

Clayton Pedestrian Plan

Town of Clayton, NC

PREPARED BY ALTA PLANNING + DESIGN | 2022



alta

Acknowledgments

Thank you to the local residents, community leaders, and Town staff that engaged in the development of this plan through meetings, mapping, public outreach, comment forms, and plan review. Special thanks to those who provided invaluable direction as Steering Committee members, listed below.

Steering Committee

Lynn Auclair, Deep River Brewing

Scott Barnard, Town of Clayton Parks & Recreation

Emily Beddingfield, Town of Clayton Recreation
Advisory Board

Chuck Blatchley, Grifols

Travis Crowder, Town of Clayton Recreation Advisory
Board

Russell Flint, Police Department

Johnny House, Resident

John Huebner, McDonald's

Jonathan Jacobs, Town of Clayton Engineering

Sam Lawhorn, NCDOT Division 4

Kyle McDermott, Johnston Health

Jay McLeod, Resident

Adrian O'Neal, Johnston County Parks, Greenways, and
Open Space

Patrick Pierce, Town of Clayton Economic Development

Aaron Prichard, Town of Clayton Planning

Basil Tsiaousopoulos, Resident

Bruce Venable, Town of Clayton Planning

Brandon Watson, CAMPO

Town of Clayton Project Contact

Ben Howell, Planning Director

NCDOT Project Contact

Nick Morrison, Integrated Mobility Division

Project Consultants

Alta Planning + Design



Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

*This project was made possible by the NCDOT IMD
Multimodal Planning Grant program.*

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2022 CLAYTON PEDESTRIAN PLAN: EXECUTIVE SUMMARY

Developed over a year-long planning process, the Clayton Pedestrian Plan builds on past efforts and creates a new vision for walking throughout town. The Plan will be used by the Town of Clayton to prioritize, fund, and implement high-quality infrastructure, high-impact programs, and supportive policies for walking.

This planning effort was made possible by an NCDOT IMD Multimodal Planning Grant award.

VISION

The Town of Clayton will have a network of high quality walkways that connect downtown, nature, the Neuse River, and neighborhoods. People of all ages and abilities will have access to comfortable and convenient sidewalks and greenways, resulting in improved mobility choice, economic opportunity, and healthier lifestyles.

GOALS



ENHANCE CONNECTIVITY



PROMOTE EQUITY



ENCOURAGE ECONOMIC GROWTH



IMPROVE HEALTH



INCREASE MOBILITY

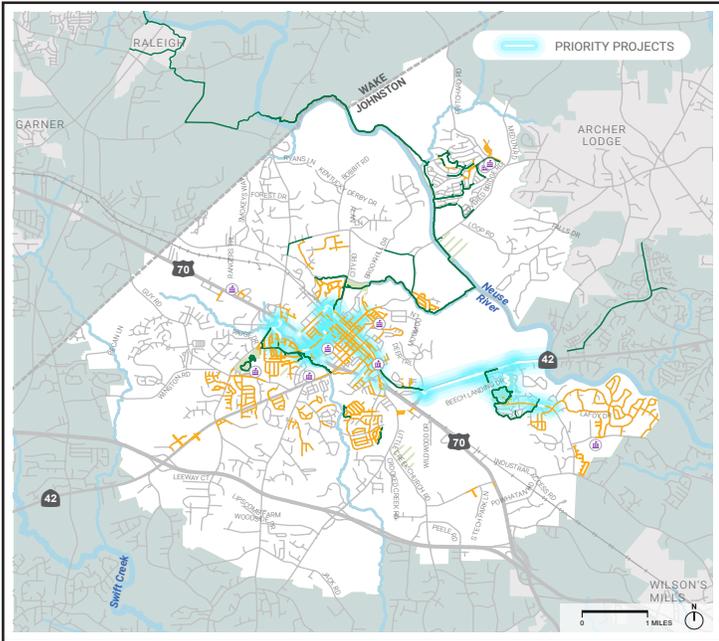


INCREASE SAFETY

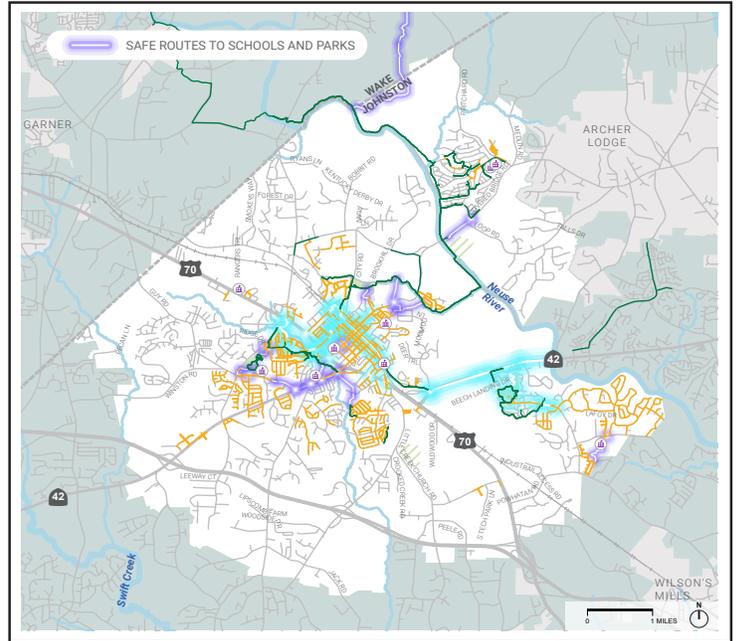
INFRASTRUCTURE RECOMMENDATIONS

Building on the existing sidewalk grid, the growing greenway network, and past planning efforts, priority projects are identified to continue filling in gaps in the pedestrian network (map below/left). Additional gaps in the network were highlighted to connect schools and parks (map below/right). See Chapter 3 and Appendix A for comprehensive pedestrian network recommendations.

PRIORITY PROJECTS



PROJECTS CONNECTING TO SCHOOLS & PARKS



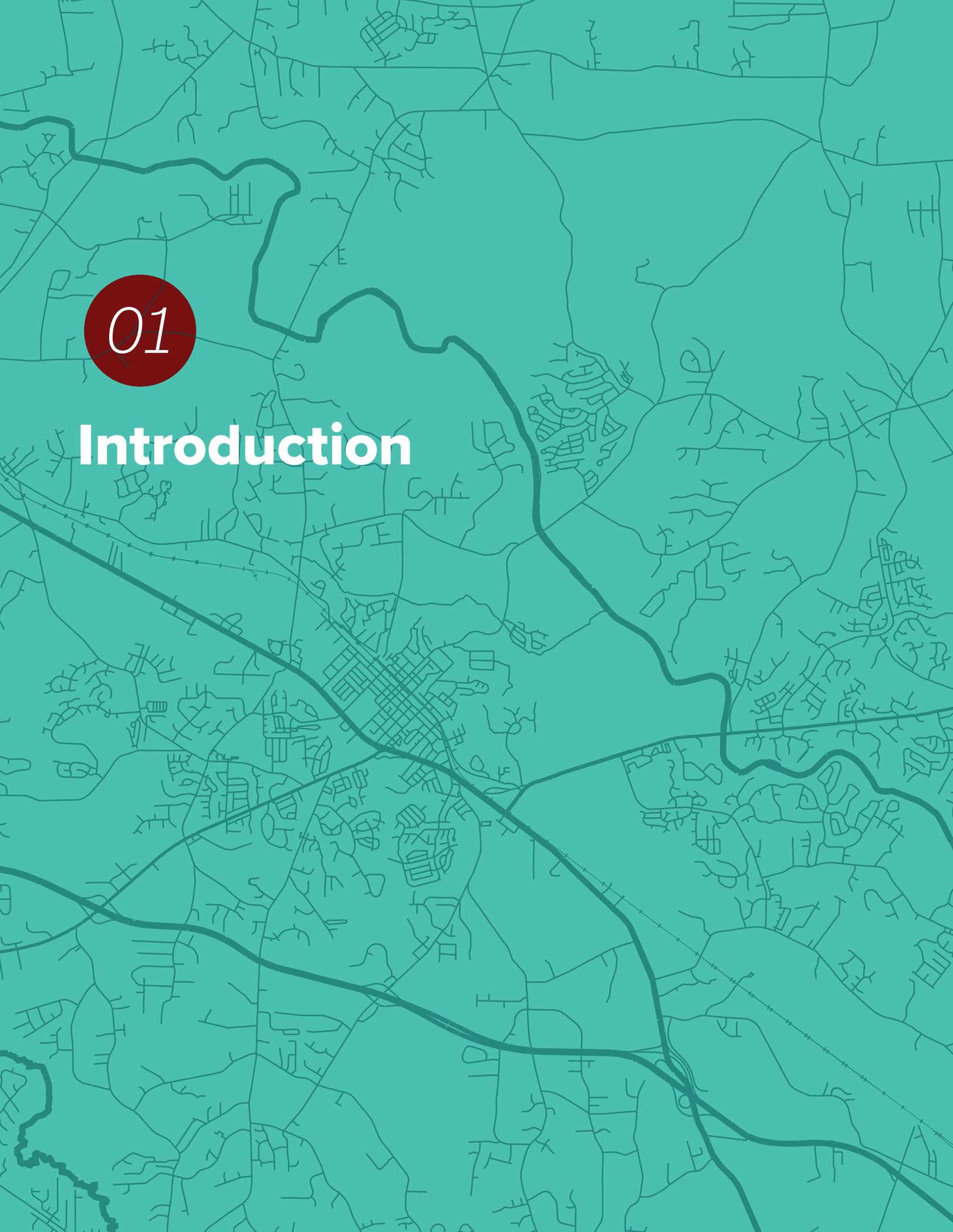
PROGRAM RECOMMENDATIONS

Programmatic efforts such as formalizing an Active Transportation Advisory Committee to help lead implementation efforts (such as engaging the Walk Friendly Communities program) require consistent effort and investment from the Town. Program recommendations can be found in Chapter 4.



POLICY RECOMMENDATIONS

One of the most cost-effective implementation strategies for Clayton is to establish land use and transportation policies, design standards, and development regulations that promote walkable new development, programs, and capital projects. Policy recommendations can be found in Chapter 5.



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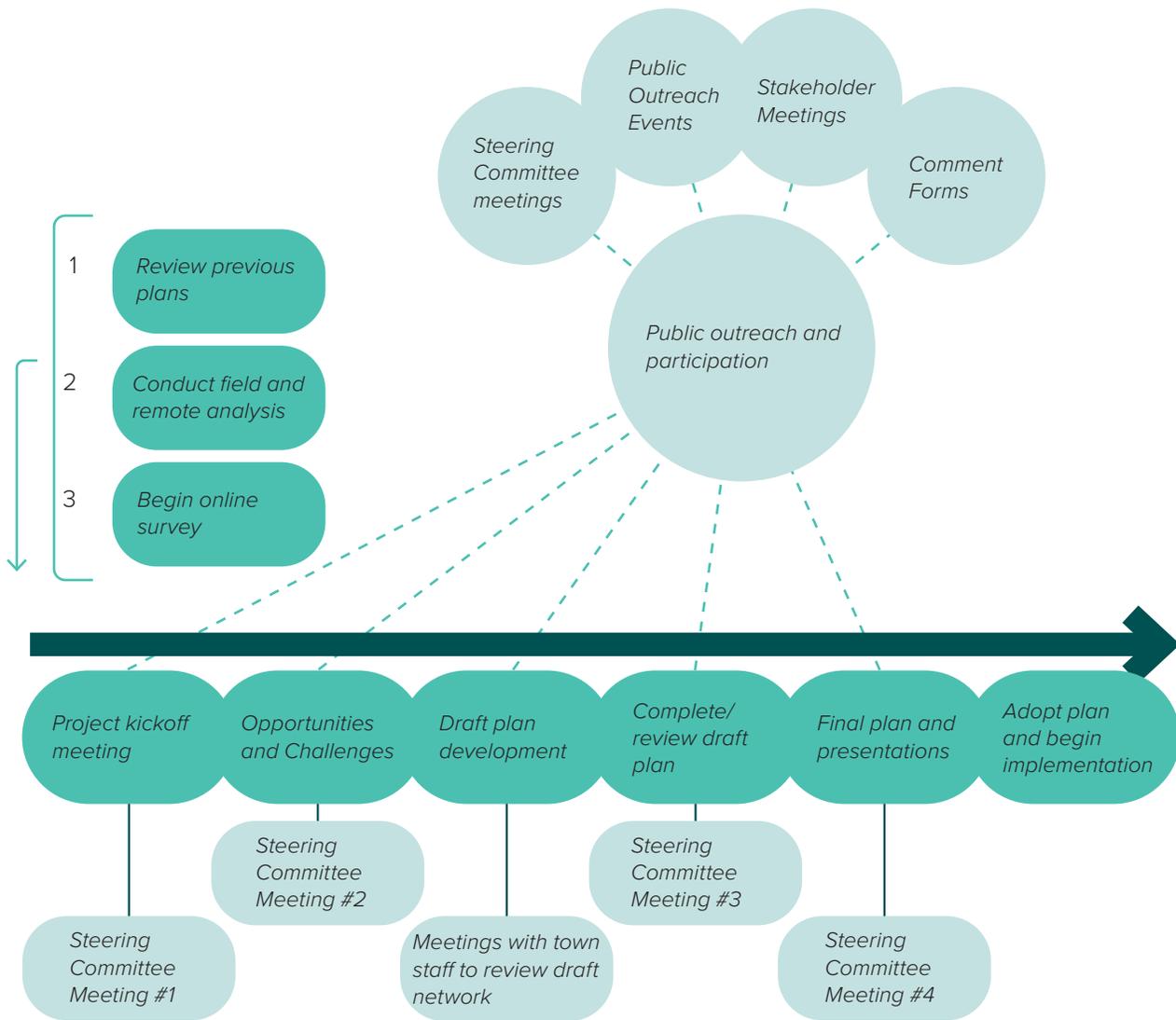
Introduction

Planning Process

The Clayton Pedestrian Plan builds on past efforts and creates a new vision for walking throughout town. The Plan will be used by the Town of Clayton to prioritize, fund, and implement high-quality infrastructure, high-impact programs, and supportive policies for walking.

This planning effort was made possible by an NCDOT IMD Multimodal Planning Grant award.

The Clayton Pedestrian Plan process began in the spring of 2021 and continued through to the spring of 2022. The graphic below illustrates the project timeline, the planning activities undertaken, and how they work together to form a dynamic and representative plan for the Town of Clayton.



Clayton Pedestrian Plan Vision

The Town of Clayton will have a **network of high quality walkways** that **connect downtown**, nature, the Neuse River, and neighborhoods. **People of all ages and abilities** will have access to comfortable and convenient sidewalks and greenways, resulting in improved **mobility choice, economic opportunity, and healthier lifestyles.**

How to Get There

The goals outlined below build upon the vision statement, relate to key themes from local plans, and expand upon national best practices.



Enhance Connectivity

Develop a network that links downtown, neighborhoods, and other destinations such as parks and open space, so people of all ages and abilities can safely and conveniently get where they want to go.



Improve Health

Enhance access to active transportation and outdoor recreation for health and wellness.



Promote Equity

Ensure that walking infrastructure is provided in the areas with the greatest need.



Increase Mobility

Provide active transportation choices that support a healthy, safe, and walkable community.



Encourage Economic Growth

Recognize the economic benefits of walkable communities, and capitalize on increased property values.



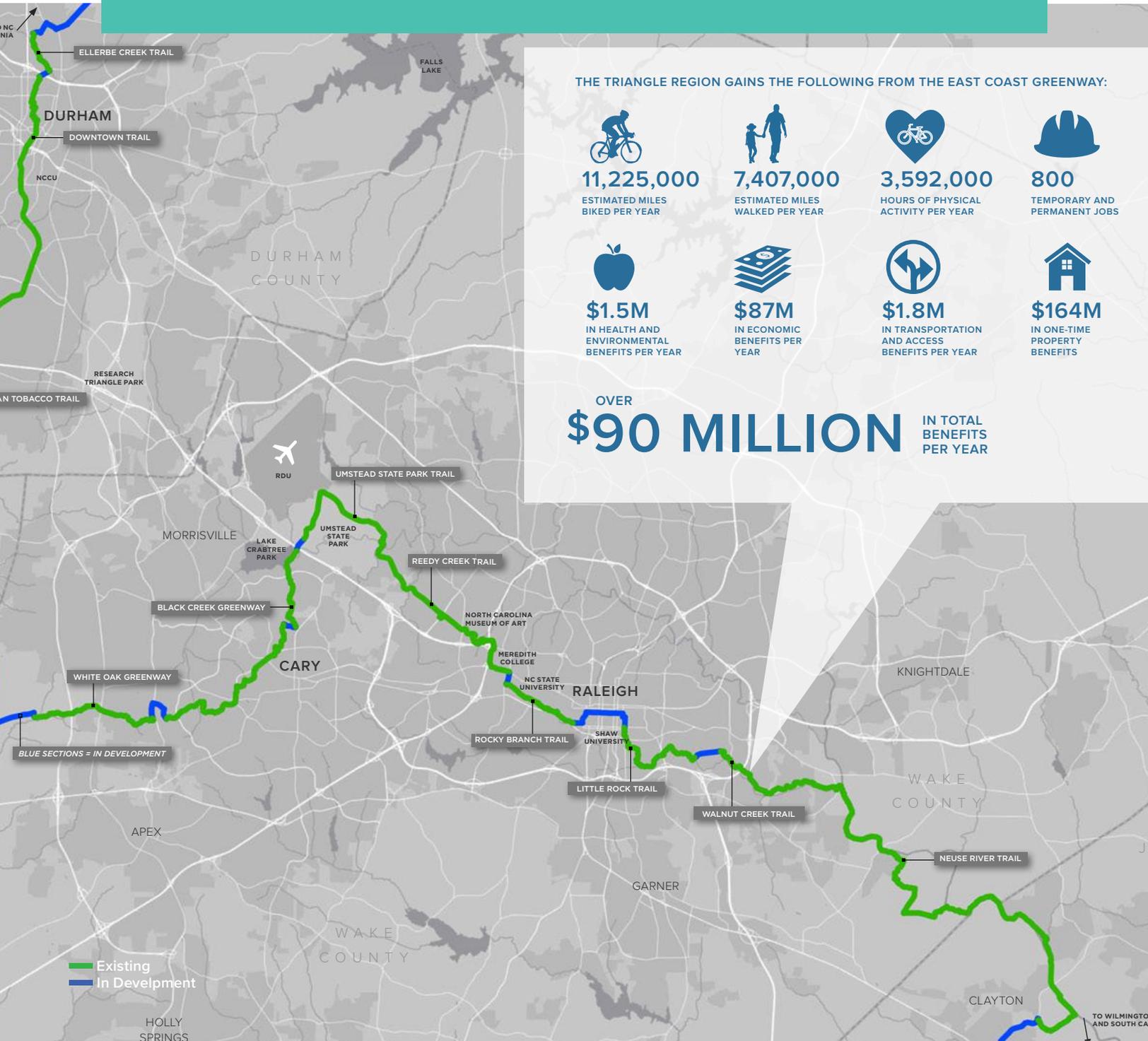
Increase Safety

Address the safety of the transportation system for the most vulnerable users and aim for zero pedestrian fatalities and serious injuries.

The Value of Walkable Communities

CONNECTIVITY BENEFITS

Clayton is at the current southern terminus of the existing 70-mile East Coast Greenway (ECG) section through the Triangle. Highlights from the ECG's *The Impact of Greenways in the Triangle* show significant returns on investment for this section of the ECG.



The Value of Walkable Communities



HEALTH BENEFITS

Sidewalks and greenways offer safe and accessible opportunities for physical activity, and can result in health benefits. People who walk are able to connect with places that they want or need to go.

For every
**0.6 MILES
WALKED**
there is a

5%

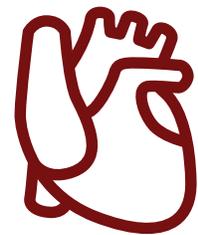
**REDUCTION IN
THE LIKELIHOOD
OF OBESITY.**

Frank, 2004



Those who are physically active generally live longer and have a lower risk for heart disease, stroke, Type 2 diabetes, depression, some cancers, and obesity.

CDC, 2015



20 MINUTES WALKING OR BIKING
each day is associated with a

21%
29%

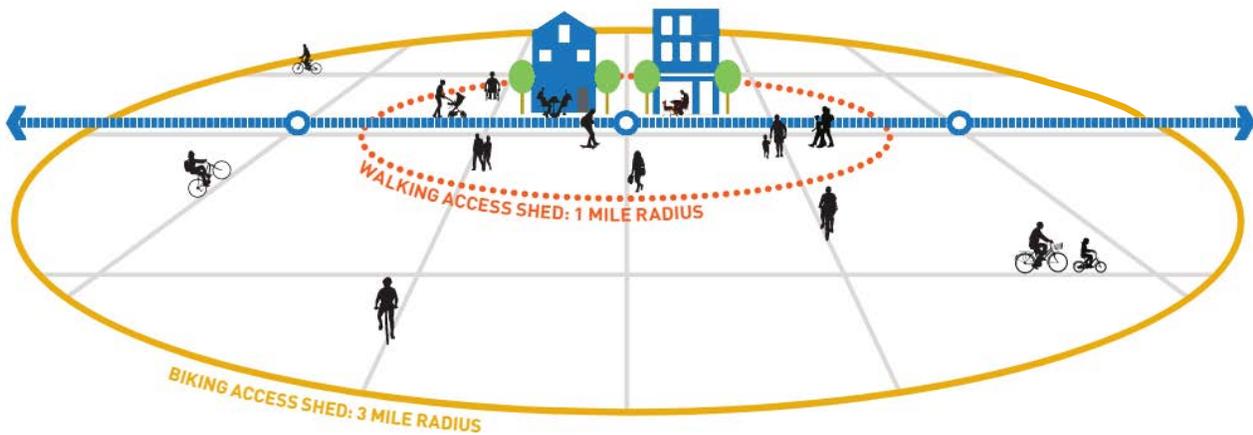
LOWER RISK OF HEART FAILURE FOR MEN
and
LOWER RISK FOR WOMEN

Rahman, 2014 and 2015



EQUITY

Sidewalks and greenways, when applied comprehensively, provide a critical element of freedom to those who may not have access to, or the ability to drive a motor vehicle.



40%

OF ALL TRIPS (IN THE US)
ARE TWO MILES (OR LESS), A DISTANCE
THAT CAN EASILY BE COVERED BY A 10
MINUTE BIKE RIDE OR A 30 MINUTE WALK

NHTS, 2009

DRIVING 4 MILES/DAY COSTS

\$847

 / year

in fuel and vehicle wear
and tear

AAA, 2015

WALKING



is

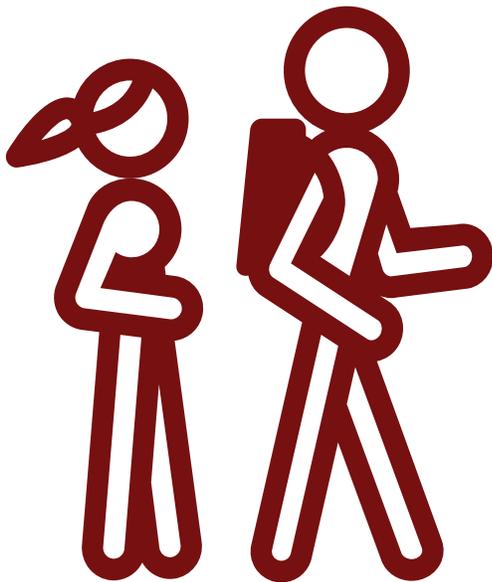
FREE

The Value of Walkable Communities



ENVIRONMENTAL BENEFITS

Decreasing reliance on automobiles and reducing congestion by utilizing sidewalks and greenways will lead to improved air quality. Walking paths serve as a tool for conserving open space and preserving wetlands.



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 **EQUIVALENT TO REMOVING 60,000 CARS FROM THE ROAD** for one year, nationally.

Pedrosa, 2008, SRTS

SAFETY BENEFITS



Pedestrian treatments and traffic calming help to save lives. Additionally, natural surveillance for trails and greenways occurs through increased numbers of trail users, creating an environment where behavior on the trail is monitored by trail users themselves.

A pedestrian hit by a vehicle traveling at **25 MPH**



has a **89%** chance of survival

A pedestrian hit by a vehicle traveling at **35 MPH**



has a **68%** chance of survival

A pedestrian hit by a vehicle traveling at **45 MPH**



has a **35%** chance of survival

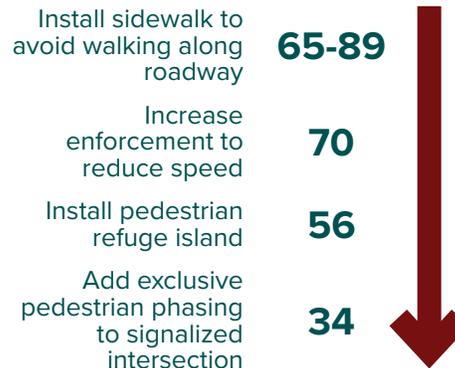
Rosén, E., & Sander, U. (2009). Pedestrian fatality risk as a function of car impact speed. Accident Analysis & Prevention, 41(3), 536-542.

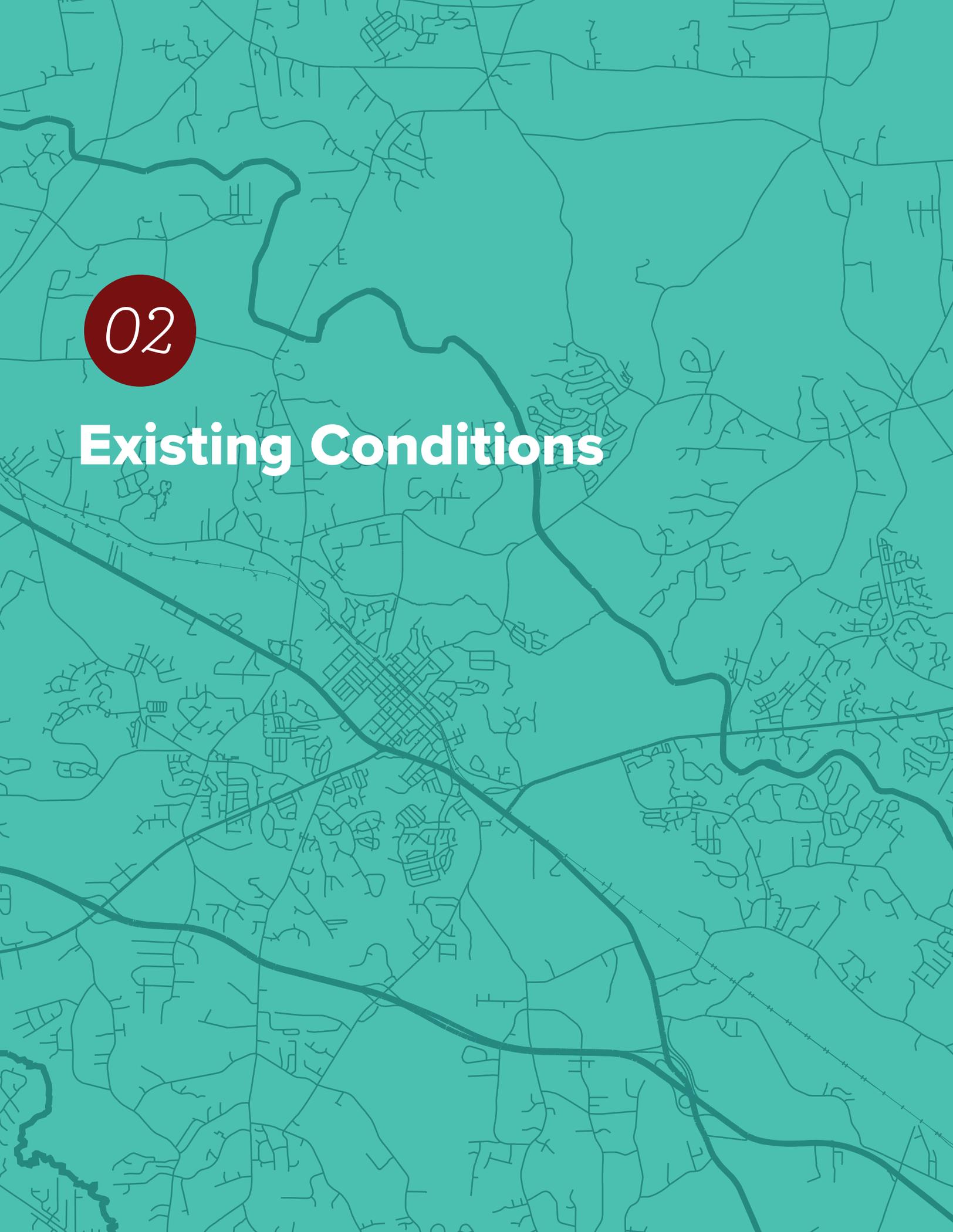
“Communities designed to be walkable can improve safety not only for people who walk but for all community members.”

- Surgeon General, 2015

Federal Highway Administration. (2008). "Desktop reference for crash reduction factors."

% DECREASE IN CRASHES





02

Existing Conditions

Local Context

Surveyed in the early 1700’s, the settlement that would become the Town of Clayton experienced much of its early growth during the 19th century, as a center of Johnston County’s local agricultural trade and a stop along the North Carolina Railroad Company’s important Goldsboro-Charlotte route. Today, Clayton maintains its small-town feel, even as residents are able to benefit from close proximity to state capital Raleigh, and convenient commutes to employment opportunities throughout the Research Triangle.

Main Street forms the backbone of Clayton’s historic downtown district and parallels the railroad tracks. With its diverse offering of restaurants, churches, local businesses, parks, and watering holes such as Deep River Brewing, Main Street is a destination for people in and outside of Clayton’s town limits who wish to experience the quintessential North Carolina small town. A few blocks southwest of the historic downtown area, the U.S. Highway 70 Business route runs southeast-to-northwest nearly roughly parallel to Main Street, while NC Highway 42 runs east/west

through the eastern town limits; both of these major roadways provide access to larger modern shopping centers, Clayton Middle and High Schools, several parks, Johnston Health’s Clayton campus, and major employers such as Grifols Therapeutics, Novo Nordisk, and Caterpillar CMDC.

The Town of Clayton has a population of 26,307 (2020 Census, see below). Clayton’s population, similar to that of other outlying suburbs in the Triangle region, has grown substantially over the past few decades as housing prices have risen in Durham and Wake counties. Future development is expected to continue at a similar pace as in the past few decades, with Clayton’s population expected to exceed 50,000 people by 2050. Highlighted in the Comprehensive Plan, the Town of Clayton hopes to continue to attract growth while preserving the small-town character and affordability that make it such a great place to live.

This plan lays out the ways in which the town can attain goals of increasing pedestrian safety and accessibility, building upon the work that has already been done to create a downtown sidewalk grid and a developing greenway system.

Demographic Comparison

	Clayton	Raleigh-Cary Metro Area	North Carolina
Population ¹	26,307	1,129,410	10,439,388
Median Age ²	34.6	36.9	38.9
Median Household Income ²	\$61,954	\$78,706	\$56,642
% Households without a Vehicle ²	3.4%	3.9%	5.6%
% Walk to Work ²	2%	1.1%	1.7%
% School-Age Children (Ages 5-19) ²	18.4%	20.6%	19%
Black or African American (alone) ²	23.4%	19.8%	21.4%
Asian (alone) ²	0.7%	6.0%	3.0%
American Indian and Alaska Native (alone) ²	1.0%	0.4%	1.2%
Native Hawaiian and other Pacific Islander (alone) ²	0.0%	0.0%	0.1%
White (alone) ²	66.4%	65.6%	67.6%
Two or more races ²	2.9%	4.3%	3.6%
Some other race (alone) ²	5.6%	3.9%	3.2%
Hispanic or Latino ¹	14.3%	12.0%	10.7%

¹US Census Bureau, 2020 Census

²US Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

Existing Conditions

Due to the size of Clayton, many residents have the potential to walk to their destinations since parks, schools, neighborhoods, and the downtown center are all proximate. However, due to existing land use, connectivity, and infrastructure conditions, walking is not always a safe or comfortable choice.

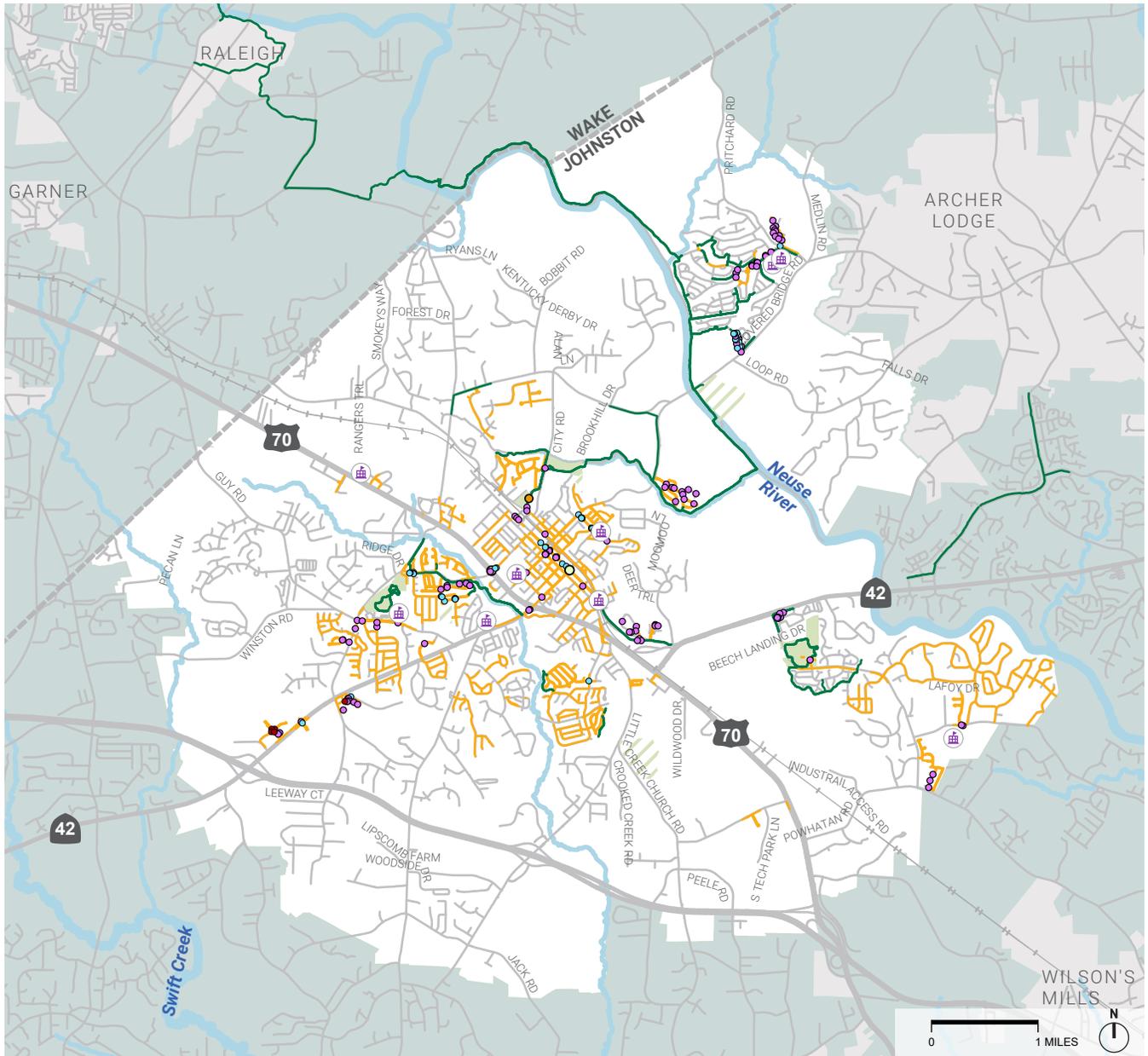
Below: Photo of the recently completed greenway extension connecting Sam's Branch Greenway into Municipal Park. From this point in Clayton to downtown Durham is an existing 70 mile section of the East Coast Greenway.

Clayton's existing sidewalk network (see Existing Facilities map, right) is mostly concentrated within the denser and more walkable downtown area as well as in some of the outlying subdivisions. Clayton has a fairly robust greenway network for a town of its size, with connections to neighboring Wake County along the Neuse River Greenway/East Coast Greenway through Raleigh and the Triangle.

Crosswalks are found in some locations throughout town, and overall, crosswalk implementation is inconsistent.



Existing Facilities



EXISTING FACILITIES

- SIDEWALK
- GREENWAY
- PEDESTRIAN CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- RAISED CROSSWALK
- BRICK CROSSWALK
- TWO-BAR CROSSWALK

FEATURES AND BOUNDARIES

- Ⓜ SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

Walking in Clayton Today...

Opportunities

Clayton provides many opportunities for new or improved pedestrian facilities. Clayton's downtown sidewalk network, the developing greenway system, and Clayton's first at-grade crosswalk of US 70 (recently implemented) are key elements of the existing network. Recent residential development across Clayton has included pedestrian facilities, significantly expanding the sidewalk network. Several future roadway projects have an opportunity to include pedestrian facilities and close gaps in the current network.



Recently implemented US 70 crosswalk



Recently installed curb ramps at O'Neil St and Wilson St - opportunity to create a formalized crosswalk



Clayton Community Park greenway - short connection opportunity to Clayton Middle School



The extensive downtown sidewalk network (E. Main St)



Clayton River Walk on the Neuse trailhead at Covered Bridge Rd.

Challenges

The existing sidewalk network, overall, has inadequate coverage/connectivity with many micro gaps. The commercial corridor of US 70 and the railroad corridor are most notably lacking in consistency in crossing/connecting pedestrian facilities. Suburban automobile-oriented development patterns typically weren't designed with pedestrians in mind, so distances and connectivity for some of the outlying subdivisions can be challenging to overcome. As the Town continues to make strides in ADA accessibility, there remain many locations that need updating.



Gap in the sidewalk network along Robertson St south of Main St



Sidewalk that connects to railroad tracks with no trespassing sign

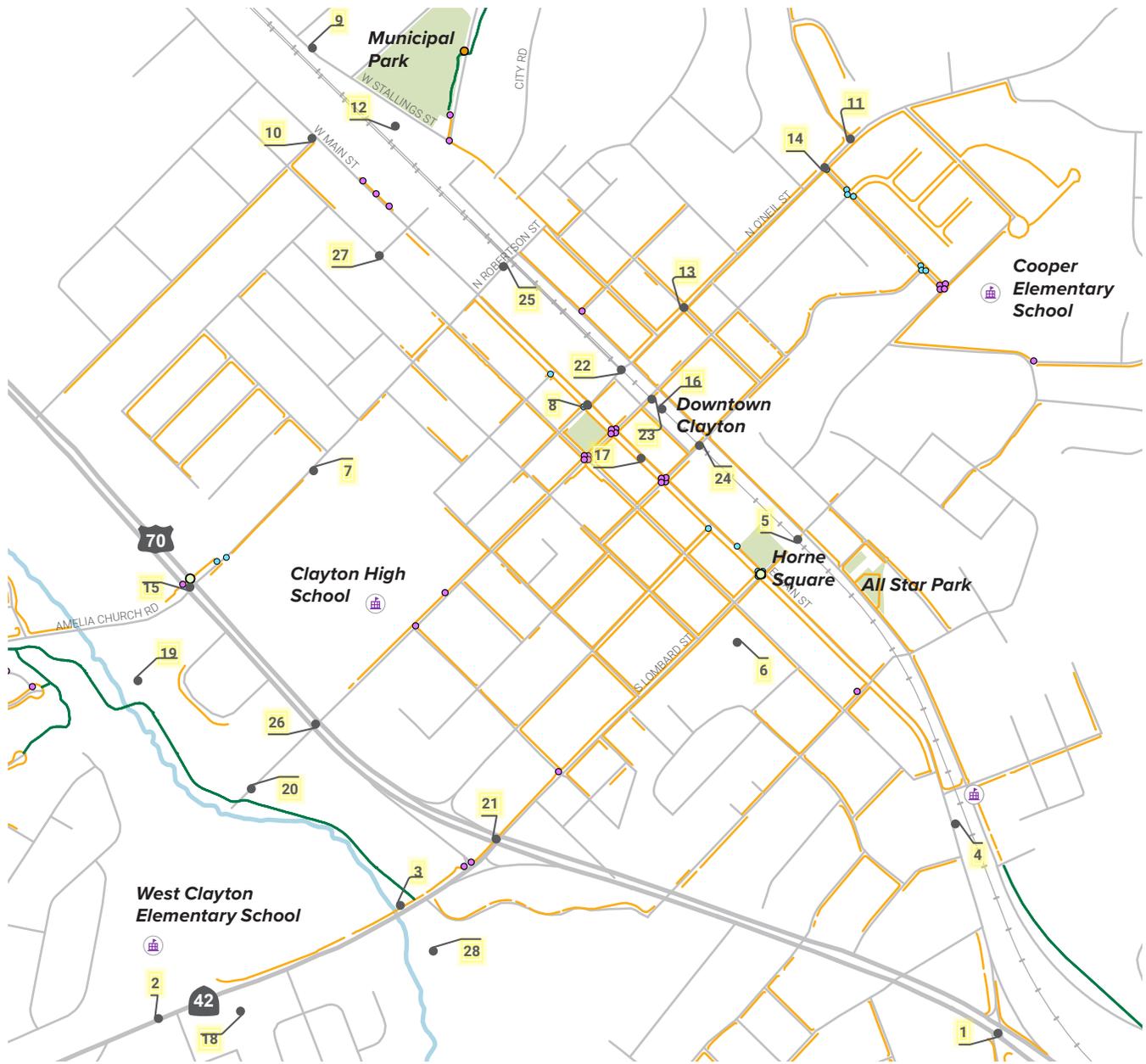


Sidewalk along Amelia Church Rd dead ends at the Little Creek bridge, falling short of the US 70 corridor and downtown connectivity



Sidewalk along NC 42 that connects to West Clayton Elementary School - no formal crosswalk to the neighborhoods on the opposite side of street (see cluster of pedestrian crashes along this stretch on page 23)

Opportunities and Challenges (Downtown)

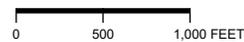


EXISTING FACILITIES

- SIDEWALK
- GREENWAY
- PEDESTRIAN CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- RAISED CROSSWALK
- BRICK CROSSWALK
- TWO-BAR CROSSWALK

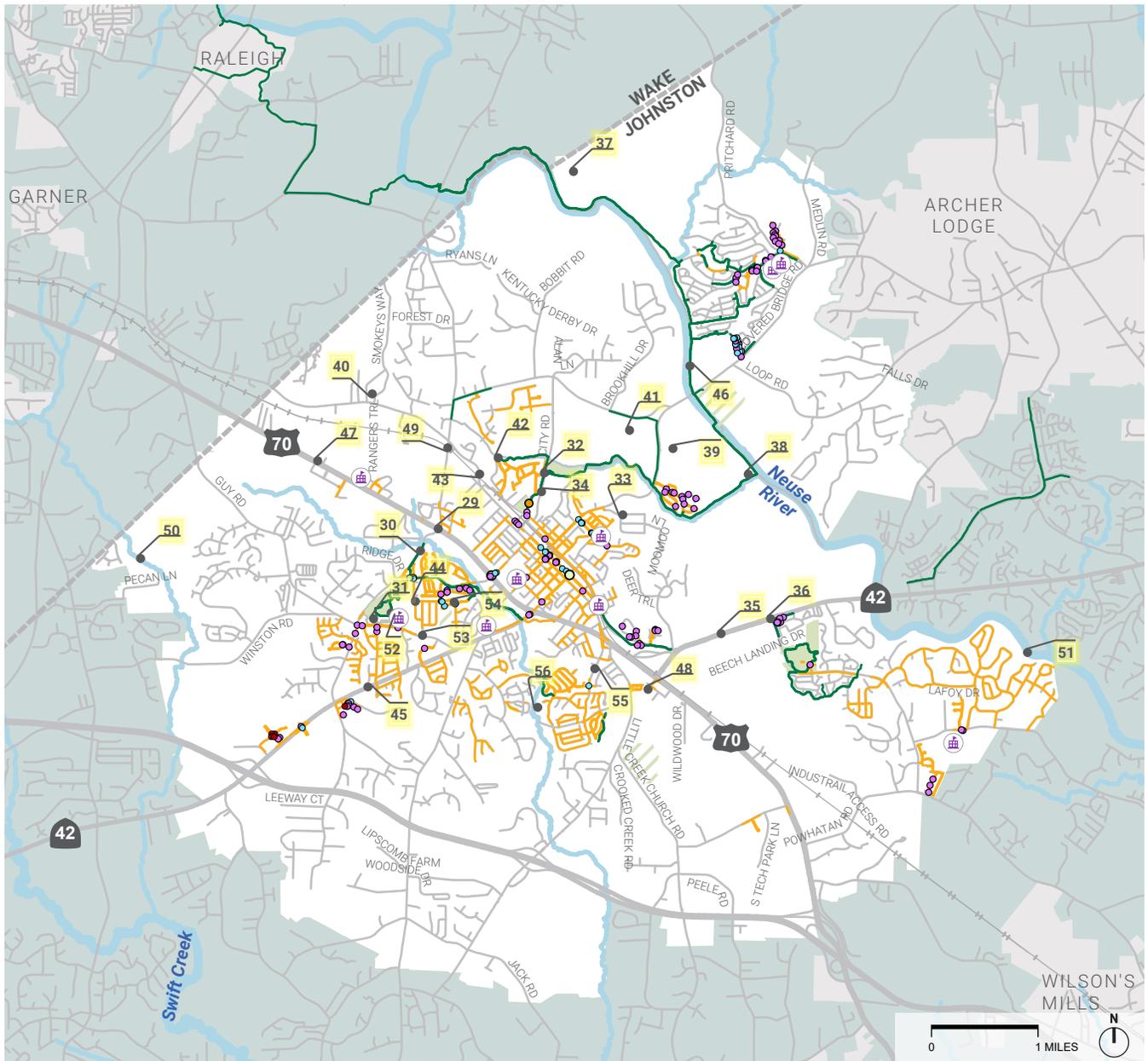
FEATURES AND BOUNDARIES

- Ⓜ SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD



Map ID Opportunities and Challenges Notes	
1	Champion St & US 70 needs improved/signalized pedestrian crossing.
2	Reduce risk of collisions for pedestrians crossing at S Lombard St/NC 42 & Barber Mill Rd.
3	Improve greenway connection to downtown streets at NC 42 intersection.
4	Gap in sidewalk along E Main St.
5	Lombard St RR Crossing: Not an approved RR crossing, though there are steps leading to the tracks.
6	Destination: Compare Foods (grocery store) is an important destination for pedestrians who are transportation-disadvantaged in the downtown area.
7	Connectivity improvements needed along S Robertson St.
8	Improve safety for pedestrians crossing at S O'Neil St & W Main St.
9	Stallings St: wide street with fast-moving traffic.
10	Improve safety at high-volume pedestrian crossing at Moore St & Main St to Deep River Brewing.
11	Improve safety at N O'Neil St & Georgetowne Dr crossing, with streetscape and buffer enhancements.
12	Provide a safe way for pedestrians and bicyclists coming from Municipal Park to cross the RR and Main St into downtown.
13	Need a safe pedestrian crossing at N O'Neil St & E Whitaker St.
14	Need safe school crossing at N O'Neil St & E Wilson St.
15	Recently constructed crosswalk (and pedestrian signal) along the west side of the US 70/Robertson St/ Amelia Church Rd intersection.
16	Significant greenspace between the railroad tracks and Front St - opportunity to complete the East Coast Greenway between the existing segments at Municipal Park and E. Front St. Commuter rail connecting through downtown Clayton is currently being studied. If/when commuter rail comes to downtown Clayton, this is both an opportunity and challenge to improve pedestrian connectivity across (and along) the railroad tracks, including pedestrian crossings and the potential East Coast Greenway alignment.
17	Mid-block crosswalks generally needed through downtown along Main St.
18	Crossing of NC 42 needed for neighborhoods on south side of road to connect to sidewalk, greenway, school, and downtown. NC 42 is a high traffic volume/high speed road.
19	Cleared and level sewer outfall - potential connection opportunity from greenway to Amelia Church Rd east of creek crossing.
20	Cleared and level space - connection opportunity from greenway to Fayetteville St and Clayton High School.
21	Aside from the recently completed crosswalk at US 70/Robertson St/Amelia Church Rd, the Lombard St sidewalk under US 70 is the only other pedestrian crossing of US 70 in Clayton.
22	Sidewalk needing repair, crossing of RR improvement.
23	Sidewalk upgrade needed for RR crossing.
24	Sidewalk repair needed on RR crossing approach (especially on east/north side).
25	Gap in sidewalk network.
26	Gap in sidewalk network and crossing needed of US 70 to make direct connection from Clayton High School to greenway.
27	Sidewalk gaps west of downtown.
28	Extend greenway east along Little Creek or utility clearing.

Opportunities and Challenges (ETJ)



EXISTING FACILITIES

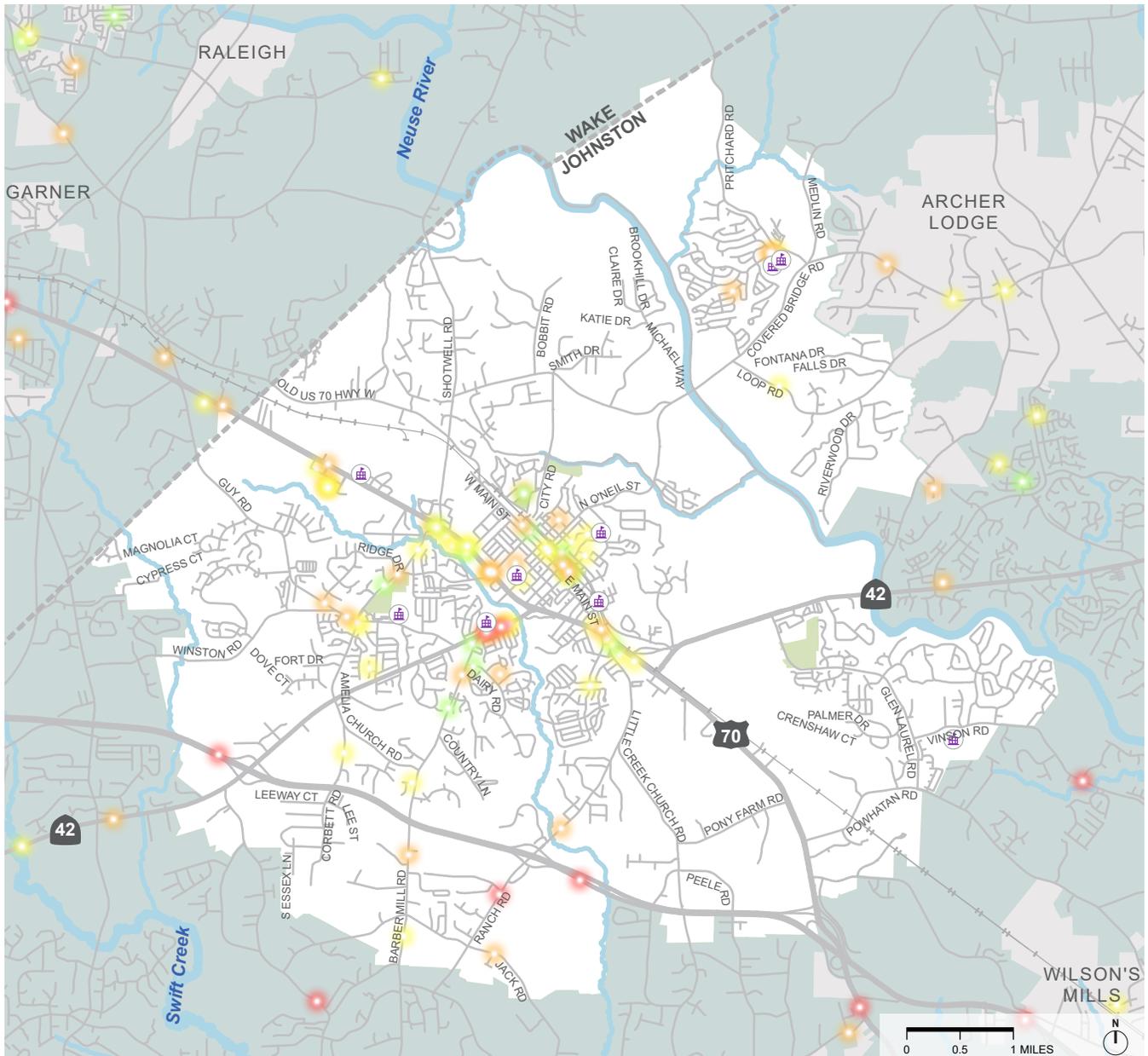
- SIDEWALK
- GREENWAY
- PEDESTRIAN CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- RAISED CROSSWALK
- BRICK CROSSWALK
- TWO-BAR CROSSWALK

FEATURES AND BOUNDARIES

- Ⓜ SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

Map ID	Opportunities and Challenges Notes
29	Shotwell Rd & US 70 needs improved/signalized pedestrian crossing.
30	Seniors from Lion Spring senior living community often walk from the greenway's end to Highway 70 to access shopping and amenities.
31	Parkside Village apartments are next to Clayton Community Park but do not have a sidewalk into the park.
32	Close gap between Sam's Branch Greenway and nearby greenway in Highgate development.
33	Connect Ashcroft neighborhood and future neighborhoods in this area to O'Neil (and add sidewalk to O'Neil), and provide connection to Cooper Academy, allowing kids to walk to the school.
34	Invest in high-quality signage that will guide people along the greenway and towards downtown.
35	Next link in NC 42 greenway - STI projects EB-6016 & EB-6017 will extend the Front St sidepath along NC 42 to the Neuse River bridge. These projects are scheduled for construction in 2028.
36	Pedestrian crossing needed at NC 42 & Glen Laurel; reduce speed limit at town line on NC 42 to 35 mph for improved safety.
37	Make connection from Neuse River Trail north to Williamson Preserve (high priority for Wake Co. & partnership opportunity with Williamson Preserve).
38	Clayton River Walk will be closed through 2024 for water treatment plant upgrades - too long with no alternative.
39	Future Development - Need policies to create key destinations from subdivision to existing networks (build or fees).
40	Destination: Clemmons Educational State Forest
41	Steeple Chase Subdivision - More facilities under construction here, need to connect to external network.
42	Recently constructed greenway segment that connects to the terminus of Crawford Pkwy.
43	Add pedestrian facilities to new portion of W Stallings & Old US 70 - currently requires 2 railroad crossings, but will be more direct if expanded.
44	Increase connectivity between Garrison Avenue neighborhoods and the nearby park.
45	STI project (R-3410) will widen NC 42 from NC 50 to US 70B in Clayton to multi-lanes, and will include a sidepath on one side of the road. Construction is scheduled for 2029.
46	Flooding along the Neuse River Greenway and Sam's Branch Greenway can cause trail closures and additional maintenance after heavy rain events.
47	STI project (U-6113) will transform US 70 from the eastern edge of Clayton to Garner into a Super Street - construction is scheduled for the 2030's at this time.
48	STI project (U-6223) will construct a new road from the NC 42/US 70 intersection to Little Creek Church Rd. Construction is scheduled for 2022. No pedestrian facilities are included in the current design.
49	STI project (P-5743) will construct a grade separated crossing of Shotwell Rd and the railroad line. Construction is scheduled for the 2030's at this time.
50	The White Oak Creek corridor was identified as a connection opportunity between Clayton and Garner in the Wake County Greenway System Plan.
51	A feasibility study for extending the East Coast Greenway/Mountains to Sea Trail from Clayton to Smithfield will be completed in 2022.
52	Direct connection needed from Clayton Middle School to the Clayton Community Park greenway.
53	Gap in sidewalk network.
54	Gap in sidewalk network.
55	Gap in sidewalk network.
56	Greenway connectivity needed to southeast neighborhoods.

Pedestrian Collisions (ETJ)

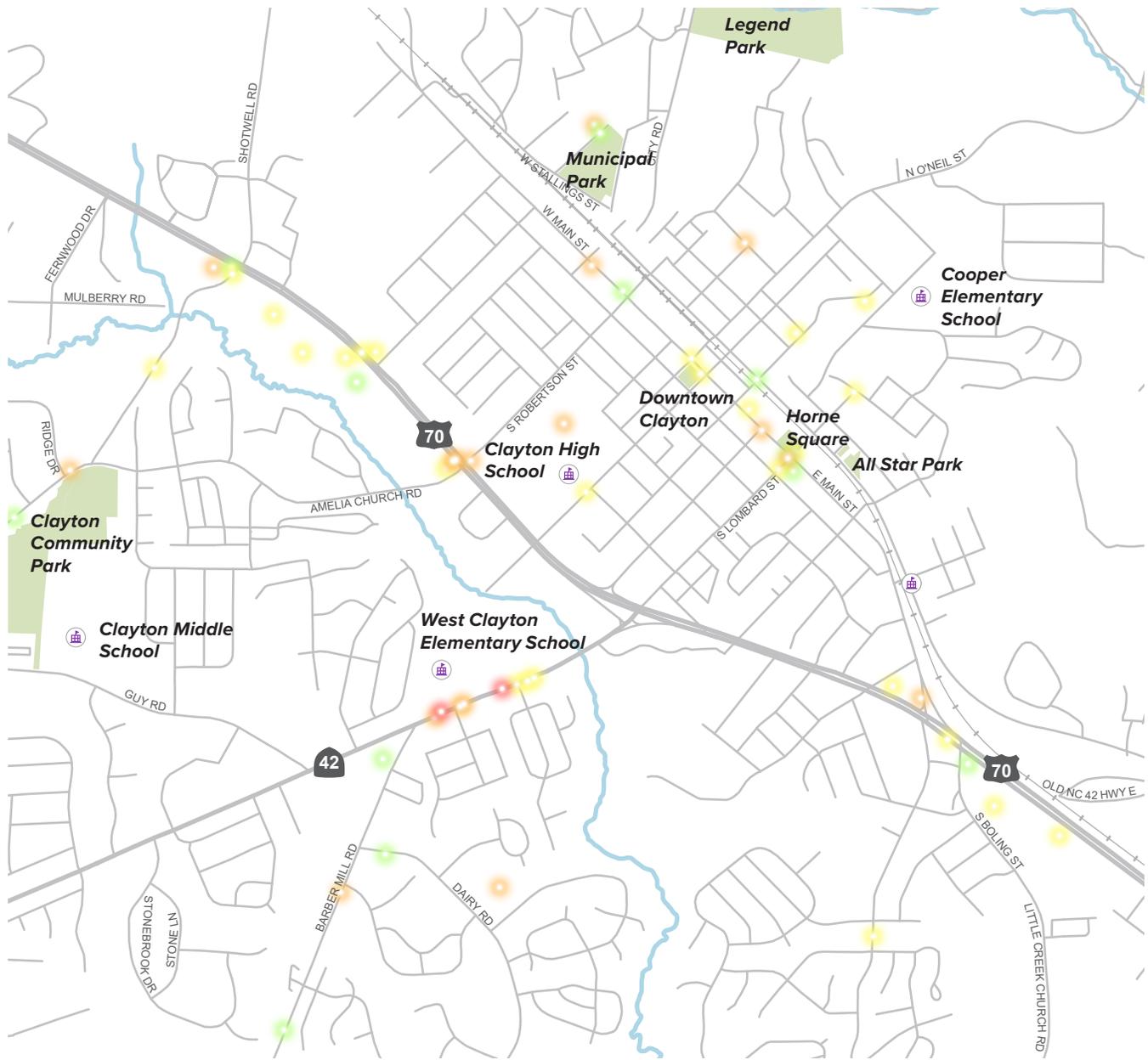


PEDESTRIAN INJURY SEVERITY	FEATURES AND BOUNDARIES
● FATALITY	SCHOOL
● MINOR OR SERIOUS INJURY	PARK
● POSSIBLE OR UNKNOWN INJURY	STREAM/RIVER
● NO INJURY	RAILROAD
	CLAYTON ETJ
	OTHER MUNICIPAL BOUNDARY
	COUNTY BOUNDARY

This map illustrates collisions involving a pedestrian between 2009 and 2019. Within this 10-year time frame, there were a total of 82 pedestrian collisions within the Clayton ETJ. Of these, 38 collisions occurred along the roadway, 15 occurred at intersections, and 29 occurred off-road (typically in parking lots).

Five of the 82 collisions resulted in a pedestrian fatality. All of the fatalities occurred along higher-volume/higher-speed roadways (two on US-70, two on NC-42/Lombard St, and one on Ranch Rd). The pedestrians involved in the fatalities were disproportionately male persons of color.

Pedestrian Collisions (Downtown)

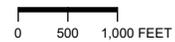


PEDESTRIAN INJURY SEVERITY

- FATALITY
- MINOR OR SERIOUS INJURY
- POSSIBLE OR UNKNOWN INJURY
- NO INJURY

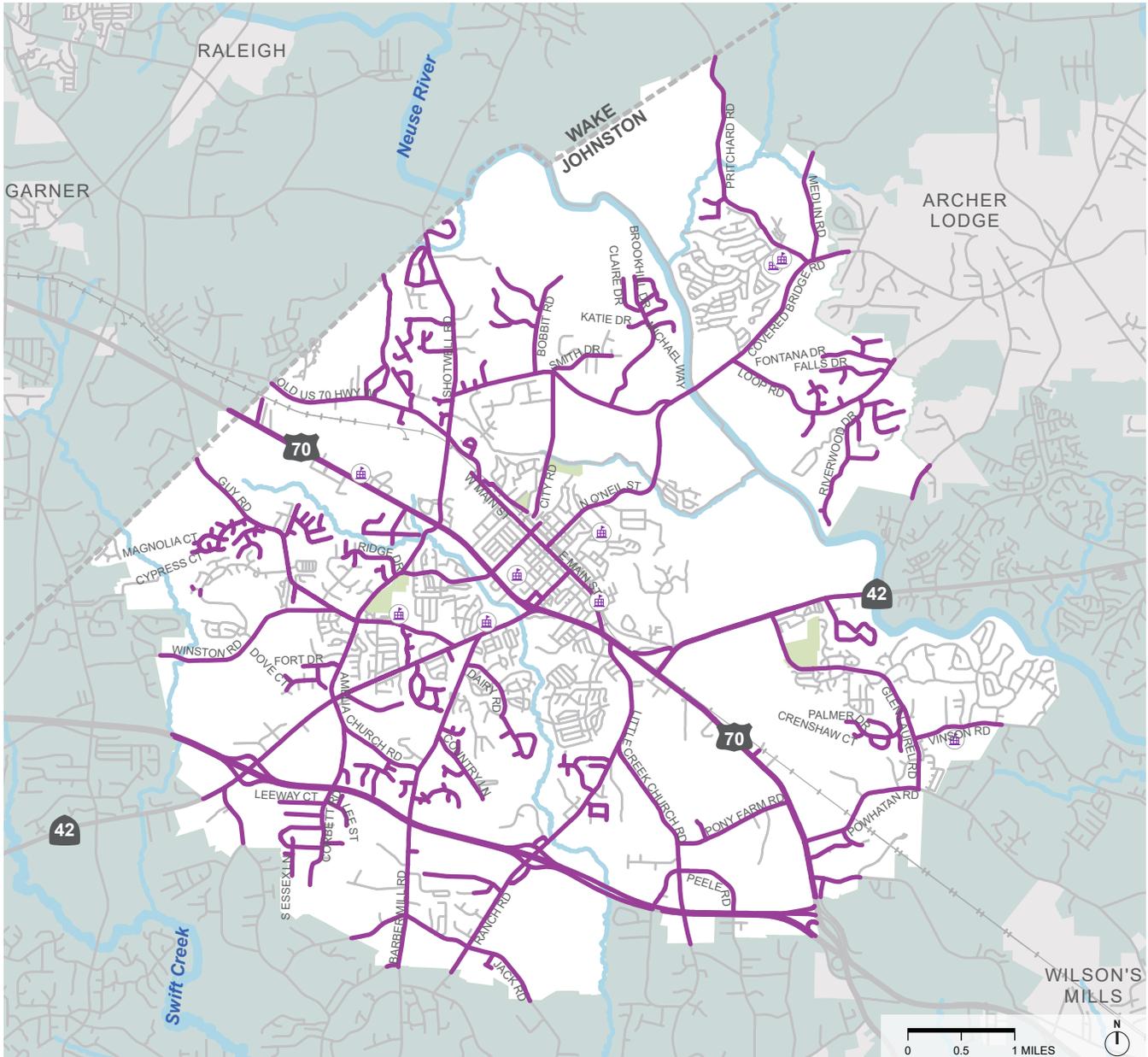
FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD



Closer to the downtown area of Clayton, clusters of crashes can be found along Main St, NC 42, and US 70. Notably, a cluster of eight pedestrian crashes (including two fatalities) along NC 42 occur on a 1,200' stretch in front of West Clayton Elementary School and two residential neighborhoods.

NCDOT-Owned Roads



CLAYTON ROADWAY OWNERSHIP

- NCDOT OWNED ROADS
- LOCALLY OWNED ROADS

FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

This map shows which roadways in Clayton are state-versus-locally-owned. The Town of Clayton will need to coordinate with NCDOT Division 4 and the Integrated Mobility Division to implement this plan's recommended improvements along NCDOT roadways.

Plan Review

A review of previous programs and plans related to Clayton pedestrian planning is included below. The purpose of the plan review is to identify previous recommendations in Clayton that are relevant to pedestrian travel.

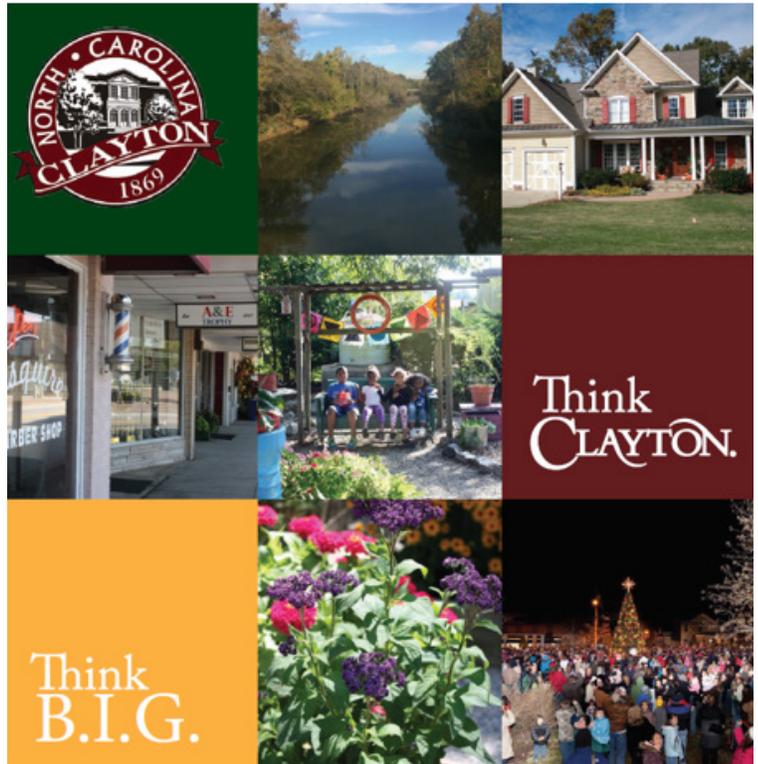
Town of Clayton Comprehensive Growth Plan 2045 (2022)

Think Clayton is a framework for Clayton's continued growth in the coming decades, providing the basis for Clayton's regulations and policies that guide its physical development. Key pedestrian-related notes from the plan include:

- Public Survey - Building more greenways and trails was the highest cited environmental priority in the public survey, and sidewalks and pedestrian improvements were the second highest cited transportation priority.
- Goals - Mobility goals include: (M-1) Develop and maintain a multimodal transportation system; (M-3) Support system user safety and prioritize bike and pedestrian activity. Parks & Natural Resources include: (PR-1) Support the development of Clayton as a regional destination for recreation and trail-based tourism; (PR-2) Develop the Neuse River corridor as a greenway and blueway with multiple access points for hiking, biking, and paddling; (PR3) Provide all Clayton residents convenient access to a park within a 10-minute walk of their residence.
- Recommendations - Throughout the document pedestrian connectivity and complete streets are emphasized, including connectivity in and to downtown, strategically improving pedestrian connectivity throughout Clayton, continuing to develop the greenway system, adopting a Complete Streets Policy, and coordinating with development and NCDOT to ensure pedestrian circulation is included in all projects.

Town of Clayton Parks and Recreation Comprehensive Plan Update (2013)

One of the main goals for this plan is to "Analyze the accessibility of Parks and Recreation facilities and how they could be better connected to where users live and work."



Think CLAYTON. Think B.I.G.
Bold. Innovative. Growth.

Comprehensive Plan 2040

The plan includes a discussion of how vibrant, accessible parks and recreation opportunities allow Clayton's downtown to maintain the small-town feel that has been such a large part of its appeal for families from the Triangle and beyond.

Specific proposals include creating new sidewalk and greenway connections to and from nearby neighborhoods and institutions, and improving safety for people choosing to walk and bike to parks in Clayton. Greenway priorities outlined in the plan include:

- Sam's Branch Greenway completion
- Sidepath along Amelia Church Rd
- East Clayton Community Park to the Neuse River (future ECG/MST)
- Little Creek Greenway
- Front St multi-use path

Town of Clayton Parks and Recreation Master Plan Update Addendum (2019)

This plan document contains inventories of each of Clayton’s parks, detailing existing pedestrian connectivity in each.

Each park’s inventory also includes recommendations for improving pedestrian access, with suggestions such as additional wayfinding as well as improved connections to specific destinations such as nearby schools and apartment complexes.

Connect 2050: The Research Triangle Region’s Metropolitan Transportation Plan (Capital Area MPO (CAMPO) and Durham-Chapel Hill-Carrboro (DCHC) MPO) (2022)

The Connect2050 Plan began from a different foundation than previous metropolitan transportation plans. Instead of relying on a conventional perspective that prioritizes faster car travel and less congested roads, this plan used a lens that also focused on the mobility and accessibility concerns of people who are less likely to own cars and have a greater propensity to use transit, walking and bicycling to meet their travel needs.

On a regional level, the CAMPO and DCHCMPO encourage pedestrian projects. Most town and city governments have instituted sidewalk requirements for

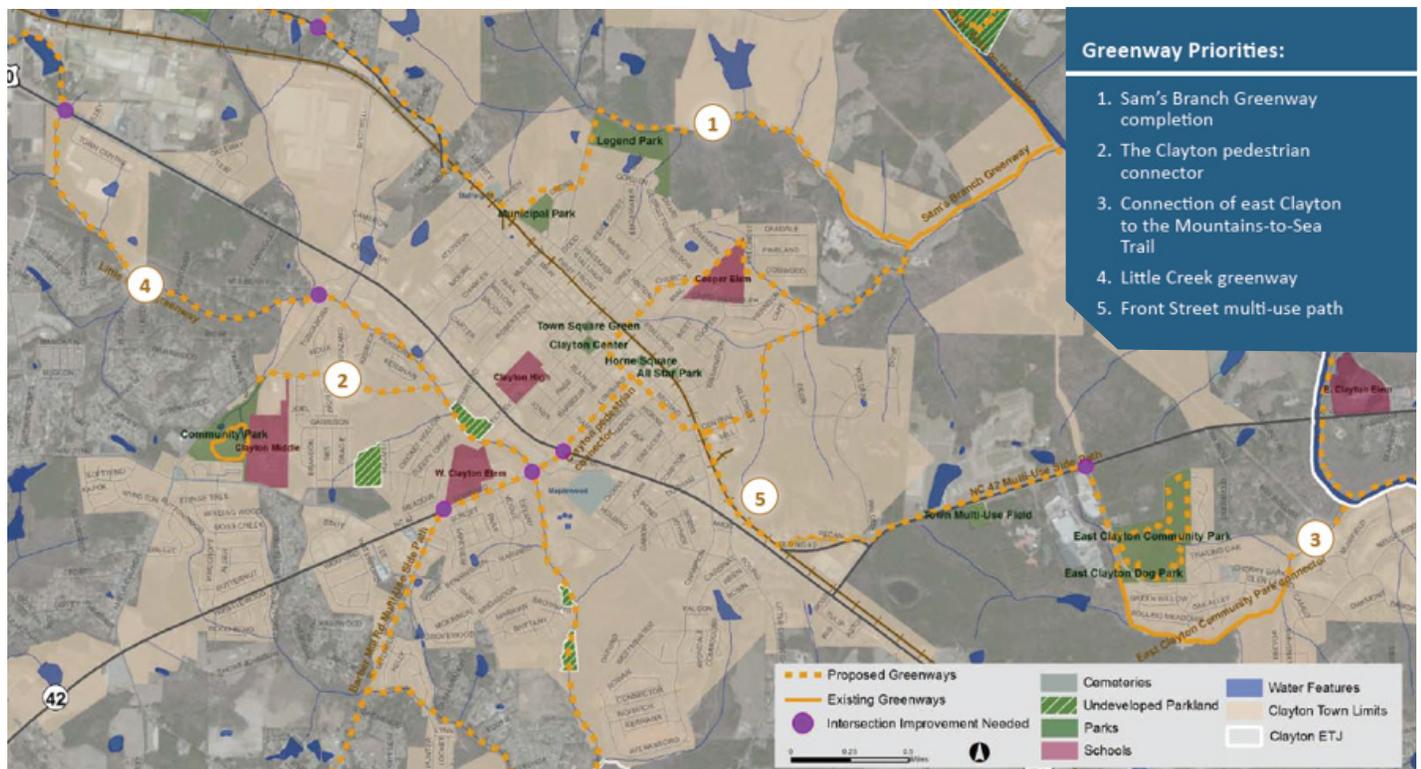
new development, and sidewalk upgrades are generally included in roadway construction projects. Most roadway projects in the ‘Roadway Element’ of the MTP are expected to provide appropriate accommodations for pedestrians, concurrent with roadway improvements. Missing links and gaps in the pedestrian networks will be constructed retroactively. Priority is generally given to areas with heavy pedestrian traffic generators, such as schools, parks, transit stops, and business districts, and to address historic inequities in the provision of sidewalks.

The DCHC MPO bicycle and pedestrian policy expects any roadway or other transportation project, whether it is a new or improved facility, to include appropriate pedestrian and bicycle accommodations, and references national best practices in design guidance from NACTO, AASHTO, and the FHWA.

Southeast Area Study (CAMPO and Upper Coastal Plain RPO) (2017)

The Southeast Area Study (SEAS) features pedestrian recommendations for the region, including Clayton, as well as an overall emphasis on integrating multimodal transportation improvements to all roadway and development projects. High-level programmatic and policy recommendations complement infrastructure recommendations. This plan is currently being updated.

Below: Image from the overall greenway priorities map from the Clayton Parks & Recreation Master Plan. Several of these priorities have been completed and/or are currently being implemented.



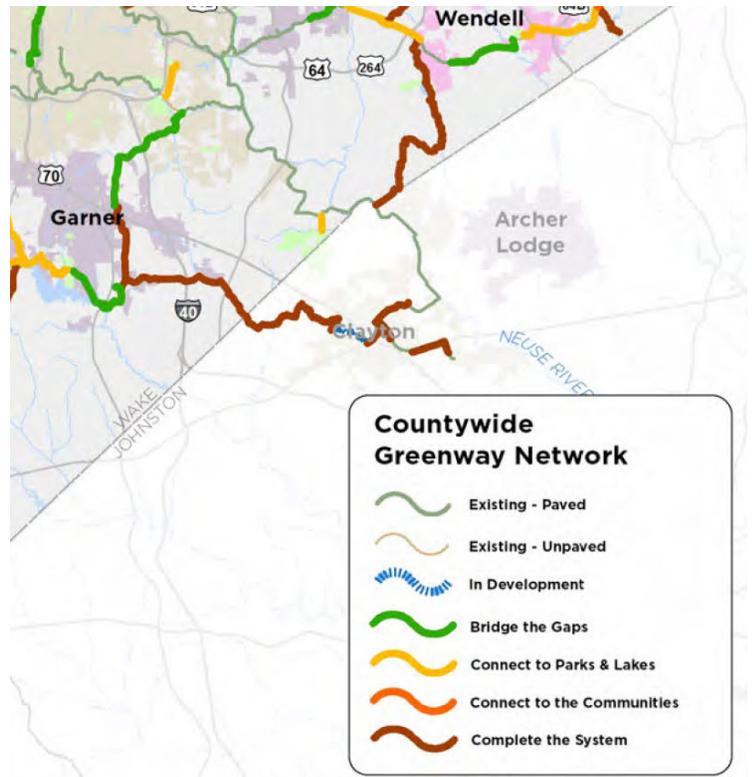
Wake County Greenway System Plan (2017)

Because Clayton is proximate to the Wake County border, and with the regional trail system connecting directly from Wake County to Clayton via the Neuse River Greenway/East Coast Greenway, Clayton is included in the recommended Wake County Greenway System network. A connection to Garner from Clayton via the Little Creek and White Oak creek corridors is also recommended as part of the Wake County greenway system (see map to the right).

Johnston County Comprehensive Transportation Plan (Maps) (2011)

This plan lays out a road map for wide-scale transportation infrastructure changes across Johnston County that will allow the county to meet the needs of increased population, as new residents continue to be drawn by its proximity to Raleigh and relatively low cost of living.

While much of the plan document focuses on improvements to highways and other major roadways to allow them to meet increased capacity needs, the plan contains a map of Clayton’s downtown that includes existing and proposed sidewalks, as well as highlighting where sidewalks are due for improvements.



Above: Image from the Wake County Greenway System recommended network, including connectivity to Clayton.



Above: Image from Clayton Pedestrian Map in the 2011 Johnston County Comprehensive Transportation Plan. Key corridors recommended for improvement include Robertson St, O'Neil St/Wilson St, the Little Creek Greenway, and a greenway connection through downtown - components of these projects have been completed.

Clayton Downtown Master Plan (2010)

This plan lays out recommendations for land use changes and urban design reconfigurations for downtown Clayton, including recommended pedestrian connections.

Recommendations include new pedestrian connections between buildings from parking areas behind Main Street, as well as between downtown and nearby neighborhoods, specifically between Fayetteville and Lombard Streets.

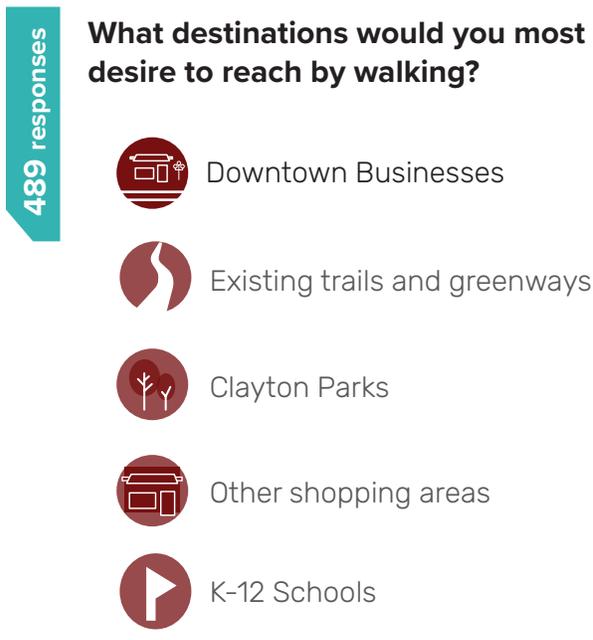
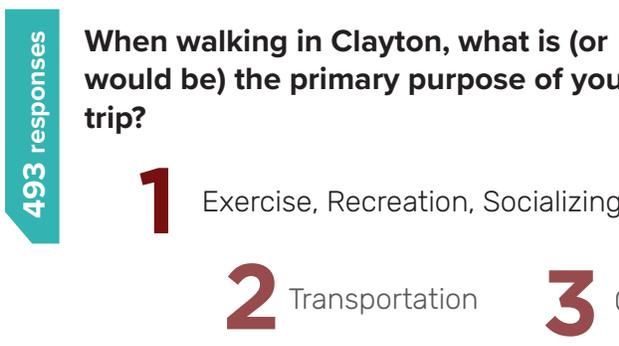
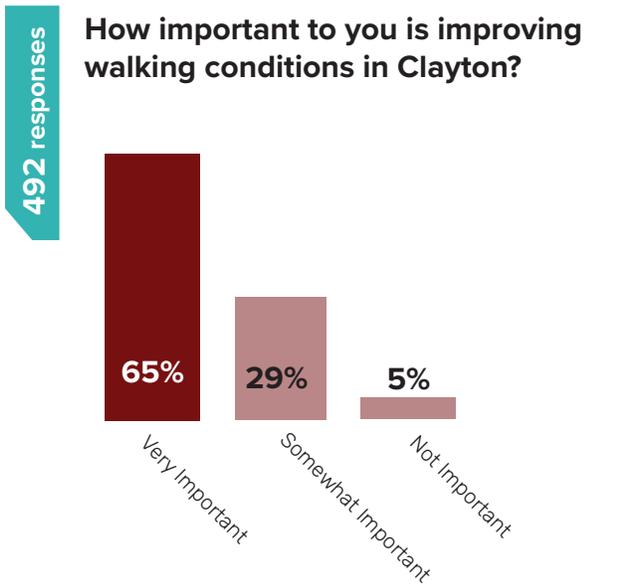
Town of Clayton Comprehensive Bicycle Plan (2007)

While the Clayton Comprehensive Bicycle Plan focuses mainly on improving the bicycle traveling experience within Clayton, it contains a useful discussion of existing conditions that lay groundwork for understanding the ways in which the town’s sidewalk network already provides connectivity, and how this can be expanded for pedestrians.

Many of the suggested improvements, such as widening existing sidewalks, creating new sidepaths, or adding more crosswalks will benefit pedestrians as well as bicycles.

Survey Responses

Public feedback was solicited through an online and hard copy survey (see summary of results below and further detail in Appendix D), distribution of information cards, two in-person public outreach events, four steering committee meetings, and seven stakeholder interviews.



492 responses

Which of the following pedestrian improvements would you like to see in Clayton?

- 81%** More sidewalks/ improvements to existing sidewalks
- 61%** Additional crossing opportunities/improvements
- 47%** Lighting
- 45%** More greenways & Trailheads
- 30%** Slower vehicle speeds (traffic calming)
- 28%** Increased shade (e.g., street trees)

489 responses

Roadway crossings: what do you think are the factors that most discourage pedestrians crossing roadways in Clayton?

-  **69%** Lack of striped crosswalks or traffic signals
-  **62%** Heavy/fast motor vehicle traffic
-  **53%** Motorists failing to yield to pedestrians

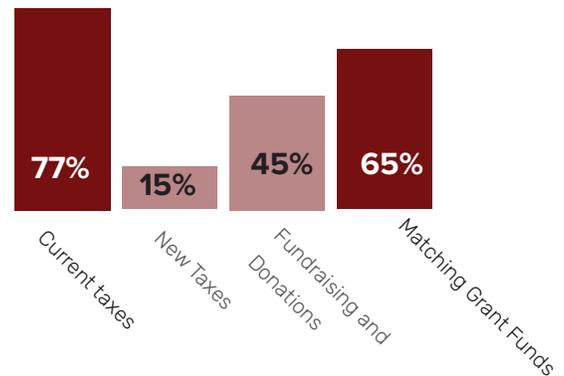
492 responses

What is your relationship to Clayton?

- 95%** I live here
- 42%** I own property here
- 17%** I work here
- 4%** I visit here

493 responses

How should pedestrian facilities be funded within Clayton?



377 responses

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements?

- MAIN ST/DOWNTOWN**
- US 70/NC 42**
- SHOTWELL RD AMELIA CHURCH RD/CLAYTON COMMUNITY PARK**
- GLEN LAUREL RD & EAST CLAYTON COMMUNITY PARK**
- ROBERTSON ST GAPS**



03

Infrastructure Recommendations

Introduction

The proposed pedestrian network aims to reflect the plan’s vision and goals, the core of which is to provide a connected network that is safe and comfortable for people of all ages and abilities. A connected network of sidewalks, greenways, and pedestrian crossings aim to achieve this vision of an all ages and abilities network.

The proposed pedestrian network was developed to:

- Build upon existing and previously planned pedestrian facilities
- Incorporate insight from the public, stakeholders, and steering committee
- Integrate best practices in pedestrian design guidance (see following pages)
- Provide connections to downtown, neighborhoods, schools, parks, and other key destinations
- Address gaps in the network

Facility Types

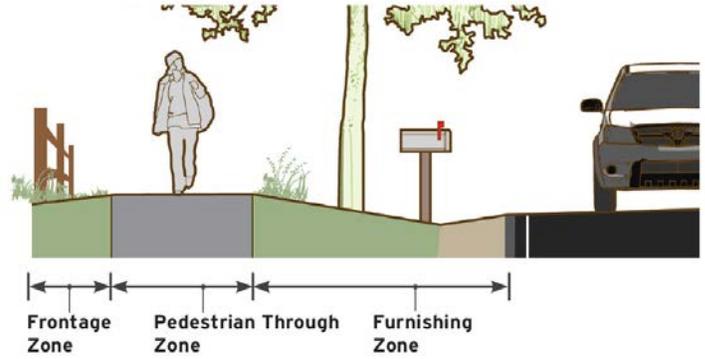
The facility types on the following pages make up the general toolbox of recommendations proposed in this plan. Each facility has its own set of guidance based on context and implementation feasibility. This section culminates in a series of maps showing priority projects, safe routes to schools and parks projects, and comprehensive recommendations.



Above: Recently constructed sidewalk along Wilson St.

Sidewalk Recommendations

Sidewalks are desirable to support pedestrian safety and comfort in areas with a mix of land uses and also in areas of the community where the roadway network connections have generally high traffic volumes or speeds. Sidewalks serve multiple important functions and should be designed with distinct zones to accommodate these uses. The graphics below and to the right provide recommended and constrained minimum dimensions for sidewalk elements in lower density areas as well as the downtown context.



In lower density areas, there are less competing uses (generally) and may have smaller dimensions than a downtown context. Sidewalks should be physically separated from the roadway by an unpaved buffer separation, barrier or curb edge.

Frontage Zone

The frontage zone is a shy zone adjacent to the property line and provides space for people to enter and exit buildings.

- On most sidewalks, a frontage zone of 1–2 ft allows for shy distance to fences and building walls. No frontage zone is necessary adjacent to parks or open space.
- Next to buildings with active ground floor uses, the frontage zone may be widened to 2-8 ft to provide room for door swing, café seating, product display, and window shopping.

Pedestrian Through Zone

The pedestrian through zone is the clear width needed for pedestrian travel activity and should be wide enough for two people to walk side-by-side.

- The pedestrian through zone should be at least 5 ft wide. This permits side-by-side walking and meets accessibility guidelines for turning and maneuvering.

Furnishing Zone

The furnishing zone is closest to the street and provides space for mailboxes, signs, street lighting, and other utilities. This area serves as snow storage areas in winter climates and protects pedestrians from splash during rain events.

- A furnishing zone of 4–8 ft is preferred for comfort and aesthetics. This width allows for trees, benches, and other large furnishing items.

Minimum recommended dimensions for sidewalks from the Small Town and Rural Multimodal Networks Design Guide

Volume And User Mix	Frontage Zone	Pedestrian Through Zone	Furnishing Zone	Total Width
Constrained Minimum	1 ft (0.3 m)	5 ft (1.2 m)	2 ft (0.6 m)	8 ft (2.4 m)
Recommended Minimum	2 ft (0.6 m)	6 ft (1.5 m)	4 ft (1.2 m)	12 ft (3.6 m)

Parking Lane/Enhancement Zone

In a downtown context, the enhancement zone may add additional space to the pedestrian realm in the form of curb extensions, parklets, bicycle corrals or other features. The enhancement zone may occupy a parking lane or shoulder.

In commercial areas or a denser environment such as downtown Clayton, sidewalk zones can also vary. The graphic/table below and to the right highlight general parameters.



Street Classification	Parking Lane/Enhancement Zone	Furnishing Zone	Pedestrian Through Zone	Frontage Zone
Downtown commercial areas	7-10 feet	6-8 feet	6-12 ft	2 - 8 ft

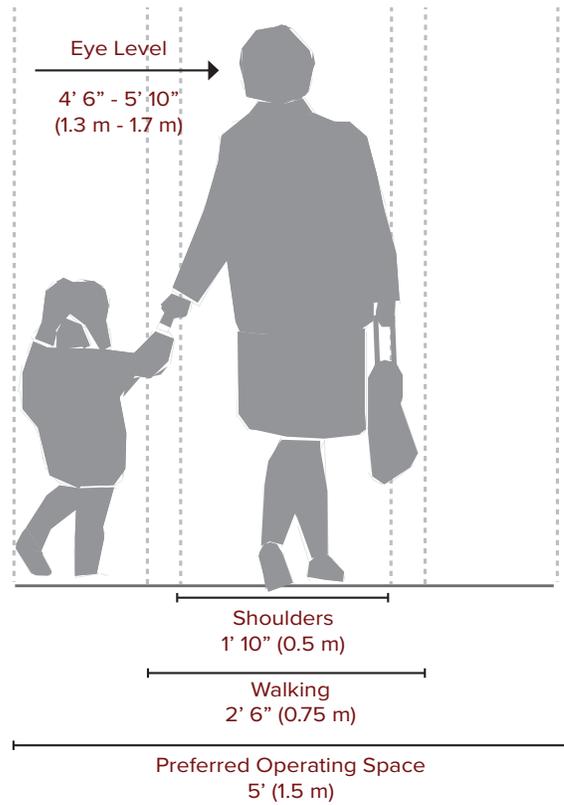
Designing Streets for All Ages

Types of Pedestrians

The transportation network should accommodate pedestrians with a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical characteristics, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. Older adults walk more slowly and may require assistant devices to help with their walking stability, sight, and hearing. The table below summarizes common pedestrian characteristics for various age groups.

The Manual on Uniform Traffic Control Devices (MUTCD) recommends a normal walking speed of 3.5 feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to 3 feet per second for areas with older populations and persons with mobility impairments. The transportation system should accommodate these users to the greatest extent possible.

AGE	CHARACTERISTICS
0-4	Learning to walk Requires constant adult supervision Developing peripheral vision and depth perception
5-8	Increasing independence, but still requires supervision Poor depth perception
9-13	Susceptible to "darting out" in roadways Insufficient judgment Sense of invulnerability
14-18	Improved awareness of traffic environment Insufficient judgment
19-40	Active, aware of traffic environment
41-65	Slowing of reflexes
65+	Difficulty crossing street Vision loss Difficulty hearing vehicles approaching from behind



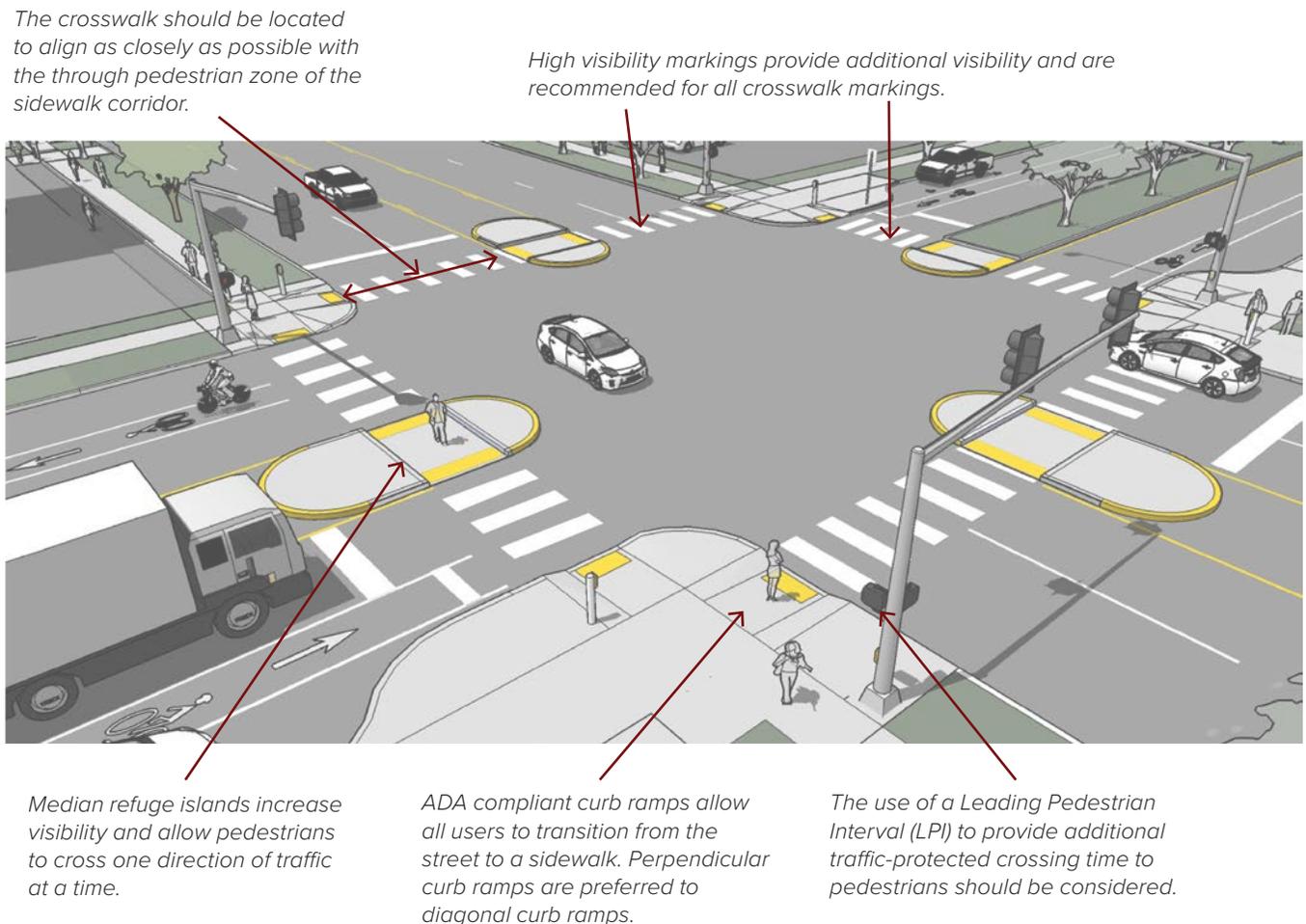
Crossing Improvements

Intersections are an important part of the pedestrian network. Intersections have high potential conflict between pedestrians, bicyclists, and vehicles. However, intersections can be designed to help reduce these conflicts, making them safer for all users. Based on input from the public and the existing conditions analyses, several proposed intersection improvement projects have been identified and are detailed in priority projects and highlighted in the comprehensive pedestrian network.

The following guidelines should be considered when designing intersection improvements for pedestrians:

Pedestrian Intersection Guidance

The diagram below highlights best practices for pedestrian facility design at intersections.



Pedestrians at Signalized Intersections

Typical Application

PEDESTRIAN SIGNAL HEADS

Pedestrian signal heads indicate to pedestrians when to cross at a signalized crosswalk. Pedestrian signal indications are recommended at all traffic signals except where pedestrian crossing is prohibited by signage.

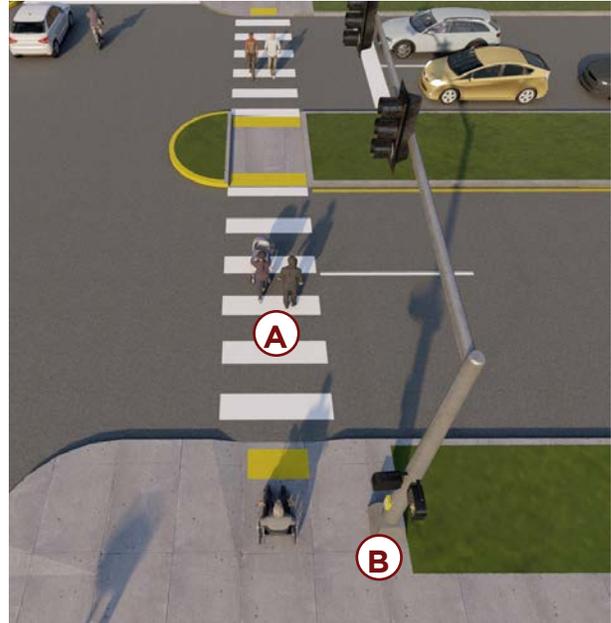
Countdown pedestrian signals should be retrofitted at existing signals with older style pedestrian signals and on any new installation. Countdown signals have a crash reduction factor of between 25 and 52% in varied studies¹.

SIGNAL TIMING AND THE PEDESTRIAN PHASE

Adequate pedestrian crossing time is a critical element of the walking environment at signalized intersections. The length of a signal phase with parallel pedestrian movements should provide sufficient time for a pedestrian to safely cross the adjacent street. The MUTCD recommends a walking speed of 3.5 ft per second.

At crossings where older pedestrians or pedestrians with disabilities are expected, crossing speeds as low as 3 ft per second should be assumed. Special pedestrian phases can be used to provide greater visibility or more crossing time for pedestrians at certain intersections.

Large pedestrian crossing distances can be broken up with median refuge islands. A pedestrian pushbutton can be provided on the median to create a two-stage pedestrian crossing if the pedestrian phase is actuated. This ensures that pedestrians are not stranded on the median, and is especially applicable on large, multi-lane roadways with high vehicle volumes, where providing sufficient pedestrian crossing time for a single stage crossing may be an issue.



- A** Consider the use of a Leading Pedestrian Interval (LPI) to provide additional traffic-protected crossing time to pedestrians.
- B** Accessible Pedestrian Signals (APS) provide crossing assistance to pedestrians with vision impairment at signalized intersections.

Further Considerations

Pushbuttons should be located so that someone in a wheelchair can reach the button from a level area of the sidewalk without deviating significantly from the natural line of travel into the crosswalk. Pushbuttons should be marked (for example, with arrows) so that it is clear which signal is affected.

In areas with very heavy pedestrian traffic, consider an all-pedestrian signal phase to give pedestrians free passage in the intersection when all motor vehicle traffic movements are stopped. This may provide operational benefits as turning movements are then unimpeded.

¹ <http://www.cmfclearinghouse.org/index.cfm>

Crossing Improvements (Continued)

Pedestrian Traffic Signal Enhancements

Pedestrian-vehicle conflicts can occur when drivers performing turning movements across the crosswalk do not see or yield to pedestrians who have the right-of-way. Pedestrians may also arrive at an intersection late, or may not have any indication of how much time they have to safely cross the intersection. Pedestrian traffic signal enhancements can be made to provide pedestrians with a head start, called a Leading Pedestrian Interval, or extend the walk time to allow them to safely and comfortably cross the street.

Typical Application

- Leading Pedestrian Intervals (LPI) are used to reduce right turn and permissive left turn vehicle and pedestrian conflicts. The pedestrian interval is initiated 3-10 seconds, in advance of the concurrent green with the potential for permissive right and left turn conflicts. The LPI gives pedestrians a head start making them more visible, and reducing crossing exposure time. Accessible Pedestrian Signals (APS) should be implemented with an LPI.
- Push buttons can be configured to provide additional crossing time. The MUTCD requires signage indicating the walk time extension at or adjacent to the push button (R10-32P).
- Passive pedestrian detection devices save pedestrians the trouble of having to locate a push button. They are also capable of tracking pedestrians as they cross the intersection, and can be configured to extend the walk/flashing don't walk interval when pedestrians are still in the intersection, and/or not dedicate walk time in the absence of pedestrians.
- The PROWAG guidance requires APS installation with any new or altered signal.



Leading Pedestrian Interval



Pushbuttons require regular inspection

Further Considerations

When pedestrians have to wait an entire cycle for the next walk phase, a higher incidence of non-compliance, in the form of jay-walking, or unpredictable behavior may occur. These signal enhancements facilitate safer, more predictable, and conspicuous crossing conditions. The Leading Pedestrian Interval and walk time extensions provide additional time for pedestrians who may need more time to cross the street such as wheel-chair users, people with disabilities, the elderly, and children.

Midblock Crossings

Midblock crossings can provide legal crossings at locations where pedestrians want to travel, and can be safer than crossings at intersections because traffic is only moving in two directions.



Rectangular rapid flashing beacons (RRFB), above, alert drivers at unsignaled intersections of people walking.



Pedestrian Hybrid Beacons stop automobile traffic for bicyclists and pedestrians wishing to cross a high traffic volume/high speed roadway.

The chart to the right from the **NCDOT Action Plan for Implementing Pedestrian Crossing Countermeasures at Uncontrolled Locations** outlines parameters for choosing an appropriate crossing treatment.

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑨
3 lanes with raised median (1 lane in each direction)	① 2 3 4 5	① ③ 5 7 9	① ③ 5 ⑦ ⑨	① 3 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑦ ⑨	① ③ 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑨
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 ⑨	① 3 4 5 6 7 9	① ③ 5 6 ⑦ ⑨	① ③ 5 6 ⑨	① ③ 4 5 6 7 9	① ③ 5 6 ⑨	① ③ 5 6 ⑨
4+ lanes with raised median (2 or more lanes in each direction)	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 9	① ③ 5 7 8 9	① ③ 5 ⑦ 8 9	① ③ 5 8 9	① ③ 5 ⑦ 8 9	① ③ 5 8 9	① ③ 5 8 9
4+ lanes w/o raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ ⑦ 8 9	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ ⑦ 8 9	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 8 ⑨

Given the set of conditions in a cell,

Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.

○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs

2 Raised crosswalk

3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line

4 In-Street Pedestrian Crossing sign

5 Curb extension

6 Pedestrian refuge island

7 Rectangular Rapid-Flashing Beacon (RRFB)**

8 Road Diet

9 Pedestrian Hybrid Beacon (PHB)**

Shared Use Paths

Description

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

Benefits

- Provides a dedicated facility for users of all ages and abilities.
- Provides, in some cases, access to areas that are otherwise served only by limited-access roadways.
- Provides nonmotorized transportation access to natural and recreational areas, which can especially help individuals without access to an automobile obtain access to recreation.
- Provides, in some cases, a short-cut between neighborhoods.
- Supports tourism through convenient access to natural areas or as an enjoyable recreational opportunity itself.

Elements of Shared Use Paths

- The minimum paved width for a trail is 10 feet. Anticipated future traffic volumes should be used to guide design decisions.
- Maximum grade should not exceed 5 percent.
- Provide a graded shoulder area of at least 2 feet.
- Lighting should be provided at path/roadway intersections at a minimum and at other locations where nighttime use is likely to be high.
- Sight distances are based on site conditions and user-based factors. Ensure sight distances are designed per the AASHTO Bike Guide.
- Provide protective railings/fences at 42 inches high if the trail is adjacent to a steep slope.
- Surfaces can be paved or unpaved and should be ADA accessible



Shared Use Path graphic from the FHWA Small Town and Rural Multimodal Networks Design Guide

Guidance on Shared Use Path widths from the FHWA Small Town and Rural Multimodal Networks Design Guide

* Note that the Minimum recommended pathway width is 10 ft. In low-volume situations and constrained conditions, the absolute minimum sidepath width is 8 ft

Volume and User Mix	Recommended Minimum Pathway Width
Low volume (less than 50 users in one direction per hour), low mix (75 percent bicyclists, 25 percent pedestrians).	*8-10 ft (2.4-3.0 m)
Low volume (less than 50 users in one direction per hour), heavy user mix (50 percent bicyclists, 50 percent pedestrians).	12 ft (3.6 m)
High volume (150 or more users in one direction per hour), low mix (75 percent bicyclists, 25 percent pedestrians).	12-14 ft (3.6-4.2 m)

Sidepaths

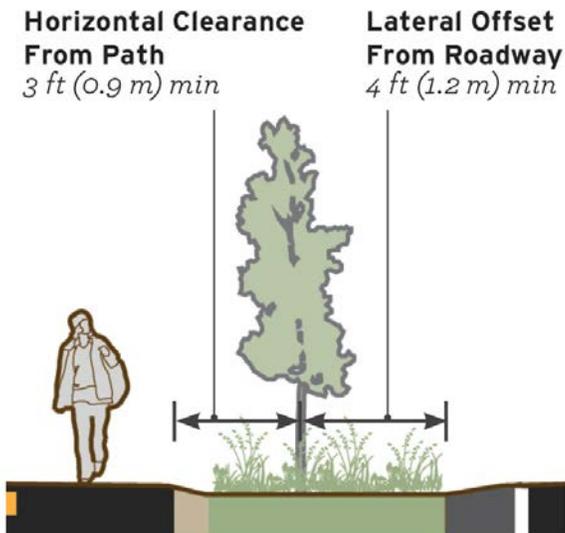
A sidepath is a bidirectional shared use path located immediately adjacent and parallel to a roadway. Sidepaths can offer a high-quality experience for users of all ages and abilities in heavy traffic environments (such as NC 42 pictured right).

Design Strategies

- Reduce the frequency of driveways.
- Design intersections to reduce driver speeds and heighten awareness of path users.
- Encourage low speeds on pathway approaches.
- Maintain visibility for all users.
- Provide clear assignment of right-of-way with signs and markings and elevation change.



The Front St sidepath was constructed along with the Front St extension in the past decade. Limited intersections or driveway crossings make this a comfortable facility.

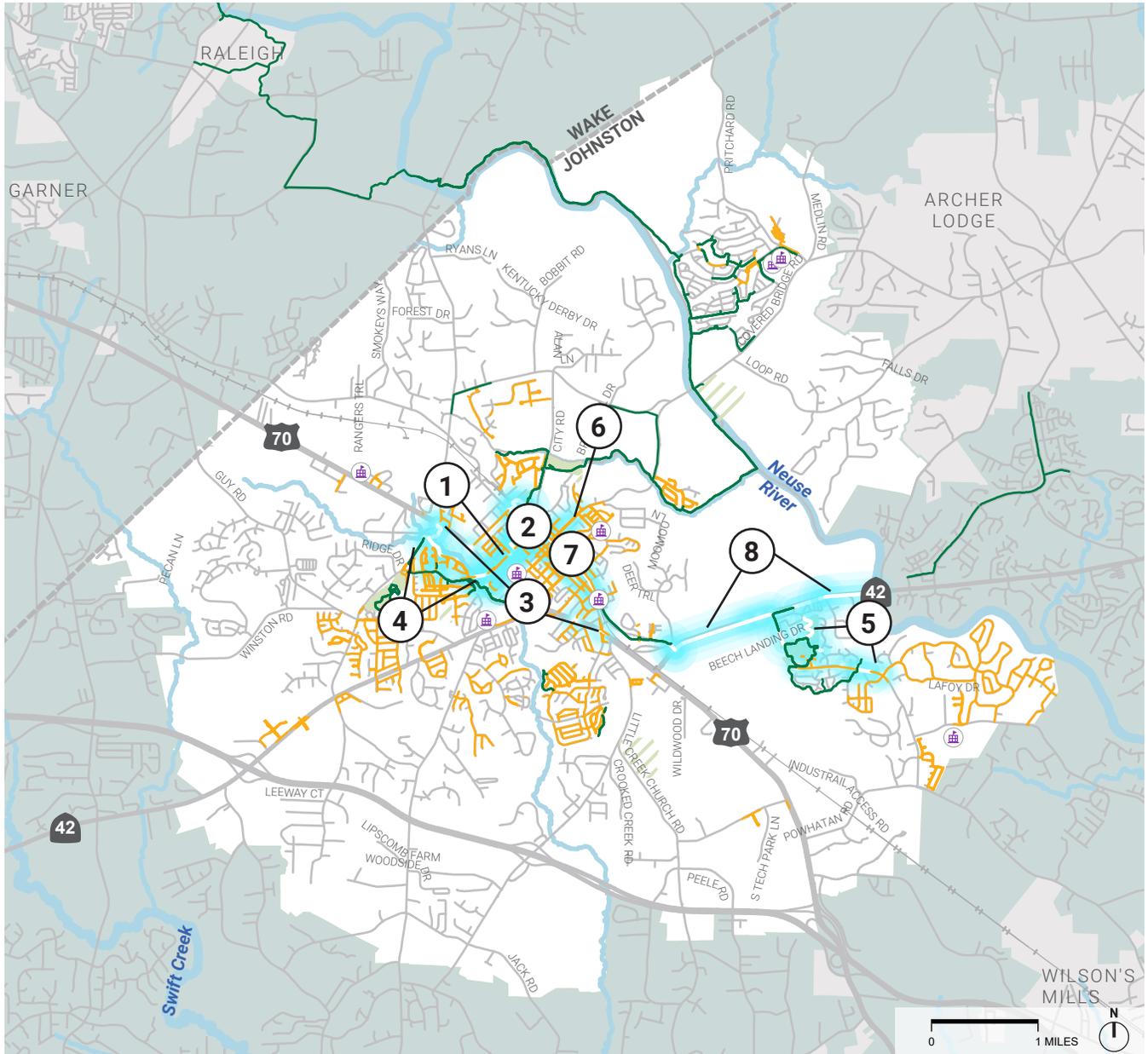


Guidance for sidepath separation distance in various contexts (FHWA Small Town and Rural Multimodal Networks Design Guide)



Adjacent Road Speed Limit (Mi/h)	Recommended Sidepath Separation Distance at Crossings
< 25 mi/h	6.5 ft (2.0 m)
35–45 mi/h	6.5–16.5 ft (2.0–5.0 m)
≥ 55 mi/h	16.5–24 ft (5.0–7.0 m)

Priority Projects



EXISTING FACILITIES

-  SIDEWALK
-  GREENWAY

FEATURES AND BOUNDARIES

-  SCHOOL
-  PARK
-  STREAM/RIVER
-  RAILROAD
-  CLAYTON ETJ
-  OTHER MUNICIPAL BOUNDARY
-  COUNTY BOUNDARY

RECOMMENDATIONS

-  PRIORITY PROJECTS

Priority Project Checklist

The eight project sheets below fill key gaps in the pedestrian network, and have been identified as the highest priority projects. The prioritization criteria in the table below are commonly utilized during pedestrian infrastructure project development processes. They generally align with CAMPO’s LAPP prioritization criteria.

Map ID	Priority Project	Missing Link	Near Ped Crash	Supported in Public Feedback	Within 1/4 mile of a park or recreation center	Within 1/4 mile of a school	Access to downtown core/business areas	In an adopted plan
1	Robertson St Sidewalk Gaps	√	√	√	√	√	√	√
2	Main St Pedestrian Improvements	√	√	√	√	√	√	√
3	US 70 Crossings	√	√	√		√	√	
4	Amelia Church Rd & Shotwell Rd Greenway Gaps	√	√	√	√	√	√	√
5	Glen Laurel Rd Pedestrian Improvements	√	√	√	√		√	√
6	O’Neil St Pedestrian Improvements	√		√	√	√	√	√
7 8	East Coast Greenway Completion	√	√	√	√	√	√	√

Priority Project Sheets

The following series of project summaries can be used when applying for future funding, or when communicating the priority project details to potential partners during implementation. The project sheets that follow show an analysis of the priority segments, including factors of feasibility identified by the project team. It serves as an inventory of the alignment factors at play, providing guidance for the next steps in implementation.

Priority Project #1: Robertson St Sidewalk Gaps and Crossing Improvements

Several gaps in the sidewalk along the east side of Robertson St should be completed with sidewalk. Additionally, formalized crosswalks are needed to connect to the neighborhood to the west. This is an important pedestrian corridor that links Clayton High School, downtown Clayton, the US 70 corridor (and the recently installed US 70 crosswalk), and multiple neighborhoods and businesses.

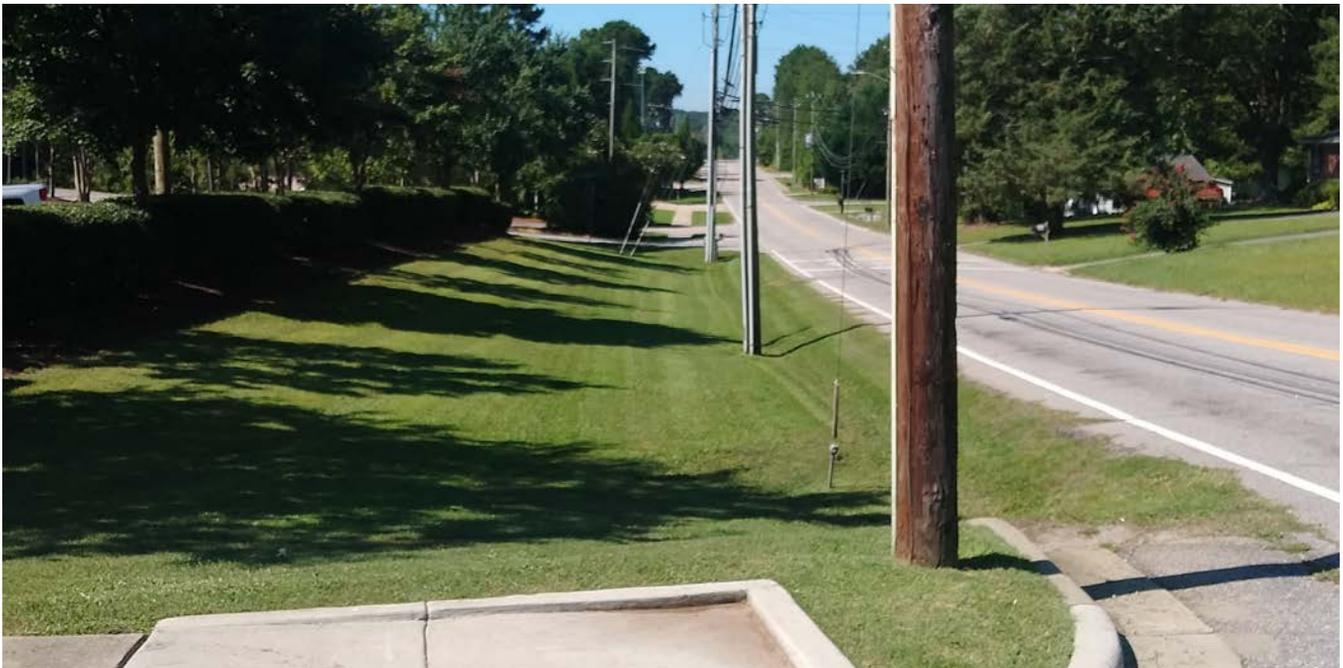
Facility: Sidewalk, Crosswalks

Trip Generators: Downtown, Clayton High School, US 70 businesses, multiple neighborhoods

Potential ROW Needs: 375' Sidewalk section along the Clayton High School property should be constructed closer to the ballfields; coordinate with Johnston County Board of Education

Potential Partnerships: Johnston County, NCDOT, adjacent businesses and residences

Estimated Construction Costs: \$359,000 (see Appendix E for further detail)



Ample space to complete the sidewalk gap south of Horne St

Consider lowering the speed limit along S. Robertson St from 35 mph to 25 mph (NCDOT maintained road - NCDOT speed zone study needed). Additional analyses should be conducted in considering additional traffic calming features such as narrowing the motor vehicle travel lanes (especially south of the Johnston County EMS) constructing separated bike lanes, and adding strategic speed tables. See further discussion of speed management on page 68.



EXISTING FACILITIES

- SIDEWALK
- PEDESTRIAN-ACTIVATED CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- TWO-BAR CROSSWALK

RECOMMENDATIONS

- - - SIDEWALK
- CROSSING IMPROVEMENT

High visibility crosswalks are needed across Robertson St to connect the Robertson St sidewalk to neighborhoods to the west. At each of these streets, install high visibility crosswalks (Brooks St, Willow Dr, Horne St, and Second St.)

For side street crossings, high visibility crosswalks should be painted (high visibility crosswalks should be the default).

Priority Project #2: Main St Pedestrian Improvements

While sidewalks are complete along both sides of Main St from Robertson St to Central St, crossing improvements are needed at each intersection to some degree. Pedestrian signals are needed at all signalized intersections.

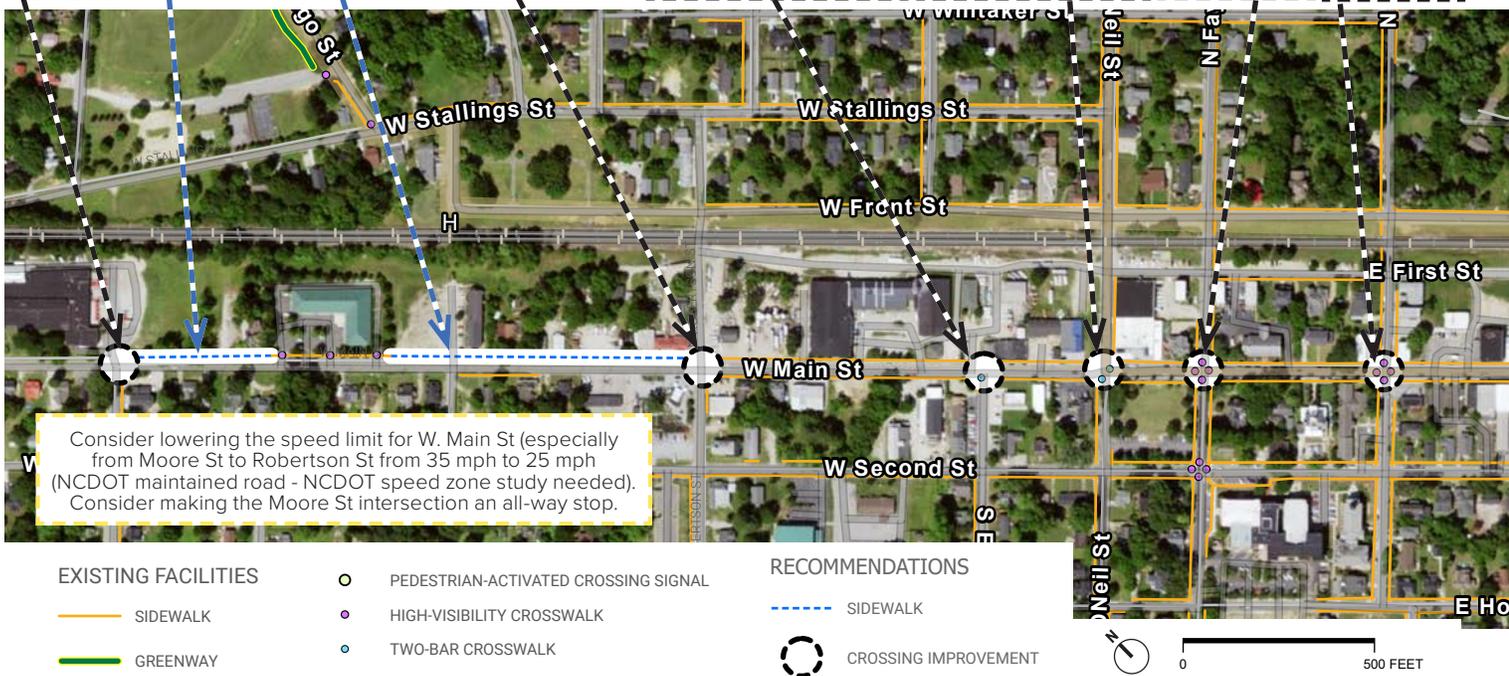
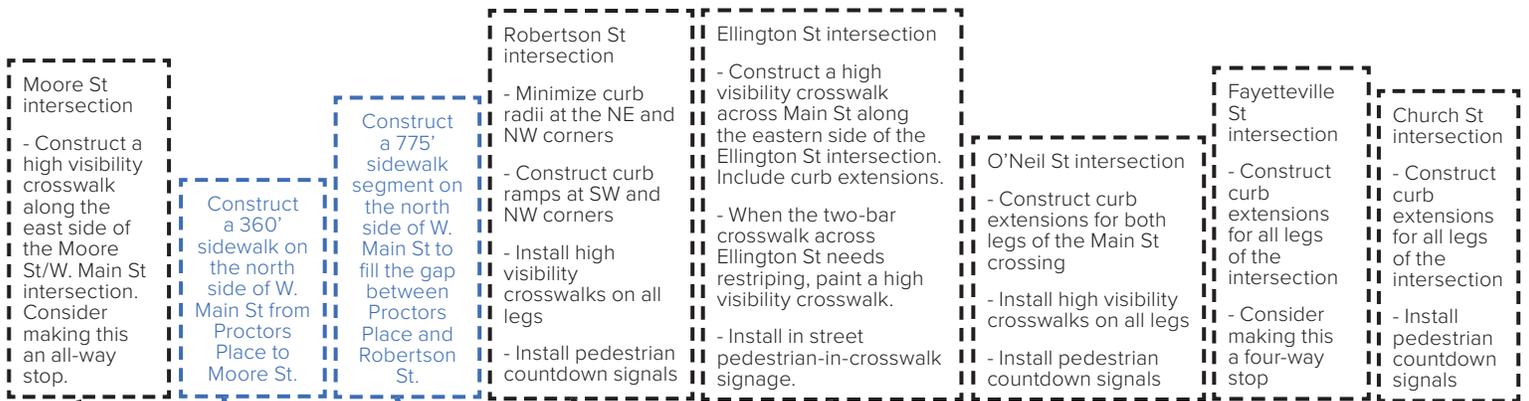
Facility: Sidewalk, Crosswalks

Trip Generators: Downtown businesses, US 70 businesses, multiple neighborhoods

Potential ROW Needs: Potentially along the proposed sidewalk segments along W. Main St, depending on alignment, especially if placed along north side of drainage ditch.

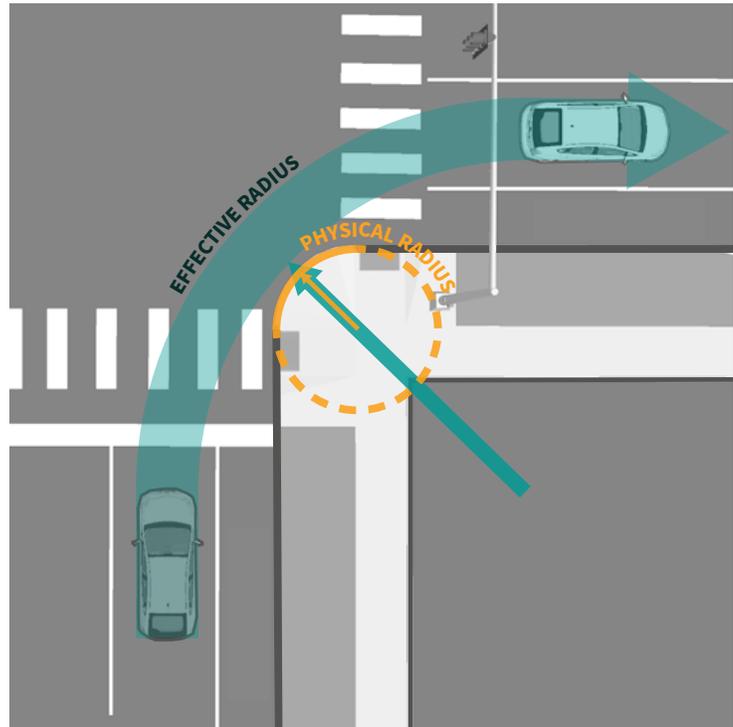
Potential Partnerships: NCDOT, adjacent businesses and residences

Estimated Construction Costs: \$1,279,000 (see Appendix E for further detail)



Curb Radii Considerations

The size of a curb's radius can have a significant impact on pedestrian comfort and safety. A smaller curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crossing distance and requires vehicles to slow more on the intersection approach. During the design phase, the chosen radius should be the smallest possible for the circumstances and consider the effective radius in any design vehicle turning modeling. For further information, see Alta Planning + Design's 'Corner Design for All Users' white paper - <https://alta.com/resources/corner-design-for-all-users/>



- Barbour St intersection**
- Construct a high visibility crosswalk across Main St along the eastern side of the Barbour St intersection. Include curb extensions.
 - When the two-bar crosswalk across Barbour St needs restriping, paint a high visibility crosswalk.
 - Install in street pedestrian-in-crosswalk signage

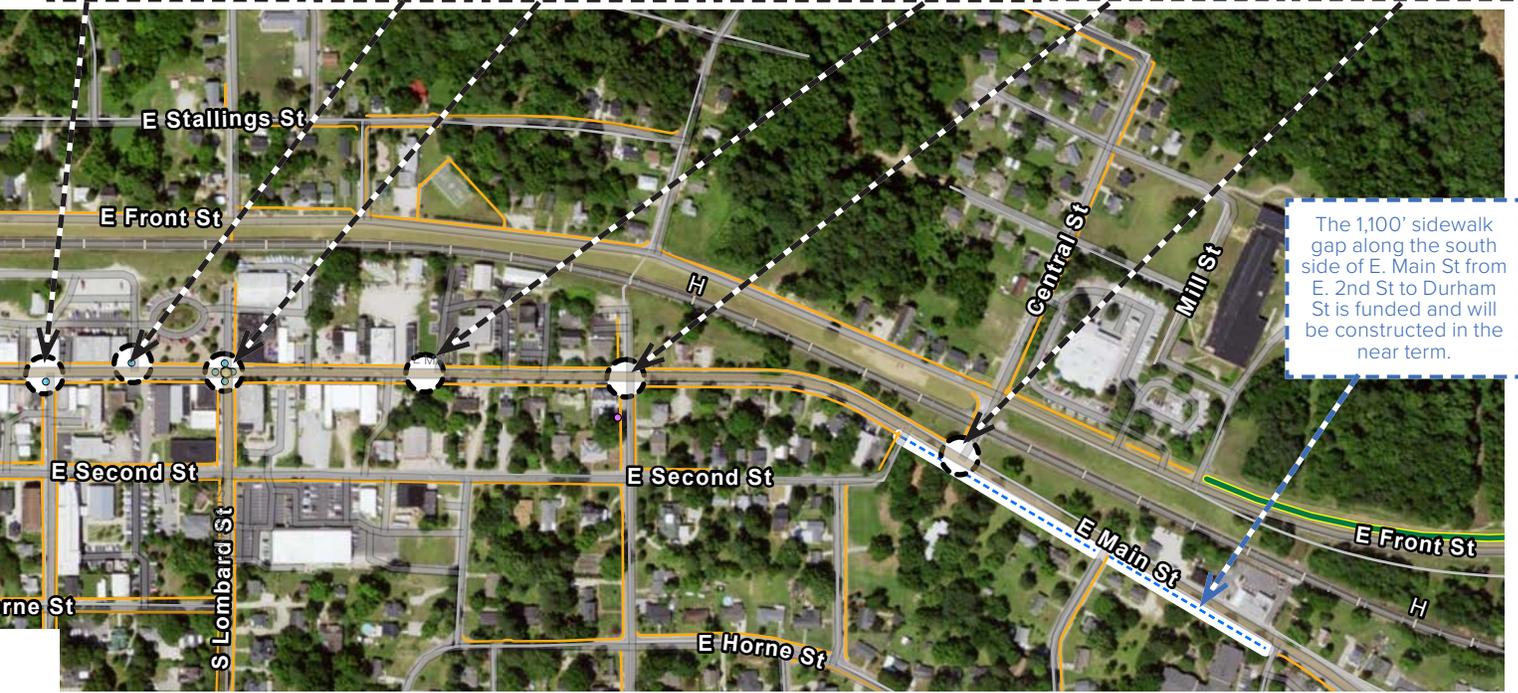
- East First St intersection**
- When the two-bar crosswalk across East First St needs restriping, paint a high visibility crosswalk.

- Lombard St intersection**
- When the two-bar crosswalks across all four legs of the intersection need restriping, paint high visibility crosswalks.
 - Construct curb extensions for all legs of the intersection

- Community Garden Mid-block crosswalk**
- The Main Street Community Garden is approximately halfway between the Lombard St and Smith St intersections and could be a logical location for a mid-block crosswalk in this vicinity (further study needed to identify exact location).
 - Construct curb extensions and a high visibility crosswalk for this mid-block crossing.
 - Install in street pedestrian-in-crosswalk signage

- Smith St intersection**
- Construct curb extensions for both legs of the Main St crossing
 - Install high visibility crosswalks on all legs
 - Install in street pedestrian-in-crosswalk signage

- Central St intersection**
- With the future sidewalk construction along the south side of E. Main St, install a pedestrian crosswalk along the west side of the intersection across Main St
 - Minimize curb radii at the NW corner
 - Install high visibility crosswalk markings
 - Install pedestrian countdown signals



The 1,100' sidewalk gap along the south side of E. Main St from E. 2nd St to Durham St is funded and will be constructed in the near term.

Priority Project #3: US 70 Crossings

While US 70 remains a significant barrier to pedestrian connectivity on both sides, multiple efforts are needed to make this corridor traversable by pedestrians. In addition to the numerous residences, businesses, and destinations on either side of US 70, this is a key corridor that is also being studied as part of the southern extension of bus rapid transit between Raleigh, Garner, and Clayton.

Building on the recently completed US 70 pedestrian crossing at the Robertson St/Amelia Church Rd intersection, the following priorities for improving US 70 crossings include (see further detail in the map below):

- **US 70/E. Main St/Champion St intersection:** With sidewalks complete to all four corners of the intersection and the funded sidewalk gap project along E. Main St to the north, this crossing would utilize the existing signalized intersection to connect the eastern edge of downtown with multiple businesses and neighborhoods to the southeast.
- **Shotwell Rd intersection:** With existing sidewalk connectivity to the northeast corner (and see priority project #4 regarding connectivity to the southeast corner), this crossing would utilize the existing signalized intersection to connect multiple businesses and residential areas on either side of US 70.
- **Moore St intersection:** With existing sidewalk connectivity to the northeast corner and the western edge of the downtown Clayton neighborhood grid, this crossing would connect numerous businesses and residences.



Facility: Sidewalk, Crosswalks

Trip Generators: US 70 businesses, multiple neighborhoods

Potential ROW Needs: N/A

Potential Partnerships: NCDOT, adjacent businesses

Estimated Construction Costs: \$604,000 (see Appendix E for further detail)



Recently implemented US 70 crosswalk



Priority Project #4: Amelia Church Rd & Shotwell Rd Greenway Gaps

Facility: Sidewalk, Greenway, Crosswalks

Trip Generators: US 70 businesses, multiple neighborhoods

Potential ROW Needs: Each greenway segment would need agreements with adjacent business or home owner association/LLC.

Potential Partnerships: NCDOT, adjacent businesses and residences

Estimated Construction Costs: \$3,151,000 (see Appendix E for further detail)

Greenway segments along Little Creek, Amelia Church Rd, and Shotwell Rd provide important neighborhood connectivity on the southwest side of US 70, but they come short of connecting to the US 70 corridor. Two short links are needed - one in the Shotwell Rd area and one along Amelia Church Rd.

Furthermore, additional greenway links could help significantly with neighborhood connectivity as well. See map notes on the following page. The image at the bottom of the page shows a cleared utility corridor that could link the existing greenway toward the Greenwood Dr neighborhood and US 70.



Cleared utility corridor that could be part of a greenway connection between Little Creek and the Greenwood Dr neighborhood and US 70.

EXISTING FACILITIES

- SIDEWALK
- GREENWAY
- PEDESTRIAN-ACTIVATED CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- TWO-BAR CROSSWALK

RECOMMENDATIONS

- - - SIDEWALK
- - - GREENWAY
- CROSSING IMPROVEMENT

- Construct a 1,300' greenway from the northern terminus of the existing sidepath along the east side of Shotwell Rd to the southeastern corner of the Shotwell Rd intersection.

- Utilize the wooded area here rather than along the edge of Shotwell Rd, providing a much more comfortable shared use path experience, with better connectivity to Clayton Corners shopping mall and businesses. Between the Lion Spring senior living community and US 70, the property is owned by DDRM Clayton Corners LLC, and any greenway development on this land will require an agreement and coordination with them.

- See priority project #3 for further information on the proposed US 70 crossing.



- An existing marked crosswalk is found here at this stop sign.

- An existing 110' gravel walking trail and small gazebo is found between the two driveways. The greenway could follow this corridor (or at least connect to it).

- A high visibility crosswalk will need to be constructed at this driveway at the stop sign.

- A shared use path bridge over Little Creek FEMA floodway, and boardwalk over wetland, will be needed in this area.

- Construct a 1,000' greenway (creating an agreement/coordinating with home owner association land) from the proposed Shotwell Rd/US 70 greenway link to the existing Kenmore Dr sidewalk.

- Construct a 650' sidewalk (including 130' pedestrian bridge) segment on the west side of Amelia Church Rd to fill the gap between the sidewalk segment south of the Little Creek bridge and the sidewalk segment leading to the US 70 pedestrian crossing in front of McDonald's.

Amelia Church Rd/Verrazano Pl intersection

- Construct a high visibility crosswalk along the east side of this intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB), and advanced flashing warning beacons upon the approach due to the sight lines.

Consider lowering the speed limit for Amelia Church Rd from 35 mph to 25 mph (NCDOT maintained road - NCDOT speed zone study needed). See further discussion of speed management on page 68.

- The greenway bridge crossing of the creek in this location as it currently cuts off greenway users from the Clayton Community Center to the west.

Amelia Church Rd/Kenmore Dr intersection

- East of this intersection is unused roadway space in the center of the road. Construct a pedestrian island and high visibility crosswalk in this location. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

- A 60' greenway segment will need to be constructed to make this connection from the existing greenway to the proposed crossing.

- The existing greenway is on the east side of Little Creek here - construct a 1,000' greenway connector to the Greenwood Dr neighborhood and to the southeast corner of the US 70/Amelia Church Rd intersection. Coordination and agreements will be needed with two or three landowners.

- Consider installing bike/ped counters on this section of greenway to count user numbers as improvements are made over time.

Priority Project #5: Glen Laurel Rd Pedestrian Improvements

Facility: Sidewalk, Greenway, Crosswalks

Trip Generators: East Clayton Community Park, multiple neighborhoods, new shopping center

Potential ROW Needs: Each greenway segment would need an agreement with an adjacent business, landowner, or home owner association.

Potential Partnerships: NCDOT, adjacent businesses and residences

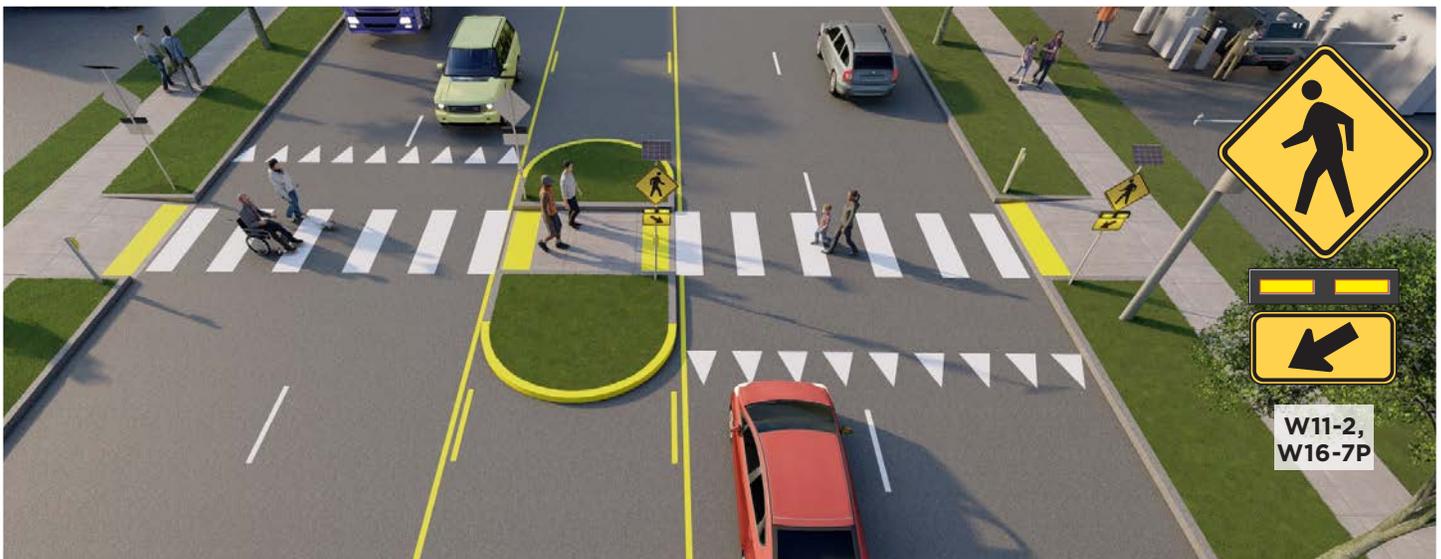
Estimated Construction Costs: \$1,320,000 (see Appendix E for further detail)

Key pedestrian improvements to this corridor are detailed on the following page, and include:

- Creating formalized crosswalks
- Filling gaps in the sidepath/shared use path network
- Lowering the speed limit from 45 mph to 35 mph (additional traffic calming measures related to roadway design should be considered (such as strategic stop signs, narrowing lane widths))

Options for installing Rectangular Rapid Flashing Beacons (RRFBs) along Glen Laurel Rd are highlighted in the map to the right. They elicit the highest increase in compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88%. Additional studies of long term installations in Florida show little to no decrease in yielding behavior over time.



Rectangular Rapid Flashing Beacon (RRFB) example graphic

EXISTING FACILITIES

-  SIDEWALK
-  GREENWAY

RECOMMENDATIONS

-  SIDEWALK
-  GREENWAY
-  CROSSING IMPROVEMENT

- Construct a 700' sidepath/greenway link to fill this gap between the existing Glen Laurel Rd sidepath and East Clayton Community Park greenway. This will require an agreement with one landowner.

- Construct a 1,600' paved or unpaved greenway link through the northern, wooded section of East Clayton Community Park to connect directly to the apartments recently constructed along NC 42.

- Construct a 240' greenway link between the existing greenway and Black Forest Dr, connecting the neighborhood to the park. This would require an agreement with the home owners association.

- Construct a 660' sidewalk segment on the south side of Glen Laurel Rd to fill this sidewalk gap. This will include some boardwalk over existing wetland.

Consider lowering the speed limit for Glen Laurel Rd from 45 mph to 35 mph (NCDOT maintained road - NCDOT speed zone study needed). Additional analyses should be conducted in considering additional traffic calming features such as creating all-way stops at key residential crossings or East Clayton Community Park. See further discussion of speed management on page 68.



Greenway/Dog Park entrance area

- Consider further analyzing this area for a potential pedestrian crosswalk. The two existing greenways on either side of Glen Laurel Rd are proximate, and is a logical location for pedestrians to attempt to cross. Site lines related to the curve make creating a crossing challenging. Further study needed.

East Clayton Community Park entrance/Oak Alley Tr intersection

- Construct a high visibility crosswalk along the west side of the intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB).
- Consider removing the right turn lane pocket, creating a shorter distance for the pedestrian crossing.

- Greenway surface repairs needed to this greenway on the south side of Glen Laurel Rd.

Trailing Oak Tr/Oak Alley Tr intersection

- Construct a high visibility crosswalk along the east side of the intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

Greenway crossing

- Construct a high visibility crosswalk. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

Birkdale Dr/Lynshire Ave intersection

- Construct a high visibility crosswalk along the east side of the intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

Priority Project #6: O'Neil St Pedestrian Improvements

Facility: Crosswalks

Trip Generators: Municipal Park, Cooper Elementary School, Downtown, multiple neighborhoods

Potential ROW Needs: None

Potential Partnerships: NCDOT, adjacent residences

Estimated Construction Costs: \$184,000 (see Appendix E for further detail)

Near Term Recommendations

New curb ramps have been recently installed along much of this corridor. High visibility crosswalks should be painted at each intersection, and crosswalks across O'Neil St should be constructed, creating formal pedestrian crossings. See further detail on the following page. Curb extensions (not included in the cost estimate above), could be accomplished by using quick-build materials (such as paint and flexible delineators), or by constructing concrete extensions that would require additional drainage detail (higher cost).

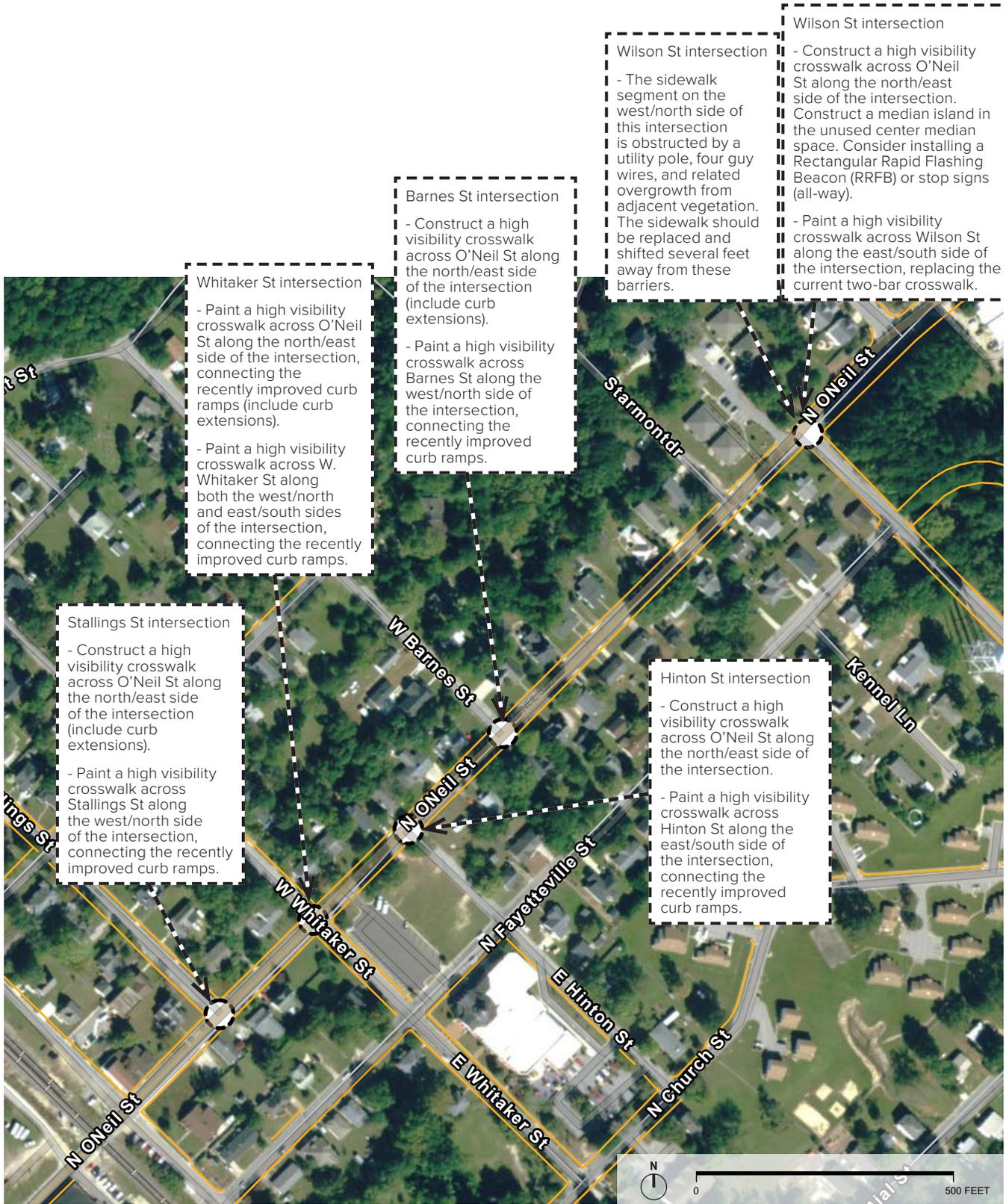
Stallings St/O'Neil St intersection - new curb ramps recently installed, but formalized crosswalks are needed



Longer Term Recommendations

Within the current 60' wide O'Neil St right of way, a significantly improved pedestrian environment could be created with some investment, by doing the following:

- Most of the O'Neil St sidewalks are older and are narrower than the 5' ADA standard width for sidewalks. Replace with 5-6' sidewalks.
- Bury the utility poles - these utilize valuable real estate that could allow for greater flexibility in creating a bike/ped corridor that has a wide physical buffer with motor vehicle traffic.
- O'Neil St currently has 28'-29' pavement width, leaving wide motor vehicle travel lanes at 14'-15' each for the two-lane cross-section. The curb should be modified to create standard 11' travel lanes, which will better match the desired posted speed limit of 25 mph, and allow for greater flexibility in creating a bike/ped corridor that has a wide physical buffer with motor vehicle traffic. This will also shorten the crossing distance for pedestrians crossing O'Neil St.



EXISTING FACILITIES

— SIDEWALK

RECOMMENDATIONS

○ CROSSING IMPROVEMENT

Priority Project #7: East Coast Greenway Completion: Downtown Clayton Feasibility Study

Municipal Park to Front St Alternatives

From the East Coast Greenway terminus at the southern edge of Municipal Park to the Front St sidepath, a key gap remains in the East Coast Greenway through the downtown area of Clayton. Two general alternatives were discussed during this planning process and a feasibility study is recommended to further detail these potential alternatives.

Rail with Trail Alternative

Trails along active rail lines are well documented throughout the US (see [Rails with Trails: Best Practices and Lessons Learned](#) (2021) by the Federal Highway Administration and Federal Railroad Administration). In downtown Clayton, a shared use path along the active railroad corridor could potentially fill this East Coast Greenway gap, utilizing the green space between the active Norfolk Southern railroad line and Front St.

With commuter rail connecting Raleigh to Clayton currently being studied, there are likely to be significant modifications to the railroad corridor and adjacent land and streetscape in the future. Any potential rail with trail along this corridor would need to be incorporated into the commuter rail development process and design.

- The existing East Coast Greenway terminates at the southern end of Municipal Park. From here to Durham, it is nearly continuous/complete.



Bike/Ped Crossing of Railroad from Municipal Park to W. Main Street

This alternative would bring the trail directly south of Municipal Park to the Moore St/W. Main St intersection, by creating a bike/ped crossing of the railroad tracks (coordination would be needed with Deep River Brewing Company on the south side). Further analysis on the feasibility of this option is needed, including whether an undercrossing, bridge, or at-grade bike/ped crossing of the railroad tracks could be feasible here.

From Moore St/W. Main St, to bring the East Coast Greenway through downtown Clayton along Main St, significant changes would be needed to the Main St streetscape to create either a sidepath or a separated bike lane/sidewalk combination to connect to Central St and Front St.

- With the upcoming downtown master plan to be conducted, this could be a topic that is further explored in that process.



A recently constructed East Coast Greenway railroad underpass in Cary, NC (Google Street View)



Priority Project #8: East Coast Greenway Completion: NC 42 Sidepath

Facility: Sidepath/Greenway

Trip Generators: Multiple residential areas and businesses, East Clayton Community Park, Neuse River access, East Coast Greenway

Potential ROW Needs: Depending on exact alignment, some right-of-way may be needed from adjacent landowners

Potential Partnerships: NCDOT, adjacent landowners, Johnston County, East Coast Greenway Alliance

Estimated Construction Costs: \$2,681,000 (see Appendix E for further detail)

Utilizing the wide right of way along the south side of NC 42, construct the sidepath/greenway as far away from the roadway as possible, and ideally along the tree line at the edge of the right of way boundary. This project could be phased by first constructing the Front St to Glen Laurel Rd section, filling a key gap between Front St and East Clayton Community Park.

The second section, east of Glen Laurel Rd, has more constraints due to topography and limitations from the recent NC 42 roadway expansion. Coordinate connectivity with the upcoming feasibility study of the East Coast Greenway from the NC 42/Neuse River bridge to Smithfield. Connection opportunities also include connecting to/through the future Johnston Community College campus (with potential connectivity further east to East Clayton Community Park).



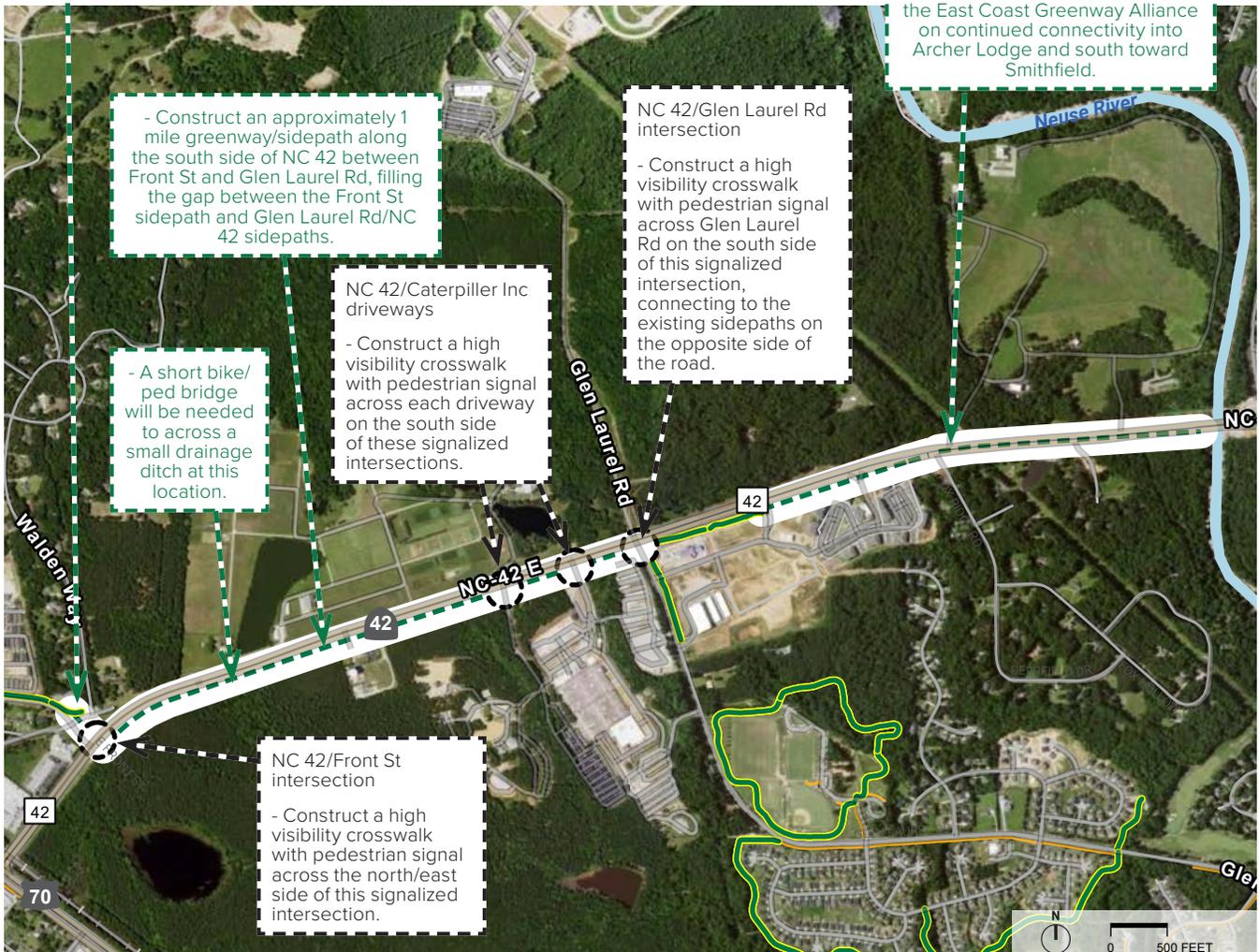
Recently installed sidepath along NC 42 east of Glen Laurel Rd. Ample physical buffer space from the roadway is key to an all ages and abilities facility along NC 42, which also serves as the East Coast Greenway through Clayton (between Front St and the Neuse River).



East Coast Greenway eastern terminus at Front St/NC 42

- Continue the NC 42 sidepath along the south side of the road to the Neuse River (Town of Clayton limits). A 5' sidewalk was recently constructed across the Neuse River on the NC 42 bridge as part of the recent roadway widening.

Coordinate with Johnston County, the Town of Archer Lodge, and the East Coast Greenway Alliance on continued connectivity into Archer Lodge and south toward Smithfield.



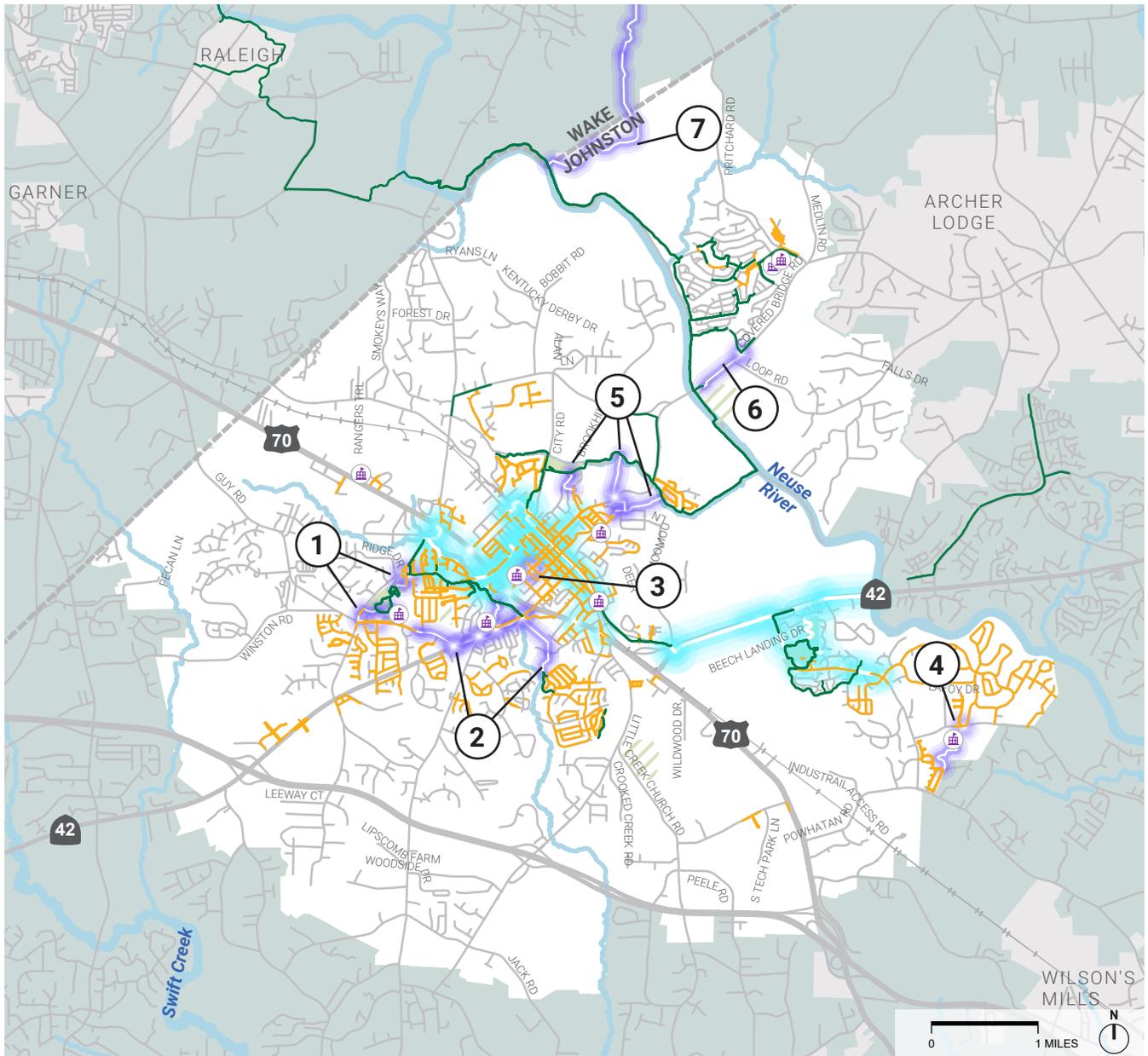
EXISTING FACILITIES

-  SIDEWALK
-  GREENWAY

RECOMMENDATIONS

-  GREENWAY
-  CROSSING IMPROVEMENT

Safe Routes to Schools and Parks



EXISTING FACILITIES

- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

RECOMMENDATIONS

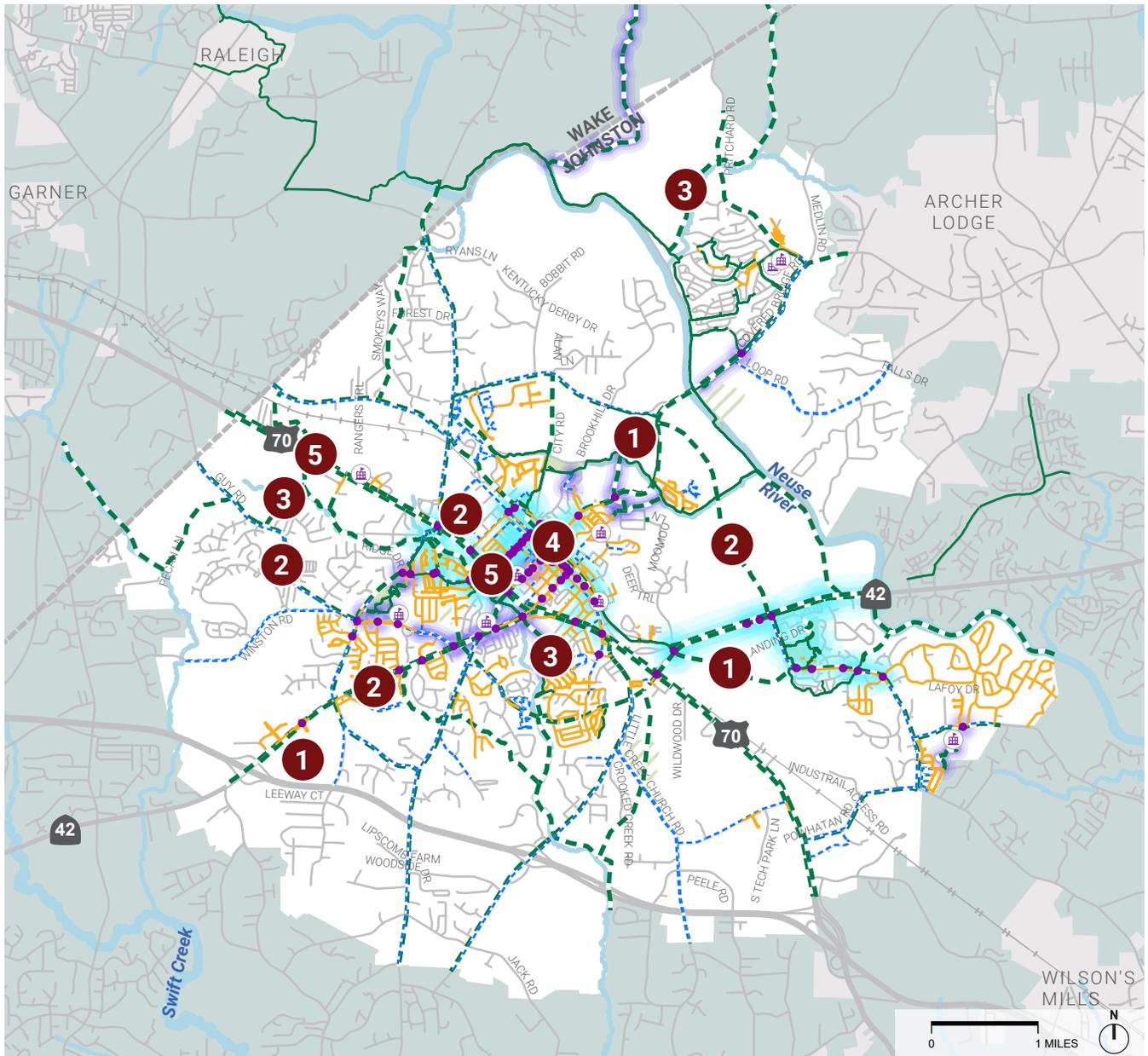
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS

Safe Routes to Schools and Parks

Numerous, relatively short links or intersection projects can enhance connectivity to parks and schools throughout Clayton. Parks and schools are key activity centers that, in many instances in Clayton, are located near multiple neighborhoods that are within a walkable distance. Implementing these short connections should be considered priorities.

Map ID	Safe Routes to Schools and Parks Notes
1	To better connect Clayton Community Park with Clayton Middle School and the surrounding neighborhood, the following steps should be taken: 1) Create a gateway in the fence that runs between the Middle School and Clayton Community Park, and create a formal shared use path link between the Clayton Community Park Greenway and the Middle School entrance. 2) Create a formal shared use path link (or links) between the Parkside Village sidewalks and the Clayton Community Park greenway. 3) Construct a high visibility crosswalk across the west side of the Guy Rd/Pineroft Dr intersection, and install a Rectangular Rapid Flashing Beacon (RRFB). 4) Complete the gap in the sidewalk network at the northeast corner of the Guy Rd/Amelia Church Rd intersection, and construct a high visibility crosswalk with pedestrian signal across the east side of the intersection. 5) Construct a shared use path from the Amelia Church Rd sidewalk terminus at Parkside Village Dr (along the north side of Parkside Village Dr) and connect it directly to the Clayton Community Park Greenway. 6) Construct a shared use path segment from the Clayton Community Center parking lot sidewalk to the greenway to the southwest. 7) Paint a high visibility crosswalk at the current two-bar crosswalk 150' west of the Yellow Jacket Ridge/Amelia Church intersection and also install a Rectangular Rapid Flashing Beacon (RRFB). 8) Shotwell Rd/Amelia Church intersection - extend the Clayton Community Center sidewalk to the intersection and construct a high visibility crosswalk with pedestrian signal across all legs of this intersection.
2	To better connect West Clayton Elementary School with the existing greenway, Clayton Middle School, Clayton Community Park, and surrounding neighborhoods, the following steps should be taken: 1) As part of the NC 42 widening project scheduled for the late 2020's, construct sidepaths on both sides of NC 42. Construct a pedestrian crossing (Pedestrian Hybrid Beacon (PHB)) at the school's eastern driveway entrance to connect the neighborhoods on the opposite side of the street. 2) Construct pedestrian crossings at the Barber Mill Rd intersection and Guy Rd intersection, and fill the sidewalk gap between NC 42 to Clayton Middle School. 3) Construct a greenway segment from the current Little Creek greenway southern terminus at NC 42 to the greenway segment to the south near Lakemont Dr (along the Town-owned land), connecting these neighborhoods to the greenway system and West Clayton Elementary. A Pedestrian Hybrid Beacon (PHB) should be installed at the greenway crossing. 4) Construct a greenway segment from the northeast side of West Clayton Elementary School to the existing greenway (a short bike/ped bridge over Little Creek will be needed).
3	Clayton High School/S. Fayetteville St: 1) Construct a high visibility crosswalk across S. Fayetteville St at the Penny St intersection (north side) and E. Blanche St (all four sides), complementing the recently installed crosswalk adjacent to the High School at Hamby St.
4	Powhatan Elementary School: 1) Construct a median island in the painted center median in the existing crosswalk at the Vinson Rd school entrance intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB). 2) Construct a short greenway link from the south side of the school to National Dr, utilizing school property and homeowners association property (agreement would be needed).
5	Cooper Elementary, Legend Park, and Sam's Branch Greenway: Consider three options for providing better connectivity in this area 1) From the new neighborhood constructed just north of Cooper Elementary, combined with upcoming development to the north of Oakdale Ave (and with potential future development to Sam's Branch to the northeast), construct a greenway segment to Sam's Branch Greenway (bike/ped bridge over Sam's Branch will be needed. 2) On the north side of O'Neil St, a residential subdivision will be constructed between the road and Sam's Branch - opportunity to connect Cooper Elementary (and surrounding neighborhoods) with Sam's Branch Greenway here as well. A high visibility crosswalk and Rectangular Rapid Flashing Beacon should be installed for the pedestrian crossing of O'Neil St in making this connection. 3) Formalize a pedestrian connection to Sam's Branch Greenway and Legend Park via Georgetowne Dr, Gordon St, and Lake Dr as the roadway public right of way abuts the Sam's Branch Greenway and Legend Park property.
6	Construct a sidepath from the Sam's Branch Greenway trailhead to Club Connection Blvd (and existing sidepath - high visibility crosswalk will be needed here with RRFB). This will also connect the future athletic fields that will be constructed between the trailhead and Loop Rd.
7	This proposed regional greenway will connect multiple parks including the East Coast Greenway, recently constructed mountain biking trails, Williamson Preserve, and a regional Wake County park (Lake Myra) that is under development to the north. Much of this corridor is already along publicly owned land.

Comprehensive Pedestrian Network



EXISTING FACILITIES

- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

RECOMMENDATIONS

- - - PROPOSED SHARED USE PATHS
- - - PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS

Comprehensive Pedestrian Network

In addition to the projects previously mentioned, there are several other important components of the pedestrian network that should be completed with pedestrian facilities when development or funding opportunities arise. The comprehensive network is the long-term vision for Clayton's pedestrian network, and below are several key components. Zoom-in maps of the comprehensive network can be found in Appendix A.

1 Projects With Development

As development continues in Clayton at a faster rate, it is imperative that these projects are constructed with pedestrian connectivity in mind. Many recent developments, such as the Steeple Chase subdivision development (between Sam's Branch Greenway and Covered Bridge Rd), have done well to incorporate greenways, sidepaths, and sidewalks into the site.

2 Projects With New Roadway Construction

As Clayton continues to grow, several roads are funded or proposed to be widened (or new construction). These are opportunities to incorporate sidepaths early into the roadway development process. This is typically significantly cheaper than retrofitting roads with complete streets infrastructure. The Front St sidepath was constructed at the same time of the roadway and serves as a good example.

NC 42 will undergo a significant change (widening) later this decade between US 70 through the southwest part of Clayton. Sidepaths and pedestrian crossing signals at all signalized intersections should be installed.

3 Watershed Trails

Continue to work with developers, home owners associations, individual landowners, and others on incorporating greenways into site planning and development that occurs along riparian corridors such as Little Creek. These corridors tend to be areas with the most intact habitat cores, and should be preserved for not only transportation and recreation, but for the critical foundation of the environmental economy they serve. These can be paved or unpaved trails depending on the specific project and context.

4 Future Commuter Rail

With commuter rail potentially coming to Clayton, a possible downtown station will result in significant changes to both the roadway and pedestrian crossings of the rail corridor. This will be an opportunity to create excellent pedestrian crossings as part of future improvements to the track. At-grade crossings should be created at every roadway crossing. While more expensive, gade separated crossings such as a bike/ped bridge or tunnel can provide safe alternatives where an at-grade crossing is not feasible (see page 55 for a local example).

5 Future Bus Rapid Transit (BRT)

US 70 is a key corridor that is also being studied as part of the southern extension of BRT between Raleigh, Garner, and Clayton. Not only are pedestrian crossings of US 70 critical (see page 46-47) to connect adjacent residences, businesses, and other destinations, but pedestrian connectivity will be essential for serving future bus stops. Sidepaths should also be developed along both sides of US 70 to complement future BRT and overall pedestrian connectivity.



4

Program Recommendations

Programs

Program recommendations are essential and complementary to infrastructure recommendations. The ideal goal is to develop a culture of safe and enjoyable walking built on comprehensive actions and initiatives by diverse groups of people. A model used to describe this comprehensive approach is called the 6 E's: Engineering, Education, Encouragement, Enforcement, Evaluation, and Equity (see diagram below).

Based on public, steering committee, and stakeholder input, the following programs are recommended:

- Active Transportation Advisory Committee
- Walk Friendly Communities Designation
- Safe Routes to Schools & Parks Action Plans
- Signage and Wayfinding
- Speed Management
- Pedestrian and Bicycle Counts



Form an Active Transportation Advisory Committee (ATAC)

Leadership from the Town of Clayton Planning Department as well as the Parks & Recreation Department, and members of this project's steering committee should become the advisory committee for guiding the implementation of this plan (often called a Bicycle and Pedestrian Advisory Committee or Trails Committee).

The ATAC should have representation from active pedestrians and bicyclists and should champion the recommendations of this plan. **The formation of this group would be a significant step in becoming designated as a Walk Friendly Community (see next page).** The committee would provide a communications link between the residents of the community and local government. They should also continue to meet periodically, and be tasked with assisting municipal staff in community outreach, marketing, and educational activities recommended by this plan.

Role in Implementation

The Committee should be prepared to:

- Meet with Town of Clayton staff and evaluate progress of the plan's implementation and offer input regarding pedestrian, bicycle, and trail-related issues.
- Assist Town of Clayton staff in applying for grants and organizing pedestrian- and bicycle-related events and educational activities.
- Build upon current levels of local support for pedestrian and bicycle issues and advocate for local project funding.

Examples in Other Local Communities

Wilson, NC; Pinehurst, NC; Southern Pines, NC

Resources:

Best Practices for Bicycle and Pedestrian Advisory Committees from the League of American Bicyclists and the Alliance for Biking & Walking

Become Designated as a Walk Friendly Community

The WFC program is a national recognition program developed to encourage communities to support safer walking environments as a local priority. The program recognizes communities which have achieved high levels of walking and low rates of pedestrian crashes while also recognizing communities which are making progress in achieving these two goals through policies, projects and programs. The thorough and detailed application process is a key part of becoming more walk-friendly by:

- Building new local partnerships.
- Collecting data for future planning efforts.
- Documenting all local walking-related programs, projects, and policies.
- Identifying areas of needed improvement.
- Providing tools to develop specific solutions before the application is submitted.
- Offering feedback and further suggestions to the community after application review.
- Creating momentum for future projects.

Preparing a WFC application requires a multi-faceted approach to collecting and presenting information about a community. The core of the application effort is completion of the WFC Assessment Tool which assesses the community in Engineering, Education, Encouragement, Enforcement, and Evaluation as well as other elements such as planning. These are the combination of criteria that best assist communities to become more walkable and to set clear goals and plans for achieving those goals. The tool is also designed to recognize that there are many different ways that communities achieve walkability and that every location is unique.



With this plan and its top recommendations completed, the Town of Clayton should be in a position to apply for and receive recognition as a Walk Friendly Community.

Safe Routes to Schools & Parks Action Plans

Safe Routes to Schools and Parks enables and encourages children and adults to walk and bike to schools and parks. These programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools and parks.

Both schools and parks are key local destinations with significant amounts of local travel (ie; shorter, walkable distances). If connected by all ages and abilities pedestrian infrastructure, they have the potential to influence a shift to more active modes of transportation.

Serving as ‘mini’ pedestrian/bicycle plans for each school/park, these planning processes could begin by incorporating the recommendations for the network from this plan, and further explore opportunities and challenges for infrastructure, programming, and policy. See the Safe Routes to Schools and Parks Projects in Chapter 3 of this plan for an example of potential connectivity improvements to multiple schools and parks in Clayton.

Below are examples of recommendations from the [Lincoln Heights Safe Routes to School Action Plan](#) in Fuquay-Varina that could serve as a template for Safe Routes to Schools & Parks Plans in Clayton.

WALKING SCHOOL BUS / BIKE TRAINS

Walking School Buses and Bike Trains let students walk or bicycle to school as a group, often with an adult volunteer. They may be daily, weekly, or monthly events.

Best Practice Programs:

- » Pinehurst Elementary School in Pinehurst, NC, created a **Walking School Bus** that resulted in a 22% reduction in traffic.
- » **Michigan’s SRTS** program developed Walking School Bus volunteer resources, sample parent letters, and resources to help develop a route.
- » Santa Clarita, CA, SRTS developed a **Walking School Bus Training Guidebook** to help parents form walking school buses.
- » Tampa Bay, FL, Washington, DC, Denver, CO, and Portland, OR, participated in a **Bike Train Webinar**.



Suggested Lead Agency:

- » Lincoln Heights SRTS Task Force

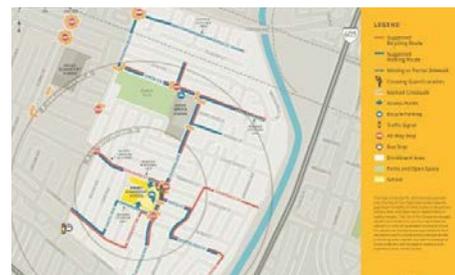
Cost: \$-\$\$

SUGGESTED ROUTE TO SCHOOL MAPS

Suggested route maps show existing sidewalks, trails, bikeways, crossing guards, and traffic control to help parents find the best walking and biking routes to school. An example and template for Lincoln Heights can be found on page 4-16. Involving students in the development of personal maps is recommended.

Best Practice Programs:

- » The **Institute of Transportation Engineers (ITE)** has a white paper on School Route Maps.
- » Washington State **requires school districts** to develop suggested route maps for all elementary schools.
- » Davis, CA, developed user-friendly **Suggested Route Maps** that include walking times and bicycle parking.



Suggested Lead Agency:

- » Lincoln Heights SRTS Task Force

Cost: \$-\$\$

Signage and Wayfinding

For a longer-term, more comprehensive approach to wayfinding, Clayton should conduct a full wayfinding plan. The plan would establish an agreed-upon signage “brand” (a.k.a., look and feel of the signs), a hierarchy of signage types (route confirmation, directional, and kiosk signage, for example), and a signage placement plan that shows exactly where each sign and sign type will be placed.

A full wayfinding plan would establish a signage “brand” and hierarchy of signage types (example here from Goldsboro, NC).

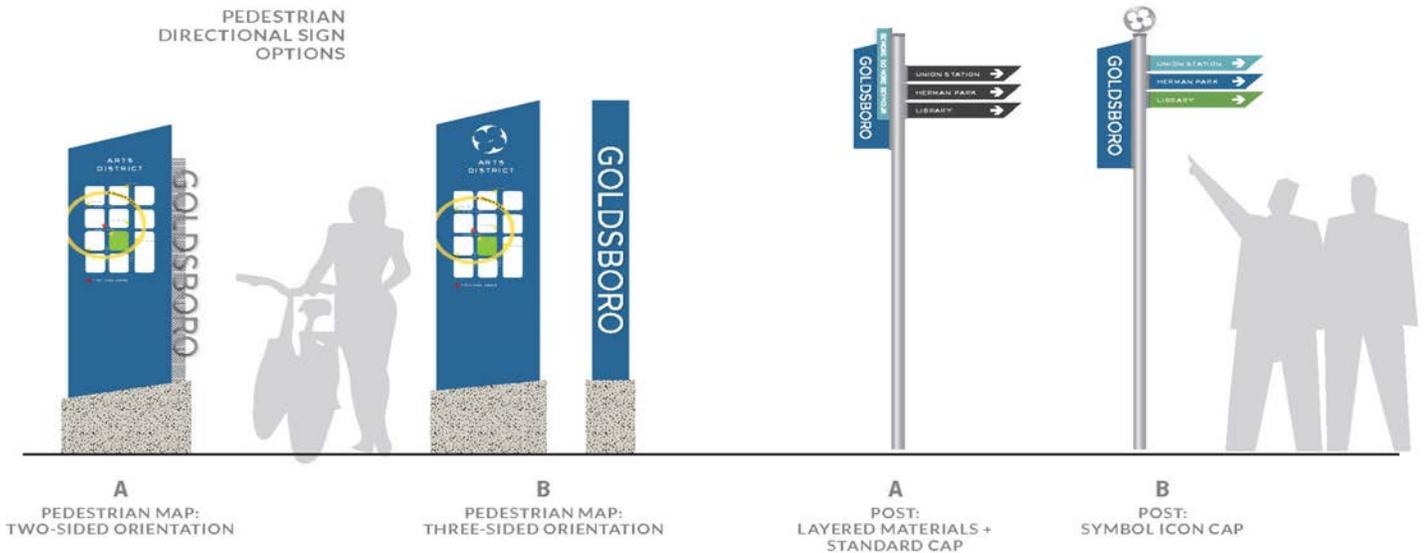
BANNER VARIATIONS



ROADWAY DIRECTIONAL SIGN POST VARIATIONS



PEDESTRIAN DIRECTIONAL SIGN OPTIONS



Speed Management

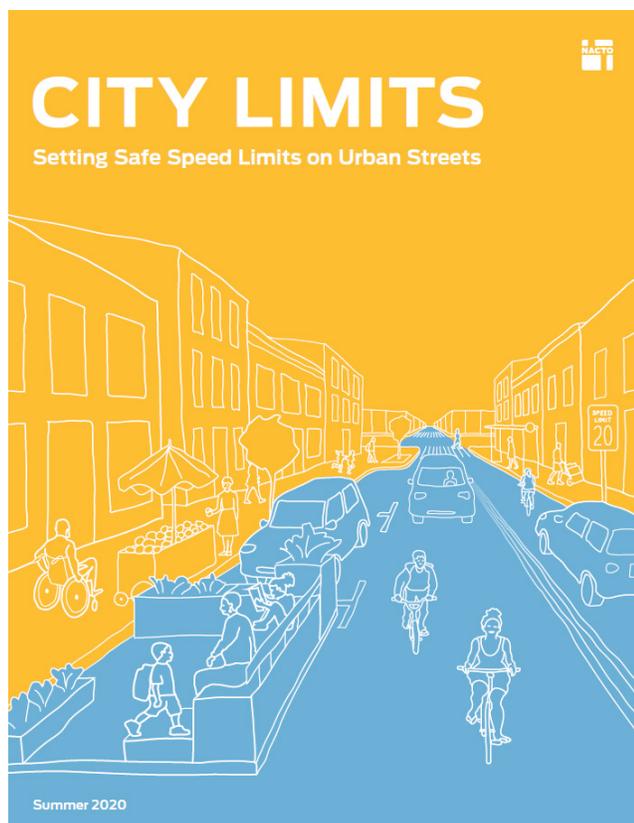
On major streets, where conditions vary widely, cities can conduct a Safe Speed Study to determine the safest maximum speed limit (see page 43 of the NACTO City Limits guide). In urban areas, a Safe Speed Study will most often result in a recommended maximum speed limit of 20 or 25 mph for major streets.

For streets that have well-protected places for people to walk and bike, and that are in low density areas with primarily manufacturing and residential uses, cities may find that a 30 or even 35 mph speed limit is appropriate. However, these higher speed limits should be used sparingly and only in cases where safe conditions can be met. Streets such as Robertson St, Glen Laurel Rd and Amelia Church Rd are examples of corridors that would benefit from speed limit reductions of 10 mph (all of these are NCDOT state maintained roads and will need coordination with NCDOT Division 4).

NACTO guidance for Speed Management

The National Association of City Transportation Officials (NACTO) created a guide on speed limits. The document succinctly outlines why communities may want to revisit their speed limits, how to go about making changes, and what is recommended based on context and goals.

More on these tactics can be found in the NACTO City Limits guide pictured below. The document can be accessed at (<https://nacto.org/safespeeds/>).



Traffic Calming Measures

Speed management needs to be approached holistically. In addition to signing appropriate speeds to a given street, street design plays a key role in creating safe motor vehicle speeds. There are three general types of speed reduction measures:

- Physical measures such as vertical deflections, horizontal shifts, and roadway narrowing intended to reduce speed and enhance the street environment for non-motorists.
- Nonphysical measures using signs and markings are intended to raise awareness and reduce speed through visual indications.
- Diversion treatments reduce cut-through traffic by obstructing or otherwise preventing traffic movements in one or more directions.

Speed management can also enhance pedestrian safety in downtown Clayton. Refer to the Transitions to Main Streets section in [FHWA Achieving Multimodal Networks](#) (2016) for more information on applying traffic calming in advance of built-up areas.

Pedestrian and Bicycle Counts

Clayton should begin the collection of bike/ped count data utilizing permanent counters and/or various technologies available that can enable the Town to evaluate trends, such as increase/decrease in usage, peak travel periods, and high activity locations. Better data on pedestrian and bicycle travel can help to determine where investments are most needed. It also helps in quantifying the benefits of walking and biking. Ultimately, better data will make active transportation projects more competitive for funding opportunities. Furthermore, with a popular regional greenway such as the East Coast Greenway featured in Clayton, count data can help determine path widths beyond 10' as needed. Bike/ped count data will also be useful for the Little Creek/Amelia Church Rd/Shotwell Rd greenway sections.

Determine the appropriate counter technology for Clayton based on feasibility and available funding. The study described below, completed by NCDOT in 2021, provides in-depth information on current technologies available. NCDOT's State-of-the-Art Approaches to Bicycle and Pedestrian Counters provides great detail on different counting technology. Clayton should review this report and consult Town Information Technology staff on potential options.

Table 43. Qualitative Cost-Benefit Analysis of the Technologies Tested

Product	Technology	Mode	Benefits		Costs		Benefit-Cost Ratio (BCR)
			Accuracy	Quality of Software Tools	Installation Difficulty	Equipment or Service Cost	
Eco-Counter MULTI System	Passive Infrared	Pedestrian	High	High	Acceptable	High	Acceptable
Eco-Counter MULTI System	Inductive Loop	Bicycle	High	High	Acceptable	High	Acceptable
TRAFx Trail Counter	Passive Infrared	All Modes Combined	Acceptable	High	Very Low	Low	High
MetroCount RidePod BP	Piezoelectric	Pedestrian	Very High	Low	Very High	Low	Acceptable
MetroCount RidePod BP	Piezoelectric	Bicycle	Very High	Low	Very High	Low	Acceptable
MetroCount RidePod BT	Pneumatic Tube	Bicycle	Very High	Low	Low	Low	Very High
Miovision Scout	Standard Video with Algorithm Processing	Pedestrian	High	High	Low	Very High	Acceptable
Miovision Scout	Standard Video with Algorithm Processing	Bicycle	High	High	Low	Very High	Acceptable
Eco-Counter CITIX 3D	Depth Camera	Pedestrian	Very Low	Acceptable	Very High	Very High	Very Low
Eco-Counter CITIX 3D	Depth Camera	Bicycle	Very Low	Acceptable	Very High	Very High	Very Low

State-of-the-Art Approaches to Bicycle and Pedestrian Counters by NCDOT (2021) with NCSU Institute for Transportation Research and Education (ITRE) and Department of Parks, Recreation, and Tourism Management. The above summary chart is from page 65 of the report.

*Another company not listed in the report is **GoodVision**. GoodVision can georeference drone imagery and pull all user activity over a specified time. For example, a series of drone video or stationary cameras across a corridor could give a sense of activity and behavior with a high level of detail.*



5

Policy Recommendations

Policies

One of the most cost-effective implementation strategies for Clayton is to establish land use and transportation policies, design standards, and development regulations that promote walkable/bikable new development, programs, and capital projects. Pedestrian, bicyclist, and motorist needs should be considered within the context of the Clayton transportation and land use system. Coordinating land-use and transportation planning activities in order to support the provision of transportation options such as walking and biking has many benefits to a community including improving safety, mobility and quality of life.

The tables below include recommendations for updating Clayton’s Code of Ordinances (as well as Clayton’s Typical Street Cross Sections). Sidewalks, bicycle facilities, and streetscape amenities such as street trees and lighting are some of the most fundamental elements of Complete Streets for pedestrians. All of these elements and others noted below also provide safety and comfort benefits to all roadway users including motorists. Access management, multi-modal level of service assessments, and traffic calming are also critical for developing Complete Streets networks for safe and comfortable walking, biking, and driving infrastructure through the development review and capital project implementation process.

The recommendations in the tables that follow are organized into major categories of “Complete Streets and Greenways”, “Pedestrian-oriented Urban Design Elements”, and “Connectivity Requirements.” All of the major categories are interrelated.

Policy Recommendations

Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
Complete Streets and Greenways		
<p>1.1 Implement Complete Streets Policy</p> <p>A Complete Streets policy allows Clayton to work towards creating a street network that encourages pedestrian and bicycle travel and provides safe and comfortable roadways for all users.</p>	<p>Needs Improvement</p> <p>The recently adopted Comprehensive Plan recommends that the Town of Clayton ‘Adopt a Complete Streets policy that supports the NCDOT 2019 Complete Streets policy and applies to new location or roadway improvements projects to ensure pedestrian and bicycle facilities are included.’</p>	<p>The policy should reference the 2019 NCDOT Complete Streets Policy, which applies to all NCDOT-maintained streets in the Town. The policy can also reference the NCDOT Complete Streets Planning and Design Guidelines, which provides excellent guidance for locally maintained streets and street networks and Complete Streets planning and design and regulatory processes. (This table references elements from the Guidelines.)</p> <p>Smart Growth America provides great resources for designing streets that cater to all users, including a best practices guide co-authored with APA.</p> <p>Dunn, NC has one of the best complete street policy statements of any community in NC:</p> <p>Zoning Ordinance Sec. 22-352. Circulation and connectivity. (a) Purpose and intent. The purpose of this section is to support the creation of a highly connected transportation system with the city in order to provide choices for drivers, bicyclists, and pedestrians; promote walking and bicycling; connect neighborhoods to each other and to local destinations such as schools, parks, and shopping centers; reduce vehicle miles of travel and travel times; increase effectiveness of municipal service delivery, and free up arterial capacity to better serve regional long distance travel needs.</p>

Policy Recommendations (Continued)

Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
<p>1.2 Develop Complete Streets Design Guidelines for a variety of contexts and all street/roadway user groups</p> <p>The subsections below include recommendations for elements of Complete Streets and complete multi-modal networks. Sidewalks, greenways, and streetscape items such as street trees and lighting are some of the most fundamental elements of Complete Streets for pedestrians and greenway users. Access management, multi-modal level of service assessments, and traffic calming are also critical for developing complete street networks for walking through the development review and capital project implementation process.</p>	<p>Needs Improvement</p> <p>To begin with, consider adopting by reference for street design one or more of the following and including in the new Unified Development Code:</p> <ul style="list-style-type: none"> • NCDOT Complete Streets Policy and Roadway Design Manual • NACTO Urban Street Design Guide • The design resources included in this plan (see Appendix B) 	<p>The NCDOT Complete Street Guidelines include recommendations on complete street design elements for pedestrians and greenway users. Clayton could adopt and endorse the NCDOT guidelines and other national guidelines, including the NACTO Urban Street Design Guide.</p>
<p>1.3 Require pedestrian accommodations, including by roadway type</p> <p>Pedestrian facilities should be determined based on street types and land uses of a given roadway corridor.</p>	<p>Clayton has Good sidewalk requirements that are generally based on street types and/or land use.</p> <p>§ 155.602 STREETS. (H) (1) Sidewalks. In order to enhance pedestrian safety and mobility, except as set forth below, sidewalks shall be required on both sides of all streets</p>	<p>Consider a greater range of sidewalks requirements based on street and land use context. In areas such as downtown and pedestrian-oriented business districts with buildings at the back of the sidewalk and ground level retail, sidewalks should be as wide as 10-16 feet wide. See the NCDOT Complete Streets Planning and Design Guidelines for contextually-based streetscape and sidewalk design requirements. Consider including these guidelines by reference in local design guidance or requirements.</p> <p>Also: The design resources recommended as part of this plan (see Appendix B) should be considered for incorporation or inclusion by reference in the Town's UDC and/or engineering specifications.</p>
<p>1.4 Require designated bicycle facilities (bike lanes, shoulders, greenways, etc) during new development or redevelopment or capital roadway projects</p>	<p>Needs Improvement</p> <p>On-road bicycle facilities are not included in the Town's Typical Street Cross Sections, but the option for sidepaths is included.</p>	<p>A wider range of bicycle facility typologies should be considered based on street typology including buffered and separated bike lanes as detailed in various publications including the NACTO Urban Bikeway Design Guide and the soon-to-be-released update to the AASHTO Guide for the Development of Bicycle Facilities.</p> <p>Also, see: Chapter 6 of Wake Forest, NC UDO for recommendations for bicycle facilities and greenways, esp. sections 6.8.2, 6.9, 6.10. Chapter 7 of the Wilson, NC UDO regarding greenways.</p>
<p>1.5 Require dedication, reservation or development of greenways</p>	<p>Needs Improvement</p>	<p>The Town of Clayton's open space requirements can include greenway development, but specific language should be included to the effect of requiring greenways identified in this Pedestrian Plan in all new development (and built to Town standards).</p> <p>See requirements in Wake Forest, NC UDO, Section 6.8.2 Greenways: "When required by the Wake Forest Comprehensive Transportation Plan, greenways and multi-use paths shall be provided according to the provisions [that follow in the section cited above]." The Town of Clayton should work with its legal counsel to determine the best approach.</p>

Policy Recommendations (Continued)

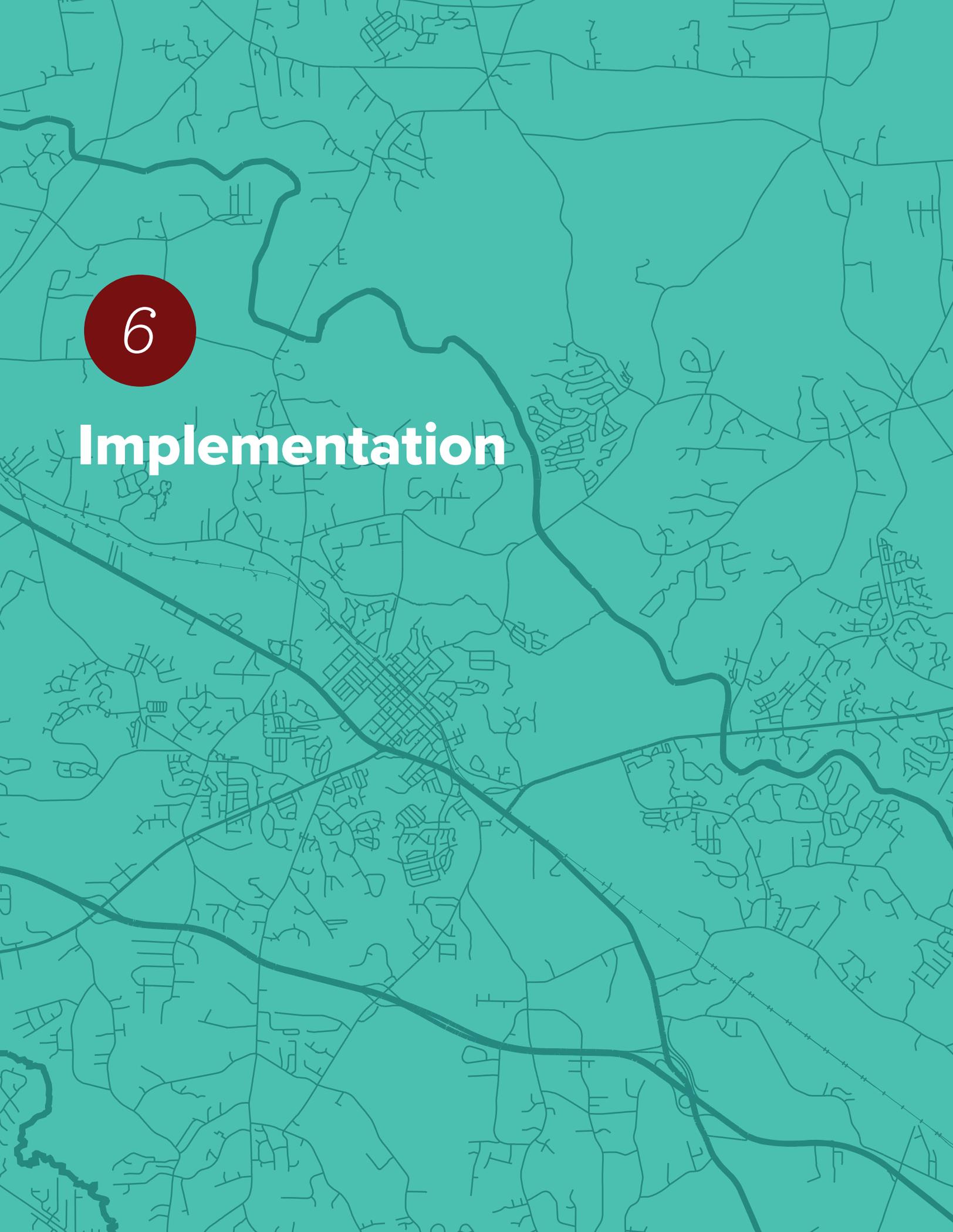
Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
<p>1.6 Consider pedestrian concerns and Level of Service (LOS) in Traffic Impact Analyses and other engineering studies</p> <p>Beyond LOS for motor vehicle travel at intersections, Clayton should consider adopting multi-modal level of service standards where active transportation and transit use are expected to be high. Consideration of pedestrian and bicycle levels of service assure adequate facilities for pedestrians and bicyclists in new development and capital improvements. This also helps promote walking and biking and transit use as legitimate means of transportation.</p>	<p>Needs Improvement</p> <p>TIA reviews for new or existing land-development projects are a great opportunity for ensuring ped/bike and transit projects/improvements are considered along with highway/street improvements.</p>	<p>The NCDOT Complete Streets Planning and Design Guidelines provides factors of “Quality of Service” and LOS for bicycle, pedestrian, and transit modes (See Chapter 3, page 39 and Chapter 5).</p> <p>The City of Raleigh uses multimodal level of service approach in determining road improvements and traffic mitigation in their Street Design Manual.</p> <p>Charlotte, NC uses Pedestrian LOS and Bicycle LOS Methodologies for intersection improvements in their Traffic Impact Study process.</p>
<p>1.7 Adopt traffic calming programs, policies, and standards</p> <p>Traffic calming on local streets increases safety and comfort for all roadway users, including pedestrians and bicyclists. It also increases neighborhood livability.</p>	<p>Needs Improvement</p>	<p>FHWA has developed a comprehensive Traffic Calming ePrimer.</p> <p>The Town of Holly Springs has an excellent Traffic Calming and Pedestrian Safety Policy, which includes allowable design treatments and policy for implementation.</p> <p>See also the NACTO Urban Bikeway Design Guide section on Bicycle Boulevards, which includes traffic calming measures.</p>
<p>1.8 Develop an access management program or policy</p> <p>Limiting turning movements on major roadways and requiring cross-access between adjacent parcels of land, including commercial developments, is a great tool for reducing the amount of traffic and turning movements on major roads while increasing safety and connectivity for pedestrians, bicyclists, and cars.</p>	<p>Good</p> <p>§ 155.204 OVERLAY DISTRICT STANDARDS</p> <p>The Thoroughfare Overlay District includes Access Regulations.</p>	<p>The Complete Streets Planning and Design Guidelines provides recommended “Access Density” guidelines (See Chapter 4, page 61 and 62) based on context, and should be referenced to create guidance for roads beyond the Thoroughfare Overlay District.</p>

Policy Recommendations (Continued)

Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
Pedestrian-oriented Urban Design Elements		
<p>2.1 Require planting strips and street trees</p> <p>When planted in a planting strip between the sidewalk and the curb, street trees provide a buffer between the pedestrian zone and the street. In addition to their value for improving the air quality, water quality, and beauty of a community, street trees can also help slow traffic and improve comfort for pedestrians. Trees add visual interest to streets and narrow the street’s visual corridor, which may cause drivers to slow down.</p>	<p>Good but Needs Improvement</p> <p>§ 155.402 LANDSCAPING, SCREENING AND BUFFERING (E2a) Street Buffers</p> <p>All new development with frontage on a commercial street or designated minor thoroughfare shall provide a Class A buffer as set forth in division (E)(3) of this section.</p>	<p>Street trees should be required for all street types and for all new development or capital projects (and where feasible based on NCDOT design standards).</p> <p>Planting strips of eight feet or greater is recommended for large maturing trees and to provide greater separation between pedestrians and the roadway. Larger planting strips may be required to meet NCDOT requirements.</p> <p>See NCDOT Complete Streets Planning and Design Guidelines (Chapter 4) for context-based pedestrian and “green” zone recommendations.</p> <p>See also, Town of Wendell UDO Chapter 8, especially section 8.8, Street Trees.</p>
<p>2.2 Require/Specify pedestrian-scale street lighting</p>	<p>Good but Needs Improvement</p>	<p>General guidance is given for pedestrian-scale lighting, but further detail on application and requirements should be included.</p> <p>Pedestrian-scale lighting along streets and at intersections is one of the most important tools for pedestrian crash prevention. See Town of Wendell UDO, Sections 11.10 and 11.11 for pedestrian-scaled lighting requirements by zoning district and for lighting requirements for greenways and walkways.</p>
<p>2.3 Update bicycle parking requirements</p>	<p>Good but Needs Improvement</p> <p>§ 155.401 OFF-STREET PARKING AND LOADING includes requirements for bicycle parking, but some improvements to the standards could include adding requirements for long-term bicycle parking, and bring the bicycle parking ratios to the recommended standards in the APBP Bicycle Parking Guidelines 2nd Edition (reference Chapter 3).</p>	<p>In general, bicycle parking should be required for all non-residential developments that have employees or visitors, all public or civic uses or sites, and all multi-family development. Different standards of bicycle parking are needed for short-term visitors and customers and for longer term users like employees, residents, and students.</p> <p>See City of Wilson UDO, Chapter 9: Parking & Driveways, Section 9.4 and 9.6.</p> <p>See City of Durham UDO Section 10.3.1 Required Motorized Vehicle and Bicycle Parking, and Section 10.4.4 Design Standards for Bicycle Parking</p> <p>Model standards for bicycle parking as well as design can be found through the Association of Pedestrian and Bicycle Professionals’ Bicycle Parking Guidelines 2nd Edition. (www.apbp.org), and are recommended for the Town of Clayton.</p>

Policy Recommendations (Continued)

Topics/Strategies	Current UDC or Adopted Plan/Standards	Comments/Recommendations General Recommendations
Connectivity Requirements		
<p>3.1 Revise block size requirements</p> <p>“[A] Good [street] network provides more direct (shorter) routes for bicyclists and pedestrians to gain access to the thoroughfares and to the land uses along them (or allows them to avoid the thoroughfare altogether). Likewise, good connections can also allow short-range, local [motor] vehicular traffic more direct routes and access, resulting in less traffic and congestion on the thoroughfares. This can, in turn, help make the thoroughfare itself function as a better, more Complete Street. For all of these reasons, a complete local street network should generally provide for multiple points of access, short block lengths, and as many connections as possible.” (NCDOT Complete Streets Planning and Design Guidelines, p 59)</p>	<p>Good</p> <p>§ 155.603 LOTS AND BLOCKS (B) (3)</p> <p>Blocks shall not exceed 1,500 feet in length.</p> <p>§ 155.603 LOTS AND BLOCKS. (B) (4)</p> <p>(4) In all districts except RE, I-1 and I-2, pedestrian connection not less than ten feet in width shall be required near the center and entirely across any block in excess of 900 feet in length to provide adequate access to schools, shopping centers, churches, or transportation facilities.</p>	<p>Maximum block length in any situation should rarely exceed 800-1000 feet for good connectivity. In areas with highest development density (urbanized, mixed use centers and high-density neighborhoods) block lengths can be as little as 200 feet. In areas with blocks as long as 800 feet or greater, a pedestrian and/or bicycle path through the block and/or alley should be required, and Clayton does have this latter requirement.</p> <p>See the example table on page 59 of the NCDOT Complete Streets Planning and Design Guidelines for a context-based approach to block size.</p>
<p>3.2 Require connectivity/cross-access between adjacent land parcels</p>	<p>Good</p> <p>§ 155.602 STREETS (K) (1)</p> <p>Public streets shall be constructed to the boundary lines of the development submitted for approval when required to provide for efficient circulation of traffic within the community.</p>	<p>Requiring connectivity or cross-access between adjacent developments is a great tool for reducing the amount of traffic on major roads while increasing connectivity for pedestrians, bicycles, service vehicles, and neighborhood access.</p> <p>For good model language, see City of Wilson, NC UDO, Section 6.4: Connectivity</p> <p>Or Town of Wake Forest, NC UDO, Section 6.5, Connectivity.</p> <p>Or for a links-to-node ratio approach, see the Town of Knightdale’s UDO Chapter 10, page 13.</p>
<p>3.3 Limit dead end streets or cul-de-sacs</p> <p>Dead end streets or Cul-de-sacs, while good at limiting motor vehicular traffic in an area, are a severe hindrance for network connectivity and over all neighborhood/ community accessibility, including for emergency access and other services.</p>	<p>Good</p> <p>§ 155.603 LOTS AND BLOCKS. (B) (5)</p> <p>A pedestrian connection not less than ten feet in width shall be required through a residential cul-de-sac when the cul-de-sac helps provide adequate access to schools, shopping centers, churches, or transportation facilities. For these purposes, this connection is required when another connection (per (B)(4) above) does not exist or the cul-de-sac terminates within 350’ of either a public right-of-way, sidewalk, greenway, school, transportation facility, park, library or public community facility, or shopping center.</p>	<p>Make the maximum length for Cul-de-sacs 250-300 feet (except in “rural” or very low-density development; e.g., density of less than 1 du/a) to limit the distance that a person biking or walking would have to travel along a cul-de-sac</p> <p>Consider requiring other traffic calming/traffic diversion measures that allow for connectivity and improve the pedestrian and biking environment such as street trees, narrow street width standards, traditional traffic calming devices, emergency and/or bike/ped connections only between streets and T intersections.</p> <p>For good model language, see City of Wilson, NC UDO, Section 6.4: Connectivity</p> <p>Or Town of Wake Forest, NC UDO, Section 6.5, Connectivity.</p>

A stylized teal map of a city with a red circle containing the number 6. The map features a network of streets, a central urban core, and a prominent road or river cutting through the city. The background is a solid teal color.

6

Implementation

How to Use This Plan

At the heart of every successful pedestrian plan is a coordinated effort by town staff and other partners to support safe travel on foot. Everyone has a key role to play in implementing this plan. Town of Clayton staff and elected/appointed officials should use this report to establish programs and policies that educate, encourage, and prioritize infrastructure investments proposed throughout the town.

TOWN OF CLAYTON →

Town staff can use this report to document travel behaviors, existing roadway design deficiencies, and specific improvement opportunities. Continuing to coordinate with developers and NCDOT will be key to implementing pedestrian facilities. This plan provides documentation and recommendations to refer to in shaping development or NCDOT projects and activities.

NCDOT →

NCDOT staff, specifically within Division 4 can use this plan to get familiar with proposed priority projects. NCDOT will play an integral role in the design, construction, and maintenance of pedestrian facilities throughout the NCDOT maintained roadways. During the project scoping process, the Town and CAMPO can communicate with NCDOT personnel to affect how STIP projects are formulated and designed.

DEVELOPERS →

As development continues in Clayton, walkability could and should be thoroughly incorporated into each site design. Growth in pedestrian facilities, such as the sidepaths and sidewalks being constructed as part of the Steeplechase Subdivision, are examples of developer participation that can serve the pedestrian network.

ACTIVE TRANSPORTATION ADVISORY COMMITTEE →

An Active Transportation Advisory Committee (ATAC) can use this plan as a framework for coordinating the development of the policies and programs recommended for Clayton. An Active Transportation Advisory Committee will be instrumental in implementing the plan.

LOCAL STAKEHOLDERS →

Local stakeholders can use this plan to understand and confirm the conditions in their neighborhoods and near their organizations (if applicable) as well as become familiar with the ways in which they can support program goals. In many cases, education and encouragement programs require these dedicated volunteers. Local stakeholders can also provide input on NCDOT processes and projects.

Implementation Action Steps

The following represent key, immediate action steps for Clayton and its partners:

Adopt This Plan

Adoption does not obligate the Town financially, but signals an intent to support the vision, goals, and recommendations of this plan in the coming years and decades.

Amend CTP

Referencing facility recommendations from this plan will ensure projects that are implemented by NCDOT will not require a cost share from the Town, per the NCDOT Complete Streets Policy.

Form an Active Transportation Advisory Committee

Leadership from the Planning Department, Parks & Recreation Department, and members of this project's steering committee should become the advisory committee for guiding the implementation of this plan.

The ATAC should have representation from active pedestrians and a diverse stakeholder group in Clayton. The formation of this group would be a significant step in becoming designated as a Walk Friendly Community (see program recommendations in Chapter 4). The committee would provide a communications link between the residents of the community and local government. They should also continue to meet quarterly, and be tasked with assisting municipal staff in community outreach, marketing, infrastructure decisions, and educational activities recommended by this plan.

Update Town Policies

Policy recommendations are presented in Chapter 5. In their essence, new policies and updated existing policies are low-cost or zero-cost means for Clayton to influence or enforce pedestrian improvements. The recommendations from this plan should be incorporated into the Town's Code of Ordinances.

Continue Coordinating with Developers and NCDOT

Continue coordinating with developers on pedestrian infrastructure circulation within and to/from new developments. As roads are improved or newly constructed, continue coordinating with NCDOT on implementing Complete Streets. With the NC 42 widening south of US 70, ensure pedestrian facilities (sidepaths, sidewalks, and crossing facilities), are thoroughly incorporated into the project.

Engage New Programs

Program recommendations can be found in Chapter 4. Planning staff, partner departments, and the ATAC should work together to move program recommendations forward.

Set Aside Dedicated Funding for Pedestrian Infrastructure Projects

Priority project sheets contain cost estimates and potential funding opportunities are listed in Appendix C. Dedicated annual funding for completing pedestrian projects should be included as a line item in Clayton's annual budget. Additionally, leverage dedicated funding by seeking private partnerships with local businesses to aid in raising funds for pedestrian projects and/or grants that require a match. Completing or at least initiating the design phase for these projects will make them more competitive in grant applications such as CAMPO's LAPP process.

Additional Staffing Needs

Consider creating a dedicated Transportation Planner whose responsibilities can include pedestrian/bicycle/greenway infrastructure and program/policy implementation. In a rapidly growing community, pedestrian Infrastructure development and program creation in a timely fashion requires additional staff time.

Typical Project Development Process

The implementation of pedestrian infrastructure projects will take time and will happen through multiple mechanisms including the NCDOT SPOT process, Clayton’s CIP, CAMPO’s LAPP process, land and roadway development, and park and open space development.

To be competitive in CAMPO’s LAPP process, creating shovel ready projects (projects that have design completed) is very important. The graphic below highlights some of the key steps in the project implementation process. These are the steps typically involved in pedestrian facility development, when the project is being built independent of other major development or roadway projects. Certain funding sources may have additional requirements, and some steps may occur simultaneously or in a different order.



Key Partners in Implementation

Role of the Town Council

The Town Council should be responsible for understanding and adopting this plan. The Council will ultimately determine the timing of action steps, and dedication of resources to implement this plan.

Role of the Planning Board

The Planning Board serves as an advisory board to the Town Council on matters of planning and zoning. The Planning Board should be prepared to:

- Become familiar with the recommendations of this plan, and support its implementation.
- During subdivision plan review, ensure required space for recommended infrastructure projects if applicable.
- Include pedestrian infrastructure needs when updating ordinances.
- Learn about bicycle- and pedestrian-related policies in North Carolina. (see: <https://connect.ncdot.gov/projects/BikePed/Pages/Policies-Guidelines.aspx>)

Role of the Active Transportation Advisory Committee (ATAC)

The Committee should be prepared to:

- Meet with Clayton staff and evaluate progress of the plan's implementation and offer input regarding pedestrian, bicycle, and trail-related issues.
- Assist Clayton staff in applying for grants and organizing pedestrian- and bicycle-related events and educational activities.
- Build upon current levels of local support for pedestrian and bicycle issues and advocate for local project funding.

Role of the Local NCDOT Division 4

Division 4 of the NCDOT is responsible for the construction and maintenance of pedestrian and bicycle facilities on NCDOT-owned and maintained roadways in Clayton, or is expected to allow for the municipalities to do so with encroachment agreements. Clayton should be proactive and take the lead in communicating with and working with Division 4, but Division 4 should also be prepared to do the following, as they are able:

- Recognize this plan as not only an adopted plan of Clayton, but also as an approved plan of the NCDOT.

- Become familiar with the pedestrian facility recommendations for NCDOT roadways in this plan (Chapter 3); take initiative in incorporating this plan's recommendations into the Division's schedule of improvements whenever possible.
- Become familiar with the design guidance listed in Appendix B of this plan; construct and maintain recommended facilities using the highest standards allowed by the State (including the use of innovative treatments on a trial basis).
- Notify Clayton staff of all upcoming roadway reconstruction projects in Clayton, no later than the design phase. Provide sufficient time for comments from Town staff.
- If needed, seek guidance and direction from the NCDOT Integrated Mobility Division on issues related to this plan and its implementation.

Role of The Police Department

The Clayton Police Department should be prepared to:

- Become experts on pedestrian- and bicycle related laws in North Carolina (see: <https://www.ncdot.gov/divisions/bike-ped/Pages/bike-ped-laws.aspx>).
- Continue to enforce not only pedestrian- and bicycle-related laws, but also motorist laws that affect walking and bicycling, such as speeding, running red lights, aggressive driving, etc.
- Participate in pedestrian- and bicycle-related education programs (excellent existing program example: the [Clayton Police Department engaged the Watch for Me NC education and encouragement program in 2018](#) - this effort should continue).
- Review safety considerations as projects are implemented.

Role of Developers

Developers in Clayton are currently playing an important role in pedestrian facility development. In general, developers should be prepared to:

- Become familiar with the benefits, both financial and otherwise, of providing amenities for walking and biking (including trails) in residential and commercial developments.
- Be prepared to account for pedestrian and bicycle circulation and connectivity in developments.

Role of Local & Regional Stakeholders

Stakeholders for pedestrian facility development and related programs, such as Johnston County, CAMPO, the Triangle Trails Initiative, members of this steering committee, and other local organizations play important roles in the implementation of this plan. Local and regional stakeholders should be prepared to:

- Become familiar with the recommendations of this plan, and communicate & coordinate with Clayton for implementation, specifically in relation to funding opportunities, such as grant writing and developing local matches for facility construction.
- CAMPO should continue to work with Clayton on submitting pedestrian and bicycle infrastructure projects for evaluation within the State Transportation Improvement Program (STIP).
- Business owners and organizations should look for opportunities to partner on specific projects, such as trail connectivity, streetscape improvements, or comprehensive signage and wayfinding projects.

Role of Local Residents, Clubs and Advocacy Groups

Local residents, clubs, and advocacy groups also play a role in the success of this plan. Building on the outreach conducted during this planning process, the ATAC should be prepared to engage local residents and groups by:

- Asking for input regarding pedestrian issues.
- Enlisting volunteers for pedestrian-related events and educational activities and/or to participate in such activities.
- Encouraging people to speak at Town Council meetings and advocate for local pedestrian and bicycle project and program funding.
- Fundraising for project implementation.

Role of Volunteers

Services from volunteers, students, and seniors, or donations of material and equipment may be provided in-kind, to offset construction and maintenance costs. Formalized maintenance agreements, such as adopt-a-trail/greenway or adopt-a-highway can be used to provide a regulated service agreement with volunteers.

Advantages of utilizing volunteers include reduced or donated planning and construction costs, community pride and personal connections to Clayton's walking network.



The Triangle Trails Initiative is a key regional partner that will assist in establishing support for regional trail development.

Performance Measures (Evaluation and Monitoring)

Clayton should establish performance measures to benchmark progress towards fulfilling the recommendations of this plan. The ATAC should play a key role in presenting these performance measures in an annual evaluation update. Performance measures could address the following aspects of pedestrian transportation and recreation in Clayton:

- Safety. Measures of pedestrian-related crashes and injuries.
- Facilities. Measures of how many pedestrian facilities have been funded and constructed since the plan's adoption.
- Maintenance. Measures of existing sidewalk/crosswalk or trail deficiency or maintenance needs.
- Counts. Measures of pedestrian traffic at specific locations.
- Education, Encouragement and Enforcement. Measures of the number of people who have participated in part of a pedestrian-related program since the plan's adoption.

Maintenance

The physical condition of walking facilities is an important consideration when residents consider choosing walking for transportation or other uses.

Continuing a maintenance management plan will be useful in ensuring that responsibility is assigned appropriately and that regular maintenance is done. The following recommendations provide a menu of considerations that can help guide continued facility maintenance in Clayton.

Pedestrian facilities should be viewed and maintained as a public resource, serving generations to come. The following guiding principles will help assure the preservation of a first class system:

- Good maintenance begins with sound planning and design.
- Promote and maintain a quality outdoor recreation and transportation experience.
- Develop a management plan that is reviewed and updated annually with tasks, operational policies, standards, and routine and remedial maintenance goals.
- Maintain quality control and conduct regular inspections.
- Include field crews, police and fire/rescue personnel in both the design review and on-going management process.
- Maintain an effective, responsive public feedback system and promote public participation.
- Be a good neighbor to adjacent properties.
- Operate a cost-effective program with sustainable funding sources.

Facility Repair or Replacement

All facilities will require repair or replacement at one time or another. The time between observation and repair/replacement will depend on whether the needed repair is deemed a hazard, to what degree the needed repair will affect the safety of the user, and whether the needed repair can be performed by an in-house maintenance crew or if it is so extensive that the needed repair must be done by outside entities or replaced completely.

Longevity of Facilities

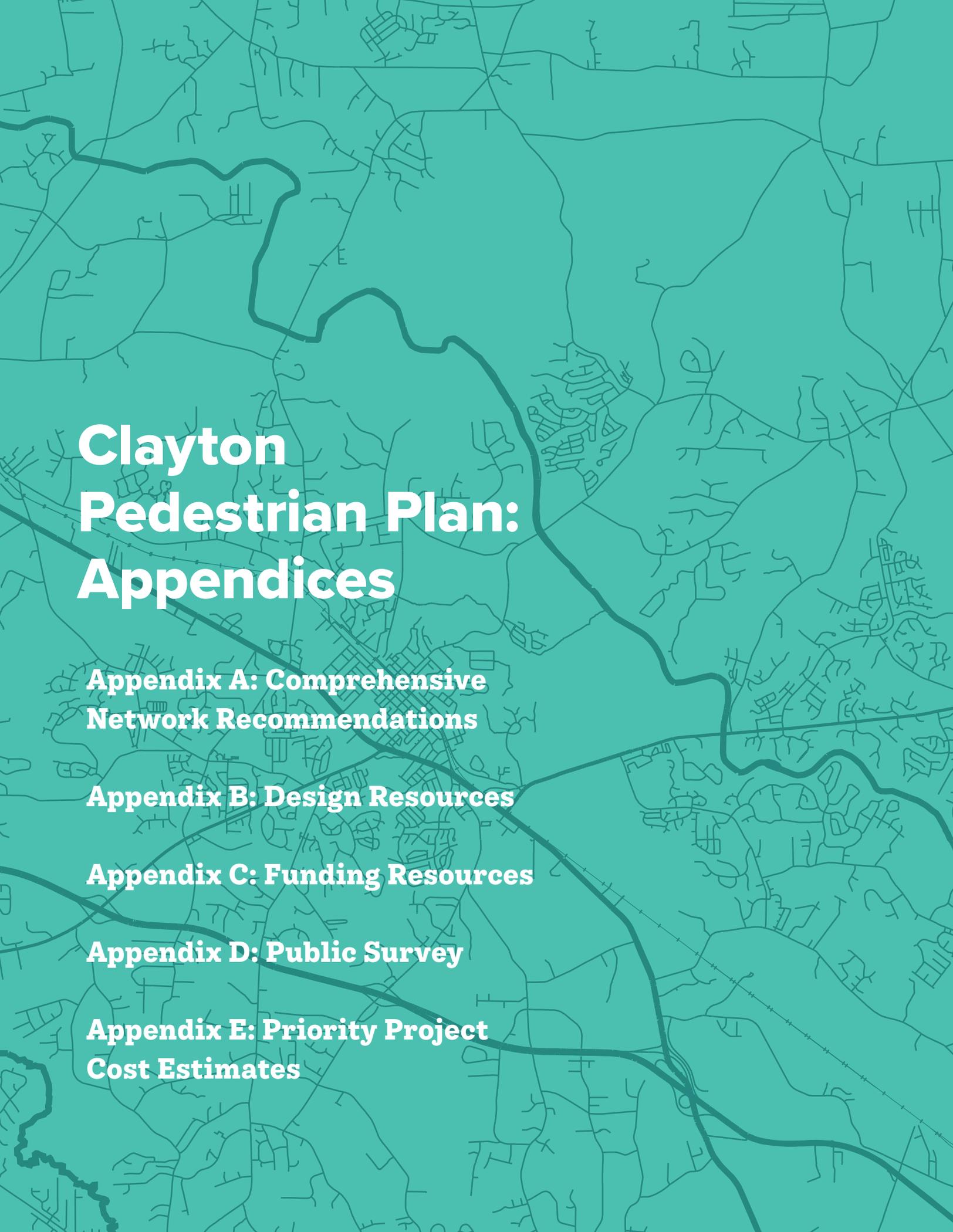
- Mulch 2-3 years
- Granular Stone 7-10 years
- Asphalt 7-15 years
- Concrete 20+ years
- Boardwalk 7-10 years
- Bridge/Underpass 100+ years

Range of Trail Maintenance Costs

Reported annual maintenance costs from cities and regions for greenways range widely, from just \$500/mile to over \$15,000/mile. The Town of Cary, NC uses \$6,000/mile for annual mowing and trash pick up, and minor repairs like replacing a fence rail; they budget asphalt and drainage repairs separately on case by case basis. Some key factors affecting these wide ranges include:

- Quality of materials used, and frequency of sealing and reconstruction of the path
- Amount of leaf drop affecting the trail that requires concentrated sweeping
- Amount of flooding of the trail that has to be cleaned up
- Amount of snow removal/grooming needed
- Whether or not mowing, irrigation, and other care of adjacent open space is calculated in the cost
- Presence of waste receptacles

The largest factor affecting the annual maintenance figures is whether or not the eventual trail reconstruction is accounted for in annual maintenance budgets, as opposed to being considered as separate capital item.



Clayton Pedestrian Plan: Appendices

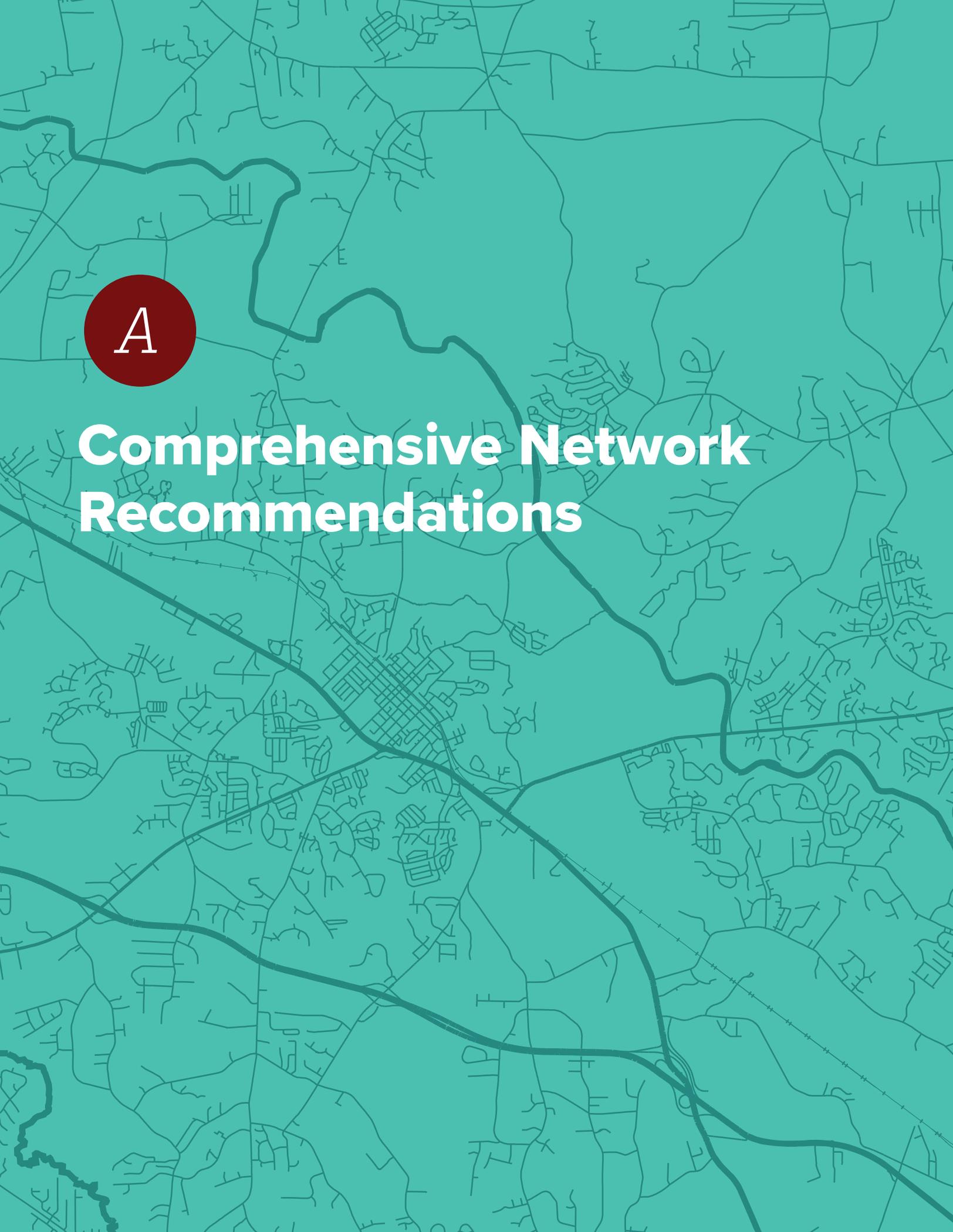
**Appendix A: Comprehensive
Network Recommendations**

Appendix B: Design Resources

Appendix C: Funding Resources

Appendix D: Public Survey

**Appendix E: Priority Project
Cost Estimates**

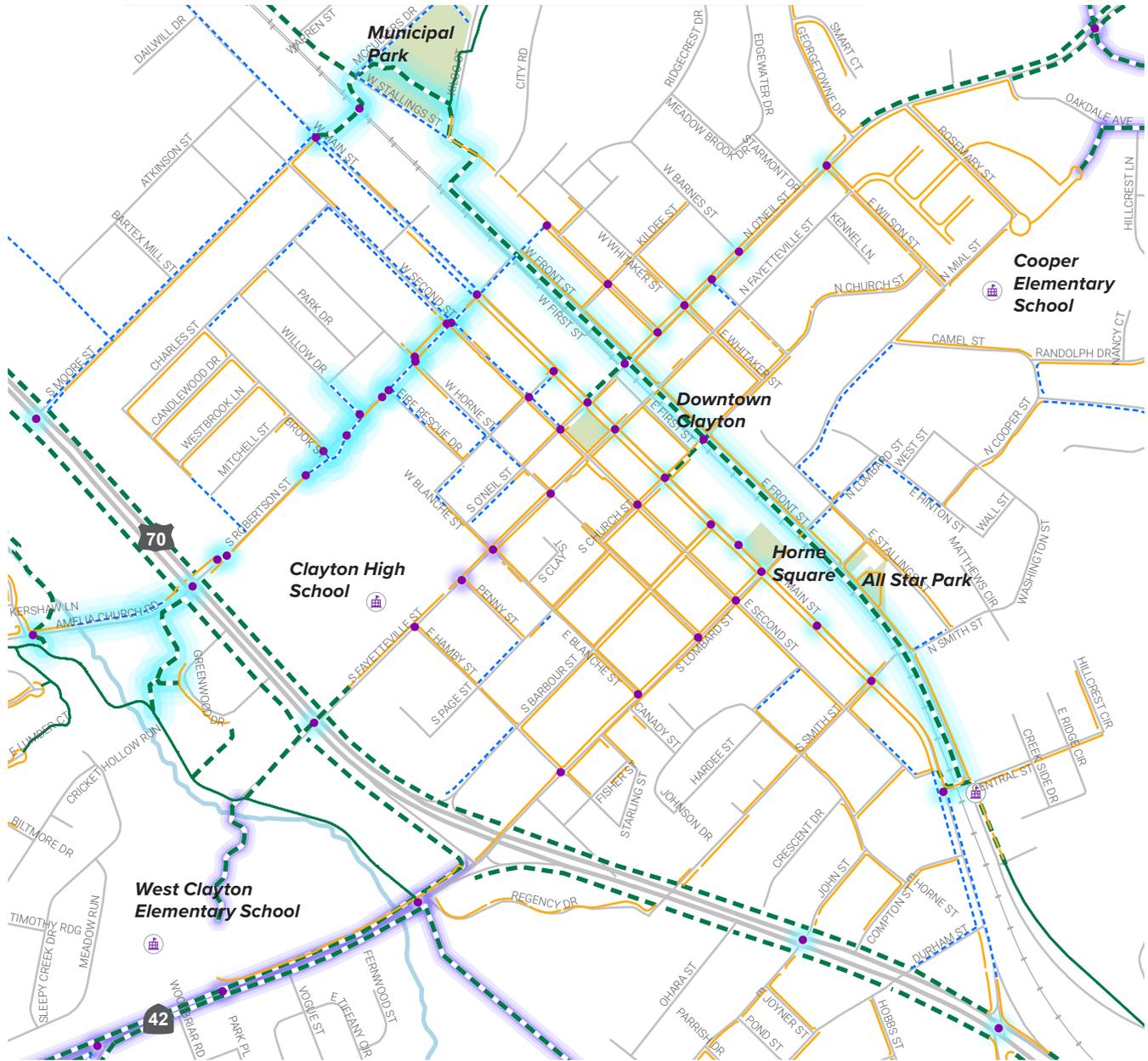


A

Comprehensive Network Recommendations

Appendix: Recommendations Maps

Downtown Clayton



EXISTING FACILITIES

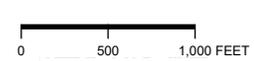
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES

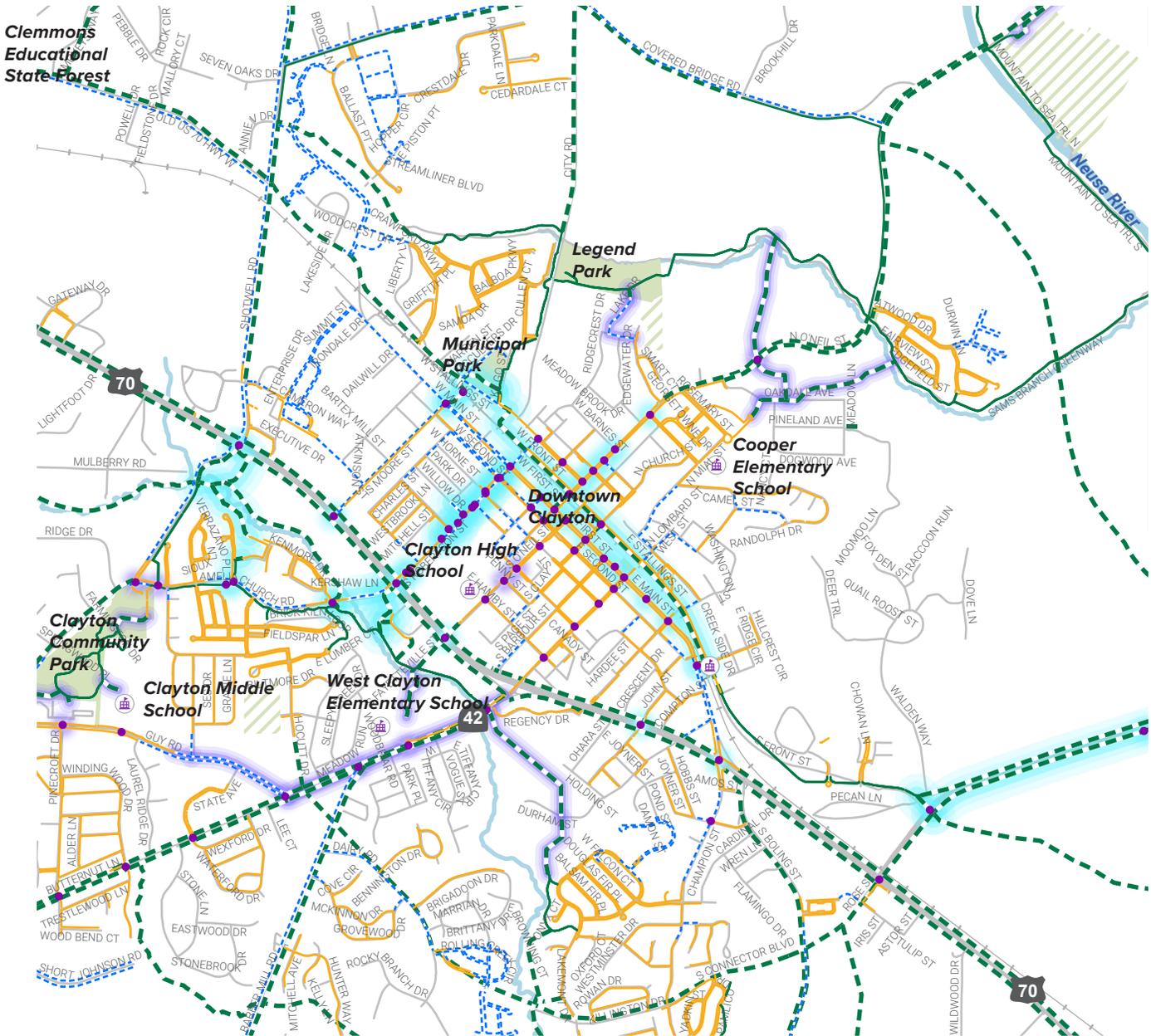
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD

RECOMMENDATIONS

- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS



Central Clayton



EXISTING FACILITIES

- SIDWALK
- GREENWAY

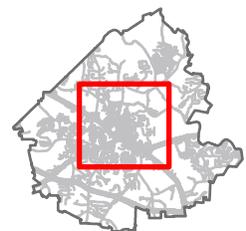
FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD

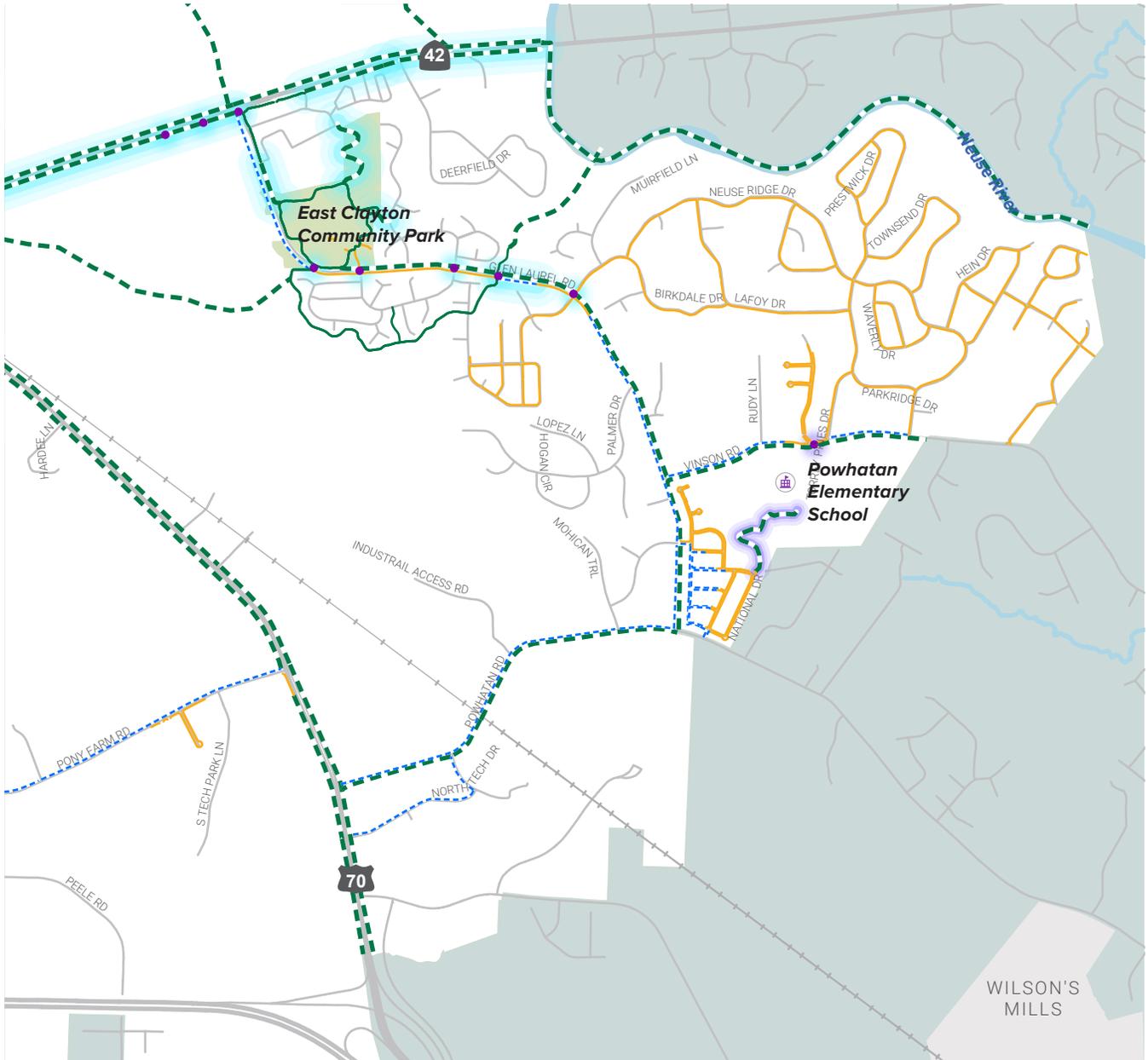
RECOMMENDATIONS

- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS

0 500 1,000 FEET



East Clayton



EXISTING FACILITIES

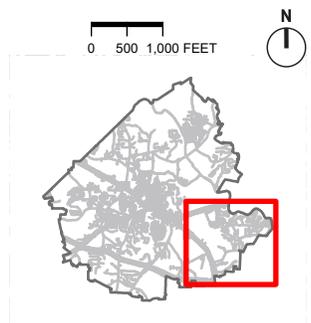
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES

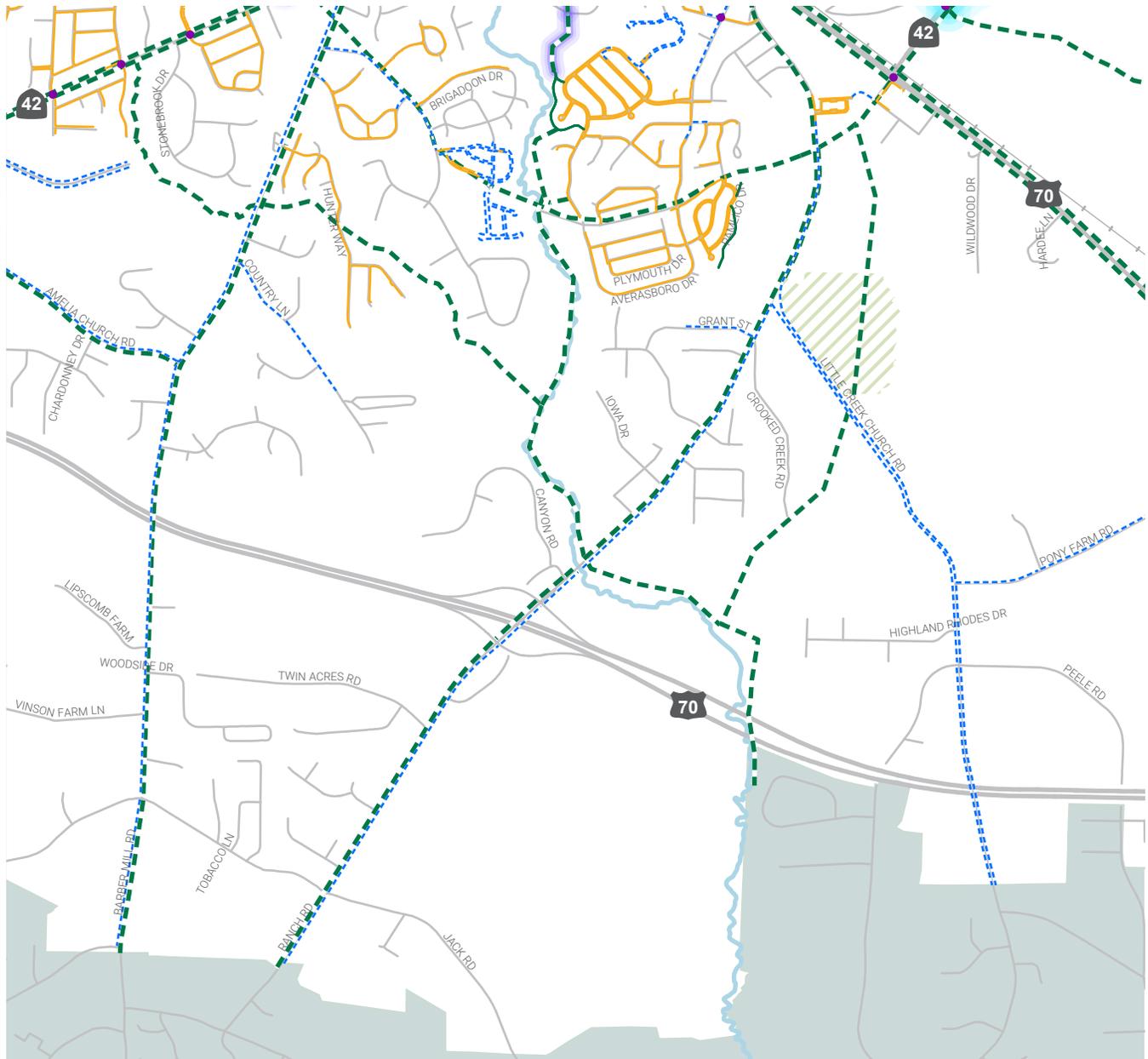
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY

RECOMMENDATIONS

- - - PROPOSED SHARED USE PATHS
- - - PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS



South Clayton



EXISTING FACILITIES

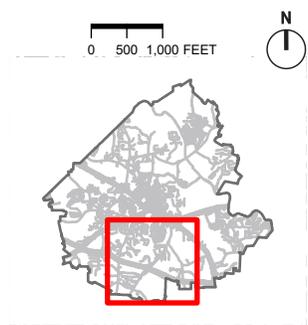
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- GREENWAY

FEATURES AND BOUNDARIES

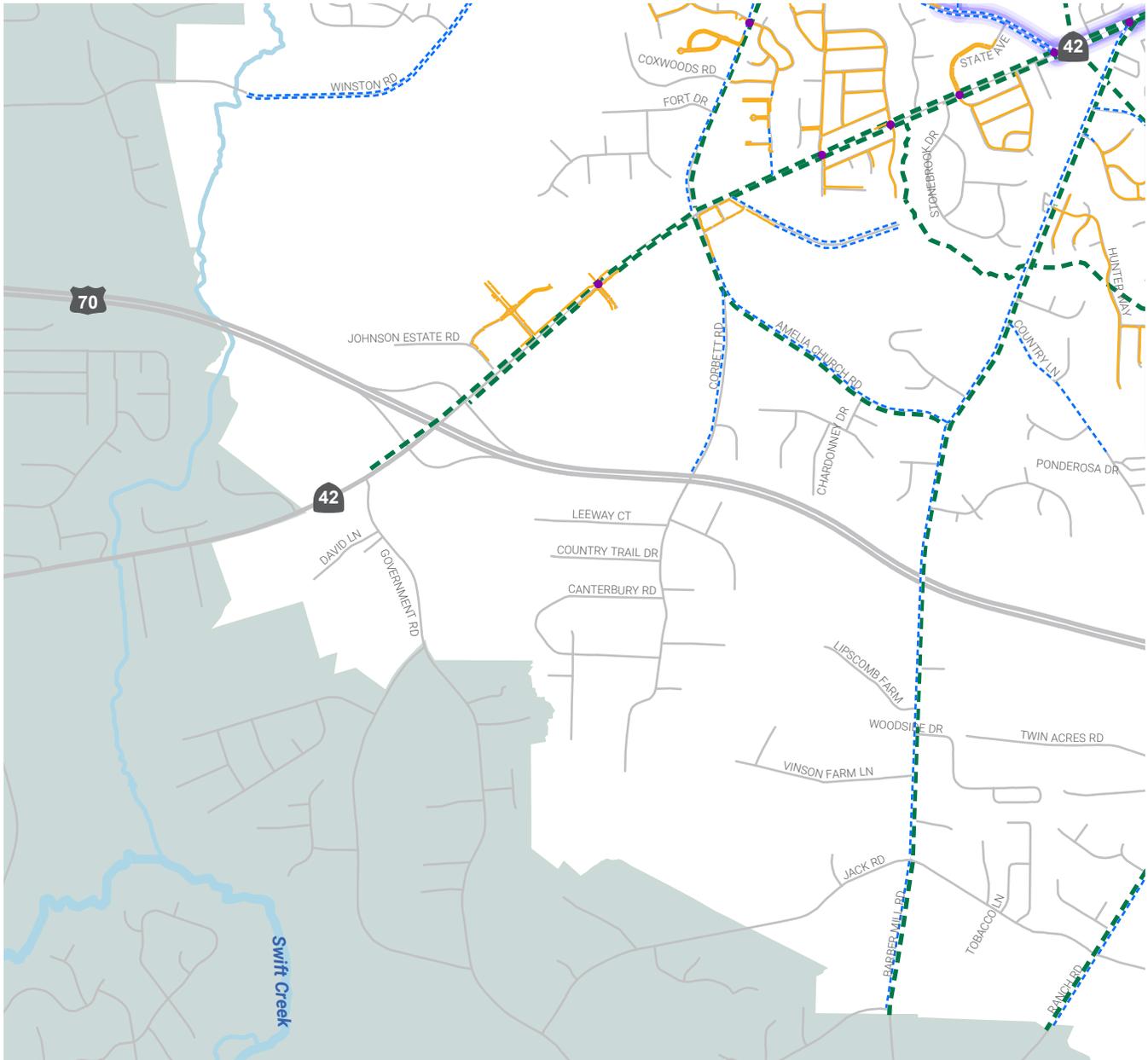
- RAILROAD
- CLAYTON ETJ

RECOMMENDATIONS

- - - PROPOSED SHARED USE PATHS
- - - PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS



Southwest Clayton



EXISTING FACILITIES

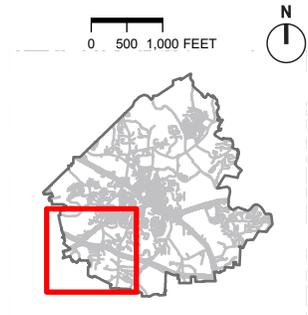
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES

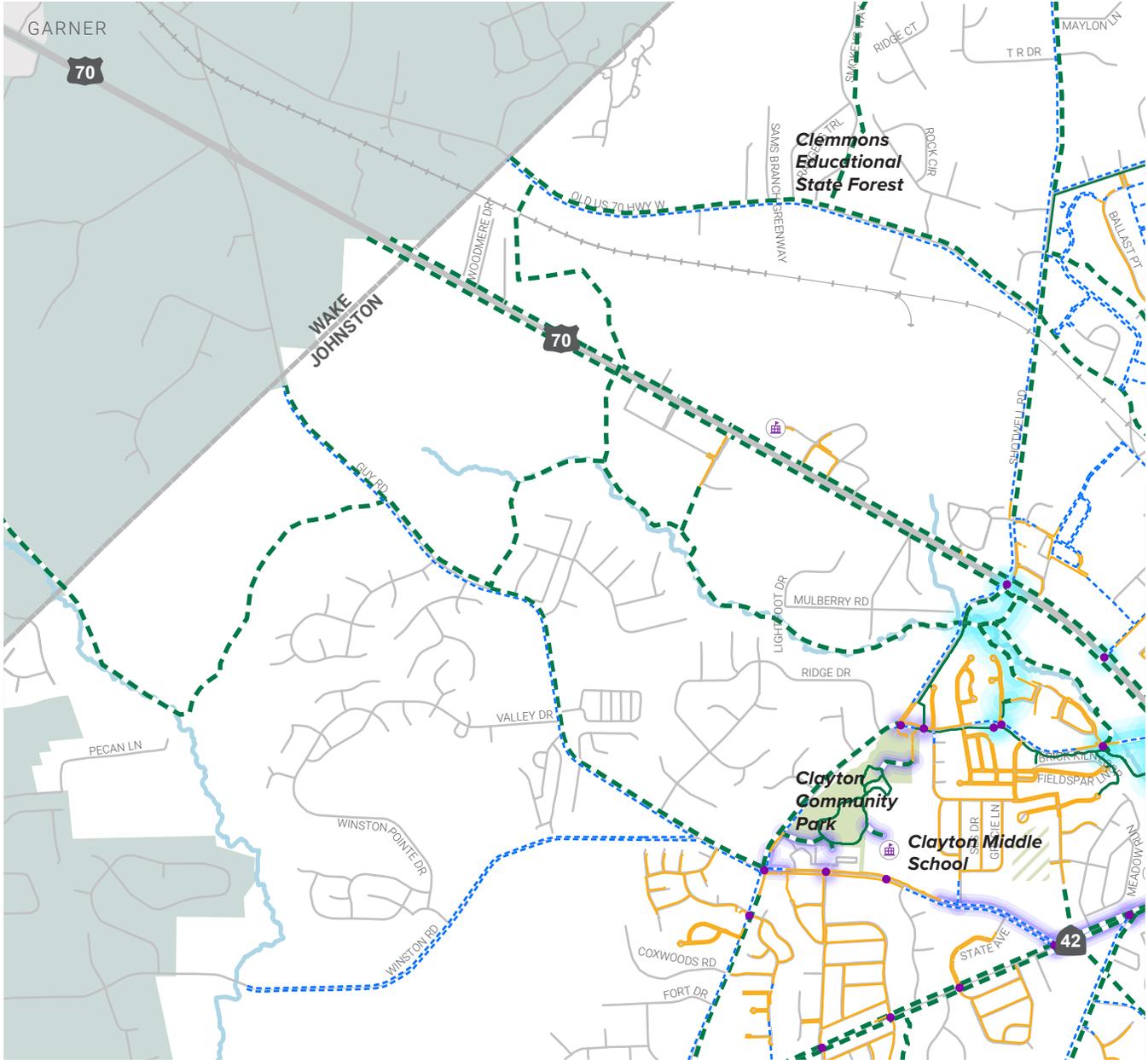
- STREAM/RIVER
- CLAYTON ETJ

RECOMMENDATIONS

- - - PROPOSED SHARED USE PATHS
- - - PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS



West Clayton



EXISTING FACILITIES

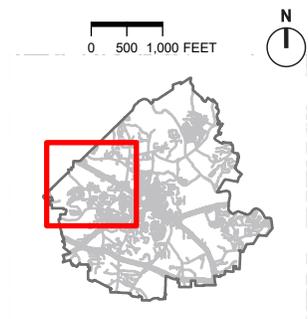
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES

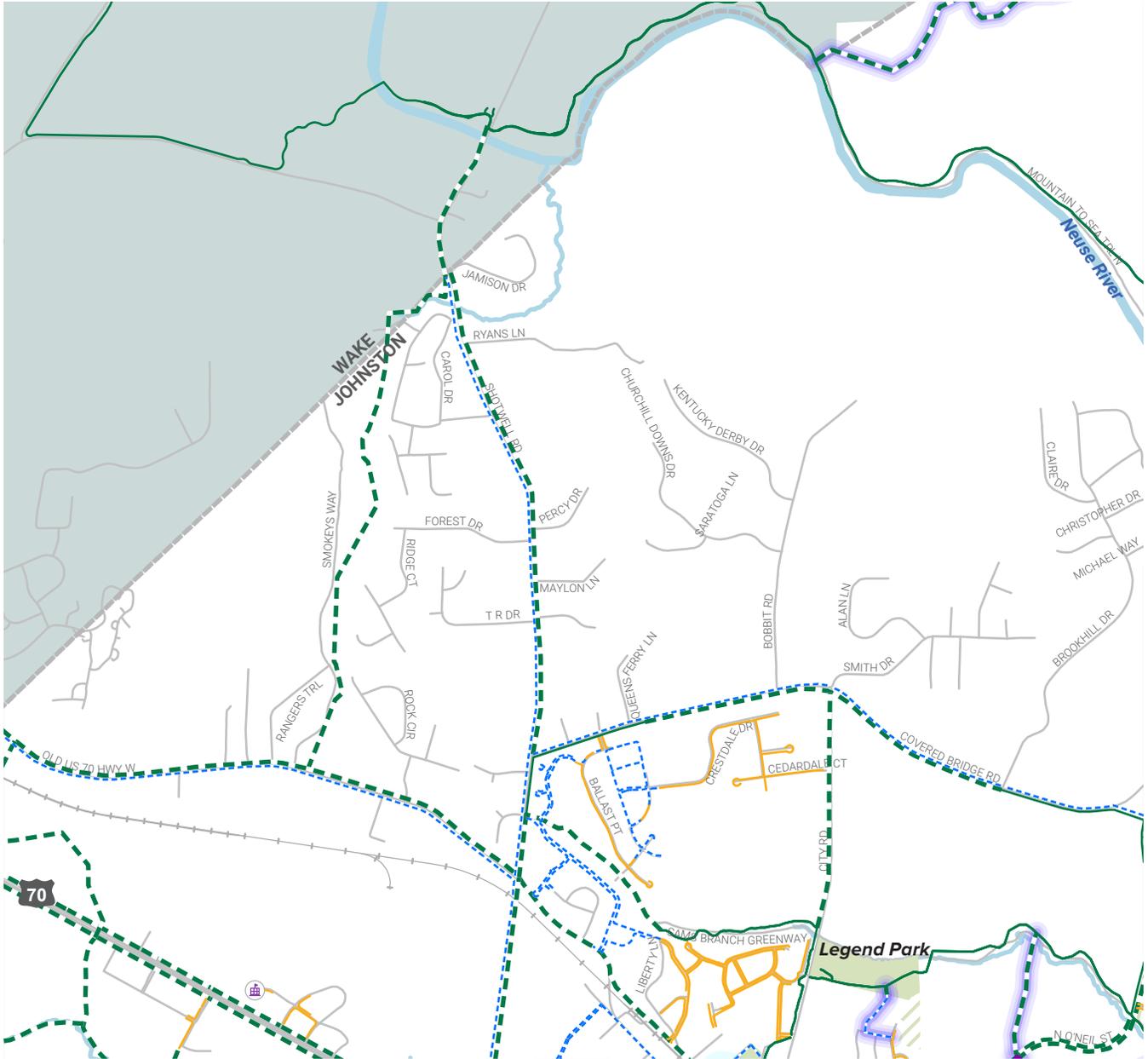
- SCHOOL
- PARK
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

RECOMMENDATIONS

- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS



Northwest Clayton



EXISTING FACILITIES

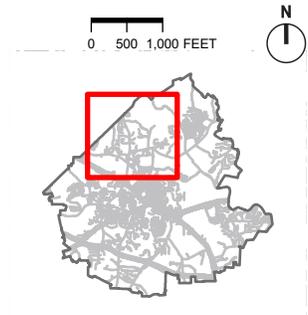
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- GREENWAY

FEATURES AND BOUNDARIES

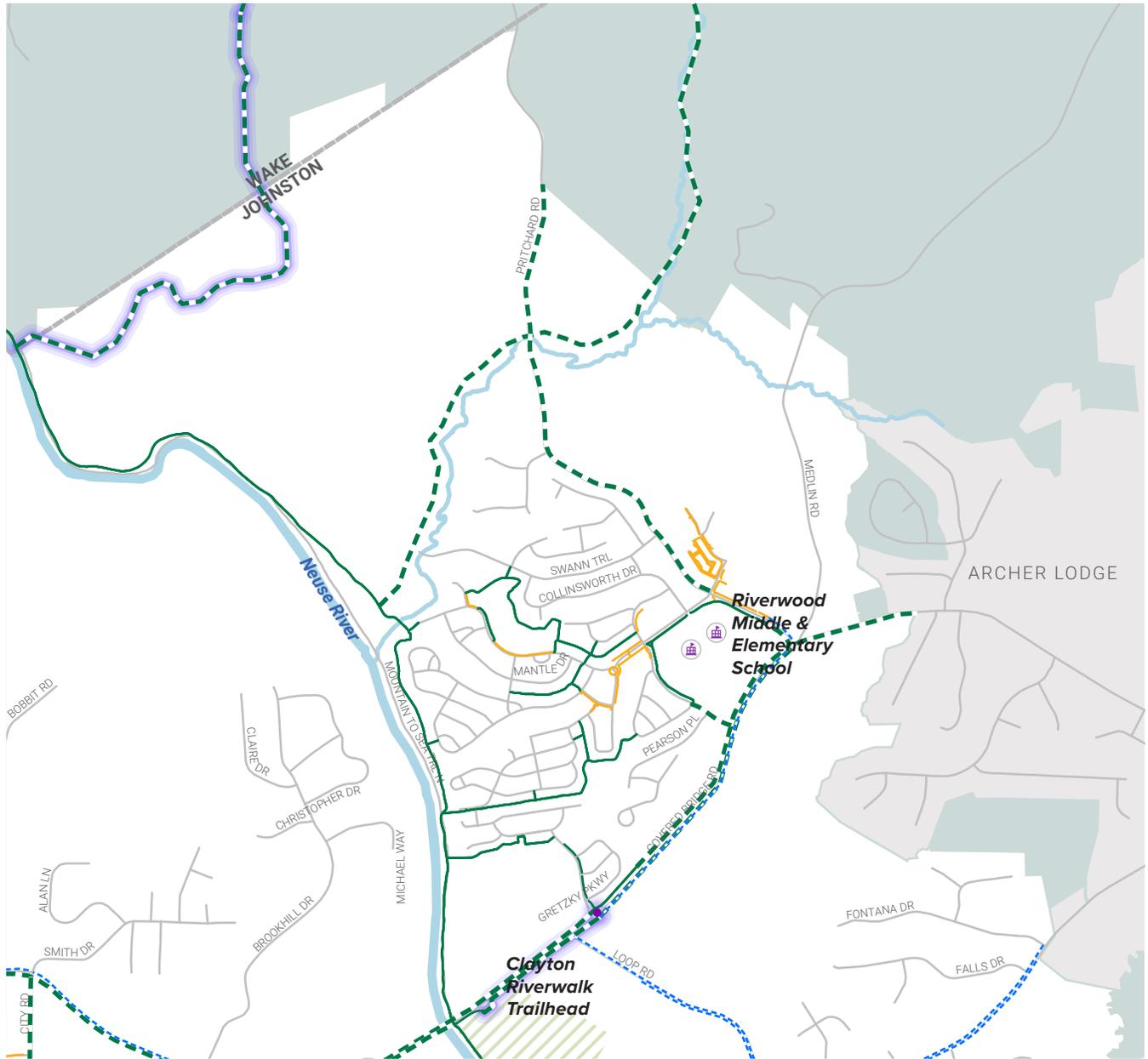
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- COUNTY BOUNDARY

RECOMMENDATIONS

- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS



North Clayton



EXISTING FACILITIES

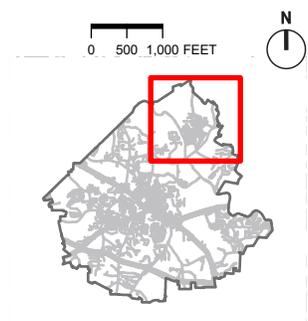
-  SIDEWALK
-  GREENWAY

FEATURES AND BOUNDARIES

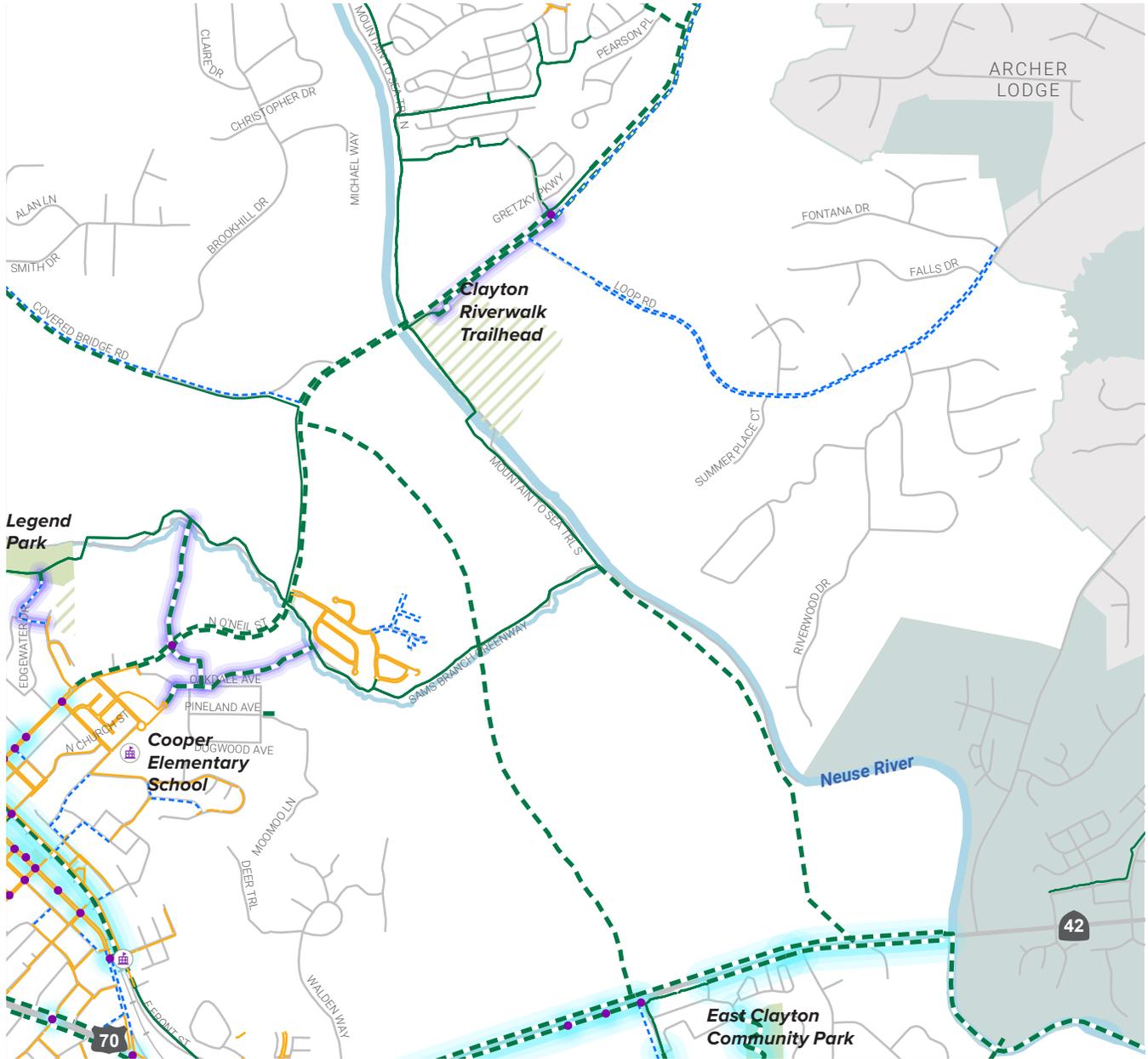
-  SCHOOL
-  STREAM/RIVER
-  RAILROAD
-  CLAYTON ETJ
-  OTHER MUNICIPAL BOUNDARY
-  COUNTY BOUNDARY

RECOMMENDATIONS

-  PROPOSED SHARED USE PATHS
-  PROPOSED SIDEWALKS
-  CROSSING IMPROVEMENTS
-  SAFE ROUTES TO SCHOOLS AND PARKS



Northeast Clayton



EXISTING FACILITIES

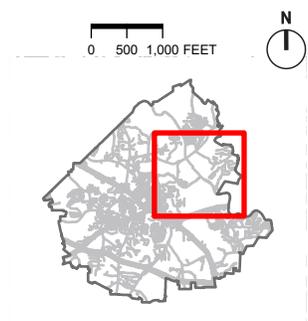
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY

RECOMMENDATIONS

- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS





Design Resources



Overview

Planners and project designers should refer to these guidelines in developing the infrastructure projects recommended by this plan, but they should not be used as the sole reference for any detailed engineering design.

As a starting point, the following list of resources are from the NCDOT website, for “**Bicycle & Pedestrian Project Development & Design Guidance**”, located here (resources listed are linked through this page; last retrieved in March 2022).

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
- 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

National Guidelines

Rails-to-Trails Conservancy:

- General Design Guidance: <https://www.railstotrails.org/build-trails/trail-building-toolbox/>
- Rails-with-Trails: <https://www.railstotrails.org/resource-library/resources/americas-rails-with-trails/>

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):

- 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:

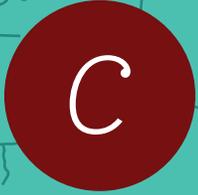
- National Center for Safe Routes to School
- National Partnership for Safe Routes to School

US Access board:

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

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/
- Small Town and Rural Multimodal Networks Design Guide (2017)
 - Main Guide: <https://ruraldesignguide.com/>
- Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (2018): https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf



Funding Resources

Funding Resources

OVERVIEW

When considering possible funding sources for trail projects, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. It will be necessary to consider several sources of funding that together will support full project completion. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and nonprofit sectors. Note that this reflects the funding available at the time of writing. Funding amounts, cycles, and the programs themselves may change over time.

FEDERAL FUNDING SOURCES

Federal funding is typically directed through state agencies to local governments either in the form of grants or direct appropriations. Federal funding typically requires a local match of five percent to 50 percent, but there are sometimes exceptions. The following is a list of possible Federal funding sources that could be used to support the construction of trail facilities.

The Infrastructure Investment and Jobs Act (IIJA)

The following is a preliminary summary of how IIJA may affect funding sources related to bicycle, pedestrian, and trail infrastructure based on what is known at the time this plan was written (early 2022).

Formula Funds (State DOTs administer to locals):

Transportation Alternatives Program (TAP) will increase from \$850 million to \$1.44 billion per year. This is the largest dedicated source of funds for walking and biking projects in the US and it just got 70% bigger. The North Carolina Department of Transportation (NCDOT) administers this funding for rural areas of the state that do not have a metropolitan planning organization. The Capital Area Metropolitan Planning Organization (CAMPO) administers Transportation Alternatives Program funding on a competitive basis to local jurisdictions in its region.

Congestion Mitigation and Air Quality Improvement Program (CMAQ) will increase by 10% to \$13.2B. This program funds interchange improvements, local transit operations, and bike and pedestrian infrastructure to help meet the National Ambient Air Quality Standard in non-attainment areas; Johnston County currently qualifies as an attainment area. Each project is evaluated to quantify its air quality improvement benefits. Funds cannot be used to add capacity for single-occupancy vehicles. Funding is distributed to non-attainment areas by population and weighted by air quality severity.

States where more than 15% of all fatalities involve cyclists or pedestrians (Vulnerable Road Users or VRU), will be required to spend 15% of their Highway Safety Improvement Program (HSIP) funding on bicycle/pedestrian projects. This includes North Carolina, where about 15% of all fatalities involve VRUs. Projects are evaluated, prioritized, and selected at the NCDOT district level based on three years of crash data (targeted funds) or systemic approved projects as outlined in the HSIP guidance.

Every state and MPO will be required to use at least 2.5% of its apportioned funding to develop planning documents that can include but are not limited to, Complete Streets standards, a Complete Streets prioritization plan, multimodal corridor studies, or active transportation plans (among other uses).

Discretionary Grants (US DOT administers to locals):

Rebuilding American Infrastructure with Sustainability and Equity (RAISE). In the first RAISE grant cycle, nearly one in five funded grant applications involved trail development. In addition, the selection committee awarded another 21% of funding to projects focused on making roads safer for vulnerable road users like cyclists and pedestrians.

Under the Infrastructure Investment and Jobs Act (IIJA), the RAISE grant program will have \$7.5 billion available over the next five years.

Competitive applications to this program have the following in common:

- The project can demonstrate broad community support and is a recognized local or regional priority.
- The project explicitly considers how it will address climate change and racial equity.

- The project documents direct and significantly favorable local or regional impact relative to the scoring criteria:
 - Safety
 - Environmental Sustainability
 - Quality of Life
 - Economic Competitiveness
 - State of Good Repair
 - Innovation
 - Partnership
- The project has a high benefit to cost ratio.
- The project demonstrates readiness by providing a detailed scope of work and budget, a realistic project delivery schedule, an understanding of the environmental risks, permit requirements, and mitigation measures, and is within the public right-of-way.
- A United States Senator or Congress member actively champions the project.

For more information on RAISE program guidelines and upcoming Notice of Funding Opportunities, see:

www.transportation.gov/RAISEgrants

Healthy Streets Program (new): \$500 million federal grant program to fund projects that address urban heat island effect, to include porous pavement changes and improvements to the tree canopy, especially along pedestrian walkways and public transit stops.

Active Transportation Infrastructure Investment Program (new): Local, regional, state, and tribal governments can apply to the program to receive funding for active transportation projects and planning grants that build upon a local/regional/state network or network spine. The projects and planning efforts have to account for safety and facilitate more people walking and biking.

Safe Streets and Roads for All (new): \$5 billion federal grant program to fund Vision Zero plans, infrastructure, and programs.

US DOT published a Notice of Funding Opportunities (NOFO) as they become available for each of the programs above.

Surface Transportation Block Grant (STBG) Program

The FAST Act converted the Surface Transportation Program into the Surface Transportation Block Grant

(STBG) program. This program is among the most flexible eligibilities among all Federal-aid and highway programs. The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of pedestrian improvements are eligible, including trails, sidewalks, crosswalks, pedestrian signals, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Safe Routes to School programs, congestion pricing projects and strategies, and recreational trails projects are other eligible activities. Under the FAST Act, a State may use STBG funds to create and operate a State office to help design, implement, and oversee public-private partnerships eligible to receive Federal highway or transit funding. In general, projects cannot be located on local roads or rural minor collectors. However, there are exceptions. These exceptions include recreational trails, pedestrian and bicycle projects, and Safe Routes to School programs.

For more information: <https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm>

Locally Administered Projects Program (LAPP)

The Locally Administered Projects Program (LAPP) was first adopted by the NC Capital Area MPO on October 20, 2010. The program is used by the MPO to prioritize and program local transportation projects in the region that utilize federal funding and are the responsibility of the MPO (such as Surface Transportation Block Grant Program – Direct Allocation (STBGP-DA), Congestion Mitigation for Air Quality (CMAQ), etc.). LAPP is a competitive funding program managed by CAMPO that prioritizes locally administered projects in the Region. These projects are funded using the federal funding sources directly attributed to the region with a minimum 20% local match. Member jurisdictions of the CAMPO region are eligible to apply for these funds.

For more information: <https://www.campo-nc.us/funding/locally-administered-projects-program>

Highway Safety Improvement Program (HSIP)

HSIP provides \$2.4 billion for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds.

For more information: <http://www.fhwa.dot.gov/fastact/factsheets/hsipfs.cfm>

Safe Routes to School (SRTS) Program

SRTS enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children. SRTS facilitates the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. Most of the types of eligible SRTS projects include sidewalks or shared use paths. However, intersection improvements (i.e. signalization, marking/upgrading crosswalks, etc.), on-street bicycle facilities (bike lanes, wide paved shoulders, etc.) or off-street shared use paths are also eligible for SRTS funds.

The North Carolina Department of Transportation's Safe Routes to School (SRTS) Program was established in 2005 through SAFETEA-LU as a federally funded program to provide an opportunity for communities to improve conditions for bicycling and walking to school. It is currently supported with Transportation Alternatives federal funding through the Surface Transportation Block Grant program established under the FAST Act. The SRTS Program has set aside \$1,500,000 per year of Transportation Alternative Program (TAP) funds for non-infrastructure programs and activities over a three-year period. Funding requests may range from a yearly amount of \$50,000 to \$100,000 per project. Projects can be one to three years in length. Funding may be requested to support activities for community-wide, regional or statewide programs.

For more information: <https://connect.ncdot.gov/projects/BikePed/Pages/Non-Infrastructure-Alternatives-Program.aspx>

CAMPO also serves as a partner in SRTS programming.

For more information: <https://www.campo-nc.us/programs-studies/bicycle-and-pedestrian>

OTHER FEDERAL FUNDING SOURCES

Federal Transit Administration Enhanced Mobility of Seniors and Individuals with Disabilities

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation

facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.

For more information: <https://www.transit.dot.gov/funding/grants/enhanced-mobility-seniors-individuals-disabilities-section-5310>

Federal Lands Transportation Program (FLTP)

The FLTP funds projects that improve transportation infrastructure owned and maintained by the following Federal Lands Management Agencies: National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), USDA Forest Service, Bureau of Land Management (BLM), U.S. Army Corps of Engineers, Bureau of Reclamation, and independent Federal agencies with land and natural resource management responsibilities. FLTP funds are for available for program administration, transportation planning, research, engineering, rehabilitation, construction, and restoration of Federal Lands Transportation Facilities. Transportation projects that are on the public network that provide access to, adjacent to, or through Federal lands are also eligible for funding. Under the FAST Act, \$335 - \$375 million has been allocated to the program per fiscal year from 2016 - 2020.

For more information: <https://flh.fhwa.dot.gov/programs/fltp/documents/FAST%20FLTP%20fact%20sheet.pdf>

Federal Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the U.S. Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources.

Since 1965, the LWCF program has built a park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than \$75 million in matching grants to protect land and support more than 875 state and local park projects. More than 38,500 acres have been acquired with LWCF assistance to establish a park legacy in our state. As of August 2020, the LWCF is now permanently funded by the federal government for \$900 million every year. This is hundreds of millions more per year than the fund typically receives.

For more information: <https://www.ncparks.gov/more-about-us/grants/lwcf-grants>

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program that provides technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program only provides planning assistance; there are no implementation funds available. Projects are prioritized for assistance based on criteria, including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. Project applicants may be state and local agencies, tribes, nonprofit organizations, or citizen groups. National parks and other federal agencies may apply in partnership with other local organizations. This program may benefit trail development in North Carolina indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: <https://www.nps.gov/orgs/rtca/index.htm>

Environmental Contamination Cleanup Funding Sources

EPA's Brownfields Program provides direct funding for brownfields assessment, cleanup, revolving loans, and environmental job training. EPA's Brownfields Program collaborates with other EPA programs, other federal partners, and state agencies to identify and leverage more resources for brownfields activities. The EPA provides assessment grants to recipients to characterize, assess, and conduct community involvement related to brownfields sites. They also provide area-wide planning grants (AWP) which provides communities with funds to research, plan, and develop implementation strategies for areas affected by one or more brownfields.

For more information: <https://www.epa.gov/brownfields/types-brownfields-grant-funding>

National Fish and Wildlife Foundation: Five Star & Urban Waters Restoration Grant Program

The Five Star & Urban Waters Restoration Grant Program seeks to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance to diverse local partnerships for wetland, riparian, forest and coastal habitat restoration, urban wildlife conservation, stormwater management as well as outreach, education

and stewardship. Projects should focus on water quality, watersheds and the habitats they support. The program focuses on five priorities: on-the-ground restoration, community partnerships, environmental outreach, education, and training, measurable results, and sustainability. Eligible applicants include nonprofit organizations, state government agencies, local governments, municipal governments, tribes, and educational institutions. Projects are required to meet or exceed a 1:1 match to be competitive.

For more information: <http://www.nfwf.org/fivestar/Pages/home.aspx>

STATE AND STATE-ADMINISTERED FUNDING SOURCES

There are multiple sources for state funding of bicycle and pedestrian transportation projects. However, state transportation funds cannot be used to match federally funded transportation projects, according to a law passed by the North Carolina Legislature.

North Carolina Department of Transportation (NCDOT) Strategic Transportation Investments (STI)

Passed in 2013, the Strategic Transportation Investments law (STI) allows NCDOT to use its funding more efficiently and effectively to enhance the state's infrastructure, while supporting economic growth, job creation and a higher quality of life. This process encourages thinking from a statewide and regional perspective while also providing flexibility to address local needs. STI also establishes a way of allocating available revenues based on data-driven scoring and local input. It is used for the State Transportation Improvement Program (STIP), which identifies the transportation projects that will receive funding during a 10-year period. STIP is a state and federal requirement, which NCDOT updates it every two years.

STI'S QUANTITATIVE SCORING PROCESS

All independent bicycle and pedestrian projects are ranked based on a quantitative scoring process, with the following main steps:

- Initial Project Review (NCDOT Strategic Prioritization Office (SPOT))
- Review Projects and Data (NCDOT Integrated Mobility Division (IMD))
- Review Data (MPOs, RPOs, Divisions)

- Review Updates and Calculate Measures (NCDOT IMD)
- Score Projects (NCDOT SPOT)

BICYCLE AND PEDESTRIAN PROJECT ELIGIBILITY REQUIREMENTS

- Minimum total project cost = \$100,000
- Eligible costs include right-of-way, preliminary engineering, and construction
- Bicycle and pedestrian and public transportation facilities that appear in a state, regional or locally adopted transportation plan will be included as part of the proposed roadway project. NCDOT will fully fund the cost of designing, acquiring right of way, and constructing the identified facilities.

SPECIFIC IMPROVEMENT TYPES

- Grade-Separated Bicycle Facility (Bicycle)
- Off-Road/Separated Linear Bicycle Facility (Bicycle)
- On-Road; Designated Bicycle Facility (Bicycle)
- On-Road Bicycle Facility (Bicycle)
- Multi-Site Bicycle Facility (Bicycle)
- Grade-Separated Pedestrian Facility (Pedestrian)
- Protected Linear Pedestrian Facility (Pedestrian)
- Multi-Site Pedestrian Facility (Pedestrian)
- Improved Pedestrian Facility (Pedestrian)

BUNDLING PROJECTS

- Allowed across geographies and across varying project types
- Bundling will be limited by project management requirements rather than geographic limitations
- Any bundled project must be expected to be under one project manager/administrative unit (must be a TAP-eligible entity)
- Makes projects more attractive for LIPs and easier to manage/let

MORE INFO ON PRIORITIZATION 6.0:

NCDOT’s Prioritization Data page has training slides that explain the prioritization process:

<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

See the “Prioritization Training” folder and the following session information within:

- Session 3: Detailed information on overall scoring components, including local input points.
- Session 4: Features relevant project funding information, and
- Session 7: Detailed slides explaining the bicycle and pedestrian project scoring

HIGH IMPACT/LOW COST FUNDS

Established by NCDOT in 2017 to provide funds to complete low-cost projects with high impacts to the transportation system including intersection improvement projects, minor widening projects, and operational improvement projects. Funds are allocated equally to each Division.

PROJECT SELECTION CRITERIA

Each Division is responsible for selecting their own scoring criteria for determining projects funded in this program. At a minimum, Divisions must consider all of the following in developing scoring formulas:

- The average daily traffic volume of a roadway and whether the proposed project will generate additional traffic.
- Any restrictions on a roadway.
- Any safety issues with a roadway.
- The condition of the lanes, shoulders, and pavement on a roadway.
- The site distance and radius of any intersection on a roadway.
 - \$1.5M max per project unless otherwise approved by the Secretary of Transportation
 - Projects are expected to be under contract within 12 months of funding approval by BOT

NCDOT TECHNICAL REVIEW & APPROVAL

- Division Engineer completes project scoring and determines eligibility.
- Division Engineer determines projects to be funded and requests approval of funding from the Chief Engineer. Division Engineer shall supply all necessary project information including funding request forms, project designs and cost estimates.
- The Project Review Committee will make a recommendation for further investigation or to include on the Board Agenda for action by the Secretary, NCDOT.

Incidental Projects

Bicycle and Pedestrian accommodations such as; bike lanes, wide paved shoulders, sidewalks, intersection improvements, bicycle and pedestrian safe bridge design, etc. are frequently included as “incidental” features of larger highway/roadway projects.

In addition, bicycle safe drainage grates and handicapped accessible sidewalk ramps are now a standard feature of all NCDOT highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds.

“Incidental Projects” are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multi-modal transportation system. Having a local bicycle or pedestrian plan is important, because it allows NCDOT to identify where bike and pedestrian improvements are needed, and can be included as part of highway or street improvement projects. It also helps local government identify what their priorities are and how they might be able to pay for these projects. Under the updated NCDOT Complete Streets Policy, NCDOT pays the full cost for incidental projects if the project is proposed in a locally adopted plan (see link to updated NCDOT Complete Streets Policy below).

For more information: <https://connect.ncdot.gov/projects/BikePed/Documents/Complete%20Streets%20Implementation%20Guide.pdf>

NC Highway Safety Improvement Program

The purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic process that identifies reviews and addresses specific traffic safety concerns throughout the state. The program is structured in several distinct phases:

- A system of safety warrants is developed to identify locations that are possibly deficient.
- Locations that meet warrant criteria are categorized as potentially hazardous (PH) locations.
- Detailed crash analyses are performed on the PH locations with the more severe and correctable crash patterns.
- The Regional Traffic Engineering staff performs engineering field investigations.
- The Regional Traffic Engineering staff utilizes Benefit: Cost studies and other tools to develop safety recommendations.

- Depending on the cost and nature of the countermeasures, the investigations may result in requesting Division maintenance forces to make adjustments or repairs, developing Spot Safety projects, developing Hazard Elimination projects, making adjustments to current TIP project plans or utilizing other funding sources to initiate countermeasures.
- Selected projects are evaluated to determine the effectiveness of countermeasures.

The ultimate goal of the HSIP is to reduce the number of traffic crashes, injuries and fatalities by reducing the potential for and the severity of these incidents on public roadways.

For more information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-program-and-Projects.aspx>

Highway Hazard Elimination Program

The Hazard Elimination Program is used to develop larger improvement projects to address safety and potential safety issues. The program is funded with 90 percent federal funds and 10 percent state funds. The cost of Hazard Elimination Program projects typically ranges between \$400,000 and \$1 million. A Safety Oversight Committee (SOC) reviews and recommends Hazard Elimination projects to the Board of Transportation (BOT) for approval and funding. These projects are prioritized for funding according to a safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction. Once approved and funded by the BOT, these projects become part of the department’s State Transportation Improvement Program (STIP).

Governor’s Highway Safety Program

The Governor’s Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries, and fatalities is required as a condition of continued funding. Permitted safety projects include checking station equipment, traffic safety equipment, and BikeSafe NC equipment. However, funding is not allowed for speed display signs. This funding source is considered to be “seed money” to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. Applications must include county level crash data. Local governments, including county governments and municipal governments, are eligible to apply.

For more information: <https://www.ncdot.gov/initiatives-policies/safety/ghsp/Pages/default.aspx>

The North Carolina Division of Parks and Recreation - Recreational Trails Program Grant

Funding from the federal Recreational Trails Program (RTP), which is used for renovating or constructing trails and greenways, is allocated to states. The North Carolina Division of Parks and Recreation and the State Trails Program manages these funds with a goal of helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking, and horseback riding to river trails and off-highway vehicle trails. Grants are available to governmental agencies and nonprofit organizations. The maximum grant amount is \$250,000 and requires a 25% match of RTP funds received. Permissible uses include:

- New trail or greenway construction
- Trail or greenway renovation
- Approved trail or greenway facilities
- Trail head/ trail markers
- Purchase of tools to construct and/or renovate trails/ greenways
- Land acquisition for trail purposes
- Planning, legal, environmental, and permitting costs - up to 10% of grant amount
- Combination of the above

For more information: <http://www.ncparks.gov/more-about-us/grants/trail-grants/recreational-trails-program>

NC Parks and Recreation Trust Fund (PARTF)

The Parks and Recreation Trust Fund (PARTF) provides dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities, and public authorities, as defined by G.S. 159-7, are eligible applicants. A local government can request a maximum of \$500,000 with each application. An applicant must match the grant dollar-for-dollar, 50 percent of the total cost of the project, and may contribute more than 50 percent. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match. Property acquired with PARTF funds must be dedicated for public recreational use.

For more information: <https://www.ncparks.gov/more-about-us/parks-recreation-trust-fund/parks-and-recreation-trust-fund>

Clean Water Management Trust Fund

The Clean Water Management Trust Fund (CWMTF) is available to any state agency, local government, or non-profit organization whose primary purpose is the conservation, preservation, and restoration of North Carolina's environmental and natural resources. Grant assistance is provided to conservation projects that:

- enhance or restore degraded waters;
- protect unpolluted waters, and/or
- contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits;
- provide buffers around military bases to protect the military mission;
- acquire land that represents the ecological diversity of North Carolina; and
- acquire land that contributes to the development of a balanced State program of historic properties.

For more information: <http://www.cwmtf.net/#appmain.htm>

Urban and Community Forestry Grant

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help plan and establish street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to more effective and efficient management of urban and community forests.

For more information: https://www.ncforestservice.gov/Urban/urban_grant_program.htm

LOCAL FUNDING SOURCES

Local governments often plan for the funding of bicycle and pedestrian infrastructure or improvements through development of Capital Improvement Projects (CIP) or occasionally, through their annual Operating Budgets. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows decision-makers to balance all capital needs. Typical capital funding mechanisms include the capital reserve fund, taxes, fees, and bonds. However, many will require specific local action as a means of establishing a program if it is not already in place.

PRIVATE AND NONPROFIT FUNDING SOURCES

Many communities have solicited funding assistance from private foundations and other conservation-minded benefactors. Below are examples of private funding opportunities.

Rails-To-Trails Conservancy

Under the Doppelt Family Trail Development Fund, RTC will award approximately \$85,000 per year, distributed among several qualifying projects, through a competitive process. Eligible applicants include nonprofit organizations and state, regional, and local government agencies. Two types of grants are available - community support grants and project transformation grants. Around three to four community support grants are awarded each year, ranging from \$5,000-\$10,000 each. Community Support Grants support nonprofit organizations or "Friends of the Trail" groups that need funding to get trail development or trail improvement efforts off the ground. Each year, 1-2 Project Transformation Grants are awarded that range from \$15,000-\$50,000. The intention of these grants is to enable an organization to complete a significant trail development or improvement project. For both types of grants, applications for projects on rail-trails and rails-with-trails are given preference, but rail-trail designation is not a requirement. The trail must serve multiple user types, such as bicycling, walking, and hiking, and must be considered a trail, greenway, or shared use path.

For more information: <http://www.railstotrails.org/our-work/doppelt-family-trail-development-fund/>

National Fish and Wildlife Foundation (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, nonprofit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation provides grants through more than 70 diverse conservation grant programs. One of the most relevant programs for bicycle and pedestrian projects is Acres for America. Funding priorities include conservation of bird, fish, plants and wildlife habitats, providing access for people to enjoy outdoors, and connecting existing protected lands. Federal, state, and

local government agencies, educational institutions, Native American tribes, and non-profit organizations may apply twice annually for matching grants. Due to the competitive nature of grant funding for Acres for America, all awarded grants require a minimum 1:1 match.

For more information: <http://www.nfwf.org/whatwedo/grants/Pages/home.aspx>

The Trust for Public Land

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the TPL is the only national non-profit working exclusively to protect land for human enjoyment and well-being. TPL helps acquire land and transfer it to public agencies, land trusts, or other groups that intend to conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

For more information: <http://www.tpl.org>

Land for Tomorrow Campaign

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come. For more information: <http://www.land4tomorrow.org/>

The Conservation Alliance

The Conservation Alliance is a nonprofit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about \$35,000 each. Funding criteria states that:

The project should seek to secure lasting and quantifiable protection of a specific wild land or waterway. We prioritize landscape-scale projects that have a clear benefit for habitat.

The campaign should engage grassroots citizen action in support of the conservation effort. We do not fund general education, restoration, stewardship, or scientific research projects.

All projects must have a clear recreational benefit.

For more information: <http://www.conservationalliance.com/grants/?yearly=2020>

Blue Cross Blue Shield (BCBS) of North Carolina Foundation

BCBS does not have a traditional grant cycle and announces grant opportunities on a periodic basis. Grants can range from small-dollar equipment grants to large, multi-year partnerships.

For more information: <http://www.bcbsncfoundation.org/grants-programs/grantmaking-overview/>

Duke Energy Foundation

Funded by Duke Energy shareholders, this foundation makes charitable grants to nonprofit organizations and government agencies. Grant applicants must serve communities that are also served by Duke Energy. The grant program has several investment priorities that could potentially fund bicycle and pedestrian projects. The Duke Energy Foundation is committed to making strategic investments to build powerful communities where nature and wildlife thrive, students can excel and a talented workforce drives economic prosperity for all.

For more information: <https://www.duke-energy.com/community/duke-energy-foundation>

Z. Smith Reynolds Foundation

This Winston-Salem-based Foundation is committed to improving the quality of life for all North Carolinians. The Z. Smith Reynolds Foundation is a statewide, private, family foundation that has been a catalyst for positive change in North Carolina for more than 80 years. A variety of grant programs are available.

For more information: <http://www.zsr.org/grants-programs>

Bank of America Charitable Foundation

The Bank of America Charitable Foundation supports a wide range of activities, including a focus on community greening efforts that create healthy neighborhoods and environmental sustainability through the preservation, creation or restoration of open space, parks and community gardens.

For more information: <https://about.bankofamerica.com/en-us/global-impact/charitable-foundation-funding.html>

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and

businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Corporate Donations

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Local governments typically create funds to facilitate and simplify a transaction from a corporation's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

Private Individual Donations

Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Local governments typically create funds to facilitate and simplify a transaction from an individual's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

Fundraising/Campaign Drives

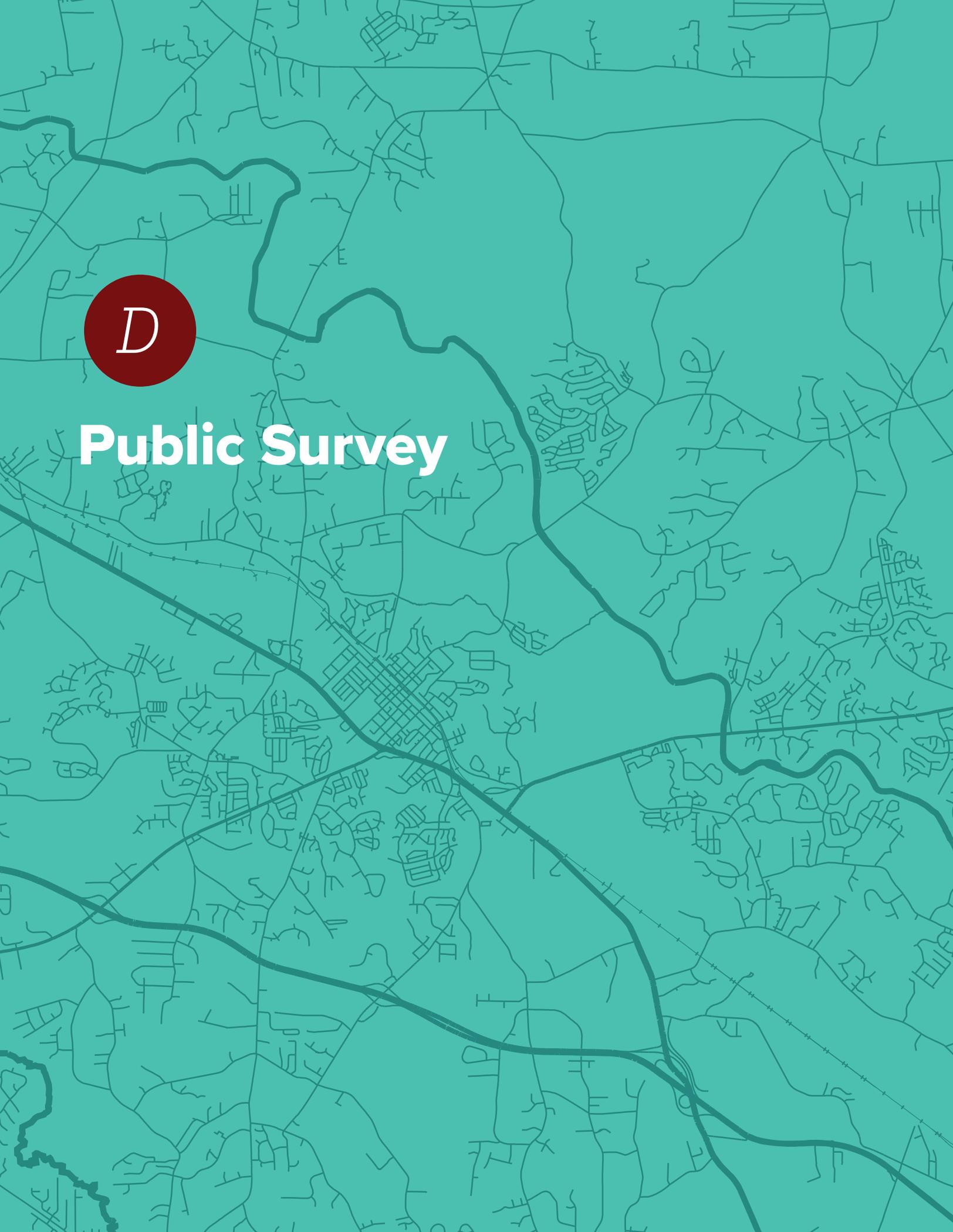
Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

Volunteer Work

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fundraising, maintenance, and programming needs.



Public Survey



The public survey responses are summarized at the end of Chapter 2. For questions that had a written response option, all responses are displayed below.

When walking in Clayton, what is (or would be) the primary purpose of your trip?

- Be able to go to gas station walk kids coming from school and go that is a most
- BOTH EXERCISE AND REACHING A DESTINATION
- Both of these are equally important
- Dining
- down town shops and businesses
- Enjoyment
- From offstreet parking to businesses
- Get to work
- I would like to walk to downtown from my Cobblestone community. I would like walkability to be our town's priority.
- Night life, dinner & dinner and drinks
- Only if there was no other way to go. Not a fan of having to walk everywhere.
- Restaurants
- shop, library, bank
- SHOPPING
- Shopping/restaurant
- Sightseeing
- Walking to a specific location, i.e., restaurant, shop, etc.

When walking in Clayton, what is (or would be) the primary purpose of your trip?

- 2x to 3x a week
- Am in physical therapy, right now, but my goal is to get back to walking!
- Cannot because of lack of side walks
- Don't currently walk do to lack of sidewalk availability and safety concerns do to no sidewalk being available.
- Every few weeks
- I don't
- I would walk more if we had sidewalks and crosswalks especially on Highway 70
- Never but I do see adults walking to the stores and kids from school and they have to cross a busy intersection with no sidewalk
- The frequency depends upon whether or not I'm on my exercise grind. Sometimes daily, sometimes seldom.
- Weekends
- Would love to walk to the park in Clayton next to my house on Glen Laurel and Black Forest Dr but have to cross a busy road and then cross again the reach the park with now cross walk or sidewalk on our side of the street
- Would walk more if there were sidewalks/crosswalks.

What do you think is the most important outcome of the Clayton Pedestrian Plan?

1. Connect sidewalk from Chandler's Ridge to Summerlyn along Glen Laurel. 2. Extend the Greenway past 42 along the Neuse for easier access for those of us who love off of 42.

All of the above

All of the above.

All of the above.

All the above

biking

CONNECTING EXISTING VENUES AND DESTINATIONS. IE GLEN LAUREL AND RIVERWOOD AND WEST MAIN ST
CONTINUE TO KEEP THIS REQUIREMENT SAFE

Don't know

I do not see a need for improvement

I don't want an additional pedestrian greenway. The cost & safety issues outweigh any desire for it.

One or two areas that are safer to walk in.

Seating. So many people with health issues and disabilities who can't walk long distances without multiple options to sit while on the walk.

Sidewalk space on 70

Spending as little tax dollars as possible

What destinations would you most desire to reach by walking?

42east to publix and that shopping area from greenwood shopping/restaurants to publix

Again all of the above

Between Chandlers Ridge and Summerlyn divisions.

Connection between Summerlyn community. Glen Laurel Rd seperates the community.

East Clayton Community Park

East Clayton Park from the Clayton Dog Park and accessibility to the future shopping area at Glen Laurel and 42 to/from East Clayton Park

filling in the missing gaps of sidewalks

Food

Getting to plazas with food stores, restaurants & variety shops

Glen Laurel

Houses

I have no problems walking downtown. Just cross streets at the intersections.

If I want to walk on a greenway, I would drive to the one on Covered Bridge Rd.

Is like to be able to walk on sidewalks down 70

Just my neighborhood

library

Link between NC42e with Sam's Branch

Lionsgate bridge has been out OVER a year!

Multiple locations

Nearby subdivisions and neighborhoods

Neighborhood pool

Neighborhoods need sidewalks and crosswalks.

Novo Nordisk

Primary concern for other pedestrians bc their are no sidewalks to help avoid traffic.. such as 70 B, shotwell, most of Amelia church

Shotwell Rd to the Lowe's shopping area. Lots of seniors live on Shotwell and walk to Lowe's. The bridge is narrow and doesn't leave room for two cars and a person walking on the side.

Side walk to be able to walk and run if they don't have a car

There's nothing in walking distance go to, with or without a sidewalk.

Walking lights on main highway 70

We need a crosswalk on glen laurel to get to East Clayton community park - or a flashing yellow light, cars drive very wrecklessly

Work

Would like to see safe walking and crossing along highways.

Which of the following pedestrian improvements would you like to see in Clayton?

Accessible downtown restroom facilities and enhanced, more visible, eye catching crosswalks

ADA accessible facilities as the norm not the exception.

Areas where you can sit and relax in such as the park

better handicap curbs

Better painting of crosswalks

Between Chandlers Ridge and Summerlyn divisions.

Cameras periodically throughout all secluded walking trails

Connect amelia church rd sidewalk to park and middle school. It is pieced the kids can't walk home safely

CONNECTING EXISTING AREAS TO DOWNTOWN

Connection from neighborhood to greenways

Continous sidewalk from Main Street to US 70 via Robertson Street

CONTINUE TO SUPPORT THE COMMUNITY

Covered seating along the paths.

Crossing walking at school needs signs in the cross walk because people don't stop for kids to walk to high school

Crosswalk on Glen Laurel to get to East Clayton Park

Crosswalks on Amelia Church! They painted over the only existing one.

Follow future plans to eliminate vehicle usage throughout a certain point on Main St and create/build more opportunities for businesses to come so that it can become a walkable shopping area.

getting to east clayton park needs a better option. Extremely dangerous. People drive down the road at 50mph, no crosswalk. Even when driving its extremely dangerous just to pull out of park or summerlyn neighborhood for how fast existing traffic moves.

Hamby & Lombard is very busy!!

I have no problems walking downtown

I hope the mastermind behind the multi million dollar expansion of 42 through Clayton at least had the foresight to add sidewalk or maybe a bike path. The suspense is killing me.

Improve and expand downtown parking

Improved density or more mixed use so destinations are closer

less on-street parking

Less vehicles parking on the street

Lombard Street is ridiculous. No enforcement like McNeil gets from other direction. Camel Street has no sidewalks, children have no option but to walk on street despite no stop signs leading into the street on a bending corner people accelerate into.

More bike road options

More enforcement if speeding laws

More unpaved trails

MUST LIGHT UP THE ROADS

NO MORE "LIGHTING," LED STREET LAMPS ARE TERRIBLE FOR WILDLIFE

NO traffic calming!!!

None

None

None. I can see the progress on existing sidewalks

Repair existing sidewalks and clear back overgrown brush.

Safe crossing opportunities on Hwy 70

Security cameras at trailheads

Sidewalk on Motorcycle Road

sidewalks on Robertson, more pedestrian access to highways

walk buttons to allow pedestrians to cross Main St and other busy roads downtown

wider streets

Roadway crossings: what do you think are the factors that most discourage pedestrians crossing roadways in Clayton?

A few motorists actually aim at us when we mow the grass, teasing that they could hit us. Too many accidents and crazies on this road.

CLAYTON CONTINUES TO WORK AND SUPPORT THE COMMUNITY

Consider pedestrian bridges where traffic is heavy and people have been killed crossing

Dangerous

Dismal city planning

Especially when crossing 70

Hamby & Lombard

having to walk between parked vehicles

I don't have problems crossing the roads i walk around downtown.

I have balance issues and am very afraid walking along the roadside on Robertson

I THINK CURRENT CONDITIONS ARE FINE FOR AN ASTUTE WALKER

I think the crosswalks could be bolder, more noticeable as some other towns are implementing

I want to see a light or a sign to say yield to pedestrians at the high school for the kids

I'm talking about downtown only. Main Street

Lack of monitoring speed, specifically on glen laural

Lack of pedestrian footbridges across areas connecting to downtown such as highway 70

Lack of sidewalks

Lack of sidewalks

Lack of sidewalks.

Lack of speeding enforcement

Long stop lights. Signal for pedestrians takes forever

Need to ban trucks cutting thru Ameila to 42. They can take 70 to 42. This is strictly residential. There are 100-200 trucks a day on this road.

No issues

No sidewalks

None

none

Pedestrians waiting for signal to change for them to walk

Please get a pedestrian walkway over business 70.

Poor thoughts on city walking paths "stroads". There is a difference between roads and streets

Pritchard Rd crossing over to Riverwood schools has no indicators/lights for kids that cross the street.

SIDEWALKS

The only issue I've encountered are each of the ends of the downtown strip. The crosswalk in front of the lawn and at the very end towards the community garden are pointless without traffic lights. With Clayton allowing street parking, pedestrians can't even see what's coming and just because there's a crosswalk doesn't mean those cars will stop for us. They rarely do so because there's no light to make them stop and because of the street parking that blocks our view of incoming traffic this creates a very dangerous environment for walkers.

The speed limit is 25 miles per hour, so crossing is not a problem on Main. The intersection with Lombard has a crossing which works fine as it is.

Where is Clayton PD?! Other than speeding like everyone else?!

How should pedestrian facilities be funded within Clayton?

Are we seriously confused about finding funds for a framing sidewalk?

Assuming the town is funded via a property taxation structure, find where new residential developments will be. Because these developments are adding to the town population and subsequently pedestrian population they will be a boon to the coffers of the town by way of current taxation schemes. Use the increase to provide new sidewalk developments to coalesce new and existing town destinations..

Better taxation if developers - a building tax to help fund the many additions they are adding to schools and streets. Maybe require all developers to have sidewalks put in as a requirement of a building permit

Bonds

Builders

Business and Builders

CREATE A FAIR ARRANGEMENT TO SUPPORT THE TOWN AND IT'S CITIZIANS

Current budget

Current funds available

Developers

DO NOT increase current/future taxes

Do NOT raise taxes for walking options in a place that is too hot to walk at least 6 months of the year!

Don't do it

DOT funds

Get those developers to contribute more to those awkward existing pathways! Have Johnston County contribute to the greater walkways and bike paths.

got rich from the excessive development should pay

Have our 1% fund it. Fred Smith comes to mind. Let those who made it big in the community give back to the community instead of continuing to benefit from the sweat of the average Joe.

How is it done now?

Instead of over development, take care of existing residents

Mayors salary

None...Just fix the sidewalks, add new sidewalks and enforce the law on motorists who drive like idiots. A fair percentage of motorists pass on double lines and speed over hills and in curves. Eighteen wheelers often speed down busy roads now with no one enforcing the speed or other activity.

Small charge to businesses directly impacted by better more sidewalks (like deep river)

Spend more on west clayton. Too much has been spent on east. Make it fair

State funded

The area by the post office

Town should budget and build. Matching grants are great, but should not hold up making progress.

Transportation Department

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements?

2nd Street between Yellow House and the Town Square is narrow with broken and uneven sidewalk. It also lacks adequate lighting at night. A sidewalk survey should be conducted to identify unsafe and uneven sidewalks throughout the downtown area in particular and repairs should immediately be made. I would think downtown revitalization grants would be available for such projects. Also, stores and businesses should be required to have accessible entrances! Some have steps which are impassable and dangerous to some with temporary or permanent limitations and/or disabilities.

4 way stop at Fayetteville and Blanche (too many big big trucks) and pedestrian crossing at Fayetteville and Main

42 and 70 north to Garner and south to Smithfield, 42 eastbound to Buffalo Road

42 by mobile home park, 70 by high school, on champion st.

42. It would be great to have sidewalks that connect downtown Clayton with Flowers Plantation.

42E

70 42 main O'Neil Boling

70 and downtown Clayton

70 and Main Street

70 and Roberson/Amelia church, 70 and Main/Champion

70 bus. and Main St

70 Business and Amelia Church Rd.

70 business, connections to greenways or other pedestrian areas

70 Business, Shotwell, Amelia church, 42

70 by the high school; 42 by moss creek; Glenn laurel by the park; guy road by moss creek.

70. Start there. Both sides of the street please pretty please.

A safe way to cross Hwy 70 from downtown. A tunnel? A bridge? Street lights downtown need to be updated.

A sidewalk from Barbour mill road to the school across 42. There have been too many clues calls and accidents considering all of the neighborhoods around the area.

A sidewalk throughout Main Street Sidewalk on Barber Mill road

Ability for students to cross 70 from Clayton High School. Good sidewalks from neighborhoods to reach shopping.

Access along or parallel to US 70 - not for me, but just for the safety of those I see walking along there.

Access to Greenways through sidewalks

Across 70 by champion to downtown, walkways to clayton highschool

Across hwy 70, and to main street-downtown

Adding a sidewalk the length of Motorcycle Rd for several communities to have a safe connection to Neuse River Pkwy's wide sidewalk that goes to the stores/ restaurants at 42E & the Parkway. Additionally, a wide sidewalk on 42E from Buffalo Rd to Glen Laurel Rd (coinciding with the 42E expansion) would connect us to many businesses & parks.

ALL 42 east

All along Main St, Fayetteville Street and all the streets with parking on both sides causing blind turning into these streets and cars having to stop to let oncoming cars through.

All along Main Street and behind it.

All Areas - We need to be pedestrian friendly like Chapel Hill.

All areas of Hwy 70

All intersections that are adjacent to all clayton public schools, recreational parks, and downtown area.

All of down town needs to extend the side walks all on city street to connect to other side walks and be properly marked with signage. All the schools in the Town of clayton needs to have updated signs with flashing signals and road markings.

all of main street

All of Main Street

All of Riverwood that doesn't already have sidewalks.

ALL of the intersections along Main Street. The street is entirely too narrow for amount of traffic that flows through. While I'm very excited about new businesses, there's NO parking, which creates a nightmare along Main.

All of them.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

All of US-70 ; Main Street western side of town ; area on Amelia Chuch Road around Clayton Community Park ;

All streets near the high school. All need sidewalks. Possibly one way streets or parking only on one side.

ALL THROUGH MAIN ST

ALL. OF. DOWNTOWN.

Almost all of them

Almost every area of Clayton is NOT pedestrian friendly

Along Glen Laurel Rd, leading up to the park

Along Highway 42 (heading toward Fuquay), in front of West Clayton Elementary and leading down to Ellington Subdivision. This area has been part of Clayton for a very long time and does not receive the improvements that other areas receive.

Along Highway 42 West

Although not applicable to me I am concerned for the safety of Clayton High School Students crossing over Rt 70. Any pedestrian bridges across 70 ever considered? I live at the Walk at East Village and I would like to see pedestrian crosswalk lines as one turns into our development. There is a great deal of foot traffic on the walkway on East Front St. and many of cars coming in and out.

Amelia Chuch from Guy Rd to Clayton Community park. Why is their no sidewalk?

Amelia Church

Amelia Church Rd and Guy Rd

Amelia Church Rd to Shotwell Roads to Clayton Corners

Amelia Church Rd, O'Neill & Hwy 42

Amelia Church Rd.

Amelia Church Road could us a walkway to connect with the park and the Rec Center, then continue with the sidewalk near Lions Gate. Also to connect with the Middle School and West Clayton Elementary along Guy RD.

Amelia Church Road near Clayton Community Park to downtown Clayton

Amelia Church Road, US 70

Amelia church road/70Business. I see a lot of high schoolers early in the morning when it is dark out walking on the edge of the road because there is no sidewalks. I'm so afraid someone is going to get hit because of this.

Amelia Street/Shotwell/Clayton Community Center--lots of traffic, not at all pedestrian friendly. There are also very few safe crossings for pedestrians downtown on Main Street. You have to peek out from behind parked cars and run across the street. Accessing the post office should be a no-brainer! We like to walk from the Community Center or from the community park next to the center, into town, for food, dining, and the post office, but the lack of sidewalks from neighborhoods makes it dangerous!

Anything on hwy 70

Anywhere near the highschool and downtown

Areas adjacent to downtown like Second St and Front St could be used more by pedestrians and for access to downtown if there were continuous ADA compliant sidewalks/crosswalks. The new crosswalk markings on main st encourage yielding and should be on more busy intersections in town.

Areas and pathways surrounding downtown and decrepit housing areas around that need to be either reprimanded and/or fined ad they make the historic area look bad.

Areas off of Bus 70

Around parks

Around parks

Around the high school, down 70 highway so the kids can be safer walking to and from school.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

At the corner of Vinson Rd and Glen Laurel, there needs to be a 4 way stop sign. Most of the time it's not clear to see oncoming traffic which a lot of times accidents occur. Glen Laurel, on both sides of the street (GL Subdivision), needs sidewalks, and proper lighting. This area has become high traffic area and the road is whining and dark. This is a serious hazardous blind spot. Further, down Vinson Rd at the top of the hill (Summerlyn) drivers are blindsided by the pedestrian crossing there needs to be a caution light with the pedestrian crossing. This particular area is predominantly families that have children constantly crossing back and forth from the pool to the park a big red flag.

Athletic Park in Riverwood Community

Barber mill rd

better access to highway 70 business for residents who walk. pedestrian priority downtown walking.

between BLVD and Corked and Untapped. lots of restaurants and bars where people are crossing often without proper crosswalks or signals.

Between the Clayton Dog Park and East Clayton Park. A teen was recently hit by a car crossing here. Multiple car accidents, too, from too fast/impaired driving. Hazardous area, but access between parks is necessary for the best use out of both, especially for individuals/families who use both parks.

Bridge area on shotwell between 70 and Amelia Church

Buffalo Rd and Jordan Narron Rd. The light will help but pedestrian traffic needs consideration.

Business 70

Business 70 especially near the Clayton high school and shotwell road.

Business 70 Heavy traffic and not enough time to get to the other side of the street because of car traffic.

Business 79 and Main Street.

By homes on the opposite side of downtown Clayton .

Champion and US 70 business needs a crosswalk. Please add lots of Greenway trail that connect south of US 70 bus w to downtown Clayton.

Champion connections to Main Street across US 70 Business. Greenway access to southeast side of downtown (near the intersection listed above).

Champion over 70

Champion st/Main st and business 70.

Champion street crossing 70 to Main Street. Finishing sidewalk on champion street to 70.

Church street

City road

City Road

City Road needs a sidewalk and/or bike lane . Many families live just off of City Road and would love to be able to walk to town.

City Road, Covered Bridge Rd

Clayton community park to summerlyn community. Bike options from Clayton community park to downtown Clayton. It is unsafe on the main highway from the new development area close to the Clayton community park. If there is a bike/pedestrian walk path, we could walk to the Nuese pathway inference and get to downtown.

Clayton high and hwy 70. Kids shouldn't have to play frogger to eat lunch at McDonald's

Clayton High, west Clayton elm,

Closer to downtown

Connect downtown Clayton to greenway. Make more obvious crossing locations on mani street. Connect Riverwood Golf to greenway, it's so close and could easily happen with one trailhead.

Connect the existing sidewalks of Chandlers Ridge and Summerlyn along Glen Laurel Road for pedestrian access to East Clayton park. Side walk on Main Street to business 70.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

Connecting areas together, for example Glenhaven off Barber Mill Rd cannot access other sidewalks/walkways in Clayton. Other neighborhoods have this same issue.

Connecting Glen Laurel to East Clayton park

Connecting the 2 sides of the LionsGate subdivision with a cross walk

Connection to the greenway from the Riverwood golf club

Continue in all directions from downtown- so more sidewalks for people- more lighted areas- buttons for pedestrians to push to signal they can walk.. downtown Clayton gets sooo congested and I always feel like I'm either going to hit another car or a pedestrian... need wider areas down there

Cover bridge - Lighting Also lighting by the fork. Traveling at night needs lighting

Cover bridge rd

Covered bridge rd.

Covered bridge road

Crossing from the Summerlyn Neighborhood to the East Clayton a park is so dangerous and needs immediate attention. Going from the dog park across to the park is equally challenging. It would also be nice to be able to bike from Glen Laurel, Summerlyn, and Chandler's Ridge to downtown without risking ones life on the road ways.

Crossing glen laurel

Crossing Highway 70. Especially crossing to Main Street and along Main Street from Highway 70. The sidewalks up Champion are nice, but we still have no way to safely cross Hwy 70 to get to downtown Clayton. It would be an easy bike ride, but even as adults it feels risky and could never allow our kids to do it, even with supervision. Improved pedestrian crossing conditions by the high school have been noticed and helpful, although I've seen high school students nearly hit twice because they didn't look before crossing and just assumed they could go when they wanted to in a crosswalk. Perhaps specific instruction to them at the school may be helpful.

Crossing I-70 on Amelia Church for the high school students and better access to downtown.

Crossing major roadways like 70 and 42.

Crossing roads to get to schools, esp. crossing O'Neil St to get to Cooper Elementary.

Crossing signals and marked pedestrian crosswalks along Hwy 70 at several of the existing traffic lights.

Crossing US 70 Business and Crossing Little Creek

Crosswalk and sidewalk from high school to McDonald's area. Crosswalk to Lowe's food shopping center

Crosswalk needed from Summerlyn Subdivision into East Clayton Community Park. It is VERY dangerous crossing Glen Laurel without an official crosswalk.

Crosswalks near parks on Glen Laurel

Crossway at 2nd st and main.

Current Hwy 42 widening project doesn't have pedestrian crossing at intersections that have traffic signals. Not sure why this was not included in the project to begin with.

Dairy/barber mill to west clayton elementary school

Deep river Vensons

Down town intersection

Down town, filling in the missing gap like between community park and Winston subdivision and we need additional crossings of Highway 70, Connection of the walking trail dead end at lions springs on Shotwell road with the shopping center. Way finding signs on greenways

Downton

downtown

Downtown

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

Downtown

Downtown

Downtown

Downtown & along route 42 E

Downtown and 70

Downtown and intersection at Walgreens and McDonald's

Downtown area

Downtown area speeding and Safety concerns .

Downtown business area

Downtown Clayton area and greenways

Downtown Clayton could use some sidewalks to be repaired. Some should also be extended from downtown along side streets and all the way to deep river brewing.

Downtown clayton, cooper academy and the new single family homes near them. Too many cars are parked on the street and we can't always see on coming traffic when driving or walking.

Downtown District- it's hard to see pedestrians/be seen as a pedestrian near Boulevard Coffee due to the numerous vehicles parked on the street. People dart out from between vehicles haphazardly.

Downtown in general. O'Neil Street needs a safe crossing because the MST/connection between Municipal Park/Downtown have been determined to be a priority corridor for pets/bikes, but there is currently no ped crossing on O'Neil, which has a very high ADT.

Downtown main street

Downtown Main Street. It's nearly impossible to cross to go to the farmers market, from the square to the businesses, and especially on the corner of main and O'Neil. Additionally it's hard for cars to see people due to street parking. Designated crossing areas would be much safer

Downtown needs crossings across Main Street (not just at intersections)

downtown O'neil street should have a sidewalk connecting the greenway to downtown. Bicycles and pedestrians do not have enough room to navigate it safely.

Downtown, motorists fail to yield at most crosswalks not at intersections with stoplights

Downtown. Others who walk elsewhere should plan to go to existing greenways.

East 42

East Clayton park to/from summerlyn Neighborhood. Between the higher speed, curves hard to see around no light or crosswalk. It's very difficult to get to the park or out of the neighborhood walking OR driving. Numerous accidents have occurred:1 death, a fence taken out, 2 power poles destroyed and a car flipped , a teen was hit and hospitalized. All separate incidents within 2 years. How much more needs to happen before it's addressed?

East main is difficult to see around parked cars to cross safely.

East Main Street

Easy access to the strip malls along somebody but increase sidewalk or pedestrian crossing such as Lowe's Shopping Center, Food Lion Walmart etc. East and West 70

Extend the walkway down guy rd to Winston Pointe, Shotwell rd by the Lion spring senior living going towards 70, Amelia church rd by Amelia village apartments going towards Hwy 70

Extending, widening and re-paving Main Street sidewalks from the greenway end near the post office on first street to legend park and to Main Street near Deep River brewery. Connecting the other end of the greenway near 42 to neighborhoods - Flowers Plantation, Glen Laurel neighborhoods

First street to go all the way through

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

Flowers Plantation

Flowers Plantation at the corner of 42 and Buffalo. We would love the opportunity to walk to the Flowers Crossroads shopping center as well as the opportunity to safely walk our children to school at River Dell.

Focusing on areas closest to schools to improve walk ability and safety

Footbridge connecting downtown to Bristol/Cobblestone and adjoining neighborhoods. Highway 70 cannot be crossed safely.

From city rd to downtown

From HWY 70 going on Main Street through downtown

From parks, schools and to main roads...

From Summerly to East Clayton Community Park. We have already had one person hit there. It is a recipe for disaster!

Front street

Garrison Ave. And Shotwell and Hwy70 intersection

Glen Laurel Rd, Vinson Rd, Powhatan Rd, HWY 42 from Glen Laurel Rd to HWY 70 and Downtown area

Glen Laurel, Hwy 42 to Front Street

Glen Laurel - a Child was just hit by a car last month crossing the street. The orchards at summerlyn to the community park desperately needs a sidewalk so the kids do not cross the street. The speed limit is too high and there is absolutely no monitoring of the speed limit. People tend to go faster on this road and it is very dangerous.

Glen Laurel

Glen Laurel

Glen Laurel and black forest dr Glenn Laurel and oak alley trail

Glen Laurel and East Clayton Community Park, multiples sidewalks on various streets connecting Front st. To Main St.

GLEN LAUREL AND RIVERWOOD TO DOWNTOWN

Glen Laurel by park and dog park

Glen Laurel crossing to East Clayton Community park

Glen Laurel near East Clayton Park

Glen Laurel near the dog park where people regularly hit the telephone pole and between the summer land neighborhoods where a 16 year old girl was recently hit.

Glen Laurel Rd

Glen Laurel rd (especially to east Clayton park and the summerlyn community

Glen Laurel rd! My 16th year old daughter was hit by a car on September 18th trying to cross the street to go to the pool and is currently still in ICU fighting for her life.

Glen Laurel Road

Glen Laurel Road by Dog Park and Summerlyn entrances.

Glen Laurel Road from Glen Laurel to park

Glen Laurel Road needs a traffic light between the new park and Summerlyn subdivision. We are in danger of someone getting killed there. Guardrail on the turn on Glen Laurel Road. A crosswalk that has a button to push by the Orchards so cars know someone is crossing. Glen Laurel road is nothing but a speed way.

Glen Laurel, 70, 42, downtown, all parks

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

Glen Laurel, pedestrian bridge over to access parks, and also extend the sidewalks along Glen Laurel, as they lead nowhere.

Glenn laurel rd

Guy rd and Amelia church,

Guy Rd/Amelia Church area

Guy Rd/HWY 42, Shotwell/ HWY 70

Guy Road and Amelia Church Rd. hwy 70 By Clayton high School where kids cross daily. Guy Road and Wynston Way. Amelia Church Rd leading to Clayton Community Park and Clayton Community Center. Roads leading to Downtown Clayton.

Guy road at amelia church road. Build the sidewalks around the gas station and complete it to Wynston neighborhood.

Guy Road, Amelia Church, 42 West

Hamby & Lombard

Highway 42 near sheetz Amelia church road

Highway 70

Highway 70!!! And Vinson Rd is dark curvy and people speed!

HW42 west to guy rd.

Hwy 42 (south lombard st), Guy road, Connecting existing greenway trail on shotwell road (by community center) to the lowe's shopping center.

Hwy 42 and 70

Hwy 42 near West Clayton Elementary

Hwy 70 & city road

Hwy 70 and main. Near Vinson's and Smithfield's main and church.

Hwy 70 business - near high school; McDonald's; grocery stores/shopping centers

hwy 70 east & west

Hwy 70 intersection into Clayton by Burger king

Hwy 70, shotwell rd, Amelia church rd.

I 70 from Champion Rd to Downtown Clayton

I am a school bus driver, so I see a lot. I wrote to you about a crosswalk at Bus 70 & Robertson/Amelia Church. Glad it was approved! I see a fair amount of people walking on both sides of the parts of Amelia Church that don't have sidewalks (Lionsgate down to Amelia Village down to McDonalds and the gas station. In my opinion, both sides of the roadway need sidewalks. I've seen people crossing that little bridge part right before Hudson's and the shopping center. It's mostly kids or the old man with the cart, basically walking in the roadway on both sides of the road. Honestly, the entire 70 Bus Clayton corridor from Shotwell to Fayetteville Street would probably benefit from sidewalks, including Shotwell Rd to Amelia Church, right back down to 70 Business. I see people walking sometimes on the US70-NC42 section of the highway as well, especially on the eastern side where all the businesses are and the community behind them.

I AM PLEASED TO SEE HOW WELL THE TOWN OF CLAYTON IS TREATING ITS CITIZIANS!

I live in Riverwood and there is where the need exists for me.

I want to be able to walk downtown, but that requires crossing 70. It is unsafe where I live (the Dominos, GI Joe area). Please connect the two sides of town.

I would like to see some along glen laurel rd

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

I would like to see the sidewalk down Lombard street extended down Barber Mill Rd and Dairy rd, along with a crosswalk on Lombard. Also, a greenway crossing (potentially a bridge) over Lombard Rd, into a greenway in the field that runs back toward the water treatment plant and over the creek to the greenway off Lakemont Dr. This would provide several neighborhoods on the south side of the town access to bike/walk downtown to shop. As of right now only the trailer park on Lombard has ready access to the existing sidewalk in front of West Clayton Elementary.

If it would be possible to make a pedestrian bridge at Robertson an 70. It would make High School and business customer shopping much safer and ensure better traffic flows Connecting Main Street Clayton sidewalks with new business/ neighborhoods being developed near the Derp River Brewery

I'm new to the area and I can't give exact names. Crossing over from main Street to Front. Sidewalk on 70, and 42

I'm not sure, but more nature trails

Improved sidewalks and railroad crossings

In front of Boulevard crossing roads and seeing vehicles/ pedestrians

In Riverwood Athletic Club, Chamberlain Drive needs some sidewalks

Intersection at 70 and Main Street. 70 and Robertson.

Intersection near Clayton Drafthouse.

Intersection of Barber Mill and HWY 42 at West Clayton Elementary

Intersection of US HWY 70 and Main Street/Champion Street

It would be amazing to have walkable access from the front street extension to Glen Laurel Rd and/or from the corner of Glen Laurel Road at 42 to the park on Glen Laurel.

It would be nice to have walking access from Glen Laurel subdivision to the East Clayton Park. There are partial sidewalks along the road that lead to nothing. It wouldn't take much to expand them to the park walkway.

Lionsgate. Fred Smith doesn't care about my safety. I almost got hit just getting my mail. I contacted ABC11.

Lombard and Main

Lombard and Main. But really all over

Lombard needs enforcement of existing speed limits. One of busiest roads in Clayton, yet least enforced. Speeding there 24/7 and rarely an officer present. Camel Street along back half has no sidewalks despite all the new homes. Buses actually drop kids off on the street. Where else does that happen?

Lombard to Clayton middle school, crosswaks on Hwy 70 to access businesses (grocery stores), sidewalks to main Street west, sidewalks from 70 and Robertson to main Street, trail along O'Neil to Sam's branch Greenway, all long overdue!

Lots of crossings on Main Street and limited ways to get to the park areas parallel to Main Street

Lumbard and main

Main

Main and 42

Main and Barbour Main and Lombard

Main and literally every intersection from Lombard to Moore streets

Main and Lombardi and Main and ONeill

Main and Robertson

Main street

Main street

main street / 1st st, oneil st, city rd

Main Street @ Fayetteville St Main Street @ Barbour St

Main Street and all crossings including sidewalks!

Main street at O'Neil, and Main Street at N Fayetteville

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

Main Street from O'Neil going south

Main Street in downtown is often challenging. While pedestrian crosswalks have been added drivers rarely yield. Also a flashing light needs to be added by WCES. I know 42 is NCDOT but a safe walkway should be accessible for the students and residents.

Main Street toward Post Office end Amelia Church by Community Center (to safely access greenway from Riodge Dr)

Main street, from at least Vinson's all of the way to at least Instill.

Main Street. Difficult to cross the street with parked cars and traffic.

Main Street. It's very hard to cross and signage is terrible

Main Street-more than one crosswalk is needed. Sidewalks from the west end of Downtown to the east end.

More traffic lights in downtown

Most definitely a crosswalk to East Clayton community park, we also need a speed zone for safe exiting of Chandlers ridge and summerlyn communities

My priority is helping children walking from Hwy 42W trailer park to Clayton Middle School do not have sidewalks - concern for their safety. I would enjoy sidewalks extending all the way from Guy Road along Hwy 42W into downtown. Crosswalk signals along Main Street are improvements to assist pedestrians.

N

N O'Neil and Main then missing sidewalk to Deep River

N/A

Na

NC42e, Glen Laurel Road, Sidewalk over the tracks by the Post Office

Near Clayton park Glen Laurel Downtown

Near downtown areas — Stallings St.

Near Farmers Market

Near the library and the Chamber Building

Near Walmart on 70, near Clayton high

Need a sidewalk on Riverwood drive between the old shops and the new convenience store.

New Trails through woods

Not sure

Not sure. Downtown looks great

Nothing if it requires raising taxes.

O Neil st. Needs to have traffic signal outside of the Ashcroft development. Lower the speed limit 55mph is just ridiculous.

O'Neil needs some sort of sidewalk connecting the trailhead to downtown

O'Neil Street down to greenway

Oak Alley Trail/42E

Old 70

Old US 70

Older sections of clayton. Many of the roadways in the area behind the post office are older and over grown. Some of the sidewalks there are deteriorating and need repair. A few areas don't have sidewalks at all. I live in the Walk and I chose this location because I saw the sidewalks. It is what tells you that the community is friendly and inviting.

On Glen Laurel Road at the entrance of the Clayton Park and Summerlyn subdivision. Cars come over thr hill way too fast and if you are crossing the street the cars cant see you and you cant see them until it's too late. In September 2021 a child was hit by a car and nearly died. I feel and fear this will not be an isolated incident.

Oneail, Fayetteville

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

O'Neil and Main also Front st and O'Neil

O'Neil and main st. main St crossing in several spots would be good.

Oneil, Amelia Church, Hwy 42

Oneill and front st. Oneill and main.

ONEill Street

Page Street is extremely sketchy to walk after dark.

pedestrian signals for main downtown area-Main street.

Pretty much everything outside of downtown

Pritchard rd

Pritchard Rd-crossing in front of Riverwood schools and Food Lion

Public restroom. More trash receptacles. Main St and Oneal intersection improvement.

River wood development...the builder should contribute to the cost

Riverwood

Riverwood Athletic

Riverwood athletic club. How is an entire subdivision approved without any regard to pedestrian traffic?

Riverwood community lacks sidewalks. Would be really nice to have a sidewalk connect from Riverwood to Downtown Clayton.

Roadways

Roadways off of the new developments. The status quo should be a persistent endeavoring to coalesce new parts of Clayton with the existing town.

Robertson and Main (Lees Produce corner)

Robertson main to 70 main to PO main to 70

Robertson st. Needs sidewalk. As does 2nd st. Many others need improvement

Robertson, Rtes 70 and 42

Route 70 Glen Laurel Rd

Route 70 Glen Laurel Rd

Routes to Clayton High School

S robertson st to safely get to the clayton high for walkers. Across the railroad tracks

Safe sidewalk is needed along Shotwell from Amelia Church to the shopping center on both sides of Shotwell at Hwy Business 70.

Schools area to parents and kids be able to go and come back home safe. Those intersections are very busy and not safe for the pedestrians

Shot well and 70

Shot well Rd. between Amelia Church Rd. & Bus. Rt. 70. Crossing Bus. Rt. 70. Amelia Church Rd. between Lions Gate & Bus. Rt. 70.

Shot well road

Shotwell & 70

Shotwell and 70. Downtown Clayton, and hwy 42 near new Publik and Harris Teeter. Lots of neighborhoods would like a bike path to safely walk or ride bikes to these shopping areas.

Shotwell from Amelia to Route 70! Sidewalks along Amelia Church Road. Sidewalks down Guy Rd and Winston Road.

Shotwell road and Old us Business 70

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

Shotwell/70 is bad, walkways on Omelia Church to 70 via Shotwell. Full sidewalks to East Clayton park from nearby neighborhoods. You cannot get to this park currently on foot.

Sidewalk along Motorcycle Road

Sidewalk connection from Clayton community park to downtown. Currently there is no pedestrian walkways, bike paths, or crossings from Clayton community park to downtown on the Glenn laurel and highway 42 intersection or on highway 42. If there was an option for pedestrians to walk or bike, this would open options to downtown and the nuese river trail entry.

Sidewalks and lighting that will take you from the new retail/restaurant building off stallings to the distillery & deep river through main street and all the way down to Vincents.

Sidewalks are uneven. Railroad crossing as well

Sidewalks are uneven. Railroad crossing as well

Sidewalks from Ashcroft community to downtown

sidewalks leading to Lowe's supermarket on Shotwell Road between Guy Road and Highway 70. The sidewalks on Guy road between Amelia Church Road and Highway 70 are sporadic at best.

Sidewalks need to be on all of main street and garner road.

Sidewalks on Main Street - Past Lee's Produce to the new shopping center as well as Robertson & Moore out to 70 and the ability to cross 70.

Slow the speed on glen laurel. Way down. And connect all sidewalks on that road, would be nice to have a sidewalk that goes the whole length, much safer

Slow traffic on Glen Laural. Add a sidewalk to connect Chandlers Ridge and Summerlyn divisions.

South lumber st in Clayton right across from west Clayton elementary school

South Robertson and Hwy 70 Champion and Hwy 70

Southeastern

Stick to downtown areas. Old US 70 is too dangerous for pedestrian traffic and would require too much construction to facilitate walking to Clemmons (we have enough accidents on this roadway).

Stop light and road crossing at East Clayton community park. Crossing from the summerlyn development.

The area between East Clayton Park and Summerlyn desperately need a cross walk. There have been two incidents where people were hit,since my family has lived here.

The area immediately surrounding downtown, as well as the strip of land next to Glen Laurel Road between the Glen Laurel Neighborhood and Highway 42. It needs pedestrian crossings and more sidewalks.

The area of Champion and US Bus. 70 from Cobblestone to downtown. A walkway/bikepath along US 70 to the High School. Another Walkway along USBus 70 to 42 and cross over from Sheets. A bikepath/ walkway along 42 from US bus.70 to Flowers pathways and bikepaths. Please let bikepaths and walkways be a priority.

The assisted living center on Shotwell needs a sidewalk to the shopping center. Elderly people are regularly walking on that dangerous thin bridge that is a blind turn and people zoom through, and it is an extreme hazard to the elderly trying to access the shopping center and cars.

The bridge on Shotwell Road near the Lowes Food plaza needs a pedestrian bridge. It's very dangerous for people to walk on the current, narrow bridge with cars passing by. There's no other way around the bridge because of the creek.

The crossing in hwy 70 to McDonald's it would safer to have a crossing bridge for the high school kids.

The crosswalk in front of the lawn. It's a constant flow of traffic, no one stops, and we can't see what's coming because Clayton allows street parking.

The East Clayton Playground on Glen Laurel Rd , also side walks. Downtown sidewalk repairs. Business 70 .

The end of Main Street needs sidewalks that run out to Deep River.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

The ends of Main St (Near Epic Axe and past Manning's headed towards Hwy 70).

The entire downtown area - Main Street and adjacent side roads.

The entire downtown area but near the bank (hard to pull out and see the pedestrian's) and the main intersection up by the circle area.

The Guy Road/Amelia Church/42 Triangle

The north side of Main Street. Better sidewalks/crosswalks/walking paths between new townhome developments and downtown.

The other side of the railroad tracks. Front st and Stallings st. And paths to hwy 70

THE PEDESTRIAN BRIDGE ON AMELIA CHURCH ADJACENT TO LIONSGATE NEEDS TO BE FIXED. DON'T CARE IF IT IS FRED SMITH'S RESPONSIBILITY EITHER HOLD HIS FEET TO THE FIRE OR BITE THE BULLET AND GET TOC TO FIX IT. THE BRIDGE ON SHOTWELL BETWEEN AMELIA CHURCH AND HWY 70 NEEDS TO HAVE A PEDESTRIAN CROSSING.

The roads by the railroad near downtown, around McNeil. Larger side walks and visible crossing for pedestrians to cross to get to downtown.

The roads by west Clayton elementary and the trailer park. Kids/ families are always crossing over there to get to the elementary school or high school. Please make it safer for them to walk and cross.

The sidewalk on Lombard St, has tree roots and other things that can trip up a senior citizen

The south west part of Clayton. Towards Smithfield. There is absolutely no walking trails near us. It's like we're not even part of town, and just a zip code.

The town square needs crosswalk signals at the Fayetteville St and Main St crossing. I would not put one at O'neil because it would clog traffic too much. There should probably be one by the library as well (Church St & Main)

The whole length of Glen Laurel Rd and Vinson Rd to the school.

There are many sidewalks and streets in disrepair. I tripped on a broken/uneven sidewalk on front street recently and suffered a broken shoulder.

There is a great trail that leads to South Lombard/42west. It would be great to have the sidewalk maintained and extended up past West Clayton Elementary so you can actually continue the walk instead of walking back through. Why does the sidewalk end anyway? Why is the brush not kept up? Why is the sidewalks not maintained. The money spent on Town managers this past year could have funded at least a block or three. Please look at this area as it would be nice to clean it up and make it walkable.

There is no walkway across the Shotwell Rd Little creek bridge to the grocery store, shops and restaurants. I see Seniors crossing that in the road (presumably from Lion Spring Senior Living). How about extending the walkway through the woods, with a foot bridge, to the grocery store

There needs to be a crosswalk with signal on Glen Laurel to get to East Clayton Community Park. The cars comes flying over that hill. A little girl just got hit here.

Trailing Oak Trail and Glen Laurel and East Clayton Park Rd.

Trying to cross main street

US 70 and Robertson Street Robertson and Main streets Central and Front streets 2nd and Main streets

US 70 business

US Highway 70

US70

Vinson Road by the elementary school. Traffic speed is not enforced.

Walking access to community center. Community center area access to downtown.

walking from N Robertson down to Stallings where the new little shops will be. also where Deep River Brewing is.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

We live in the Guy Rd/Amelia church area, and would like to be able to walk downtown on sidewalks -- they would be needed on Guy Rd between Amelia Church & 42, and along 42 from Guy downtown.

We need a pedestrian- and bike-friendly route from downtown to the Greenway. I would also like to feel safer crossing the intersection at the post office, Smith and E. Main, and anywhere along N. O'Neill St. Thank you for the crosswalks at BLVD, but drivers still do not want to stop there. Also thank you for the safer crossing at 70 and Robertson.

We need more cross walks with lights for pedestrians. Additionally I think the downtown residential areas should have more 4 way stops to prevent cars from getting up to unsafe speeds.

West Clayton Elementary

West stallings, shotwell

West stallings, shotwell

When crossing streets that don't have lights or those light poles where you can press the button without getting ran over by a vehicle

Where Main St & Bus 70 intersect

Wilson mills

Yes



Priority Project Cost Estimates



PLANNING ESTIMATE
CLAYTON, NC PEDESTRIAN PLAN

PRIORITY PROJECT #1: ROBERTSON ST SIDEWALK GAPS AND CROSSING IMPROVEMENTS

LOCATION:

DESCRIPTION:

1320 LF SIDEWALK ALLONG S. ROBERTSON ST AND WILLOW DR.

TOTAL LENGTH: 0.3 MILES

COUNTY: JOHNSTON

DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
TRAIL ITEMS						
0000100000-N	800	MOBILIZATION	1	LS	\$16,000.00	\$16,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$10,000.00	\$10,000.00
0043000000-N	226	GRADING	1	LS	\$31,000.00	\$31,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	250	LF	\$60.00	\$15,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	675	SY	\$60.00	\$40,500.00
2605000000-N	848	CONCRETE CURB RAMP	11	EA	\$3,000.00	\$33,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	180	SY	\$115.00	\$20,700.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$10,000.00	\$10,000.00
		DRAINAGE ALLOWANCE	1	LS	\$25,000.00	\$25,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$15,000.00	\$15,000.00
		MINOR ITEMS (5%)	1	LS	\$10,000.00	\$10,000.00

CONSTRUCTION COST SUBTOTAL \$227,000.00

CONTINGENCY (30%) \$68,100.00

UTILITIES (ABOVE GROUND) \$30,000.00

NCDOT ADMINISTRATION FEE (10%) \$33,000.00

OPINION OF TOTAL CONSTRUCTION COST (2022) \$359,000.00

NOTE:

ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.

BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED

ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE

EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.

UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY CJA

DATE 6/10/2022



PLANNING ESTIMATE CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #2: MAIN ST PEDESTRIAN IMPROVEMENTS**

DESCRIPTION: **1135 LF SIDEWALK ALONG MAIN ST (EXCLUDES 1,100 OF FUNDED SIDEWALK NEAR CENTRAL ST)
INTERSECTION IMPROVEMENTS AT MOORE ST, ROBERTSON ST, ELLINGTON ST, O'NEIL ST, FAYETTEVILLE ST, CHURCH ST, BARBOUR ST, E. 1ST ST, LOMBARD ST, COMMUNITY GARDEN MID-BLOCK CROSSING, SMITH ST, CENTRAL ST**

TOTAL LENGTH:	0.2 MILES
INTERSECTIONS:	12

COUNTY: JOHNSTON DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
TRAIL ITEMS						
0000100000-N	800	MOBILIZATION	1	LS	\$61,000.00	\$61,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$9,000.00	\$9,000.00
0043000000-N	226	GRADING	1	LS	\$49,000.00	\$49,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	2,645	LF	\$40.00	\$105,800.00
2591000000-E	848	4" CONCRETE SIDEWALK	531	SY	\$65.00	\$34,515.00
2605000000-N	848	CONCRETE CURB RAMP	54	EA	\$3,000.00	\$162,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	300	SY	\$115.00	\$34,500.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$30,000.00	\$30,000.00
8801000000-E	SP	MSE RETAINING WALL NO ****	480	SF	\$110.00	\$52,800.00
		MAIN ST / ROBERTSON SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	\$35,000.00	\$35,000.00
		MAIN ST / O'NEIL ST SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	\$35,000.00	\$35,000.00
		MAIN ST / CHURCH ST SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	\$35,000.00	\$35,000.00
		MAIN ST / CENTRAL ST SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	\$15,000.00	\$15,000.00
		DRAINAGE ALLOWANCE	1	LS	\$145,000.00	\$145,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$10,000.00	\$10,000.00
		MINOR ITEMS (5%)	1	LS	\$38,000.00	\$38,000.00

CONSTRUCTION COST SUBTOTAL	\$852,000.00
CONTINGENCY (30%)	\$255,600.00
UTILITIES (ABOVE GROUND)	\$55,000.00
NCDOT ADMINISTRATION FEE (10%)	\$116,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	\$1,279,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
 BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
 ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
 EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
 UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY CJA
 DATE 6/10/2022



PLANNING ESTIMATE
CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #3: US 70 CROSSINGS (PHASE 1)**

DESCRIPTION: **1125 LF SIDEWALK FILLING SIDEWALK GAPS**
INTERSECTION IMPROVEMENTS AT SHOTWELL RD, MOORE ST, AND CHAPION ST

TOTAL LENGTH:	0.2 MILES
INTERSECTIONS:	3

COUNTY: JOHNSTON DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
TRAIL ITEMS						
0000100000-N	800	MOBILIZATION	1	LS	\$27,000.00	\$27,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$9,000.00	\$9,000.00
0043000000-N	226	GRADING	1	LS	\$22,000.00	\$22,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	827	SY	\$60.00	\$49,620.00
2605000000-N	848	CONCRETE CURB RAMP	28	EA	\$3,000.00	\$84,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	210	SY	\$115.00	\$24,150.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	267	SY	\$150.00	\$40,050.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$30,000.00	\$30,000.00
		SHOTWELL / US70 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	\$20,000.00	\$20,000.00
		MOORE / US70 SIGNAL - ADD PEDESTRIAN SIGNALS (2 LEGS)	1	LS	\$25,000.00	\$25,000.00
		CHAMPION ST / US70 SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	\$40,000.00	\$40,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$10,000.00	\$10,000.00
		MINOR ITEMS (5%)	1	LS	\$18,000.00	\$18,000.00

CONSTRUCTION COST SUBTOTAL	\$399,000.00
CONTINGENCY (30%)	\$119,700.00
UTILITIES (ABOVE GROUND)	\$30,000.00
NCDOT ADMINISTRATION FEE (10%)	\$55,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	\$604,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
 BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
 ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
 EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
 UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY CJA
 DATE 6/10/2022



PLANNING ESTIMATE
CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #4: AMELIA CHURCH RD & SHOTWELL RD GREENWAY GAPS**
 DESCRIPTION: **3500 LF 10' WIDE ASPHALT SHARED USE PATH, PEDESTRIAN BRIDGES, AND BOARDWALK ALONG LITTLE CREEK OFF OF SHOTWELL RD AND AMELIA CHURCH RD**
650 LF 5' WIDE CONCRETE SIDEWALK AND PEDESTRIAN BRIDGE ALONG AMELIA CHURCH RD
INTERSECTION IMPROVEMENTS AT AMELIA CHURCH RD / VERRAZANO PL, AND AMELIA CHURCH RD / KENMORE DR

TOTAL LENGTH: 0.8 MILES

COUNTY: JOHNSTON DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
TRAIL ITEMS						
0000100000-N	800	MOBILIZATION	1	LS	\$121,000.00	\$121,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$28,000.00	\$28,000.00
0043000000-N	226	GRADING	1	LS	\$302,000.00	\$302,000.00
1121000000-E	520	AGGREGATE BASE COURSE	1,450	TON	\$50.00	\$72,500.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	410	TON	\$200.00	\$82,000.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	25	TON	\$780.00	\$19,500.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	720	LF	\$60.00	\$43,200.00
2591000000-E	848	4" CONCRETE SIDEWALK	289	SY	\$65.00	\$18,785.00
2605000000-N	848	CONCRETE CURB RAMP	21	EA	\$3,000.00	\$63,000.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	28	SY	\$150.00	\$4,200.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$10,000.00	\$10,000.00
8801000000-E	SP	MSE RETAINING WALL NO ****	1,225	SF	\$110.00	\$134,750.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	6	EA	\$10,000.00	\$60,000.00
		PEDESTRIAN BRIDGE	300	LF	\$3,000.00	\$900,000.00
		10' CLEAR WIDTH WOOD BOARDWALK	140	LF	\$600.00	\$84,000.00
		DRAINAGE ALLOWANCE	1	LS	\$70,000.00	\$70,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$55,000.00	\$55,000.00
		MINOR ITEMS (5%)	1	LS	\$97,000.00	\$97,000.00

CONSTRUCTION COST SUBTOTAL	\$2,165,000.00
CONTINGENCY (30%)	\$649,500.00
UTILITIES (ABOVE GROUND)	\$50,000.00
NCDOT ADMINISTRATION FEE (10%)	\$286,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	\$3,151,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
 BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
 ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
 EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
 UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY CJA
 DATE 6/10/2022



**PLANNING ESTIMATE
CLAYTON, NC PEDESTRIAN PLAN**

LOCATION: **PRIORITY PROJECT #5: GLEN LAUREL RD PEDESTRIAN IMPROVEMENTS**

DESCRIPTION: **2540 LF 10' WIDE ASPHALT SHARED USE PATH SPURS FROM E. CLAYTON COMMUNITY PARK GREENWAY
660 LF 5' WIDE CONCRETE SIDEWALK AND BOARDWALK ALONG GLEN LAUREL RD
GREENWAY CROSSING, AND LYNSHIRE AVE
EXCLUDES POTENTIAL EFFORTS ASSOCIATED WITH SPEED LIMIT REDUCTION OF GLEN LAUREL RD., AND EX. GREENWAY
SURFACE REPAIRS**

TOTAL LENGTH: 0.6 MILES

COUNTY: JOHNSTON DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
TRAIL ITEMS						
0000100000-N	800	MOBILIZATION	1	LS	\$50,000.00	\$50,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$22,000.00	\$22,000.00
0043000000-N	226	GRADING	1	LS	\$180,000.00	\$180,000.00
1121000000-E	520	AGGREGATE BASE COURSE	1,110	TON	\$50.00	\$55,500.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	310	TON	\$200.00	\$62,000.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	20	TON	\$780.00	\$15,600.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	225	LF	\$65.00	\$14,625.00
2591000000-E	848	4" CONCRETE SIDEWALK	289	SY	\$50.00	\$14,450.00
2605000000-N	848	CONCRETE CURB RAMP	11	EA	\$3,000.00	\$33,000.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	34	SY	\$150.00	\$5,100.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$20,000.00	\$20,000.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	9	EA	\$10,000.00	\$90,000.00
		10' CLEAR WIDTH WOOD BOARDWALK	400	LF	\$600.00	\$240,000.00
		DRAINAGE ALLOWANCE	1	LS	\$35,000.00	\$35,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$40,000.00	\$40,000.00
		MINOR ITEMS (5%)	1	LS	\$41,000.00	\$41,000.00

CONSTRUCTION COST SUBTOTAL	\$919,000.00
CONTINGENCY (30%)	\$275,700.00
UTILITIES (ABOVE GROUND)	\$5,000.00
NCDOT ADMINISTRATION FEE (10%)	\$120,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	\$1,320,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY CJA
DATE 6/10/2022



**PLANNING ESTIMATE
CLAYTON, NC PEDESTRIAN PLAN**

**PRIORITY PROJECT #6: O'NEIL ST PEDESTRIAN IMPROVEMENTS - NEAR TERM
RECOMMENDATIONS**

LOCATION: _____
 DESCRIPTION: O'NEIL ST INTERSECTION IMPROVEMENTS AT STALLINGS ST, WHITAKER ST, BARNES ST, WHILSON ST, AND HINTON ST
EXCLUDES LONGER TERM RECOMMENDATIONS

INTERSECTIONS: **5** COUNTY: JOHNSTON DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
TRAIL ITEMS						
0000100000-N	800	MOBILIZATION	1	LS	\$10,000.00	\$10,000.00
0043000000-N	226	GRADING	1	LS	\$6,000.00	\$6,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	40	LF	\$75.00	\$3,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	23	SY	\$70.00	\$1,610.00
2605000000-N	848	CONCRETE CURB RAMP	8	EA	\$3,000.00	\$24,000.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	17	SY	\$150.00	\$2,550.00
4025000000-E		CONTR FURN, ***SIGN (E)	72	SF	\$20.00	\$1,440.00
4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	108	LF	\$20.00	\$2,160.00
4102000000-N	904	SIGN ERECTION, TYPE E	8	EA	\$150.00	\$1,200.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$20,000.00	\$20,000.00
4710000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	997	LF	\$12.00	\$11,964.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	3	EA	\$10,000.00	\$30,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$5,000.00	\$5,000.00
		MINOR ITEMS (5%)	1	LS	\$5,000.00	\$5,000.00

CONSTRUCTION COST SUBTOTAL	\$124,000.00
CONTINGENCY (30%)	\$37,200.00
UTILITIES (ABOVE GROUND)	\$5,000.00
NCDOT ADMINISTRATION FEE (10%)	\$17,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	\$184,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
 BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
 ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
 EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
 UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY _____ CJA
 DATE _____ 6/10/2022



PLANNING ESTIMATE
CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #8: EAST COAST GREENWAY COMPLETION - NC 42 SIDEPATH**
 DESCRIPTION: **9620 LF 10' WIDE SHARED USE PATH ALONG NC 42 FROM FRONT ST TO GLEN LAUREL RD, AND FROM MCKENZIE RIDGE DR TO NEUSE RIVER**

TOTAL LENGTH: 1.8 MILES

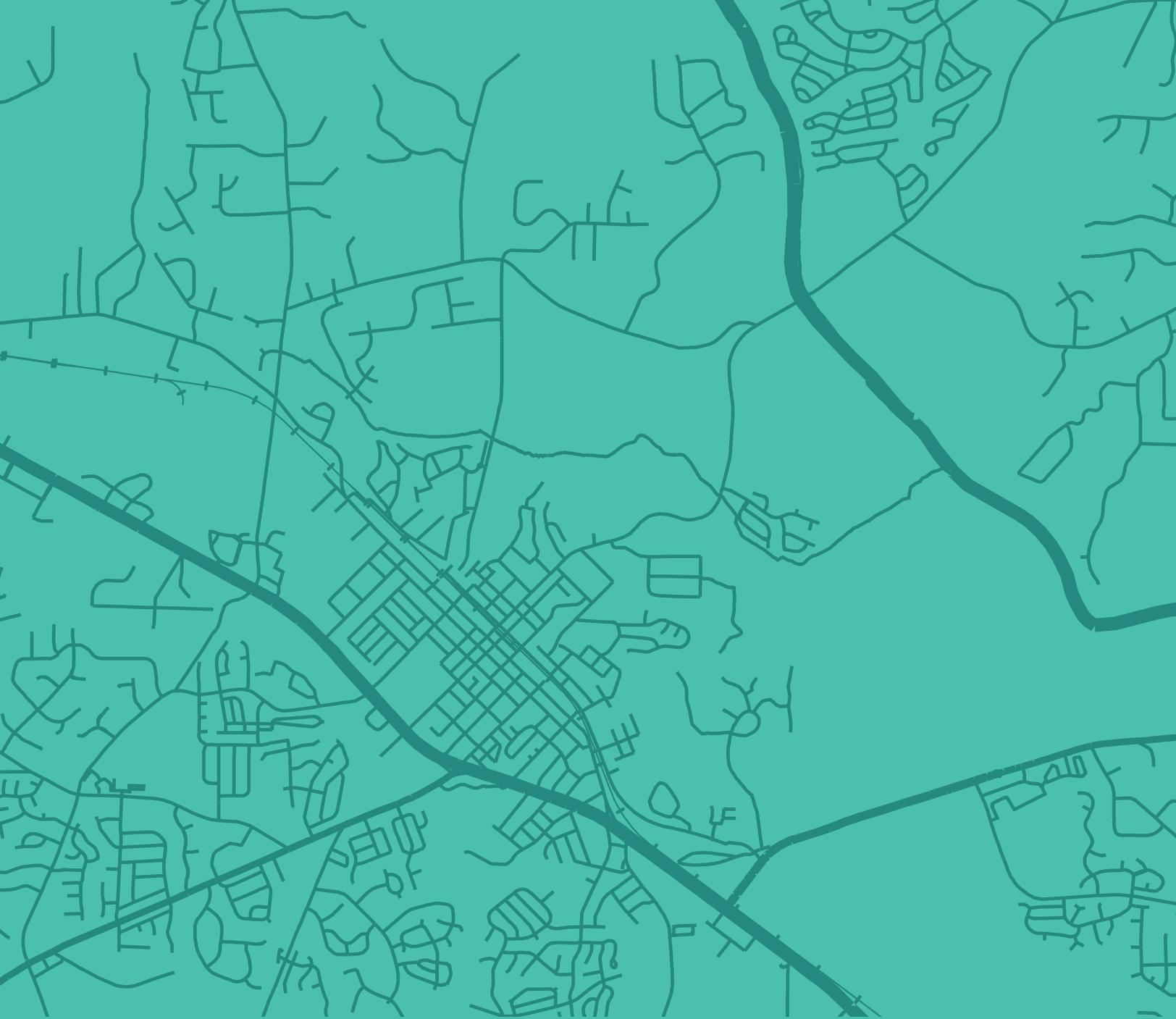
COUNTY: JOHNSTON DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
TRAIL ITEMS						
0000100000-N	800	MOBILIZATION	1	LS	\$99,000.00	\$99,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$72,000.00	\$72,000.00
0043000000-N	226	GRADING	1	LS	\$594,000.00	\$594,000.00
1121000000-E	520	AGGREGATE BASE COURSE	4,350	TON	\$45.00	\$195,750.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	1,220	TON	\$140.00	\$170,800.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	75	TON	\$720.00	\$54,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	2,700	LF	\$40.00	\$108,000.00
2605000000-N	848	CONCRETE CURB RAMP	7	EA	\$3,000.00	\$21,000.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$50,000.00	\$50,000.00
		PEDESTRIAN BRIDGE	20	LF	\$3,000.00	\$60,000.00
		E FRONT ST / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	\$15,000.00	\$15,000.00
		CATERPILLER INC W. ENTR / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	\$15,000.00	\$15,000.00
		CATERPILLER INC E. ENTR / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	\$15,000.00	\$15,000.00
		GLEN LAUREL RD / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	\$15,000.00	\$15,000.00
		DRAINAGE ALLOWANCE	1	LS	\$165,000.00	\$165,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$125,000.00	\$125,000.00
		MINOR ITEMS (5%)	1	LS	\$84,000.00	\$84,000.00

CONSTRUCTION COST SUBTOTAL	\$1,859,000.00
CONTINGENCY (30%)	\$557,700.00
UTILITIES (ABOVE GROUND)	\$20,000.00
NCDOT ADMINISTRATION FEE (10%)	\$244,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	\$2,681,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
 BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
 ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
 EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
 UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY CJA
 DATE 6/10/2022



Clayton Pedestrian Plan 2022

PREPARED FOR THE TOWN OF CLAYTON |
PREPARED BY ALTA PLANNING + DESIGN



alta