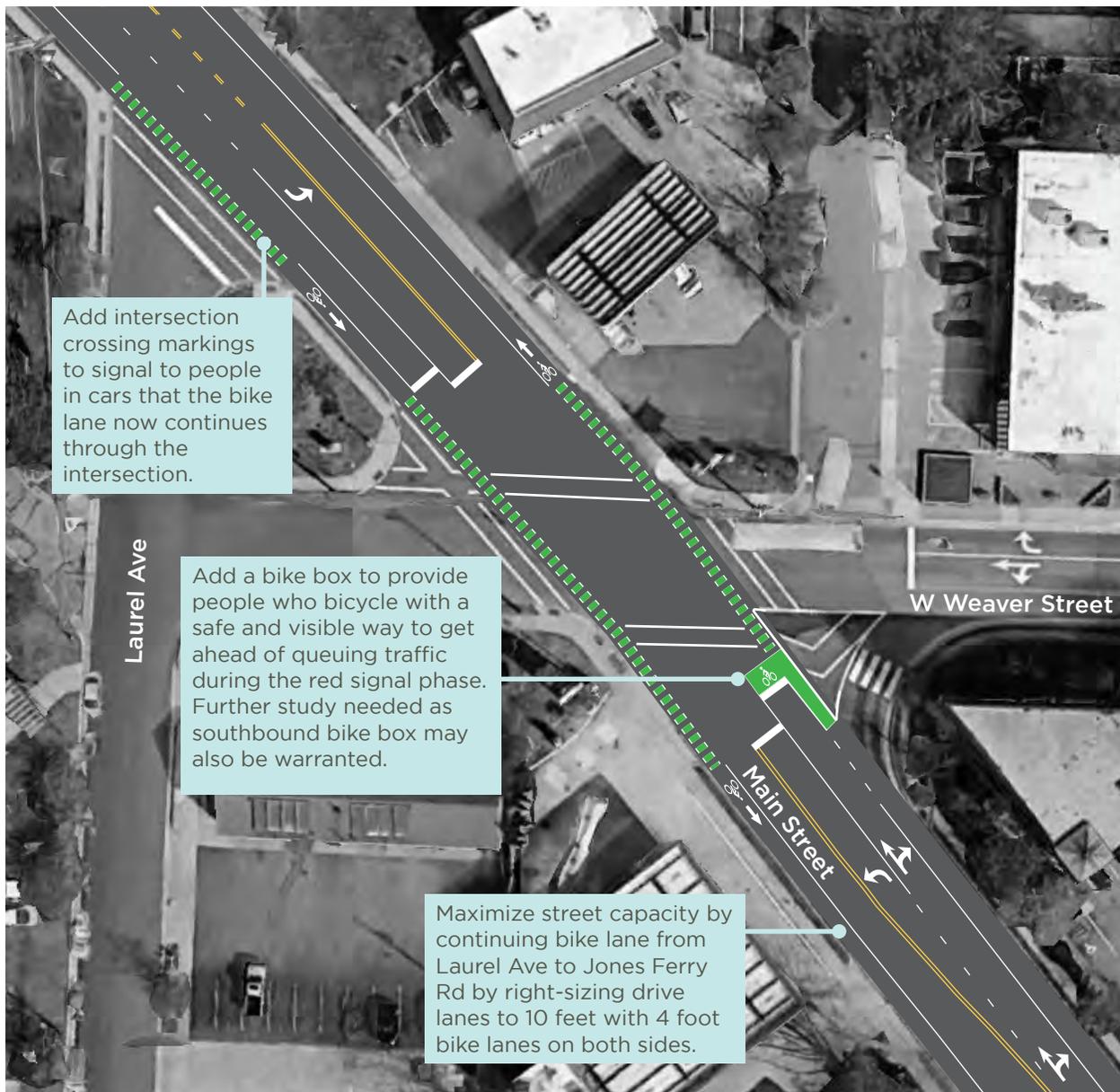
- None (for short term recommendations) - Long term recommendations may require additional ROW at the intersections

POTENTIAL PARTNERSHIPS:

- NCDOT
- Businesses along the corridor
- Town of Carrboro

OPINION OF TOTAL CONSTRUCTION COST (2019) PHASE I: \$145,860**ADDITIONAL NOTES**

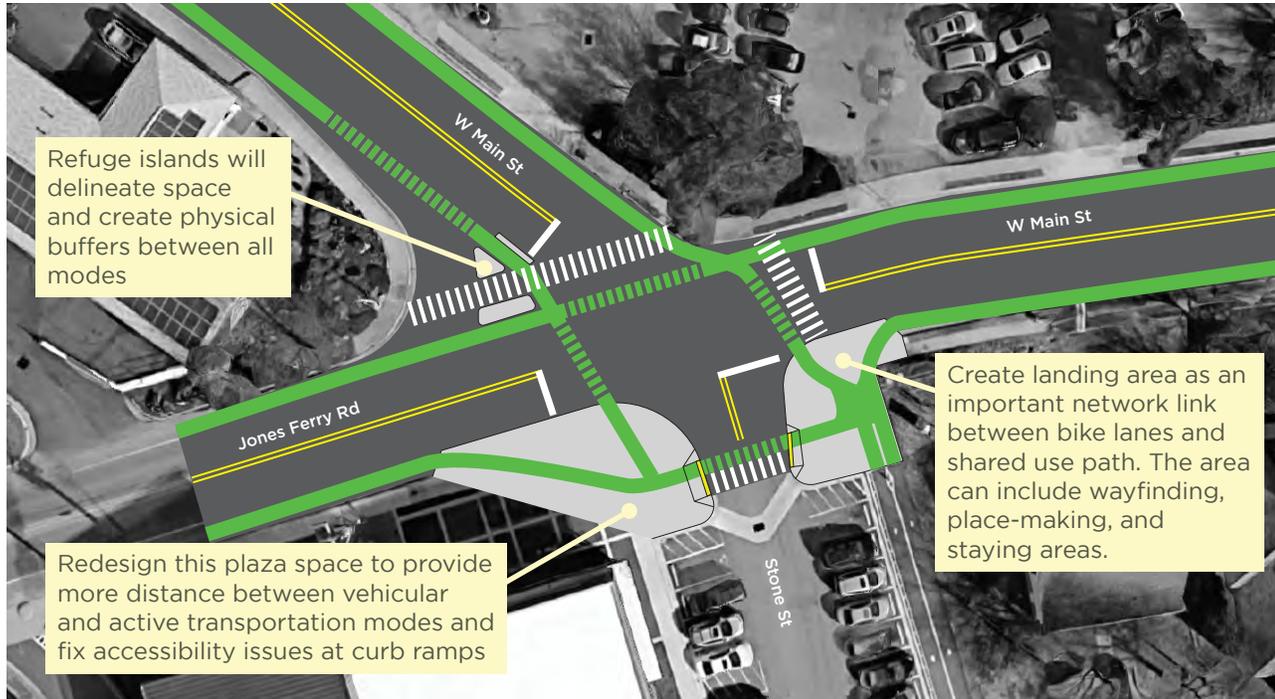
- NCDOT does not have interim approval for application of green paint. The Town of Carrboro does have this interim approval and can install green paint and bike boxes through encroachment with the approval letter as an exhibit.

PHASE 1 CONCEPT: COMPLETE BIKE LANE AND INTERSECTION IMPROVEMENTS

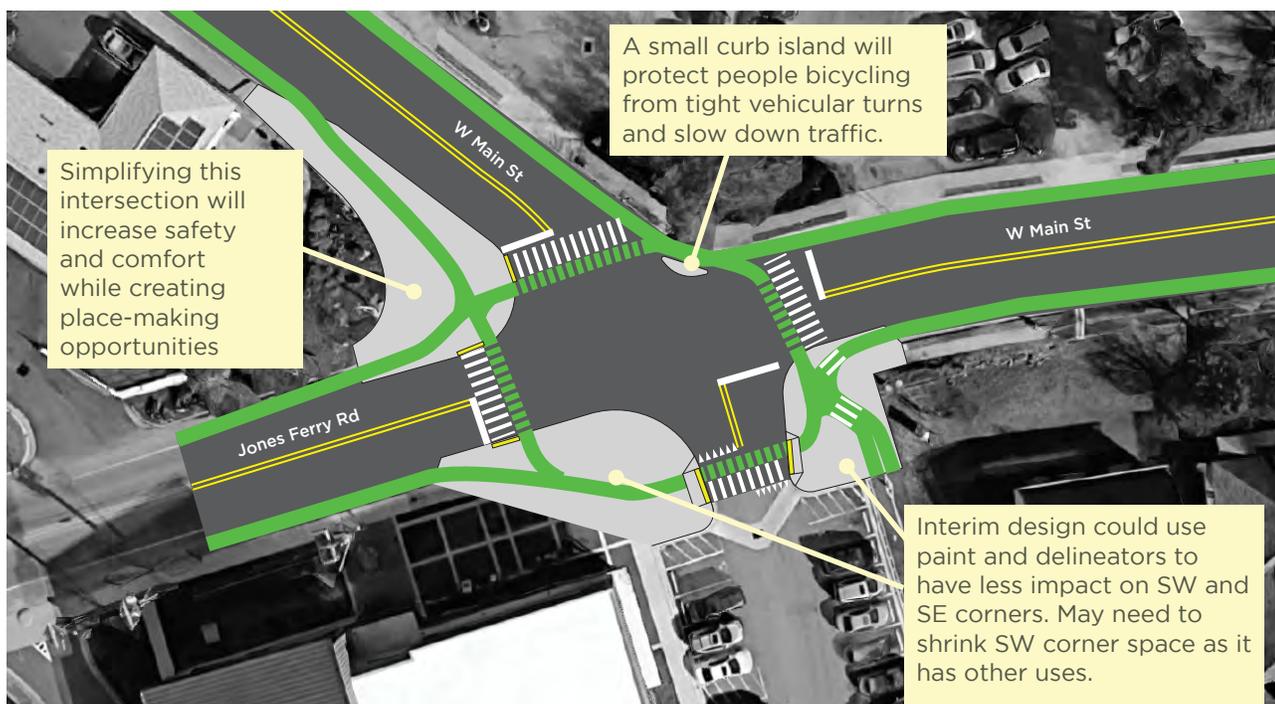
DESIGN OPTIONS AND CONSIDERATIONS:

The following graphics express long-term concepts for a Main St and Jones Ferry Rd protected intersection. This project would require a heavy reworking of the existing curbs, including the recently completed area in front of the PTA Thrift Store.

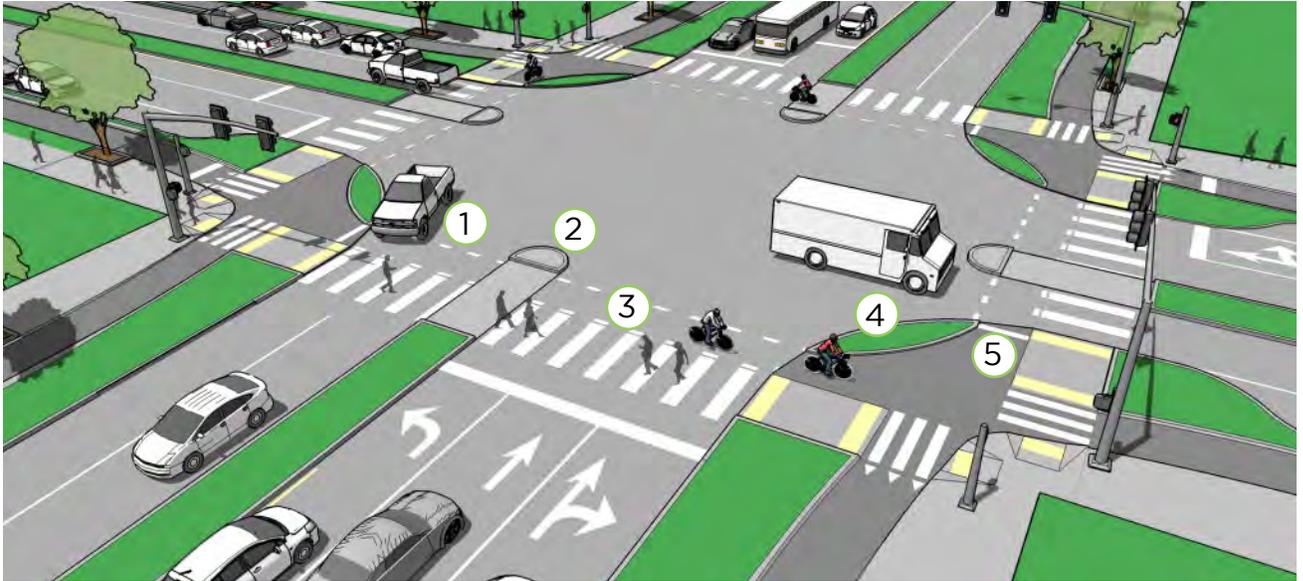
DESIGN ALTERNATIVE 1:



DESIGN ALTERNATIVE 2:



PROTECTED INTERSECTION DESIGN GUIDANCE



- 1 Setback bicycle crossing of 20ft allows for one passenger car to queue while yielding. A larger setback is desired in high speed areas (>35 mph). Small setback distance is possible in slow-speed, space constrained conditions.
- 2 If a permissive left turn is allowed, a median island extending into the intersection should be used to channelize and direct left turning motor vehicles.
- 3 Corner safety island with a 15-20ft corner radius slows motor vehicle speeds. Larger radius designs may be possible when paired with a deeper setback or a protected signal phase.
- 4 Intersection crossing markings should be used to identify the bicycle crossing. Consider green pavement to highlight the crossing area.
- 5 A forward stop bar should indicate the area for people bicycling to wait at a red signal.



Salt Lake City, UT - These protected intersections are used to improve safety and circulation at intersections where two separated bicycle lanes cross.

FURTHER CONSIDERATIONS

Colored pavement may be used within the corner refuge area to clarify use by people bicycling and discourage use by people walking or driving.

Intersection approaches with high volumes of right turning vehicles should provide a dedicated right turn only lane paired with a protected signal phase to separate the right turn movements from through bicycle movements (Stanek, 2015).

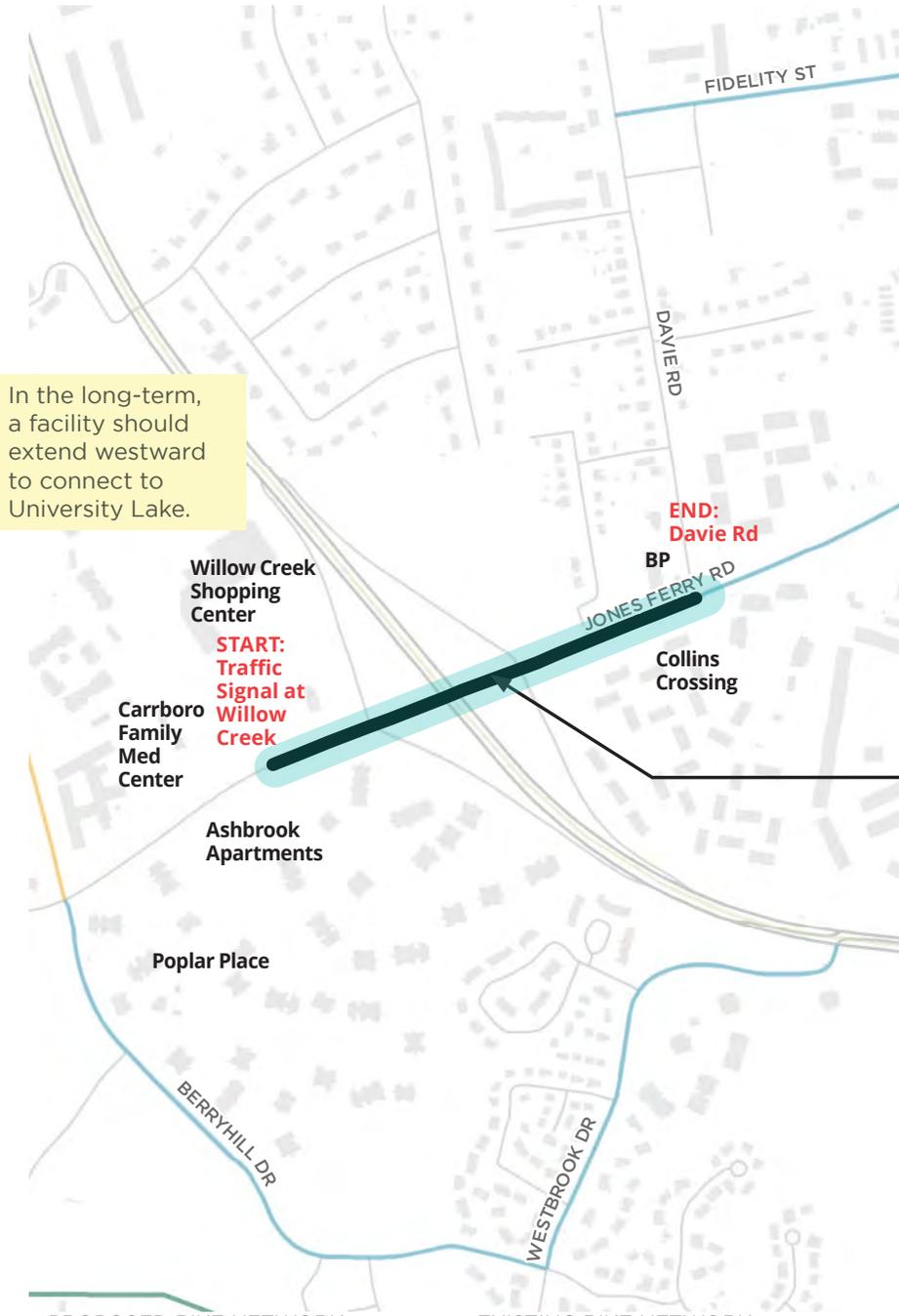
5 - JONES FERRY RD SEPARATED BIKE LANES



FROM:
Traffic Signal at Willow Creek

TO:
Davie Road

LENGTH:
1,600 Feet



Jones Ferry Rd, from the traffic light at Willow Creek to Davie Rd, currently has a buffered bike lane along the uphill (eastbound) side (implemented in 2016), and no bicycle facilities along the downhill (westbound) side. The Town is working with NCDOT Division 7 and the IMD Division to develop a pilot project with three test treatments which would create a protected bike lane using the buffer on the eastbound side. The proposed treatments are standard delineator posts, zebra bumps, and thermoplastic rumble strips.

PHASE 1: Given the relatively high traffic volumes (8,300-12,000 AADT) and 35 mph speed limit through this section, **separated bike lanes** are recommended along both sides of Jones Ferry Rd.

For the downhill (westbound) portion, this would require eliminating the far right turn lane to create space for a buffered bike lane (and physical barrier such as flexible bollards).

For the uphill section (eastbound), a physical barrier should be constructed in the existing buffer space (such as flexible bollards).

A capacity analysis will be needed for the westbound direction.

LONG-TERM: Consider constructing a landscaped median to improve safety, green infrastructure, and aesthetics in the separated bike lane buffer space.



The recommendations are conceptual at this stage. While these ideas and design features represent best practices for bicycling, they don't represent actual design. Once a design process begins, input from the community, adjacent property owners, other internal departments, and NCDOT will likely lead to adjustments that will be made based on what is feasible, desirable, and realistic.

TRIP GENERATORS:

- Willow Creek Shopping Center (Food Lion)
- Adjacent residential areas
- Downtown Carrboro

POTENTIAL PARTNERSHIPS:

- NCDOT
- Town of Carrboro
- Businesses and apartment complex owners along corridor

POTENTIAL ROW NEEDS:

- None

OPINION OF TOTAL CONSTRUCTION COST (2019) PHASE I: \$111,540

EXISTING



PHASE 1: FLEXIBLE BOLLARD SEPARATED BIKE LANE



PHASE 2: LANDSCAPED MEDIAN PROTECTED BIKE LANE



THE LONG TERM NETWORK

The proposed long term bike network was developed with the goal of creating a system of well-connected, low-stress facilities for people of all ages and abilities. This network is intended to identify roadways in need of bicycling improvements so that as roadway and development projects occur, these bicycle facilities should be implemented.

In addition, once the strategic priority projects are implemented, projects from the long-term system will be selected as the next to implement.

The visual facility legend to the right highlights each facility type and the total mileage recommended in the proposed network.

The Town should remain flexible to opportunities as well as constraints that may require adjustments to this long-term network. Additional projects may require refining with further local conversations and coordination with NCDOT and Chapel Hill Transit. These include the N Greensboro St/ Hillsborough Rd buffered (or separated) bike lanes, E Main St separated bike lanes, and consideration of a Rail with Trail route to Hillsborough, among other potential projects.

NCDOT will have corridor studies and roadway projects in the future as well. The Town should remain coordinated with NCDOT to communicate its desires and take advantage of any opportunities to advance bikeways.

Separated Bike Lanes



Private Connections



Shared Use Path



Bike Lanes



Neighborway



Map 11: Long-Term Network

EXISTING BIKE NETWORK

- Bike Lanes
- Bike Lane One Side Only
- Sharrow
- Wide Shoulder
- Shared Use Path

LONG-TERM BIKE NETWORK

- Separated Bike Lanes
- - - Bike Lanes
- - - Neighborway
- - - Private Connection
- - - Shared Use Path
- Crossing Improvement

DEVELOPMENT STATUS

- In Development

A shared use path or wide shoulders could be considered for bike facilities along Old NC 86.

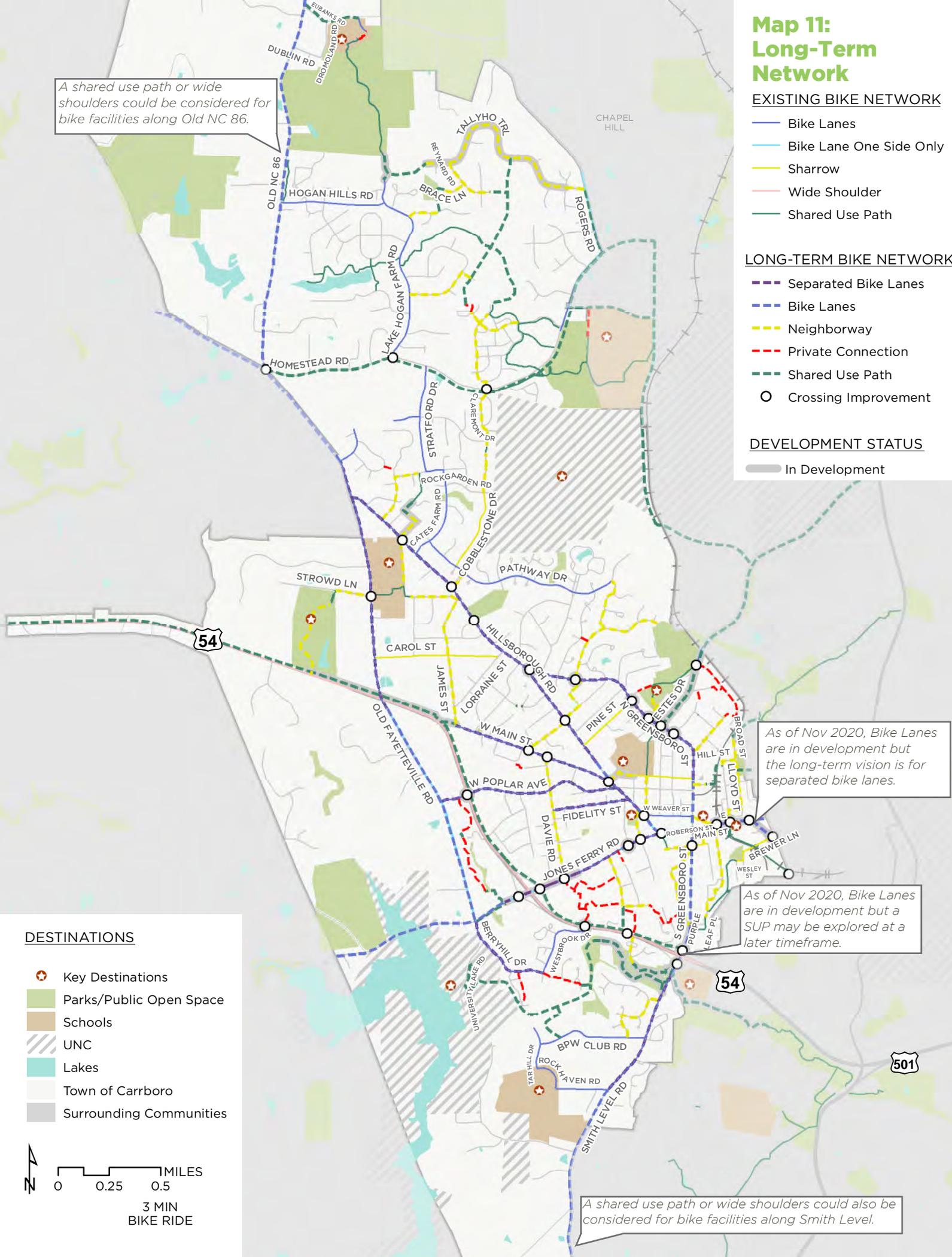
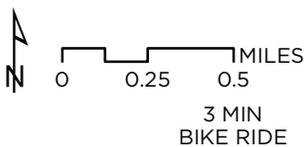
As of Nov 2020, Bike Lanes are in development but the long-term vision is for separated bike lanes.

As of Nov 2020, Bike Lanes are in development but a SUP may be explored at a later timeframe.

A shared use path or wide shoulders could also be considered for bike facilities along Smith Level.

DESTINATIONS

- ★ Key Destinations
- Parks/Public Open Space
- Schools
- UNC
- Lakes
- Town of Carrboro
- Surrounding Communities





REGIONAL CONNECTIVITY

There are numerous opportunities for increasing regional bicycle connectivity that would benefit people getting to and from Carrboro. Carrboro has a deep connection to its neighboring communities. Many neighborhoods, commercial areas, attractions, and institutions overlap between multiple

jurisdictions. The projects and categories below highlight areas of opportunity where the Town of Carrboro can leverage its partnerships to develop bicycle facilities that increase livability and economic vitality for not only Carrboro residents, but for the region.

1 CHAPEL HILL TO HILLSBOROUGH RAIL TRAIL

A 10.2-mile rail corridor from downtown Carrboro northward towards Hillsborough could be a landmark project for the region by linking Carrboro, Chapel Hill, Hillsborough, and Durham. The State University Railroad corridor is currently used infrequently and with very slow-speed trains. A feasibility study managed through the DCHC MPO is recommended to pursue the possibilities.

PARTNERSHIPS

- University Railroad (Norfolk Southern)
- Town of Carrboro
- Town of Chapel Hill
- Town of Hillsborough
- NCDOT
- UNC - Chapel Hill
- Orange County

2 CHAPEL HILL AND UNC CONNECTIONS

UNC-Chapel Hill and its institutions are large employers of many Carrboro residents. In addition, Carrboro and Chapel Hill residents commonly utilize services, recreation, and shopping across the “border” given the adjacent proximity. There are numerous key corridors linking Carrboro and Chapel Hill including Main St, Rosemary St, Estes Dr, Homestead Rd, Morgan Creek Greenway, and the Libba Cotton Bikeway. These all represent vital connections between the two communities. Ensuring continuity amongst bicycle facilities is paramount in ensuring a safe and comfortable regional network for regular users.

PARTNERSHIPS

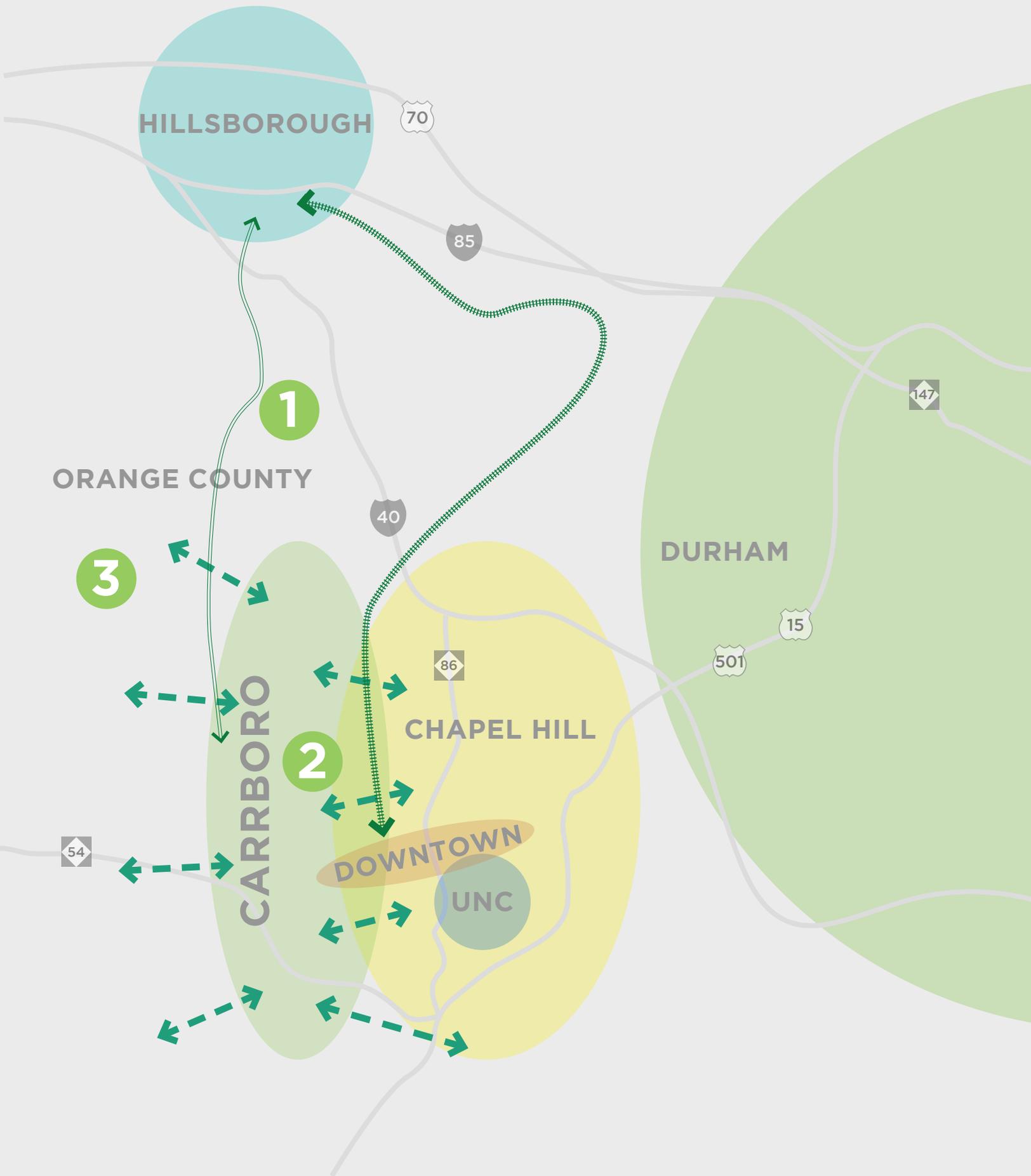
- Town of Carrboro
- Town of Chapel Hill
- UNC - Chapel Hill
- NCDOT

3 ORANGE COUNTY CONNECTIONS

Orange County has always been a popular recreational riding region with one of the first state bike routes established for the county. There are currently 206 miles of bicycle routes throughout Orange County, connecting communities and rural landscapes. Today, the communities of Carrboro, Chapel Hill, Hillsborough, and Mebane have expanded their bike networks. Thoughtfully tying these networks together into the future will help reduce future congestion and increase livability in this growing area.

PARTNERSHIPS

- Town of Carrboro
- Town of Chapel Hill
- Orange County
- Adjacent property owners
- NCDOT



HILLSBOROUGH

70

85

1

ORANGE COUNTY

40

3

DURHAM

147

2

CARRBORO

86

CHAPEL HILL

501

15

54

DOWNTOWN

UNC



LONG TERM NETWORK - OTHER PROJECTS OF INTEREST

In addition to the long-term network shown on page 65, there are other projects of interest, while not shown on that map, warrant additional discussion. These projects are ones that the Town is still interested in finding an appropriate route to implementation, but additional work is needed in clearing administrative hurdles, design review & approval, or identifying community consensus. Showing these as lines on a map fails to acknowledge the underlying complexities and work needed to make these projects a reality.

Bolin Creek Greenway

Carrboro adopted a Greenways Master Plan in 2006, that first identified the Bolin Creek Corridor as a potential alignment for greenway development. This is a multi-phase project of which sections 1A and 1B have been completed. Phase 2 as identified in that plan should still be considered for potential bicycle transportation projects. Consideration of other alignments in that plan were not discussed as part of this planning process, because as of October 2020, direction has yet to be determined by the Carrboro Town Council.

Buffered/Separated Bike Lanes

Throughout the development of this Plan, there was a significant interest in separated bicycle lanes, in particular along N Greensboro Street and Hillsborough Road. These facilities are of utmost important in providing safe routes for people on bikes of all ages and abilities, and the Town is fully supportive of them, but there are implementation hurdles worth acknowledging. There are

currently no separated bicycle lanes on NCDOT maintained facilities. This means that there are no design standards in place to facilitate efficient review and approval of any proposed design for separated bicycle lanes on their facilities.

Carrboro is currently working with NCDOT to develop a pilot project for the Jones Ferry Road corridor, which would place physical separation in the buffer space that already exists. The implementation process for future separated bike lanes on NCDOT facilities will be better refined based on the information gathered and lessons learned from that project. The Town fully acknowledges the importance of these facilities in developing a true “8 to 80” bicycle network and is committed to identifying funding and routes to implementation whether that be through the State Transportation Improvement Program (STIP), the NCDOT complete streets process, Highway Safety Improvement Program (HISP), or other sources.

Rail Trails

The current Libba Cotten bikeway is a key piece of bicycle infrastructure in Carrboro. There has been significant interest received in extending that route along the rail corridor to points further north; In particular to use that as part of a route to Hillsborough or the Campus to Campus Connector. The Libba Cotten is a unique section of rail with trail in that it exists through an agreement between the University of North Carolina (who owns the rail spur) & the Town of Carrboro (who built and maintains the

trail). The implementation for the Libba Cotten included an extensive discussion of liability, one that would likely need to be held again if another rail trail is to be considered. To extend the trail further would require developing a separate agreement with Norfolk Southern, the owner of the ROW along its alignment north of East Main Street in downtown.

NCDOT Complete Streets Policy

A large amount of feedback has been received on the need to incorporate separated bicycle facilities for the purposes of taking advantage of the current NCDOT Complete Streets Policy. As of November 2020, this is the current understanding and applicability of that policy:

1. The policy applies to approved an programmed highway projects within the STIP, either those without a finalized environmental review or those submitted to prioritization.
2. NCDOT may use highway funds to construct bike-ped projects provided they are shown in a local or MPO plan
3. NCDOT will not fund independent bike-ped projects, rather they will be built alongside highway projects.

The fact that these bike-ped projects are built alongside a highway project should not be overlooked. While this provides a route to implementation, it may be coupled with additional motor vehicle infrastructure that increase capacity (lanes, turn bays, wider intersections) that is contrary to Carrboro's vision of developing an "8 to 80" bicycle network.

Town Development Projects

The Town of Carrboro is committed to improving bicycle infrastructure as part of public development projects. The

following projects highlight the Town's past and future commitment:

- » **Town Commons** - Completed in 2018, the upgraded space which is utilized by the Carrboro Farmer's Market included a bicycle Fix-It Station.
- » **Dr. Martin Luther King Jr. Park** - Completed in 2020, the design of this park was modified, based on substantial community input to include a bicycle pump-track. The Town continues to look for ways to make this site more bicycle friendly.
- » **The 203 Project** - Located along S Greensboro street, this is the future site of the Orange County Southern Branch Library, Town Recreation and Parks offices, and other community services. The Town is committed to incorporating on-site improvements to create a bicycle friendly community hub. More information can be found at: www.the203project.org.



N. Greensboro Street and Hillsborough Road represent opportunities for enhancing the current bicycle lane to a buffered bike lane or separated bike lane. Given the curb-to-curb constraints, changes within existing pavement may be the only alternative that is feasible, and would still provide benefit to people on bikes.



DESIGN GUIDE RESOURCES

Overview

Planners and project designers should refer to these standards and guidelines in developing the infrastructure projects recommended by this Plan. The following resources are from the NCDOT website, for “Bicycle & Pedestrian Project Development & Design Guidance”, located here:

<https://connect.ncdot.gov/projects/BikePed/Pages/Guidance.aspx>

All resources listed below are linked through the web page listed above, retrieved in August 2018.

National Guidelines

American Association of State Highway and Transportation Officials (AASHTO):

- Guide for the Development of Bicycle Facilities
- Guide for the Planning, Design, and Operation of Pedestrian Facilities

The Federal Highway Administration (FHWA):

- Accessibility Guidance
- Design Guidance
- Facility Design
- Facility Operations

Manual on Uniform Traffic Control Devices (MUTCD):

- 2009 NC Supplement to MUTCD
- Part 4E: Pedestrian Control Features
- Part 7: Traffic Controls for School Areas
- Part 9: Traffic Controls for Bicycle Facilities

National Association of City Transportation Officials (NACTO):

- Urban Bikeway Design Guide
- Urban Street Design Guide

Safe Routes to School (SRTS) Non-Infrastructure:

- National Center for Safe Routes to School
- National Partnership for Safe Routes to School

US Access board:

- ABA Accessibility Standards
- ADA Accessibility Guidelines
- ADA Accessibility Standards
- Public Rights-of-Way, Streets & Sidewalks, and Shared Use Paths

North Carolina Guidelines

North Carolina Department of Transportation (NCDOT):

- WalkBikeNC: Statewide Pedestrian & Bicycle Plan
- Glossary of North Carolina Terminology for Active Transportation
- NCDOT Complete Streets, including the Complete Streets Planning and Design Guidelines
- Evaluating Temporary Accommodations for Pedestrians
- NC Local Programs Handbook
- Traditional Neighborhood Development Guidelines

Greenway Construction Standards:

- Greenway Standards Summary Memo
- Design Issues Summary
- Greenway Design Guidelines Value Engineering Report
- Summary of Recommendations
- Minimum Pavement Design Recommendations for Greenways
- Steps to Construct a Greenway or Shared-Use Trail

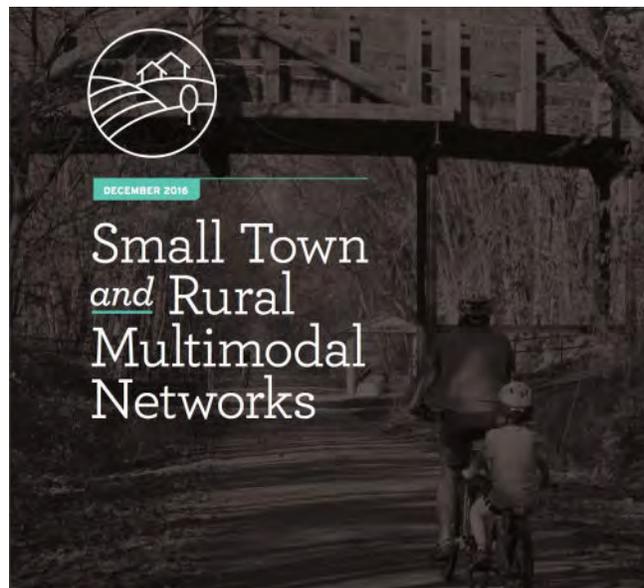
NCDOT Bicycle and Pedestrian Policies

<https://connect.ncdot.gov/projects/BikePed/Pages/Policies-Guidelines.aspx>

Additional FHWA resources not currently linked through the main NCDOT link above:

- Achieving Multimodal Networks (2016)
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/
- Separated Bike Lane Planning and Design Guide (2015)
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/page00.cfm
- Incorporating On-Road Bicycle Networks into Resurfacing Projects (2016)
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing/
- Small Town and Rural Multimodal Networks Design Guide (2017)
Main Guide:
<http://ruraldesignguide.com/>

Section specific to side paths:
<http://ruraldesignguide.com/physically-separated/sidepath>



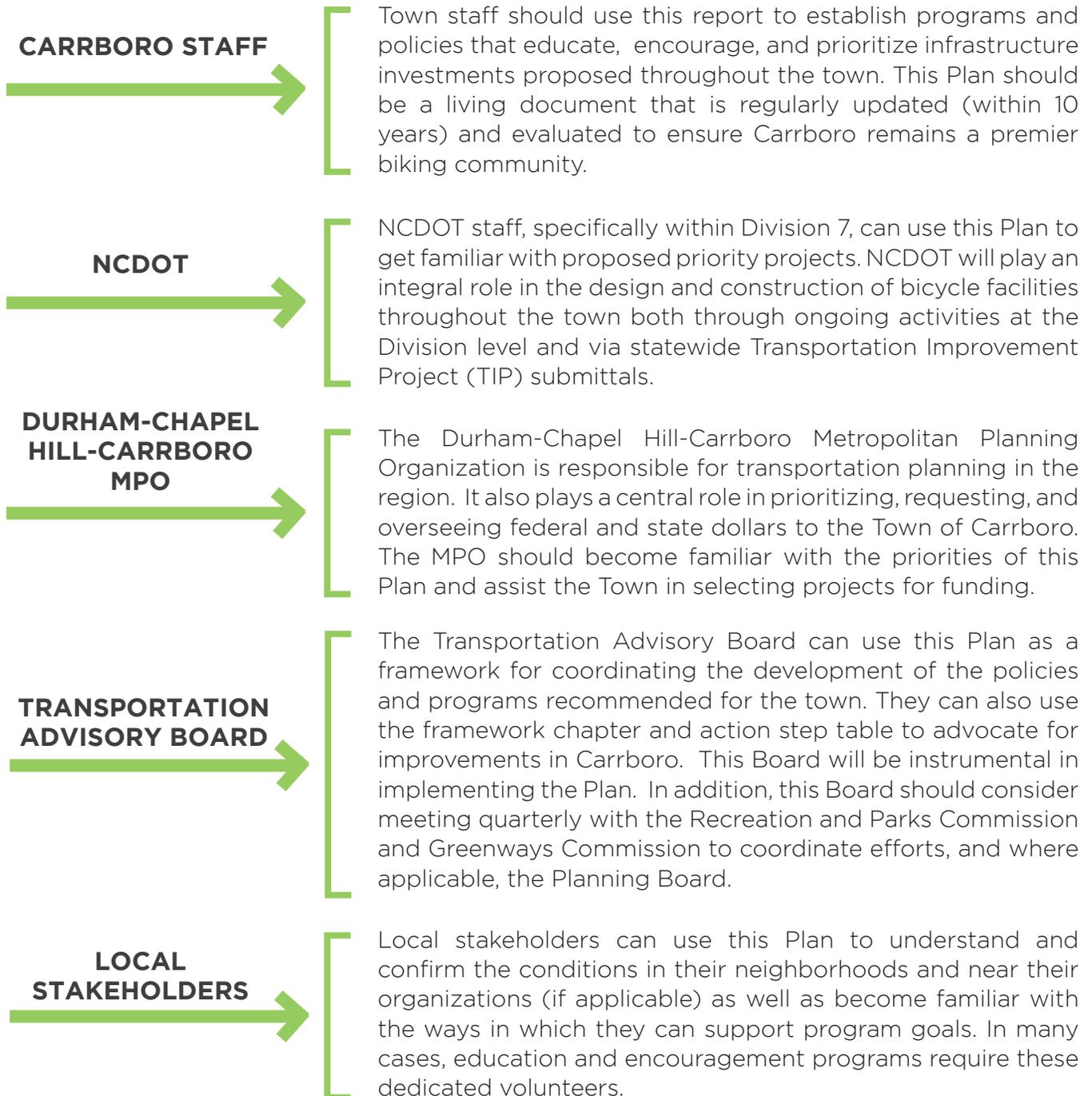


6 STRATEGIES



ROLES + RESPONSIBILITIES

At the heart of every successful plan is a coordinated effort by town staff, stakeholders, and other partners to support safe travel by bike. Everyone has a key role to play in implementing this Plan.



Other stakeholders include Chapel Hill Transit, GoTriangle, Orange County, Town of Chapel Hill, UNC-Chapel Hill, Triangle Trails Initiative, and others.



PERFORMANCE MEASURES

The performance measures in this Plan are important for assessing whether the Plan is meeting its goals over time. Data on these measures should be collected on a routine basis to help track progress. This information will allow for adjustments to help ensure that this Plan’s goals are achieved.

The Plan performance measures are based on the goals of the Plan (see Chapter 1).

The performance measures are generally outcome-based, and the intent is to prioritize investments that do the best job of achieving desired Plan outcomes.

The performance measures were selected based on Carrboro’s ability to collect relevant data. The expectation is that these measures will be evaluated and reported on a biennial basis.

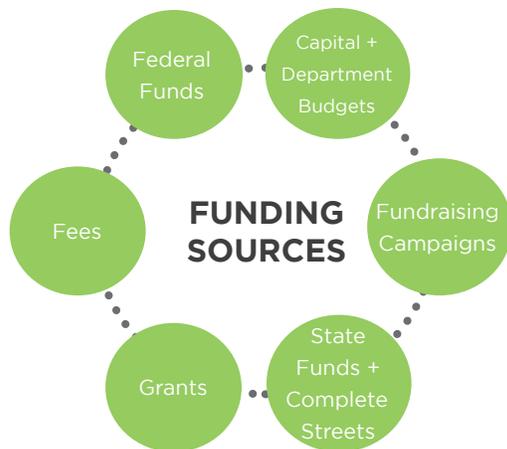
Table 1 Bicycle Plan Performance Measure Targets		
Goal	Example Performance Measure	Performance Target/ Desired Trend
Maximize Ridership Growth	Bicycle counts	Increased counts at key locations
Enhance Connectivity	Average travel time by mode	Decrease in average travel time*
Create a Positive Economic Impact	Retail Sales tax revenue	Increase sales tax revenue*
Protect the Environment	Motor vehicle trips reduced by project	Decrease in the number of motor vehicle trips to levels aligned with the Town’s GHG emission reduction goal
Promote Equity	Housing and Transportation Affordability Index	Increase in H+T Index*
Enhance Health	Percentage of children and adults who meet physical activity recommendations	Increase in childhood and adult physical activity level*
Safety	Bicycle collision rate	Reduce bicycle collision rate
	Number of fatalities and serious injuries	Zero fatalities
Increase Livability	Number of jobs accessible by travel time; mode, and industry	Increase number of jobs accessible within 15 minutes by bike

**These data are challenging to obtain and scale to the Town’s geography and to the bicycling mode, specifically. The Town can consider surveys to determine progress with equity, average travel time, and physical activity levels.*

FUNDING SOURCES

In order to achieve the goals of this Plan, the Town of Carrboro and its partners will need to fund improvements from a variety of funding sources and partners. Funding sources will need to be opportunistic and consistent in order to implement this plan. Five primary funding sources make up the core funding strategy for this Plan:

- » **Federal Funds.** There are several federal funding programs that can be used for biking projects that are administered by NCDOT to the DCHC MPO or local jurisdictions. Examples include the Transportation Alternatives Programs (TAP), Surface Transportation Program (STPDA), Congestion Mitigation and Air Quality (CMAQ) and the Highway Safety Improvement Program (HISP). The Strategic Mobility Formula aligns bicycle and pedestrian projects with funds from the Transportation Alternatives Program and Surface Transportation Program.
- » **State Funds.** A number of opportunities for funding exist at the state level including submitting projects through the state prioritization process (SPOT), safety funds (SPOT Safety), as well as working with the Division Traffic Engineer to identify funds for smaller improvements such as signage and pavement markings. The SPOT process is highly competitive and takes time to progress a project through to implementation, so this isn't the most speedy process to secure funds.
- » **NCDOT Complete Streets.** The newly revised program might apply, but can only be accessed if the Town submits a highway project to the SPOT process that get accepted into the STIP. NCDOT will use highway funds to build bike-ped projects that are in a local plan as part of a highway STIP project.
- » **Grants.** Competitive grants through public agencies or through private or non-profit foundations can generate additional resources for projects and programs.
- » **Capital & Department Budgets.** Carrboro can implement this Plan through regularly scheduled capital projects, such as streetscape projects, street resurfacing, or new public or private property construction. This is particularly applicable to smaller projects, for which securing outside funds might be more difficult as well as increasing the complexity of an otherwise simple project.
- » **Fees.** User fees or development impact fees provide an opportunity to generate revenue to fund infrastructure projects, such as sidewalk and trail construction, as well as programs, such as bicycle education classes.
- » **Fundraising Campaigns.** Fundraising through neighborhood groups, advocacy groups, or even crowd-funding can help generate additional resources for projects and programs.
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BIKE-FRIENDLY COMMUNITY RECOGNITION

The Bicycle Friendly Community (BFC) program led by the League of American Bicyclists is intended to assist communities in making bicycling a viable transportation option. The program incorporates assessments in the score card that can help Carrboro gauge where they are excelling and where they are falling short.

The Town has participated in the League of American Bicyclists' Bicycle Friendly Community program since 1999 and its bronze-level designation inspired the Town to frame its first comprehensive bicycle plan around actions that could help lead to higher level designations.

In 2010, the Town was awarded with a silver-level designation – the first to achieve this ranking in North Carolina. The League of American Bicyclists attributed Carrboro's active Transportation Advisory Board, the percentage of arterial streets with bike lanes, and the percentage of people bicycling daily as key contributors to the Town's silver-level designation. The League submitted the guidance below to help Carrboro think about ways to advance to a gold-level recognition.

Going for Gold!

- » Continue to expand on and off street bike network connectivity both within the Town and to surrounding areas. Protected bike lanes are recommended, especially on roads with speed limits above 35 mph.
- » Develop a system of bicycle boulevards on quiet, neighborhood streets.
- » Make intersections safer and more comfortable for people who bicycle.
- » Increase high quality bicycle parking.
- » Expand Safe Routes to School programs.
- » Continue to expand public education and bicycling skills workshops.
- » Promote cycling throughout the year by offering community bike rides.
- » Encourage communication between the Carrboro Police Department and cycling community.
- » Ask police officers to step up enforcement for people driving and bicycling.

KEY PRIORITIES

1

KEEP MOMENTUM ON BICYCLE PROJECTS THAT ARE ALREADY IN DEVELOPMENT.

Map 4 (pg. 19) features existing facilities along with projects that have some level of funding, design, or construction in progress. These “in-development” projects should be fully funded first, as the lowest hanging fruit for new bicycle infrastructure. *Timeline: IMMEDIATE*

2

USE EQUITY TO PRIORITIZE PROJECTS FOR FUTURE IMPLEMENTATION

Maps 5 & 6 display the composite and racial equity assessment for the Town. As a condition of Carrboro’s participation in GARE, this information will be used to help prioritize future projects with the goal of ensuring that bicycle ridership is not predictable by race. *Timeline: IMMEDIATE*

3

STRATEGICALLY AND PROACTIVELY FUND AND BUILD STRATEGIC PRIORITY PROJECTS.

Map 9 (pg. 44) features a set of priority projects that developed out of the Carrboro Bike Plan process. These are detailed in individual project cut-sheets (starting on page 50) that summarize why the project is a priority, and what the key opportunities and challenges are to its development. *Timeline: 5-10 years*

4

USE THE LONG TERM NETWORK OF RECOMMENDATIONS TO BUILD OTHER PROJECTS INCREMENTALLY OVER TIME.

As Carrboro continues to grow, new development and roadway construction projects should incorporate facilities recommended in Map 10 (pg. 59). As progress is made on priority projects, new priorities should be selected from this comprehensive map of recommendations. *Timeline: 10+ years*

5

LEVERAGE PARTNERSHIPS TO IMPLEMENT NEW POLICY AND PROGRAMS.

Working with existing partners and reaching out to new organizations with common goals may help implementation of the short-term recommendations outlined in chapter 4. *Timeline: 3-10 years*



Division of
Bicycle &
Pedestrian
Transportation



Prepared for the Town of Carrboro, North Carolina

Prepared by Alta Planning + Design

This project was made possible with a matching grant from the
North Carolina Department of Transportation (NCDOT)

Division of Bicycle and Pedestrian Transportation (DBPT).



APPENDIX

A

Comprehensive Projects List



**TOWN OF
CARRBORO**

BIKE PLAN



COMPREHENSIVE PROJECTS LIST

This list was developed by Town staff based on feedback received towards the end of the plan development process to more clearly define the projects that are included in the plan. This list is comprehensive, and thus includes all projects, even those which (as of January 2021) lack a clear route to implementation. This table identifies location, improvement type (long term and incremental), cost estimate, estimate source, facility ownership, resurfacing timeline, and funding/implementation information. Any improvement proposed for a street that is not maintained by the Town is subject to approval and agreement from the entity which maintains it, whether that is an encroachment agreement from NCDOT or easement from a private entity. Additional information about the attributes shown in the table are described below.

Improvement Types - Linear Facilities

- » Sharrow + Wayfinding - Basic non-traffic calming improvements typically incorporated as part of a neighborway, but can be made to create a functional bike route where traffic speeds and volumes are already low.
- » Neighborway - In residential neighborhoods, neighborways—also known as bicycle boulevards—improve travel for people who bicycle while calming traffic and greening neighborhoods. Neighborways are shared by automobiles and bicycles, but at speeds that make travel more comfortable for people who bicycle. Typical treatments along neighborways may include mini traffic circles, chicanes, wayfinding signage, and shared-lane markings.
- » Buffered Bike Lane - A bicycle lane with a buffer space between the motor vehicle lane and the bike lane. This is the first step in incrementally installing a protected bike lane.
- » Separated or Protected Bike Lane - This updated Plan defines a separated bike lane as a bicycle facility that is physically separated from motor vehicle traffic within a street corridor. For this Plan, this includes cycle tracks and buffered bike lanes. The on-road physical separation can be achieved through parked cars, curbs, medians, bollards/traffic posts, planters, or marked buffered space between the bike lane and adjacent travel lane.
- » Bike Lane - A bike lane is a portion of the roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of people who bicycle. Bike lanes are almost always located on both sides of the road (except one way streets), and carry people who bicycle in the same direction as adjacent motor vehicle traffic. In some cases, climbing bicycle lanes (on uphill side) can be paired with shared-lane markings on the downhill section. The minimum width for a bike lane is 4 feet; five- and six-foot bike lanes are typical for collector and arterial roads.



- » Climbing Lane - In an area where there is significant topography, a bicycle lane may be provided only in the uphill direction.
- » Cycletrack - Placement of both bike lanes on the same side of the street, usually with a vertical separation between the bike lane and the vehicle lane.
- » Shared Use Path - Shared Use Paths are completely separated from motorized vehicular traffic and are constructed in their own corridor, often within an open-space area. Shared Use Paths can be paved and should be a minimum of 10' wide. Pavement widths of 12-, 14-, and even 16-feet are appropriate in high-use urban situations. Greenways and Sidepaths are included in this category.
- » Private Connection (On-street or Shared Use Path) - A private connection includes the development of a public bike facility on a privately owned street or land. The recommendations found here include shared use paths taking advantage of privately owned open space and neighborways on privately owned residential streets. These facilities are often kept short to minimize impacts on private property but are critical components to a well-connected network.

Improvement Types - Intersections

Intersection projects, while indicated separately from linear ones, often don't have independent cost estimates. This is due to the fact that if a linear project

crosses an intersection, it includes the intersection improvements noted.

- » Hi-vis X-walk and Signage - A basic, low cost improvement to indicate the crossing location at an intersection for people on bikes and people walking. Signage provides advance warning to drivers.
- » Bike Box - A dedicated space for people on bike to wait for a green signal. Increases safety during the transition from a section with a bike lane, to one without by allowing people on bikes to get in front of those in car and be more visible. Bike loops (so people on bikes can trip the traffic signal) are often placed here.
- » Conflict Markings - Markings designating the area where people on bikes ride through an intersection. This helps people driving understand where to expect people on bikes and reduce the risk of right-hooks and other collisions.
- » Signalized Crossing - More intense crossing infrastructure that encompasses a variety of treatments including Rapid Rectangular Flashing Beacons (RRFBs), High-intensity Activated crossWalk (HAWK), Pedestrian Hybrid Beacon (PHB), or a traffic signal. Selected of treatment is dependent on the context of the intersection.
- » Protected Crossing - A type of bicycle crossing where the bike lane is pulled behind the curb, adjacent to the sidewalk.
- » Roundabout - An intersection traffic control device which

allows traffic to move continually at a lower speed with which people on bikes can easily merge with motor vehicle traffic.

Improvement Types - Other Information

- » Existing Pavement (EP) - Utilize a road diet or restriping to implement within existing pavement to reduce cost. Additional analysis is required to determine if a road diet would be approved by NCDOT. Furthermore, these estimates operate under the assumption that pavement markings can be added without needing to remove existing markings or mill/resurface existing pavement; both of these items could add to the cost estimates significantly, and would be determined once more information about individual projects becomes available.
- » New Construction (NC) - Build new facility along existing road, often associated with substantial right-of-way and cost requirements, along with stormwater impacts due to increased impervious surface area.

Cost Estimate Source

Best available information for project level cost estimates. While the goal is to be as realistic as possible given available information, estimates are subject to change as a project enters development and more detailed information becomes available. Some estimates combine information from multiple sources.

All cost estimates were developed in November 2020, and are displayed in 2020 Dollars.

- » Updated Bike Plan - Estimates take from strategic priority cut sheets in the main plan, developed by Alta Planning and Design.
- » In Development - Estimate based on current design work and/or contracted amount for a Town managed project.
- » Staff Tool - Internal tool developed by Town staff based on costs from recently developed road diet projects to assist in cost estimates for future road diets.
- » Staff Estimate - Simple quantity take offs developed by Town staff based on information confirmed with the Town's Public Works Department.
- » NCDOT SPOT 6.0 Tool - Bike-Ped Cost Estimate taken from a tool developed by NCDOT for use in estimating preliminary project costs for Prioritization 6.0. This tool can be accessed online at: <https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Prioritization%206.0/NEW%20BikePed%20Cost%20Estimation%20Tool>
- » Previous Projects - Based on cost estimates for past Town projects related to traffic calming. Neighborways in particular primarily incorporate traffic calming measures.



- » Long Term Estimate – A general estimate for an intersection project for which no specific improvement has yet been identified.
- » N/A - Project for which an estimate has not been developed due to either being under construction or included as a part of another project.

Priority

- » Under Construction - Projects which are under construction as of November 2020.
- » In Development - Projects which have secured funding and/or have begun the design process as of November 2020.
- » Strategic Priority - The top priority projects as identified in the Updated Bike Plan. Those numbered 1 through 5 have a project cutsheet and cost estimate in the main plan. Those numbered 6 do not have a cutsheet or assigned ranking, thus they are assumed to be equal (but below the top 5).
- » Short Term - Those projects which aim to be completed within the first 5 years (yrs 0-5).
- » Mid Term - Those projects which aim to be completed within the second 5 years (yrs 5-10)
- » Long Term - Those projects which aim to be completed more than 10 years later.

Owner

- » Carrboro - A street maintained by the Town.
- » NCDOT - A street maintained by the State of North Carolina. An encroachment agreement is needed for the Town to make improvements to roads in the state maintained system.
- » Private - A privately maintained street, driveway, or other vehicle circulation area, like a parking lot within an apartment complex. A discussion with the property owner is needed to determine how or if project implementation can proceed.
- » Utility - A utility corridor. An easement or other agreement may be required for project implementation.
- » Railroad - Current active rail line, substantial discussion with the railroad company is needed. Implementation is dependant on this process.

Funding/Implementation Information

- » Enroach – The Town will need to enter into an encroachment agreement with NCDOT to make improvements on roadways maintained by the state. Funding expected through the Town;s Capital Improvement Program and Annual Budget.
- » Traffic Calming – Neighborways or other small on-street projects



can be funded through the Town's traffic calming budget or assessed through a request under the Town's Residential Traffic Management Plan.

- » STIP – State Transportation Improvement Program, projects must be submitted to the competitive prioritization process in order to receive funding. Projects funded this way generally take at least 5 years prior to beginning design.
- » Resurfacing – Work alongside Town or NCDOT maintenance projects to reduce costs associated with installing improvements.
- » Compete Streets (CS) – NCDOT's revised Complete Streets policy which funds bike-ped projects in local plans as part of a highway project that is programmed in the STIP. The Town would need to submit a highway project to prioritization and have it successfully programmed in order to have NCDOT fund a local bike-ped project. Complete Streets does not build independent bike-ped projects that are not associated with a highway project.
- » Federal Grants (FED) – Federal sources of project funding including CMAQ (Congestion Mitigation and Air Quality), STBGDA (Surface Transportation Block Grant Direct Apportionment), TAP (Transportation Alternatives Program), and HISP (Highway Safety Improvement Program). These are competitive programs for which Town staff must submit

projects that are then assessed for funding. Submitting a project does not automatically mean funding will be secured.

- » OCTP – Orange County Transit Plan (funded by county sales tax).
- » CIP – the Town's Capital Improvement Program, updated annually, this covers a five-year period from which local funds can be allocated to capital projects in the annual budget.
- » Developer - A project which is being built by a developer as part of their construction. The Town can also look for opportunities to require facilities to be built as part of or alongside future development projects.

#	Name	From	To	Miles	Feet	Long Term Improvement	Long Term Estimate	Initial Improvement	Initial Estimate	Estimate Source	Priority	Owner	Resurface Year	Implementation/Funding
1	N Greensboro St	at Estes Dr	---	---	---	Roundabout	---	---	---	N/A	Under Construction	NCDOT	---	STIP
2	N Greensboro St	at Williams St	---	---	---	Signalized Crossing	---	---	---	N/A	Under Construction	NCDOT	---	STIP
3	N Greensboro St	at Oak Ave	---	---	---	Signalized Crossing	---	---	---	N/A	Under Construction	NCDOT	---	STIP
4	Homestead Road Phase 1	Burgundy Ln	Stratford Dr	0.07	388	10' Shared Use Path	\$ 200,000	---	---	Updated Bike Plan	Strategic Priority 1	Private	---	Work with owner/Encroach
5	Homestead Road Phase 2	Lake Hogan Farms Rd	Stratford Dr	0.16	837	10' Shared Use Path	\$ 400,000	---	---	Updated Bike Plan	Strategic Priority 1	NCDOT	---	STIP, CS, FED
6	Hillsborough Rd	At N Greensboro St	---	---	---	Signalized Crossing	\$ 150,000	Pvmt Marking + Curb Mod	\$ 100,000	Updated Bike Plan	Strategic Priority 2	NCDOT	---	CIP, STIP, FED
7	Shelton St	Hillsborough Rd	Ashe St	0.15	785	Protected Contraflow (Existing Pavement)	\$ 20,000	Contraflow Lane (Existing Pavement)	\$ 30,000	Updated Bike Plan	Strategic Priority 3	Carrboro	---	Resurface, CS, STIP
8	W Main St	At Jones Ferry Rd	---	---	---	Protected Crossing	\$ 100,000	Conflict Markings	\$ 70,000	NCDOT SPOT 6 Tool	Strategic Priority 4	NCDOT	---	Encroach/CIP, CS, STIP
9	W Main St	Laurel Ave	Jones Ferry Rd	0.15	803	Protected Bike Lane (Existing Pavement)	\$ 200,000	Bike Lanes (Existing Pavement)	\$ 150,000	Updated Bike Plan	Strategic Priority 4	NCDOT	---	Encroach/CIP, CS, STIP
10	Jones Ferry Road	Willow Creek	E of Davie Rd	0.39	2,037	Protected Bike Lane (Existing Pavement)	\$ 180,000	Buffered BL (Existing Pavement)	\$ 165,000	Updated Bike Plan	Strategic Priority 5	NCDOT	---	Encroach/CIP, CS, STIP
11	Elm St	Shelton St	W Weaver St	0.19	1,026	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 3,000	Previous Projects	Strategic Priority 6	Carrboro	---	Resurface or TC
12	W Carr St	PTA Bike Path	S Greensboro St	0.14	728	Neighborway	\$ 5,000	Sharrow + Wayfinding	\$ 2,500	Previous Projects	Strategic Priority 6	Carrboro	---	Resurface or TC
13	Parkview Ave	Hillsborough Rd	Pathway Dr	0.09	497	Neighborway	\$ 5,000	Sharrow + Wayfinding	\$ 2,500	Previous Projects	Strategic Priority 6	Carrboro	---	Resurface or TC
14	Laurel Ave	W Main St	Jones Ferry Rd	0.15	770	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 3,000	Previous Projects	Strategic Priority 6	Carrboro	---	Resurface or TC
15	Claremont-Cobblestone Connector	Homestead Rd	Rockgarden Rd	0.48	2,515	Neighborway	\$ 20,000	Sharrow + Wayfinding	\$ 5,500	Previous Projects	Strategic Priority 6	Carrboro	---	Resurface or TC
16	Estes Drive Sidepath	N Greensboro St	Town Limits	0.43	2,277	10' Shared Use Path	\$ 1,600,000	---	---	NCDOT SPOT 6 Tool	In Development	NCDOT	---	STIP, FED, OCTP
17	Downtown RR Crossing	Parker St	Lloyd Street	0.17	876	15' Shared Use Path	\$ 1,100,000	---	---	NCDOT SPOT 6 Tool	In Development	Railroad	---	CMAQ
18	Horne Hollow Ext	Horne Hollow Greenway	Sanderway Subdivision	0.08	442	15' Shared Use Path	\$ 280,000	8' Shared Use Path	---	NCDOT SPOT 6 Tool	In Development	N/A	---	Developer
19	Anderson Park Sidepath	James St	Anderson Park	0.78	4,094	15' Shared Use Path	\$ 2,400,000	---	---	NCDOT SPOT 6 Tool	In Development	NCDOT	---	STIP
20	Tally Ho Tr	Rogers Rd	End	1.07	5,667	---	---	Sharrow + Wayfinding	\$ 11,000	Previous Projects	In Development	Carrboro	---	Resurface or TC
21	E Main St	at W Rosemary St	---	---	---	Bike Boxes	---	Conflict Markings	---	N/A	In Development	NCDOT	---	Resurfacing
22	E Main St	at Roberson St	---	---	---	---	---	Conflict Markings + BB	---	N/A	In Development	NCDOT	2021	Resurfacing
23	E Main St	at Brewer Ln	---	---	---	---	---	Conflict Markings	---	N/A	In Development	NCDOT	2021	Resurfacing
24	Smith Level Road	at NC 54 EB Ramps	---	---	---	---	---	Crosswalk + Bike Lanes	---	N/A	In Development	NCDOT	2021	Resurfacing
25	NC Hwy 54	at W Poplar Ave	---	---	---	---	---	Add Bike Loops	---	N/A	In Development	NCDOT	---	Fed, CIP
26	N Greensboro St	at Bolin Forest Dr	---	---	---	---	---	Hi-vis X-walk + signage	\$ 30,000	Staff Estimate	In Development	NCDOT	---	Encroach/CIP
27	E Main St	at Lloyd St	---	---	---	---	---	Conflict Markings + BB	---	N/A	In Development	NCDOT	---	Resurfacing
28	Morgan Creek Greenway Phase 1	Smith Level Road	Berryhill	0.72	3,781	---	---	10' Shared Use Path	\$ 1,500,000	In Development	In Development	N/A	---	FED, CIP
29	Jones Creek Greenway	Lake Hogan Farms Rd	Existing Greenway	0.13	683	---	---	10' Shared Use Path	\$ 1,100,000	In Development	In Development	N/A	---	FED, CIP

#	Name	From	To	Miles	Feet	Long Term Improvement	Long Term Estimate	Initial Improvement	Initial Estimate	Estimate Source	Priority	Owner	Resurface Year	Implementation/Funding
30	Sanderway	Horne Hollow	Hillsborough Rd	0.17	880	Neighborhood	\$ 10,000	---	---	Previous Projects	In Development	Developer	---	Resurface or TC
31	E Main St	Roberson St	Town Limits	0.32	1,669	Protected Bike Lane (Existing Pavement)	\$ 50,000	Bike Lanes (Existing Pavement)	\$ 120,000	In Development	In Development	NCDOT	---	Resurfacing
32	Smith Level/S Greensboro	Old Pittsboro Rd	Public Works Dr	0.25	1,322	Protected Bike Lane (Existing Pavement)	\$ 50,000	Bike Lanes (Existing Pavement)	\$ 100,000	In Development	In Development	NCDOT	2021	Resurfacing
33	Jones Ferry Rd	at Bim St	---	---	---	Signalized Crossing	\$ 100,000	Hi-vis X-walk + signage	\$ 25,000	Staff Estimate	In Development	NCDOT	---	Encroach/CIP, CS, STIP
34	NC Hwy 54	at Westbrook Dr	---	---	---	---	---	Signalized Crossing	\$ 150,000	In Development	In Development	NCDOT	---	OCTP, HISP
35	NC Hwy 54	at Abbey Ct	---	---	---	---	---	Signalized Crossing	\$ 150,000	In Development	In Development	NCDOT	---	OCTP, HISP
36	Davie Rd	W Main St	Jones Ferry Rd	0.60	3,171	Neighborhood	\$ 25,000	Sharrow + Wayfinding	\$ 7,000	Previous Projects	Short Term	Carrboro	---	Resurface or TC
37	Rosemary Street	E Main St	Merritt Mill Rd	0.09	468	Protected Bike Lane (Existing Pavement)	\$ 20,000	Bike Lanes (Existing Pavement)	\$ 10,000	Updated Bike Plan	Short Term	Carrboro	---	TC or Resurfacing
38	S Greensboro St	at Merritt Mill Rd	---	---	---	---	---	Crosswalk + Bike Lanes	---	N/A	Short Term	NCDOT	2021	Resurfacing
39	Homestead Rd	at Lake Hogan Farm Rd	---	---	---	Signalized Crossing	\$ 150,000	Hi-vis X-walk + signage	\$ 25,000	Staff Estimate	Short Term	NCDOT	---	Encroach/CIP, CS, STIP
40	N Greensboro St	at Pine St	---	---	---	Signalized Crossing	\$ 100,000	Hi-vis X-walk + signage	\$ 25,000	Staff Estimate	Short Term	NCDOT	---	Encroach/CIP, CS, STIP
41	Berryhill Connector	Smith Level Rd	BPW Club Rd	0.36	1,893	Neighborhood	\$ 15,000	Sharrow + Wayfinding	\$ 4,500	NCDOT SPOT 6 Tool	Short Term	Carrboro	2022	Resurface or TC
42	Dairyland Rd	Old NC 86	Union Grove Church Rd	0.61	3,213	Buffered Bike Lane (New Construction)	\$ 8,300,000	BL or Shoulder (New Construction)	\$ 2,100,000	Staff Estimate	Short Term	NCDOT	2024	Resurface, CS, STIP
43	Old Fayetteville Rd	S of NC 54	Farm House Rd	1.24	6,549	Protected Bike Lane (Existing Pavement)	\$ 189,900	Buffered BL (Existing Pavement)	\$ 126,800	Staff Estimate	Short Term	NCDOT	2024	Resurface, CS, STIP
44	Greensboro St ^x	Shelton St	Main St	0.24	1,289	Protected Bike Lane (Existing Pavement)	\$ 140,400	Bike Lanes (Existing Pavement)	\$ 128,000	NCDOT SPOT 6 Tool	Short Term	NCDOT	2024	Resurface, CS, STIP
45	N Greensboro St	Shelton St	Estes Dr	0.34	1,785	Protected Bike Lane (Existing Pavement)	\$ 57,500	Buffered BL (Existing Pavement)	\$ 40,600	Staff Tool	Mid Term	NCDOT	2024	Resurfacing
46	Old NC 86	Farm House Rd	Homestead Rd	0.58	3,046	Buffered Bike Lane (New Construction)	\$ 5,800,000	BL or Shoulder (New Construction)	\$ 1,450,000	NCDOT SPOT 6 Tool	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP
47	Fidelity St	Davie Rd	W Main St	0.37	1,974	Cycle Track (Existing Pavement)	\$ 65,000	Buffered BL (Existing Pavement)	\$ 44,900	Staff Tool	Mid Term	Carrboro	---	CIP
48	Morgan Creek to Chapel Hill	Public Works	FPG Elementary	0.06	336	10' Shared Use Path	---	---	---	N/A	Mid Term	N/A	---	STIP, FED
49	Jones Ferry Rd	at Davie Rd	---	---	---	Conflict Markings	\$ 50,000	---	---	NCDOT SPOT 6 Tool	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP
50	W Main St	at W Weaver St	---	---	---	---	---	Bike-Ped Crossing Imp.	\$ 250,000	Staff Estimate	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP
51	Jones Ferry Rd	at NC 54 EB Ramps	---	---	---	---	---	Crossing Markings	\$ 20,000	Staff Estimate	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP
52	Jones Ferry Rd	at NC 54 WB Ramps	---	---	---	---	---	Crossing Markings	\$ 20,000	Staff Estimate	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP
53	Old NC 86	at Homestead Rd	---	---	---	---	---	Bike Box	\$ 90,000	Staff Estimate	Mid Term	NCDOT	---	HISP
54	203 Project Connector	E Main St	Carr St	0.16	840	Neighborhood	\$ 10,000	Sharrow + Wayfinding	\$ 3,000	Previous Projects	Mid Term	Carrboro	---	Resurface or TC
55	Cheek-Milton	Hillsborough Rd	N Greensboro St	0.27	1,401	Neighborhood	\$ 10,000	Sharrow + Wayfinding	\$ 4,000	Previous Projects	Mid Term	Carrboro	---	Resurface or TC
56	Hillsborough Rd	W Main St	start of bike lanes	0.12	622	Protected Bike Lane (Existing Pavement)	\$ 20,000	Bike Lanes (Existing Pavement)	\$ 14,100	Staff Estimate	Mid Term	NCDOT	---	Resurface, CS, STIP
57	Hillsborough Rd	at High/Westview	---	---	---	Signalized Crossing	\$ 100,000	Hi-vis X-walk + signage	\$ 25,000	Staff Estimate	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP
58	W Main St	at High St	---	---	---	Signalized Crossing	\$ 100,000	Hi-vis X-walk + signage	\$ 25,000	Staff Estimate	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP

#	Name	From	To	Miles	Feet	Long Term Improvement	Long Term Estimate	Initial Improvement	Initial Estimate	Estimate Source	Priority	Owner	Resurface Year	Implementation/ Funding
59	Old Fayetteville Rd	at Strowd Ln	---	---	---	Signalized Crossing	\$ 100,000	Hi-vis X-walk + signage	\$ 25,000	Staff Estimate	Mid Term	NCDOT	---	Encroach/CIP, CS, STIP
60	Homestead Road Phase 3	Stratford Dr	Claremont Dr	0.31	1,641	10' Shared Use Path	\$ 850,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
61	Old Fayetteville Rd	Jones Ferry Rd	NC 54	1.13	5,970	Buffered Bike Lane (New Construction)	\$ 12,400,000	Bike Lane (New Construction)	\$ 1,700,000	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
62	Old NC 86	Homestead Rd	Town Limits	2.22	11,723	Buffered Bike Lane (New Construction)	\$ 22,300,000	BL or Shoulder (New Construction)	\$ 6,200,000	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
63	Smith Level Rd	Rock Haven Rd	Town Limits	2.21	11,677	Buffered Bike Lane (New Construction)	\$ 21,100,000	BL or Shoulder (New Construction)	\$ 3,200,000	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
64	Jones Ferry Road	Old Fayetteville Rd	Town Limits	0.72	3,803	Buffered Bike Lane (New Construction)	\$ 9,400,000	BL or Shoulder (New Construction)	\$ 3,500,000	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
65	S Greensboro Street	Old Pittsboro Rd	Two Hills Dr	0.35	1,848	Buffered CL (New Construction)	\$ 2,565,000	Climbing Lane (New Construction)	\$ 870,000	NCDOT SPOT 6 Tool + Staff Knowledge	Long Term	NCDOT	---	STIP, CS, FED
66	Stroud Ln	Anderson Park	Old Fayetteville Rd	0.18	924	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 3,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
67	Bolin Forest Dr	N Greensboro St	Bolin Creek Dr	0.30	1,593	Neighborway	\$ 15,000	Sharrow + Wayfinding	\$ 4,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
68	Wild Oak-Bolin Creek Dr Connector	Pathway Dr	End	0.55	2,914	Neighborway	\$ 20,000	Sharrow + Wayfinding	\$ 6,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
69	Williams St	Wilson Park MUP	N Greensboro St	0.14	752	Neighborway	\$ 5,000	Sharrow + Wayfinding	\$ 3,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
70	Pleasant Dr	N Greensboro St	Estes Park Apts	0.23	1,217	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 3,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
71	Campus to Campus Connector	Broad St	E Main St	0.48	2,522	Neighborway	\$ 20,000	Sharrow + Wayfinding	\$ 5,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
72	Old Pittsboro	S Greensboro St	Two Hills Dr	0.43	2,269	Neighborway	\$ 20,000	Sharrow + Wayfinding	\$ 5,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
73	Purple Leaf-Sweet Bay Connector	Robeson Bikeway	Roberson St	0.45	2,385	Neighborway	\$ 20,000	Sharrow + Wayfinding	\$ 5,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
74	McDougle Connector	Hillsborough Rd	McDougle SUP	0.23	1,212	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 3,500	Previous Projects	Long Term	Carrboro	---	Developer
75	E Weaver St	Greensboro St	E Main St	0.13	667	Neighborway	\$ 5,000	Sharrow + Wayfinding	\$ 2,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
76	Reynard Rd	Tallyho Tr	Winmore Connector	0.26	1,396	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 4,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
77	Brace Ln	Reynard Rd	Turtleback Connector	0.10	553	Neighborway	\$ 5,000	Sharrow + Wayfinding	\$ 2,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
78	Tuttleback Crossing Dr	Turtleback Connector	Lake Hogan Farm Rd	0.16	830	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 3,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
79	Anderson Park Bike Route	NC 54	Stroud Ln	0.44	2,316	Neighborway	\$ 20,000	Sharrow + Wayfinding	\$ 5,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
80	James St	W Main St	Hillsborough Rd	0.65	3,412	Neighborway	\$ 25,000	Sharrow + Wayfinding	\$ 7,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
81	Barnes-King Connector	Jones Ferry Rd	Lantern Way	0.38	2,026	Neighborway	\$ 15,000	Sharrow + Wayfinding	\$ 5,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
82	Hogan Woods Cir	Lake Hogan Farm Rd	Winmore Connector	0.36	1,897	Neighborway	\$ 15,000	Sharrow + Wayfinding	\$ 4,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
83	Winmore Ave	Jewell Dr	Andys Ln	0.28	1,475	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 4,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
84	High St	W Main St	Hillsborough Rd	0.23	1,220	Neighborway	\$ 10,000	Sharrow + Wayfinding	\$ 3,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
85	Camellia St	Atterbury St	Homestead Rd	0.42	2,201	Neighborway	\$ 15,000	Sharrow + Wayfinding	\$ 5,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
86	Hill St	Broad St	RR Crossing	0.08	439	Neighborway	\$ 5,000	Sharrow + Wayfinding	\$ 2,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC
87	Parker St	N Greensboro St	RR Crossing	0.06	333	Neighborway	\$ 5,000	Sharrow + Wayfinding	\$ 2,000	Previous Projects	Long Term	Carrboro	---	Resurface or TC

#	Name	From	To	Miles	Feet	Long Term Improvement	Long Term Estimate	Initial Improvement	Initial Estimate	Estimate Source	Priority	Owner	Resurface Year	Implementation/ Funding
88	Abbey Ln	NC 54	Morgan Creek	0.13	705	Neighborhood	\$ 5,000	Sharrow + Wayfinding	\$ 2,500	Previous Projects	Long Term	Carrboro	---	Resurface or TC
89	Barrington-Autumn Connector	Hillsborough Rd	Horne Hollow	0.35	1,831	Neighborhood	\$ 15,000	Sharrow + Wayfinding	\$ 4,500	Previous Projects	Long Term	Carrboro	---	Resurfacing
90	Quail Roost Dr	James St	McDougle SUP	0.23	1,229	Neighborhood	\$ 10,000	Sharrow + Wayfinding	\$ 3,500	Previous Projects	Long Term	Carrboro	---	Resurfacing
91	Westview Connection	Westview Dr	Kay St	0.03	150	Private Route (Shared Use Path)	\$ 160,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
92	NC 54 Apts Connector	Collins Crossing	Carolina Apts	0.04	196	Private Route (Shared Use Path)	\$ 185,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
93	Carolina Apts Connector	Collins Crossing	Barnes St	0.27	1,410	Private Route (Shared Use Path)	\$ 810,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
94	Queen St Connector	Carolina Apts	Barnes St	0.21	1,131	Private Route (Shared Use Path)	\$ 630,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
95	Hillcrest Connector	Hillcrest Ave	Estes Park Apts	0.07	378	Private Route (Shared Use Path)	\$ 285,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
96	Thomas Connector	N Greensboro St	Wilson Park MUP	0.08	440	Private Route (Shared Use Path)	\$ 275,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
97	Sunset-Circadian Connector	Sunset Creek Cir	Circadian Way	0.05	259	Private Route (Shared Use Path)	\$ 180,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
98	Oak Ave Connector	Hillcrest Ave	Oak Ave	0.06	310	Private Route (Shared Use Path)	\$ 240,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
99	Prince St Connector	Jones Ferry Rd	Prince St	0.07	391	Private Route (Shared Use Path)	\$ 350,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
100	Robert-Bolin Connector	Robert Hunt Dr	Bolin Forest Dr	0.04	211	Private Route (Shared Use Path)	\$ 195,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	Work with owner
101	Autumn Woods Connector	West End Apts	Willow Creek Greenway	0.31	1,646	Private Route (On-street)	\$ 15,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
102	West End Connector	Autumn Woods Apts	W Poplar Ave	0.21	1,133	Private Route (On-street)	\$ 10,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
103	Rosewalk Connector	Berryhill Dr	Morgan Creek	0.16	838	Private Route (On-street)	\$ 10,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
104	Winmore Private Connection	W Winmore Ave	Winmore Connector	0.07	354	Private Route (On-street)	\$ 5,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
105	Collins Crossings Connector	Jones Ferry Rd	Carolina Apts	0.19	1,003	Private Route (On-street)	\$ 10,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
106	Carolina Apt Spur	NC 54	Carolina Apts	0.08	440	Private Route (On-street)	\$ 5,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
107	Estes Park Connection	Estes Dr	Pleasant Dr	0.40	2,113	Private Route (On-street)	\$ 15,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
108	Weatherhill Connector	Berryhill Dr	Morgan Creek	0.20	1,059	Private Route (On-street)	\$ 10,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
109	Whispering Hills Connector	King St	Old Pittsboro Rd	0.23	1,217	Private Route (On-street)	\$ 10,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
110	Royal Park Connector	NC 54	King St	0.15	801	Private Route (On-street)	\$ 10,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
111	Morris Grove Connector	Morris Grove Entrance	Jones Creek	0.06	311	Private Route (On-street)	\$ 5,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
112	Chapel Hill High School	High School Rd	Parking Lot	0.15	787	Private Route (On-street)	\$ 10,000	---	---	Previous Projects	Long Term	Private	---	Work with owner
113	Hillsborough Rd	N Greensboro St	NW of Shelton St	0.56	2,977	Protected Bike Lane (Existing Pavement)	\$ 95,900	Buffered BL (Existing Pavement)	\$ 67,700	Staff Estimate	Long Term	NCDOT	---	Resurface, CS, STIP
114	Berryhill Dr	Old Fayetteville Rd	Westbrook Dr	0.47	2,483	Protected Bike Lane (Existing Pavement)	\$ 112,600	Bike Lanes (Existing Pavement)	\$ 65,800	Staff Tool	Long Term	Carrboro	---	TC or Resurfacing
115	W Main St	Laurel Ave	James St	1.00	5,281	Protected Bike Lane (Existing Pavement)	\$ 170,000	Buffered BL (Existing Pavement)	\$ 120,000	Staff Estimate	Long Term	NCDOT	---	Resurface, CS, STIP
116	W Poplar Ave	Old Fayetteville Rd	W Main St	0.90	4,738	Protected Bike Lane (Existing Pavement)	\$ 168,000	Buffered BL (Existing Pavement)	\$ 122,400	Staff Tool	Long Term	Carrboro	---	TC or Resurfacing

#	Name	From	To	Miles	Feet	Long Term Improvement	Long Term Estimate	Initial Improvement	Initial Estimate	Estimate Source	Priority	Owner	Resurface Year	Implementation/Funding
117	N Greensboro St	Estes Dr	Hillsborough Rd	0.74	3,916	Protected Bike Lane (Existing Pavement)	\$ 126,100	Buffered BL (Existing Pavement)	\$ 89,000	Staff Estimate	Long Term	NCDOT	---	Resurface, CS, STIP
118	Jones Ferry Road	W Main St	E of Davie Rd	0.44	2,338	Protected Bike Lane (Existing Pavement)	\$ 68,300	Buffered BL (Existing Pavement)	\$ 45,600	Staff Tool	Long Term	NCDOT	---	TC or Resurfacing
119	Hillsborough Rd	Old NC 86	N Greensboro St	1.22	6,424	Protected Bike Lane (Existing Pavement)	\$ 192,000	Buffered BL (Existing Pavement)	\$ 130,000	Staff Tool	Long Term	NCDOT	---	Resurface, CS, STIP
120	Jones Ferry Road	Willow Creek	Old Fayetteville Rd	0.17	894	Protected Bike Lane (Existing Pavement)	\$ 102,600	Bike Lanes (Existing Pavement)	\$ 85,800	Staff Tool	Long Term	NCDOT	---	Resurface, CS, STIP
121	Main St	Club Nova	Roberson St	0.18	965	Protected Bike Lane (Existing Pavement)	\$ 152,900	Bike Lanes (Existing Pavement)	\$ 134,600	Staff Tool	Long Term	NCDOT	---	Resurface, CS, STIP
122	S Greensboro Street ^x	Main St	Old Pittsboro Rd	0.11	592	Protected Bike Lane (Existing Pavement)	\$ 63,000	Bike Lanes (Existing Pavement)	\$ 50,800	Staff Tool	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
123	Smith Level Rd	Public Works Dr	Rock Haven Rd	0.66	3,491	Protected Bike Lane (Existing Pavement)	\$ 5,220,000	Buffered BL (New Construction)	\$ 5,220,000	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
124	Homestead Road Sidepath East	CHHS MUP	High School Rd	0.74	3,896	10' Shared Use Path	\$ 3,300,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
125	Rogers Rd Sidepath	Tallyho Tr	Homestead Rd	0.32	1,702	10' Shared Use Path	\$ 1,200,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
126	Morgan Creek Phase 2	Morgan Creek Phase 1	Weatherhill Pt	0.31	1,648	10' Shared Use Path	\$ 1,000,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
127	Eubanks Rd Sidepath	Old NC 86	Morris Grove Ele	0.30	1,577	10' Shared Use Path	\$ 800,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
128	Morgan Creek Spur	Morgan Creek Phase 4	BPW Club Rd	0.24	1,253	10' Shared Use Path	\$ 740,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
129	TallyHo Connector	Tallyho Tr	Jones Creek	0.21	1,085	10' Shared Use Path	\$ 720,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
130	Turtleback Connector	Brace Ln	Turtleback Crossing	0.15	806	10' Shared Use Path	\$ 570,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
131	Winmore Connector	W Winmore Ave	Tallyho Tr	0.78	4,104	10' Shared Use Path	\$ 2,300,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
132	Willow Creek Connector	Jones Ferry Road	Autumn Woods Apt	0.12	618	10' Shared Use Path	\$ 450,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
133	Barnes St Connector	NC 54	Barnes St	0.11	572	10' Shared Use Path	\$ 400,000	---	---	NCDOT SPOT 6 Tool	Long Term	Utility	---	STIP, FED
134	Brace Ln Connector	Winmore Connector	Brace Ln	0.09	453	10' Shared Use Path	\$ 390,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
135	Baldwin Park Connector	Broad St	Craig St	0.07	394	10' Shared Use Path	\$ 290,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED, OCTP
136	Morgan Creek Bridge	Public Works Dr	Morgan Creek	0.07	392	10' Shared Use Path	\$ 1,330,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, FED
137	Bel Arbor Connector	Phipps St	Rocky Ct	0.04	193	10' Shared Use Path	\$ 220,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED, CIP
138	Old Fayetteville Connector	Autumn Woods Apt	West End Apts	0.02	122	10' Shared Use Path	\$ 190,000	---	---	NCDOT SPOT 6 Tool	Long Term	Private	---	STIP, FED, CIP
139	Knolls Connector	Robeson Bike Path	Knolls St	0.02	95	10' Shared Use Path	\$ 140,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
140	Homestead Road Sidepath West	Old NC 86	Lake Hogan Farm Rd	0.64	3,366	10' Shared Use Path	\$ 2,000,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
141	Morgan Creek Phase 5	Rosewalk	University Lake	0.50	2,634	10' Shared Use Path	\$ 1,500,000	---	---	NCDOT SPOT 6 Tool	Long Term	OWASA	---	STIP, FED
142	Seawell School Rd Sidepath	Estes Drive	Smith Middle School	1.38	7,298	10' Shared Use Path	\$ 4,420,000	---	---	NCDOT SPOT 6 Tool	Long Term	Railroad	---	STIP, FED
143	LHF Greenway Ext	LHF Greenway	Winmore Greenway	0.48	2,521	10' Shared Use Path	\$ 1,600,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
144	Morgan Creek Phase 3/4	Rosewalk	Morgan Creek Phase 2	0.44	2,303	10' Shared Use Path	\$ 1,400,000	---	---	NCDOT SPOT 6 Tool	Long Term	N/A	---	STIP, FED
145	Smith Level Road	Old Pittsboro Rd	Rock Haven Rd	0.94	4,973	10' Shared Use Path	\$ 5,300,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	Complete Streets

#	Name	From	To	Miles	Feet	Long Term Improvement	Long Term Estimate	Initial Improvement	Initial Estimate	Estimate Source	Priority	Owner	Resurface Year	Implementation/Funding
146	<i>Old Fayetteville Road</i>	<i>NC 54</i>	<i>Farmhouse Rd</i>	1.15	6,072	10' Shared Use Path	\$ 3,600,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	Complete Streets
147	<i>Smith Level Rd</i>	<i>Rock Haven Rd</i>	<i>Town Limits</i>	2.21	11,677	10' Shared Use Path	\$ 6,200,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	Complete Streets
148	<i>Old NC 86</i>	<i>Farmhouse Rd</i>	<i>Town Limits</i>	3.08	16,262	10' Shared Use Path	\$ 8,500,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	Complete Streets
149	<i>Rail with Trail</i>	<i>Downtown Carrboro</i>	<i>Hillsborough</i>	15.90	83,899	15' Shared Use Path	\$ 82,000,000	---	---	NCDOT SPOT 6 Tool	Long Term	Railroad	---	TBD
150	NC 54 Sidepath	W Main St	W Poplar Ave	0.38	2,010	15' Shared Use Path	\$ 1,900,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
151	NC 54 Sidepath	S Greensboro St	Abbey Ln	0.31	1,629	15' Shared Use Path	\$ 1,600,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
152	NC 54 Sidepath	Anderson Park	Town Limits	1.51	7,980	15' Shared Use Path	\$ 6,300,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
153	NC 54 Sidepath	Abbey Ln	Westbrook Dr	0.19	995	15' Shared Use Path	\$ 900,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
154	Jones Ferry Sidepath	Willow Creek	Old Fayetteville Rd	0.17	902	15' Shared Use Path	\$ 1,100,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
155	NC 54 Sidepath	W Poplar Ave	Westbrook Dr	0.89	4,698	15' Shared Use Path	\$ 3,900,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
156	High School Road Sidepath	Homestead Rd	CHHS Entrance	0.10	505	15' Shared Use Path	\$ 550,000	---	---	NCDOT SPOT 6 Tool	Long Term	NCDOT	---	STIP, CS, FED
157	300 E Main Connector	Libba Cotten	E Main St	0.03	178	---	---	8' Shared Use Path	\$ 150,000	NCDOT SPOT 6 Tool	Long Term	Developer	---	Developer
158	Jones Ferry Rd	at Laurel Ave	---	---	---	---	---	Hi-vis X-walk + signage	\$ 30,000	Staff Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
159	W Main St	at Davie Rd	---	---	---	---	---	Hi-vis X-walk + signage	\$ 30,000	Staff Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
160	Estes Dr	at Estes Park Apts	---	---	---	Signalized Crossing	\$ 150,000	---	---	Long Term Estimate	Long Term	NCDOT	---	STIP, FED
161	Homestead Rd	at Claremont Dr	---	---	---	Unspecified	\$ 150,000	---	---	Long Term Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
162	S Greensboro St	at Carr St	---	---	---	Unspecified	\$ 100,000	---	---	Long Term Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
163	W Main St	at Hillsborough Rd	---	---	---	Unspecified	\$ 150,000	---	---	Long Term Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
164	Hillsborough Rd	at Parkview Ave	---	---	---	Unspecified	\$ 100,000	---	---	Long Term Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
165	Hillsborough Rd	at McDougle School	---	---	---	Unspecified	\$ 100,000	---	---	Long Term Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP
166	Hillsborough Rd	at Dove St	---	---	---	Unspecified	\$ 100,000	---	---	Long Term Estimate	Long Term	NCDOT	---	Encroach/CIP, CS, STIP

EP - Existing Pavement by way of Road Diet or Lane Diet

CS - Complete Streets

OCTP - Orange County Transit Plan

NC - New Construction

STIP - State Transportation Improvement Program

HISP - Highway Safety Improvement Program

OS - On Street route, privately owned

FED - Federal Funding Sources

x - Construction Costs only, those for road diet analysis/design for project #122 included in project #45

SUP - Shared Use Path

TC - Traffic Calming, the Town's Residential Traffic Management Plan

Unspecified - A long term improvement that lacks a specific recommendation

Strategic Priority - Those priorities identified within the bike plan. Priorities numbered 1 to 5 are those projects which have detailed cutsheets, conceptual design, and cost estimates. Those numbered 6 are also strategic priorities but are outside of the top 5 and do not have project cutsheets.

Encroach - Encroachment agreement with NCDOT for the Town to install improvements (and maintain them) on roadways maintained by the state

Italics indicates a project that would likely ONLY be funded through NCDOT complete streets or another major outside source

Green indicates an intersection crossing improvement project (non-linear)



APPENDIX

B

Technical Memos



**TOWN OF
CARRBORO**

BIKE PLAN



111 E. Chapel Hill Street
Suite 100
Durham, NC 27701
www.altaplanning.com

Existing Conditions Memorandum

Date: April 17, 2019
To: Zachary Hallock, Transportation Planner, Town of Carrboro
From: Jennifer Baldwin, Senior Associate, Alta Planning + Design
Re: **Existing Conditions**

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Local Context + 2009 Carrboro Bike Plan	2
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Current Conditions.....	14
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Program Review.....	20

Local Context + 2009 Carrboro Bike Plan

The Town of Carrboro has always been a bicycling pioneer in North Carolina, installing the first bicycle lane in the state in 1980 and becoming the state's first Bicycle Friendly Community (BFC). Its unique culture and history of dedication to providing bicycle infrastructure and programs for its residents is unparalleled in the state. The Town features a population of long-time residents and transient UNC students, many of whom bike for recreation and transportation purposes. Also, unlike most North Carolina cities, the bicycle network is substantial with bike lanes, sharrows, and shared-use paths connecting much of the community. However, there is still room for improvement as evidenced by the Bicycle Friendly Community (BFC) report card noting the areas to address to reach "gold" status.

The 2009 Carrboro Comprehensive Bicycle Transportation Plan recommends the implementation of an additional 54 miles of bicycle facilities, including paved shoulders, bicycle lanes, sharrows, sidepaths, intersection improvements and off-road trails. The facilities are recommended in phases, and are prioritized for implementation. The plan adopted the following vision statement:

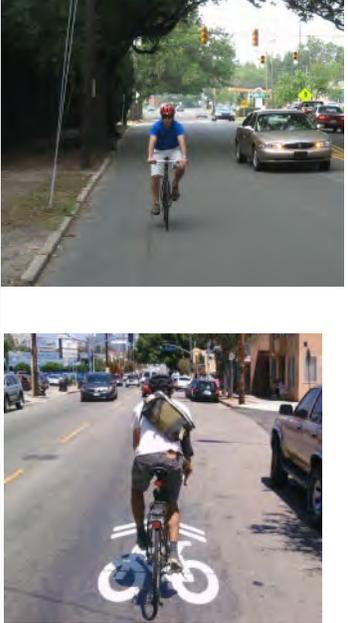
“Carrboro will be a place that is bicycle-friendly; where people have an accessible, safe, and convenient option of bicyclist for transportation, recreation, and health; where bicycle lanes and greenways provide a connected system within and outside the Town; where future development provides access and facilities for bicyclists; where bicycle transportation is an easy choice; and where proposed policies and programs educate, inspire, and encourage residents and enforce safe bicyclists and motorist behavior.”

The following existing conditions analysis will be used to assess progress since the 2009 Carrboro Bicycle Plan and to identify need and opportunity for making Carrboro even more bicycle-friendly.

Existing and Planned Bikeways

The Town of Carrboro has a network of bicycle facilities that while fragmented, provides significant coverage to key destinations around Town. Existing greenways are found in town parks like Wilson Park and bike lanes are found along major corridors such as W Main Street and Hillsborough Road. Below is the estimated total mileage of the bicycle network within Carrboro.

Existing Bikeway Network Summary

Type of Bike Facility	Definition	Example Photo	Total Mileage in Carrboro Today
<p>Shared Roadway or Sharrow</p>	<p>A Shared Roadway may either be a low volume (less than 3000 cars per day) roadway with traffic calming and signage to create a safe shared use environment, OR a higher volume roadway with wide (14') outside lanes.</p> <p>A Sharrow is used on roadways where lanes are too narrow for striping designated bike lanes. The sharrow marking makes motorists more aware of the potential presence of cyclists; directs cyclists to ride in the proper direction; and reminds cyclists to ride further from parked cars to avoid 'dooring' collisions.</p>		<p>1.8 MILES</p>
<p>Paved Shoulder</p>	<p>Paved Shoulders are the part of a roadway which is contiguous and on the same level as the regularly traveled portion of the roadway. Shoulders should be provided on both sides of the road. There is no minimum width for paved shoulders, however a width of at least 4 feet is preferred. Paved shoulders are typically found in more rural areas, where there is no curb and gutter in place.</p>		<p>4.0 MILES</p>

Type of Bike Facility	Definition	Example Photo	Total Mileage in Carrboro Today
Bicycle Lane	A Bicycle Lane is a portion of the roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bicycle lanes are always located on both sides of the road (except one-way streets), and carry bicyclists in the same direction as adjacent motor vehicle traffic. The minimum width for a bicycle lane is 4 feet; five- and six-foot bike lanes are typical for collector and arterial roads.		16 MILES
Greenway	Greenways (also referred to as multi-use paths) are completely separated from motorized vehicular traffic and are constructed in their own corridor, often within an open-space area. Greenways can be paved and where paved should be a minimum of 10' wide travelway. Pavement widths of 12-, 14-, and even 16-feet are appropriate in high-use urban situations.		5.4 MILES

Bike Network Growth Over Time

Year	Miles Added	Total
1989	3.01	3.0 miles
By 2005	+ 12.94	16 miles
By 2012	+ 7.25	23.2 miles
By 2013	+ 0.36	23.6 miles
By 2014	+ 0.32	23.9 miles
By 2015	+ 1.96	25.8 miles
By 2016	+ 0.83	26.7 miles
By 2018	+ 0.4	27.1 miles
2019	0	27.1 miles

Existing Low-Stress Bikeways

The last decade has seen tremendous investment in bicycle infrastructure locally and across the United States. However, one key realization is now shaping how bicycle investments are made and that's the fact that different cyclists have different needs.

Although some bicyclists will ride on any road, regardless of an available bikeway ("strong and fearless"), a much larger portion of the population will ride only where there is a high-quality bikeway ("interested but concerned" population). Understanding this concept has led us to design more low-stress bikeways that provide the high-quality experience the majority of cyclist's desire

Bike lanes, trails, and low speed neighborhood routes all make biking more comfortable. While Carrboro currently has 24.5 miles of bikeways, only roadways such as Pathway Drive and Lake Hogan Farm Road fall into the "low-stress" category. Low stress bikeways include the following:

- **Trails + Separated Bikeways:** Shared use trails and separated bikeways separate bicyclists from automobiles and improve overall safety. Separated bikeways are especially useful on roads with higher speeds or traffic volumes. The Libba Cotton Bikeway is one example of a shared use trail in Carrboro but there are currently no examples of a separated bikeway.
- **Bicycle Boulevards:** In residential neighborhoods, bicycle boulevards – also known as neighborhood greenways, improve travel for bicyclists while calming traffic and greening neighborhoods. Bicycle Boulevards are shared by automobiles and bicycles, but at speeds that make travel more comfortable. While Carrboro doesn't currently have a designated network of Bicycle Boulevards, the opportunity exists to connect several neighborhoods to key destinations along low volume, low speed corridors.
- **Intersection Improvements:** One persistent challenge to building high-quality routes is integrating bicyclists at intersections. Providing protected intersections, or just marked crossings, can help make motorists more aware of cyclists.



Example of a Separated Bikeway



Example of a Bicycle Boulevard



Example of an Intersection Improvement

2009 Recommended Bikeways

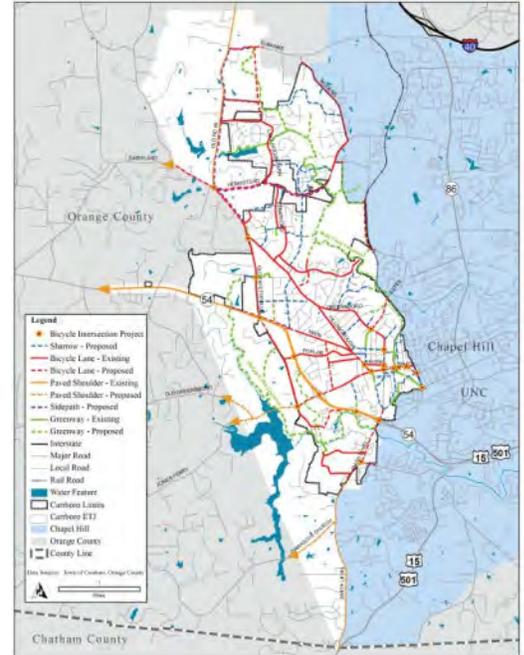
The Town of Carrboro’s Comprehensive Bicycle Transportation Plan (2009) shows recommended bicycle facilities to make up a complete Bicycle Network Map, including bicycle corridors, greenway corridors, and recommended intersection improvements. These facilities, in conjunction with the five E’s (engineering, education, encouragement, enforcement, and evaluation and planning), seek to fulfill the goals of creating a safe, accessible, and comprehensive bicycle network.

The prioritization process of the 2009 plan began with a list generated by recommendations from the steering committee and general public. The roadways were then broken down into segments at logical points, such as major intersections and were generally under a mile long. The plan consisted of 30-miles of commended improvements for bicycle facilities, including long term solutions and interim treatments for the top 10 priority bicycle corridors. The high priority projects were intended to provide a guide for the community that responds to changing conditions and community priorities. The shorter, residential segments were left out. The projects highlighted below in red are the projects that were not implemented (short-term nor long-term solution) as recommended in the 2009 plan.

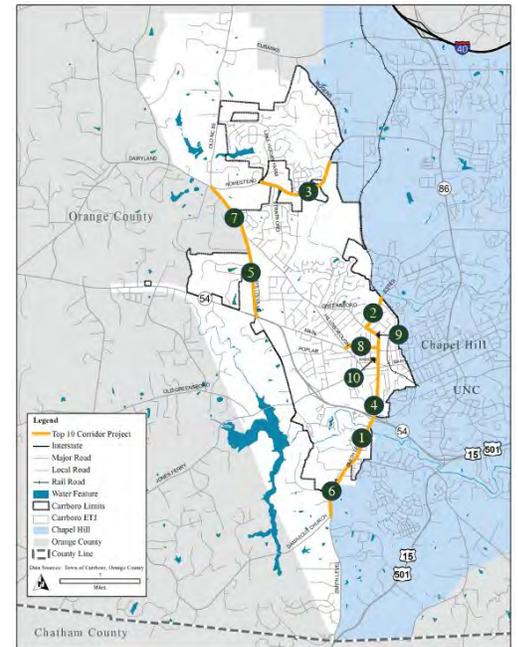
Carrboro’s 2009 Bike Plan’s Top 10 Priority Corridors

Rank	Corridor	From	To
1	Smith Level	NC 54	Rock Haven
2	Estes	Greensboro	Town Limits
3*	Homestead	High School	Lake Hogan Farm
4*	S Greensboro	Weaver	NC 54
5	Old Fayetteville	Hillsborough	NC 54
6	Smith Level	Rock Haven	Damascus Church
7*	Old 86	Homestead	Hillsborough
8	Shelton	N Greensboro	Hillsborough
9	N Greensboro	Estes	Shelton
10	N Greensboro	Shelton	Weaver

*Partial long-term recommendation completed



Bicycle Network Map from 2009 Carrboro Bike Plan



Bicycle Corridor Map of Top 10 Priority Projects from 2009 Carrboro Bike Plan

EXISTING BIKE FACILITIES

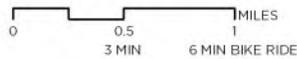
CARRBORO BIKE PLAN UPDATE

BIKE NETWORK

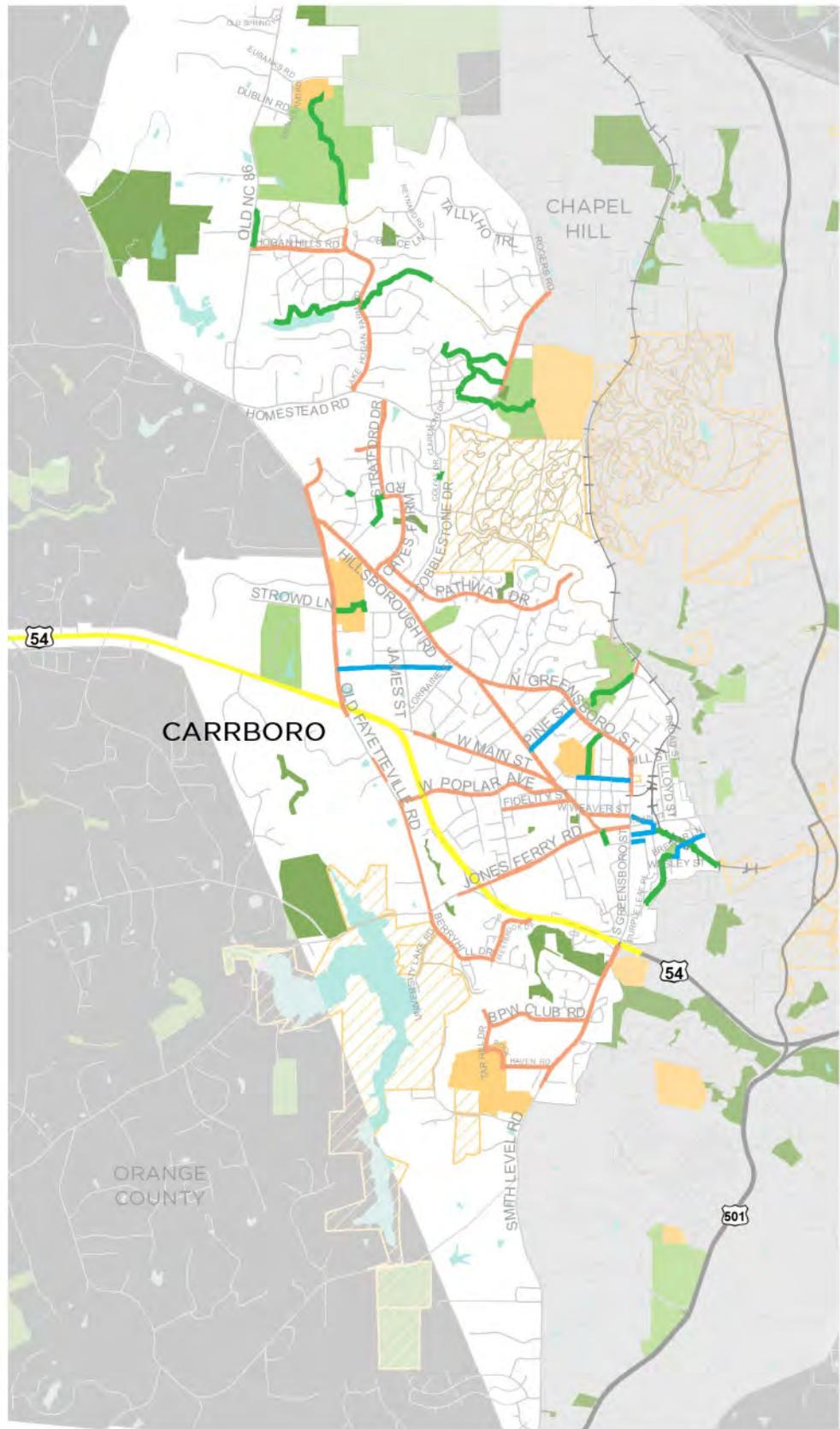
- Bike Lane
- Greenway (paved)
- Sharrow
- Wide Shoulder
- Rural Trails

BASE LAYERS

- + Railroad
- Streets
- Lakes
- NC State Forest
- Parks
- Schools
- UNC



alta Data provided by NCDOT and the Town of Carrboro. Map produced March 2019.



POPULATION DENSITY ANALYSIS

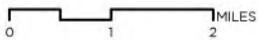
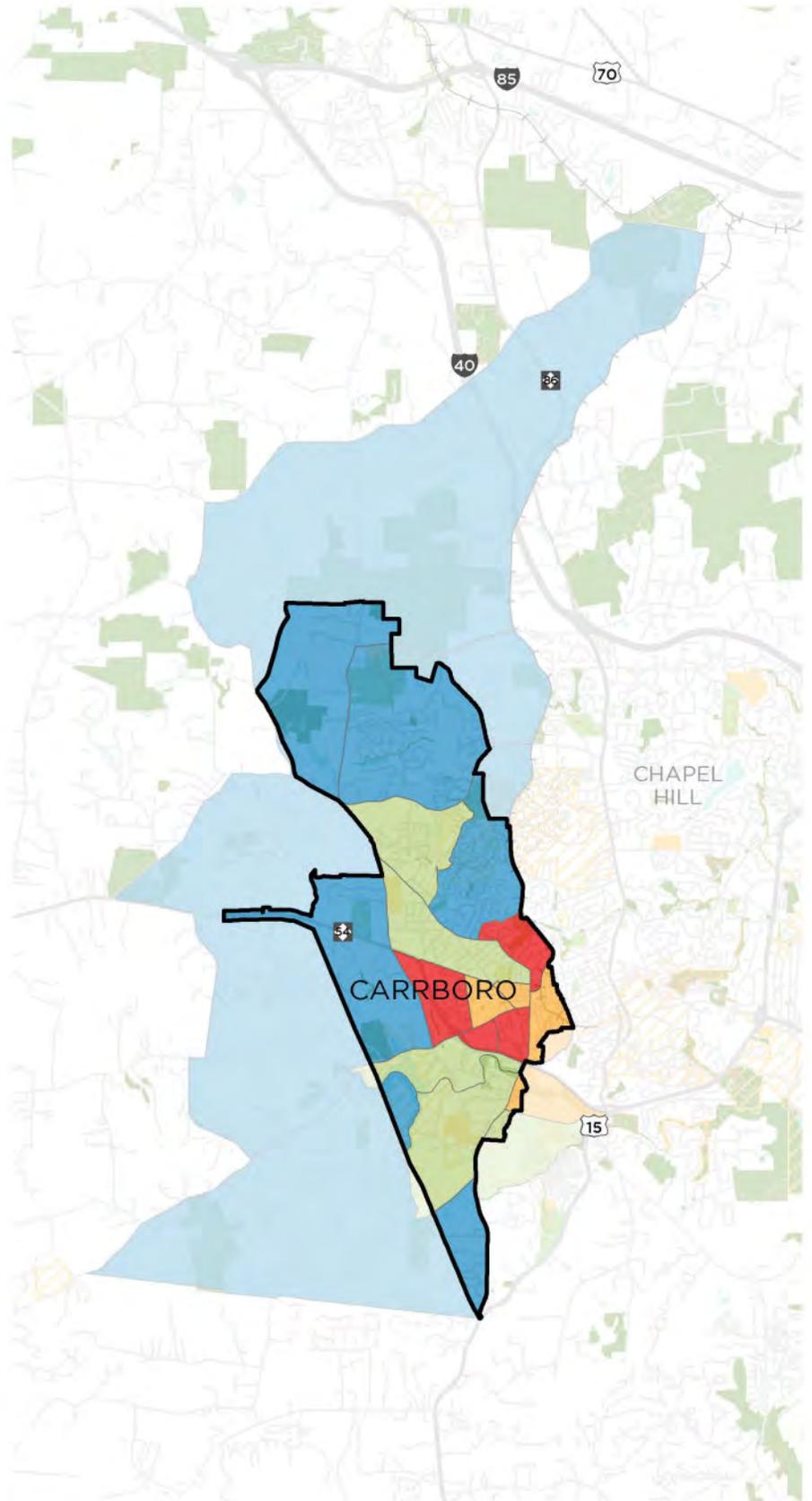
CARRBORO BIKE PLAN UPDATE

POPULATION DENSITY ANALYSIS

- Higher Population Density
- Lower Population Density
- Study Area

BASE LAYERS

- Railroad
- Parks
- Schools
- UNC
- NC State Forest



Data provided by NCDOT and the Town of Carrboro. Map produced March 2019.

Safety Analysis

Introduction

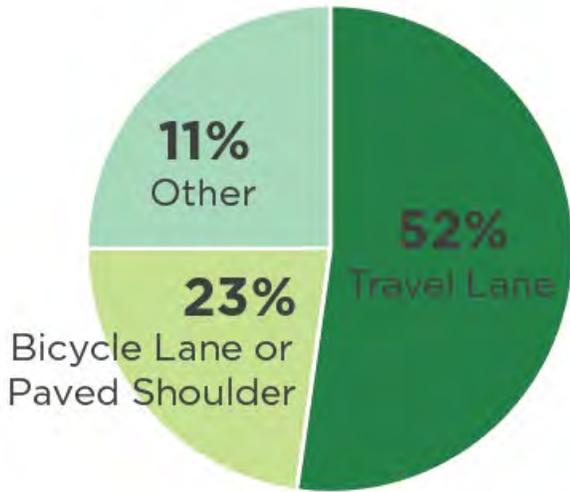
Around the U.S., concerns about safety are the most common reasons why people do not bicycle. Bicycle crash research supports concerns about bicycle and motorist interactions, since crashes occur mostly at arterial intersections. Local crash data is a valuable source of information for identifying difficult or dangerous areas for bicyclists. It can also highlight specific interactions between bicyclists and motorists that require increased awareness or engineering.

In 2017, the Town of Carrboro experienced nine total bicycle crashes, eight resulting in injuries. Orange County on a whole had 27 bicycle crashes in 2017, 25 resulting in injuries. Between 2013 and 2017, Orange County had six bicycle fatalities, one that occurred in Carrboro. Designing a complete and safe bicycle network can have implications for existing and future traffic operations, as well as increase visibility of bicyclists to motorists. Improving safety for bicyclists is the primary goal of the Carrboro Bicycle Transportation Plan.

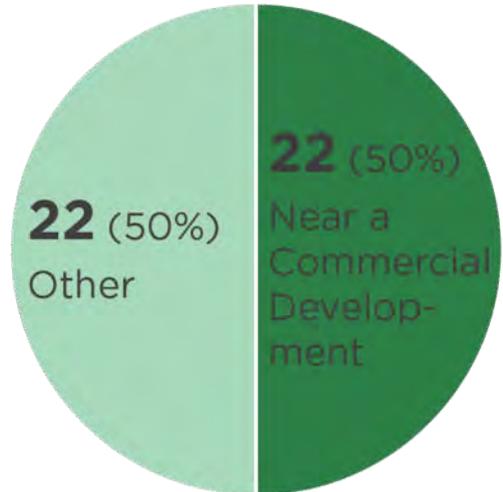
Carrboro Bicycle Crashes by Year



Where Bicyclist was at Point of



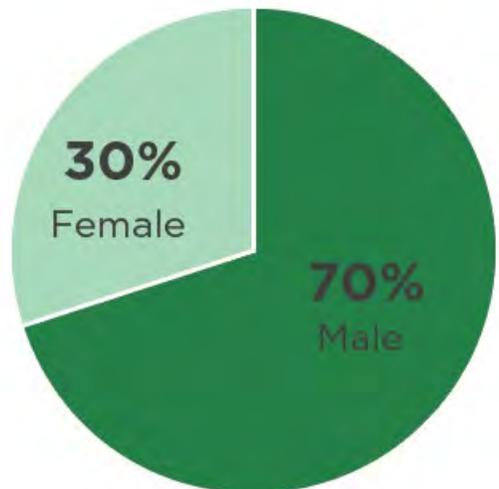
Location of Bicycle Crash



Age of Bicyclist Involved in Crash



Sex of Bicyclist Involved in Crash

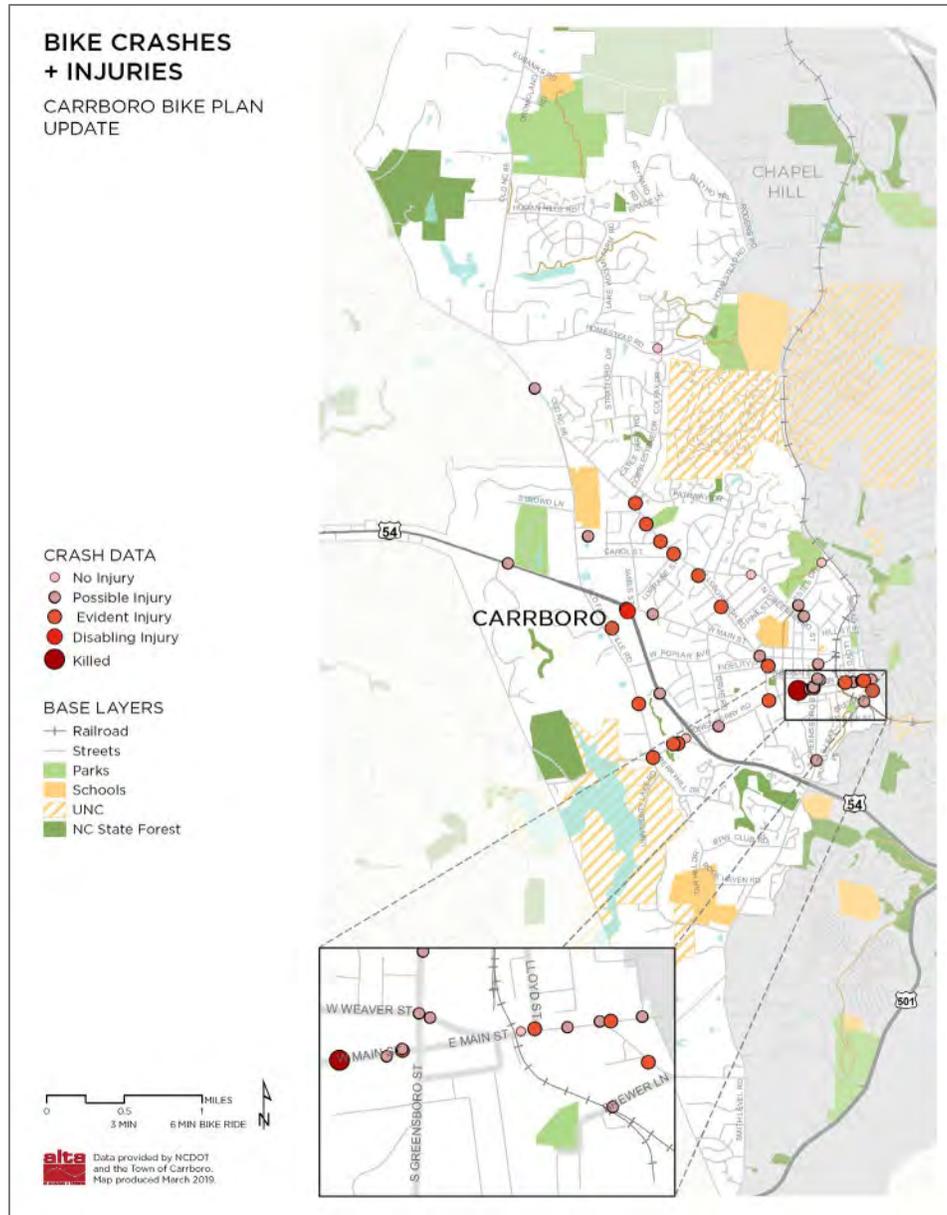


High Crash Corridors

The map to the right shows all of the crash locations between 2007 and 2015 with the size of the dot reflecting the frequency of crashes over time.

The following corridors have the highest frequency of bicycle related crashes and will be investigated further for potential safety improvements:

- Jones Ferry Road included a high frequency of crashes involving motorist overtaking cyclists, bicyclists making right turns and conditions where bicyclists or motorists failed to yield near SR-54
- Hillsborough Road has several evident injury bicycle crashes with conflicts of turning, overtaking roadways, and failing to yield
- West Main Street is the location of the 2011 death of bicyclist due to motorist overtaking bicyclist
- W Rosemary Street has several crashes recorded that mostly consist of injuries involving motorists failing to yield and conflicts with turning vehicles
- Crashes along N Greensboro Street consist of motorist turning conflicts with commercial driveways and intersections
- Estes Drive crashes consist of bicyclists losing control and motorist turning conflicts from commercial driveways



The map on page 11 highlights the crash locations overlapped with the equity analysis. The corridors of Jones Ferry Road and Main Street have the highest frequency of crashes that also fall within the highest tier of vulnerable users (see Equity Analysis memo for more details).

EQUITY VS CRASHES

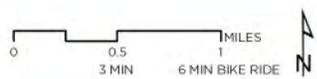
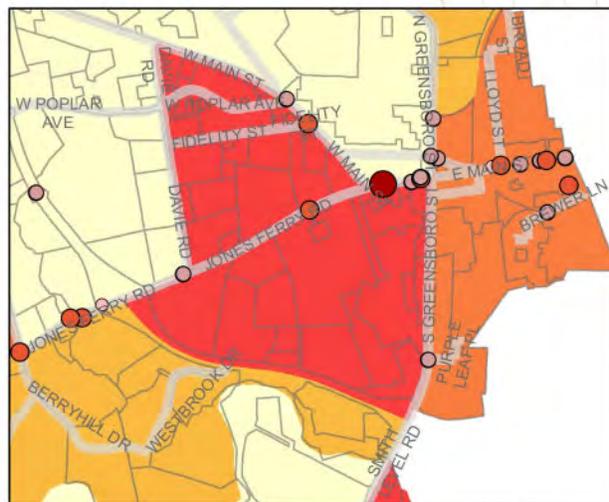
CARRBORO BIKE PLAN UPDATE

EQUITY ANALYSIS

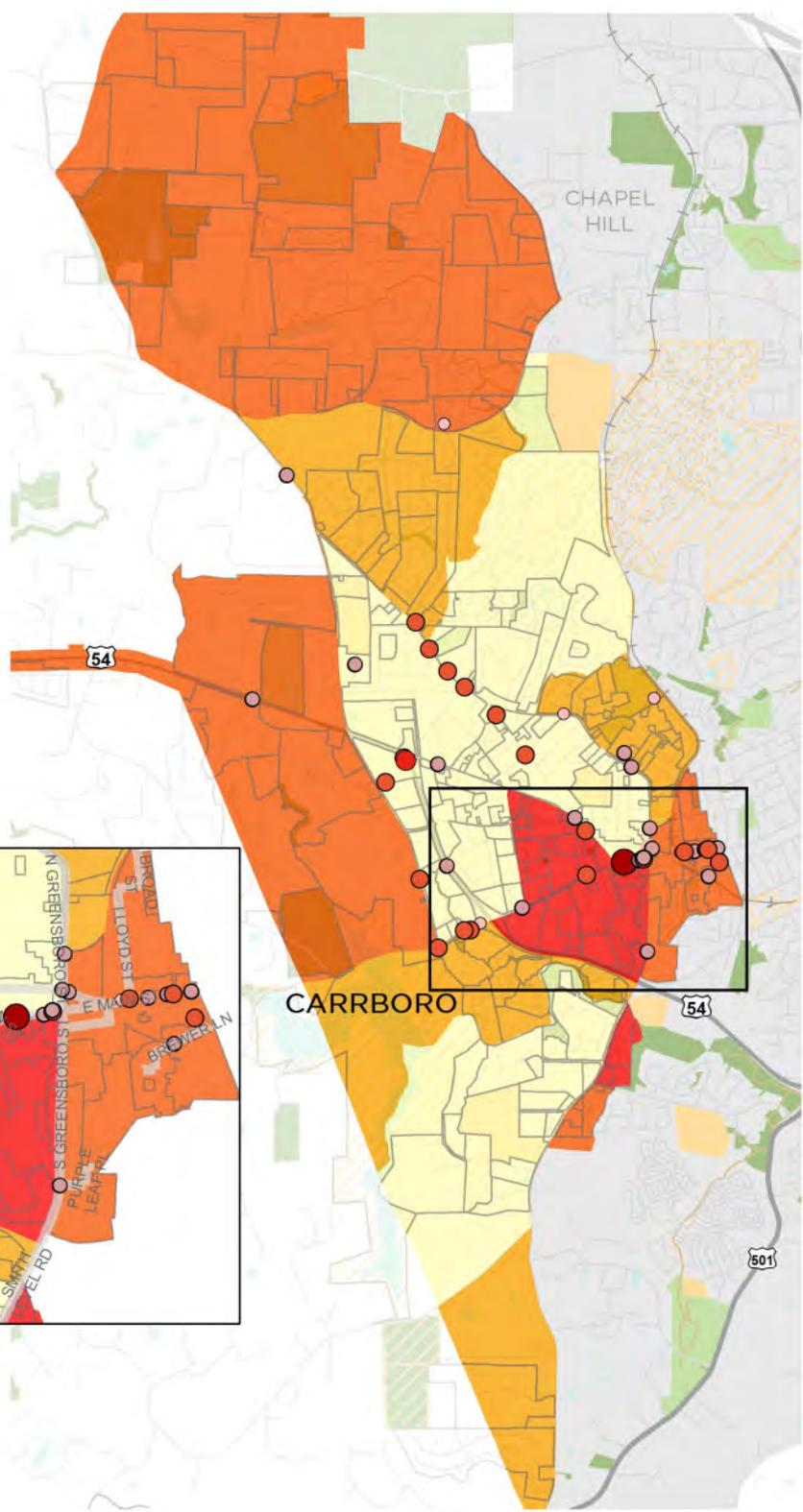
- Higher Need
- Lower Need

CRASH DATA

- No Injury
- Possible Injury
- Evident Injury
- Disabling Injury
- Killed



alta Data provided by NCDOT and the Town of Carrboro. Map produced March 2019.



Current Conditions

The following tables and map series describe key opportunities and challenges in Carrboro related to current conditions for bicycling, and provide a basic inventory of existing facilities, destinations, and conditions.

Opportunities + Challenges

Opportunities and Challenges	Assessment
Overall Transportation Network	The majority of streets in Carrboro see relatively low to moderate traffic, with several notable exceptions., such as NC54 and Main Street which are the main arterial roadways that carry high volumes of traffic through the area. The busiest section of roadway is the section of NC54 between Jones Ferry Road and South Greensboro Street that sees over 34,000 vehicles per day.
Ownership of Public Road Right-of-Ways	The roadway network in Carrboro is a combination of locally-owned and state-owned roads. The ownership of the public right-of-way is important for determining: 1) the types of facilities that can be constructed in or along a roadway; 2) the agency in charge of maintaining the roadway and implementing bicycle recommendations; and 3) how improvements are scheduled, funded, and constructed. The map on page 16 shows which roadways in Carrboro are state- versus locally-owned. The town will need to coordinate with NCDOT Division 7 and the Division of Bicycle and Pedestrian Transportation to implement this plan’s recommended improvements along State roadways.
Size and Scale of Carrboro for Bicycling	If Carrboro were completely flat with no obstacles, it would take less than 10 minutes (1.6 miles) to ride from the Carrboro Farmers Market to UNC’s Davis Library (as the crow flies; based on 12 MPH average). Carrboro is well suited for bicycling in terms of its size and scale; consider Raleigh, for example, which is 20 miles across at its longest, end to end.
Safe Routes to School	Carrboro’s Safe Routes to School Strategic Action Plan, adopted in 2012, provides the vision and goals for Carrboro Elementary School and McDougle Elementary. The report stated that around 60 children walk or bike to Carrboro Elementary and about 140 walk or bike to McDougle Elementary. In 2014, Carrboro Elementary was also the first school in the state to introduce curriculum that will help teachers promote safe transportation habits. In addition, Carrboro’s Safe Route to School Implementation Committee and Carrboro’s Youth Advisory Board were put in place in 2016. Compared to other NC schools, Carrboro has shown the necessary commitment to improving safe routes to school, which can be expanded within this update to the bike plan.

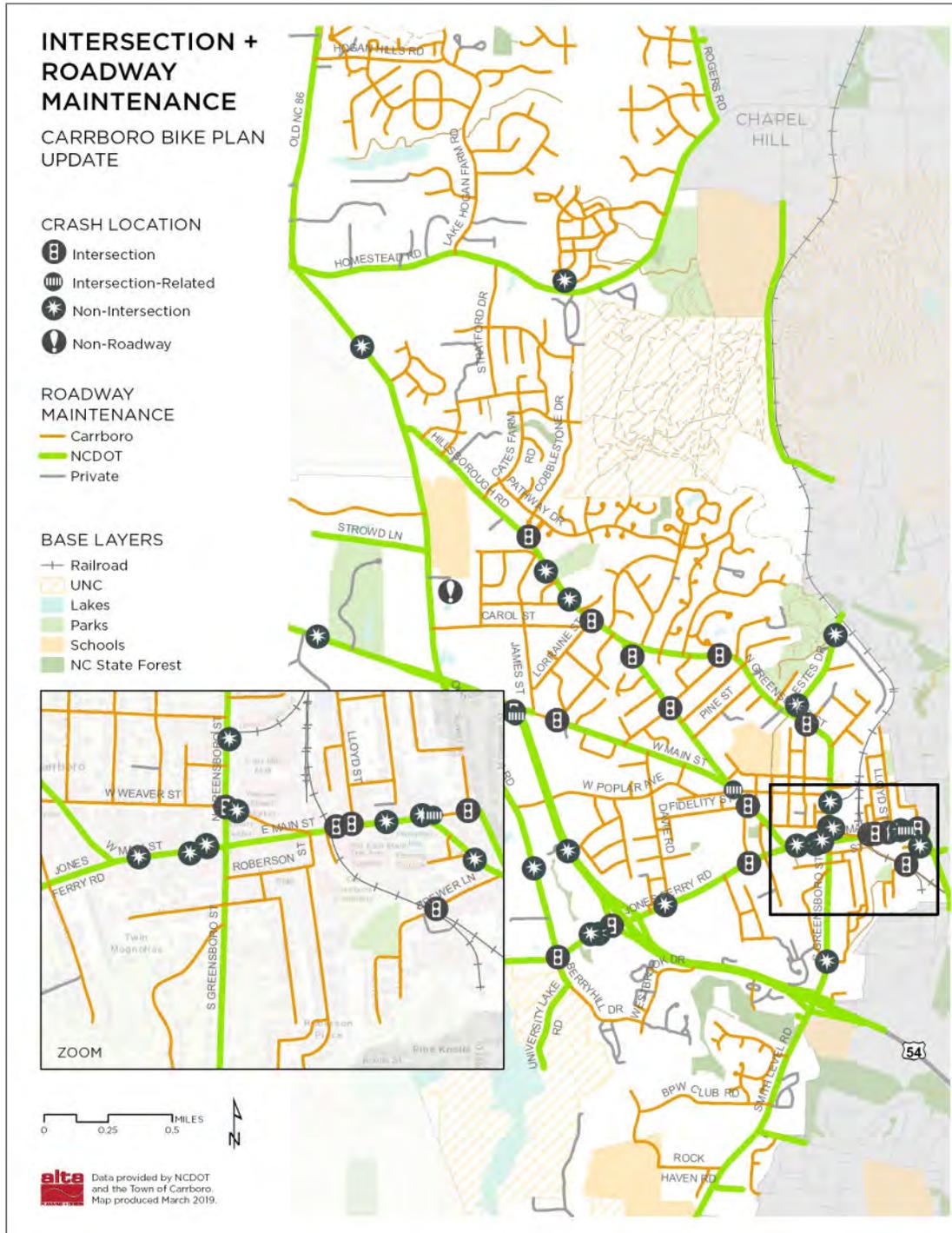
Opportunities and Challenges	Assessment
<p>Climate</p>	<p>North Carolina’s climate is very well-suited for bicycling, with cycling possible almost year-round, aside from a few months of the year during the peak extremes of summer and winter. The most bike-friendly small town in the U.S. (Davis, CA), has similar annual average temperatures, the key difference being humidity levels.</p>
<p>Topography</p>	<p>There is a significant amount of elevation change throughout the Town of Carrboro. Hills are found primarily north of N Greensboro Street/Hillsborough Road and south of Jones Ferry Road. The majority of road segments observed to have a significant slope are also scored as LTS 1 (low level of traffic stress). This is likely due to the shared characteristics of many hilly neighborhoods having low-speed residential roads. Also, while these roads may have a lower level of traffic stress, the presence of steep or challenging terrain may discourage the “interested but concerned” bicycle riders. For this reason, slopes can influence facility type that increase comfort and safety; or routing, where steep roads are avoided.</p> <p>Roads such as Estes Drive, Spring Valley Road, Cates Farm Road, Cobblestone Drive, and Barington Hills Road have challenging topography, especially for inexperienced cyclists.</p>
<p>Physical Barriers</p>	<p>Like most small and suburban towns, the major infrastructure that prohibits bicycle travel in Carrboro are major roads and intersections. NC 54 is a 4-lane divided state highway that contains the highest traffic volumes in Carrboro with limited access to bicyclists and pedestrians. The north and south segments of Greensboro Street continues through the middle of the Town and connects to Estes Drive, which is one of the main routes to the Town of Chapel Hill. Additionally, Jones Ferry Road and Main Street interest in the heart of downtown Carrboro and feed traffic to E Main Street and onto W Franklin Street, the main corridor in Chapel Hill. In addition, the railroad that runs north/south through the eastern side of Town is challenging to bicycle connectivity. These barriers to bicycling create “bikeable islands” within residential areas. (See Bicycle Level of Comfort memo, in which these somewhat isolated bikeable areas are visible).</p>
<p>University of North Carolina</p>	<p>UNC promotes biking as a safe and healthy alternative means of transportation. Students at UNC serve as strong advocates for two-wheel transport and provide an opportunity to the Town to convert short, single occupancy vehicle trips to bicycle trips.</p>
<p>Regional Connectivity</p>	<p>Orange County offers a variety of biking experience included several bike routes suitable for day rides, from 25 miles to 83 miles, reaching all municipalities and all parts of the County. The opportunity exists for Carrboro to develop a bikeway connection to both the Town of Chapel Hill and the Town of Hillsborough.</p>

Inventory of Select Roadways

Roadway Segment	From	To	Roadway Class	Width	# Traffic Lanes	Speed Limit	Bike Facilities	Maint.	Traffic Volume (AADT)	Roadway Configuration
Jones Ferry Rd	NC 54	W Main St	Arterial	35'	2	35	Bike lanes on both sides	NCDOT	8300	Undivided
Homestead Rd	Lake Hogan Farm Rd	Stratford Dr	Arterial	25'	2	45	No	NCDOT	5300-8000	Undivided
Homestead Rd	Stratford Dr	Smith Soccer Fields	Arterial	25'	2	45	Wide shoulder	NCDOT	5300-8000	Undivided
N Greensboro St	Main St	E Poplar Ave	Arterial	35'	3	20	No	Carrboro	9500-14000	Undivided
N Greensboro St	E Poplar Ave	Hillsborough Rd	Arterial	35'	2	20	Bike lanes on both sides	Carrboro	6000	Undivided
S Greensboro St	NC 54	Main St	Arterial	20'	2	35	No	NCDOT	11000	Undivided
Pathway Dr	Cates Farm Rd	Wild Oak Ln	Collector	35'	2	25	Bike lanes on both sides	Carrboro	N/A	Undivided/ Residential
Stratford Dr	Autumn Dr	Homestead Rd	Collector	35'	2	25	Bike lanes on both sides	Carrboro	N/A	Undivided/ Residential
Cobblestone Dr	Pathway Dr	Carolina North Forest	Local	25'	2	25	No	Carrboro	N/A	Undivided/ residential
Claremont Dr	Carolina North Forest	Homestead Rd	Local	25'	2	25	No	Private/ Carrboro	N/A	Undivided/ Residential
Estes Dr	N Greensboro St	Town Limits (Village Dr)	Arterial	20'	2	35	No	NCDOT	13000	Undivided
Strowd Ln	Old Fayetteville Rd	Anderson Community Park	Private	20'	Not paved	35	No	NCDOT	N/A	Gravel road
Rosemary St	E Main St	N Merritt Mill Rd	Collector	40'	3	25	No	Carrboro	N/A	Undivided
Rosemary St	N Merritt Mill Rd	S Robertson St	Collector	40'	3	25	Protected bike lanes both sides	Chapel Hill	N/A	Undivided
Brewer Ln	Hargraves St	E Main St	Local	20'	2	25	Sharrows	Carrboro	N/A	Undivided
Smith Level Rd	Ray Rd	NC 54	Arterial	45'	2	40	Bike lane on both sides	NCDOT	9700-17000	Undivided w/ Center Turn Lane

Inventory of Select Intersections

Identifying types of crashes involving bicyclists suggests several design and engineering solutions for reducing crashes. Some crash types can be reduced through good design at specific intersections, while other types indicate the need for greater overall education and visibility of bicyclists on the roadways or in paths. The following map highlights the roadway ownership (NCDOT vs Local) as well as the traffic control devices at key intersections.



Existing Mode Share

Data obtained from the American Community Survey (ACS) based on demographic information from the U.S. Census Bureau provides information regarding the means of transportation to work and an important starting point to understanding current use. Commute to work data is our only metric to understand bicycle travel currently. The Town will need to develop a more robust program to fully understand the comprehensive bicycle use in Carrboro. The mean travel time to work for Carrboro residents is about 21 minutes, two minutes lower than the North Carolina average. At 4.7% existing bike mode share, Carrboro has the highest percentage of bicycle commuters in the state of North Carolina, with the state average of 0.2 percent.

Means of Transportation to Work, Carrboro, NC (2017)

Workers over age of 16 (2017 ACS):	12,103	(100%)
Drove alone	7,634	(63.1%)
Carpooled	1,029	(8.5%)
Public Transportation (bus)	1,331	(11%)
Walked	375	(3.1%)
Bicycle	568	(4.7%)
Motorcycle	169	(1.4%)
Worked at home	992	(8.2%)

Mode Share Comparisons

The table below compares Carrboro's existing commute mode shares against several peer and aspirational cities across the United States. While Carrboro's bicycle mode share is high for a silver-ranking bicycle friendly community, communities with a platinum-ranking have more than double the percent of people commuting by bike.

Community	Drove Alone	Carpooled	Public Transportation	Walked	Bicycle	Taxi/motorcycle	Worked at home
Carrboro, NC (SILVER)	63.1%	8.5%	11%	3.1%	4.7%	1.4%	8.2%
Chapel Hill, NC (SILVER)	55.9%	6.1%	11.4%	13.0%	2.2%	1.9%	9.4%
Durango, CO (GOLD)	64.7%	6.1%	3.3%	11.7%	5.8%	1.1%	7.3%
Ashland, OR (GOLD)	65.0%	7.1%	0.9%	10.1%	3.7%	0.5%	12.7%
Boulder, CO (PLATINUM)	50.9%	5.6%	7.9%	11.3%	10.4%	1.1%	12.8%
Davis, CA (PLATINUM)	53.0%	8.2%	6.9%	4.4%	19.7%	1.2%	6.7%

*Data based on 2013-2017 American Community Survey 5-Year Estimates

Program Review

The Town of Carrboro has shown a commitment to improving bicycle safety, education and awareness through the implementation of several programs. The following summary is a snapshot of existing efforts and programs, organized by the four E's: Education, Encouragement, Enforcement, and Evaluation.

Education

- 51-75% of public and private elementary schools in Carrboro offer bicycle education (e.g. Safe Routes to School or similar) but there are currently no programs offered to middle or high schoolers.
- Town is a partner in Watch for Me NC, a statewide education and enforcement campaign focusing on cyclists, pedestrians, and motorists. Carrboro has made Watch for Me NC and other bicycle safety materials available at community events.
- Carrboro has had two adult bicycling education classes to provide adult bicycle education by League Cycling Instructors (LCI) in the community.
- Local bike shops such as Clean Machine and ReCYCLERY have hosted bicycle maintenance classes.
- Carrboro Bicycle Coalition (CBC) has done several grant-funded projects in Chapel Hill and Carrboro that have reached underserved populations, including a fix-a-flat workshops at low-income apartment complexes and provided them with lights, pumps, patch kits, and tire irons so they can be seen and continue to maintain their bikes. They have advertised these workshops in Spanish and Karen to draw those communities in, and have provided translators at several of the events. In 2014, the CBC received the Community Diversity Award from the University of North Carolina for its work in these areas.
- Carrboro Police Department routinely distributes bike lights to night riders without them.

Encouragement

- The Town of Carrboro partners with the Town of Chapel Hill and coordinates with other stakeholders (CBC, bike shops, ReCYCLERY, Tarwheels, local businesses, regional TDM coordinator, GoTriangle, etc.) on Bike Month events.
- Events like Open Streets, Bike to Work Day, Kidical Mass, and Walk/Bike to School Day have been great ways of promoting biking in the area. Events are promoted in email newsletters, posters, at Board/Council meetings where Bike Month proclamations are made, and via internet and social media.
- Cycling clubs such as Carolina Tarwheels, Luna Chix, Triangle Off-Road Cyclists, and Triangle Bikeworks are several ways to engage and encourage biking in Carrboro.

Enforcement

- Training such as basic academy training and National Highway Traffic Safety Administration Law Enforcement Training are the only programs offered to police officers regarding traffic law for bicyclists.
- Enforcement programs such as light giveaways, targeting motorist and cyclist infractions, and share the road campaigns help enforce bicycle safety in Carrboro.
- In Feb. 2014, the Board of Aldermen deleted a provision from the Town Code requiring bicyclists to ride single file when doing otherwise would obstruct traffic and never ride more than two abreast.

Evaluation & Planning

- Carrboro voters approved a Sidewalks and Greenways Bond program in November 2003. Ten years following that, it has been used to provide the local match for greenways projects throughout the study area.
- Carrboro has used Federal Surface Transportation Program funding (directly apportioned to the MPO and sub-allocated to MPO member jurisdictions) to provide the federal share of greenways projects. There is no stable annual amount; funding has been allocated on a project-by-project basis.
- The Institute for Transportation Research and Education (ITRE) is assisted NCDOT in establishing a statewide bicycle and pedestrian count program that completed in Summer 2018, which had two locations in Carrboro that included Libba Cotton Bikeway shared use path and a sidewalk along one side of Old NC 86. Based on the North Carolina Non-Motorized Volume Data Program Report, both locations saw a mixture of volume types between bicyclist and pedestrians.

Count Station	Location	2017 AADBТ	2017 AADPT	AADT	AADT Year
CRB_LCB	Libba Cotton Bikeway	602	358	NA	NA
CRB_OLD	Old NC 86	84	61	13,000	2017

AADBТ = Annual Average Daily Bicycle Traffic

AADPT = Annual Average Daily Pedestrian Traffic

AADT = Annual Average Daily Traffic (motorized vehicles)

To: Zachary Hallock, Transportation Planner, Town of Carrboro, NC

From: Jennifer Baldwin, Senior Associate, Alta Planning + Design

Date: April 17, 2019

Re: Carrboro Bicycle Plan: Equity Analysis

Introduction – Why Consider Equity?

Without access to transportation, people in our community will have a harder time getting to work, buying healthy food, seeing a doctor, going to school, or connecting with others. While all communities offer a variety of ways to get around, not everyone has equal access to a wide range of convenient, safe, and affordable means of transportation. Many communities rely on a variety of modes to connect to basic services that are necessary to live productive, fulfilling, and healthy lives. However, convenient, safe, and affordable transportation options are not always available to those that need them most. Referenced here as communities of concern, the following analysis considers populations that have been historically disadvantaged or are otherwise considered vulnerable to unsafe, disconnected, or incomplete active transportation facilities. These communities—that may experience poor financial, health, and housing circumstances, and/or physical or communication limitations—are prevented from fulfilling basic needs without safe, convenient transportation options.

Transportation facilities are essential components in creating communities of opportunity and reducing the disproportionate economic and health burdens on communities of concern.⁴ Often, traditionally vulnerable populations, such as children, older adults, people of color, people with limited English proficiency, and low-income individuals rely heavily on affordable transportation, especially active transportation modes like walking, biking, and transit.¹⁻³ Further, many areas with a concentration of low income or non-English speaking populations suffer from an underinvestment in transportation infrastructure. A lack of high-quality walking, biking, and transit facilities can result in unsafe travel conditions and/or long travel times. Uneven distribution of active transportation infrastructure can also provide health, safety, mobility, and economic benefits for those who are more fortunate, while increasing hardships for communities of concern. One way this becomes apparent is in the disparity in the number of collisions involving bicyclists or pedestrians in disadvantaged areas.²⁶

In this memorandum, we define the pursuit of equitable outcomes in planning as having two steps: a) Understanding the historic situations that have disadvantaged certain communities, and b) seeking to reduce the impact of those disadvantages by providing these populations with resources to live more healthy lives. By having the resources to provide mobility options all members of a community, communities can experience improved access to jobs, housing, and other critical services. These needs include access to jobs, housing, and other critical services. Equity recognizes that different people experience different barriers to securing their needs.⁴ Working towards equity may mean prioritizing active transportation funding in areas with a greater concentration of disadvantaged populations instead of distributing funding equally based on geography.

For Alta's equity analysis process, we have defined the following equity indicators, which are factors derived from US Census data that have historically been connected to disadvantaged and vulnerable populations, including: concentrations of children, older adults, people of color, people with limited English proficiency, households with no access to a vehicle, and low-income individuals. Equity is particularly important for these groups because of their common reliance on active and public transportation, which renders them more vulnerable to poor infrastructure.

Alta's equity analysis identifies where the majority of individuals within each indicator reside within Carrboro's Jurisdiction. Understanding where these individuals are most densely located helps to prioritize transportation improvements to address historic inequities. Increasing transportation opportunities for the communities that most depend on such services improves access to life-enhancing services and opportunities.

Methods

The project team conducted an equity analysis using existing demographic information from the US Census Bureau. All data was obtained from the 2012-2016 American Community Survey (ACS) 5-year estimates and analysis was conducted at the Census Block Group level for Carrboro's Jurisdiction. Each of the six indicators received equal weight in determining the composite equity score. For this analysis, the following indicators were used:

- **Race:** This indicator measures the percentage of the population that identifies as non-white.
- **Age:** Individuals under the age of 18 and over the age of 65 comprise this indicator. These two age groups are displayed separately to better identify the differing needs of these populations.
- **Income:** This indicator measures individuals of working age living at or below 200% of the Federal Poverty Level, which is a threshold set by the U.S. Census Bureau and is updated annually.
- **Educational Attainment:** This indicator represents the percentage of the population over 25 years of age that does not have a high school diploma or equivalent.
- **Limited English Proficiency (LEP):** This indicator measures the percentage of the population that identifies as not speaking English well or at all.
- **Access to a Vehicle:** This indicator measures the percentage of household that do not have regular access to a vehicle.

The equity analysis demonstrates relative need for transportation investments based on concentrations of the populations listed above. Results for each Census Block Group are based on a comparison to all Census Block Groups within North Carolina in order to provide greater context for the relative need identified through these indicators. For each Census Block Group, the equity score reflects the distance from the mean of the comparative geography (North Carolina).

All indicators help identify where populations that may have specific mobility needs (youth and elderly populations, no access to a vehicle) or have historically been disadvantaged (LEP, Race, Income, Education) live within Carrboro's Jurisdiction. These populations may rely on active transportation networks for daily trips, access to services or recreational facilities. While this analysis does not directly assess access to existing facilities, the results identify areas where more facilities may be needed or access to existing facilities should be improved. The project team can use the resulting maps to identify focus areas for new investments that may address equity needs.

Equity Analysis Results and Discussion

The following discussion explains why each indicator is utilized.

Race: Non-White Population

Rationale: Racial or ethnic minorities are more likely to live in areas with poor or limited active transportation facilities, educational opportunities, job resources, and healthy food outlets.^{1,6} They tend to be more dependent on transit and active transportation; black individuals are more than four times and Hispanics three times as likely to not have access to a household car compared to their white counterparts, regardless of income.⁷ In turn, these deficits exacerbate the disproportionate health burdens communities of color experience. Lastly, communities of color experience a greater proportion of pedestrian crashes and have increased risk of mortality after pedestrian injury.^{9,10} Therefore, increasing active transportation facilities and connectivity may promote physical activity, enhance economic opportunities, and increase transportation safety. Facility planning, designing and implementation should be done with special attention to input and ideas from communities of color.⁶

Age: Under 18

Rationale: The population under 18 years of age is thought to have higher active transportation infrastructure need because they have less access to motor vehicles and may rely more on alternative modes of transportation. Other youth-related vulnerabilities may include lacking knowledge of safe travel behaviors; greater susceptibility to environmental exposures, such as damage caused to developing bodies through emissions; and difficulty navigating poorly-designed areas.¹ Youth especially need safe transportation to/from places to be physically active and to build social connections.¹ Research on transportation facilities shows that road design and sidewalk conditions determine youth physical activity; safe crossings, well-built sidewalks, and traffic calming strategies are all associated with greater physical activity in youth.¹¹ Promoting physical activity in youth is important for physical and social development, boosting academic achievement and self-esteem, and preventing costly chronic diseases.¹² Further, physical and cognitive development impact a child's ability to safely walk and bicycle in a high traffic scenario.^{30,31} For younger children in particular, this means that children lack proficiency in actions such as scanning for traffic and identifying safe locations for crossing. Areas with high concentrations of youth populations will benefit from improved crossing conditions and additional separated facilities.

Age: Over 65

Rationale: The population over 65 years of age may have more mobility needs than the general adult population, specifically in that they may require more alternatives to driving. Older adults increasingly depend on active transportation modes, such as using public transit, walking and/or biking when they decrease or stop driving. Prioritizing active transportation needs enables older adults to maintain positive well-being, despite the onset of functional limitations.¹³ Walkable access to adequate public transportation is essential for older adults to maintain their daily activities and independence.¹⁴ Additionally, safe, walkable communities that promote physical activity help prevent or delay chronic diseases such as arthritis, osteoporosis and diabetes in older adults.¹⁵ As 61% of American adults ages 65 years or older have at least one activity-based limitation, creating communities where older adults can safely be active and access necessary resources is crucial to the future prevention of such disability.¹⁶ Lastly, older adults are especially vulnerable to social isolation, which can result in significant declines in physical health; increasing walkability enhances older adults' ability to connect with others.^{2,14}

Income: Poverty

Rationale: Poverty is a socioeconomic vulnerability, linked with disproportionate exposure to poor housing, homelessness, and limited access to resources, such as transportation services, quality food, recreation facilities and health care facilities.^{1,17,18} With transportation costs, especially those associated with vehicle ownership, often comprising the second largest portion of an individual's income (second to housing), reduced access to transit and active transportation networks may lead to greater reliance on an automobile and therefore have significant financial impacts on poor households.²⁹ Populations with higher levels of poverty may have limited access to vehicles and rely more on active transportation networks to access daily trips. Of U.S. residents with incomes at or below 200% of the Federal Poverty Level (FPL), 32% overall do not have access to a household vehicle.⁷ Comparatively, 55% of Black and 39% of Hispanic individuals at or below the 200% FPL do not have such access.⁷ Even with increased dependence on non-automotive transportation, low-income residential areas are often less walkable, a condition that creates barriers to living safe, social, and active lives.^{1,18} Lastly, children living in low socioeconomic status areas are more likely to experience traffic injuries and more likely to die from traffic injuries than children in more affluent areas.¹⁹ Increasing low-income residents' active transportation facilities can improve access to economic and educational opportunities, improve health through increased physical activity, and promote safety.^{20,21}

Education: No High School Diploma or Equivalent

Rationale: Nationwide those without high school diplomas have the highest rates of walking and the second highest rates of biking to and from work.³ These individuals may depend on walking and biking due to financial constraints and lack of adequate and/or convenient transportation options. Educational attainment, as a socioeconomic indicator, correlates with income levels. Therefore, although this population is most likely to walk to work, individuals without high school diplomas tend to live in areas without adequate biking and walking facilities.¹ Boosting active transportation resources in areas where these individuals reside could promote increased access to educational resources and job opportunities.

Limited English Proficiency

Rationale: Individuals with Limited-English Proficiency (LEP), or who identify as not speaking English well or at all, tend to rely more on active transportation as their primary means of transportation than the average English speaker.^{20,22} General low economic status of LEP individuals may correlate with low car ownership rates and high reliance on active transportation facilities.²³ Given low car ownership and poor active transportation conditions, immigrants and LEP individuals are more likely to walk and ride along roads that lack appropriate biking and walking facilities, forcing individuals into unsafe transportation situations.²⁰ Therefore, access to active transportation services is critical for LEP individuals to access basic employment and other necessities.²³ Further, LEP individuals are less likely to participate in decision-making processes, in part due to barriers caused by limited English proficiency and in part due to the correlation with low-income status and implications of work schedule.²⁴ Additional, multilingual outreach is needed in communities with high LEP concentrations in order to better understand active transportation access needs.^{24,25} Engaging LEP communities using focus groups in the policy, planning, and designing processes may assist in creating more appealing transportation improvements.¹ LEP populations may be less likely to engage in planning processes because of language barriers and language exclusion, and if so, they may not be as likely to advocate for active transportation facilities in their area.²⁵

Access to a Motor Vehicle

Rationale: In less urbanized locations, specifically those with limited transit access and coverage, access to a motor vehicle carries strong implications for one's ability to reach employment, access healthy foods, and reach basic services.²⁷ A diverse transportation system that offers multiple modes, including transit, bicycling, and walking, reduces reliance on automobiles and can provide for more equitable access to services.²⁰ Providing access via quality walking and bicycling infrastructure is one method for increasing equity in access for locations with limited vehicle availability.²⁰ Studies have also found that access to a motor vehicle improves employment rates, as it provides a reliable means to commute to work.²⁷ The addition of safe and comfortable walking and biking routes, as well as developing improved connections to transit, have the ability to also serve as a reliable means to commute to work. This has the potential to alleviate the necessity of a motor vehicle to reach employment opportunities.

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EQUITY ANALYSIS

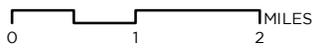
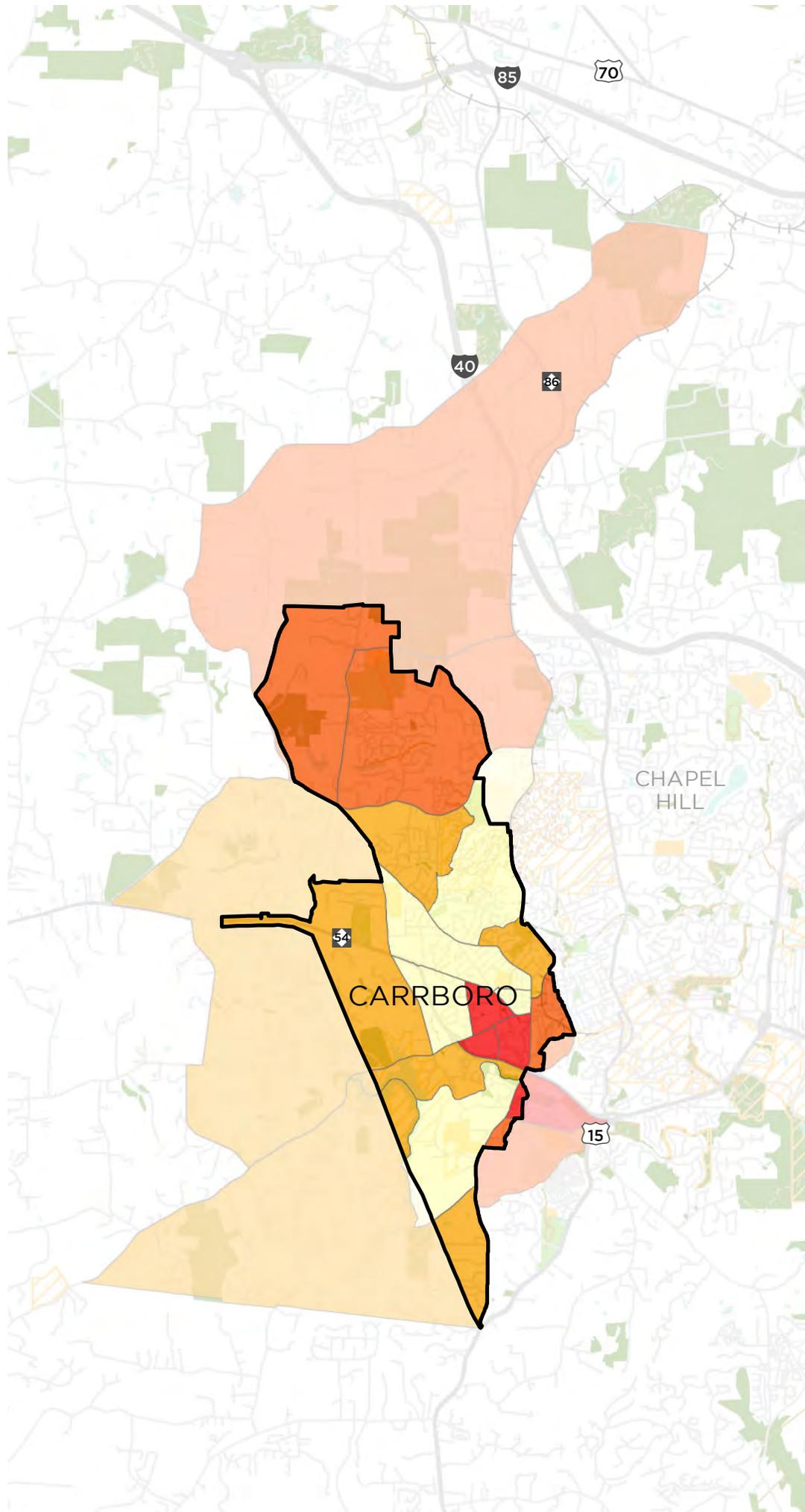
CARRBORO BIKE PLAN UPDATE

EQUITY ANALYSIS

- Higher Need
- Lower Need
- Study Area

BASE LAYERS

- Railroad
- Parks
- Schools
- UNC
- NC State Forest



To: Zachary Hallock, Town of Carrboro
From: Alta Planning + Design
Date: August 27, 2020
Re: Carrboro Bicycle Plan: Level of Traffic Stress Methodology and Results

Level of Traffic Stress (LTS) Analysis

Overview

The Level of Traffic Stress Analysis was adapted from the 2012 Mineta Transportation Institute Report 11-19: *Low-Stress Bicycling and Network Connectivity*. A level of comfort for bicyclists is determined based on factors including posted speed limit, street width, and the presence and character of bicycle lanes. The combination of this criteria separates the bicycle network into one of four scores:

- LTS 1: Low-stress roadway suitable for all ages and abilities
- LTS 2: Roadway comfortably ridden by the mainstream adult population
- LTS 3: Roadway ridden by “enthused and confident” cyclists
- LTS 4: Roadway ridden by the “strong and fearless” cyclists

In general, a separated bicycle facility, such as a trail or a cycle track, would qualify as a low-stress (LTS 1) bikeway, while roadway shared with motor vehicle traffic operating at high speeds would receive a higher-stress score. The results of the LTS analysis helps identify existing areas with a high level of service as well as focus areas for improvement.

LTS provides an intuitive framework to describe the benefits of bicycle infrastructure, and demonstrates that some roadways need more intervention than others to provide a truly comfortable experience. LTS is based on a national framework that does not translate perfectly to each locality. The LTS methodology has been modified to better account for bike stress conditions in the Town of Carrboro.

Methodology

The Level of Traffic Stress analysis is completed through an assessment of street segments and intersections using spatial data and aerial imagery. In this context, every street link (a section of roadway) receives two scores based on its characteristics: one score for its segment, the space of roadway between intersecting streets; and one score for its intersection, where one segment crosses another. See Table 1 below for more information about data limitations and assumptions.

The table on the following page shows Levels of Traffic Stress (LTS Definitions). Source: Mineta Transportation Institute Report 11-19

LTS 1	Presenting little traffic stress and demanding little attention from cyclists, and attractive enough for a relaxing bike ride. Suitable for almost all cyclists, including children trained to safely cross intersections. On links, cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a slow traffic stream with no more than one lane per direction, or are on a shared road where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where cyclists ride alongside a parking lane, they have ample operating space outside the zone into which car doors are opened. Intersections are easy to approach and cross. Accessible for people between 8 and 80 years old.
LTS 2	Presenting little traffic stress and therefore suitable to most adult cyclists but demanding more attention than might be expected from children. On links, cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a well-confined traffic stream with adequate clearance from a parking lane, or are on a shared road where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where a bike lane lies between a through lane and a right-turn lane, it is configured to give cyclists unambiguous priority where cars cross the bike lane and to keep car speed in the right-turn lane comparable to bicycling speeds. Crossings are not difficult for most adults.
LTS 3	More traffic stress than LTS 2, yet markedly less than the stress of integrating with multilane traffic, and therefore welcome to many people currently riding bikes in American cities. Offering cyclists either an exclusive riding zone (lane) next to moderate-speed traffic or shared lanes on streets that are not multilane and have moderately low speed. Crossings may be longer or across higher-speed roads than allowed by LTS 2, but are still considered acceptably safe to most adult pedestrians.
LTS 4	A level of stress beyond LTS3.



LTS 1

comfortable for all ages and abilities



LTS 2

comfortable for most adults



LTS 3

comfortable for confident bicyclists



LTS 4

uncomfortable for most



The scores assigned are based on a link's characteristics that affect a bicyclist's perception of safety and comfort. The scores range from 1 to 4, where 1 represents the lowest stress, and 4 represents highest stress and discomfort. These two scores determine the overall LTS score. It is important to note that LTS scores are assigned based on a weakest link principle; this means that while a segment may provide a relatively low-stress path, a high-stress intersection will result in an overall high-stress score. Tables 2, 3 and 4 below summarize the scoring methodology used in this analysis.

Private roads, limited access roads, and unpaved roads were omitted from the analysis.

Table 1: Data Assumptions and Limitations

Inputs	Notes	Assumptions/Logic
Roads Classified as Private	For the purposes of this analysis, private roadways were excluded from the network. Private roadways were identified based on the Class attribute in the provided dataset.	Private roads are omitted to focus on roadways where the Town has jurisdiction and ability to implement improvements.
Residential Roadways	Centerline data was not available; to better identify which roadways provide a low-stress pathway, roads that were defined as Local based on the Class attribute and have a posted speed of 25 mph were considered to meet the threshold for a residential roadway as it applied in Table 2 below. Based on a visual check against land use data, these roadways are generally consistent with residential areas.	Low-speed roadways with no marked centerline are considered low stress (LTS 1) as these roadways encourage shared space and often represent roadways with low volumes.

The following tables specify the scoring criteria based on roadway configuration, bike lane and crossing condition. The criteria are adapted from the original 2012 Mineta Institute report. These tables are used in combination to create the segment, approach, and intersection scores described above.

Table 2: Criteria for Level of Traffic Stress in Mixed Traffic

Posted Speed Limit (mph)	Street Width		
	2 -3 Lanes Volume < 3,000 AADT	2 -3 Lanes Volume >= 3,000 AADT	4-5 Lanes
≤ 30	LTS 1 or 2*	LTS 3	LTS 3
35	LTS 3	LTS 4	LTS 4
≥ 40	LTS 4	LTS 4	LTS 4

**Lower value is used for streets without marked centerlines or classified as residential with fewer than 3 lanes. Residential roadway were determined in this analysis based on land use data.*

Table 3: Criteria for Bike Lanes

Posted Speed Limit (mph)	Street Width		
	2 -3 Lanes Volume < 3,000 AADT	2 -3 Lanes Volume >= 3,000 AADT	4 – 5 lanes
≤ 30	LTS 1 or 2*	LTS 2	LTS 2
35	LTS 2	LTS 3	LTS 3
≥ 40	LTS 4	LTS 4	LTS 4

**Lower value is used where the bike lane width is 6 feet or more*

Table 4: Criteria for Unsignalized Crossings¹

Speed Limit of Street Being Crossed	Width of Street Being Crossed	
	Up to 3 Lanes	4-5 Lanes
Up to 30 mph	LTS 1	LTS 2
35 mph	LTS 2	LTS 3
40 mph or more	LTS 3	LTS 4

Findings

Map 1 illustrates the Level of Traffic Stress for public roadways in the Town of Carrboro. Generally, lower stress roadways are found in residential areas. Lower speeds and fewer number of lanes contribute to this condition. Roads with higher posted speeds and/or higher traffic, such as Greensboro Street, Jones Ferry Road, some of Main Street, Rogers Road, and some of Hillsborough Road are classified as high-stress. These high-stress roadways create barriers for travel amongst neighborhoods and other lower-stress roadways. Some major roadways, such as Hillsborough Road closer to downtown, have lower volumes and speeds and existing bike lanes, which make them effective low stress connections between local roads..

It should also be noted that there is a dense network of unpaved trails in the Carolina North Forest that is bordered by low-stress roadways to the south and west. While these trails are not accounted for in the analysis as they are unpaved, they may be used for commuting purposes to reduce out-of-direction travel between low-stress roads.

Additionally, many high stress roadways include bicycle lanes; the greater number of lanes and higher posted speeds impact the ability of bicycle lanes to improve the comfort along these roadways. Where possible, separation should be considered, especially along high-stress corridors. Roadways with a high level of traffic stress (LTS 3 and LTS 4) and a bicycle lane include:

- Old Fayetteville Road (all)
- Main Street (except W. Main Street to Greensboro Street)
- Greensboro Street (all)
- Hillsborough Road (north of Greensboro Street, at W. Main Street junction)
- Jones Ferry Road (all)
- Smith Level Road (except short segment north of Willow Oak Lane)
- Homestead Road (all)

None of the LTS scores were dictated by their respective crossing score and no crossing score exceeded an LTS 3.

Low-Stress Connectivity Analysis

Map 2 (attached) analyzes the connectivity of existing low-stress connections. Low-stress roadways that provided for continuous travel are displayed in the same color; when the color of a collection of roadways changes, this indicates that a

¹ Signalized crossings provide a dedicated cycle for roadway crossings. Signalized intersections are not considered to have a negative impact to crossing locations and are not evaluated in this analysis.

high stress roadway or crossing is impeding travel among low-stress network links. Low-stress roadways are classified as either an LTS 1 or 2.

The results of this exercise demonstrate that while large portions of the city can be reached through travel on low-stress network links, there is still a lot of fragmentation. There are 43 distinct low stress “islands” across the Town of Carrboro.

Major Island Clusters:

- Downtown shows a strong network of connectedness but Greensboro Street acts as a barrier to northern or southern travel.
- Isolated between Homestead Avenue and Hillsborough Road/Greensboro Street is a large area of connected residential streets.
- The zone between Hillsborough Road and Main Street is composed of numerous small “islands” without a low-stress travel route beyond its barriers.
- Neighborhoods near the northern and southern extents of the study area (i.e. north of Homestead Avenue and south of NC 54) experience both internal and external network isolation.

While these results depict some relatively large areas of connected low-stress roadways, it is important to consider the potential out-of-direction travel that is associated with reaching crossing opportunities in areas where a major roadway otherwise creates a barrier.

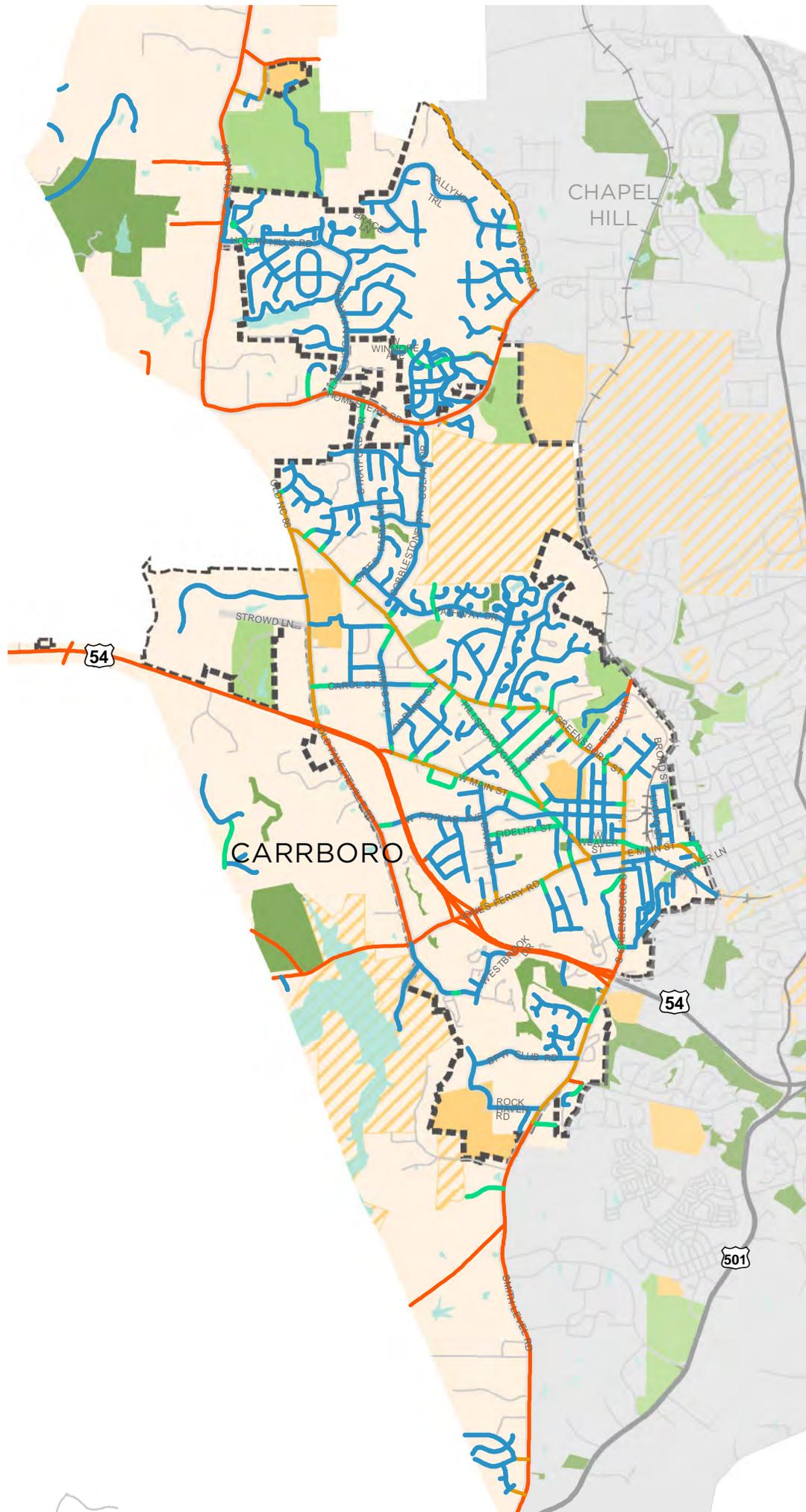
LEVEL OF STRESS ANALYSIS

CARRBORO BIKE PLAN UPDATE



LEVEL OF TRAFFIC STRESS

- 1 (Most Comfortable)
- 2
- 3
- 4 (Least Comfortable)



- Lakes
- Carrboro Town Limits
- Parks
- Schools
- UNC
- NC State Forest
- Railroad
- Streets



LEVEL OF TRAFFIC STRESS ANALYSIS

Connectivity Islands

CARRBORO BIKE PLAN UPDATE



- Lakes
- Carrboro Town Limits
- Parks
- Schools
- UNC
- NC State Forest
- Railroad
- Streets



Carrboro Bicycle Plan - Previously Adopted Plans or Policies

Document Name	Year	Purpose	Key Recommendations
<p>CONNECT 2045: The Research Triangle Region's Metro Transportation Plan (Metropolitan Planning Org)</p>	<p>Jan-19</p>	<p>This document contains the 2045 Metropolitan Transportation Plans for CAMPO and the DCHC MPO. These plans are the guiding documents for future investments in roads, transit services, bicycle and pedestrian facilities and related transportation activities and services to match the growth expected in the Research Triangle Region.</p>	<p>Local plans and inventories used for pedestrian facility recommendations (Figure 7.5.1) - page 56 Local plans used for bicycle facility recommendations (Figure 7.5.2) - page 57 Increase bike and pedestrian safety and possible incentives to provide to get more people walking/biking in region (pg 58): <u>Education:</u> Institutionalize bicycle and pedestrian safety education within public schools; Provide bicycle instruction to adult cyclists; Provide educational messages to better inform drivers and pedestrians about pedestrian and bicycle safety laws and best practices; Educate motorists on cyclists' rights to use the road; Establish a local fund for bicycle and motorist education. <u>Enforcement:</u> Update bicycle traffic laws; Provide an active enforcement program; Appoint a "Bicycle Liaison Officer"; Develop "Bicycle Patrol Units" within local police departments. <u>Encouragement:</u> Offer incentives to employers to encourage employee bicycle commuting; Conduct a well-publicized annual "Bike-to-Work" week with multiple events; Improve access to transit for pedestrians and bicyclists; Develop a publicity campaign to raise awareness of cycling issues; Conduct annual regional bicycle events; Publicize the region as "bicycle-friendly"; Encourage community-based support for cycling; Develop cooperative relationships; Promote Safe Routes to Schools and walk/bike to school events; Participate in the Triangle Transportation Demand Management activities and programs.</p>
<p>NC 54 West Corridor Study</p>	<p>Oct-18</p>	<p>The NC 54 Corridor Study is an in-depth review of the 20.4 mile stretch of NC 54 between Old Fayetteville Road in Carrboro and I-85 in Graham. This regionally significant roadway helps 6,000 to 15,000 vehicles per day reach work, schools, and stores, so local governments are interested in opportunities and strategies to improve the roadway and support the communities alongside it.</p>	<p>The NC 54 West Corridor Study recommends a phased package of conceptual improvements summarized below. Widening and related improvements are recommended for completion when the practical capacity of the roadway is forecasted to be exceeded. The implementation schedule consists of four overlapping ten year phases. The widening schedule is preliminary, and it reflects reasonable assumptions about overall conditions within each corridor segment. The probable cost of the entire package of widening improvements described totals just under \$180 million (in 2018 dollars). <u>Corridor Level</u> Given the length of the corridor, recommendations are described according to six segments. Recommended roadway cross sections consist of two variations of a 4-lane median divided roadway from NCDOT's Complete Streets Guidelines. The other cross section is a ditch and swale design with paved shoulders and shallow, vegetated, open-channel drainage, rather than concrete curb-&-gutter with piped runoff. The other cross section is a curb-and-gutter version; the median and inner travel lane have the same dimensions as the ditch and swale version, but the outer lane is 14 feet wide with a 2-foot curb and gutter pan. Both cross sections allocate space for a shared-use path.</p>
<p>The 203 Project</p>	<p>Sep-18</p>	<p>The 203 Project is a combined effort that will offer a community based facility that will provide opportunities for education, art, and togetherness.</p>	<p>Completed a study to show the need for Town facilities and future space. The use was identified as needed by the Town and compatible users. Facilities will include the Town's Recreation and Parks Department, the Orange County Southern Branch Library, the newly relocated ArtsCenter, and community radio station WCOM.</p>

<p>Town of Carrboro Economic Sustainability Plan 2017</p>	<p>Nov-17</p>	<p>Provide a set of values, guiding principles, and action items for the continued development and economic well being of the Town - based around environment, people, and local economy</p>	<p>Grow the Town's pedestrian network and connectivity to businesses; provide access to public transit and use as a measurement to economic success; preserving and growing bikability as a means of attracting people and businesses; strengthen partnerships with education and economic development as a means of connecting talent development and community assets; support and grow its locally owned and operated business community -- Focused on recommendations of the Climate Action Plan (CAP) and the Parking Plan, especially wayfinding signs that help customers locate parking; support and implement goals of the Affordable Housing Plan</p>
<p>Downtown Parking Plan</p>	<p>Jul-17</p>	<p>The plan vision was described as process to examine the current and future states of parking in Carrboro, involving public outreach to identify potential barriers that may be preventing residents from visiting downtown more frequently.</p> <p>Measurable output first involving a full documentation of the existing parking conditions, supplemented by an online survey of residents to identify parking behaviors and perspectives relating to parking. Preliminary findings were presented to the public and feedback was obtained during the early stages of the project. After incorporating citizen feedback and more refined existing conditions data, business owners were contacted to discuss concerns and potential parking management strategies for the short-term and long-term growth of the Town.</p>	<p>Based on model assumptions, the calculated parking surplus for downtown Carrboro on a typical weekday is 1,281 empty spaces for the existing conditions and an estimated future surplus of 908 empty spaces, within a range of +/- 140 throughout the day. The data collected does not support the need for the Town to provide additional parking spaces today.</p> <p>During the course of the next five (5) years, parking demand is expected to increase by 900 new parking spaces due to new development; these projects should provide a sufficient number of additional new spaces to mitigate this demand. The balance of spaces needed will reduce the existing surplus of more than 1,200 spaces to approximately 900 surplus spaces, which factors in an artificial maximum occupancy of 85% (leaving 15% of spaces empty). This quantitative analysis does not support the need for the Town to construct additional parking spaces in the next five (5) years.</p>

<p>Community Climate Action Plan</p>	<p>Jan-17</p>	<p>Reduce emissions of greenhouse gases that are causing global climate change</p>	<p><u>Community Integration:</u> Create grass roots partnerships to engage community; Expand public partnerships to more explicitly consider climate action; Create green neighborhood program; Integrate climate action with local living economy; Expand capacity; Facilitate low cost financing for energy efficiency and renewable energy projects; Integrate climate action and social/equity initiatives</p> <p><u>Building Energy Efficiency Measures:</u> Reducing emissions by 50% by 2025; Energy audit/performance ratings; Demonstrate pursue energy performance beyond minimum requirements for new development; Create rental property task force and process; Create rental property registry/certification</p> <p><u>Transportation:</u> Reduce emissions by 50%; Enhance transit service; Improve vanpool/carpool options; Further promote walking, biking transit; Limit idling in school loading zones; Improve bicycle and pedestrian infrastructure</p> <p><u>Renewable Energy:</u> Pursue community solar projects; Pursue downtown geothermal heating and cooling; create rental property task force and process</p> <p><u>Ecosystem:</u> Pursue stormwater utility; Evaluate extent to which the deer population and climate change affect native plant ecosystems; Accelerate/expand organic waste collection/composting; Tree preservation, protection and conservation; Improve regulations and community capacity to discourage invasive plants and encourage native plants; Pursue watershed restoration actions to protect local streams from changes in rainfall due to climate change</p> <p><u>Food Choice:</u> Reduce emissions by 50%; Develop local dietary consumption and associated GHG profile</p>
<p>Carrboro Bike Program Review</p>	<p>Dec-16</p>	<p>This guide is meant to be a summary of current practices in bicycle infrastructure, with some redundancy with the 2009 Carrboro Comprehensive Bicycle Plan.</p>	<p>Encouraged the Town of Carrboro to update the bicycle plan in the short-term, with recommendations – detailed by chapter – in the pages that follow.</p> <p>Suggestions for how to revise the plan from its last iteration that apply generally to many parts of the report:</p> <ul style="list-style-type: none"> -Reduce the text length and improve readability by eliminating repetitive sections, cutting out extraneous detail, and transforming paragraphs to bullet-point form -Convert text to infographics, charts, and tables where applicable -Add quotes, from the public engagement survey, to illustrate perspective of Carrboro residents on biking in the town -Use photographs of local facilities (in Carrboro or other nearby places) whenever possible -When mentioning information detailed in other sections, reference the page number and section where information is discussed in full -With unchanged information, refer to 2009 report over repeating text. -In sections describing different types of facilities or programs, summarize information in a table at the start of the section, so that users know to use it as a reference as they read. -When referring to types of cyclists, use the more inclusive, welcoming definitions included in the updated survey rather than the definitions used in the 2009 report (Modified from Geller, 2006).

Carrboro Bike Parking

Dec-16

This section summarizes Carrboro's current bike parking requirements, providing the background information necessary to compare Carrboro to national leaders in bicycle parking and our proposed prioritization model. Safe bike parking is often regarded as a major concern for cyclists and can even be considered as a barrier to entry for potential cyclists.

Specifically in regards to Section 15-291 Number of Parking Spaces Required in the Carrboro Land Use Ordinance, the Comprehensive Bicycle Transportation Plan requires that the 5 bicycle parking spaces used as a replacement parking space are both provided by the developer and conveniently located near a building entrance - a step up from the language in the Land Use Ordinance.

1. A bicycle storage room, bicycle lockers, or bicycle racks within a building;
2. Bicycle racks or lockers in a parking structure, underneath an awning or marquee, or near a main building; or
3. Bicycle racks on the public right-of-way with approval from the Town or State and where such racks do not conflict with pedestrian use.

Recommend that the Town compare requests for additional parking infrastructure to determine their level of priority. There was a decision tree that was developed so files each project into a priority tier and determines which requests should be filled first. This approach is well-suited to this task because it is easily applied, easily modified according to values and regulations, and transparent. This decision tree begins with two pre-conditions that must be met for the project to reach a prioritization tier. The first pre-condition that each proposed site must meet is that it must be near destinations. These destinations might be residential, commercial, civic, industrial, recreational, or otherwise. Second, there must be available right of way at this location. The term "available" should be considered a loaded term: the right of way is only "available" for bicycle parking if installing the facility does not compromise design or legal (e.g., ADA compliance) standards.

<p>Affordable Housing Goals and Strategies</p>	<p>2014</p>	<p>To support and increase affordable housing opportunities in Carrboro, short-term and long-term</p>	<p>Affordable Homeownership:</p> <ul style="list-style-type: none"> - Increase # of homeownership units that are permanently affordable in Carrboro. - Evaluate and reduce housing density restrictions to slow the climb of housing prices and diversity housing stock, particularly in high transit areas - Decrease barriers to first-time homeownership and to homeownership retention, particularly seniors - Continue to improve public transit access, focused on moderate-income homeownership communities and development with an affordability component <p>Affordable Rentals</p> <ul style="list-style-type: none"> -Increase # of rental units that are permanently affordable to individuals/families earning less than 60% of AMI (\$33,943.80 in 2017). - Reduce negative effects of parking requirements on rental prices - Slow the pressure on rental prices by increasing rental housing stock, particularly in high-transit areas - Reduce erosion of rental housing quality and affordability - Examine the current marketplace for mobile and modular homes <p>Overarching Priorities</p> <ul style="list-style-type: none"> - Concerted land use planning/small land use plan for 3 high priority/high potential areas - Improve opportunities for developers and potential partners to identify affordability in a project - Develop a dedicated funding source-in partnership with county and peer municipalities - Ensure implementation of the Affordable Housing Strategy - Provide greater incentives for developers to include affordable housing in their projects - Reduce utility costs - Acquisition of land/property-be proactive with OWASA in the land or parcels they are saying they will offer to municipalities first-Start to engage with them
<p>Safe Routes to School Strategic Action Plan</p>	<p>Dec-10</p>	<p>The plan highlights goals and visions for enhancing opportunities for active travel to school, and outlines ways to turn those opportunities into realities, addressing Carrboro Elementary and McDougle Elementary Schools</p>	<p>Safety and infrastructure improvements at both school locations--</p> <p><u>McDougle Elementary</u>: new sidewalk along west side of Hillsborough Rd; new multi-use path on Horne Hollow Rd from existing bike path near Autumn Drive to Hillsborough Rd; repair pathway of Quail Roost Drive path to McDougle Elementary</p> <p><u>Carrboro Elementary</u>: new sidewalks- Pine St from Greensboro St to Hillsborough Rd, north side of W Main St from Pine Hill Dr to Hillsborough Rd, south side of W Main St from Poplar Ave to Fidelity St, Davie Rd from W Poplar Ave to W Main St, west side of Hillsborough Rd from Simpson St to W Main St; greenway/crossings - path or trail from Pine St to Carrboro Elementary, lighted multi-use path or trail from Estes Apts to Pleasant Dr, path or trail from Todd St to Carrboro Elementary</p>
<p>Morgan Creek Greenway</p>	<p>Mar-10</p>	<p>The primary purpose of this study is to determine the opportunities and constraints for a trail location along Morgan Creek between Smith Level Road and University Lake. In addition, the study included an exploration to determine the opportunities and constraints for a connector trail from the main Morgan Creek trail to Carrboro High School.</p>	<p>Goals:</p> <ul style="list-style-type: none"> - To determine the feasibility of a trail along Morgan Creek to provide a trail connection between University Lake Drive and Smith Level Road with a spur connection to Carrboro High School - To determine a recommended trail alignment - To create a phasing plan to build the most effective and cost efficient connectors earliest - To determine a cost estimate by <p>Plan broken apart in phases highlighting trail segments and implementation steps</p>

<p>Bolin Creek Greenway - Conceptual Master Plan</p>	<p>Dec-09</p>	<p>The Bolin Creek Greenway project was initiated by the Town for the purposes of alternative transportation, recreation, and environmental protection and restoration.</p> <p>Some of the key issues in the development of the Bolin Creek Greenway: Ecology and the Natural Environment; Transportation; Recreation & Quality of Life</p>	<p>Preserve land and provide continuity to an open space system providing multiple benefits to the community and the environment. Connect natural areas and provide habitat for wildlife, as well as corridors for recreation. Greenways help filter sediment and pollutants from runoff thereby improving water quality; they enhance the natural function of streams and floodplains and accommodate stormwater flows. Creating a greenway along Bolin Creek provides an important opportunity to enhance the environment and quality of life for Town of Carrboro citizens.</p>
<p>Carrboro Bicycle Transportation Plan</p>	<p>2009</p>	<p>Funded by NCDOT Bicycle and Pedestrian Planning Grant, Carrboro made a commitment to improve bicycle facilities and programs within the Town, giving residents and visitors an accessible, safe, and convenient option of bicycling for transportation, recreation, and health.</p>	<p>Goals:</p> <ul style="list-style-type: none"> -To have bicycling as a viable transportation alternative throughout the Town and for all trip purposes. -A continuing process for reviewing, updating, and implementing bicycle-related policies. -A robust comprehensive bicycle program that incorporates engineering, education, encouragement, enforcement and evaluation programs. -A safe and accessible network of bicycle facilities. <p>The Plan recommends the implementation of an additional 54 miles of bicycle facilities, including paved shoulders, bicycle lanes, sharrows, sidepaths, intersection improvements and off-road trails. The facilities are recommended in phases, and are prioritized for implementation. Recommended improvements include re-striping, repaving, or signage installation with few actual roadway alterations; others will involve new construction or property acquisition in the form of right-of-way or public easement.</p>
<p>Town of Carrboro Residential Traffic Management Plan for Speed and Traffic Control</p>	<p>Oct-06</p>	<p>Based on concerns regarding speeding in neighborhoods, this plan provides a process for identifying and addressing existing problems related to speeding, excessive volumes, and safety on town-maintained residential streets -- proper actions can be taken depending on severity</p>	<p>Process of procedure: Report the problem; develop petition and neighborhood consensus; data collection done by Town staff; review by Town staff and determine if street is eligible for Stage 1 Traffic Calming alone or both Stage 1 (primarily education and enforcement measures) and Stage 2 (physical modifications of the street) Traffic Calming; Staff recommendations, TAB review, and Board of Alderman Approval; Follow-up evaluation</p>
<p>Downtown Traffic Circulation Study</p>	<p>Jun-05</p>	<p>To describe various ideas about how the transportation system can be used and improved to expand and enhance the vibrancy of downtown Carrboro.</p>	<p>The recommended order of projects is listed below. Pre-requisites for project 9 - the redesign of East Main Street include projects 2, 3 and 7. To gain NCDOT approval of project 9, the Town also may consider project 12 - the extension of Hosiery Street as a pre-requisite. Doing so would complete a network of interconnected streets that could support the conversion of Main Street to a "complete street."</p> <ol style="list-style-type: none"> 1. Weaver Street Repaving and Restriping 2. Roberson Street Extension 3. Railroad Agreement 4. Walkability Improvements 5. Bikeability Improvements 6. Bus Stop Improvements 7. Roberson Street Improvement 8. Greensboro Street Corridor Improvements 9. East Main Street Redesign 10. Town Hall Roundabout 11. Jones Ferry Roundabout 12. Hosiery Street Extension 13. Gateway Roundabout

Carrboro Vision 2020	Dec-00	To establish guiding principles for growth and development in the Town through the year 2020 and preserve the Town's history and qualities in an atmosphere of desirable growth	Outlined: Programming, Services and Amenities; Development; Economic Development; Transportation; Environmental Protection and Promotion; and Housing

To: Zachary Hallock, Transportation Planner, Town of Carrboro, NC

From: Jennifer Baldwin, Senior Associate, Alta Planning + Design

Date: August 27, 2020

Re: Carrboro Bicycle Plan: Stakeholder and Public Engagement

Stakeholder and Public Engagement

Strong emphasis was placed on stakeholder and public engagement through the process of developing the Carrboro Bicycle Plan. A variety of methods were used including in-person intercept events, targeted outreach, project website, comment form, and steering committee meetings. This memo includes some of the materials used, survey results, and steering committee meeting notes. A list of these specific outreach events is provided below:

Steering Committee Meetings:

- February 28th, 2019 - Project Kickoff
- March 28th, 2019 - Existing Conditions
- May 30th, 2019 - Network Recommendations
- June 27th, 2019 - Program and Policy Recommendations

General Public Outreach:

- Survey opened to public at Carrboro Open Streets 2019 on April 7th, 2019
- Intercept Surveys conducted at Carrboro Plaza Food Lion, Willow Creek Food Lion, and Carrboro Community Health Center during the week of April 29th, 2019
- Survey hosted alongside Carrboro Bicycle Breakfast on May 14th, 2019
- Survey hosted alongside Bike on Bus @ the Carrboro Farmer's Market on May 18th, 2019

Targeted Outreach:

- Hosted information session at the Clear Machine during the week of June 1st 2019
- Hosted information session at the Century Center with members of local middle school biking teams on June 15th, 2019
- Hosted session at Wilson Park with translators for Burmese/Karen speaking community members on June 15th, 2019
- Hosted session at Town Hall targeted towards long-term Carrboro Residents on June 21st, 2019
- Hosted information session with surveys and draft bike plan network at the Rogers Road RENA Community Center on July 1st, 2019
- Hosted surveys at El Centro/CEL during the month of September 2019
- Direct survey mailing to residents (with pre-stamped return envelope) in the Rogers Road, King Street, Barnes Street, Alabama Avenue, and Lloyd/Broad neighborhoods conducted during the month of September 2019.

- **Materials:**
 - **Business Card (Back and Front)**



- **Open-ended Comment Form**



COMMENT FORM

This is your plan, and your input is critical.
Please take a few minutes to take leave a comment.

Please leave your email address below if you'd like to receive project updates.

- o **Social Media/Flyers**

- o A variety of social media and web-based and print materials were developed for the Plan. Posts were made on Twitter, Facebook, and NextDoor.

LEND YOUR VOICE FOR THE CARRBORO BIKE PLAN!

WE WANT TO HEAR FROM YOU!



**SHARE YOUR
IDEAS**



**TAKE THE
SURVEY**



CARRBORO BICYCLE PLAN



Carrboro and NCDOT are working together to develop a plan that will enhance bicycling as a mode of transportation while improving connectivity and safety for bicycling throughout the town. Let's create better bicycling connections and opportunities in Carrboro!

We want to hear from you!

Please share your vision and ideas for the plan and tell us how to improve bicycling in Carrboro. Visit our website to learn more and take the online survey at:

WWW.TOWNOFCARRBORO.ORG/1174/2019-BIKE-PLAN-UPDATE



CONTACT:

Carrboro Planning Department
301 W. Main St.,
Carrboro, NC 27510
Phone: 919-918-7329
Email: zhallowck@townofcarrboro.org

○ **Materials in Spanish**



Encuesta de Plan de Bicicleta
TU VOZ IMPORTA

¡La ciudad de Carrboro quiere saber tu opinión!

¡Por favor tome unos minutos para informarnos cómo Podemos crear un plan de bicicletas de calidad que beneficie a los residentes!

¿Cada cuanto usas tu bicicleta durante la semana en Carrboro? (marque uno)

Siempre	Casi Siempre	A veces	Casi Nunca	Nunca
<input type="checkbox"/>				

Yo andaría en bicicleta más si...

¿Qué tipo de ciclista te describiría mejor?

Fuerte + Sin Miedo	Entusiasta + Confiado	Interesado + Preocupado	De ninguna manera
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mi lugar favorito para andar en bicicleta en Carrboro es...

¿Qué factor(es) te animaría a montar bicicleta más? (marque todos los que correspondan)

- Clases de educación y mantenimiento de bicicleta
- Carriles para bicicletas
- Programa de bicicletas compartidas
- Señalización de orientación de bicicletas
- Más estacionamiento para bicicletas
- Tráfico más lento
- Intersecciones seguras
- Senderos o acceso a vías verdes
- Otro: _____

El lugar más difícil para andar en bicicleta en Carrboro es...

¿Hay alguna idea, inquietud o problema adicional que quieras compartir?

¿Cuánto tiempo has vivido en Carrboro?

- menos de 3 años
- 3-5 años
- 6-10 años
- 11-15 años
- Más de 15 años
- Yo no vivo en Carrboro
- Prefiero no contestar

¿Cuál es tu código postal? _____

Si vives en Carrboro, ¿en qué calle vives? _____

¿Cuál es su raza? Seleccione todos los que apliquen.

- Indio Americano o Nativo de Alaska
- Asiático
- Negro o Afroamericano
- Hispano o Latino
- Nativo de Hawai o de otras islas del Pacífico
- Blanco o caucásico
- Prefiero no contestar
- Otro: _____

¿Cuántos años tienes?

- menos de 18
- 18-44
- 45-64
- 65+
- Prefiero no contestar

¿Cuál es su género?

- Hombre
- Mujer
- No binario
- Prefiero no contestar

¿Cuál es el nivel más alto de educación que ha completado?

Por favor deje su correo electrónico a continuación si desea recibir actualizaciones del proyecto:

GRACIAS!

○



MEMORANDUM

Date: March 4, 2019
 To: Zachary Hallock, AICP, EI – Town of Carrboro
 From: Jennifer Baldwin – Alta Planning + Design
 Meeting Date: Thursday, February 29, 2019



Internal Team Meeting Attendees: Jennifer Baldwin, Matt Hayes and Angela Coullias from Alta Planning + Design; Zachary Hallock, Town of Carrboro Transportation Planner; Trish McGuire, Town of Carrboro Planning Director; Tina Moon, Planning Administrator

Re: Carrboro Bike Plan – Steering Committee Kickoff Meeting Notes

Meeting Attendees

Tyler Gilmore	Orange Literacy – ESOL Program Coordinator	tgilmore@orangeliteracy.org
Donnie Rhoads	Chapel Hill PD	drhoads@townofchapelhill.org
Galen Poythress	Carrboro Rec	jpoythress@townofcarrboro.org
Anahid Vrana	Advisory Board NTAAC	Anahid.vrana@gmail.com
Steve Rogers	NCICL (North Carolina Interscholastic Cycling League)	Sfr1224@gmail.com
Brent Hobby	Carrboro PD	chobby@townofcarrboro.org
Ray Enoch	Carrboro Fire	renoch@townofcarrboro.org
Daniel Snipes	Carrboro Public Works	dsnipes@townofcarrboro.org
Jon Scott	Carrboro	Scott.jss@gmail.com
Becki Cleveland	Carrboro Rec	Becki.cleveland@gmail.com
Dave Mabe	Carrboro GWC	Davemabe@gmail.com
Rachel Gaylord-Miles	Carrboro Planning Board	Rlgaylordmiles@gmail.com
Lyndsay Gavin	TJCOG/EAB	lgavin@tjcog.org
Rachel Kelley	Carrboro	Rbellkelly4@gmail.com
Josh D Worshofsky	Citizen at large	joshalope@gmail.com
Abigaile Pittman	Orange County	abpittman@orangecountync.gov
Lee Schimmelfing	Orange County	leeschim@email.unc.edu
Barbara Jessie-Black	PTA Thrift Shop	info@ptathriftshop.org
Linda Haac	Carrboro TAB	lindahaac@yahoo.com
Colleen Barclay	Carrboro Bike Coalition	Colleen.j.barclay@gmail.com
Charlie Hileman	Citizen	carrbonate@gmail.com
Chris Colvin	Citizen	Christopher.colvin@gmail.com
Tamara Sanders	Clean Machine Bike Shop	tamara@thecleanmachine.com
Kurt Stolka	UNC Chapel Hill	kurt@unc.edu
Dale McKeel	DCHC MPO	Dale.mckeel@durhamnc.gov

Scope/Schedule Overview

- Existing conditions analysis to include:
 - Level of Traffic Stress analysis
 - Mode share analysis
 - Crash analysis
 - Place of interests (grocery stores, walk sheds around schools)
 - Inventory of existing/signalized intersections
 - Review of program recommendations from 2009 Plan and providing update on projects that have been implemented and where there is need
 - Compile list of NCDOT transportation improvement projects (TIP) in and around Carrboro
- Recommendations to focus on low-stress network solutions so that we can reach the “interested but concerned” population
- Phased approach to identify short-term, mid-term and long-term projects
- Tactical urbanism approach to be investigated for low-cost and quick build solutions

2009 vs 2019 Steering Committee Discussion

- Bicycle Friendly Community – not the complete focus in 2019 but can provide a solid framework
- 2019 Bicycle Transportation Plan should be a simpler document than 2009 with achievable goals
- High priority focus is the “interested but concerned” group
- Look into developing a progress update dashboard for committee members and residents to keep updated on tentative and active improvement projects in correlation with plan
 - Opportunity to show progress made between 2009 and 2019 and then provide additional information on priority projects moving forward
 - Main focus is accountability and providing phasing of implementation
- Breaking down the five “E’s”:
 - Use of enforcement methods as education opportunity
 - Look into education integrations (ex. Safe Routes to Schools in Orange County)
 - Another “E” to focus on: Engagement
- Peer city review- coordination with other cities/towns in the region
- Possibility for plan to include cost analysis so that future budgets can be made available and dedicated to fund improvements
- Surrounding neighborhoods should be highlighted to increase connectivity
- Showing ridership (modeshare) metrics
 - Comparison of before and after (2009 vs 2019)
 - Commuting vs utilitarian ridership
- Critical needs outlined in 2009 – need to determine if they still the same? Have they improved?

Public Outreach Steering Committee Discussion

- Alta team to develop a user survey to be distributed in both hard copy format and on-line
- Town to develop a project page for the bike plan at <https://townofcarrboro.org/>
- The committee discussed potential public outreach events in April to share project information and collect user surveys. The following potential outreach opportunities were discussed:
 - Carrboro Open Streets event – April 7th
 - Equitable engagement – include all of Carrboro’s diverse population
 - Orange Literacy group (Tyler) – reaching out to all demographics
 - Parks and Rec integration
 - School engagement with kids

- Piggyback with Safe Routes to School events and educational opportunities
- Door-to-door engagement in all neighborhoods
- Bike maintenance workshops (Bike Carrboro past event)
 - Bike light giveaway
- Pop-up events to showcase engineering and design of different concepts, while also providing education
 - Integrating visual ques and educating how to react to pedestrians and bicyclists

Map Exercise

- The committee divided into three groups to review an existing condition map and discuss existing opportunities and constraints around what it's like to bike in Carrboro today.
- The following topics were discussed and highlighted on each map:
 - Safety concerns along specific corridors with big hills, such as Estes Dr and Rosemary/Weaver St
 - Improvements needed at intersections, like Jones Ferry Rd at Davie Rd and W. Weaver St at Greensboro St
 - Providing some sort of vertical separation along Greensboro St/Hillsboro Rd for the existing bike lanes would make it much more attractive for the “interested but concerned” riders
 - Focus on safe connections to schools, such as Carrboro Elementary
 - Close the gap on Homestead Rd between Lake Hogan Farm Rd and Stratford Dr
 - Connect neighborhoods to the north, such as Lake Hogan Farm Community, with downtown
 - Focus on connections to parks and community centers
 - Carolina Forest and University Lake are key bike destinations
 - Potential economic development opportunities by connecting downtown Hillsborough to downtown Carrboro

Next Steps

- Project team to develop public outreach materials to launch on the project website and promote during key public events during March and April
- The next committee meeting date will be on Thursday, March 28th at 6:30pm at Town Hall to review existing condition findings and discuss low-stress bikeway design options.



Date: April 2, 2019
To: Zachary Hallock, AICP, EI - Town of Carrboro
From: Jennifer Baldwin - Alta Planning + Design
Meeting Date: Thursday, March 28th, 2019

Internal Team Meeting Attendees: Jennifer Baldwin, Matt Hayes and Angela Coullias from Alta Planning + Design; Zachary Hallock, Town of Carrboro Transportation Planner; Tina Moon, Planning Administrator

Re: Carrboro Bike Plan - Steering Committee Existing Conditions Meeting Notes

Meeting Attendees

Table with 3 columns: Name, Title, and Email. Rows include Lisa Brown (for Anahid Vrana), Jon Scott, Tyler Gilmore, Josh D Worshofsky, Brent Hobby, Dave Mabe, Dale McKeel, Becki Cleveland, Steve Rogers, Rachel Kelley, Linda Haac, Kevin Hicks, Rachel Gaylord-Miles, Daniel Snipes, John Vine-Hodge, Donnie Rhoads, Barbara M Foushee, Colleen Barclay, Tamara Sanders, and Kurt Stolka.

Meeting Agenda

- Progress since 2009 plan
- Biking in Carrboro Today
 - Bikeway Network Growth
 - Existing Bike Network
 - Equity analysis
 - Level of Traffic Stress (LTS) analysis
 - LTS Connectivity Islands
- Public Involvement
 - Events + Outreach Materials
- Upcoming Schedule

2009 Action Step Assessment Steering Committee Discussion

- Overview of action step plan from 2009 – the project team developed an infographic to assess progress towards key recommendations from the 2009 Carrboro Bike Plan. Recommendations were sorted into the five E's and committee included:
 - **Engineering**
 - Bike parking ordinance considered complete, but should be re-evaluated to provide recommendations for improvements.
 - Bicyclists should continually be accommodated for in long term transit services plans, including design opportunities like covered shelters and bike parking. Should also be included with UNC plans.
 - Online app outlining bike facilities would be helpful to outline current network.
 - **Education**
 - Focus on creating social media platform for bicyclists AND motorists instead of handouts/newsletters/brochures, integrating that as a new key recommendation.
 - Re-evaluate “Basics of Bicycling” course, especially pertaining to women comfort level and older children.
 - Based on 2009 key recommendations, important to re-evaluate engagement with Town, local police departments, schools, and other local organizations on education of roadway/bike laws and spread positive message about biking in the community.
 - Discussion of advocacy ambassador program integrated with the Carrboro Bike Coalition. Currently nothing formal in place.
 - Expand familiarity of bicyclists culture regarding the expansion of League Cycling Instructors (LCI).
 - Discussion involving state level education, including DMV licensure with bike education tips and questions.
 - **Encouragement**
 - Look at funding for Safe Kids NC and their level of involvement.
 - Carrboro Bike Coalition developed own Bicycle Friendly Business (BFB), but by in-large most businesses haven't done much in Carrboro. Revisit ways to incentivize commuting by bike.
 - Local private groups host bike riding tours/races so it would be important to get support from Town on addition events to promote safe bicycling.
 - **Enforcement**
 - In regards to bike patrol positions, there's difficulty in recruiting and budget. Not enough full-time officers on staff to have full-time bike patrol.
 - Additional officer training will have to fall on the State or locally. Watch for Me NC safety program offered training courses to enforcement agencies and university police. Issue with younger officers not knowing the laws to enforce and abide by.
 - **Evaluation**
 - Big need for measurement before and after implementation of new bike facilities.

- Near miss reporting for bicycle crashes for evaluation of crash reduction.

Equity and Level of Stress (LTS) Steering Committee Discussion

- Equity Analysis
 - Additional information to possibly include:
 - Full Census blocks to show overview of how Carrboro's extra-territorial jurisdiction (ETJ) fits within the overall equity analysis
 - Population density
 - Property real estate value
 - Project team to target the following areas for outreach:
 - Lake Hogan area based on education level and limited English proficiency
 - Estes Park location
 - The multiple apartments south of NC 54 based on large student population
 - Multiple businesses and organizations that can help with outreach in limited English proficiency
 - El Centro, Refugee Community partners, etc
- LTS Analysis
 - The committee discussed the following factors that the LTS analysis does not include:
 - Parking lots
 - Sometimes act as alternate bike routes in order to connect to other roadways with bike facilities
 - Topography
 - Directional differentiation on certain roadways based on topography changes (i.e. steep hill upward in one direction versus downhill direction in another)
 - Population density
 - Major destinations
 - Main roadways connecting to Chapel Hill (Rosemary, Main, Estes)
 - Strava data to highlight highly-used corridors and routes.
 - The project team will look into the following segments:
 - Downtown Greensboro Street (between Main Street and Pleasant Drive) is marked LTS 2 but feels like a LTS 3 based on nonexistent bike facilities, uphill traffic, and numerous parking lot driveways.
 - Pathway Drive based strictly on topography
 - Discussion of Hillsborough Road being less stressful than N Greensboro Street even though both are rated an LTS 3 based on volume of traffic
 - Main Street near downtown as a possibility as an LTS 4
 - Smith Level Road based on speed and traffic volumes

Next Steps

- Town of Carrboro staff to conduct public outreach during Open Streets
- All materials will be sent to the Steering Committee digitally for review
- The next committee meeting date will tentatively be Thursday, May 30th at 6:30pm at Town Hall to review preliminary bike plan recommendations
 - Meeting subject to change based on availability due to the Memorial Day holiday



MEMORANDUM



Date: May 30, 2019
 To: Zachary Hallock, AICP, EI – Town of Carrboro
 From: Jennifer Baldwin – Alta Planning + Design
 Meeting Date: Thursday, May 30th, 2019

Internal Team Meeting Attendees: Matt Hayes, Will Roberts, and Angela Coullias from Alta Planning + Design; Zachary Hallock, Town of Carrboro Transportation Planner; Tina Moon, Planning Administrator; Patricia McGuire, Planning Director

Re: Carrboro Bike Plan – Steering Committee Meeting Notes

Meeting Attendees

Tyler Gilmore	Orange Literacy – ESOL Program Coordinator	tgilmore@orangeliteracy.org
Josh D Worshofsky	Citizen at large	joshalope@gmail.com
Brent Hobby	Carrboro PD	chobby@townofcarrboro.org
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Rachel Gaylord-Miles	Carrboro Planning Board	Rlgaylordmiles@gmail.com
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Barbara M Foushee	Carrboro Board of Alderman	bmfoushee@townofcarrboro.org
Lee Schimmelfing	Senior Games	leeschim@email.unc.edu
Bergen Watterson	Town of Chapel Hill	bwatterson@townofchapelhill.org
Galen Poythress	Carrboro Rec	jpoythress@townofcarrboro.org

Meeting Agenda

- Proposed Low-Stress Bike Network
- Implementation Strategy – Priority Projects
- Next Steps

Draft Network Steering Committee Discussion

- Committee members broke up into groups and marked up the network maps, identifying areas of agreement and opportunities for network modifications. The comments included the following:

"Greensboro/Hillsborough/Jones Ferry are 35 mph posted and operate over that. They are not low stress. Need separation on main corridors."
"Ensure bike boulevards have significant traffic calming, not just sharrows."
"Look for connections to Southern Village" (south of Culbreth Rd and East of Smith Level Rd)
"Love the bicycle boulevards network - add High Street"
"Longer term, but look at downtown core and the missing connections (i.e. in front of Harris Teeter on Greensboro)"
"Comprehensive, well-thoughtout and responsive to the Committee's thoughts and feedback"
"Any suggestion of a greenway in Bolin Forest is a non-starter with the community"
"Start at intersections downtown, then work out. Intersections needs lots of work."
"Opportunities for private funding. Adopt-a-bike lane."
"Review topography before committing to bike lane/blvds."
"Focus on downtown"
"Wayfinding signage to increase use of existing bike facilities"
"Please be ambitious. Don't assume NCDOT or the RR will say no. Aim for the best facilities."
Possible contra flow bike lane along E Poplar Ave (one suggestion said to remove the bike blvd option on Shelton St to Poplar Ave)
Additional intersection improvement at Brewer Ln and E Main St
Additional intersection improvement at Main St and NC 54
RRFB on Estes Dr (?)
Private connection between Jones Ferry Rd and W Poplar Ave is shown going thru parking lots - could be problematic
Intersection improvement at Jones Ferry Rd and NC 54
Intersection improvement at Smith Level Rd and NC 54
Intersection improvement at Old Fayetteville Rd and NC 54
Change the option for a bike blvd on Lorraine St to James St in order to connect Hillsborough Rd and W Main St
Intersection improvement on N Greensboro St and E Poplar Ave
Intersection improvement W Weaver St and N Greensboro St
Could there be a possibility of Rails-to-Trail or Rails-with-Trail scenario that connects downtown Carrboro to Hillsborough? Look into land ownership along railroad

NCDOT project set for Estes Drive, late 2019/early 2020 looking for design recommendation with possible bike facility along Estes Drive that connects with Frances Shetley Bikeway
Should all existing sharrows be shown as a bike blvd? Highlight separate bike recommendations?
Add long-term regional connectors, including Old NC 86 and Old Fayetteville Rd bike facility option
Turn all waterways on, including creeks
Combine SUP and sidepath options
Show downtown inset
Provide short connect between MLK Park to Pathway Dr
Sharrow (SRTS) down Lisa Dr between Quail Roost Dr and Carol St (to the east of McDougle Elementary/Middle Schools)
Connect Lake Hogan Farm Greenway to Tallyho Trail potentially using sewer easement
Implementation Priority - looking at Tallyho Trail as a shorter term project since it's only a mile long
Greensboro/Hillsborough - doing some ADA improvements and crosswalks
Important to sync up with NC 54 Safety Study from Main to Columbia
Crosswalk will be added at Greensboro near roundabout
Possible connection between Charles St thru Adams Tract (connected to Charles Herman Wilson Park) to Bolin Creek Dr/Bolin Forest Dr
N Greensboro, Hillsborough and Jones Ferry need bike protection - families are concerned

Top 3 Priority Projects Committee Exercise

- Committee members completed a blank form, selecting their top 3 projects. The results are as follows:

Cobblestone Dr bike blvds connecting McDougle Schools, Smith, Chapel Hill HS, Carolina North to residents	4
E Main Street	3
Jones Ferry Road - continue separate bike trail to downtown	3
Intersection at Greensboro and Hillsborough St	3
N Greensboro St - any kind of improvement	3
Crossing improvements throughout Carrboro	2
Intersection at Main St and Weaver St	2
Intersection at Weaver St and Greensboro Street	2
Weaver St	3
Intersection improvements on N Greensboro	2
Hillsborough/N Greensboro St - separate lanes	1
Old 86 between the intersection of Old Fayetteville Rd through Calvander and Dairyland	1
W Main St from Hillsborough to Jones Ferry Rd	1
Intersection at Jones Ferry and Bim St	1
Connection between Tar Hill and Berryhill Dr	1

Bel Arbor path between Bel Arbor and Phipps St	1
Connection between Hogan Hills Rd and existing trail-in design	1
East-west route through downtown Carrboro and Chapel Hill	1
Connect parking lots of Carrboro Plaza, Carolina Spring, The Crest (?), and Kingswood (?) - from crossing @ NC 54/Poplar to University Lake area	1
Intersections in downtown	1
Separated Hillsborough/Main/Weaver and crossing	1
West of NC54 between Poplar/Jones Ferry - private crossing	1
Homestead Rd	1
Connections	1
Bike lanes on Rosemary (continued from Chapel Hill infrastructure)	1
Pathway Dr as bike blvd instead of bike lanes	1
Intersection at E Weaver St and Roberson St	1
Crossing Greensboro to go towards Chapel Hill	1
Wayfinding	1
Intersection at Hillsborough and W Main	1
NC 54 intersections (W Main, W Poplar Ave)	1
NC 54 sidepaths	1
Estes Drive	1
Paved trail through Carolina North (Pathway/Estes to CHHS)	1
Bolin Creek Greenway	1
Protected bike lanes into downtown	1

Top intersections for improvement were:

Intersection at Greensboro and Hillsborough St	3
Intersection at Weaver St and Greensboro Street	2
Intersection at Main St and Weaver St	2
Intersection improvements on N Greensboro	2
Intersection at Jones Ferry and Bim St	1
Intersections in downtown	1
Intersection at E Weaver St and Roberson St	1
Intersection at Hillsborough and W Main St	1

Next Steps

- Upcoming stakeholder meetings
- Refine network recommendations; review with NCDOT
- Develop policy and program recommendations
- Draft Plan development
- The next committee meeting date will tentatively be Thursday, June 27th at 6:30pm at Town Hall to review draft plan recommendations



Date: July 1, 2019
To: Zachary Hallock, AICP, EI - Town of Carrboro
From: Jason Reyes - Alta Planning + Design
Meeting Date: Thursday, June 27, 2019

Internal Team Meeting Attendees: Jennifer Baldwin and Jason Reyes from Alta Planning + Design; Zachary Hallock, Town of Carrboro Transportation Planner; Trish McGuire, Town of Carrboro Planning Director; Tina Moon, Town of Carrboro Planning Administrator.

Re: Carrboro Bike Plan - Steering Committee Draft Plan Meeting Notes

Meeting Attendees

Table with 3 columns: Name, Role, and Email Address. Rows include Chris Colvin, Tyler Gilmore, Josh D Worshofsky, Dave Mabe, Becki Cleveland, Linda Haac, Charlie Hileman, Jeremy Galen Poythress, Donnie Rhoads, Colleen Barclay, and Kurt Stolka.

Meeting Agenda

- Programs (Education, Encouragement, Enforcement, Evaluation) Presentation
• Policy Recommendations
• Evolution of bike network and updated DRAFT network map
• Priority project idea list
• Next Steps

Programs & Policies Comments

The following is a summary of the comments collected during discussion of draft programs and policies:

- **Bike wayfinding: Regional map/app**
 - The app should allow users to turn a BLOS layer off/on when viewing the map
 - The app should allow for crash and near-miss reporting, if possible
 - Town has a flood reporting app that is managed by their GIS developer – could be a resource in designing this app, or at least be a stakeholder for its development
- **Tactical Urbanism/Demonstration Projects**
 - This was the most discussed program of the meeting. The discussion focused on the desire to use this program to increase visibility of bicycling opportunities in Carrboro, and to be able to test solutions on roadways before they permanent.
 - Funding for demonstration projects could be supplemented by private sources; Town should seek partnerships with groups such as Fifth Season Gardening Co (for lending plants to be used in demonstration medians/buffers), Cannondale, UNC Healthcare, and other local/regional entities
 - The Town could partner with Chapel Hill to create a demonstration project trailer that houses materials to be used (and re-used) during demonstration projects. This could be a Triangle initiative as well, to expand resources.
 - Committee members can learn more about this topic here: <http://tacticalurbanismguide.com/>
- **Partner with Carrboro Bike Coalition (CBC) to expand options for skills training and social rides**
 - Town representatives expressed interest in this topic, at least in terms of cross-promotion through the Town Recreation & Parks Calendar on the Town's website.
 - CBC recently shifted focus away from activities such as leading social rides. There may still be an opportunity for partnership, with roles to be determined.
- **Continue to expand bicyclist count programs**
 - Counter positioning/placement is key; an example was given of a counter in Carrboro that was placed just after most bicyclists turn from the corridor. The Town was aware of this issue and recently adjusted it.
- **Continue success of safe routes to school programs and partnerships**
 - The success of a SRTS program for bicycling in Carrboro will depend in large part on having safe infrastructure
 - For program development, start with the PTA Council President, then the school principals and PTA. Gather their ideas and address their concerns.
 - See Boulder, CO, for an example of a program that uses branding as a key element for promotion and community visibility.
- **General Programs/Policies Comments**
 - Partner with High School to offer opportunities for students to apply their service hours towards some of the recommended program activities.
 - The Town need to have commitment to these programs (and the plan as a whole) in order for any of them to work. Participants suggested ways for the Town to be accountable for the plan, with ideas ranging from an Annual Report Card to weekly or monthly meetings.

Program Ranking

In addition to the discussion above, participants also ranked the draft list of program ideas (highest scores = most important), and submitted written comments, with the following results:

Program	Score	Written Comments (verbatim)
Tactical urbanism for testing new infrastructure	43	Make it visible to motorists - and potential cyclists; Use to establish separation facilities on current bike lanes
Bike wayfinding: Sign system	25	Promote signs on social media
Continued traffic calming programs	23	Expand to merge volume of bike boulevard locations
Continue success of safe routes to school programs and partnerships	23	Whatever we do has to work for families- not just bachelors like me!
Expand & enhance bike parking	15	Carr Mill/HT is often full; Especially off the main drags (Main & Franklin)
Expand police promotion of safety for bicyclists, including "near miss" reporting	15	"Near miss" as part of larger bike app.; Make this part of the app
Bike wayfinding: Regional map/app	13	Would like it connected to larger app- I use CIA's MapMyRide; Integrate with Google, OpenStreetMap, Strava heat maps
Partner with Carrboro Bike Coalition to expand options for skills training and social rides	12	New cyclists need a community, resources, etc.; Or Recreation & Parks (a couple youth plus parent education courses happening this fall!) Partner with bars for the social rides, and bike shops
Speed enforcement for hot spots	8	Coordinate with slow zone for downtown
Continue to expand bicyclist count programs	6	By far the most important; Visible counters/Upgrade counters to show # of people for day and lifetime; Also app capability on the backend
Carrboro-based social media campaign aimed at bicyclists & motorists (instead of print material)	4	App (on the bike side)
Formalize an advocacy ambassador program integrated with the Carrboro Bike Coalition	3	The town(s) can't do it all
Other Program Ideas:		
Expand community partnerships to extend to northern neighborhoods and their HOA, also Friends of Bolin Creek, other stakeholders to wider beyond bikers and gov. entities.		
All: sustained commitment from Alderman/staff		
Town commitment to maintain bikeways and prioritize bike access		
Website/portal to collect/crowdsource any/all local biking related info (group rides, bike shops, etc.)		

Draft Network & Priority Project Comments

- **NC 54**
 - Wide shoulder label is misleading – not bikeable for many people
- **Carolina North Forest**
 - Add path connection on cleared easement (drawn from Waterside Dr north to Seawell Elementary and Chapel Hill High School)
- **Carr St & S Greensboro Intersection**
 - Difficult intersection, but key for avoiding traveling along Main St; Explore potential for intersection crossing improvements for bicyclists in conjunction with future library project.
- **Cobblestone Dr**
 - Steep elevation makes for a difficult bicycling connection (especially as a bicycle blvd)
- **Estes Dr Ext. to Village Dr**
 - Connection between Carrboro and Chapel Hill often used by committee member
- **N Greensboro St to Lloyd St Connector**
 - Explore potential grade separated crossing of railroad between these two streets, in the vicinity of Mulberry St and Parker St. Town may have resources to do a feasibility study for a crossing in this area.
- **N Greensboro St**
 - Bolin Forest Dr to Oak St: Add separation on corridor in long term
- **N Greensboro St**
 - Network gap needs to be addressed, including crossing improvements, from E Poplar Ave to Weaver St
- **N Greensboro St at Milton Dr**
 - Add signal?
- **S Greensboro St**
 - W Main St to Roberson St: [illegible; likely: “Add lanes; remove parking”]
- **Jones Ferry Rd**
 - Consider extending the recommended buffer/separated bike lanes from Davie Rd to Laurel Ave
- **Libba Cotton Bikeway**
 - Need an official connection to the Arts Center
- **Morgan Creek Greenway**
 - Portions of this could be noted as in-development sections near S Greensboro St have let for construction
- **Orange County**
 - Potential greenway connection noted from Carrboro High School heading south along Orange Water and Sewer Authority (OWASA) corridors towards Starpoint/Walmart employment area at US 15 501 & Smith Level Road.
- **Pathway Dr (eastern half)**
 - Steep elevation makes for a difficult bicycling connection
- **Prince St Connector**
 - Neighborhood connection or dirt path opportunity on north end of Prince St connecting to Jones ferry Rd
- **Purple Leaf Place/S Greensboro St**
 - Rather than the bicycle blvd as shown at the south end of Purple Leaf Place, consider a shared use path connecting the south end of the Roberson Bike Path to the recommended path along S Greensboro St
- **Roberson St**
 - Consider a Woonerf pilot project on Roberson St, from Libba Cotton Bikeway to S Greensboro St
- **Rose Walk Lane to Tar Hill Dr Bike Lanes**
 - Comment: “Yay!”
- **Known Map Corrections/Additions:**
 - Pacifica Easement & Adams Riparian Conservation Easement: These are limited to pedestrian access; remove recommended bicycle connection through these areas.
 - RR tracks are now gone west of N Greensboro St, just north of Fitch Lumber & Hardware (small section shown as existing on map)

- W Main St, between Jones Ferry Rd and Greensboro St: The existing bike lanes do not go all the way up the Greensboro St intersection (causing problems for bicyclists); update map to show where they stop
- Check greenway labeled “Roberson Place” – should it be “Roberson Bike Path”? (street sign in the neighborhood says the latter)
- Check existing greenway alignment as shown through Seawell Elm/High School, especially on the eastern end. A dedicated connection was noted/drawn from the existing shared use path at Seawell Elementary to recommended shared use path on Seawell School Rd
- Add recommendation for contraflow advisory bike lane (w/ sharrow in direction of traffic) on:
 - one-way section of Shelton St, from Hillsborough Rd to Ashe St
 - one-way section of E Poplar Ave, from Hillsborough Rd to N Greensboro St
- Add Rose Walk Greenway as existing? If so, confirm extents.
- Add existing gravel trail (or unpaved trail) from north end of Anderson Park parking lot to Strowd Lane
- Remove duplicate Wilson Park label and Anderson Park label
- Key Destination and Crossing Improvement symbols are too symbol – use a different color for one of them
- General: Consider showing topography, even if slightly, to help show steep slopes

Next Steps

- July: Draft Plan Production
- August: Draft Plan Internal Review (Town and NCDOT)
- September: Draft Plan Open House (tentative, depending on Town’s September calendar; possibly October)

Combined Assessment: Strategic Priorities & Racial Equity

EXISTING BIKE NETWORK

- Bike Lanes
- Bike Lane One Side Only
- Sharrow
- Wide Shoulder
- Shared Use Path

STRATEGIC PRIORITY NETWORK RECOMMENDATIONS

- Separated Bike Lanes
- Bike Lanes
- Neighborway
- Shared Use Path
- Crossing Improvement

DEVELOPMENT STATUS

- In Development

PRIORITY STATUS

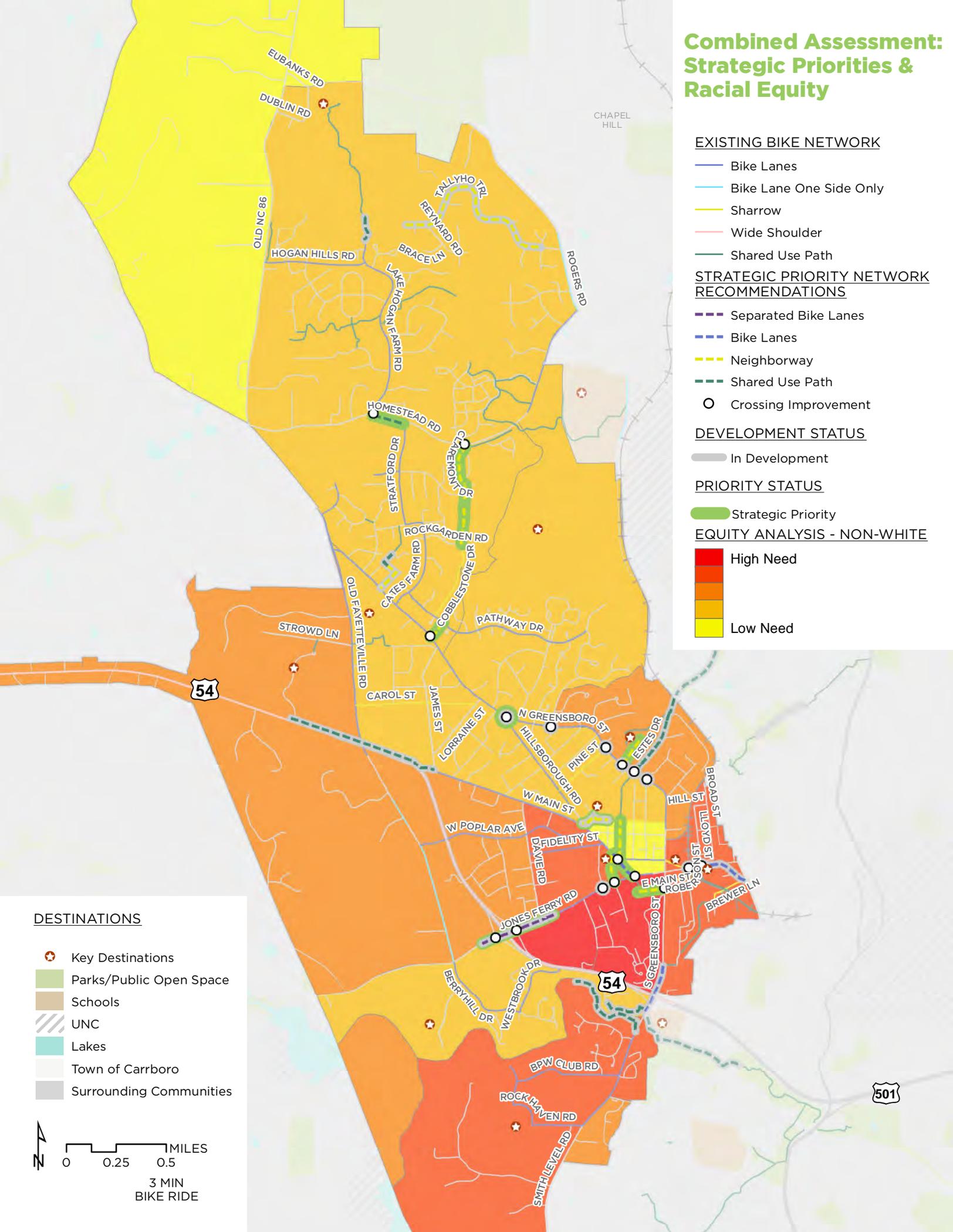
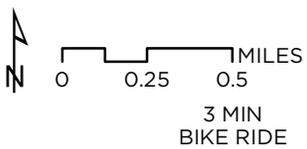
- Strategic Priority

EQUITY ANALYSIS - NON-WHITE

- High Need
-
- Low Need

DESTINATIONS

- Key Destinations
- Parks/Public Open Space
- Schools
- UNC
- Lakes
- Town of Carrboro
- Surrounding Communities





APPENDIX



Raw Survey Responses



**TOWN OF
CARRBORO**

BIKE PLAN

Q1: How often do you bike during the week?

Answer Choices	# of responses	Percent
76-100% of the time	150	30.4%
51-75% of the time	89	18.0%
26-50% of the time	123	24.9%
1-25% of the time	92	18.6%
never	40	8.1%
Answered	494	
Skipped	0	

Q2: What type of cyclist best describes you

Answer Choices	# of responses	Percent
Strong and Fearless	75	15.2%
Enthusiastic and Confident	229	46.4%
Interested but Concerned	167	33.8%
No Way, No How	23	4.7%
Answered	494	
Skipped	0	

Q3: What factor(s) would encourage you to bike more? (Check all that apply)

Answer Choices	# of responses	Percent
Bike education and maintenance classes	80	16.2%
Bike lanes	381	77.1%
Bike wayfinding signage	126	25.5%
Bikeshare program	44	8.9%
More bike parking	123	24.9%
Safe intersections	300	60.7%
Slower traffic	168	34.0%
Trail or greenway access	352	71.3%
Other	59	11.9%
Answered	494	
Skipped	0	

Q3: What factor(s) would encourage you to bike more? (Other responses received)

Actual consequences to drivers who hit cyclists, or threaten them.
and by bike lanes I mean actual protected, safe, maintained bike lanes
better behavior from bike riders
better maintenance of bike lanes
Better maintenance of existing bike lanes to remove obstacles and dangerous pavement irregularities
Better separation between auto and bike lanes
Better trail connectivity for meadow run ct to Morris grove area
Bike + helmet rentals / More bike lanes were avail
Bike lane on Estes Extension and wider lanes
bike lanes separated from traffic by parking lines (for example)
Bikelanes not suddenly ending
Biking is too dangerous for me. Senior citizen!
buffered or separated bike facilities/multiuse facilities
by bike lane I mean protected bike lanes
CLEAR bike lanes
Clear bike paths (free from yard waste and vehicles), alert drivers
clearer connectivity of lanes & bike friendly roads
Closing roads every other hour
comprehensive bike routes - not just bike lanes that end. Also bike lanes separated by a curb from distracted
connecting routes for long distances. When I can't bike if it's not safe or connected, I bus
dedicated bike trails
Dedicated facilities
Don't bike at all
Driver Education
Drivers being less aggressive towards cyclists
something other than first class citizens among the various vehicles. By law, cyclists have largely the same rights, as they should, of motorists, but dedicated lanes changes public perception. Rather, motorists must be educated about how to drive around cyclists and about the fact that they have every right to the road, including use of the full lane.
Enforcement of traffic laws for all users of roads
Enforcement on car drivers who illegally, unsafely pass/cut off/harass/speed/hit people on bikes; Weaver St. in front of Weaver St. Market should be a pedestrian/bike way
Fewer cars, and with drivers that understand pedestrians and people on bikes are vulnerable. They are not protected by anything when a car hits them. A car hitting a pedestrian or person on a bike is not an "Oopsy."
Getting over Boston
Greenway or bike Lanes to surrounding cities and to Durham train station
Having a bike
I bike commute to Carrboro, so getting across intersections safely so people can see me clearly is important...so I am expected, not unexpected.
I do not want to bike more
I'm going to ride regardless of hazards and lack of bike friendly infrastructure
Just waiting for the kids to get a bit bigger!
Less bumps in the bike lanes (especially on Hillsborough St.)
Less hills!! Free drinks.
Life factors and logistics
Local NC DOT decisions

Maintenance stations to fill tires with air.
More accountability for drivers that disrespect cyclist space. I've had several people try to pass me and then angrily yell when I take a lane...even though lane sharing is illegal in NC.
More careful drivers, less traffic.
more cautious cyclists
More daycare options in biking distance
More incentives for people who bike rather than driving!
More inclusive road-sharing laws (i.e., less car-centric)
More signs for drivers to be mindful of bikes
More time
My kids bike to Carrboro Elementary and the cars bombing down Main St are terrifying.
No structural supports or changes required. In order to submit I was forced to check a box above, but none
Non aggressive drivers!
Not only lanes and parking, but protected lanes and covered parking
Nothing, I have a physical disability that prevents it.
Nothing. I consider bikes to be a very dangerous mode of transportation
Paved bike roads along major routes to interconnect major towns and cities in the Triangle and beyond.
People on mobile phones...its crazy
Planned round - town fun rides!
Please complete the bolin Creek Greenway!!
Protected bike lanes
Protected bike lanes
Protected bike lanes, a well-connected and safe network of cycling routes
Protected bike lanes.
protected bike lanes; higher-quality bike parking
Protected bike paths
Protected by barrier bike lanes
Protection for Bikes (against theft)
Reduction in distracted driving (cell phones)
Reduction of automobile traffic through downtown Carrboro. And greater connectivity of trails and bike paths to encourage cycling for transportation, but just pleasure.
Road use education for all, especially drivers, starting at DMV and drivers Ed level. These factors above focus on bikes, and not the impacts of all other aspects.
Roads or paths just for bikes. It is too dangerous to ride with cars in any condition.
Safely getting myself and my bike downtown without having to drive my own car, because then, there's no point
Separate bike lanes when possible
separated bike lanes
some serious driver education about expecting cyclists on the road
Stronger connections between segments of greenway paths, e.g., via path extensions or roads that are designated bike routes
The ability to ride my bike across the triangle seamlessly. A more regional approach to bike travel. I don't really care that much about biking in Carrboro, its fine already.
The bike rack at Weaver St. is really horrible right now. They need a new better one.
Time
to see bikers obeying the traffic law
Traffic lights that change for bikes

We DESPERATELY need an overpass over 54 (like the one of highway 40 by SouthPoint mall) so we can ride from Carrboro and Chapel Hill over to Southern Village and not take our life in our hands! This would benefit cyclists and walkers/runners.

Well paved roads with few or no potholes

Wide shoulders

wider roads or bike lanes, or even sidewalks

Would like to see University Lake, and the surround area there, have some official trails

Q4: I would bike more if... (open question)

... there were bike lanes on every part of ALL major streets.-- even intersections.
... there were safer ways to get to downtown Carrboro. And if I felt more confident about my own ability to fix issues (e.g., flat tires).
...I worked less. Or... I would bike more if there were greenways connecting Carrboro to Durham and Raleigh.
...it was safe to take kids with me outside of the greenway paths
...it were safer to do so. Car speeds are too high in Carrboro--no one should be driving 40-45 here, but it is common, even in dense neighborhood areas.
...there was better street lighting a night and bike lanes on busier roads like Estes
construct the hike and bike trail along the rail line for a proper north-south route into downtown. 2) complete the connection of the Bolin Creek trail from Chapel Hill High School to Umstead Park. I know that this project is controversial, but the current trail is in horrible condition and isn't passible by bike or even by foot for the most part. Something needs to be done and if we want more bike transit then the connection needs to be made. The section through Bolin Forest is far from pristine so environmental concerns seem to be off base in light of environmental benefits of a completed cross-town connector.
...there were more off-road trails. I'm particularly interested in a connecting the Rose Walk Greenway (behind Chapel Hill Tennis Club) across Morgan Creek to Tar Hill Road. Also interested in connecting Weatherhill Point across Morgan Creek to Morgan Hill Court and Manor Ridge Road.
A library was downtown
A more direct route to campus that is safe
already bike as much as possible. just pave the roads!
Better infrastructure
better traffic- slowing measures were in place.
Better trail connectivity for meadow run ct
Bike facilities continued along entire routes instead of just sections and if traffic were slower and paying more attention to the road.
Bike is my main mode of transportation in town.
Bike lane or greenway all the way down Homestead Road
Bike lanes
Bike lanes
Bike lanes connected everywhere
Bike lanes extended to my apartment complex
bike lanes into Carrboro from Fayetteville/Dairyland
Bike lanes on 54 existed
bike lanes were a bit wider
bike lanes were continuous and not so segmented
bike lanes were continuous and well-marked
Bike lanes were made with direction (people go both ways in one lane)
Bike lanes were more consistent and people didn't honk, yell and curse at me.
Bike lanes were wider
Bike lanes, protected!
Bike lanes. Designated bike trails with shade.
Bike lanes/I didn't feel like I could be hit by a car
bike paths were more connected to each other
Bike paths were protected and aligned with common destinations
biker riders followed the rules
Bikes and pedestrians were treated with consideration in/around town center, if there were crosswalks anywhere outside of town center, if speed limits were enforced anywhere, if there were bike lanes clearly marked *and protected* from cars, if cars weren't the only priority on the roads, if drivers weren't so erratic around bikes and pedestrians, if fewer dudes shouted/wanted to talk to me from their vehicles, etc.
Bikes had a clear route through intersections

Bikeways- pave Bolin Creek Sewer easement and build trail along RR and across Estes to Umstead Park to connect to Bolin Creek Bike Trail.
Buffered or protected bike lanes
Buses had more racks for bikes
Car drivers would drive in town no faster than the speed limits and if the speed limit was set at 20 mph in the heart of the
Car traffic was slower and more courteous.
Carrboro cleaned bike areas off after debris/snow clogs our arteries.
Cars didn't suck
cars in town knew how to interact with bikes on the road.
Cars were friendlier
Cars were less aggressive and their were consequences for drivers intent on terrorizing/killing cyclists.
Cars were not sharing the road with me.
cars were not so aggressive!
Cars weren't encroaching on my space and drivers weren't driving dangerously
-Cars/drivers respected cyclists -bike lanes to more places -cyclists respected right of way
Chapel hill and Carrboro were linked by greenways
City would pay for more bike lanes, even if they extent into Orange County and Chapel Hill
Clear lanes throughout town.
Dedicated bike route around main St/Weaver St traffic (Parker St. To Fowler St.). Tunnel under/bridge over 54 connecting to Morgan creek Greenway.
downtown areas had better bike lanes
Drivers better understood the rules for passing and yielding
Drivers couldn't use their phones. There were actual shoulders on the roads here!
Drivers were better educated on bike safety
Drivers were less aggressive towards cyclists
Estes and Seawell School road had a bike lane
Everything I needed were within a bikeable distance (20 minutes/3miles). Roadsides clear of gravel (regular problem on Jones Ferry Road).
Expanded greenways
garbage cans and tree debris were mandated to be kept on sidewalks instead of bike lanes. AND joggers were fined for jogging in bike lanes. separate lanes for joggers, runners.
Gas prices went higher
I already bike everyday but all above would help
I already commute to from Carrboro to Durham about 25 miles round-trip daily, M-Thurs
I bike a lot for exercise and to go shopping downtown. I wish the Bolin Creek Trail would include a paved bike trail. It would be a beautiful, safe, and useful trail for me to ride to town from Cates Farm. I'd also like to be able to ride within Carolina North to the Senior Center, to Chapel Hill High School, and the aquatic center on Homestead Rd.
I bike all the time but would bike even more if there are fun social bike events to attend
I bought a bike
I could
I could be confident that I could keep my daughter safe (13 years old).
I could bike to work--but that requires going on Estes Extension from Greensboro Rd to Martin Luther King
I could bike with my children: The Shared road is not enough, NEED bike paths!
I could bike with my kids
i could do it safely with my family. think 8-80.
I could get my children to and from without cars and extreme safety issues
I could get my children to and from without cars and extreme safety issues
I could get to further places on bike lanes and through intersections. I keep my riding hyper local because of this. There are some places where I wan't go near because they are unsafe.
I could get to where I need to go
I could reach the town more easily.
I could safely commute to Durham where I work

I could safely get to all of Carrboro/Chapel Hill without crossing NC-54 or 15-501
I could take my child to daycare via bike.
I couldn't bike more
I didn't have a disability
I didn't have to deal w/ car traffic
I didn't have to ride on narrow, no shoulder, fast traffic roads to get into Carrboro.
I didn't have to work
I didn't have to worry about cars
I didn't live south of 54 bypass.
I don't bike because I am wheel-chair bound, but my community has the same needs - if not more than bicyclists to get around safely. The proposed Bolin Creek greenway would provide more access and safer transportation for those who are mobility limited. Why is it not finished, yet?
I felt it was safer for my son to be in the lanes of the roads
I felt more confident and safe on the road
I felt more confident on the road and the intersections had more bike specific lanes.
I felt safe - separation from cars and safe turning
I felt safe biking through town and had a space for bikes alone
I felt safe doing so
I felt safe on the roads
I felt safer
I felt safer
I felt safer
I felt safer across intersections
I felt safer doing so. A lot of drivers around here seem to disregard cyclists in terms of sharing the road.
I felt safer from vehicles
I felt safer on more roads.
I felt safer on roads.
I got over my inconvenience factor of being wet
I had a better bike
I had a bike
I had a bike
I had a bike
I had a bike myself, haven't felt the investment was worth it. Do use UNC's bike share program from the SCE to campus occasionally though.
I had a bike.
I had a safe route that was more direct.
I had a safe route to my job in Durham
I had easy access to safe biking. I don't want to have to load my bike in the car to go bike.
I had more kids' bikes
I had more time
i had more time :)
I had more time, my knee wasn't hurt
I had more time.
I had more time. It wouldn't hurt if drivers were more alert and educated.
I had more time/work was not so busy.
I had more willpower
I had one
I had the time
I had the time and safe pathways to take my kids out of Lake Hogan Farms

I had time
I had time. Biking to retail was easy.
I have more time, I do it recreational
I have the time
I just don't bike.
I knew how to bike safely / comfortably in the rain
I knew how to make it safe for my 1.5 + 3.5 y.o.
I lived closer to town
I made more of a mental commitment to it.
I owned a bike
I planned ahead more
I planned better. =)
I put my mind to it and worked less
I ride a ton as it is, so I can't really ride more :)
I saw more people on bikes
I try to bike every day, but two things obstruct me from that occasionally: 1) heavy rain (perhaps you all could offer backpack covers or something?) and 2) the amount of car exhaust fumes I have to inhale while biking during heavy traffic periods. The fumes from the local school buses and trash/recycling trucks are especially *horrible*, and I think all the time about how bad inhaling exhaust must be for my lungs and general health (support for this: https://media.springernature.com/original/springer-static/image/art%3A10.1007%2Fs00204-016-1736-5/MediaObjects/204_2016_1736_Fig3_HTML.gif). It would be wonderful if there were either a way to move bike lanes or create some sort of "ultra-low emission zone" like London (https://www.theguardian.com/uk-news/2019/apr/06/london-prepares-for-launch-of-ultra-low-emissions-zone) and New York (https://www.theguardian.com/us-news/2019/apr/01/new-york-congestion-pricing-manhattan) have recently adopted.
I was in better shape. I had a better bike.
I was more confident that cycling was safe. I have known too many people injured by distracted drivers. I have been to places such as Davis CA, Boulder CO, and various places in Europe where bike routes are dedicated and protected from cars. This would substantially improve my willingness to bike
I was safe for my kids
I was younger.
I wasn't scared of cars.
I wasn't so lazy
I were certain of drivers noticing and respecting cyclists on the road in town, especially at intersections and turns.
I were younger
I weren't as afraid of distracted or impatient drivers.
I worked in a more central location and there were less hills (really I bike as much as I can)
I worked in Carrboro otherwise I try to bike every time
I worked in town!
I worked in town.
I would have dedicated bike lanes all the time and not have to share the road
If bicyclists in the area weren't so rude and didn't cut me off so much my opinion of them and the activity would rise considerably, and I would be more likely to bike.
If cars weren't jerks
If I had a place to lock my bike in my townhouse neighborhood
if I had more places to go without passengers (kids) or cargo. I mostly bike for fun and exercise.
If I knew more of the trails/safety on the road?
If it stopped raining so much . . .
If my time was flexible.
if the streets were better
If there were better paths.
If there were more bike lanes / trails.

If there weren't any other forms of transportation on the line.
I'm biking a lot, so I'm not sure I need any changes. I bike commute whenever possible (not on overly cold/hot days or when it's raining heavily), but otherwise I'm doing it!
increased access to bike pumps that actually work
injury knee
Intersections were safer
It didn't get so hot in the summer
It didn't rain
it felt safer to bike alongside cars. Or if there were paths away from cars.
It felt safer, especially in down town where so congested.
It rained less
it was easier to get to off-road trails (i.e. Wilson Park).
It was easier to navigate motor vehicles in adverse weather or at night.
It was safe to do it
it was safer
It was safer
It was safer
It was safer to get to the heart of Carrboro and Chapel Hill. And if I felt more confident on my bike and didn't worry about the gears not working properly or the chain conning off.
It wasn't so hot. If I didn't have to work in Durham from CH.
it wasn't so dangerous
It wasn't so goddamn hot outside.
It wasn't so hot
it wasn't so hot in the summer
it were cooler in the summer :)
It were easier to cross town
It were easier to find safe routes to bike with my children to our destinations.
it were safer and more bike friendly, especially on my main thoroughfares including Estes extension. It's treacherous, and cars are antagonist since there's no real bike lane in many places.
it were safer to bike from where I live into town
It were safer to mix motor vehicles and bicycles, or if there were more dedicated bike spaces on roadways.
it were safer.
it were safer. Used to bike to take my daughter to preschool and out in the county with friends but have had unpleasant experiences with distracted drivers and aggressive drivers.
It would have more bike roads and trails more signs and less traffic.
Laws against mobile phones
Less traffic...can the weaver st block before n. Greensboro become a pedestrian street? Also students are really distracted drivers on phones...we need more awareness about this
More bike- friendly road features, bike paths. More signs indicating bike trails
More bike lanes
More bike lanes
More bike Lanes
More bike lanes and better maintained shoulders so that road bikes can safely ride there
More bike lanes and greenways
more bike lanes and greenways. I'm particularly hoping there will be a bike trail connecting the new loop in Claremont South to the trail that goes under Homestead Rd. and to the high school (is that in Carrboro or Chapel Hill? I'm not sure).
More bike lanes and places to lock up bike
More bike Lanes and traffic calming
More bike lanes!
More bike lanes, bike-friendly signs, bike separated lanes
More bike lanes, slower traffic, wider roads out of town
More bike parking

More bike parking
More bike paths/greenways
More bike paths/lanes especially when entering chapel hill
More businesses had the ability to set up a rack outside with little to no objection from the city.
More complete and consistent infrastructure for cycling -- particularly lanes, protected lanes, cycle tracks, and greenways -- are essential to encouraging cycling. Carrboro also could do much more to encourage safe and slow traffic -- with a pretty much town-wide speed limit of 25, there's no excuse for folks to drive the way they do.
More connected routes
More greenways, better driver education and safer intersections
More hybrid-bike style trails
More kid safe bike lanes and routes - I like to include my young kids if I can
More of my most frequent needs/destinations were closer
More off-street paths were available, if there were better connections to existing trails (Morgan Creek), and with protected bike facilities on E Main St connecting to Rosemary St and Franklin St in Chapel Hill
more places to bike (ie more trail for mountain biking, cyclocross practice facilities, bike lanes especially those separate from traffic)
More preference was given to bikes- more safe facilities, connected greenways. slower traffic..etc
More protected intersections
More protected/ dedicated bike lanes
More routes to good places off of busy roads
more safe direct connect routes & less needing to add distance just to be safe
More straightforward route to unc hospital
More trails or greenway access
More/less beat up bike lanes
Motor vehicle speeds were slow, there were safe intersection treatments for people on bikes, especially kids
Motorists were educated about how to avoid dangerous situations when passing (and to give ample room while passing cyclists).
My bike fit me
My bike was in better shape
my home connected to a greenway or trail to get to town
My job was more localized.
My kids could ride.
My kids get a little older
-My kids went to the school closest to us -I had a rack so that I could carry multiple bags of groceries -There was a long, predominantly car-free path here, similar to the American Tobacco Trail
My schedule allowed it
My youngest daughter could ride a bike. Soon...
Not applicable. I bike anyway. Distracted drivers scare me most.
Not applicable. I commute to work at UNC from Hillsborough, and I ride through Carrboro daily.
Not sure
Once I have a good bike to just ride around town
parking and signage improved
Paved path separate from cars
People didn't drive using cellphones and there was a protected lane. A lot of the places I need to go would require me to bike on Estes, and I don't feel that that road is safe, especially if I'm biking with children.
people stopped texting and driving. Wider bike lanes.
People would stop texting and driving. Stricter text and driving laws. No one is paying attention.
Post Knee Replacements
Probably not applicable. If I bike, I bike.
Riding on roads were made safer with bike lanes separated from traffic
Roads and intersections were safer and if there were more spots to lock my bike
Roads were designed to be inclusive of bicycles and not considered as secondary to cars/trucks.

roads were designed with cycling as a priority.
Safe and easy way to cross highway 54. The crossings from south of town at 15-501 and smith level make this incredibly dangerous. There is no easy way to bike from downtown Carrboro to Southern Village safely.
Safe biking lanes.
safer routes connecting areas i need to go (home, work, out for the evening, etc)
Separated bike paths on major (faster moving) roads.
Streets were designed for them
Streets were more like friendly
The #1 thing that would make me bike more is more cyclists on the road. The critical mass and the natural visibility of a lot of cyclists is the best encouragement. Second to that, paths that circumvent the highways like 54 around town in order to provide a similar distance but removed from cars that sometimes drift into shoulders.
The bike lanes were clearer with fewer obstructions/roots/metal plates/bumps.
The bike paths were SAFE
The bike trails would connect better, in particular the connection between the new section of bolin creek trail and the wilson park trail. We bike from the Chapel Hill Community Center on the bolin creek trail to Umstead Park, from there to Wilson Park and/or Carrboro Elementary, then to Weaver Street and back on the Libby Cotton bike trail, across UNC campus and down Franklin Street (that bit we do on the sidewalk). It's a great way for young kids to see the whole town(s), and get a sense of what they can do on a bike, but a couple of spots are just not very safe. Crossing Estes is the worst, and this is what is required to access the otherwise amazing bike trail that leads to (or past) Wilson park.
the bikeable network was connected. often one unsafe stretch will prevent me from biking at all.
The Chapel Hill/Carrboro buses came to my neighborhood. I live in the rural buffer, and downtown is where we need to go to conduct both business and pleasure activities, both during the week but more so on the weekends, but getting down there requires driving. It's not safe to bike down 54 (I live on Hatch Road).
The intersections allowed for more bike traffic
The intersections were improved and better greenways
The intersections were less daunting! And more aware/less impatient drivers!
The intersections were safer
The issue is connectivity - sometimes the only way is on 15-501 or 54 which are no-go areas for me. Traffic is too fast and shoulder is cluttered and narrow.
The Morgan Creek Trail extended to University Lake
the network was truly low stress and suitable for me to ride with my child, and difficult segments like Estes had safe bicycle facilities and low traffic speeds.
The roads that actually TAKE me to specific locations seemed more accessible/safer to ride on a bike.
The roads were cleared more quickly of debris after storms and after people put their leaves and tree branches in them - it is dangerous to have to go into the street to avoid them
The roads were safe! Need bike lanes.
the roads were safer
the roads were safer
The roads were wider.
The roads were wider/ I didn't feel too close to the cars
The routes were safer for kids. I have 3 children (2 on bikes and 1 in bike seat) and we bike a lot...but would more (ie to Franklin street/UNC) instead of driving if we could get through downtown Carrboro in a safe, less-stressful way
The streets had bike lanes
The streets were safer
The town really needs to get on the greenway bandwagon!
The was more off-road, manageable bike routes
the weather was always perfect!
The weather was better
the weather was drier or there were fewer hills, but that's not something the planning committee can change.
There are more options off road (trails)

There are more trails to connect neighborhoods to popular destinations
there was a better greenway system/better bike lanes
There was a bike lane or sidewalk connecting Southern Village community park to Smith level road. And from Smith Level road at Walmart/15-501 all the way into downtown Carrboro.
There was a bike path I could use to get to downtown Carrboro without having to use Estes Drive Extension
There was a bike path that connected Carrboro to the ATC trail.
There was a bike share station further into Carrboro
There was a clearer path and slower/more cautious traffic on Smith Level Road and S Greensboro so I could get downtown
there was a good way to get where I'm going, meaning not a busy two lane road with no shoulder.
There was a greenway built where the railroad is. Seems silly that we are still on coal...
There was a path alongside Old 86/Hillsborough Rd from Hillsborough Rd/Old Fayetteville intersection to the Calvander intersection.
There was a pathway between Chapel Hill/Carrboro and Hillsborough
There was a pedestrian/bike overpass over 54!
-There was a safe connection between Carrboro and Frank Porter Graham elementary school.
There was a safe path or lane on Old 86/Fayetteville Rd between homestead rd and Hillsboro Rd
There was a safer place to keep my bike overnight at my apartment (I keep it in my shed)
There was a safer route to work
There was a safer way to bike to work when it rains (currently have to cross 54); also the Morgan Creek trail gets flooded. Also if I felt safe biking on Estes Drive, which I do not. I also don't bike down Greensboro (south of the main intersection) as that is a very narrow road.
There was a way to get down Smith Level Road once the sidewalk ends.
There was a way to get to destinations from my home without going on busy streets
there was an overpass/pathway of some sort to cross 54
There was clear connection with bike lanes and greenway systems across the city.
There was good secure bike parking in more places.
There was greenway access closer to my home off of 54
There was more bike parking available, especially covered bike parking
There was more consciousness re bikers + visibility
There was more consistent room on the road (width) not necessarily lined off, but simply space to use that allows for safe sharing of the transit road
there was more protected bike infrastructure
There was more protection available to prevent and prosecute bike theft, which happens far too often. Also, I'd be delighted to see more safe intersections.
There was safer transit on Estes Drive from Carrboro to MLK, continuing to 15-501. Also, I'd like safer bike routes/intersections in downtown Carrboro.
There wasn't a big hill on S. Greensboro!
There were a greenway along Bolin Creek and if there were fewer car lanes/more bike space on Main St.
there were additional bike-friendly routes from Carrboro neighborhoods to downtown groceries, or to the Chapel Hill Mall.
there were better bicycle lanes through the congested downtown
There were better bicycle plans
There were better bike lanes and greenways.
There were better bike lanes and traffic handled bikes better.
There were better bike lanes on major connector roads like Homestead and Estes dr and Franklin st
There were better network connections
there were better routes connecting Carrboro and Chapel Hill. Taking Main street onto Rosemary or Franklin is unpleasant and dangerous, not to mention disjointed in terms of cycling "facilities". The Cotten Bike path is nice, but Cameron Ave doesn't take me to many of the places I want to go.
There were better ways and incentives to acquire a bike
There were bike donations
There were bike paths fully separate from roads, or at least with physical barriers separating bikes from cars.
There were bike paths off the main roads/traffic or wider roads/more space. I love riding a bike, but not negotiating traffic.

There were bike-only lanes. Not just striped but divided physically.
There were bridges over Morgan Creek. One could be linked to Rose Walk Greenway behind Rose Walk and the Tennis Club (creating bicycle access to Carrboro High from Rose Walk, Tennis Club Estates and all the apartments in those neighborhoods) and another in Weatherhill Point, creating access to Manor Ridge. There are already drain pipes at these points, so bridges could be built over these.
there were charging stations for e-bikes.
There were clear bike lanes, and more trail/greenway access from those marked roads.
There were complete networks to more destinations around town.
There were dedicated bike lanes out to maple view
There were dedicated bike trails
there were dedicated places to bike - NOT on the streets
there were designated bike lanes
There were designated bike Lanes that didn't block traffic and inconvenience lots of other drivers
There were Greenway or bike Lanes to surrounding cities and Durham train station
There were greenways connecting Morgan Creek to Eastgate
There were more "short cuts" like the existing bike paths that bypass intersections and traffic.
There were more available bike lanes
There were more barrier protected bike lanes and Greenways
There were more bike lanes
There were MORE BIKE LANES :) and driver awareness of bikers
There were more bike lanes and better turning lanes for bicyclists.
there were more bike lanes and connected lanes
There were more bike lanes and greenways.
There were more bike lanes and less pot holes/bumps.
There were more bike lanes and more green trails (or green trails connected by bike lanes). As a family with 2 kids and 4 bikes, we enjoy recreational riding - but it tends to be more a case of drive to a place, for example to the community center, to take the Bolin creek trail, or to the Northern Forest to the pumpkin loop. I would probably bike more as a commuter, if it were safe, and more lanes.
there were more bike lanes and parking
There were more bike lanes and safer intersections
there were more bike lanes and safer opportunities and/or connected greenways
There were more bike lanes and stricter laws regarding distracted drivers.
There were more bike lanes or more public transport to connect to
There were more bike lanes to get into the countryside
There were more bike lanes, bike paths and intersections were clearer for cyclists
There were more bike lanes, more separated from the car traffic. If it was bit more convenient to travel by bike than by car (traffic restrictions, traffic lights with cyclist, roads accessible only by bike, not by a car, incentives for biking (maybe some vouchers/gift cards for bike shops). One option could be to set up cobble stone streets which are less comfortable to drive by car, but on the side, there will be a bike lane with smooth surface, making public places cycling friendly with bike stands and stickers on the doors, putting signs "Attention Cyclists at all greenways and bike lanes"
there were more bike lanes.
There were more bike lanes.

There were more bike lanes. Also if there were protected bike lanes on major roads like MLK
there were more bike lanes. Concrete dividers between the bike lane and the rest of the road would be a bonus.
There were more bike paths and lanes that are safe
there were more bike paths to destinations that are unsafe to get to on a bike (e.g. near Smith Level/anywhere near 54)
there were more bike racks to lock up to.
there were more bike safe routes.
There were more bike trails and drivers were more considerate
there were more bike-laned streets. For instance, I live in Carrboro, and would love to bike my kids in the bike trailer over to the Chapel Hill Public Library, but getting to the Bolin Creek Trail feels too onerous. There isn't an easy connection of protected bike lanes.
There were more bikes only paths
There were more car-free bike routes
There were more connected trails and more/wider lanes, driver education
There were more connectors between our existing greenways and bike lanes. I just happen to be able to do most of my commuting on my bike because of my current location, but I wouldn't if I had to ride in traffic.
There were more dedicated bike paths
There were more Greenway connections
There were more greenways and bike lanes.
There were more greenways and public trails
There were more greenways.
There were more lanes and a safety education program for (car) drivers. Many do not know or care how to drive safely around cyclists.
There were more large and safe bike lanes, especially on main thoroughfares
there were more off ride bike paths
There were more off-road trails. Please complete the bolin Creek Greenway!!!
There were more paved bike/walking trails such as a trail along Bolin Creek from Homestead Road into Wilson Park.
there were more places to secure a bicycle at bars and restaurants.
There were more protected areas/routes for bikes that don't involve undertaking the risk of being in (very) close proximity to cars, but also don't impede/risk pedestrian foot traffic.
there were more protected bike lanes and clearer rules at intersections.
There were more public transit stops between Carrboro and Durham or Hillsborough
There were more routes with less traffic to get from Carrboro to Chapel Hill (past UNC).
There were more separated bike paths(not lanes) away from cars
There were more separated trails or physically separated lanes. I have young children and while I'm comfortable biking on roads myself, I'm scared to take my kids on the roads since they are lower down and less visible in the bike trailer or tandem bike attachment
There were more signed safe routes in Carrboro and connecting to CH
There were more trail/non-road options. I would opt for a longer route off-road than a direct road option.
there were more trails and places to park
There were more trails for cyclists, especially to Southern Village or other places like Eastgate
There were more trails. I already do a ton of road biking, but more trails and greenway access is always a plus, since you can avoid traffic interaction
There were more trial. I still ride everyday
There were protected bike lanes and slower speeds
There were protected bike lanes in Carrboro. For a supposedly progressive town, I find it frustrating that there's not a single protected bike lane in Carrboro. There should be protected bike lanes on Weaver Street, Greensboro, and East Main for
There were protected bike lanes, especially connections across multiple parts of town.
There were protected facilities
There were safe facilities to do so and vehicles drove slower
There were safe routes to more places, especially ones where I would feel safe biking with my kids.
There were safer intersections and buses were trained not to cross into the bike lane when there is a bike (this has happened several times... the bus drivers don't seem to care and will just cross into the bike lane despite the presence of a bike)

There were safer places to bike
There were safer roads to bike on to get to places I go regularly, such as the Chapel Hill Public Library, dog parks, etc.
there were safer routes to the places I want to go.
There were trails connecting Southbridge neighborhood to downtown Carrboro
There were wider shoulders/bike lines
There would be less traffic
there would be recreational bike paths
they learn to do unto others, as they want cars to do unto them.
Though I bike all the time there are lots of places I find unsafe or confusing for sharing.
Traffic lights actually recognized that you were there so you don't have to wait for a car to trigger the weight sensor
Traffic safety were more rigorously observed
Traffic speed was decreased, or we had some streets closed to traffic (even if only specific days). For example, Philly closes an entire section of the parkway every sunday and you should see how many people come out and use it!
Traffic was slowed down in our school zone. And if there was a safe way to cross Hillsborough from McDougle to Cates Farm with the kids.
Traffic was slower
Traffic was slower Protected bike lanes
Traffic wasn't so crazy
Trails were easier to access. Greenways connected to places I want to go.
Trails/Greenways
Two issues 1. Busy and dangerous areas are missing bike lines. Weaver/Greensboro as an example. Bike lanes end at the busiest and most dangerous intersections 2. Bike lanes need to connect outlying neighborhoods so people living further out could also ride and not need to drive
unsure
We had more facilities that were separate from traffic and SAFE on town streets
Work happened closer more often
work schedule would allow

Q5: My favorite place to bike in Carrboro is... (open question)

...in Chapel Hill on the bolin creek trail.
...through time and space.
Adaris Tract
all around
All of it (one-way streets)
All over
All over
All over
All over
all over Carrboro/Chapel Hill, Old Fayetteville Rd
All over- love the downtown
along hillsborough to greensboro road
Along Main, Hillsborough, in West Carrboro
Any street wide enough to comfortably accommodate a bike, especially those with a dedicated bike lane
anywhere
Anywhere
anywhere
Anywhere between Lake Hogan Farms and Main St.
Anywhere not near a major road
anywhere not uphill
Anywhere outside carrboro. Hillsborough street out of town is when one can breathe again and feel like there is enough room to share.
Anywhere. The major roads are scary though, especially with kids
Around downtown
Around downtown.
around my neighborhood (lake hogan)
Around neighborhoods
around the area of McDougle Schools (Hillborough Rd)
Back neighborhood streets
Bike lane on north greensboro
bike path
Bike path and road from Wilson park to town
Bike path and side streets
bike path behind cats cradle
Bike path behind Cat's Cradle.
Bike path Main Street to Merritt Mill Road
Bike path to CH -Weaver St
bike path, Armadillo Grill to Merritt
Bike paths
Bike Paths
Bike paths (all of them! Love them!)
Bike trail to UNC campus
biking to my children's school: Morris Grove Elementary
Bolin Creek
Bolin Creek
Bolin Creek Trailway

By UNC-Chapel Hill
By weaver
Carolina Forest, Pumpkin Loop
Carolina North
Carolina North Forest
Carolina North Forest
Carolina North Forest
Carolina North Forest Poplar Rd/Hillsborough Rd out to Homestead
carolina north forest.
Carolina North single track
Carolina North Trails. Greenways. Neighborhood bike lanes. Out to Dairyland Rd.
Carolina North, as the trees don't run over people.
Carrboro
Carrboro Downtown, Carolina north forest, a southern village
Carrboro Elementary to Greensboro and Estes- Forresty bike path
CNF
Coming into town/ biking around town
Community Park and Wilson Park
Cottonwood Trail
Dairyland Road
Don't have a favorite. I mostly bike between Northside and downtown Carrboro and Greensboro toward Calvander to get out to the countryside.
Don't know many. Just tried Wilson Park, it was too short
Don't ride in town
Down Greensboro St
Down Hillsborough/Greensboro to Carrboro Farmers Market or to UNC campus
Down Main St to the post office and back via Hillsborough
Down town and on bike paths
Downtown
Downtown and anywhere with a bike lane
Downtown and Chapel Hill downtown
Downtown and through the Fair Oaks/Cates Farm/Wexford neighborhoods.
Downtown for shopping
Downtown shopping/dining.
Downtown/bike paths
E. Poplar
Everywhere
Everywhere

Everywhere
Everywhere
Everywhere
Everywhere
Everywhere (except on Main St)
Everywhere really
Everywhere!
Everywhere!
Everywhere. Bolin Forrest.
Fan branch trail
Farmer's Market, Weaver Street
For relaxation I like to bike to bars.
Frances Shetley Bikeway and the Wilson Park Trail (these are short but helpful connectors). Bolin Creek path (is that Carrboro or CH?).
Frances Shetley Greenway Libba Cotton Path
Franklin St
From Carrboro to UNC.
From my home near chapel hill tennis club to downtown
From my neighborhood to Carrboro Elementary or to the gym (O2 fitness) - mainly on Hillsborough Rd. Riding to the Carrboro Branch library at McDougle is okay, too.
From weaver street market out to the food lion shopping center off 54 trouble is there's not really a way to cross said hwy or out of carrboro and chapel hill to say south point mall
gravel roads, bike paths near Lake Hogan Farms
Gray Squirrel
Green ways
greensboro
Greensboro North of Main
Greensboro Street
Greenway
Greenway
Greenway around Seawell high school
Greenway beside the railroad tracks, to UNC Campus.
Greenway, Libba Cotton
Greenway/ Bike Path
greenway/trails
greenways
Greenways, mountain bike trails.
greenways. anywhere off the road.
Hard to say. My biking in Carrboro is to get around so I am mostly on the roads and prefer those with bike lanes and/or low traffic. Lots of my recreational biking is on Chapel Hill greenways (Tanyard Branch, Umstead-to-community-center, pumpkin trail). I do appreciate the connector by Wilson park and the Libba Cotton bikeway.
Heading out of town away from the cars!
heading out of town past maple view ice cream

Hillsborough and N. Greensboro above Estes road
Hillsborough Rd (w/ bike lane) and the Cotten bike path along the tracks.
Hillsborough Rd and all its tributaries
Hillsborough Road
Hillsborough road
Hillsborough Road area
Hillsborough Road as an alternative to N. Greensboro St.
Hillsborough road between main street and where it joins Greensboro Rd
Hillsborough Street and Shelton Street
Hillsborough Street, W. Main Street, and on dedicated Bikeways (i.e., no cars)
Honestly, I love biking my kids to school (Carrboro ES) and to eat/play/market to teach them the importance of not driving when possible and the value of being active.
I bike from our neighborhood down Hillsborough/Greensboro to weaver street area and then typically park and
I don't have one... yet
I don't because of the way people drive
I don't bike in Carrboro
I don't bike in Carrboro
I don't bike.
I don't feel safe biking in Carrboro, and the trail or lane network isn't a network as much as unconnected spaces that take you nowhere
I don't have one
I just ride to the bar or do errands at Harris Teeter.
I like the Libba Cotton bikeway b/c it's separated from vehicular traffic
I like to bike around the northwest part of Carrboro and also downtown to campus.
I love biking around Carrboro with my family and feel that it is quite safe. We take side roads with the kids to avoid major roads when necessary. I also bike from Carrboro to UNC for work. I like using the bike lane that goes along the railroad track to avoid Weaver street/Franklin Street.
I really don't bike in Carrboro outside of our neighborhood (Lake Hogan Farms) because the risk feels too great.
I started biking from the highlands to campus through carborro. .
I taught my kids to ride bikes on the Shetley bikepath.
I use the bike lane next to the train tracks on my commute. Love that it bypasses some of the traffin in the middle of town
I use the Libba Cotten bike path constantly as a conduit to get from UNC out to the rural roads northwest of
I used the greenway from Carrboro to Cameron street every day and I would be really happy if there were more bike paths like that in Carrboro. I also like single tracks and North Forest.
I usually bike in Chapel Hill
I'd like to go a long bike/walk paths
I'm moving to Carrboro because I hear it is a bike friendly city
I'm not sure exactly where the town limits are. I love the Greenway along Umstead Drive. I wish there were some way to connect it with the greenway between Estes and North Greensboro.
In downtown Carrboro and wherever there are bike lanes
in my driveway
In my neighborhood
In the bike lanes
in the bike lanes
In the neighborhood, and back and forth to school.
In town

Into the countryside from Wilson Park
Into town from the north
Is there a place to bike in Carrboro?
Jones Ferry Rd
Jones Ferry Rd.
Lake Hogan Farms
Lake Hogan Farms.
Leaving the stress of Town Limits.
Libba Colton
Libba Cotten
Libba Cotten Bike Lane - because it is car free. But it is so short.
Libba Cotten bike path
Libba Cotten bike path
Libba Cotten Bike Path Bolin Creek Path
Libba Cotten bike path on the way to work at the UNC.
Libba Cotten Bike Way
Libba Cotten bikeway
Libba Cotten bikeway
Libba Cotten Bikeway, though I wish you had more retail/etc. on the bike trail itself. It seems like a missed opportunity to not have more spur trails to Carrboro business, and to not connect it directly to Weaver Street with a protected bike lane.
Libba Cotten Bikeway. Would love more trails like that!
Libba Cotten but the Merrit Mill transition is bad for bikes
libba cotten path
Libba cotten path, old Mill house neighborhood with narrow lanes and low traffic
Libba Cotten Trail
Libba Cotton
Libba Cotton
Libba Cotton
Libba Cotton Bike path
Libba Cotton bike path, and whatever the name of the path from Eugene st down to the bottom of S
Libba Cotton Bike Trail/Path
Libba Cotton Bikepath
Libba Cotton Bikeway
Libba Cotton Bikeway
Libba Cotton Greenway
Libba cotton trail, Hillsborough
Libbacotten Bikeway
Libby Cotten path.
Libby Cotton greenway
Local Mt bike trails
Main St and downtown
Main St and Xmas parade
Main Street

Main Street
Main street
main street
Main Street
Mainly, I bike for fun in the Bolin/Chapel Hill forest. I don't bike to commute because I fear it is dangerous over the long term
Main-Weaver intersection
Maple view farm & carboro downtown
Martin Luther
Mill Village Area
Morgan creek trail as more of a exercise verses commute.
Morgan Creek Trail/Southern Village Bolin Creek
My commute to work is pleasant and easy, and I also found a route I like to UNC's campus that avoids heavy congestion areas.
My neighborhood
my neighborhood (Bolin Forest)
my neighborhood, Dogwood Acres
N Greensboro St
N Greensboro St and Main St
N Hillsborough St into
N. Greensboro
N. Greensboro
N. Greensboro bike lane/ bike paths
N. Greensboro St to downtown
Nature Trails
Near Carrboro elementary
near house outside park
Neighborhoods
neighborhoods, carolina north forest, with my son to school (CES)
neighborhoods, other quiet streets, and paved trails (mostly anyway) like Libba Cotton
No response
No response
No response
No response
No sure how useful this question is. There are just a few ways to go where you're going, and that's how you'll
North Carrboro to UNC
North forest to weaver st market
North Greensboro St
North Greensboro St & side streets along it
North Greensboro St. and Hillsborough Road until it joins Old 86.
North of Town in Orange County
Not Estes Drive that's for sure!
same way. Traffic is too crazy and the cars, ahem, SUVs everyone drives speed and will flatten you. When I first moved from CH to Carrboro decades ago, traffic was negligible so I biked everywhere. We need dedicated bike lanes.
Nowhere because I don't bike. But if I did I'd bike to Maple View
Old Carrboro

Old Hillsborough and North Greensboro heading into town
On any greenway where there are no cars.
On Libby Cotten because I don't have to worry about cars.
On neighborhood streets and in bike lanes
On side streets or other low traffic areas.
On the bike paths and through the neighborhood streets where speed limits are slow, there are speed tables, and frequent stop signs.
On the greenway
on the roads heading out towards Mapleview
on the roads on the edge of town, close to the farms
Only bike trails at the moment
Out Dairyland
out Greensboro/Hillsborough to Calvander and on Dairyland
Out of town into the country
out of town, Dairyland road
Out of town, toward Orange Grove.
Out toward Maple View
Out towards Maple View
Outside of carrboro
Pan land
Parks
Parks
Parks
Parks b/c protected + safe
Parks, grocery store (Harris Teeter & Weaver st)
Paths (not roads)
Poplar to town Commons
Portion of Carolina North Forest in Carrboro.
protected bike paths and greenways
Pumpkin Loop
Pumpkin loop
Pumplan? I mostly run it
Riding from Calavander into Carrboro and back.
Single track trails on Carolina north
Taking son to school using Roberson bike path
Tanyard Branch
Tanyard Branch in CH
Tanyard Branch Trail
The bike lane to campus
The bike path
The bike path along the railroad
The bike path along the railroad tracks.
The bike path by the railroad connecting Carrboro to chapel Hill
The bike path from open eye to chapel hill
The bike paths and in the woods
The bikeway
The country roads

The dedicated bike paths
The farmers market
The Greenway
The greenway at the end of Estes, on N Greensboro
The greenways
the greenways. carolina north forest (MTB), and various locations for commuting and road riding
The Libba Cotten and Frances Shetley Bikeways
The Libba Cotten Bike path.
The Libba Cotten bikeway is an absolute gem. Hillsborough road is also pretty good, though the component of it that runs through neighborhoods sort of northwest of Carrboro Elementary School is very bumpy—lots of manhole covers and unevenly patched up areas of the road that you have to swerve around.
The Libba Cotton trail
The Libby Cotton Bikeway in the springtime, bonus if the train is running
The new trail from Umstead Park to the Community Center. I am looking forward to the trail under the bridge at the MLK cross section being completed!
The North Forest or Wilson Park
The park near the fire station
The parks
the parks
The path along the train tracks
The path within Wilson Park.
The railroad path
The trail to UNC campus
The trails along Bolin Creek
The trails on Wilson
The Weave
The woods
Through town to the bike path behind Cats Cradle into Chapel Hill Up N. Greensboro Street and then to Old 86 to Dairyland, etc. to Maple View and Saxapahaw
thru the neighborhoods.
To and from Farmers market
To and from UNC Chapel Hill.
to and from work
To Calavander and beyond
to Merritts Pasture (Chapel Hill)
to Merritts Pasture (Chapel Hill)
To school.
To the farmers market
to the farmers market
To the Farmer's Market on Saturday mornings.
to the Farmer's Market!
To Weaver St and Farmers Market
To Weaver Street
to weaver street
To weaver street.
todos partes
Too new here to know what is available.

towards mapleview farm
Town streets and Bolin Creek area.
Trails
trails
Trails behind Bolin Forest/ Wilson Park
Trails/Greenways
W Main St, N Greensboro, and (parts of) Hillsborough road.
W. Main St
W. Main/Weaver
Weaver
weaver
Weaver ST
Weaver St
Weaver st market.
Weaver street
Weaver Street Market
Weaver Street Market
West of town.
West side of town
Wilson Park
Wilson Park and Carolina North
Wilson Park is a hub for both on and off-road riding.
Wilson Park trail, Frances Shetley bike trail (at Carrboro Elementary), Libby Cotton bike trail.
Woodsy bike lanes
work
Wren Park

Q6: The most difficult place to bike in Carrboro is... (open question)

54
...our current political climate.
..?
?
1. North Greensboro Street between McDougle School and Calvander Corners. 2. Old 86. 3. Dairyland Road. 4. Weaver Street (during heavy traffic periods).
15-501 and 54
15-501 Around South grove and Walmart. No bike lanes/sidewalks or cross walks!
15-501/54 & Main Street
54, S. Greensboro
Across 54.
Across highway 54
All major intersections across NC54 (S Greensboro, Jones Ferry, W Main). Both 5-way intersections of E Main (at Merritt Mill and Roberson). All of S Greensboro. Hillsborough Rd north of Farm House Dr (is this still Carrboro?)
All of the intersections
Along 54 - I'd like to be able to get to the Morgan Creek Greenway from downtown Carrboro more easily. Also the Franklin Street/Rosemary Street split when you need to go left toward Rosemary from Carrboro is difficult to maneuver.
Along 54 & Fayetteville & Homestead Rd.
Along E Main St from Weaver St to Franklin.
Along Estes, downtown, near Weaver St
along weaver street, especially at the intersection near Armadillo Grill.
Any intersection. Any added benefit of lanes is lost in the chaos here and the lack of awareness of drivers (from lack education or experience), just makes every intersection a chance for disaster
Any main roads
Any place where the shoulder suddenly goes away, for example, Estes Extension.
Any place with steep hills -- I don't go there.
Any street w/ 55mph+
Any street without bike lanes, but particularly roads with zero shoulder (most).
Anywhere at rush hour; downtown (I prefer not to bike downtown)
Anywhere on Highway 54 or 15/501
are the roads
Around the hospital or other areas near campus w/ heavy bus traffic
Around town
around Weaver Street
Around Weaver Street and any major intersections
Back and forth from our neighborhood (Fair Oaks) up to the McDougle Schols.
Between Bowbarr and Weaver Market (E. Main) -> Rosemary
Between Estes and Downtown
Between Smith Level Rd and Greensboro at the 54 intersection.
Biking from Carrboro down to Chapel Hill because I cross the 54 and it's super dangerous.
biking from my neighborhood (fox meadow) to downtown
Bolin Creek, because of the condition of the OWASA right-of-way. Many sharp rocks and mud holes make biking, or walking and running, difficult and dangerous.
Busy street
by pass

Downtown. The traffic lights downtown (Weaver/Greensboro, Main/Greensboro, in front of Armadillo Grill and Carr Mill parking lot, where Rosemary meet Franklin, etc...) make it a bit difficult to navigate.
downtown's pretty bad, as are S Greensboro heading toward 15-501 and Estes extension
Downtown
E Main St
E. Main between Rosemary and Weaver St. Traveling south on N. Greensboro by Fitch - bike lane ends and then there's a pedestrian sign in the middle of the road that trips up motorists. Traveling north on N. Greensboro approaching light at Estes, motorist turning right don't yield.
E. Main St
E. Main St Estes Dr.
-E. Main St., Carrboro
East Main between Chapel Hill and Carrboro. There are four lanes of traffic, a complicated intersection, far too many driveways, and a sidewalk and road system that's in terrible shape (on the Weaver St. side)
east main st, parts of Jones Ferry, 54, estes extension. any place where the speed limit is 35 and traffic exceeds that regularly (like N Greensboro)
East Main Street and Hwy 54 Bridges
East Main Street from Roberson Street to Rosemary.
Estes
Estes + Greensboro, downhill + disappearing lane on a bike that's slightly too big = terrifying
Estes and North Greensboro
Estes approaching Greensboro
Estes because it's not safe.
Estes Dr ext and N. Greensboro intersection and Estes Dr. Ext.
Estes Dr.
Estes Dr.
Estes Dr., MLK Pkwy.
Estes Drive
Estes Drive Ext.
Estes Drive Extension
Estes Drive Extension
Estes Drive Extension - the road is dangerous for bikers at all points but particularly within Carrboro
Estes Drive where it approaches N. Greensboro
Estes Drive. Please put in a bike lane!
Estes Ext., South Greensboro, Weaver St. in front of WSM, and East Main St. on the section where Domino's is
Estes extension, and Weaver St in front of Weaver St. Market.
Estes extension, Intersection of Weaver and N. Greensboro st.

Estes Rd to the Farmer's Market. It's ridiculous that we even have to touch the main lane on such a busy road to get from a greenway to the Farmer's Market or vice versa.
Estes Rd. (and any other main road that has fast traffic and no bike lane.) Actually, 54 is probably even more difficult, but it's so dangerous that I don't even consider it a biking possibility.
Estes Road
Estes Road - it's terrifying.
Estes, 15-501 intersections, and N Greensboro when traveling with a small child, due to speed. East Main.
Estes, S. Greensboro, downtown
Estes.
Everywhere
Everywhere Bikes impede traffic and generally act without regard to the rules of the road. Running stop signs and lights, not yielding to pedestrians, wrong way on one way streets.
Evevywhere the traffic is too fast
FPG elementary school is impossible to get to by bike, everyone drives and it's insane. That school is in a terrible place for traffic. Also the intersection of weaver st and n. Greensboro is scary.
Franklin St
Franklin ST
Franklin St
From art center to weaver st market.
From N. Greensboro down Estes
Getting from Carrboro to the other side of 54 (ie. the Southern Village side). Also, the strip of N. Greensboro in front of Harris Teeter and CVS. There are no bike lanes. It is very narrow.
Getting from Main Street across to Carrboro Plaza Getting from the bikeway/greenway behind Carrboro Elementary to the part of Estes Road where it widens to a significant shoulder (better signage might help get cyclists onto the Wilson park greenway)
greensboro - by Harris Tetter and intersections with weaver st and main. Cars are so desperate to pass they do so very dangerously.
Greensboro Rd
Greensboro ST
Greensboro St
Greensboro St and Pleasant Dr; Main St. Near Rosemary intersection
Greensboro st near Harris teeter
aggressive towards cyclists. If I hug the shoulder before the bike lane starts, drivers will pass with well below the legal space requirements --- sometimes with less than a foot of space around me. If I hold the middle of the lane, I routinely get drivers coming within a foot behind me and revving their engine loudly or laying on the horn in a startling way.
Greensboro St.
Greensboro St.
Greensboro st. downtown; Main st. @ Poplar is no fun either
Greensboro street and main Street, the streets that also happen to have the most destinations
Greensboro towards Smith level, no shoulder
Greensboro, Main
Greensboro, Smith Level
Greensboro/Estes ext to MLK
Haven and Done St
high traffic streets without bike lanes
Highway 54

Highway 54
Highway 54 area
Hillsborough Rd (old 86) between Old Fayetteville Rd and Homestead Rd.
Hillsborough Road
Hillsborough Road (Old 86) south of Calvander
Hillsborough road between Old Fayetteville and Dairyland road
Hilly Smith Level Rd, with zero shoulder.
Homestead
Homestead Rd, outlying roads
Homestead Road
Homestead road
Homestead Road
Hwy 54
Hwy 54 BYP
Hwy 54. Need better pedestrian & bicycle crossings. A catwalk would be great. People run across there to catch buses & it's dangerous. Also, Estes ext loses real bike lanes/sidewalks coming into Greensboro street intersection. It's too tight & traffic moves a little too fast.
I can't bike with my kids and connect safely to the greenways and bike lanes into Carrboro. The one I take stops and continuing is too dangerous with young children.
I don't know
I don't know
I don't mind riding on the hill going to the west on Estes Drive Extension but that is probably the most difficult road to bike on in Carrboro.
I don't mind this but the two most difficult places for most people would be up South Greensboro and up the hill on Estes Drive Extension going towards Greensboro.
there's a bike lane, there are always trash/recycling bins obstructing them, and the road is extremely bumpy. I also never even bother trying to bike on Franklin/Rosemary streets and I actively avoid the area around Carrboro's Weaver Street Market (East & West Weaver Street, Roberson Street, West Rosemary) because the level of traffic makes me feel unsafe while biking there and it's often so congested that you can't get a breath of air that isn't 99% car exhaust.
I still feel guilty riding on Main St when I slow down traffic on the one lane road. It makes me not want to bike.
In front of fitch
In front of Weaver St
In the streets with cars
In the Weaver St. Area
In town
In traffic
-Intersection at Greensboro and Weaver, when the traffic gets heavy and the bike lane disappears
Intersection at Spotted Dog, Intersection at Chapel Hill Car Wash and in front of Milltown.
Intersection of Estes and Hillsboro
Intersection of North Greensboro Street and Weaver Street.
Intersection of S. Greensboro and Main St.
Intersection of Weaver and N Greensboro
Intersection of west cameron and south merrit mill to get onto Libba Cotten trail
Intersections
Intersections around Main and Greensboro St
Intersections around weaver street and on the busy roads with no shoulders (e.g. Estes)

intersections near Weaver Street Market, Open Eye
Intersections on Weaver St
Intersections where bike lanes disappear
Its all pretty good!
It's on the line w/ Chapel Hill -- but it's the transition from the Libba Cotten bikeway to the Merritt Mill/Cameron Ave. Also not ideal: the Estes Dr. Ext./N. Greensboro intersection, heading North, and all of Estes Dr. Ext.
Jones Ferry and 54.
Jones Ferry and Old Fayetteville need to have a way for bikes to trip the light. This intersection also has poor
Jones Ferry Rd
Left turn from Merritt Mill to Libba Colton
limited, it's pretty easy within Carrboro.
parent. I'm a relatively adventurous 30 year old who'd like to feel more consistently safe around her own town...)
Main and Roberston St crossing/tracks. Estes (Carrboro part) and Weaver St
Main by the tracks or Greensboro by town hall
Main st
Main St (east)
Main St at Roberson
Main St between Rosemary and Weaver; Estes Dr Ext from N Greensboro St; Old Fayetteville
Main St from Weaver St to Merritt Mill Rd
Main Stree. We need the four lanes to become 2 and add protected bike lanes and widen sidewalks.
Main Street
Main street
Main Street
Main Street & Weaver Dairy area
Main Street area
Main Street between crossties and Chapel Hill
Main Street during rush hour.
Main street/downtown Carrboro seems impossibly risky.
Main Street/Weaver Greensboro South of Main
Main street/weaver street
main street/weaver street downtown area
Main/Rosemary Connection
major intersections, n greensboro
MLK Jr Blvd, not in Carrboro though.
most of the streets are a mess
Multi-intersection in center of town.
Multiple: (1) Columbia St.-Smith Level Rd., (2) Estes Rd., (3) Greensboro St., (4) Jones Ferry Rd., (5) Old
N. and S. Greensboro St.
N. Greensboro in front of southern states, Harris teeter, and Fitch (narrow, no bike lanes, congested, multiple
N. Greensboro Street where the bike lane disappears for the intersection at Estes Dr. I think the traffic circle will make this worse unless there is a special bike accommodation.
NC 86 Intersections
NC86 heading east to Carrboro
Near highway 54.
Near our house off 54 and Greensboro
near streets

Near Town Hall on Saturday mornings when the Farmer's Market is underway. Very congested.
Near weaver street :(
No response
No response
North Greensboro heading in and out of town from 54.
Northern part of town
Northside neighborhood from OWASA
not sure
Not sure
Not sure
Not Sure
Nowhere
Off homestead road
Old 86 and Dairyland Roads
Old 86 between Hillsborough and Calvander; Estes in Carrboro
Old 86 heading into Calvander. It's the most dangerous stretch of road that I ride.
Old 86 to get into town
Old Fayetteville Rd
Old Hwy 86. No bike lane and super dangerous for cyclists from Calvander heading west toward Eubanks Rd. An accident waiting to happen.
Old NC 86 between Hillsborough Rd and Homestead.
Old NC 86 from Homestead to Greensboro area and downtown.
Old NC 86. Lots of traffic and very narrow.
Old NC 86-Old Fayetteville to Dairyland
town and that road has become a death trap. more and more cars every year but nothing changes for bikes. if anything it got worse with recent paving job. from carrboro city limits to homestead is a cyclist death waiting to happen.
On every street where bikes makes right turn in front of cars.
On North Greensboro St outside Fitch Lumber where there is no bike lane and lots of pot holes. Or, because I cycle with my 3-yo daughter, the Frances Shetley Bikeway with lots of bumps due to the tree root system.
on the roads
on the streets
On the UNC Campus
On the way to Maple View Dairy from Carrboro; narrow, winding roads and narrow shoulders.
Part of the Main Street from the beginning of Weaver Street to the Intersection with Greensboro street, it is a busy and narrower passage. Around this street there are not enough bike stands as well.
Parts of main st. weaver,
Pretty much everywhere
Probably MLK, even just crossing over it
Probably Weaver Street because of how crowded it is, especially with the sidewalk in front of Weaver Street Market being closed temporarily.
Ransom St (Chapel Hill)
right there by the Century Center, on any of the 3 sides of that wedge-shaped triangle (Greensboro St., Weaver St., and Main St.).
Roads that are very narrow with no shoulder, such as Estes Extension before the light. While Estes Extension has an alternative path by Wilson Park, it is not marked as the best bike alternative.

roads/intersections, especially along N Greensboro Street with children and along Homestead Road near Lake Hogan Farms
Roberson Street
S Greensboro
S Greensboro and Estes Dr. extension are probably tied for absolute worst streets to bike on.
S Greensboro St
S Greensboro, between open Eye Cafe and Fordham ave.
S Greensboro/Smith Level
S Merrit Mill area and anytime you need to get around 54
S. Estes ext.
S. Greensboro
S. Greensboro
S. Greensboro
S. Greensboro Street between Main St. and Hwy. 54
S. Greensboro to Smith Level
S. Greensboro traffic circle. S. Greensboro & 54 intersection Smith Level traffic circle
S. Greensboro/ Smith Level
Section of Old 86 from Carrboro to Calvander (not sure if this is technically in Carrboro)- the bike lane stops in the middle and there's not even a shoulder after that.
shared road
Smith Level Rd
Smith Level Rd/South Greensboro
Smith Level Road
Smith Level Road and the 54 Interchange
Smith level road under 54 to greensboro street & Merrit mill road towards columbia. It's generally very difficult to get from smith level road to any other part of town due to lack of bike-lanes once you get off smith-level.
Smith Level Road, 15-501, 54, Estes drive. Hillsborough road.
Smith level road.
Smith Level, Jones Ferry, west 54.
So many hills and I'm too scared to bike on the roads
South Greensboro
South Greensboro (big hill, narrow road, no shoulders), Weaver Street, Main St into Chapel Hill
South Greensboro by traffic circle
South Greensboro St
South Greensboro St just South of Main St the hill
-South Greensboro St to Smith Level Rd. -The stretch of Hillsborough Rd from Old Fayetteville to Calvander. - Jones Ferry adjacent to University Lake, and continuing west on Old Greensboro Hwy. -Weaver St (adjacent to Weaver St Market) continuing east on Main St. -Homestead Rd.
South Greensboro Street
South Greensboro Street, E Main St.
Straight west on Main St @ intersection w/ Roberson & Weaver St
Streets
Streets without bike lanes
Tactical urbanalism! Planters + paint for protected bike lanes
That's easy--the east end of Main Street (toward Rosemary, and CH). It is a complete mess, especially around "rush hour" (which often starts as early as 3p now). Though there are multiple bad spots in Carrboro now.

The area hemmed in by Morgan Creek (Tennis Club Estates, Weatherhill Point, Rose Walk). In order to go anywhere you have to ride on a major highway such as Hwy 54. This does not encourage riders or walkers. It is ridiculous that no access over Morgan Creek for these neighborhoods has ever been provided. They are thoroughly cut off. It would take so little - just a couple of simple bridges over existing water pipes.
The bike lanes that have cars and trucks parked in them or are full of yard debris.
The border of Carrboro/CH by Rosemary
The city
The downtown area including the main intersections.
the entire length of East Main Street, and North Greensboro Street from Weaver Street to Pleasant Drive.
The five-way intersection in front of Weaver.
The Greensboro/Smith Level/54 intersection
the heart of downtown Carrboro
The hill S. Greensboro
the hills
The intersection 54 - Smith Level Rd
on Weaver St. Also S Greensboro, and North Greensboro heading south towards Weaver St, in front of Carr Mill mall
The intersection of NC 54 and S. Greensboro / Smith Level Road.
The intersection of Old Fayetteville Rd and Hillsborough Rd
emerge from that bike path and turn left onto Jones Ferry? (No idea - I've started coming through the PTA parking lot just so the drivers can see me when I want to turn - otherwise they're not sure whether I want to be a pedestrian or not.)
The Narrows Of Dairyland
The section of main street in front of cats cradle and other places the road is full of potholes and ruts and the lanes built solely for cars where drivers blow by you with no where else to go
the street from Weaver street to Carrburitos
The streets in central Carrboro (Main st, Hwy 54, Weaver St)
The stretch of road between Calvander and McDougale
The tracks- of RR
There are a few places that are still a little concerning (in center of town in carborro moving from bike path to
These: N. Greensboro and W. Weaver St.; N. Greensboro and W. Main; N. Greensboro and Estes; S. Greensboro and Roberson St.
through downtown
Through downtown - too congested and not enough room. I try to find ways to avoid it by planning routes around it whenever possible.
Through downtown and the Estes/Greensboro intersection (no bike lane on Greensboro just north of traffic light) and onto Estes drive; south Greensboro street toward 54west. I find it troubling that some of the lowest income residents in carrboro who live in apartments/trailers off of Estes or south Greensboro have no sidewalk or bike lane to access and they may not have cars to rely on. It's very dangerous for them.
through downtown if trying to get through Weaver, Main, Rosemary, Franklin, down to Umall, eastgate, meadowmont areas
Through Main/Weaver
Through town to get to Chapel Hill/Franklin Street. Also, when I see people cycling on NC54, I worry that it's not safe for them.
To school.
Traffic, concerned for safety

-Transition from Libba Cotten bikeway with S Merritt Mill Rd--very treacherous access the path. -Poplar St and 54--no way to trigger the stoplight if traveling east on Poplar. -Southernmost part of Estes Dr Ext--lanes too narrow for cars to pass comfortably.
Up Estes to N. Greensboro
up Franklin Street into Carrboro
Up the hill from Hwy 54 into town.
Up the hill on S Greensboro St
Weaver meets Main St. behind Weaver St Market
Weaver St
Weaver St
Weaver St between Greensboro & Train Tracks
Weaver St Market
Weaver St. alongside the co-op market
Weaver St/N Greensboro intersections
Weaver St/North Greensboro Street intersection Smith level from 54 up to Main st.
Weaver street
Weaver street
Weaver street Intersection of Main and Hillsborough in front of the thrift shop
Weaver street (especially at the intersection with main)
Weaver Street/Greensboro intersection and Weaver street towards Chapel Hill/Franklin St.
Weaver/ Main intersection by the Co-op
Weaver/Main Street or down Smith Level/Jones Ferry
West Main St, North Greenboro St
West on Main St. as it crosses under the freeway, towards Old Fayetteville Rd.
when bike lanes end nowhere and start at some place
Where there are no bike lanes and the traffic is heavy
work

Q7: How long have you lived in Carrboro?

Answer Choices	# of responses	Percent
Less than 3 years	105	21.4%
3-5 years	94	19.2%
6-10 years	67	13.7%
11-15 years	57	11.6%
Over 15 years	101	20.6%
I don't live in Carrboro	66	13.5%

Answered 490

Skipped 4

Q8: Please select your zip code

Answer Choices	# of responses	Percent
27510	288	62.6%
27516	142	30.9%
Other	30	6.5%

Answered 460

Skipped 34

Q9: What street do you live on in Carrboro? (Open Question)

27514
110 Amber Court
200 NC Highway 54 Bypass
300 NC 54
300 NC Hwy 54 Byp
401 NC 54
401 NC 54
54 bypass
Aberdeen Ct
Alabama
Alabama Ave
Amber Court
Amber Ct
Autumn Dr
Barbee Court
Barrington Hills Rd.
Barnes Street
Bel Arbor Lane
Bennington Drive (Orange County)
Berryhill Dr
Bim
Bim
Bim
Bim St
Bim Street
Blueridge Rd
Bolin Creek Drive
Bolin Creek Drive
Bolin Crek Dr.
Bolin Forest Drive
BPW
BPW Club Rd
Brewer Lane
Broad
broad
Broad
Broad st
Broad Street
Broad Street
Broad Street
Broad Street
Bruton Dr.
Bum St
Carlton Drive
Carol
Carol St

Carol Street
carr
Carr
Cates Farm
Cates Farm
Chapel Hill Currently
Chatham Line
Cheek St
Cheswick court
circadian way
Cobblestone
Cobblestone Drive
Coleridge Court
Colfax Drive
Corner of Newberry Lane (private road) and Hatch Road (public road)
Corner of Pathway and Buck Taylor Teail
Creekstone Dr
Creel
Crest
Crest ST
Daffodil
Dairy Court
Damascus Church Rd
Davie
Davie
Davie
Davie Rd
Davie Rd
Davie Rd
Davie Rd
Davie Rd, which is no party to bike on, especially with kids
Davie rd.
Davie Rd.
Davie Road
Davie Road
Della
Della
Della
Dillard
Dillard
Dillard (one of the last gravel roads in town limits).
Dillard St
Drayton Court
Drayton Ct
E Winmore Avenue
E. Poplar
East Poplar

East Poplar
East Poplar
Estes Drive Ext.
Estes ext
Eugene
Eugene
Eugene St
Fenway Ct
Fidelity
Fidelity Street
Fidelity Street
Fidelity street
Friar Lane
Friar Lane
Garden Gate Drive
Greensboro
Greensboro
Greensboro
Greensboro
Greensboro St
Greensboro St
Hanna
High St
High St
Hill
Hill Street
Hill Street
Hillcrest Ave
Hillsborough
Hillsborough Rd
Hillsborough Road
Hillsborough St.
Hillview Street
Hogan Glen Court
Hogan Woods
Hogan Woods Cir
Homestead Road
I live in chapel hill on severin street
I live in Chapel Hill on Williams Circle
I live in Chapel Hill, but do most of my grocery shopping in Carrboro.

I live in lake hogan farms (so technically chapel hill)
I live on Williams Circle in Chapel Hill
in Dogwood Acres
James
James
Jasmine Ct
Jasmine Ct
Jay St.
Jewell
Jewell Dr
Jewell Dr
Jones ferry
Jones Ferry Rd
Jones Ferry Road
Jones Ferry Road
Kay
Kiley
Kiley st
Kit Lane
Lake Manor Rd
Laurel Ave
Laurel Ave
Laurel Ave
Laurel Ave
Laurel Avenue
Lena Cir
Lilac Dr
Lisa
Lloyd
Long Meadows Road
Lorraine
Main
Main St.
Manor Ridge
Manor Ridge Dr.
Manor Ridge Drive
Manor Ridge Rd
Maple
Maple Ave
Marin Dr
Marlowe Ct
Mary St

Meadow Run Ct
Meadow run ct
Meeting street in Southern Village
michaels way
Mill Rock Court
Morningside Dr
Mulberry St
N Fields Cir
N Greensboro
N Greensboro
N Greensboro st
N Greensboro street
N. Greensboro
N. Greensboro st
N. Greensboro St
N. Greensboro ST
N. Grensboro
N/A
NA
NC 54
NC 54 Bypass
NC 54 Bypass
NC 54 Bypass
Near Lake Hogan
no response
North Greensboro
Northside
Not applicable
Oak
Oak Ave
oak ave
Oak Ave
Oak Ave
Oak St
Off N. Greensboro
Off of Greensboro
old Fayetteville
Parkview Crescent, CH
Pathway
Pathway dr

Pathway Drive
Phipps St
Phipps Street
Piano
Piano
pine
Pine
Pine
Pine Street
Pleasant Drive
Pleasant Drive
Poplar
Poplar Ave
Prince
Prince
Prince
Prince
Prince St
Prince St
Prince St
Prince St
Prince Street
Prince Street
Purple Leaf Place
Quail Roost
Quail Roost Dr
Quail Roost Drive
Raven Lane
Red Sunset RL
Richard Dixon court
Richard Dixon Ct
River Walk
Riverbirch Point
Robert Hunt Dr
Robert Hunt Dr
Robert Hunt Dr.
Robert Hunt Dr.
Robert Hunt drive
Rock Garden
Rock Haven Road
Rogers
Rogers Road

Roger's Road
Rose Walk Lane
Ruth Street
S. Estes
S. Peak Dr.
Shadow ridge
Shadow Ridge Place
Shagbark court
Shelton
Shelton
Simpson
Skye Dr
Smith Level Rd
Smith Level Road
Smith Level Road
South Greensboro
South Hawick Ct.
Southern Village
Spring valley
Spring Valley
Spring Valley
Spring Valley Rd
Stable Road
Staffield
Starlite
Starlite Drive
Starlite Drive
Starlite Drive
Sudbury
Sue Ann Ct
Sunset
Sunset Creek Cir
Sunset Creek Circle
Sweet Bay Place
Sweet Bay Place
Tallyho Trail
Tanglewood Lane
Tanglewood Lane
Thomas Lane
Todd
Todd
Towne Ridge Ln
Tripp Farm
Tripp Farm Rd

Tuckers Pond Drive
Viburnum
Viburnum
Viburnum Way
Viburnum Way
Viburnum Way
Viburnum Way
W Main St
W. Carr St
W. Main
W. Poplar
W. Poplar
W. Poplar Ave. we
Wannamaker Dr
Waterside
Waterside Drive
Weathervane
West Main
West Main Street
West Poplar
West Poplar
Westbrook Drive
Westbury Dr
Westbury Dr
Westview
westview
Westview
Whispering oak
Whispering Oak Ct.
Wild Oak Lane
Wild Oak Lane
Wild Oak Lane
Wild Oak Ln
William White Ct
Williams st
Williams Wood
work & own property on weaver st since 2003
Yeargen Place (it's technically Chapel Hill...)

Q10: What is your gender?

Answer Choices	# of responses	Percent
Male	234	47.4%
Female	223	45.1%
Prefer not to answer	24	7.5%
Answered	481	
Skipped	13	

Q11: What is your age?

Answer Choices	# of responses	Percent
Under 18	5	1.0%
18 - 44	279	56.5%
45 - 64	155	31.4%
65+	39	7.9%
I prefer not to answer	8	3.2%
Answered	486	
Skipped	8	

Q12: What is your race?

Answer Choices	# of responses	Percent
American Indian or Alaska Native	0	0.0%
Asian or Asian American	15	3.1%
Black or African American	14	2.9%
Hispanic or Latino	32	6.6%
Native Hawaiian or other Pacific Islander	1	0.2%
White or Caucasian	371	76.3%
I prefer not to answer	45	9.3%
Other (please specify)	8	1.6%
Answered	486	
Skipped	8	

Q13: What is the highest level of education that you have completed?

Answer Choices	# of responses	Percent
Less than high school	2	0.4%
High School Diploma or Equivalent	31	6.5%
Some college, no degree	16	3.3%
Associate Degree	9	1.9%
Bachelor's Degree	146	30.5%
Graduate Degree	258	54.0%
I prefer not to answer	16	3.3%
Answered	478	
Skipped	16	

Q14: Any other comments? (Open ended)

(1) Crosswalks needed on Greensboro for kids who walk and bike to school (2) Speedbumps and any other measures to slow traffic on Greensboro
are a lot of riders and walkers coming out on to Shelton. It's dangerous. *It would be a dream come true to have the block of Weaver St at Weaver St market closed to traffic and open for bikes, plants, walkers. *Related, there is a serious need for a clear and safe bike route through downtown Carrboro. Getting between the bike path on the railroad tracks and through the shops around Main & Greensboro is dangerous. A clear and well painted/marked bike lane would be a huge improvement.
1. Residency: Why doesn't the consultant and survey administration want to know about people who have lived in Carrboro for more than 15 years? 2. Access for differently-abled: Why aren't adult tricycles offered as an option to factors that would encourage you to bike more. 3. Safety: Why hasn't a question been asked as to whether as a cyclist one wears a bike helmet? Uses rearview mirrors? Uses and has operating bike lights?
1. Separated bike facilities 2. Bike Lanes - preferably minimum 5' wide (not including gutter on curb and gutter roadways) 3. Fewer cars. 4. Drivers that adhere to the speed limits 5. Lower speed limits. Twenty is Plenty 6. Drivers that understand how vulnerable pedestrians and people on bikes really are and give them ample room. 7. More bike parking, and parking that isn't awful. Covered parking, too. Weaver Street Market needs a lot more bike parking. 8. Town staff and town leaders should be out front and showing others how to get around on bikes. Currently, I see only Aldermen Slade and Seils on bikes on regular occasions, going about their business.
54 should never be considered a bikeable road Clearer/safer alternatives for new/inexperienced riders.
A bike lane along Hillsborough Rs going towards/through the Calvander intersection could be a literal life saver. downtown Carrboro and Frank Porter Graham. And, the stretch of Hillsborough Rd out to Calvander, and east on Homestead Rd is situated between at least 6 schools, therefore there needs to a combination of bike lanes, sidewalks, greenways, and traffic calming.
Add dedicated bike lane to old Hwy 86. Ensure children riding from all neighborhoods to Morris Grove Elementary, McDougle Middle, Smith Middle, Chapel Hill HS, and Carrboro HS can do so as safely as possible. Support a law against use of cellphones while operating the evil combustion engine.
An improved neighborhood connection between Meadow Run Ct and Tallyboro
at one point people were handing out go triangle bike lights on the bike path behind cats cradle (it might have been town of chapel hill), the light I got didn't work which was kinda sad.
At the Club Nova non profit
Bike donations for people who need bikes
Bike lanes and designated routes are a huge help for urban bicycle commutes.
Also, consider dedicated traffic signals to allow cyclists a head start to get through and out of the way of turning vehicles.
bike lanes on Old Fayetteville Rd heading North out of town and then along Dairyland would be a huge benefit to to the cycling community.
Bike lanes seem to disappear when they're most needed- intersections and narrow, high traffic areas. Still, compared to other areas, Carrboro is bike friendly!
bike lanes separated from traffic by parking lines (for example)
bike riders need to obey the rules of road-they make the roads unsafe for themselves and walkers
Bikers on Calvander and other non-bike lane roads cause nuisance traffic problems and unsafe conditions for both the cyclists and drivers.
Comment

outweigh cutting down some trees. If trees are the stumbling block then let's have a tree planting program to offset the ones removed to allow useful, efficient bike paths that all people can use for transportation. Only the able bodied people can use Bolin Forest paths now- that;s not equitable. Let's help children bike to school within the forest. Let's give the elderly and the less able a place to enjoy nature. Open up Bolin Creek to everyone- pave the trail! Use the forest so the public can enjoy and learn to once again BE OUTSIDE.

-Cyclists don't follow traffic lights and we're afraid of them getting hit -Physical bike lane separations, please!
difficult for children in bike lanes.

Double down on cell phone users and speeding (nearby, not just downtown).

comfortable riding with my children. For now, the best place to ride is a half empty downtown parking lot or on trails. Though the trails inevitably don't connect to lead to any type of system. I live a 5 minute walk from the center of town and I would not feel safe allowing my children to navigate the downtown intersections because there's no space to ride, vehicles drive too fast, and sidewalks are barely wide enough for pedestrians let alone a child on a bike.

EASY group rides Paper Survey

Eubanks too dangerous for kids to bike to school

the weekend) and will be use only for bikes or farmers markets/stands. That way, even smaller children will be encouraged to take a bike to school as well as adults, traveling to work. There might be set up special waiting preference lines for people at the public places like DMV or Town Halls, because cyclist do not take parking spots. I think that bike stands could be commercialized giving companies the opportunity to sponsor the bike stands while promoting themselves and their products. Cycling classes as part of sport classes in high schools and elementary and secondary schools giving the basics of cycling in the traffic and some basic cycling skills.

Families would ride more if kids could be better protected. It's just not safe to have young kids off the sidewalk, the bike lanes are not always open (yard waste, trash, cars), and the drivers are insane.

Fix potholes downtown (please).

Fix the raised metal cover in the intersection of South Greensboro and Jones Ferry (in front of Wendy's) and the bumps in the Libby Cotton bikeway.

Generally, I've always thought that Carrboro does a great job with cycling infrastructure, and has kept improving, so thank you very much. I would love to see vehicular traffic shut down on Weaver St and Main St right at downtown (from The Station/Armadillo Grill all the way to the PD/Cybrary).

Get Chapel Hill to do better. The most important part of being bike friendly is to network: connect bike lanes, connect areas with bike infrastructure, incite neighboring areas to do the same.

Get the bikes OFF the streets!

Give them tickets for doing dumb things in traffic.

Great project! Full speed ahead!

Hope you all are coordinating with Chapel Hill and Orange County

How can we get Carrboro to Gold?

I think it is Orange County, but Smith Level Road is a main artery now and biking south toward 15-501 is too treacherous for me or my child. We are trapped in our neighborhood!

I am NOT in favor of paving along Bolin creek as a way to create a bike path. Destroying greenspace for cyclists is NOT the answer. The bike lanes along North Greensboro are just fine.

I believe that we can't solve demand for car parking and demand for reducing car traffic and fulfill our desire to bike and walk more in this community by creating more parking lots and car lanes. I hope we start with enabling bike and Ped with the intent to reduce demand for car facilities.

I bike to the university campus every day, but anything you can do to make it safer and easier would be appreciated. Thank you for the work you are doing!

I don't live in Carrboro but I bike through Carrboro at least ten times in a typical week (going to and from work or riding to Wilson Park for a Saturday ride).

<p>I lived in Carrboro for three years with my family and loved it, but hated that we couldn't bike into town easily from our house because it was on the far side of 54 and biking on the side of 54 with a toddler didn't feel safe, especially with the giant hill of Greensboro Street the closest option. Now we might attempt it, if we still lived there, but Greensboro Street is narrow and climbing it with traffic going by would be scary.</p>
<p>i love biking and am riding my bike more and more these days. i would love more connected greenways that would enable me to go on longer bike rides with my kids. as it is now, there are no "long" (e.g. 4+ mile) rides we can do on greenways with kids. we have to go to the tobacco trail to do longer, casual family rides.</p>
<p>I love summer when the college kids are gone and I don't have to constantly worry about bike riders acting outside the norms of the roadway.</p>
<p>intersections of Greensboro and Main as a bicycle and pedestrian road only. Re-route all motor vehicles through Main St. That bottleneck is always too tight when bicycles, pedestrians and motor vehicles are trying to cooperate...</p>
<p>I realize that in LHF we are outside of "Carrboro proper", but we are technically still part of Carrboro and could easily bike to downtown Carrboro if there were safe routes that felt doable with children.</p>
<p>benefits of biking to work outweigh the risks, but I know many people who have been hit by cars biking around chapel hill and Carrboro.</p>
<p>I really would love to see some protected bike lanes and safer lanes for bikers on roads that are busier. I would love to see bike laws enforced so bikes don't ride on the sidewalk.</p>
<p>Greensboro St. In my mind this should be a pedestrian/bike only stretch of road. Not only are the cars dangerous to children running around Weaver Street's lawn, but the air pollution from idling cars should be considered a public health concern. Closing down this section of E. Weaver St. to cars would be a huge benefit to bikers and pedestrians in Carrboro, and make very little difference to drivers - Westbound drivers can use Main St. Eastbound drivers from Weaver St. can turn right on Greensboro and use Main St. The truly bold idea would be to make all of Weaver St pedestrian/bike only. I would love to see that too. But at the very least, I would love to see that section of Weaver St between Greensboro and Main closed to car traffic. It seems obvious. If there is anything I can do to help make this happen, please feel free to contact me!</p>
<p>I think you're basically doing a great job! How about placing request for light change buttons on the curbs so bikes can reach them (they do it in Vancouver, B.C. and it works very well.)</p>
<p>I used to bike as my primary mode of transportation. Now I'm nervous to do it with kids in tow.</p>
<p>I would like a bike trail connected from Lake Hogan Farm to the rest of Carrboro</p>
<p>I would like to highlight how Weatherhill Point, Tennis Club Estates and Rose Walk are cut off because of Morgan Creek (which could easily be fixed with bridges) and Hwy. 54.</p>
<p>I would like to see more crosswalks on long road stretches. An example would be on the various streets that intersect Jones Ferry but do not have traffic signals. On multiple occasions, I have felt unsafe crossing the road, especially where the speed limit increases and where visibility is impaired (eg hills). It's not uncommon for people waiting to cross the street to miss a bus that they were intending to ride because there has not been a safe opportunity to cross the road. Perhaps those flashing pedestrian crosswalks might be helpful.</p>
<p>I would love to see Carborro, UNC and CH all connected with greenways so we can give up our town.</p>
<p>I would love to see Carborro, UNC and CH all connected with greenways so we can give up our town.</p>
<p>I'd like some sort of check on aggressive cyclists. They give the rest of us a bad name.</p>
<p>I'm curious if there could be a bike path from the new honey suckle tea house (out in the country) into carrboro?</p>
<p>I'd also like to feel more comfortable riding from Carrboro Center down Jones Ferry to the other side of 54 - to housing, shopping centers, recreation at University Lake. Particularly tricky is the junction with 54 with cars entering/exiting highways, merging across lanes, buses, etc. .</p>

bikers going to navigate it safely if cars aren't ever required to come to a full stop? If we're counting on the goodness of their hearts, I have to say that everyone is in a big old hurry from 7:30-9am and again from 3-6pm so I don't see there being any generosity of spirit extended! Also, it seems that the intersection is deemed dangerous enough to schoolkids to pay a crossing guard to ensure safety to/from Carrboro Elementary, so I can't be alone in thinking this. I just want to be able to walk my dog and to/from my bus without getting run over by an angry-rushing Lexus driver.

In addition to my request for protected bike lanes, I'd like to see Carrboro commit to a Sunday Streets program. Closing off Weaver Street (between East Main and Greensboro) every Sunday from September to November, and again from March to May, would be a great way to get people out of their cars.

Calvander. Many cyclists use this route to get out toward Mapleview and there is always a traffic back-up behind them.

Inconsistent application of biking infrastructure, creates more confusion for riders and drivers as to expectations (and the law is often either unknown or misinterpreted to be applied as 'what's best for me'). It is important to remember that almost all, if not all, cyclists are also drivers. This is not an 'us V them' scenario. Education is the only way to make broad, long term change in how cars should interact with anything else sharing the road - a road designed for transport, not solely cars (though we have shifted to it being car-centric).

increased bike parking, a greenway that connects CH to Carrboro. Please, complete the bolin creek greenway!

Its important to work on making cycling safer and more accessible in Carrboro, but there are still going to be times I'd want to drive, no matter how great the bike lanes are (night, rain, really hot, need to transport stuff, get somewhere quick with kids, dressed-up for a fancy event, etc.). Please don't consider improvements for cycling accessibility to be a replacement for traffic management and auto parking planning.

I've been told repeatedly that the "Bike Plan" is supposed to be a Bike and Ped Plan, but there isn't a single question here about walking in Carrboro. More people walk than ride bikes.

lane reconfiguration on Main Street, make bike lanes contiguous with Rosemary Street, slow zone downtown

Leaves in the bike lane also recycling/trash, bus in the lanes. Paper Survey

on greenways and NOT have deal with cars. Also, to see the number of people walking, running etc. is great. I find it hilarious that Carrboro is labeled as a "silver" bike community when is lacks greenways. It is time for Carrboro to put greenway development on the forefront!

Local Mt bike trails Paper Survey

other groups besides the bike group. The conversation on bike lanes needs to move beyond where it currently sits that any accomodation for cars is bad. People are going to be using this type of transport for the foreseeable future, and it is shifting more and more to EV's, so look at the future and don't just react out of some ideological stance.

Look to a place like CO for how to make a bike friendly neighborhood. We could bike all over there and not feel we were taking our lives in our hands.

Make bikers obey the traffic laws.

More greenways would make pedaling into and around town better in order to avoid vehicle traffic. More public trails would help grow the cycling community and get more people interested.

More level, direct routes for bikes. Why couldn't separate facilities be provided in the right-of-way of 54 and 501? Those are level, direct routes, but bike lanes are not enough for most people (myself included) given the speed and volume of motor traffic. I bike to work in Southern Village sometimes, but the hills are intense, and the bicycle lanes at the Smith Level Road and 54 interchange are dicey.

more safety for cyclists and for car drivers to be more considerate of them

More than bike lanes, we need sidewalks!

Most recreational road bike traffic leave Carrboro going north up old 86 to Calavander. I know there is a gap what is outside of Carrboro town limits. I would love to see if the town could put pressure on the NCDOT to get bike paths on that very busy section of Old 86. Seems like a safer solution for both cars and bikes.

Paper Survey
Paper Survey- Anything helps. Change laws so I'm not breaking the law if I don't stop completely! I would not get anywhere if I followed laws to the letter.
Paper Survey Biking can help fix so many things, mental, physical health, emission reduction, less reliant on fossil fuels, community connection with neighbors, obesity, attract people to the area, friendliness
Paper Survey Build Bolin Creek Greenway!
Paper Survey Need a North/South connection. Bolin Creek Greenway. Facilities and slower traffic around
Paper Survey Scarred of traffic! Prefer to ride in the country or else on greenways or bike paths
Paper Survey W. Main marking improvements are great
Paper Survey \$10/ gallon gasoline that's what we need. And more ebikes. My round trip commute is 26miles.
Paper Survey Busses very aggressive.dangerous w/ cyclists in the right-hand lane
Paper Survey More awareness
Paper Survey More shared resources between Carrboro and Chapel Hill
Paper Survey People on their phones while driving
Paper Survey Protected bike lanes!
Paper Survey- Close off Weaver St to car traffic
Paper Survey- I walk more and love all the bike/walk paths
Paper Survey- I would like bike sharing
Paper Survey- My grandchildren play in the parking lot with this bikes but there isn't a park for them with space
Paper Survey- The cost of parking a bike
Paper Survey- The streets are too small
Paper Survey: I kind of stick to my route where I know there are paths if there were more bike paths where I can avoid roads that would be great
Paper Survey: Lack of signage reminding divers of cycling. Fork of Weaver/Main/Greensboro close (ride, make pedestrian/grass minimal loss of parking and improve foot traffic to businesses
Paper Survey: No spending on parking, spending on parks
Pay more towards the local cost share and local match for bicycle projects. Provide more Shared-use/Multi-use please complete the greenways plan, enable off road connectivity and access. this includes finishing the bolin
Please continue the bikelanes through the downtown area - this would be hugely helpful. And please come up with a way to keep the bike lanes clear of debris so we don't have to go out into the street.
please implement the greenway plan and truly connect Carrboro to Chapel Hill via shared use path/greenway. also, please fund a regular bike/ped count program.
Please incorporate the Greenway Master Plan into the Bike Plan update. Greenways are used for both recreation
Please pave the bolin creek greenway - the erosion there is a mess and everyone deserves accessibility.

Please share this feedback and coordinate with Chapel hill jurisdictions!
work around 10pm some nights, and the light at the intersection of Roberson St. and Main/Weaver never registers that I am there, so I have to bike through the red when turning from Roberson onto Weaver. (I do not believe riding up onto the sidewalk to push the pedestrian signal button is an appropriate solution.) Also, in future surveys, please remember that gender is not a binary and remember to include gender options beyond male and female. Those who do not identify as male or female might not feel included in this survey, which may skew the responses you receive.
Please, please stress the importance of bicyclists following the rules of the road. Too many times have I almost hit a biker because they ran a stop sign or red light, and FAR too many times have I been stuck behind a bike or bike group because they wouldn't let me pass even though they had room to move over. I've even been cut off by a bike before. If they want the respect of drivers they need to show some in return. That is all.
Problem areas: Intersection at 610 W Franklin St, Chapel Hill, NC 27516; Rosemary Street.
Prompt clearing of bike lanes/bike trails of debris (from construction, after storms, snow etc.
Protected bike lanes would help
Protected bike lanes! Finish the Morgan Creek trail. Give smith level a diet plan down to 2 lanes.
Roundabouts are dangerous for bikes!
runners! joggers! truck drivers who run my husband down...
Several in lake Hogan farms plan to vote against, or not support bike paths because it is their belief that the school bus transportation will be revoked if bike paths are made. These neighbors trying to influence other neighbors on the list serve though. Many are waiting for more information.
Shoehorning bike lanes into the existing road structure is insane. More bike specific pathways and trails need to be built from the ground up. Biking on the current roads is very hazardous.
Sidewalk bike maintenance stations are cool.
Sidewalk on South Greensboro Street would help
Greensboro? It is confusing for approaching drivers to have them so close together with one made more visible, and it's not safe for pedestrians.
in the face of climate change, and that starts with local governments making it safer and easier for citizens to do so. You're appreciated :)
Thanks for all the dedication y'all!
Thanks for making this survey. Carrboro is great for bicycling!
The stretch of N Greensboro between McDougal School and Calvander is just plain scary dangerous. It is also
There are not many questions here. What are you trying to figure out from this?
Think about routes for kids getting to school and new library and road riders heading North and out Jones Ferry.
Think of the youth. Any bike plan should be safe enough for child to get around Carrboro otherwise you're only planning for the few who feel confident enough to ride.
this is great!
This is really a matter of town character. Do we want a highway through town or a place for people. Making space for bikes (and even closing a road to pedestrians and bikes if needed) goes a long way in creating an environment where people want to linger (and spend money!). Otherwise Carrboro's a pass through for people heading between work and home. That's a not a home or a place where people want to be.
This survey seems biased in that it only seeks responses from bikers. It makes me feel like whoever developed it is trying to to manage our transportation plan in favor of cyclists. I would prefer the focus to be on all residents.
Today there was a biking event w/ breakfast. Next year please put up an event sign right there several days in advance to let people know the date and details. Otherwise its always a surprise as you ride by. If I don't know to plan ahead I can't stop and participate because I'll be late for work. Thank you for the event!
Traffic circles have been problematic with cars not yielding at circle entrance or trying to pass bike within the circle. Need dedicated lane, more signage or alternate route for bikes.

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public transit. We really need crosswalks throughout the 2-mile stretch in Greensboro where many children go to/from school (and potentially more if it were safer with crosswalks and better protected bike lanes). The Hillsborough road /Greensboro road intersection is very dangerous during morning commute. Also some bike lanes need road repair (I'll add to map). When community members put their garbage/recycling bins or yard waste in bike lanes or park cars in bike lanes can they get a warning from the town? Such lack of consideration toward bike lanes has not been allowed in other cities/towns I've lived in! Thank you for your work on this very important issue!

Work on a regional approach to cycling and travel, connecting small town roads is not going to decrease VMT. Also do not pave in riparian areas, keep the areas water clean in accordance with the clean water act. Swimmable and fishable waters are the goal of that law.

Work with private business owners to provide them with necessary bike parking. Allow small businesses to apply

Would like to see a safer way to ride on Hillsborough between Old Fayetteville and Dairyland.

Would love a bike lane system similar to Boulder, Colorado where you can traverse the entire town on bike

Would love a bike rack in Fenway Courth!

yes, when cars or trucks are running "80" MPH. we need to look out for biker.