

City of Newton, NC Pedestrian Plan



Prepared by:



Adopted August 2017



Acknowledgments

Thanks to the local residents, business leaders, community leaders, and government staff who participated in the development of this study through meetings, events, volunteering, interviews, and review. Special thanks to those stakeholders who participated as steering committee members, listed below.

Project Staff

Randolph S. Williams, AICP, Planning Director, City of Newton
Alex Fulbright, Assistant Planning Director, City of Newton

Steering Committee Members

Dennis Falder, Public Works, City of Newton
Carol Stiles, Parks & Recreation, City of Newton
Alex Frick, Public Information Officer, City of Newton
Michael Sullivan, Captain, Newton Police Department
Robin Rudisill, Director of Facilities, Safety, and Maintenance, Newton-Conover City Schools
Todd Stroupe, IT/GIS Services, Western Piedmont Council of Governments
Chris Timberlake, Planning, Parks & Development, Catawba County/Carolina Thread Trail representative
Carmen Isenhower, Planning Commission, City of Newton
Tom Rowe, City Council, City of Newton
Twyla McDermott, Resident, Business Owner, City of Newton
Jim Gargis, Resident, City of Newton
Leslie Yount, Resident, City of Newton
Jason White, Resident, City of Newton
Becca Bleich, Representative, Downtown Newton Development Association
George Berger, Active Routes to School Region 4 Coordinator, Cabarrus Health Alliance
Camille Sterling, Executive Director, Greenway Public Transportation
Nick Scheuer, Planner, NC Department of Transportation Division of Bicycle & Pedestrian Transportation

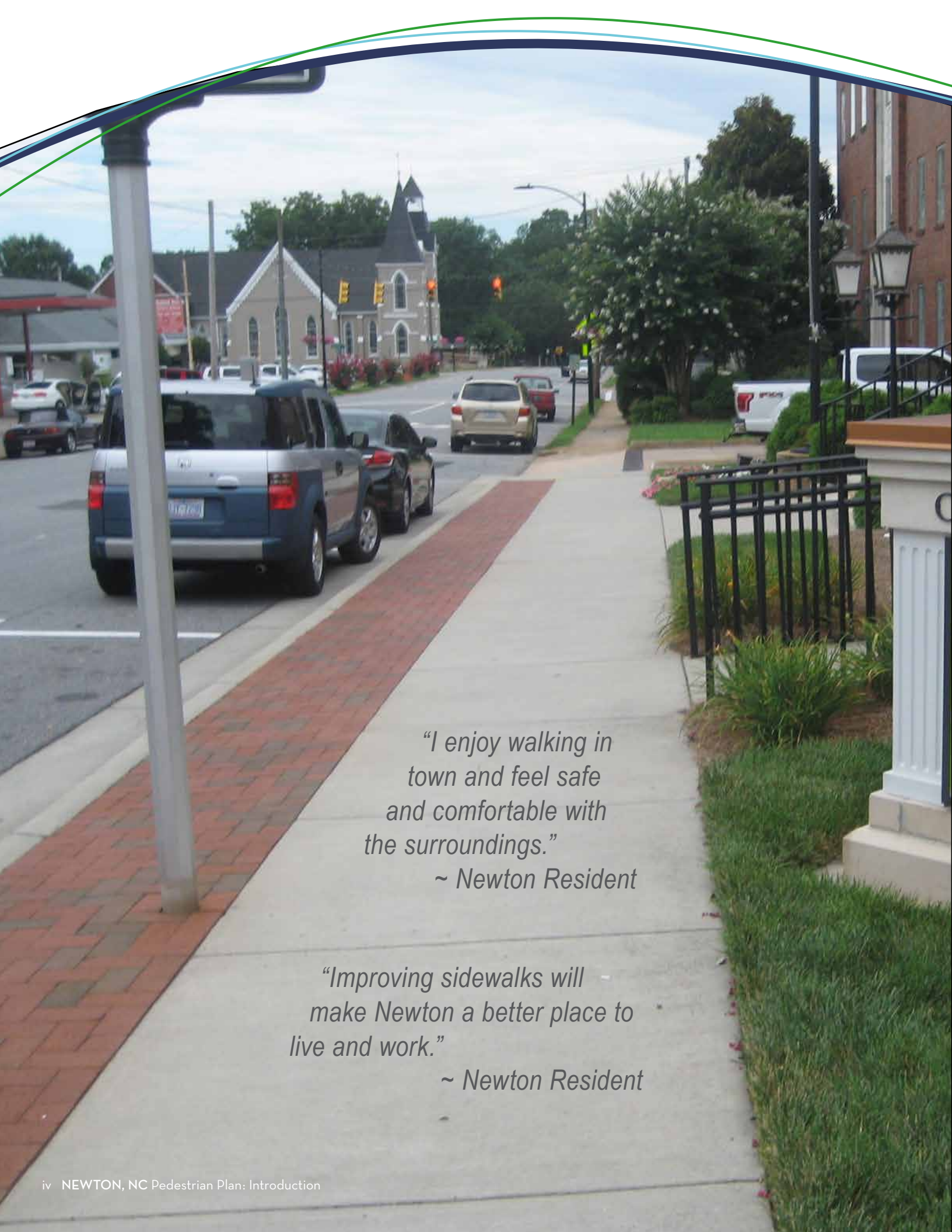
Project Consultant

John Cock, Vice President, Alta Planning + Design
Wade Walker, PE, Principal, Alta Planning + Design
Jennifer Baldwin, Senior Planner, Alta Planning + Design
Heather Maloney Seagle, Planner, Alta Planning + Design
Celina Chan, Planner, Alta Planning + Design
Katie Lloyd, Designer, Alta Planning + Design



Contents

1	Introduction	
	Overview	1-1
	The Vision	1-2
	Plan Goals	1-2
	Planning Process	1-3
	Public Outreach	1-4
	Why is This Plan Important?	1-5
	References	1-11
2	Existing Conditions	
	Overview	2-1
	Local Context	2-2
	Existing Conditions Map Series	2-4
	Existing Conditions Photo-Inventory	2-10
	Opportunities and Challenges	2-16
	Review of Existing Plans	2-18
	Public Input Summary	2-23
3	Policy	
	Overview	3-1
	Development Ordinance Review	3-1
	Policy Action Steps	3-9
4	Programs	
	Overview	4-1
	Potential Partners + Stakeholders	4-2
	Program Toolkit	4-3
	Program Action Steps	4-7
5	Infrastructure Recommendations	
	Overview	5-1
	Methodology for Network Development	5-1
	Recommended Pedestrian Network	5-2
	Intersection Improvements	5-15
	Infrastructure Network and Funding Action Steps	5-19
	Priority Projects Cutsheets	5-20
6	Implementation	
	Overview	6-1
	How to Use this Plan	6-2
	Planning Level Cost Estimates	6-3
	Performance Measures	6-4
	Organizational Framework for Implementation	6-5
	Implementation Action Steps	6-6
	A Appendix: Design Guidelines	
	Overview	A-1
	Pedestrian Facilities	A-2
	Pedestrians at Intersections	A-9
	Multi-Use Paths	A-21
	B Appendix: Funding	
	Overview	B-1
	Federal Funding Sources	B-1
	State Funding Sources	B-5
	Local Government Funding Sources	B-8
	Private and Non-Profit Funding Sources	B-9
	C Appendix: Public Survey	
	Overview	C-1
	Survey Results	C-1



“I enjoy walking in town and feel safe and comfortable with the surroundings.”
~ Newton Resident

“Improving sidewalks will make Newton a better place to live and work.”
~ Newton Resident



Introduction

Chapter Contents:

Overview

The Vision

Plan Goals

Planning Process

Public Outreach

**Why is This Plan
Important?**

OVERVIEW

As the county seat of Catawba County and situated within the triangle formed by the surrounding cities of Asheville, Winston-Salem, and Charlotte, the city of Newton is well positioned for growth and a high quality of life for its residents. The city has been actively planning for such growth with a focus on improvements to its streetscapes, parks and recreation facilities. A focus on planning and implementing pedestrian facilities will offer transportation and recreation opportunities for residents, as well as provide important connections to transit service. Pedestrian facilities, such as the Heritage Trail Greenway and sidewalks in the downtown core and historic neighborhoods, are already in place, but Newton is taking further measures to improve safety and accessibility.

The Newton Pedestrian Plan serves as a guiding document and blueprint for implementation and funding of pedestrian facilities in the city. The planning process kicked off in September 2016 and included a variety of methods to gather public input. The Newton Pedestrian Plan was made possible by joint funding from the City of Newton and the North Carolina Department of Transportation (NCDOT).



Crumbling sidewalk at intersection of North Main Avenue and West 6th Street.

THE VISION

The Newton Pedestrian Plan aims to identify new opportunities and ongoing initiatives that will create a pedestrian environment that connects people of all ages and abilities to where they live, work, play and learn.

The purpose of the Newton Pedestrian Plan is to improve all aspects of the pedestrian experience and increase pedestrian activity. It addresses how to make the city's streets safe for Newton's youngest and oldest pedestrians, how to improve the connections between neighborhoods, and how an improved pedestrian environment can create a healthier and more livable city. The following is the plan's vision:

“Newton is a community that invites people of all ages and abilities to walk for enjoyment, exercise, and daily transportation by providing a safe, convenient and inclusive pedestrian environment based on accessibility and connectivity.”

PLAN GOALS



Improve safety for all pedestrians

Improve the quality and safety of the pedestrian environment through infrastructure, programs, and policies



Increase connectivity and accessibility of sidewalks

Improve connectivity of pedestrian network to key destinations and employment centers while increasing accessibility at intersections



Improve linkages between the pedestrian network and recreation & exercise opportunities

Improve accessibility and provide direct links to the greenway system, parks, and recreation centers via extended sidewalk network and improved street crossings



Improve quality of life & livability of the Newton community

Create more opportunities for vibrant community interaction, physical activity, and economic development through an improved pedestrian-scale environment

PLANNING PROCESS



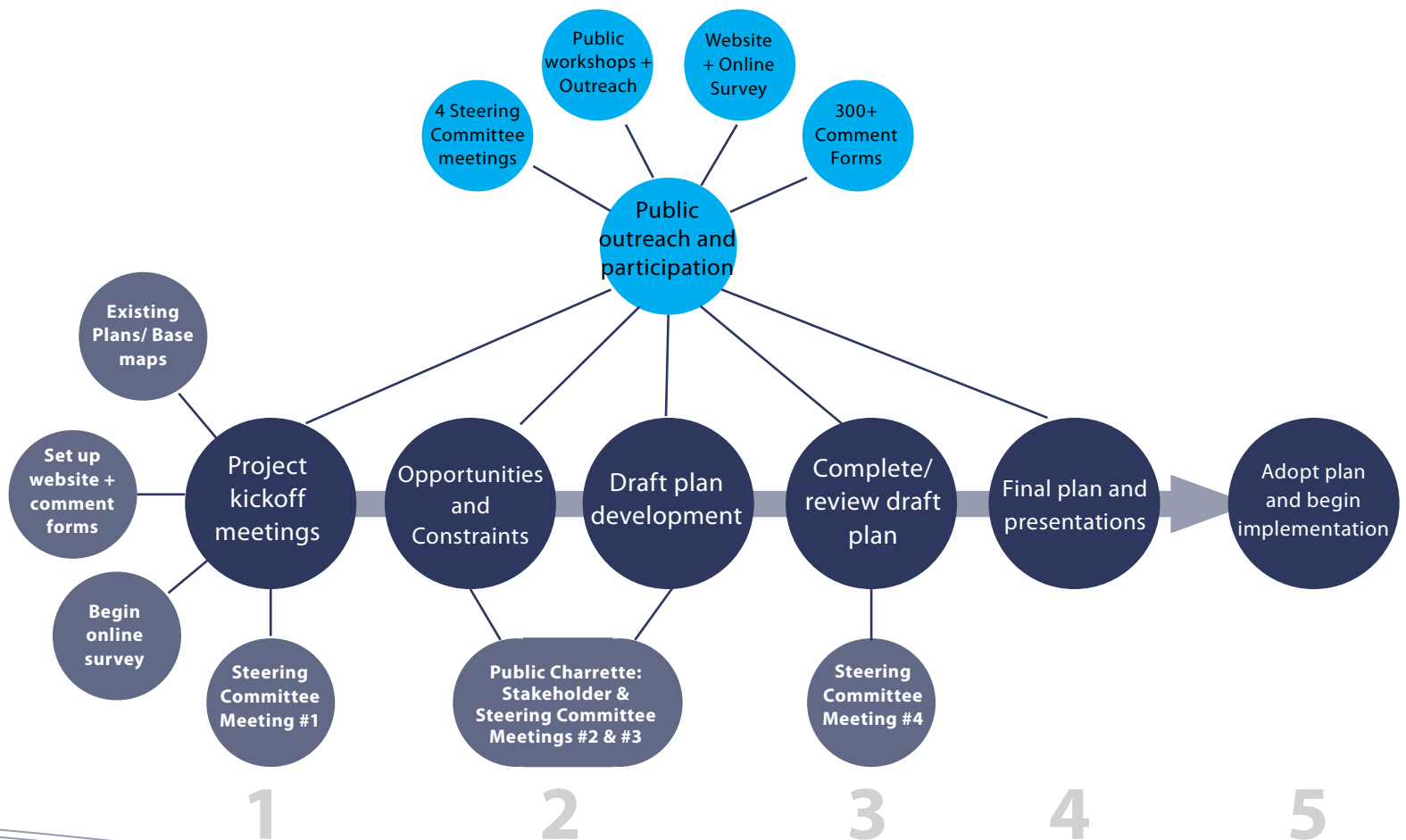
Steering Committee members gathered around a base map of Newton to discuss existing conditions during the kickoff meeting in September 2016.

The planning process for the Newton Pedestrian Plan started in Fall 2016 with the initial Steering Committee meeting and concluded in Spring 2017. Key steps in the planning process are highlighted in the diagram below.

Project Steering Committee

Key tasks of the Steering Committee included guiding the overall vision of the plan, identifying existing opportunities and constraints for walking in the city, leveraging resources for an expanded public outreach effort, and providing feedback on plan recommendations. The Steering Committee included representatives of the following groups. The names of the Steering Committee members are listed on the Acknowledgments page.

- » Local residents & Business owners
- » City of Newton
- » Newton Police Department
- » Newton Public Works
- » Newton-Conover City Schools
- » Downtown Newton Development Association
- » Greenway Public Transportation
- » Catawba County
- » Carolina Thread Trail
- » Western Piedmont Council of Governments
- » Active Routes to School (NCDOT)
- » NCDOT Division of Bicycle & Pedestrian Transportation



PUBLIC OUTREACH

In addition to Steering Committee meetings, the planning process included several other methods of public outreach and involvement.

Project Website

(www.newtonnc.gov/walk/index.php)

The website featured information about the plan and a link to the comment online survey.

Public Comment Form

The public comment form was offered on-line and in hard copy format. The form asked questions about walking destinations, barriers to walking, and funding in Newton.

Public Display

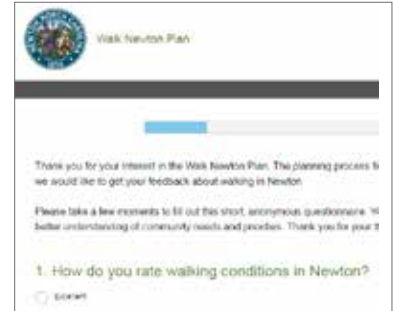
A map of current conditions was displayed at Carolina Vines and City Hall to allow input from the public on opportunities and constraints for walking in Newton.

Public Charrette

In December, the project team hosted a public workshop and charrette at City Hall to develop network recommendations and the draft plan, as well as to gather further input from the public.

Final Plan Presentations

The plan was finalized in Spring 2017. A final report was presented to the Newton City Council and the Planning Commission.



An image of the on-line public survey that allowed the public to report preferences for improvements to pedestrian facilities where they prefer to walk.



Receiving input in locations where people already are, such as Carolina Vines, helped increase project awareness.



Residents reviewing preliminary recommendations during the December charrette



A walk audit during the charrette was an opportunity for residents and stakeholders to get on-the-ground experience assessing the pedestrian environment.



Pedestrians crossing 1st Street near the History Museum of Catawba County

WHY IS THIS PLAN IMPORTANT?

Extensive research has highlighted the multitude of economic, health, mobility, environment, safety, and quality of life benefits of having a pedestrian-friendly community.

The following sections highlight the many benefits of planning for and creating a walkable Newton. Resources drawn upon in this discussion are listed at the end of this chapter.

Key Benefits of Pedestrian Friendly Communities



Safety & Crime

Trends and Challenges

According to a survey of 16,000 North Carolina residents for the 2011 North Carolina Bicycle and Pedestrian Safety Summit, the most commonly reported safety issue for walking in North Carolina is inadequate infrastructure (75%).¹ A lack of pedestrian facilities, such as sidewalks, trails, and safe crossings, lead to unsafe walking conditions for pedestrians.

- » Each year on average (2011-2015), 178 pedestrians are killed in collisions with motor vehicles on North Carolina roads, with 2,181 more injured.²
- » North Carolina is ranked as one of the least safe states for walking (41st).³
- » 14% of all traffic fatalities in 2015 North Carolina were pedestrians.
- » During the five-year period from 2011 to 2015, a total of 10,656 pedestrian-motor vehicle crashes were reported to North Carolina authorities.
- » Research by The University of North Carolina Highway Safety Research Center found that Newton was the site of 19 crashes involving pedestrians from 2010 to 2014.



SAFETY

***From 2010-2014,
there were 19
pedestrian collisions
in Newton.***

Improving Safety

Separate studies conducted by the Federal Highway Administration and the University of North Carolina Highway Safety Research Center demonstrate that installing pedestrian and bicycle facilities directly improves safety by reducing the risk and severity of pedestrian-automobile and bicycle-automobile crashes. For example, installing a sidewalk along a roadway reduces the risk of a pedestrian “walking along roadway” crash by 88 percent. Furthermore, according to the aforementioned survey, 70% of North Carolina respondents said they would walk or bicycle more if these safety issues were addressed.¹

Pedestrian Crash Countermeasures⁴

Pedestrian Crash Reduction Factor

- | | |
|--|-----|
| » Install pedestrian overpass/underpass | 90% |
| » Install sidewalk (to avoid walking along roadway) | 88% |
| » Provide paved shoulder (of at least 4 feet) | 71% |
| » Install raised median at unsignalized intersection | 46% |
| » Install pedestrian refuge island | 36% |
| » Install pedestrian countdown signal heads | 25% |

The following web addresses link to more comprehensive research on active transportation and safety:

- » <https://www.ncdot.gov/bikeped/walkbikenc/>
- » www.pedbikeinfo.org/data/factsheet_crash.cfm



CRIME

Crime rates were lower 75% of the time along 14 greenways in Mecklenburg County, from 2001-2003, compared to surrounding neighborhoods.²²

Personal Safety and Crimes

Some communities can be apprehensive about the impact of greenways on neighborhood crime and safety. Concerns usually revolve around a feeling of increased vulnerability to crime and unwanted traffic related to greenway use. These concerns have been shown to be unfounded by numerous studies of crime rates along greenways over the past 20 years.²¹⁻²⁵

Two studies done in Mecklenburg County have shown that crime rates along greenways are in fact lower than in surrounding communities.²² The lower crime can be attributed to the fact that greenways attract people to the area for recreation, and their presence deters criminal activity. This phenomenon of increased activity helping to lower crime rates is referred to as “eyes on the street,” and was developed by Jane Jacobs in the 1960s. In practice, the theory of “eyes on the street” and the broader theory of Crime Prevention Through Environmental Design call for design elements that maximize visibility, minimize hidden and isolated areas, control access, and clarify appropriate uses as strategies to deter crime and promote proper use of the facilities.²⁶ The following elements can be incorporated into greenway design to create safe, welcoming facilities with minimal opportunities for crime.²⁷

- » Provide regular maintenance of trail and landscaping to eliminate safety hazards and to encourage regular use.
- » Clearly mark trails with orientation to trail layout, surrounding streets, facilities, and mile markers so users can navigate easily and safely.
- » Install emergency telephone systems.
- » Design landscaping that does not block visibility- 10-foot buffer between woods to allow long sight lines.
- » Provide proper lighting at trailheads and other access points.
- » Restrict access when with gates when facility is closed.
- » Use fencing, landscaping or other design features to clearly distinguish between public and private property along trail.
- » Post facility rules for proper use at all access points.
- » Align trail near parks or other places of activity, or along active streets to make trail users more visible to others.
- » Develop programs around greenway activity to encourage involvement and use of the trail.

Mobility

Opportunity to Increase Walking Rates

According to the 2011 Bicycle and Pedestrian Safety Survey, at least 70 percent of North Carolinians would walk or bike more for daily trips if walking (and bicycling) conditions were improved.¹ With appropriate accommodations, walking can provide alternatives to driving for short trips, including trips to work, school, running errands, or other short trips. And even for trips that are made via driving or transit, every trip involves walking at either end of the trip, whether it is across a parking lot or down the street to catch a taxi, bus, or train.

Unfortunately, in many parts of North Carolina, the conditions for walking are unsafe., even for short distances. Over 30% of the respondents to the Bicycle and Pedestrian Safety Survey felt that walking for any purpose was somewhat or very dangerous. These respondents cited inadequate infrastructure for walking (75%) and lack of pedestrian connectivity between residential neighborhoods and activity/commercial centers (70%).¹

Commute rates for walking in North Carolina currently fall below the national average, with just 1.8% walking to work, compared to 2.9% walking nationwide. This places North Carolina 42nd for walking commute rates in nationwide state rankings.³ According to recent data from the U.S. Census Bureau, 0.3% of Newton residents walk to work, which is below the county and statewide averages of 0.8% and 1.8%, respectively

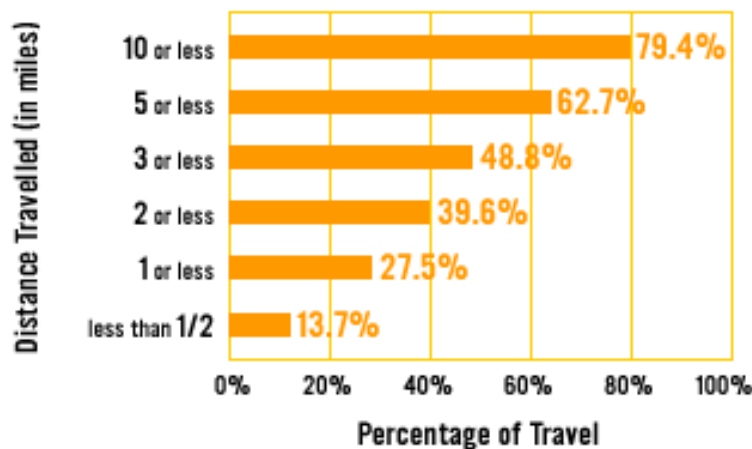
In many communities, the walking commute rate is used as an indicator of overall walking. An estimated 40% of all trips (commute and non-commute) taken by Americans each and every day are less than two miles, equivalent to a walking trip of 30-40 minutes or a 10-minute bike ride; however, just 13% of all trips are made by walking or bicycling nationwide.³ To put these numbers into perspective, 34% of all trips are made by walking or bicycling in Denmark and Germany, and 51% of all trips in the Netherlands are by foot or by bike.¹⁷ Germany, Denmark, and the Netherlands are wealthy countries with high rates of automobile ownership, just like the United States. Yet, an emphasis has been placed on providing quality walking and bicycling environments which has alleviated the reliance on motor vehicles for short trips.



MOBILITY

0.3% of Newton residents currently walk to work

Daily Trip Distances



Most driving trips are for a distance of five miles or less. Chart from the Bicycle and Pedestrian Information Center website, www.pedbikeinfo.org

Health



HEALTH

37.03% of adults in Catawba County are obese, nearly 30% higher than the state obesity rate of 28.6%¹⁰

Health Trends and Challenges

North Carolina's transportation system is one of the most important elements of our public environment, and it currently poses barriers to healthy living through active transportation. In 2012, NCDOT's Board of Transportation revised its mission statement to include "health and well-being" and passed a "Healthy Transportation Policy," which declares the importance of a transportation system that supports positive health outcomes. Below are some key findings and challenges related to health and transportation in North Carolina.

- » 65% of adults in North Carolina are either overweight or obese.⁵ The state is also ranked 5th worst in the nation for childhood obesity.⁶
- » Recent reports have estimated the annual direct medical cost of physical inactivity in North Carolina at \$3.67 billion, plus an additional \$4.71 billion in lost productivity.⁷ However, every dollar invested in pedestrian and bicycle trails can result in a savings of nearly \$3 in direct medical expenses.⁸
- » Of North Carolinians surveyed, 60% would increase their level of physical activity if they had better access to sidewalks and trails.⁵
- » A Charlotte study found that residents who stopped driving to work, and started walking to the light rail station and taking light rail to work, weighed an average of 6.5 pounds less than those who continued to drive to work.⁹

Better Health Through Active Transportation

Using active transportation to and from school, work, parks, restaurants, and other routine destinations is one of the best ways that children and adults can lead measurably healthier lives. Increasing one's level of physical activity through walking and bicycling reduces the risk and impact of cardiovascular disease, diabetes, chronic disease, and some cancers. It also helps to control weight, improves mood, and reduces the risk of premature death.¹¹

Active Transportation: Pathway to Health



The graphic above is from the Health Appendix of Walk Bike NC, North Carolina's statewide bicycle and pedestrian plan from 2013, available at <https://www.ncdot.gov/bikeped/walkbikenc/pictures/Health-Appendix.pdf>. It illustrates the relationship between improvements in the active transportation system (i.e., better walking and bicycling facilities) and health, both in terms of human health and environmental health.

Stewardship

Stewardship addresses the impact that transportation decisions (both at the government/policy level and individual level) can have on the land, water and air that Newton residents and visitors enjoy.

Providing safe accommodations for walking can help to reduce automobile dependency, which in turn leads to a reduction in vehicle emissions – a benefit for residents and visitors and the surrounding environment. As of 2003, 27 percent of U.S. greenhouse gas emissions are attributed to the transportation sector, and personal vehicles account for almost two-thirds (62 percent) of all transportation emissions.¹⁷ Primary emissions that pose potential health and environmental risks are carbon dioxide, carbon monoxide, volatile organic compounds, (VOCs), nitrous oxides (NOx), and benzene. Children and senior citizens are particularly sensitive to the harmful affects of air pollution, as are individuals with heart or other respiratory illnesses. Increased health risks such as asthma and heart problems are associated with vehicle emissions.

Below are some key trends and challenges related to stewardship and transportation in North Carolina:

- » Even a modest increase in walking (in place of motor vehicle trips) can have significant positive impacts. For example, replacing two miles of driving each day with active travel (walking or biking), in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.¹⁸
- » According to the National Association of Realtors and Transportation for America, 89% of Americans believe that transportation investments should support the goal of reducing energy use.²⁰
- » North Carolina's 2009-2013 Statewide Comprehensive Outdoor Recreation Plan (SCORP) found "walking for pleasure" to be the most common outdoor recreational activity, enjoyed by 82% of respondents.²¹
- » The natural buffer zones that occur along greenways protect streams, rivers, and lakes, preventing soil erosion and filtering pollution caused by agricultural and roadway runoff.²²

The following web addresses link to more comprehensive research on active transportation and stewardship.

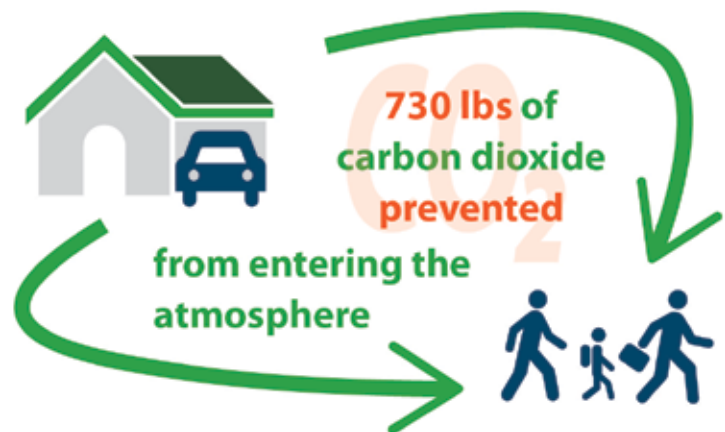
- » www.ncdot.gov/bikeped/planning/walkbikenc/
- » www.pedbikeinfo.org/data/factsheet_environmental.cfm



STEWARDSHIP

Newton has 1.5 miles of greenways and there is strong support for the extension of the Heritage Trail Greenway

Replace 2 miles of driving with walking or biking x 365 days =



* Federal Highway Administration. (1992). Benefits of bicycling and walking to health

Economics

Facilities for pedestrians generate economic returns through improved health, safety, and environmental conditions, **raise property values**, and attract visitors. Below are some key economic trends related to walking in North Carolina and surrounding areas:



The Carolina Thread Trail alignment runs through the heart of Newton. Properties near greenways have been shown to have higher property values.

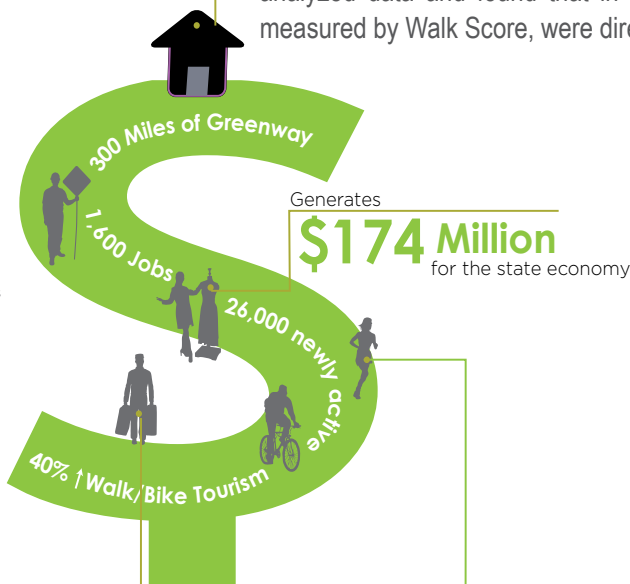
- » North Carolina is the 6th most visited state in the United States; visitors spend as much as \$18 billion a year, many of whom partake in activities related to walking (and biking).¹²
- » According to the report, “The Potential Economic Impacts of the Proposed Carolina Thread Trail,” property values of home in the vicinity of the Carolina Thread Trail alignment are expected to **increase by approximately 4%**, representing **an increase in \$1.7 billion**, which translates into approximately **\$17 million in annual property tax revenues**.³⁰ The Heritage Trail Greenway is part of the approved Carolina Thread Trail.
- » In a three-year study of trails in North Carolina, the Institute for Transportation Research and Education is examining the economic and public health impacts of trails throughout the state. Initial findings found that approximately 20% of trail users make purchases related to their trail use. When completed this study will also evaluate the impacts of trails on property values and tax benefits.¹³
- » Businesses in Travelers Rest, SC, have reported a 10% to 85% increase in sales and revenues following the construction of the The Swamp Rabbit Trail.¹⁴ Trails in Virginia, like the Creeper Trail and the New River Trail have also been found to have significant positive impacts on their local economies.¹⁵
- » Walking is an economically efficient transportation mode. Many North Carolinians cannot afford to own a vehicle and are dependent on walking for transportation (2.5% of occupied housing units in North Carolina do not have a vehicle; 1.9% of households in Catawba County do not have a vehicle; 4.2% of households in Newton do not have a vehicle).¹⁶

Increases residential property values by

\$64 Million
across the state

- » The report, “Walking the Walk: How Walkability Raises Housing Values in U.S. Cities”, analyzed data and found that in 13 of the 15 markets, higher levels of walkability, as measured by Walk Score, were directly linked to higher home values.

An economic impact study, performed as part of the WalkBikeNC Plan, showed significant positive return on investment from the addition of 300 miles of greenways.

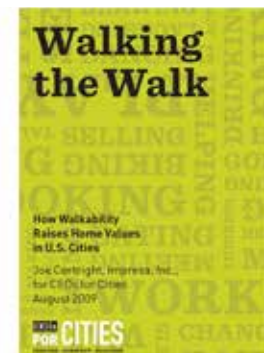


Increases visitor spending by

\$68 Million
annually

Reduces health care costs by

\$76 Million
annually



Download the full report at:

www.ceosforcities.org

REFERENCES

1. NCDOT DBPT and the Institute of Transportation Research and Education. (2011). 2011 Bicycle and Pedestrian Safety Summit Report.
2. North Carolina 2015 Traffic Crash Facts. (2015). North Carolina Division of Motor Vehicles.
3. Alliance for Biking and Walking. (2014). Biking and Walking in the United States: 2014 benchmarking report.
4. Federal Highway Administration. (2008). Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes. FHWA-SA-014. http://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_tctpepc/#cras.
5. North Carolina State Center for Health Statistics. (2007). Behavioral Risk Factor Surveillance System, 2007 Results. www.schs.state.nc.us/SCHS/brfss/2010/index.htm.
6. North Carolina DHHS, Physical Activity and Nutrition Branch, Eat Smart, Move More NC. The Obesity Epidemic in North Carolina. www.eatsmartmovemorenc.com/ObesityInNC/ObesityInNC.html.
7. Be Active North Carolina. (2012). Tipping the Scales: The High Cost of Unhealthy Behavior in North Carolina.
8. Chenoweth, David. (2012). "Economics, Physical Activity, and Community Design." North Carolina Medical Journal 73(4): 293-294.
9. MacDonald, J.M., Stokes, R.J., Cohen, D.A., Kofner, A., & G.K. Ridgeway. (2010). The effect of light rail transit on body mass index and physical activity. American Journal of Preventive Medicine 39(2): 105-112.
10. Catawba County Community Health Assessment 2015. <http://www.catawbacountyhealthpartners.org/2015CHA.pdf>.
11. National Prevention Council. (2011). National Prevention Strategy: America's plan for better health and wellness. <http://www.healthcare.gov/prevention/nphpphc/strategy/report.pdf>
12. The North Carolina Department of Commerce reported 37 million visitors to the State in 2011, of which 63 percent came from outside the State. www.visitnc.com
13. Institute of Transportation Research and Education. (2016). "Evaluating the Economic Impact of Shared Use Paths in North Carolina- Technical Memorandum:American Tobacco Trail Year Two."
14. Reed, J.A. (2014). Greenville Health System Swamp Rabbit Trail: Year 3 Findings. Available at: <http://greenvillerec.com/wp-content/uploads/2014/12/SRT-Impact-Study-Year-3-Final.pdf>
15. Economic Development Studio, Virginia Tech University. (2011). Building Connectivity through Recreation Trails: A Closer Look at New River Trail State Park and the Virginia Creeper Trail. Available at: http://www.visitdamascus.org/wp-content/uploads/2016/06/Final-Report_Impact-of-Trails_Fall2011Studio_VT.pdf

16. U.S. Census Bureau. American Community Survey 2010-2014 5-year estimates.
17. Pucher, J. and R. Buehler. (2010). Walking and Cycling for Healthy Cities. *Built Environment* 36(5): 391-414.
18. Federal Highway Administration. (2012). Report to the U.S. Congress on the Outcomes of the Nonmotorized Transportation Pilot Program SAFETEA-LU Section 1807. Retrieved from http://www.fhwa.dot.gov/environment/bicycle_pedestrian/nftp/2012_report/page00.cfm
19. Office of Transportation and Air Quality, Environmental Protection Agency. (2006). Greenhouse Gas Emissions from the U.S. Transportation Sector: 1990-2003. Report number EPA 420 R 06 003
20. National Association of Realtors and Transportation for America. (2009). 2009 Growth and Transportation Survey.
21. Division of Parks and Recreation, NC Department of Environment and Natural Resources. (2008). 2009-2013 North Carolina Statewide Comprehensive Outdoor Recreation Plan
22. Arendt, R. (1994). *Rural by Design*. American Planning Association, Chicago, Illinois.
23. Tedder, L. A. (1995). Effects of Three Cary Greenways on Adjacent Residents. University of North Carolina at Chapel Hill.
24. Martin, W., Ludden, T., et al. (2004) Preliminary Assessment of Crime Risk along Greenways in Charlotte, North Carolina. Department of Geography and Earth Sciences University of North Carolina at Charlotte. 1994-2004. Available at: http://carolinathreadtrail.org/assets/files/Safety%20GreenwayCrime04_paper%20from%20UNCC.pdf
25. Virginia Crime Prevention Association. *Safety by Design: Creating a Safer Environment in Virginia*. 2005
26. Catawba Valley Heritage Alliance. *Greenways & Crime*. Available at: <http://www.heritagealliance.org/GreenwaysAndCrime.htm>
27. National Trails Training Partnership. "Impacts of Trails and Trail Use". Available at: <http://www.americantrails.org/resources/adjacent/sumadjacent.html>
28. International CPTED Association. www.cpted.net/
29. Buncombe County Greenways and Trails Master Plan. Available at: <http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx>
30. Catawba Lands Conservancy. (2007) *The Potential Economic Impacts of the Proposed Carolina Thread Trail*. Available at: http://www.carolinathreadtrail.org/assets/files/CTT_Economic_Study.pdf



CITY OF
NEWTON

↑
History
Museum
Old Post Office
Playhouse
Public Library



2

Existing Conditions

Chapter Contents:

Overview

Local Context

Existing Conditions Map Series

Existing Conditions Photo Inventory

Opportunities & Challenges

Review of Existing Plans

Public Input Summary

OVERVIEW

Located in the greater Hickory area, Newton is home to approximately 13,000 residents.¹ With convenient access to a broad network of interstates and highways; Hickory Regional Airport and Charlotte Douglas International Airport; and rail services, Newton is well served in terms of transportation. Interstate 40 and US-70 run east-west just to the north of Newton’s city limits, while NC Highway 16 and US Highway 321 provide north-south transport through Newton. The city is conveniently located at the midpoint between the cities of Asheville and Greensboro, and only an hour’s drive north of Charlotte.



The History Museum of Catawba County is at the center of the walkable downtown Newton.

Industries in Newton

While historically known for its furniture and manufacturing industry, Newton is home to a diverse industrial base, with companies producing a range of products ranging from fiber optic cable, automotive parts, baked goods, medical supplies, telecommunications technology, as well as traditional industries such as furniture and textiles.

Newton is also home to a Target Distribution Center, which provides more than 550 jobs. Other major employers include Flowers Baking Company, Lee Industries, General Dynamics, ZF Lemforder, Sarstedt, Technibilt, Renwood Mills, Catawba County Government, Catawba County Schools, and Newton-Conover City Schools.

¹ City of Newton current population estimate

LOCAL CONTEXT

Activity Centers

The maps to the left show four major activity centers in Newton. Existing sidewalks and a half-mile buffer (approximating a 15-minute walk) were drawn around each of these centers to demonstrate the walking potential and existing pedestrian network near these activity centers.

Downtown Newton is the main focal point of activity and destination for residents and visitors. The various restaurants, retail shops, movie theatre, banks, and other services located in the downtown core create an attractive environment where many residents and visitors congregate.

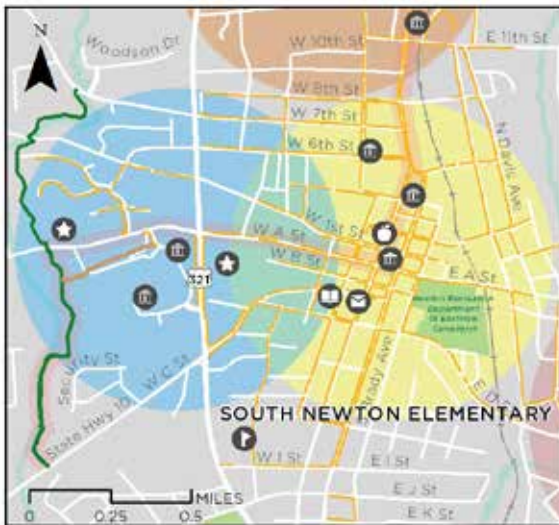
The **Catawba County Government Center**, at the intersection of Radio Station Road and US 321 Business, is also a busy activity center where many people have expressed interest in improving the pedestrian access. Creating pedestrian connections between here and the surrounding shopping centers, restaurants, and downtown is a priority.

The close proximity of **Newton-Conover High School and Discovery High School** create a nexus of activity on the north side of Newton. Students frequently walk between the two campuses, and also access the many shopping opportunities along US 321 Business during after-school hours.

The **intersection of NC Highway 10 and NC Highway 16**, near Food Lion and Dollar General, is another center of activity. Between this area and downtown Newton is the East Newton Park and Central Recreation Center, which both draw activity. Significant foot traffic between these two areas calls for improved pedestrian facilities to address safety concerns.



1/2 mile/15-minute walk boundaries around 4 major activity centers in Newton



1/2 mile/15-minute walk boundaries around Downtown Newton (yellow) and the Catawba County Government Center (blue)



Newton-Conover and Discovery High Schools, with 1/2 mile/15-minute walk boundary (orange)



1/2 mile/15-minute walk boundary around Dollar General (red)

Walking Rates

The percentage of Newton residents who report that they walk to work is 0.3%, which is below the North Carolina average of 1.8%. Furthermore, when compared to peer cities of similar population size, the percentage of residents who walk to work is lower in Newton. Among the peer cities, Hendersonville and Davidson have the highest percentage of residents who report that they walk to work (around 7.0%). Meanwhile, 0.8% of residents in the neighboring cities of Lenoir and Granite Falls report walking to work, which is over twice the rate of Newton. In the long-term, Newton should aspire to achieve a walking rate comparable to Hendersonville.

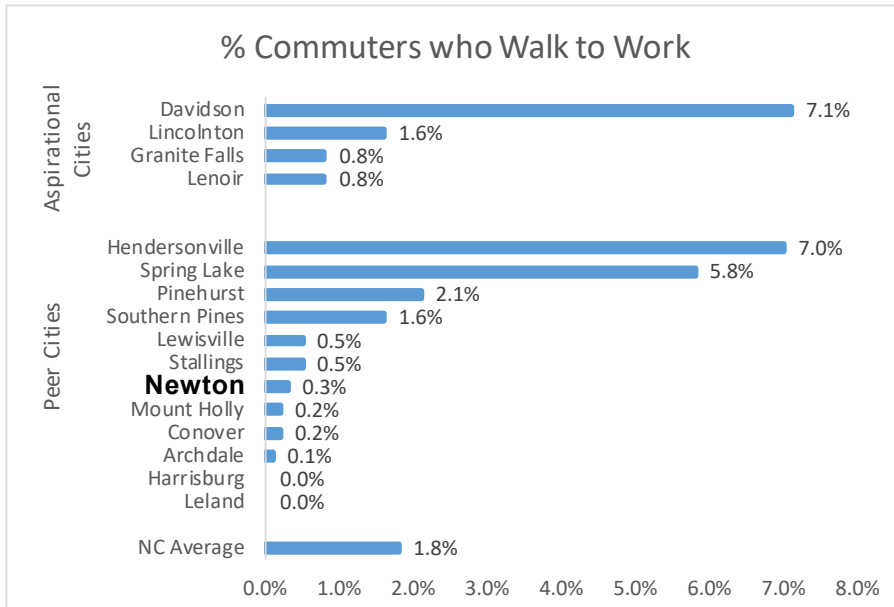


Figure 2.1: Walking Mode Share in Newton, its peer cities in North Carolina, and aspirational cities

Source: U.S. Census, Bureau, 2010-2014 American Community Survey (ACS), 5-year estimates

Demographics

The City of Newton is located in Catawba County. The median age of Newton residents is 41.4 years of age, which is slightly higher than Catawba County and the state of North Carolina. However, the median household income is lower in Newton compared with Catawba County and the state. **A larger percentage of households in Newton (12.8%) don't own a vehicle, compared to 5.4% and 6.5% in the county and state, respectively.** Yet, the percentage of residents who walk to work is well below that in the county and the state overall. The percentage of workers who carpoled is significant and may reflect the high number of households without a car.



12.8% of households in Newton do not own a vehicle, compared to 5.4% and 6.5% in the county and state, respectively.

	Newton	Catawba County	North Carolina
Median Age	41.4	40.4	37.8
Median Household Income	\$29,884	\$45,397	\$46,693
% Households with no vehicles	12.8	5.4	6.5
% Walk to work	0.3	0.8	1.8
% Carpool to work	11.9	8.4	10.2

Table 2.1: Select Demographic Data for Newton, Catawba County, and North Carolina

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

EXISTING CONDITIONS MAP SERIES

The existing conditions maps on the following pages provide insight into the demographic, environmental, and existing pedestrian network of Newton. These maps display existing opportunities and constraints in the city.

Map 2.0 Newton Study Area

The study area for this plan is the limits of the Newton planning boundary, which encompasses the City of Newton, Newton Extra-Territorial Jurisdictions (ETJ), and unincorporated parts of the surrounding county. **The existing pedestrian network consists of 28.4 miles of sidewalks throughout the city.** A more extensive sidewalk network is present in the downtown area. Presence of sidewalks along major thoroughfares is variable. Sidewalks are present along most of Main Avenue, but there is a lack of sidewalks along US 321 Business. Parts of A Street and D Street currently lack key sidewalk connections with gaps in the system.

Map 2.3 Sidewalk Conditions Analysis

Sidewalk conditions in Newton were thoroughly assessed as part of the Pavement & Sidewalk Condition Report of 2015. This assessment provided a detailed analysis of the conditions of 27.5 miles of sidewalks, as well as the presence and condition of curb ramps, throughout Newton. Mapping of these conditions along with key destinations revealed areas with high concentrations of deteriorated relative to areas of high pedestrian demand. This composite map was used by the project team to identify potential priority projects and investments.

Map 2.2 Pedestrian Collisions (2007-2012)

From 2007 to 2012, there were 21 pedestrian collisions in Newton, 1 of which was fatal.

The fatal collision occurred near the intersection of US 321 Business and West C Street. A high number of collisions occurred along Main Avenue. Other notable locations were on Radio Station Road where the greenway crosses, near Westside-Jaycee Park, and residential neighborhoods throughout the city.

Map 2.3 Equity Analysis

When evaluating the need for pedestrian infrastructure and improvements, it is important to understand the areas of Newton where there is a greater concentration of need. A well-connected pedestrian network should be accessible to everyone, especially to populations that rely on walking or transit as modes of transportation. Inputs for the equity analysis were analyzed at the census tract level. The inputs are: households with no vehicle, households living below the poverty level, limited English proficient populations, non-white populations, population under 18 years, and population over 65 years of age. Findings from the equity analysis were used to inform the pedestrian network recommendations.

Map 2.4 Ownership of Public Road Right-of-Ways

Knowledge of roadway ownership is important for determining the types of facilities that can be recommended along a roadway, the agency in charge of maintaining the roadway and implementing pedestrian facility recommendations, and how improvements are scheduled, funded, and constructed. There are a number of state-owned roads in Newton that connect to major destinations and/or have bus routes. They include Main Avenue, College Avenue, US 321 Business, A Street, D Street, 20th Street, Radio Station Road, West 7th Street, West 15th Street, and Long Drive.

**Collision rate (2007-12):
16.2 pedestrian
collisions per 10,000
Newton residents**

*Collisions Source: NCDOT
Population Source: U.S. Census Bureau,
2012 5-year American Community Survey
(ACS) estimates*

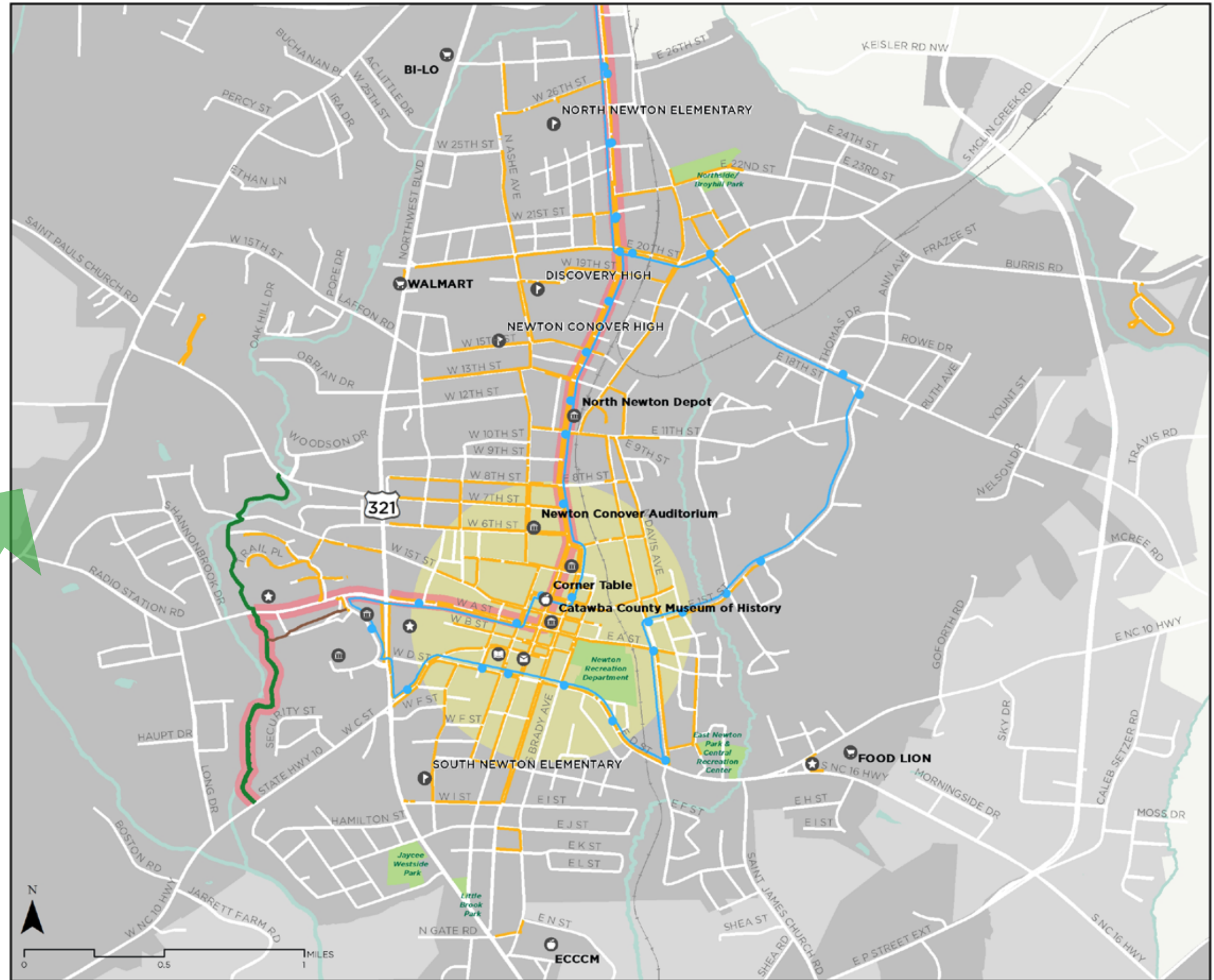
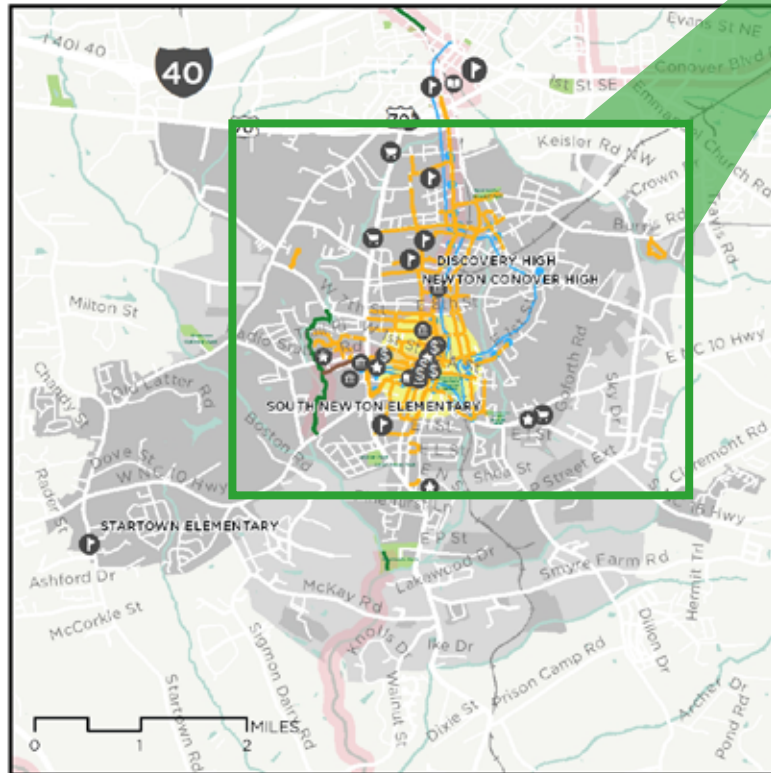
MAP 2.0 NEWTON STUDY AREA

EXISTING PEDESTRIAN FACILITIES

- Sidewalk- existing
- Natural Surface Trail
- Greenway- existing
- Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

- | | |
|-----------------------|---|
| Point of Interest | Bus Stop |
| Food Outlet | Greenway Public Transit Route |
| Post Office | Railroad |
| Government / Cultural | Streams |
| Banks | Lakes & Ponds |
| College/University | Parks |
| Grocery Store | Newton City Limits |
| Library | Extra Territorial Jurisdictions |
| School | Half Mile (15-min walk) from Center of City |



MAP 2.1 SIDEWALK CONDITIONS ASSESSMENT

IDENTIFIED SIDEWALK ISSUES & CONDITIONS

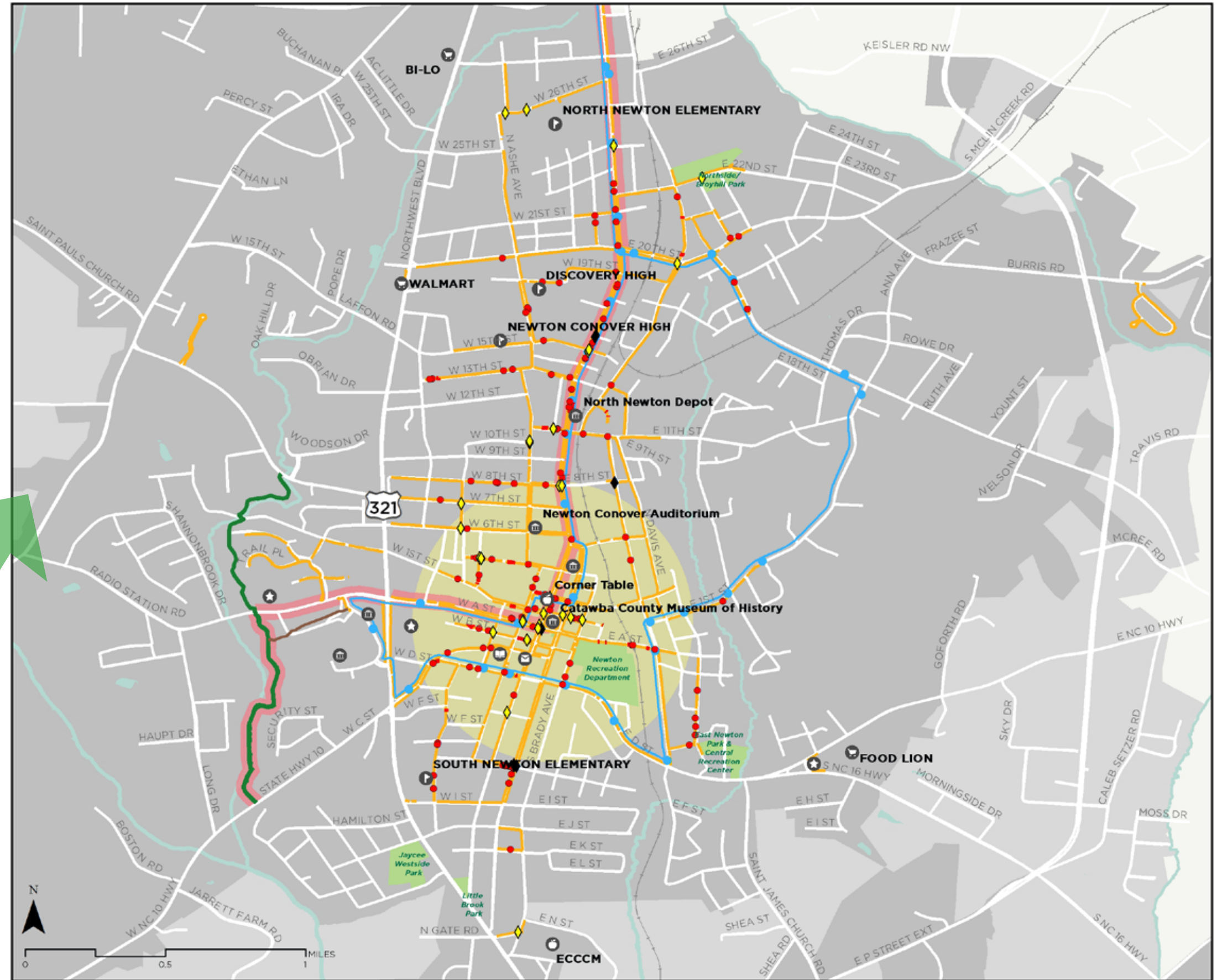
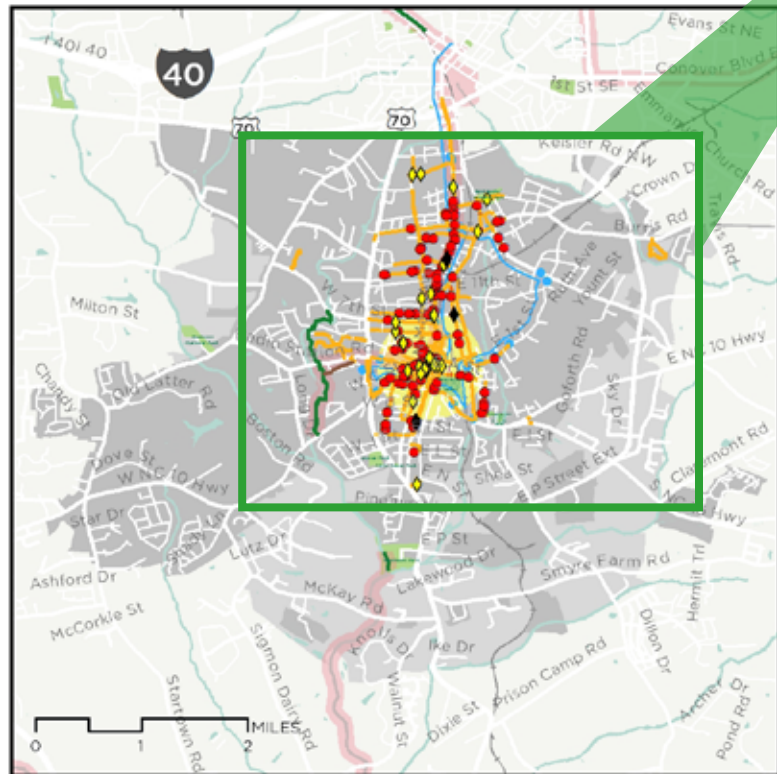
- ADA ramp presence**
- ◆ No ramp, Uneven surface
 - ◆ Ramp, Uneven surface
 - Sidewalk point-poor condition
 - Sidewalk segment-poor condition

EXISTING PEDESTRIAN FACILITIES

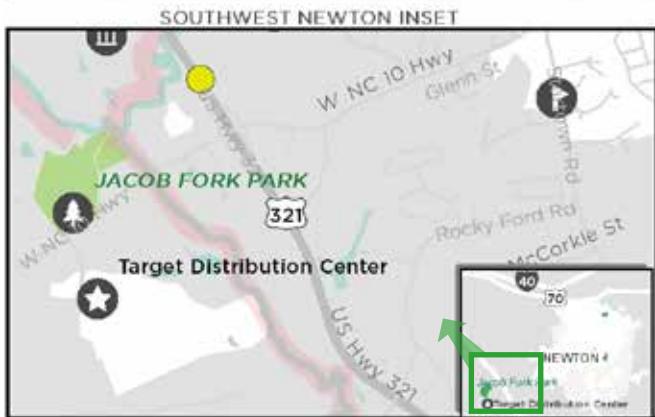
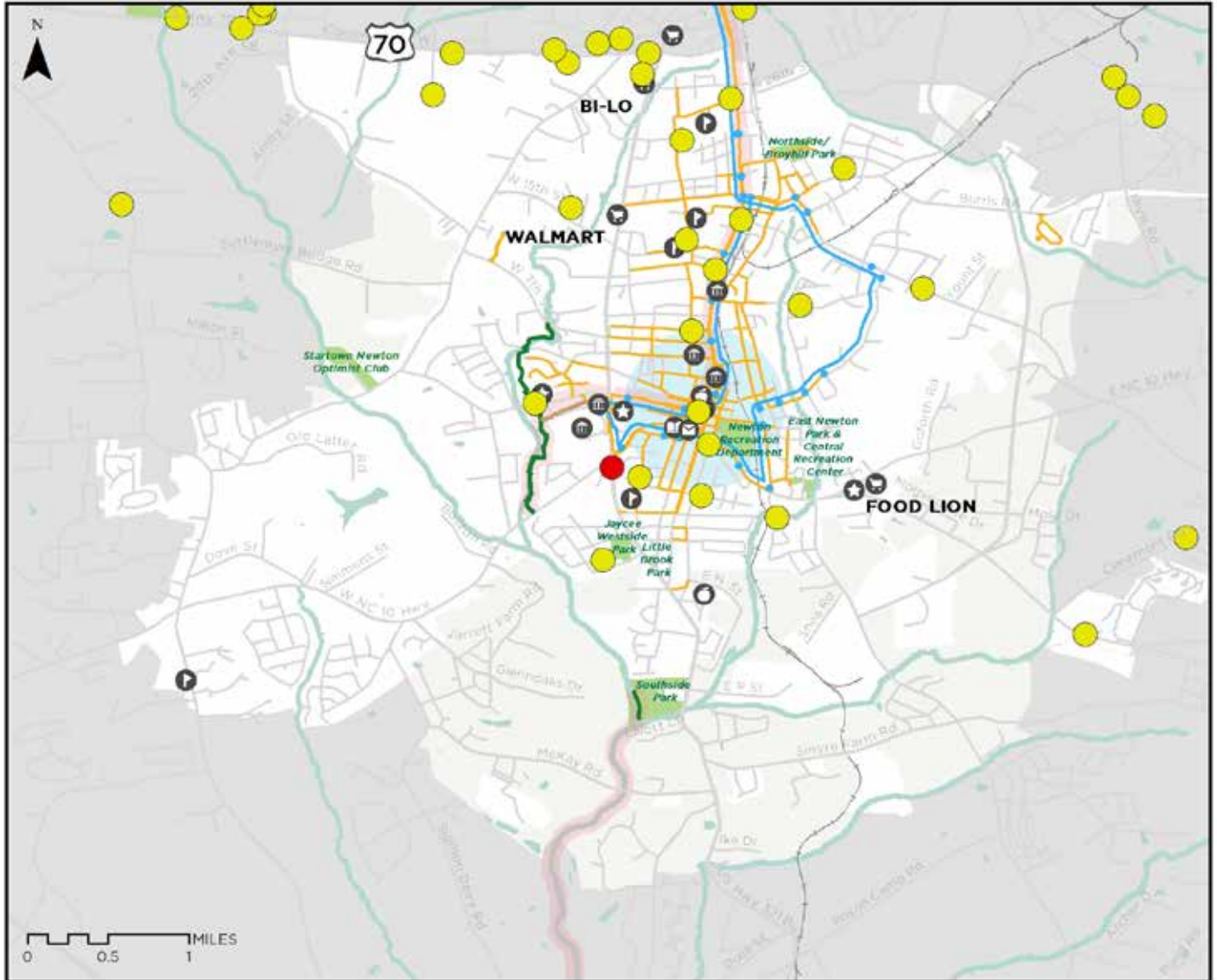
- Sidewalk-existing
- Natural Surface Trail
- Greenway-existing
- Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

- ★ Point of Interest
- Bus Stop
- Food Outlet
- Post Office
- Government / Cultural
- Banks
- College/University
- Grocery Store
- Library
- School
- Greenway Public Transit Route
- Railroad
- Streams
- Lakes & Ponds
- Parks
- Newton City Limits
- Extra Territorial Jurisdictions
- Half Mile (15-min walk) from Center of City



MAP 2.2 PEDESTRIAN COLLISIONS (2007-2013)



NEWTON PEDESTRIAN PLAN

PEDESTRIAN & BICYCLIST COLLISIONS (2007-2013)

- PEDESTRIAN COLLISIONS (2007-2013)**
- Fatal collision
 - All other collisions

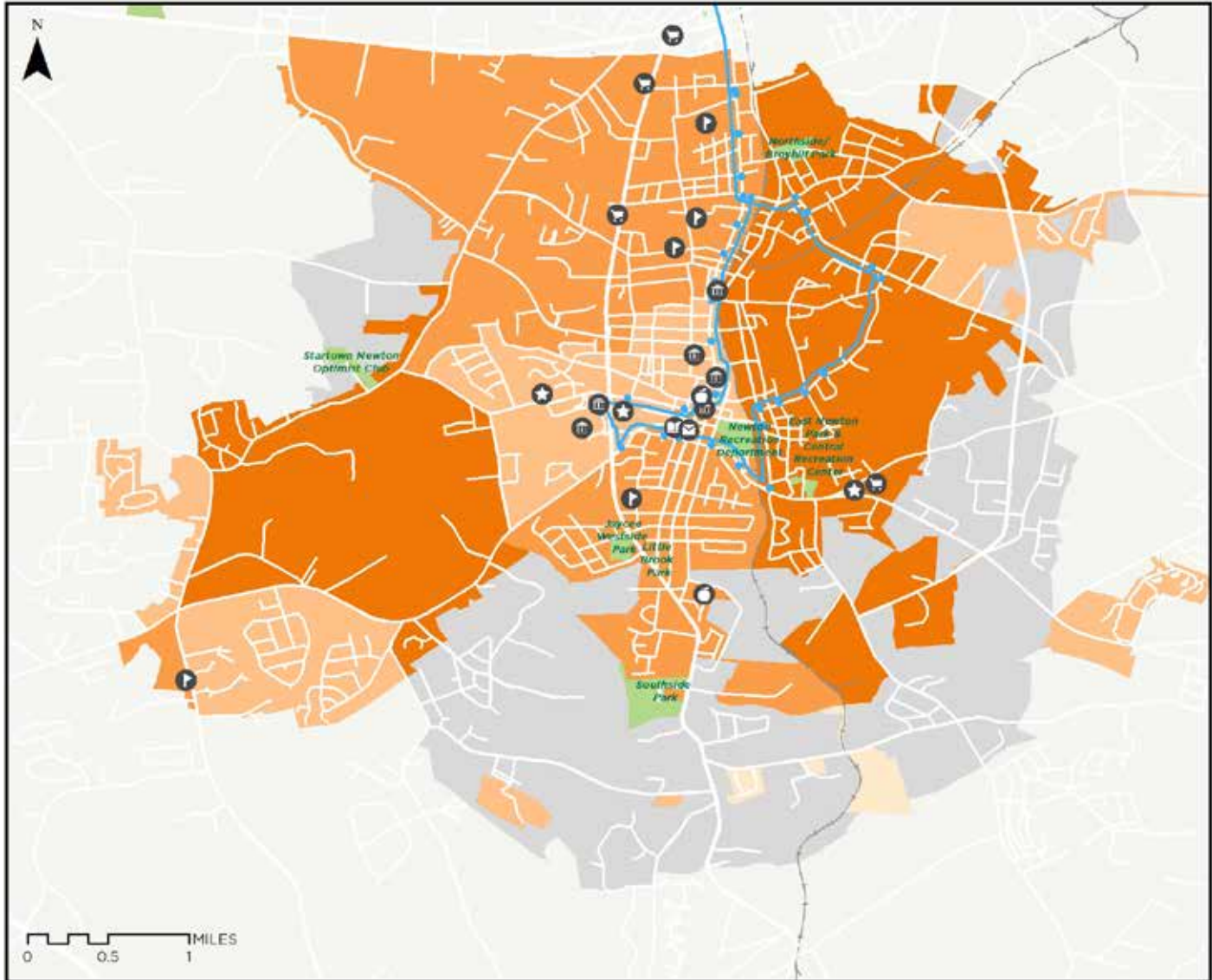
- EXISTING PEDESTRIAN FACILITIES**
- Natural Surface Trail
 - Greenway - existing
 - Sidewalk - existing
 - Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

- Point of Interest
- Food Outlet
- Post Office
- Government / Cultural
- Banks
- College/University
- Grocery Store
- Library
- School

- Bus Stop
- Greenway Public Transit Route
- Railroad
- Streams
- Lakes & Ponds
- Parks
- Newton City Limits (shaded)
- Extra-Territorial Jurisdictions
- Half-Mile (15-min walk) from Center of City

MAP 2.3 EQUITY ANALYSIS



SOUTHWEST NEWTON INSET



DOWNTOWN NEWTON INSET



NEWTON PEDESTRIAN PLAN

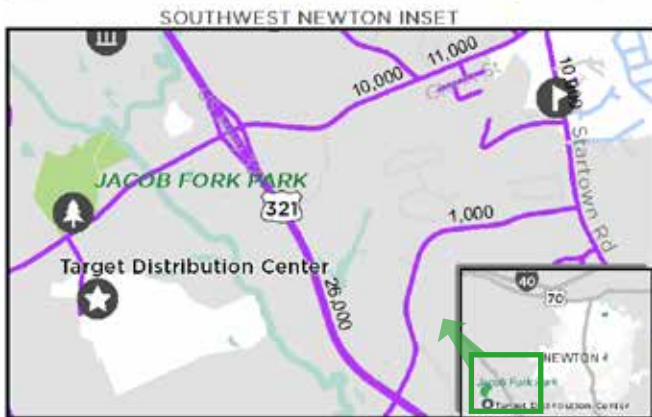
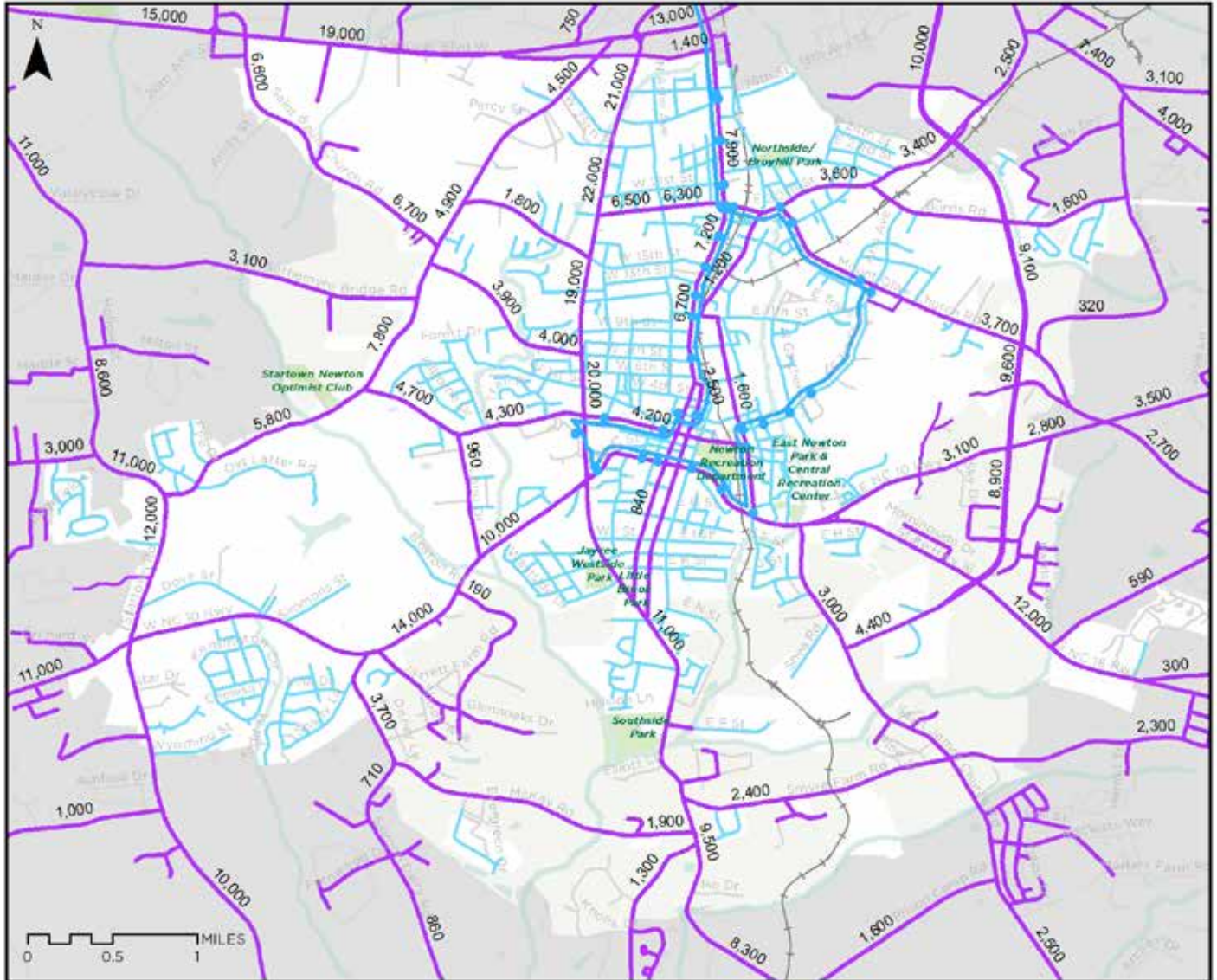
EQUITY ANALYSIS

CONCENTRATION OF HIGH INDICATOR DEMOGRAPHICS ANALYZED



- BACKGROUND & BOUNDARIES
- Point of Interest
 - Food Outlet
 - Post Office
 - Government / Cultural
 - Banks
 - College/University
 - Grocery Store
 - Library
 - School
 - Bus Stop
 - Greenway Public Transit Route
 - Railroad
 - Streams
 - Lakes & Ponds
 - Parks
 - Newton City Limits
 - Extra Territorial Jurisdictions
 - Half Mile (15-min walk) from Center of City

MAP 2.4 OWNERSHIP OF PUBLIC ROAD RIGHT-OF-WAYS & TRAFFIC VOLUMES



NEWTON PEDESTRIAN PLAN

STREET OWNERSHIP & TRAFFIC VOLUMES

- STREET OWNERSHIP**
- City
 - State
 - Bus Stop
 - Greenway Public Transit Route

BACKGROUND & BOUNDARIES

- Point of Interest
- Food Outlet
- Post Office
- Government / Cultural
- Banks
- College/University
- Grocery Store
- Library
- School
- Railroad
- Streams
- Lakes & Ponds
- Parks
- Newton City Limits (white)
- Extra Territorial Jurisdictions
- Half Mile (5-min walk) from Center of City

EXISTING CONDITIONS PHOTO-INVENTORY

The following photo-inventory provides a visual accounting of the issues of pedestrian infrastructure around Newton. Many of these issues have also been identified through the Pavement & Sidewalk Condition Report (discussed on page 2-19), such as deteriorated sidewalks, but the inventory also provides evidence of other pedestrian-infrastructure related issues, such as crosswalk placement and curb cut issues that influence safety and comfort of the pedestrian experience in Newton.

Wide sidewalks:



Alleyways with potential for attractive pedestrian throughways:



Great new sidewalks at South Newton Elementary. (However, there are no crosswalks or sidewalks on surrounding roads.):



Uneven surfaces:



No curb cut at crosswalk:



Crosswalk markings do not line up with curb cuts/ ramps:



Difficult railroad crossings:



Sewer grate in crosswalk- unsafe for wheel chairs, strollers, bicycles, etc.:



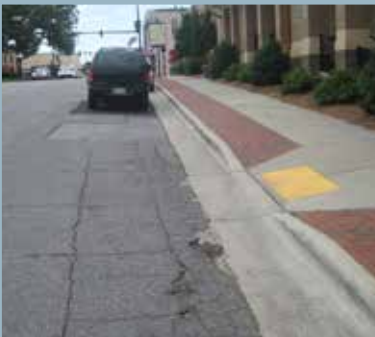
Pedestrian signal and sidewalks, but no crosswalk:



Poor connectivity through parking lots to access business entrances



No crosswalks at curb ramps; no crosswalks to key destinations (parks, rec center, schools, library):



Crosswalks that parallel major streets but none that **cross** them:



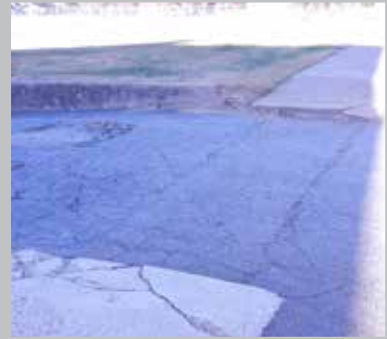
No crosswalks, no curb cut on one side:



Handicap parking without ramp access:



Crumbling infrastructure:



Abrupt end to the sidewalk:



OPPORTUNITIES AND CHALLENGES

Current walking conditions in Newton are variable. The sidewalk network is most extensive in Downtown Newton and historic neighborhoods, but sidewalks are lacking in other parts of the city. Since destinations such as parks, schools, and shopping are spread out throughout the city, the lack of sidewalks makes it difficult to walk to and from these destinations. According to feedback from the steering committee, there is high pedestrian activity along a few corridors that currently lack adequate sidewalks, such as West A Street. This section summarizes current opportunities and constraints.

Opportunities

Current opportunities for pedestrian network development include:

- » **Extensive existing network of sidewalks:** The existing sidewalks in Downtown Newton serve as a model for the expansion of the pedestrian network throughout the city. Although there are a few gaps downtown, the network is essentially complete and provides pedestrians with an effective and safe mode of transport downtown. Pedestrian mobility and access can be improved with the consistent application of ADA standards, especially at intersections.
- » **Strong support for the expansion of greenways system:** Opportunities for expanding and connecting the Heritage Trail Greenway to parks, schools, and neighborhoods has been a priority identified through the City's recent Parks and Recreation Master Plan, as well as the various Area Plans and regional plans. There is also support for the creation of a rail-trail to Malden.
- » **Bicycle and Transit Facilities:** There are opportunities to expand the bicycle infrastructure and transit amenities where they can be used to enhance or support the pedestrian network. For instance, using bicycle lanes as buffers for the sidewalks along key corridors, such as Main and College Avenues as recommended in the Western Piedmont Bicycle Plan, or adding more attractive shelters to high priority transit stops can offer shade and seating for pedestrians.
- » **North Main Avenue:** North Main Avenue is an area ripe for reinvestment, as it runs through historic residential areas and includes the recently renovated Newton Depot Authority and other historic buildings. This area has the potential to develop into a second commerce hub that will synergize with downtown through strategic pedestrian connectivity. Although there are sidewalks on both sides, few pedestrians can be seen. Improvements to the pedestrian facilities and streetscape can greatly enhance the pedestrian experience.



Heritage Trail Greenway



Bus shelter at a Greenways Transit stop on East 1st Street



The square around the Catawba County Museum of History gets steady pedestrian activity from downtown visitors



The buildings along N. Main Avenue, near the Newton Depot Authority form a nexus of a walkable shopping district ripe for development

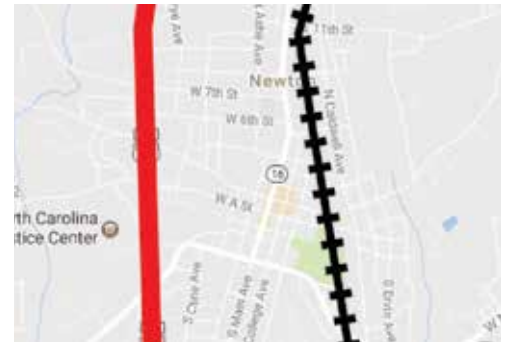
Challenges

Current challenges for pedestrian network development include:

- » **North/South corridors divide city's connectivity:** The Norfolk Southern Railroad and US 321 Business separate the town along two North/South corridors, both of which are difficult to cross and will require solutions in order to connect residents on either side of these corridors.
- » **Crosswalks and curb ramps:** A number of key intersections already have painted crosswalks and/or crossing signals. There needs to be more consistency to the placement of these crosswalks, and the pairing of marked crosswalks with pedestrian signals. Many of the existing crosswalks are painted parallel to the major corridors (Main Avenue, College Avenue, D Street), but few marked crossings exist to get across these busy streets.
- » **Existing Sidewalks are Deteriorated:** Streetscape and sidewalk maintenance needs are not being sufficiently addressed. While the overall condition of existing sidewalks is good, many walkways are crumbling or uneven. Similarly, crosswalks are poorly maintained or non-existent, yet are integral to the livability of Newton's neighborhoods.
- » **Outside of downtown:** Newton lacks pedestrian connectivity outside the historic downtown core and neighborhood to the north and south. Though there are strong connections near the elementary and high schools, many other areas, including the Westside-Jaycee Park and the shopping centers along US 321 Business, lack pedestrian facilities. Some sidewalks have been built in areas of new development, but there are still gaps connecting those new segments to the larger network.

"I like the idea of Newton having more options for walking. The Heritage Greenway needs to be expanded."

~ Newton Resident



US 321 Business (shown in red) and the Norfolk Southern RR create parallel barriers for pedestrian access



A crosswalk is marked across 4th St., but none exists to get pedestrians safely across Main Avenue



Crumbling sidewalks are a regular scene around many parts of Newton



This sidewalk ends at the property line and fails to provide a pedestrian connection to anywhere

REVIEW OF EXISTING PLANS

At the beginning of the planning process, a review of previously adopted plans in Newton and surrounding jurisdictions was conducted. These plans were reviewed in order to understand previous pedestrian and transit recommendations. Previous recommendations from these plans were taken into consideration when developing the proposed pedestrian network in Chapter 3. Recommendations from these plans are summarized on the following pages in order of relevance to the pedestrian planning process.

Newton Parks & Recreation Master Plan (2016)

The main goal of this plan is to identify gaps in the existing parks and recreation facilities, and to recommend strategies to fill those needs. Many of these recommendations have direct implications for improving opportunities for walking- both as recreation/exercise and for transportation. The highest priority identified in this plan was improving greenways, walking trails, and sidewalk connectivity to neighborhoods, parks, and schools. Additional relevant recommendations included improving signage, support facilities, curb cuts, and crosswalks; expanding the Heritage Trail Greenway; improving internal park trails; and adding new greenways linking the city.

- » **Key Takeaway:** Specific pedestrian connections and improvements are summarized in the Master Plan Map (at right) and should be incorporated into the Pedestrian Plan recommendations.



Newton Streetscape Master Plan & North Newton Master Plan (2016)

The purpose of this plan is to provide uniform guidance on streetscape improvements for the downtown Newton area, as well as master plan recommendations for the North Newton area. In terms of pedestrian planning recommendations, this plan offers a hierarchy of where sidewalk improvements are most economically valuable and where they are most needed based on current conditions. The map at right shows this hierarchy. In addition, the report includes plans and cross-sections with recommendations for expanded pedestrian (and bike) facilities along several key corridors (including the A Street connection to the new Catawba County Government Center on US 321-Business). Finally, it provides design guidance on sidewalk materials and amenities, recommendations for expanding pedestrian facilities relative to roadway widths, and discouraging auto-oriented development .

- » **Key Takeaway:** Priorities areas for pedestrian improvements are the downtown core, Main and College Avenues.



Western Piedmont Regional Transit Authority Bus Routes (2016)

Western Piedmont Regional Transit Authority runs six routes in the Hickory, Conover, Newton Area. The joint Bus Route 3 & 4 runs through Newton. There are 33 stops in Newton on Bus Route 3 & 4, some of which are located on streets with no sidewalks for safe pedestrian access (e.g. Mount Olive Church Rd. and E. 1st St.).

- » **Key Takeaway:** Connecting walking and biking facilities to existing bus routes gives walkers and bikers greater access to the Western Piedmont Region.

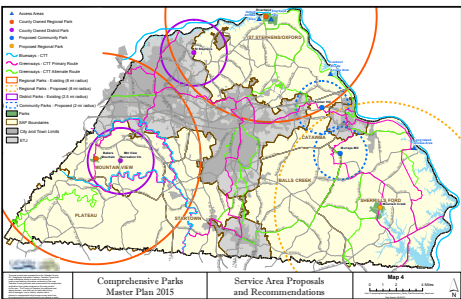




City of Newton 2015 Strategic Growth Plan (2015)

This report was prepared by the Western Piedmont Council of Governments in order to provide a vision for Newton’s residential, commercial, and economic growth in the coming decade. In terms of pedestrian planning, this report presents a summary of public input on priority sidewalk projects (see map at right). It also has specific action items related to greenway facilities, including extending the greenway from NC 10 to Southside Park and connecting the greenway to the sidewalk network on West A St.

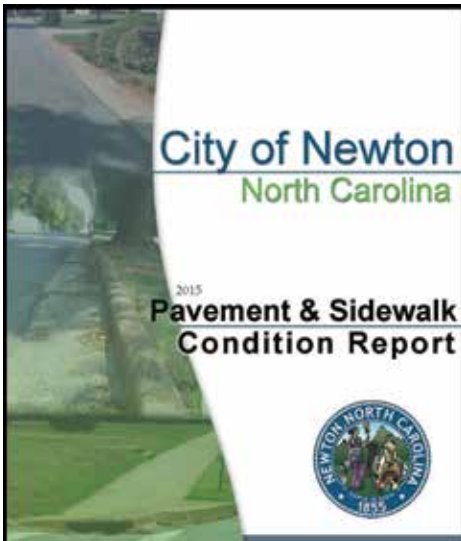
» **Key Takeaway:** Priority sidewalk and greenways segments are identified, and the plan calls for creating a priority list for new sidewalk construction.



Catawba County Comprehensive Parks Master Plan (2015)

The purpose of this plan is to evaluate existing park facilities in Catawba County and make suggestions to accommodate the needs of the population. Newton currently has the majority of the county’s parks, recreation, and public open space for Catawba County. This plan recommends a Newton Greenway/Maiden Link, a greenway which would follow Clarks Creek through Newton past Jaycee and Southside Parks to Shady Branch in Maiden, then travel upstream past Rosenwald Park, connecting the Hickory Urban Trail network to the Lincoln County Rails-to-Trails project. In order to do this, acquiring land for greenways should be of the highest priority.

» **Key Takeaway:** The county is already acquiring land for greenways.



City of Newton Pavement & Sidewalk Condition Report (2015)

This report is a recent and thorough inventory of the condition of roads and sidewalks in Newton. The report provides descriptions and analysis of the conditions of all the sidewalks in Newton. It also provides an estimate of the cost to repair the sidewalks in Newton based on its current conditions, including a table of every sidewalk segment, detailing the length, width, condition, cost to repair, and additional notes. The report does not provide any prioritization for sidewalk repairs, other than its overall condition rating. Additional factors to consider in order to prioritize them further are pedestrian traffic volume (demand) and availability of funding in conjunction with street repair projects.

» **Key Takeaway:** A total of 27.46 miles of sidewalk were surveyed and rated, with an estimated cost for repairing/maintaining of \$2,120,245. The estimated cost per mile is \$77,212. Data from this report was used to create Map 2.3 of current sidewalk conditions on page 2.8.

Table 4.5
Sidewalk Pavement Recommended Repair Summary

Rating	Score	Length (Miles)	# of Street Segments	Repair Cost	Average Repair Cost/Mile
Do nothing	1.00	11.37	69	---	---
Cut, Remove 25% Sidewalk, Replace	2.00	9.10	35	\$890,720	\$97,881
Cut, Remove 50% Sidewalk, Replace	3.00	6.99	26	\$1,229,525	\$175,898
TOTALS		27.46	130	\$2,120,245	---

Western Piedmont Bicycle Plan (2013)

This bicycle plan provides a framework for the development of new facilities, programs, and policies that will support safe and efficient bicycling throughout the Western Piedmont Region. This plan proposes bicycle facilities to connect downtown Newton to Conover along North Main Avenue, 20th Street, McLin Creek Road, and Emmanuel Church Road. Developing this route would include implementing bike lanes along South Main Avenue and South College Avenue and sharrows along the East 20th Street and North Main Avenue. The plan also calls for sharrows on C Street between Main and College Avenues.

- » **Key Takeaway:** The development of bike facilities in Newton will be a complement to the improvements to the pedestrian facilities.



Southwest Area Plan (2011)

The purpose of this plan is to address issues effecting land use development in the southwestern area of Newton. The primary concern of the planners is in new and existing developments. Before the plan, no bike or pedestrian facilities existed within the southwest area, but the area along Clark Creek has been dedicated by the City to be developed as part of a larger greenway, which will loop around Newton. Within this area the greenway will run along Clark Creek from the southern boundary of the Planning Area, passing Southside Park and extending northward to Radio Station Road. This portion of the greenway has been adapted to be the Catawba County Section of the Carolina Thread Trail.

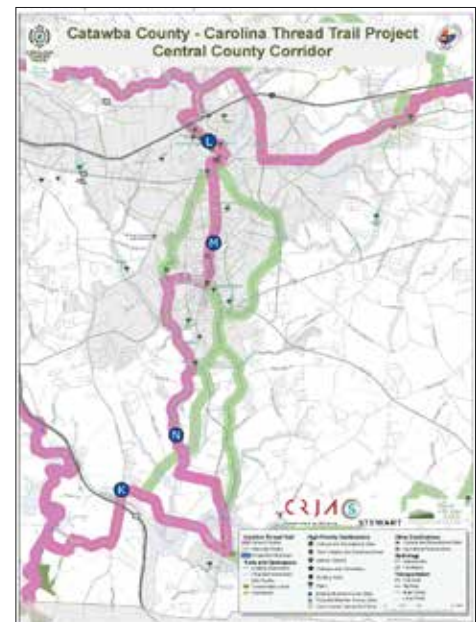
- » **Key Takeaway:** Catawba Valley Heritage Alliance has proposed a Heritage Trail Greenway to circle Newton.



Carolina Thread Trail Master Plan for Catawba County (2010)

This plan seeks to expand the existing portions of the Carolina Thread Trail (CTT) in Catawba County. The 0.8-mile long, constructed portion of the Heritage Trail Greenway in Newton (NC 10 to Radio Station Road) is currently included as part of the CTT. There is an additional portion of the greenway that is 0.7-miles long that is not included as part of the CTT. The Newton to Maiden Connector (Conover Boulevard to Southside Park), which is proposed as an addition to the CTT, would be 5.6-miles long and would be within walking distance of many recreational and cultural centers in Newton.

- » **Key Takeaway:** The Newton to Maiden Connector is the third highest priority trail in the Catawba County CTT Master Plan. The sidewalk connection along NC-16 Business to Conover is part of the dedicated CTT.





Core Area Pedestrian and Bicycle Facilities

Core Area Plan (2010)

The purpose of this plan is to address land use development and to minimize impacts of different land use on neighboring developments and issues due to infill development and redevelopment. There are currently 25.3 miles of sidewalks in this Planning Area, but no greenways or bike lanes. Notable areas within the Core Planning Area without sidewalks include the majority of US 321 Business and NC 10/16 west of South Caldwell Avenue. A series of greenways have been proposed within the Core Planning Area: 1) Southern extent of the Planning Area near East L Street to East A Street, 2) Town Creek to South Brady Street, 3) Along Town Creek turning north and continuing to Mt. Olive Church Road, 4) Northwest Boulevard to North Main Avenue. This greenway will become part of the Catawba Valley Heritage Alliance's Heritage Trail Greenway.

» **Key Takeaway:** Areas along US 321 Business and NC 10/16 need improved pedestrian facilities.



Southeast Area Plan (2008)

This plan's goal is to address issues effecting land use development. Its primary concern is to balance residential and industrial developments. Before this plan, very few bike and pedestrian facilities existed within the southeast area, but the area along Smyre Creek has been dedicated by the city to be developed as part of a larger greenway, which will loop around Newton. A branching greenway with three segments was proposed in this area: 1) Southwest Boulevard to NC 16 along Smyre Creek, 2) Smyre Creek near Southwest Boulevard to East L Street along Town Creek, 3) Smyre Creek near St. James Church Road to East P Street Extension.

» **Key Takeaway:** The city has specified areas as coded for greenways in the area.



Eastside Area Plan (2002)

The purpose of this plan is to address issues that will influence land use development in eastern Newton. The biggest factor influencing this Planning Area is the Newton-Conover East Loop thoroughfare (U2404A), which has changed traffic patterns in the area. For pedestrian planning, this plan outlines the following policies for the city: 1) all new streets should also include sidewalks on both sides of the street, 2) sidewalks, greenways, and bike lanes should be constructed to connect residential areas with commercial, recreational, and industrial areas, and 3) as property is developed along any greenway route, developers should build that portion of the greenway and dedicate it to the city for maintenance.

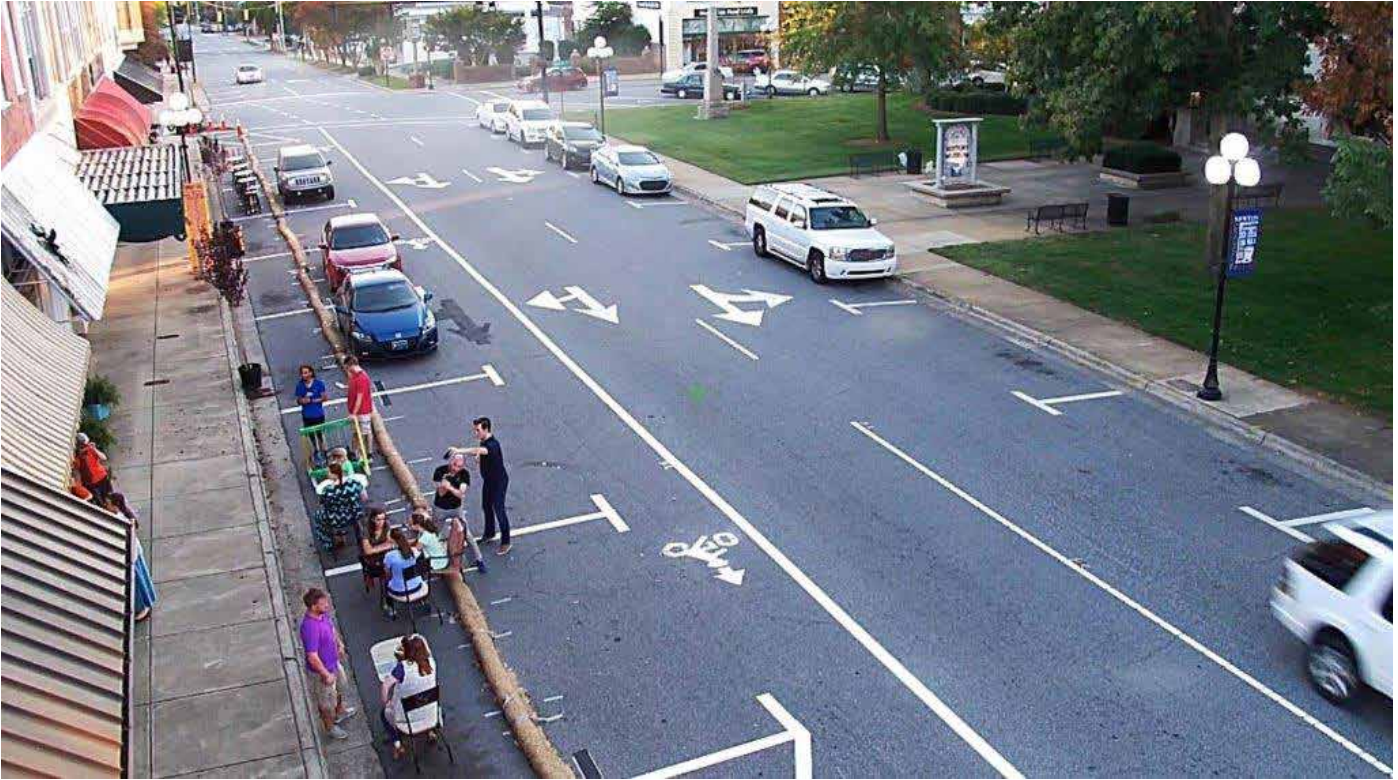
» **Key Takeaway:** The city has policies in place for pedestrian and greenway infrastructure in this area that need to be implemented as development occurs.



Saint Paul's Area Plan (2001)

The purpose of this plan is to address future commercial, industrial, and residential development in the St. Paul Church Rd. Area. The primary concern of the planners is to create a plan for the area before development occurs. The planners cite public interest in a greenway system throughout the city and suggest areas along river and creek systems as possible greenway locations. In the St. Paul area, they suggest a greenway running along Cline Creek from US 70 to Settlemyre Bridge Rd., with three branches off Cline Creek extending to Old Conover-Startown Rd.

» **Key Takeaway:** Newton residents are in support of a greenway system in the city. The city is interested in pursuing greenway development along rivers and creeks.



A temporary demonstration project along College Avenue in the fall of 2016, implemented as part of the 2016 Streetscape Master Plan, shows the value of redistributing wide vehicular lanes into pedestrian space in front of storefronts and bicycle lanes, without compromising vehicular travel.

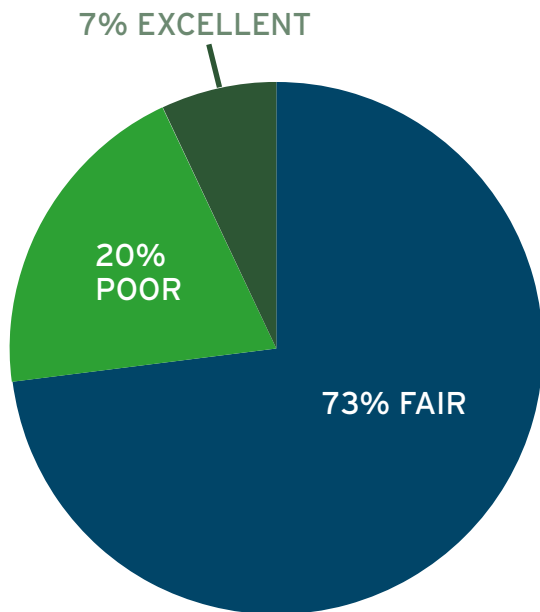
PUBLIC INPUT SUMMARY

Public outreach was an integral component of this plan and results from public input were used to inform network recommendations. As described in Chapter 1, public outreach was conducted through a variety of means, including a project website, public survey, and an open public design workshop (a charrette). The charrette was a 2-day event held in December 2016, where residents and interested stakeholders were invited to review the progress of the plan and help develop recommendations. Meetings were also held with key stakeholders, including Newton-Conover City Schools, Parks & Recreation, the Police Department, Public Works, and City administrative staff. Feedback and suggestions gathered through these meetings helped shape preliminary recommendations, which were then reviewed and further developed by the public at the open house at the close of the two days. These recommendations were then presented to the city council at their regular December meeting.

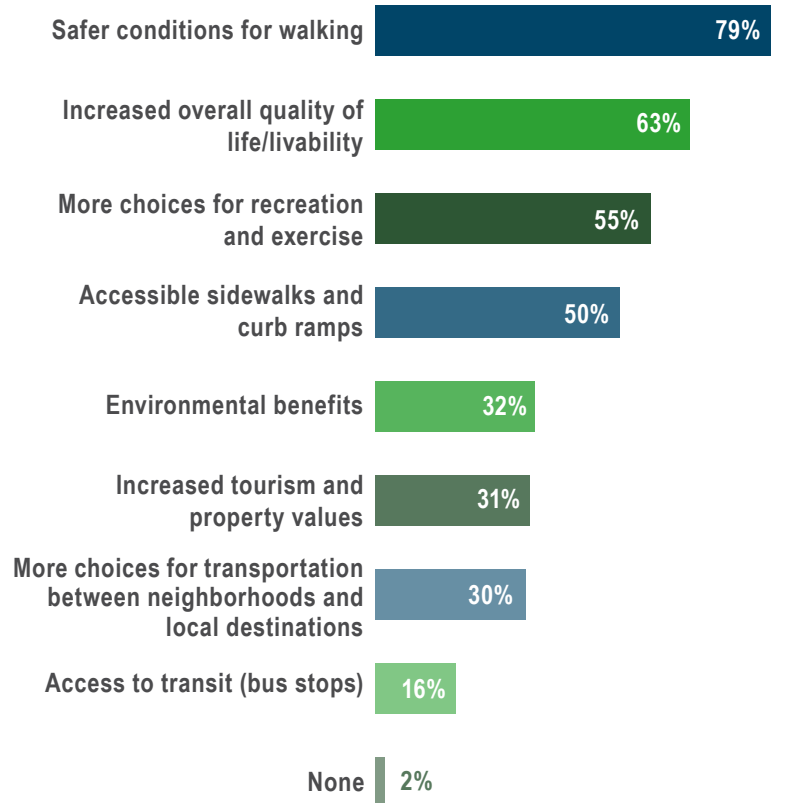
The public survey was offered online from late September through December on the city’s main webpage, at www.newtonnc.gov/walk. Steering committee members were encouraged to spread the word about the survey through their organizations and personal contacts. The survey was also advertised on the City of Newton’s website. **Over 320 respondents filled out the public survey**, which included questions about current walking conditions, where people currently walk, barriers to walking, and where pedestrian improvements are needed. The following pages summarize the results from the public survey and the word cloud below highlights major themes.

The full survey results are provided in Appendix C.

How do you rate walking conditions in Newton?



What should be the most important goals and outcomes of the Walk Newton Plan?

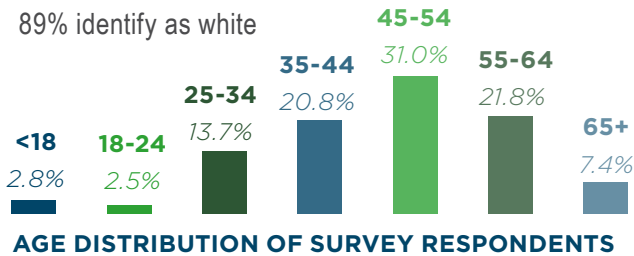


Survey Results Summary

This summary section highlights key findings:

Of the 326 survey respondents

- 65% live in Newton
- 89% identify as white



Twenty percent of respondents rated current walking conditions in Newton as poor. Seventy-three percent rated the conditions as fair.

Ninety-five percent of respondents indicated that improving walking conditions is either very important (73%) or somewhat important (22%).

Respondents were asked to indicate the primary purpose of their walking trips and were allowed to select more than one response. **The following are the top 3 trip purposes:**

- » Exercise (87%)
- » Recreation (53%)
- » To enjoy nature (45%)

Respondents would most like to reach the following destinations by walking (with the first ones listed as higher in ranking):

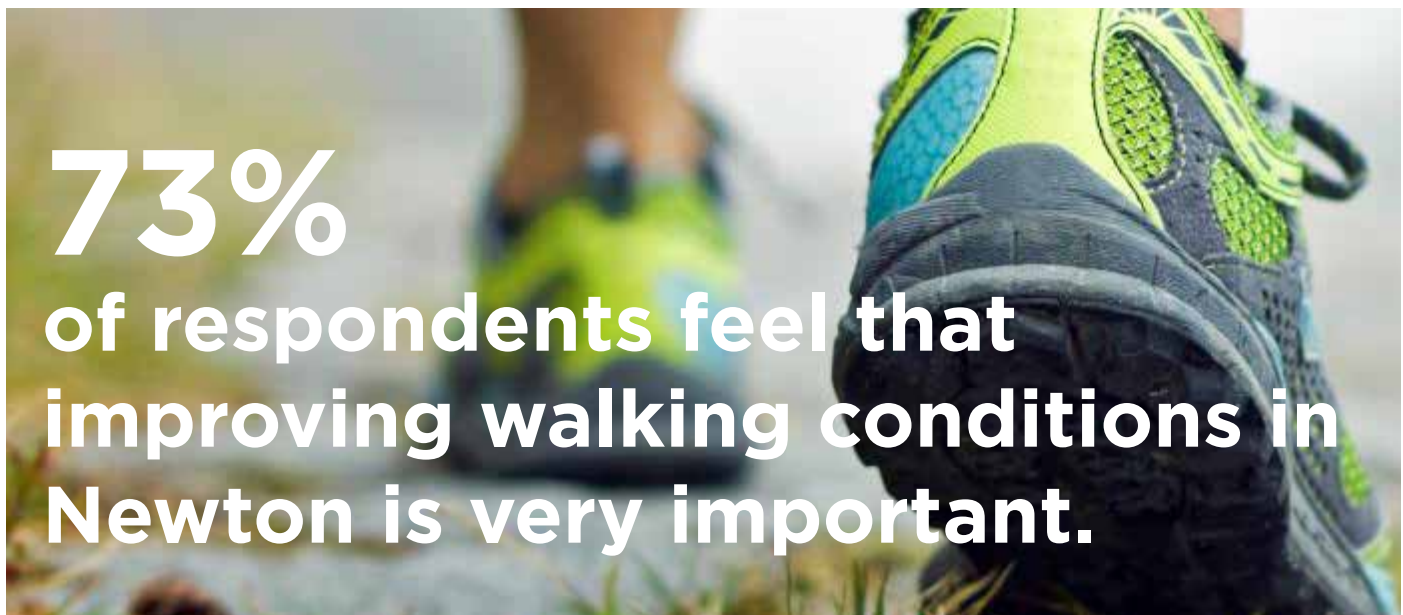
- » Downtown Newton
- » Heritage Trail Greenway
- » Parks
- » Newton Library
- » Recreation centers
- » Catawba County Government Center

The factors that most discourage walking are:

- » Lack of sidewalks (63%)
- » Sidewalks in poor condition (56%)
- » Lack of pedestrian signals and crosswalks (46%)
- » Lack of pedestrian amenities (benches, shade, etc.) (40%)
- » Heavy/fast motor vehicle traffic (31%)
- » Lack of nearby destinations (30%)

The top 3 locations for improving walking conditions are:

- » West A Street and Radio Station Rd
- » US 321 Business- especially crossings
- » College & Main Avenues south of A Street





Responses to the Newton Pedestrian Plan Online Survey question, "What are the top three locations for improving conditions for walking in Newton?"



3

Policy

Chapter Contents:

Overview

Development Ordinance
Review

Policy Action Steps

OVERVIEW

One of the most cost effective implementation strategies for Newton is to establish land development regulations and street design policies that promote walkable new development and capital projects. As part of a comprehensive and “6 E’s” approach to developing recommendations for a more walkable Newton, the consultant team reviewed City ordinances, development standards and policies to identify general issues and opportunities impacting the pedestrian environments across the city. The recommendations in this section generally fall under the 6 E’s category of “Evaluation and Planning.” The team analyzed these regulatory standards and policies through the lens of the project visions and goals.

The consultant team has identified model regulatory and policy language from around North Carolina and the U.S. for elements including land use/transportation integration, connectivity, Complete Streets, and bicycle parking, enabling the City to maximize pedestrian and greenway improvements in conjunction with new development, redevelopment, and corridor improvement projects.

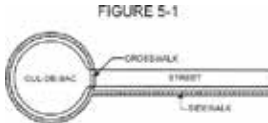
NOTE: All references are pulled from the Newton, North Carolina - Code of Ordinances (Zoning and Subdivision requirements) (available here: www.municode.com/library/nc/newton/codes/code_of_ordinances?nodeld=13848) and the City’s Land Development Design Standards (available here, <http://www.newtonnc.gov/departments/planning/docs/ldg.pdf>).

DEVELOPMENT ORDINANCE REVIEW

The following tables outline existing regulatory and policy language found in the Code of Ordinances or Land Development Design Standards. When applicable, recommendations were made to improve and/or strengthen policies to promote walkability in Newton.

Table 6.1 Policy Review

Topic	Recommendations	Comments
Existing Regulatory & Policy Language (and Section found)		
1. Definitions and General Ordinances		
1.1 Sidewalk, Street, and Crosswalk Definitions	<p>NEWTON - CODE OF ORDINANCES Sec. 1-2. - Definitions and rules of construction. <i>Sidewalk.</i> The word “sidewalk” shall mean that portion of a street between the curb line, or the lateral lines of a roadway OR SHOULDER where there is no curb, and the adjacent property line, intended for the use of pedestrians.</p> <p><i>Street.</i> The word “street” shall mean and include any public way, road, highway, street, avenue, boulevard, parkway, alley, lane, viaduct, bridge and the approaches thereto within the city and shall mean the entire width thereof between abutting property lines. It shall also be construed to include a sidewalk or foot path, unless the contrary is expressed or unless such construction would be inconsistent with the manifest intent of the city council.</p> <p>Sec. 54-1. - Definitions. <i>Crosswalk</i> means: (1) That portion of a roadway ordinarily included within the prolongation or connection of the lateral lines of the sidewalks at intersections. (2) Any portion of a roadway distinctly indicated for pedestrians crossing by lines or other markings on the surface.</p> <p>Sec. 86-15 - “Street” Defined. A street is an improved area intended for vehicular traffic and which may also serve in part for pedestrian OR BICYCLE traffic OR TRANSIT.</p>	Generally, very good. Consider adding or modifying as noted at right.
1.2 Greenway Definition	No definition found	The Code of Ordinances and Land Development Design Standards should include definitions, requirements, and design standards for greenways. These can refer to the greenway alignments and design standards in adopted plans such as the Pedestrian Plan, the Carolina Thread Trail Plan for Catawba County, or the Newton Park & Recreation Master Plan or existing or future small area plans.
1.3 General Ordinances Supporting Pedestrian Safety	<p>NEWTON - CODE OF ORDINANCES Sec. 86-3. - Maintenance of vegetation near street or sidewalk. No tree, hedge, shrubbery, vine, etc., shall be allowed to be placed or grow to such an extent that it impedes the free passage of any pedestrian or motorist on a street or sidewalk.</p> <p>Sec. 86-5. - Encroachments on streets and sidewalks. (a) Generally. No person shall encroach upon a public right-of-way, street, or sidewalk of the city by erecting any window, stoop, chimney, portion of a building, any downspout, steam pipe, air conditioning unit, wall, fence, or any other obstruction over the sidewalks or street lower than eight feet above the sidewalk, except this section shall not apply to awnings, fences as allowed by this article, nor mailboxes as listed below. [Consider adding text to clarify that mailboxes may not impinge upon the pedestrian clear zone of sidewalks.]</p> <p>Sec. 86-41. - Sidewalks and gutters to be kept clean. Every occupant of a lot or dwelling unit on any street shall keep the sidewalk clean and the gutter or ditch open as far as such lot or house extends.</p> <p>Sec. 86-42. - Water dripping or discharging onto sidewalk prohibited. No person shall allow water to drop from the roof of any building or discharge from a gutter or pipe on any sidewalk.</p> <p>Sec. 86-45. - Loading and unloading. No person shall load or unload any goods, wares or merchandise of any kind from trucks, wagons or motor express on, over or across the sidewalks without written permission of the city manager or designee.</p> <p>Sec. 86-46. - Skating. No person shall skate, either with roller skates or in any other manner, upon a sidewalk in the Central Business District, as defined in chapter 102. [Is this still an issue? If not, consider revising.]</p> <p>Sec. 54-11. - Same-Riding on sidewalks; riding without hands on handlebars. No person shall ride a motorcycle on any street without having his hands upon the handle bars, nor shall any person ride a bicycle upon any sidewalk. [Consider limiting sidewalk riding in downtown area only or in other heavily traveled pedestrian zones.]</p> <p>Sec. 66-11. - Playing games in streets or other public property. [Is this an issue locally? If not, consider revising.] No person shall engage in any game of ball, marbles or other game on the streets, sidewalks, public grounds or cemetery.</p> <p>Sec. 54-75. - Play streets. Whenever authorized signs are placed, erected or installed indicating any street or part thereof as a play street, no person shall drive a vehicle upon any such street, or portion thereof except drivers of vehicles having business or whose residences are within such closed area, and then such driver shall exercise the greatest care in driving upon such street.</p> <p>Sec. 54-76. - School zones. Whenever authorized signs are placed, erected or installed indicating any street or parts thereof as school zones, all drivers of motor vehicles using such streets thereof shall exercise the greatest care in driving upon such streets for the protection of children.</p>	<p>Very good and thorough provisions. Changes and additions to consider include:</p> <ul style="list-style-type: none"> • Consider changes noted at right • Reducing the maximum allowable speed limits in residential areas and pedestrian-oriented districts to 20 or 25 mph • Promote the use of play streets in appropriate neighborhoods under appropriate conditions. <p>See the following documents for comprehensive recommendations for policy and regulatory tools to support walking and bicycling:</p> <ul style="list-style-type: none"> • Making Neighborhoods More Walkable and Bikeable, ChangeLab Solutions: http://changelabsolutions.org/sites/default/files/MoveThisWay_FINAL-20130905.pdf • Getting the Wheels Rolling: A Guide to Using Policy to Create Bicycle Friendly Communities, ChangeLab Solutions http://changelabsolutions.org/bike-policies

Topic	Recommendations	Comments
<u>Existing Regulatory & Policy Language (and Section found)</u>		Comments
2. Pedestrian Facility Requirements		
2.1 Pedestrian accommodations required	<p>NEWTON - CODE OF ORDINANCES: SUBDIVISION: REQUIRED IMPROVEMENTS Sec. 90-204. - Sidewalks, greenways and other pedestrian facilities. (a) Sidewalks required; minimum sidewalk width. Sidewalks of at least five feet in width shall be installed along one side of all subdivision streets. The SRB may require sidewalks on both sides and/or sidewalks of widths that exceed the minimum when such requirement is in the interest of pedestrian safety. Sidewalks along cul-de-sac streets shall extend the full circumference of the bulb with a crosswalk at the throat as indicated on figure 5-1.</p>  <p>FIGURE 5-1</p> <p>(b) Special requirements concerning pedestrian routes to schools. Where substantial concentration of school pedestrian traffic is anticipated, sidewalks shall be provided on both sides of streets along the route of such concentration within the subdivision; provided that: (1) No such sidewalk shall be required to be extended more than one-quarter mile by normal pedestrian routes from the point of access to the school grounds, except to include the full length of a block which would otherwise have such sidewalks for only a portion of its length; and (2) Where the pattern of proposed and potential development is such that safe, logical and convenient routing of school pedestrian traffic requires a sidewalk on only one side of the street, the SRB may permit the provision of only one sidewalk.</p> <p>(c) Walkways in lieu of sidewalks. (1) Upon findings by the SRB that walkways, other than in the form of sidewalks at the edges of streets, would form safe, logical and convenient routing of pedestrian traffic, such walkways, improved in a manner found by the SRB to be appropriate to their purpose, may be substituted for such sidewalks. (2) Where such walkways are proposed, they shall not be approved unless the SRB finds that there are adequate provisions for their preservation and maintenance, in form and of dimensions adequate for their intended uses. These uses may include, in addition to pedestrian ways, bicycle paths OR GREENWAYS or bridle paths THAT ARE DESIGNED FOR PEDESTRIAN USE AND ACCESS, INCLUDING ACCESS BY CITIZENS WHO ARE HANDICAPPED, HAVE LIMITED MOBILITY, OR ARE TRAVELING WITH CHILDREN IN STROLLERS OR OTHERWISE. Where appropriate[ly] designed and improved, such walkways may also be used by service, fire and police vehicles, but shall not be used for other automobiles, trucks, motorcycles, motor scooters or the like. (3) Such walkways, with related uses as indicated above, may be in easements of their own or combined with utility or drainage easements, where such combination is appropriate and suitable approvals have been obtained.</p>	<p>The requirements for sidewalks along pedestrian routes to school is good. Consider additional quantifiable and objective requirements for when sidewalks should otherwise be required outright or by the SRB, including:</p> <ul style="list-style-type: none"> Where recommended by the Pedestrian Plan or other adopted plan Requiring sidewalks on both sides of all arterial streets; and, local or collector streets where traffic volumes are 2,000 vehicles per day or greater; or where the predominant land uses on both sides of the street are residential of 4 du or greater and/or non-residential. <p>Suggest that sidewalk provision requirements include the following regarding context-based sidewalk requirements:</p> <ul style="list-style-type: none"> Five foot wide sidewalks along local streets and six foot wide sidewalks along collectors and arterials are preferred minimum widths. In areas of higher density and mixed-use development, the minimum required width for sidewalks should be six feet or more. The land use context and density of development necessitates a greater level of requirement for sidewalk specifications. In areas such as downtown with buildings at the back of the sidewalk and ground level retail, sidewalks should be as wide as 10-18 feet wide. See the NCDOT Complete Street Planning and Design Guidelines for contextually-based streetscape and sidewalk design requirements. <p>The Code of Ordinances and Land Development Design Standards should include definitions, requirements, and design standards for greenways. These can refer to the greenway alignments and design standards in adopted plans such as the Pedestrian Plan, the Carolina Thread Trail Plan for Catawba County, or the Newton Park & Recreation Master Plan or existing or future small area plans.</p>
2.3 Greenway Requirements	<p>Newton's ordinances don't current require or provide standards for the development of greenways with new development.</p>	<p>Consider adding language such as this requirement for greenway dedication from the City of High Point's Zoning Ordinance:</p> <p>7.4.1. REQUIRED GREENWAY DEDICATION Whenever a tract of land included within any proposed subdivision, including a group development plan, includes any part of a greenway designated on the Bikeway, Greenway, and Trails Master Plan, [insert: <u>or other relevant adopted plan</u>] the greenway shall be platted and dedicated as a greenway easement.</p> <p>Some NC cities go further in requiring construction of greenways where they are part of an adopted plan. Consider adding requirements for greenway corridor <u>construction</u> in new developments where a greenway or trail is shown on an adopted plan or where a property connects to an existing or proposed greenway. See requirements in Wake Forest, NC UDO, Section 6.8.2 Greenways: "When required by <i>Wake Forest Open Space & Greenways Plan</i> or the <i>Wake Forest Transportation Plan</i>, greenways and multi-use paths shall be provided according to the provisions [that follow in the section cited above]." http://www.wakeforestnc.gov/udo.aspx</p>

Topic	Recommendations	Comments
<u>Existing</u> Regulatory & Policy Language (and Section found)		
2. Pedestrian Facility Requirements		
2.4 Pedestrian Oriented Design Requirements	<p>SUPPLEMENTAL REGULATIONS</p> <p>Sec. 102-306. - Pedestrian access and circulation.</p> <p>(a) Pedestrian design requirements. For multi-tenant building/parcel projects, the site plan shall include provisions for pedestrian-scale amenities, which may include benches, picnic tables, pocket parks, court-yards, plazas, water attractions and trash receptacles. An area shall be reserved for pedestrian use and/or open space and shall be improved and maintained accordingly. Such areas may include covered malls for general pedestrian use, exterior walkways/crosswalks, outdoor seating areas and the like where the facilities are available for common use by employees and visitors. Required buffer areas and setback yards as well as improved deck and roof areas may be used to meet this requirement.</p> <p>(b) Heavy traffic generators. Service stations, fast food restaurants and similar uses, if provided, shall be so located that operations do not block pedestrian or traffic flows in other parts of the development.</p> <p>(c) Location of loading zones and maintenance areas. Loading zones where customers pick up goods shall be located and arranged so as to prevent interference with pedestrian movement within the develop-ment. Facilities and access routes for deliveries, servicing, and maintenance shall be located and arranged, so as to prevent interference with pedestrian traffic within the site.</p> <p>(d) Pedestrian travel. All buildings or building clusters within the development shall be connected with linkages other than roads (sidewalks, bikeways and walking paths). When feasible, as determined by the planning director or designee, linkages shall be provided between adjacent existing developments and/or shall continue to the site property line to provide access to adjacent future developments. Pedestrian access may be provided at any suitable locations, but shall, where practicable, be separated from vehicular access points in order to reduce congestion, marginal friction and hazards, except where signalization is used in such a manner as to control pedestrian and vehicular movements safely.</p> <p>(e) Street frontages. Sidewalks shall be installed along all street frontages.</p> <p>(f) Exceptions. Single-family and two-family dwellings are exempt from this subsection.</p>	<p>Good guidelines and requirements.</p> <p>Consider modifying subsection (e) to be consistent with other sidewalk provisions in the ordinance which seem to require sidewalks only on one side of street frontages in certain conditions.</p> <p>Consider adding additional requirements and detailed provisions for pedestrian circulation/connectivity in non-residential parking lots:</p> <ol style="list-style-type: none"> 1. Wilson, NC UDO Section 9.5.5 PEDESTRIAN CORRIDORS IN PARKING LOTS: http://www.wilsonnc.org/wp-content/uploads/2014/12/UDO.pdf 2. Lincoln County, NC UDO: http://www.lincolncounty.org/Document-Center/Home/View/5356 <p>Sec. 2.5.1.H.4. Pedestrian Facilities: (b) Continuous internal pedestrian walkways, no less than four feet in width, shall be provided from the sidewalk or right-of-way to the principal public entrance for nonresidential establishments and pads on the site. At a minimum, walkways shall connect areas of pedestrian activity such as, but not limited to, road crossings, and building entry points.</p> <p>3.6.3.C.6: Pedestrianways: Safe pedestrianways shall provide direct linkages between key anchors/on- and off-site destinations, which are well lighted and:</p> <ol style="list-style-type: none"> (a) Minimize pedestrian-vehicular conflicts by giving priority to the pedestrian through the design of pathways, crosswalks, etc.; and (b) Utilize landscaping to shade walkways and create a pedestrian scale.
2.5 pedestrian scale lighting	None Required	<p>There are no requirements or provisions for pedestrian-scale or sidewalk lighting along sidewalks or at intersections. This should be included. Incorporate human-scale lighting (<15' tall) considerations for pedestrians where appropriate. 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: http://files.wendell.ghifi.com/departments/planning/zoning/udo-unified-development-ordinance/Chapter_11_-_amended_071410.pdf</p>

Topic	Recommendations	Comments
<u>Existing Regulatory & Policy Language (and Section found)</u>		
2. Pedestrian Facility Requirements		
2.7 Block size	<p>NEW DEVELOPMENT ORDINANCE S Sec. 90-174. - Blocks. (a) General design criteria. Lengths, widths and shapes of blocks shall be determined with due regard to: (1) Provision of adequate building sites suitable to the special needs of the type of use contemplated (residential, commercial, industrial or other). (2) Zoning requirements as to lot sizes and dimensions. (3) Need for convenient access, circulation, traffic control and safety. (4) Limitations and opportunities of topography and drainage features. (b) Length. Block lengths shall not exceed 1,200 feet or be less than 400 feet, except upon a finding by the SRB, in a particular case, that there is adequate justification for greater or lesser lengths. (c) Pedestrian crosswalks. Where orientation or length of blocks or other considerations justify such action, the SRB may require crosswalks to improve pedestrian circulation and provide access to schools, playgrounds, shopping centers, transportation and other facilities. Where such crosswalks are provided, they shall be located, dimensioned, fenced, screened, lighted or otherwise improved in such a manner as to provide security, tranquility and privacy for occupants of adjoining property and safety for users of the walks. Such pedestrian ways, if suitably improved, may be used by emergency vehicles, but shall not be used by other motor vehicles.</p>	<p>1. Newton's minimum block length is very good. However, additional detail is needed to determine where various block lengths are appropriate. Block lengths should relate to land use densities and land use typologies. Small block size is important to intersection density and interconnectivity which serve to enhance walking, bicycling, and transit-access opportunities. Ideally, block length should not exceed 1000-1200 feet for low density residential development. In higher density areas, blocks can be as long as 200-600 feet wide.</p> <p>Consider allowing larger blocks – up to a maximum, such as 800-1000 feet – where development densities are expected be lower (> 4 du/a). See City of Charlotte Subdivision Ordinance, Section 20-23 for example of connectivity requirements and block standards based on land use context: http://www.charmeck.org/Planning/Subdivision/SubdivisionOrdinanceCity.pdf</p> <p>Consider maximum intersection spacing in minimum design standards – use LEED for Neighborhood Development as a guide.</p> <p>2. Blocks of 800 feet or longer should be required to have a pedestrian cut through in all areas of the city. (“Pedestrian crosswalk” is the term used in the ordinance; this is a confusing terminology, however, since crosswalk is typically used to describe street crossings at intersections.) Greater definition on the design of such pathways would be helpful to include in the ordinance</p>
2.8 Street Connectivity & Speed Limits	<p>Sec. 90-171. - Streets and alleys. b) Conformance with thoroughfare and land development plans. Arrangement, character, extent, width, grade and location of all streets shall conform to the officially adopted Hickory-Newton-Conover Urban Area Thoroughfare Plan and the adopted Land Development Plan, Collector Street Plan, or elements thereof, and shall be considered in relation to existing and proposed transportation patterns; topographic and other natural features; public convenience and safety; and appropriate relation to proposed uses of land to be served by such streets and existing or potential land uses in adjoining areas. (c) Other design standards. The following design standards shall apply to all streets proposed in subdivisions: (1) Continuation or projection of arterial and collector streets. Within or adjacent to subdivisions, arterial and collector streets shall provide for continuation of arterial or collector traffic flow from surrounding areas, except where topographic or other conditions make such continuance or projection unnecessary, impracticable or undesirable. (14) Cul-de-sac streets. Maximum length. Cul-de-sac streets, designed to be so permanently, shall not exceed 750 feet in length, except where unusual land configuration requires otherwise. (15) Speed limits. Unless otherwise determined by the city council, speed limits in all subdivisions shall be 35 mph. Upon request or at its own discretion, the city council by adoption of an ordinance may designate a different speed limit.</p>	<p>Street interconnectivity is critical to successful pedestrian networks. Furthermore, long dead-end streets and cul-de-sacs are create challenges for pedestrians, cyclists, and effective transit and other public services. Consider providing additional language regarding connectivity:</p> <p>Cul-de-sacs may be permitted only where topographic conditions and/or exterior lot line configurations offer no practical alternatives for connection or through traffic. Cul-de-sacs, if permitted, shall not exceed 250 ft in length from the nearest intersection with a street providing through access (not a cul-de-sac). A “close” is preferred over a cul-de-sac. Cul-de-sacs shall have pedestrian and bicycle neighborhood access trails at the ends to connect to adjacent streets. (For similar language, see the Town of Davidson, NC, Planning Ordinance - http://www.ci.davidson.nc.us/1006/Planning-Ordinance) See City of Wilson, NC, Unified Development Ordinance Section 6.4 for excellent connectivity requirements, including bicycle and pedestrian connections: http://www.wilsonnc.org/development-services/unified-development-ordinance/.</p> <p>See City of Charlotte Subdivision Ordinance, Section 20-23 for example of context-based connectivity requirements and block standards: http://www.charmeck.org/Planning/Subdivision/SubdivisionOrdinanceCity.pdf</p> <p>Also, consider limiting local speed limits (and design speeds for street design) to be 20-25mph. This is a much more appropriate speed limit to ensure the safety of all roadway users, especially on local streets.</p>

Topic	Recommendations	Comments
Existing Regulatory & Policy Language (and Section found)		
3. Other Design Standards Related to Pedestrian-Oriented Community Design		
3.1 Street Trees & Planting Strip	<p>Street trees or planting strips between sidewalk and curb are not currently required in the City's development standards, although the Land Development Design Standards do require planting strips in some conditions and have provisions for street trees (street trees are not required):</p> <p>"The City may require a planting strip in developments where traffic conflicts and/or utility placement warrant." (Roadway Guidelines section; page 13)</p>	<p>Newton should consider requiring planting strips and street trees as part of new street construction and reconstruction. In addition to their value for improving the air quality, water quality, and beauty of a community, street trees can 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. When planted in a planting strip between the sidewalk and the curb, street trees also provide a buffer between the pedestrian zone and the street.</p> <p>See NCDOT Complete Streets Planning and Design Guidelines (Chapter 4) for context-based pedestrian and "green" zone recommendations: http://www.completestreetsnc.org/wp-content/themes/CompleteStreetsCustom/pdfs/NCDOT-Complete-Streets-Planning-Design-Guidelines.pdf</p> <p>See also, Town of Wendell UDO Chapter 8, especially section 8.8, Street Trees: http://files.wendell.ghifi.com/departments/planning/zoning/udo-unified-development-ordinance/Chapter_8_-_amended_092611.pdf</p>
4. Complete Street Policy		
4.1 Complete Streets Policy	<p>None specifically adopted by the City of Newton, although NCDOT does have Complete Street Guidelines.</p>	<p>The City of Newton should consider adopting a Complete Street policy. The following is an excellent and comprehensive Complete Streets Policy from the City of High Point:</p> <p>As a standard practice, Complete Streets principles will be applied to all new street construction, substantial retrofits, and reconstruction projects except in unusual or extraordinary circumstances as outlined below. . .</p> <p>Inasmuch as High Point's surface transportation network is intertwined with and is co-dependent of that which falls within the jurisdiction and authority of the State of North Carolina, it is appropriate for the City's policy regarding Complete Streets to meet or exceed the standards and guidelines established by the State Department of Transportation (NCDOT).</p> <p>To provide for implementation, the Complete Streets Policy needs to have an associated design guide with context-based provisions for all modes of transport, including walking, biking, and transit. The design guidance should be integrated into development standards for new development and processes for corridor, as was done with the Raleigh Street Design Manual http://www.raleighnc.gov/content/extra/Books/PlanDev/Street-DesignManual/#1 and the Charlotte Urban Street Design Guidelines: http://charmeck.org/city/charlotte/transportation/plansprojects/pages/urban%20street%20design%20guidelines.aspx</p> <p>The NCDOT Complete Street Planning and Design Guidelines could also be adopted by reference as an excellent local implementation and process guide.</p> <p>The National Complete Streets Coalition provides good guidelines for traffic calming through their best practices manual: (http://www.completestreets.org/resources/complete-streets-best-practices/).</p>

This page intentionally left blank.

Table 6.2 Policy Action Steps

POLICY ACTION STEPS				
TASK	LEAD	SUPPORT	DETAILS	PHASE
Develop new policies & approaches for implementation.	Planning & Zoning Department	City Council, Planning Commission, Public Works Department	Establish land right-of-way acquisition mechanisms, expand sidewalk fee in-lieu options, coordinate development plans, & implement driveway access management.	Short-term/ Ongoing (2017 onward)
Adopt a Complete Streets Policy.	Planning & Zoning Department	City Manager,	Continue partnering across City departments to draft, adopt, and implement a comprehensive Complete Streets Policy with targeted performance measures and implementation steps. Specific language recommendations and guidance can be found on page 3-13.	Short-term/ Ongoing (2017 onward)
Be aware of the laws related to walking and bicycling in North Carolina, and help educate others.	Newton Police	NCDOT Bike/Ped Division, Planning & Zoning Department	Police staff should be familiar with state bicycle and pedestrian policies and laws, including best practices for reporting on crashes involving people walking or bicycling: https://www.ncdot.gov/bikeped/lawspolicies/ Also, the National Highway Traffic Safety Administration has made available a 2-hour self-paced interactive video training for all law enforcement officers: http://www.nhtsa.gov/Driving+Safety/Bicycles/Enhancing+Bicycle+Safety:+Law+Enforcement's+Role	Short-term (2017)
Update zoning and development ordinances to better support a walk friendly community.	Planning & Zoning Department	City Council, Planning Commission	See the recommended policies for the Newton zoning ordinance and subdivision regulations in Chapter 3 on Policies.	Mid-term (2018)
Develop illustrated design standards for pedestrian friendly development and infrastructure.	Planning & Zoning Department	NCDOT	Using NCDOT standard details and the pedestrian design guidelines in Appendix A as guidance, develop new and update existing design standards relating to pedestrian access and infrastructure. Examples include curb ramp standard details, crosswalk marking standards, sidewalk standards, etc.	Mid-term (2018 onward)





4

Programs

Chapter Contents:

Overview

Potential Partners + Stakeholders

Program Toolkit

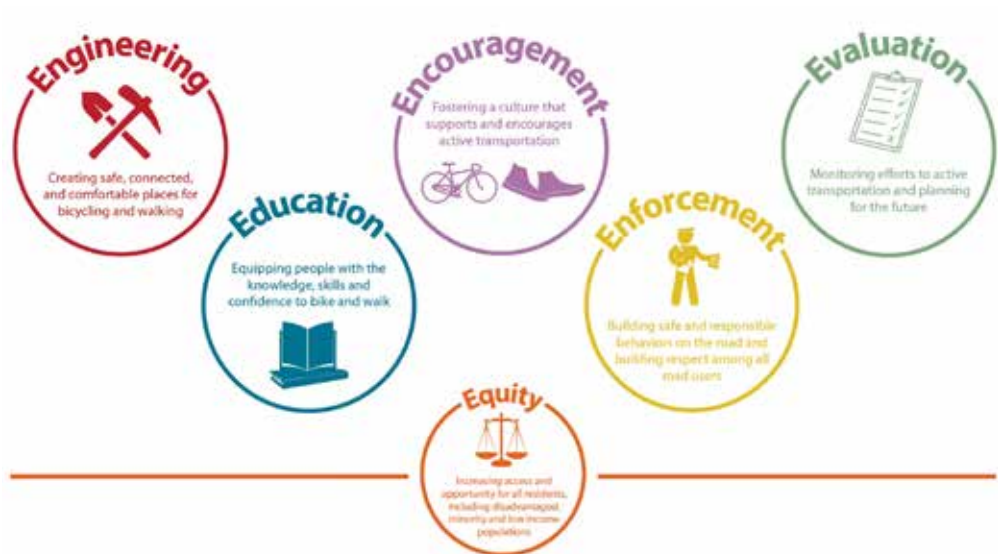
Program Action Steps

OVERVIEW

Simply adding pedestrian infrastructure alone doesn't create a pedestrian friendly community. Rather, it takes a comprehensive effort to create a culture around safe walking. A comprehensive program is often centered around what is known as the 5 E's: Engineering, Education, Encouragement, Enforcement, and Evaluation (see diagram below). Equity is added here as the non-traditional 6th E to ensure a focus on underserved communities.

Programs will help people of all ages and abilities realize the full potential of Newton's new and proposed pedestrian infrastructure. These types of programs help people learn how to use the City's roads safely, whether traveling as a pedestrian, in an automobile, or on a bicycle.

A range of strategies and actions, including broad policy and outreach efforts will help the City meet the goals and objectives of this Plan. The programmatic strategies in this chapter aim to improve safety, increase access to walking, and encourage community and economic development. The actions will increase the visibility of people who walk, communicate that all road users are expected to look out for each other no matter how they travel, create safer streets, and develop a common understanding of traffic safety.



POTENTIAL PARTNERS + STAKEHOLDERS

Existing and potential partners for the Newton Pedestrian programs described in this chapter include:

Active Routes to School

Active Routes to School is a North Carolina Safe Routes to School (SRTS) Project supported by a partnership between the N.C. Department of Transportation and the N.C. Division of Public Health. The Active Routes to School Project creates opportunities for youth to walk and bike to or at school. Active Routes to School Coordinators are available to provide technical assistance and support to schools and communities in planning Walk and Bike to School day events, building ongoing walk and bike to or at school programs, offering trainings on Safe Routes to School, building policy support for Safe Routes to School, and addressing safety features near schools. The goal of the project is to increase the number of elementary and middle school students who safely walk and bike to school.

Ten regional coordinators are based at local health departments across the state. Newton is in Region 4, which includes all of Catawba County and several neighboring counties. For more information, visit www.communityclinicalconnections.com/What_We_Do/Active_Routes_To_School/index.html

Newton-Conover City School District

The Newton-Conover City School District is an important partner for creating safe pedestrian environments and programming for schools. Safe Routes to School programming is a vital component of successful pedestrian plans so partnering with the school district, as well as individual member schools, is important to creating programs that are appropriate and coordinated with schools' curricula.

Parks & Recreation Department

The Parks & Recreation Department of Newton is a center of physical activity for the community, and can be a key partner in creating programs targeted at specific age groups and populations for increasing walking and other forms of physical activity. As a busy hub of community activity, it can also be a centralized location for awareness campaigns and disseminating information related to pedestrian programs and events going on in the community. The Parks & Recreation Department can be an important partner for creating educational and encouragement programs for walking in Newton.

Business Associations

The Catawba County Chamber of Commerce and the Downtown Newton Development Association are staple institutions in Newton, and are key partners for creating relationships with local businesses and community leaders in order to have buy-in of the City's pedestrian programming.

Police Department

The Newton Police Department is a key partner for creating an enforcement campaign that encourages safe driving practices and pedestrian activity. Enforcement campaigns can reduce excessive speeding in pedestrian zones, encourage proper yielding to pedestrians in crosswalks, and generally promote a sense of respect for all travelers regardless of whether one drives, walks, or bikes in Newton.

Disabilities or Senior Service Agencies/ Organizations

Partnering with agencies and organizations that advocate for the needs of those with disabilities or senior citizens is important for ensuring that the needs of the most vulnerable walkers in the community are being represented and accommodated. Elderly residents and those with mobility issues are vulnerable to limited transportation options and access, and it is important to keep these issues at the forefront of the pedestrian planning process.



PROGRAM TOOLKIT

Watch for Me, NC

Watch for Me, NC is an awareness campaign aimed at reducing the number of bicyclists and pedestrians hit and injured in crashes with vehicles. Piloted in the Triangle area, Raleigh was one of the first cities to launch the campaign in 2013. The campaign includes education during the months of October and November, and has been followed by targeted enforcement efforts by police departments. Newton has been named as a 2017 partner for the *Watch for Me, NC* program.

For more information, visit:

<http://watchformenc.org/>

- » **Why Implement?** Residents expressed concern over high speed corridors and the failure of motor vehicle drivers yielding to pedestrians in crosswalks. Enforcement efforts, when combined with education messaging, can often improve pedestrian safety awareness.

Safe Routes to School (SRTS)

Safe Routes to School Programs (SRTS) make walking and bicycling to school more accessible to children and encourage more children to walk and bicycle to school. This typically involves examining conditions around public schools and providing programs to improve bicycle/pedestrian safety, accessibility and use.

North Carolina's Safe Routes to School program is managed by the NCDOT Division of Bicycle and Pedestrian Transportation. It sponsors activities at the local level through a partnership with North Carolina Division of Public Health to support the Active Routes to School Project. Safe Routes to School infrastructure projects are eligible to compete for funding through North Carolina's Strategic Transportation Investment (STI) program and other sources of funding for bike and pedestrian projects.

For more information, visit: www.ncdot.gov/bikeped

- » **Why Implement?** Children are one of the most vulnerable users of the pedestrian network. Improving safe and efficient access to school can have several benefits (health, environment, education, etc). Newton has advantage of have several walkable school campuses. Numerous residents and stakeholders identified improving the walkability of Newton schools as a priority concern. Given the urban nature of Newton schools and the grid street pattern of streets surround them, there is great potential for increasing the number of children who walk and bike to school.



Let's Go NC!

Let's Go NC!, A Pedestrian and Bicycle Safety Skills Program for Healthy, Active Children, is an all-in-one educational package of lesson plans, materials, activities and instructional videos that encourages children in grades K-5 to learn about and practice fundamental skills that build safe habits.

This program was developed for the NCDOT's Division of Bicycle and Pedestrian Transportation and Safe Routes to School Program by NC State University's Institute for Transportation Research and Education. The curriculum aligns with NC Essential Standards and is endorsed by the NC Department of Public Instruction.

All lesson plans and materials are available for free online at www.ncdot.gov/bikeped/safetyeducation/letsگونc/.

- » **Why Implement?** *This package provides key guidance and materials to assist instructors in teaching bicycle and pedestrian safety to children at a young age.*

Walking School Bus

Walking School Buses and Bike Trains allow students to walk or bicycle to school as a group, often with an adult volunteer. These could be daily, weekly, or monthly events. These programs encourage walking in school aged children as well as the adult chaperones. Schools in North Carolina that have walking school buses include Olive Chapel Elementary in Apex and Langston Farms Elementary in eastern North Carolina. For more information, visit www.walkingschoolbus.org

- » **Why Implement?** *This group program encourages more walking to school and community fellowship through volunteering.*



Parts of the Let's Go NC! curriculum is offered in Spanish

Walk at School Programs

Through this program, children are given the opportunity and are encouraged to increase how much they walk during school hours through competitions, prizes, goal setting, and other activities. This type of program is especially important for schools that do not have good walking or biking routes, or if students live too far to walk or ride bikes.

Best Practice Programs:

- » **Tigers on the Prowl** is a popular walking program at Davidson Elementary School in Davidson, NC.
- » The **Creative Walking** website provides resources and materials to create school walking wellness programs.
- » **WalkBike to School** also provides examples and resources.
- » **Why Implement?** *Programs to encourage safe walking practices and physical activity during the school day is an equitable way to ensure all students benefit from Safe Routes to School programming.*

Volunteers can teach children safe pedestrian practices while walking to school.

National Walk to School Day

Students and their families are encouraged to use alternative modes to get to/from school. Individual students and classrooms receive incentive prizes. These events can occur more than once a year, ideally one in the fall and one in the spring, usually coinciding with the National Walk to School Day in October and National Bike to School Day in May.

- » **Why Implement?** *These annual events promote walking to school and create awareness around the pedestrian needs surrounding the school. Such events have a history of leading to policy and engineering changes that help make it safer and more convenient for students to walk to school on a regular basis.*



Over 250 students participate in the annual Walk to School Day event at Northwoods Elementary in Cary, NC.

Wayfinding Signage

Wayfinding signage helps orient pedestrians to key destinations and provides distances as well as approximate walking times to those destinations. Newton has already invested in a quality vehicular wayfinding signage program that provides visitors directions to local destinations (see image on left). The Catawba County Eat Smart Move More program has also created wayfinding signs for a series of walking routes in town (top right). Building off of these foundations to incorporate signage that indicates distances and walking times to key destinations can help people say “Yes!” to walking (bottom right). With the help of high school art students and teachers to design the signs, this can be a great way to engage the community and build a culture around walking.

- » **Why Implement?** *Improves the pedestrian experience and enjoyment by providing clear, accurate and quality information.*



The wayfinding signs in Newton are a great foundation that can be expanded to include walking distances and times to key destinations.

Speed Reduction/Traffic Calming Campaign

Strategies to reduce speeding, such as speed feedback signs displaying the approaching vehicle speeds and the posted speed limits on roadways, can create safer, calmer streets. Newton already owns a speed feedback trailer; it will be helpful to use it along corridors where new pedestrian facilities are added. These feedback loops remind drivers to obey the speed limit and can be used in areas where traffic calming is needed. Reducing speed limits, perhaps near schools, might also be considered to create a safe pedestrian environment.

- » **Why Implement?** *These interactive signs increase speed limit compliance and pedestrian comfort level along high volume corridors.*



Speed feedback signs can be an effective and low cost tactic to reduce speed along corridors with high pedestrian activity.

Enforcement

These programs can cover a wide range of focuses including crosswalk stings, speeding, distracted driving, and distracted walking/bicycling. Increasing the presence/enforcement at back-to-school times and/or daylight savings is also advised.

Best Practice Programs:

- » **Greenville, NC** participated in a distracted driving research project, neighborhood speed watch program, installed speed feedback signs, and increased law enforcement before and after school.
- » Volunteers in Arizona conducted a **Neighborhood Speed Watch** routine detection event which assisted law enforcement efforts, putting serial speeders on notice and bringing down average speeds.

» **Why Implement?** *Enforcement of all traffic laws will improve safety for all users, especially the most vulnerable user, the pedestrian.*



Pedestrian crossing signals installed between two schools in Davidson, NC.

Open Street Events

Open street events have many names: Sunday Parkways, Ciclovias, Summer Streets, and Sunday Streets. The events are periodic street “openings” (i.e., “open” to users besides just cars; usually on Sundays) that create a temporary park that is open to the public for walking, bicycling, dancing, hula hooping, roller-skating, etc. They have been very successful internationally and are rapidly becoming popular in the United States. Open street events promote health by creating a safe and attractive space for physical activity and social contact, and are cost-effective compared to the cost of building new parks for the same purpose. Events can be weekly events or one-time occasions, and are generally very popular and well attended.

This Plan recommends that the City of Newton and local partner groups, consider hosting open street events annually. The City may choose a two-block section of street, with the intention of growing the spatial coverage of the event over time.

» **Why Implement?** *Open street events would activate community stakeholders around an annual event to promote pedestrian safety and Newton livability.*



Salisbury, NC, attracts participants to their regular Streets Alive events.



The Atlanta Streets Alive event opens streets for people by temporarily closing them to cars to create a whole new healthy, sustainable, and vibrant City street experience.

PROGRAM ACTION STEPS				
TASK	LEAD	SUPPORT	DETAILS	PHASE
Establish a standing Walkability Committee, tasked with initiating Pedestrian Programs.	Community Stakeholders, Dept. of Transportation	NCDOT Bike/Ped Division, Newton Police Department	A task force should be formed specifically of key stakeholders who have a vested interest in developing pedestrian safety programs in Newton. A suggested list of potential stakeholders can be found on page 4-2.	Short-term/ Ongoing (2017-onward)
Implement one new pedestrian safety program.	Programs Task Force	Dept. of Planning & Zoning, Public Information, Parks & Recreation	Using the information listed in Chapter 4, one program, such as Walk to School Day or an Open Streets Event, should be implemented to serve as Newton's pilot pedestrian safety program. This event will bring key stakeholders together and help initiate the Program Task Force.	Short-term/ Ongoing (2017-onward)
Distribute pedestrian safety information.	Communications & Public Engagement, Program Task Force	NCDOT Bike/Ped Division, Police Department	NCDOT has print material with safety tips for motorists and pedestrians available for download at www.ncdot.gov/bikeped/safetymaterials/ . Other methods of distribution could include web sites, social media, and 'on-the-ground' in park kiosks.	Short-term (2017-onward)
Consider reducing speed limits within school zones and along corridors where new pedestrian facilities have been added.	City Council	NCDOT, Dept. of Transportation, Police Department	Consider lowering the speed limits along key corridors once improvements have been made. Installing temporary speed feedback signs is another traffic calming strategy.	Short-term/ Ongoing (2017 onward)
Conduct communication & outreach campaigns related to walking.	Communication & Public Engagement, Program Task Force	Local newspapers, City website & social media managers	Establish a communication campaign to celebrate successes as progress is made. A key first task is to establish a page on the city's website dedicated to pedestrian education and project updates	Mid-term (2018-onward)
Seek designation as a Walk-Friendly Community.	Program Task Force	Dept. of Planning & Zoning, City Manager	The development and implementation of this plan is an essential first step toward becoming a designated Walk-Friendly Community. With progress on program, policy, and infrastructure recommendations, the City should be in a position to apply for and receive recognition by 2021.	Mid- to Long-term (2020-2021)





5

Infrastructure Recommendations

Chapter Contents:

Overview

Methodology for Network Development

Recommended Pedestrian Network

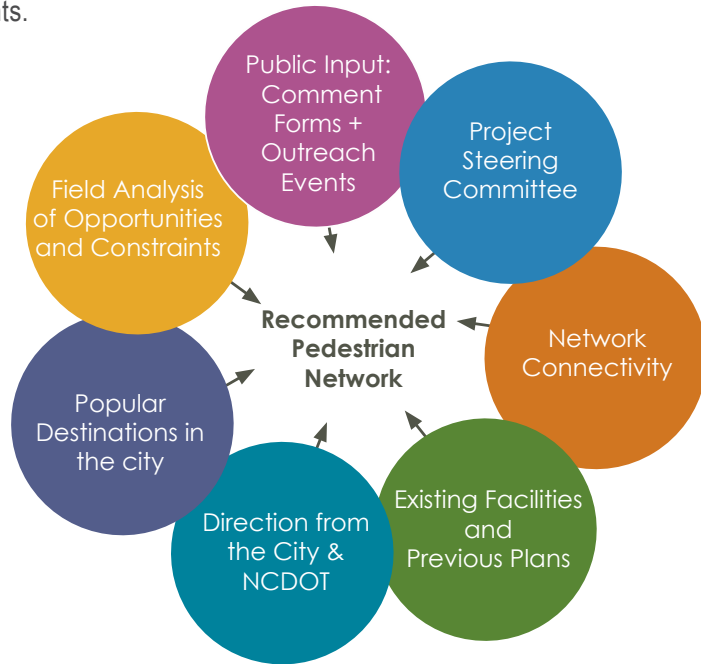
Intersection Improvements

Infrastructure Network & Funding Action Steps

Priority Projects Cutsheets

OVERVIEW

This chapter details the infrastructure improvements that are recommended to create a safe, accessible, and connected pedestrian network in Newton. A mix of facilities and implementation strategies are recommended to create this comprehensive network, including sidewalks, sidepaths, greenways, sidewalk repairs, and crossing improvements.



METHODOLOGY FOR NETWORK DEVELOPMENT

Recommendations were developed based on information from several sources, as highlighted in the image above. Fieldwork examined the potential and need for pedestrian facilities along and across key roadway corridors to make connections between popular destinations in Newton.

All facility recommendations along NCDOT-maintained roadways will require review and approval by NCDOT Highway Division 12 prior to implementation.

RECOMMENDED PEDESTRIAN NETWORK

Map 5.0 on the facing page includes all the recommended facilities and improvements for the pedestrian network in Newton. Existing facilities are shown as solid lines, and proposed facilities are dashed lines. Each facility type is marked with a different color. In addition, intersections marked with red circles indicate where improvements to the pedestrian crossing are recommended. Intersections are symbolized as either signalized or unsignalized based on current conditions.

Detailed maps on the subsequent pages depict facility type-specific recommendations: proposed new sidewalks, sidewalk repairs, sidepaths, greenways, pedestrian connectors, and intersection improvements.

Sidewalks

The sidewalks recommended for Newton are shown by the dashed orange lines in Map 5.1 (with existing sidewalks shown in solid gray lines) and listed in Table 5.1. These recommendations were chosen to expand the existing sidewalk network, address safety concerns,

and to better connect destinations and neighborhoods.

General characteristics include:

- » Sidewalks in Newton should be at least 5 feet wide, and, where possible, should include a landscaped buffer of 1-foot or 6-feet with trees/shrubs between the sidewalk and roadway.
- » Drainage improvements may be necessary additions to a sidewalk project based on engineering judgment and existing conditions.
- » Areas of higher pedestrian volume may require greater width, and sidewalks serving as part of the multi-use path system should be at least 10 feet in width. Two people should be able to walk side-by-side and pass a third comfortably. Different walking speeds should be possible.

Design Guidance

Sidewalks should contain adequate width to accommodate the volumes and different walking speeds of pedestrians. The Americans with Disabilities Act requires a 4-foot clear width in the pedestrian zone plus 5-foot passing areas every 200 feet. Recommended dimensions are shown on page A-5 in Appendix and are based on NCDOT Complete Streets Planning and Design Guidelines. Exact dimensions should be selected in response to local context and expected/desired pedestrian volumes. Further design guidance can be found in Appendix A.



West A Street is categorized as a sidewalk project. It is also a project that will be receiving funding through a Locally Administered Projects Program through SPA-DA grant to redesign the streetscape

MAP 5.0 RECOMMENDED FACILITIES - MASTER PLAN

PEDESTRIAN FACILITY RECOMMENDATIONS

- New Sidewalk
- Sidewalk Repairs
- Greenway
- Ped Connector
- Sidepath
- Unsignalized
- Signalized
- RR xing

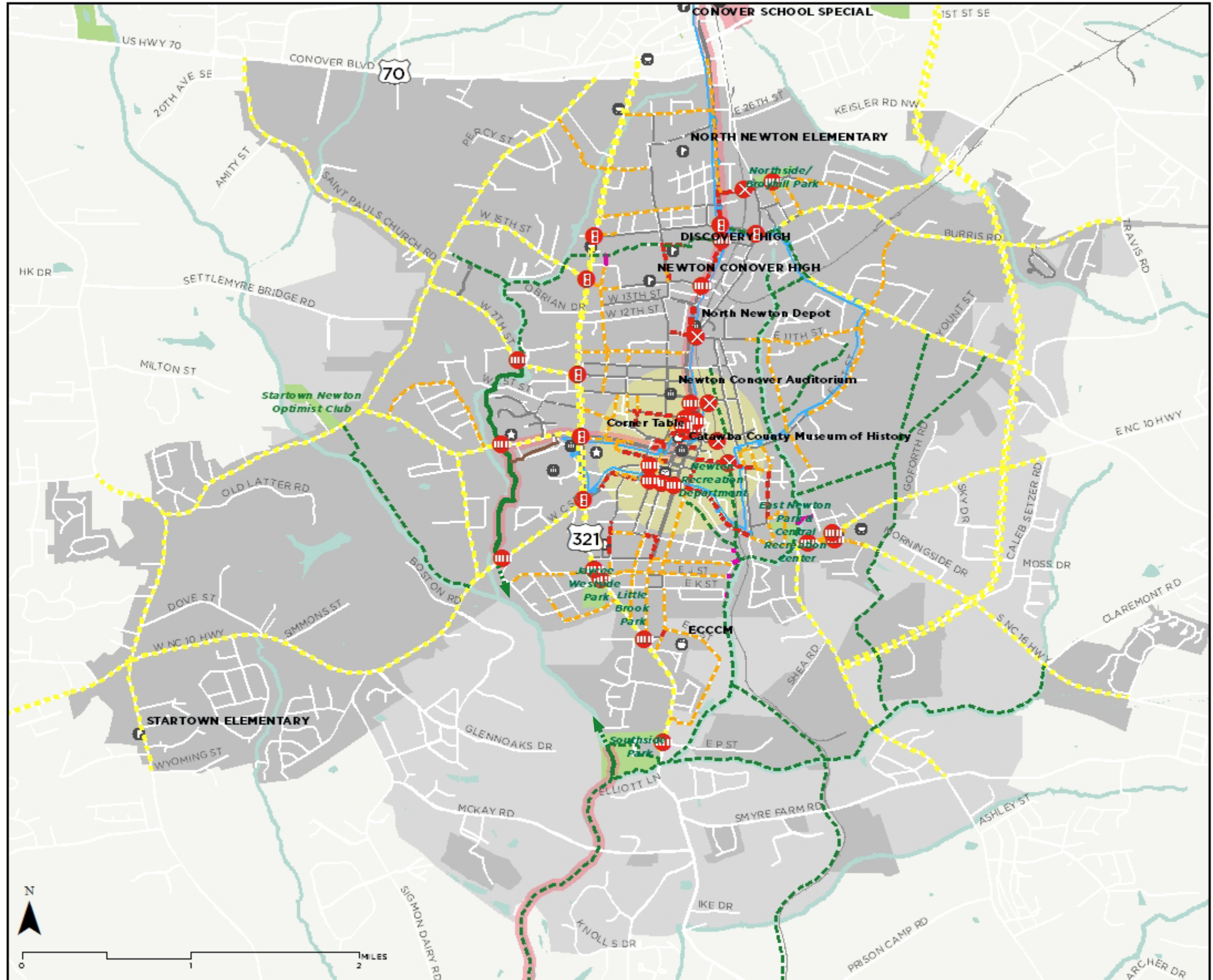
EXISTING PEDESTRIAN FACILITIES

- Sidewalk- existing
- Natural Surface Trail
- Greenway- existing
- Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

- Point of Interest
- Food Outlet
- Post Office
- Government / Cultural
- Banks
- College/University
- Grocery Store
- Library
- School
- Bus Stop
- Greenway Public Transit Route
- Railroad
- Streams
- Lakes & Ponds
- Parks
- Newton City Limits
- Extra Territorial Jurisdictions
- Half Mile (15-min walk) from Center of City

DOWNTOWN NEWTON INSET



MAP 5.1 RECOMMENDED FACILITIES - SIDEWALKS

PEDESTRIAN FACILITY RECOMMENDATIONS

— New Sidewalk

EXISTING PEDESTRIAN FACILITIES

- Sidewalk- existing
- Natural Surface Trail
- Greenway- existing
- Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

- ★ Point of Interest
- 🍔 Food Outlet
- 📬 Post Office
- 🏛️ Government / Cultural
- 🏦 Banks
- 🎓 College/University
- 🛒 Grocery Store
- 📖 Library
- 🎓 School
- 🚏 Bus Stop
- 🚇 Greenway Public Transit Route
- 🚊 Railroad
- 🌊 Streams
- 🌊 Lakes & Ponds
- 🌳 Parks
- 🏙️ Newton City Limits
- 🏘️ Extra Territorial Jurisdictions
- 📏 Half Mile (15-min walk) from Center of City

DOWNTOWN NEWTON INSET

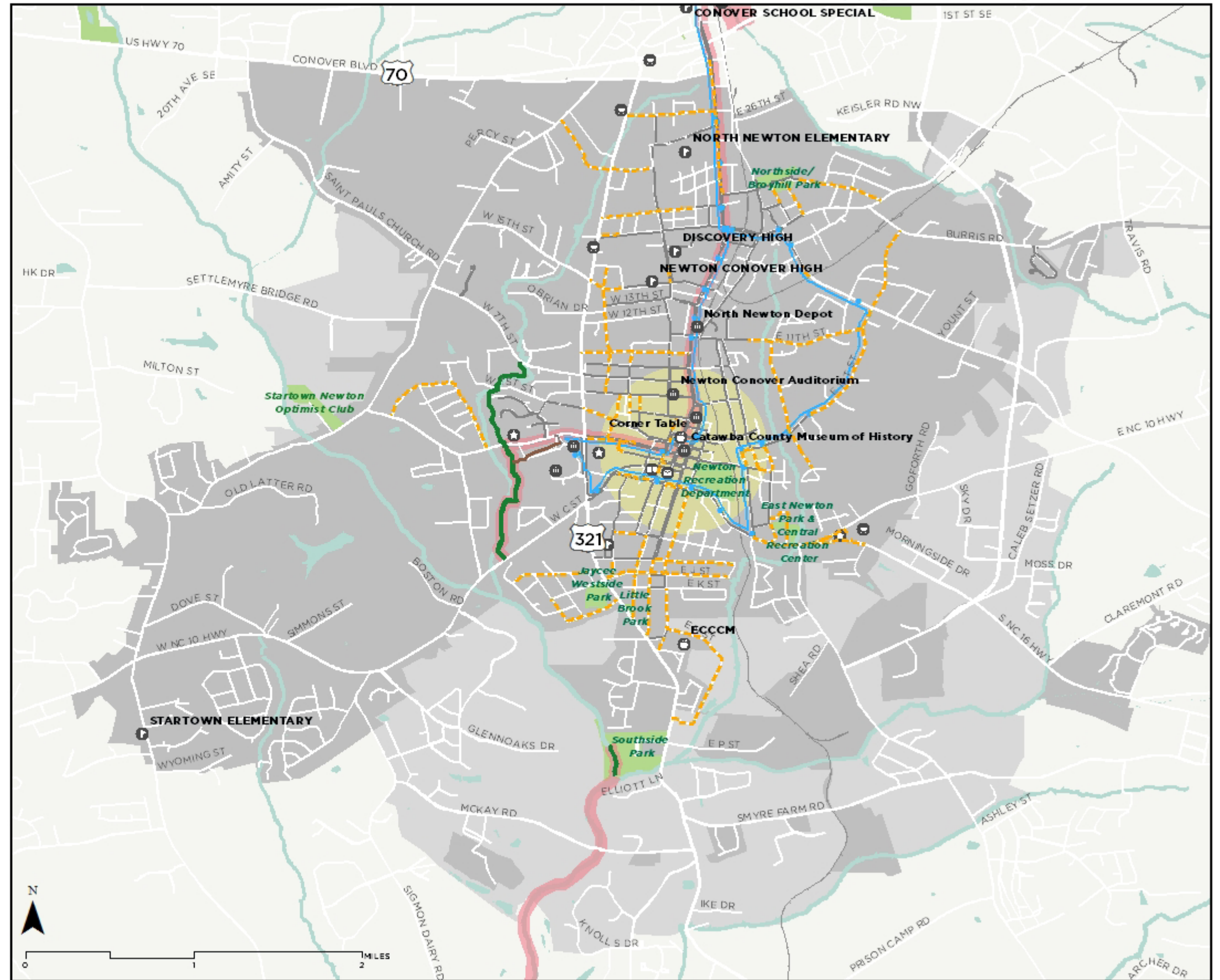
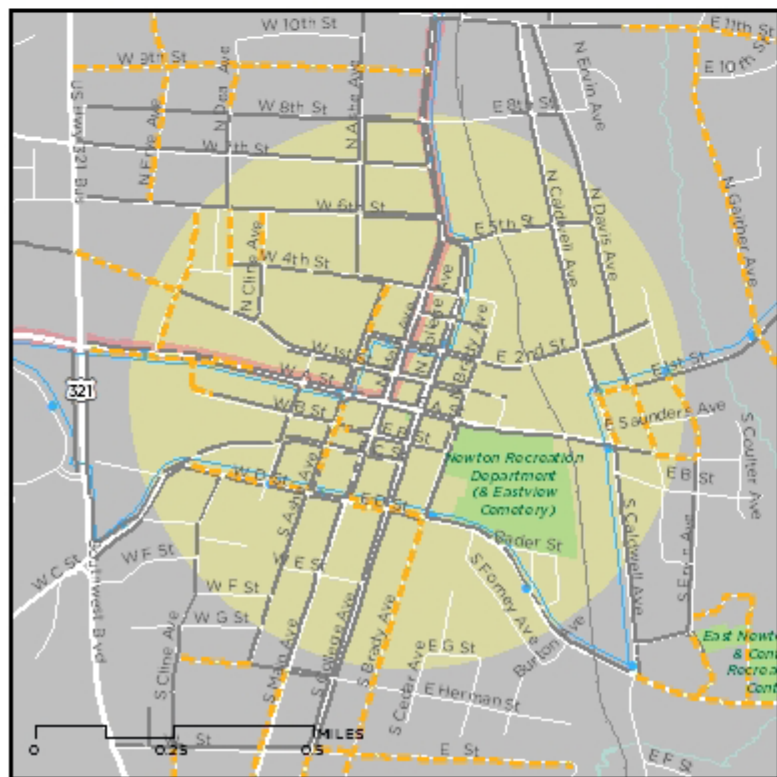


Table 5.1 Sidewalk Projects

Roadway	From	To	Length (mi.)
E. 1st St.	E. Saunders Ave.	Mount Olive Church Rd.	0.742
E. 1st St.	N. College Ave.	N. Davis Ave.	0.052
W. 1st St.	Northwest Blvd.	N. Spring Ave.	0.163
W 9th St.	Northwest Blvd	N. Main Ave.	0.528
E. 11th St.	500 block of E. 11th St.	E. 1st St.	0.575
W. 15th Street	Northwest Blvd.	N. Deal Ave.	0.175
W. 20th Street	Northwest Blvd.	N. Frye Ave.	0.085
W. 21st Street	Northwest Blvd	N. Stewart Ave	0.459
E. 22nd St.	800 block of E. 22nd St	E. 20th St	0.417
W. 25th St.	Old Conover Startown Rd.	N. Ashe Ave.	0.623
W. 27th St.	Northwest Blvd.	N. Main Ave.	0.429
E. A St.	S. Davis Ave.	N. Ervin Ave.	0.058
W. A Street (south side)	Southwest Blvd.	east of Family Dollar parking lot	0.189
W. A St. (north side)	painted crosswalk	in front of Lackey Accounting	0.059
Anne Ave.	Burriss Rd.	Mount Olive Church Rd.	0.488
N. Ashe Ave.	W. 4th St.	W. 1st St.	0.115
N. Ashe Ave.	W. 15th St.	northern N-CHS driveway	0.071
S. Ashe Ave.	1/2 block south of W. A St.	1/2 block south of W. C St.	0.225
W. B St. (north side)	western terminus	existing sidewalk west of Bost Ave.	0.033
W. B St. (south side)	S. Ashe Ave.	1/2 block east of Ashe Ave.	0.021
S. Brady Ave.	E. D St.	E. J St.	0.520
S. Brady Ave.	E. K St.	E. N St.	0.240
S. Brady Ave.	E. O St.	Southwest Blvd.	0.094
N. Caldwell Ave.	E. 1st St.	E. A St.	0.090
N. Cline Ave.	W. 6th St.	W. 4th St.	0.090
S. Cline Ave.	W. I St.	W. J St.	0.099
S. College Ave.	W. I St.	Southwest Blvd	0.454
E. D St. (north side)	S. Main Ave.	S. Brady Ave.	0.100
E. D St. (south side)	S. Main Ave.	S. College Ave.	0.055
W. D St.	W. C St.	S. Ashe Ave.	0.170
N. Davis Ave.	E. 1st St.	E. A St.	0.127
N. Deal Ave.	W. 6th St.	W. 4th St.	0.108
N. Deal Ave.	W. 9th St.	W. 8th St.	0.083
N. Ervin Ave.	E. 1st St.	E. A St.	0.159
S. Ervin Ave.	Burton Ave.	E. D St.	0.132
Family Dollar parking lot	W. A St.	W. B St.	0.053
N. Frye Ave.	W. 16th St.	W. 6th St.	0.718
N. Gaither Ave.	E. 11th St.	McDaniels Circle	0.795
Hamilton St.	Westside Dr.	Southwest Blvd	0.402
W. Herman St.	S. Cline Ave.	S. Ashe Ave.	0.104
Hospital St.	E. N St.	Southwest Blvd	0.523
E. I St.	S. College Ave.	eastern terminus	0.377
E. J St.	S. Main Ave.	eastern terminus	0.425
W. J St.	Southwest Blvd.	S. Main Ave.	0.143
Long Dr.	Radio Station Rd.	NC 10	0.738
N Main Ave. (west side)	Boundary St.	1/2 block south of W. 23rd St.	0.741

Table 5.1 Sidewalk Projects (continued)

Roadway	From	To	Length (mi.)
N Main Ave. (east side)	1/2 block north of E. 22nd St.	E. 22nd St.	0.032
S Main Ave.	W. Herman St.	Southwest Blvd	0.495
E. N St.	S Brady Ave.	Hospital St.	0.345
NC Highway 10	S. College Ave.	Pitts Ave, Food Lion driveway	0.492
NC Highway 16	NC Hwy 10	Eastmont Ave., Food Lion driveway	0.312
N. Ranking Ave.	W. 16th St.	RR Tracks	0.072
Shannonbrook Dr.	Radio Station Rd. (west)	Radio Station Rd. (east)	0.823
N. Spring Ave.	W. 6th St.	W. A St.	0.248
Stadium Ave.	Ervin Ave.	E. D St.	0.296
N. Thomas Ave.	E. 22nd St.	E. 21st St.	0.119
Valley Dr.	W. J St.	Westside Dr.	0.155
Westside Dr.	Valley Dr.	Southwest Blvd.	0.279
N. Whisnant Ave.	E. 22nd St.	E. 20th St.	0.226



There are several examples, such as this residential street, South College Avenue, that have existing tree-lined sidewalks separated from the low-volume, low-speed roadway. This section of the roadway does not have a recommendation in this pedestrian plan; instead it serves as a model for other streets within the study area.

Sidewalk Repairs

The sidewalk repairs recommended for Newton are shown by the dashed red lines in Map 5.2 (with existing sidewalks shown in solid gray lines) and listed in Table 5.2, below. These repair recommendations were identified through a spatial analysis of the sidewalk conditions based on the data from the City of Newton Pavement and Sidewalk Condition Report (2016). Areas with high concentrations of poor sidewalks and areas with high pedestrian traffic, identified through stakeholder interviews and surveys, were selected as needing repair. Focusing resources in these identified areas can improve walkability and safety where pedestrian demand is already high.

Table 5.2 Sidewalk Repairs

Roadway	From	To	Length (mi.)
E. 1st St.	N. College Ave.	N. Brady Ave.	0.049
W. 1st St.	N. Bost Ave.	N. Ashe Ave.	0.055
E. 2nd St.	N. Main Ave.	N. College Ave.	0.044
W. 2nd St.	N. Ashe Ave.	N. Main Ave.	0.049
W. 4th St.	N. Deal Ave.	N. Ashe Ave (eastern intersection)	0.214
W.11th St.	N. Ashe Ave.	N. Main Ave.	0.088
W. 18th St.	N. Ashe Ave.	N. Stewart Ave.	0.101
E. 22nd St.	N. Main Ave.	N. College Ave.	0.170
E. A St.	N. Brady Ave.	N. Davis Ave.	0.289
W. A St.	N. Bost Ave.	N. Ashe Ave.	0.055
N. Ashe Ave.	W. 18th St.	W. 15th St.	0.229
N. Ashe Ave.	W. 1st St.	W. A St.	0.046
E. B St.	S. Ashe Ave.	S. Main Ave.	0.048
W. B St.	western terminus	S. Bost Ave.	0.118
S. Brady Ave.	E. N St.	E. O St.	0.052
S. Brady Ave.	E. B St.	E. D St.	0.123
W. C St.	W. D St.	W. E St.	0.076
N. Cline Ave.	W. 4th St.	W. 1st St.	0.093
S. Cline Ave.	W. G St.	W. I St.	0.217
S. College Ave.	E. Herman St.	E. I St.	0.129
W. D St.	W. C St.	S. Bost Ave.	0.148
S. Ervin Ave.	E. A St.	Burton Ave.	0.305
E. Herman St.	S. Main Ave.	S. College Ave.	0.060
N. Main Ave. (west side)	W. 13th St.	W. 11th St.	0.178
N. Main Ave. (east side)	E. 13th St.	E. 11th St.	0.174
N. Main Ave. (west side)	W. 19th St.	W. 17th St.	0.117
N. Main Ave. (east side)	E. 19th St.	E. 15th St.	0.269
N. Main Ave.	E. 14th St.	1/2 block north	0.015
N. Main Ave.	W. 20th St.	1/2 block south of 23rd St.	0.228
N. Main Ave.	E. 2nd St.	E. 1st St.	0.049
NC Hwy 10 (D St.)	S. Brady Ave.	S. Caldwell Ave.	0.387
NC Hwy 10 (D St.)	S. Ashe Ave.	S. Main Ave.	0.046

MAP 5.2 RECOMMENDED FACILITIES - SIDEWALK REPAIRS

PEDESTRIAN FACILITY RECOMMENDATIONS

- Sidewalk Repairs

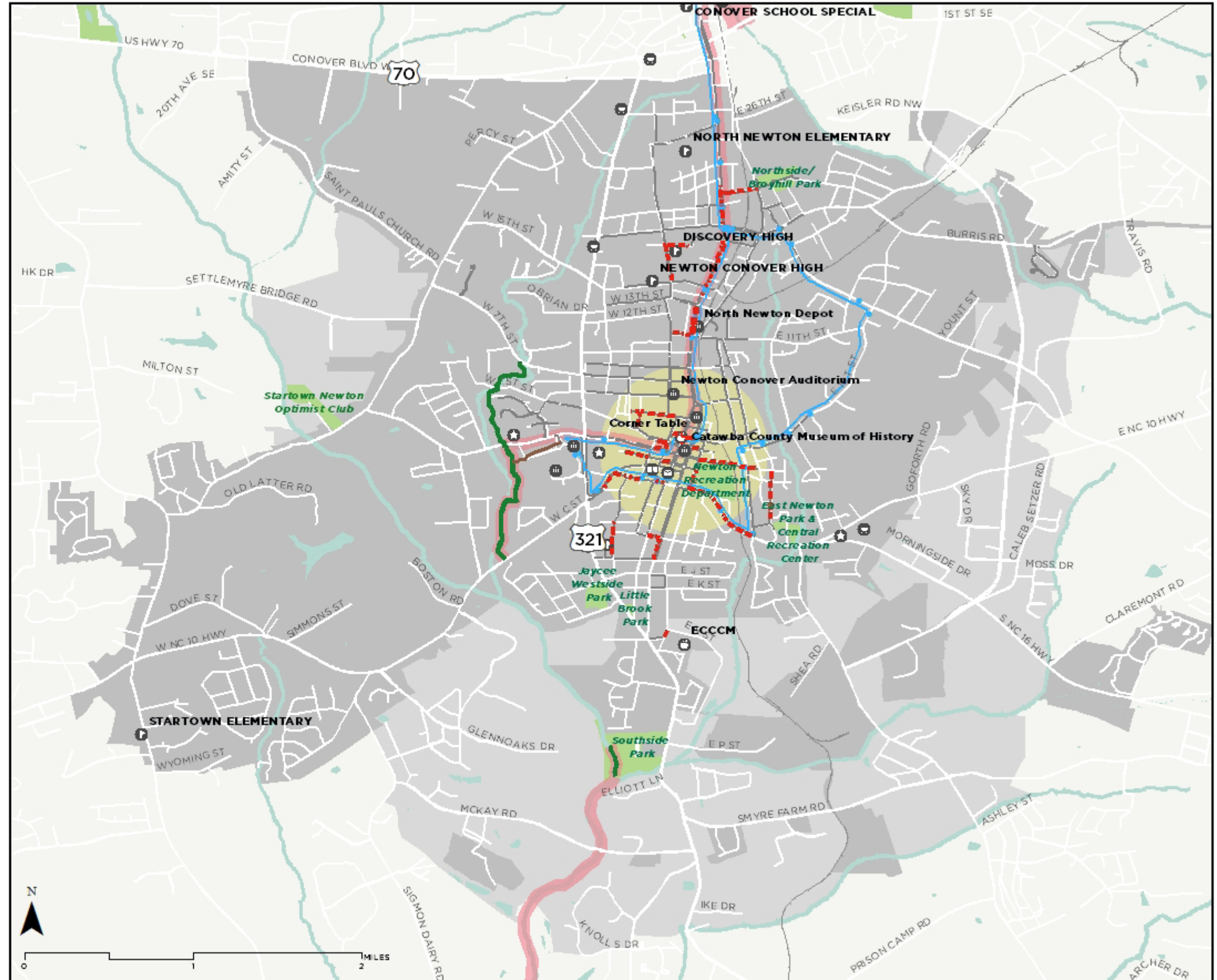
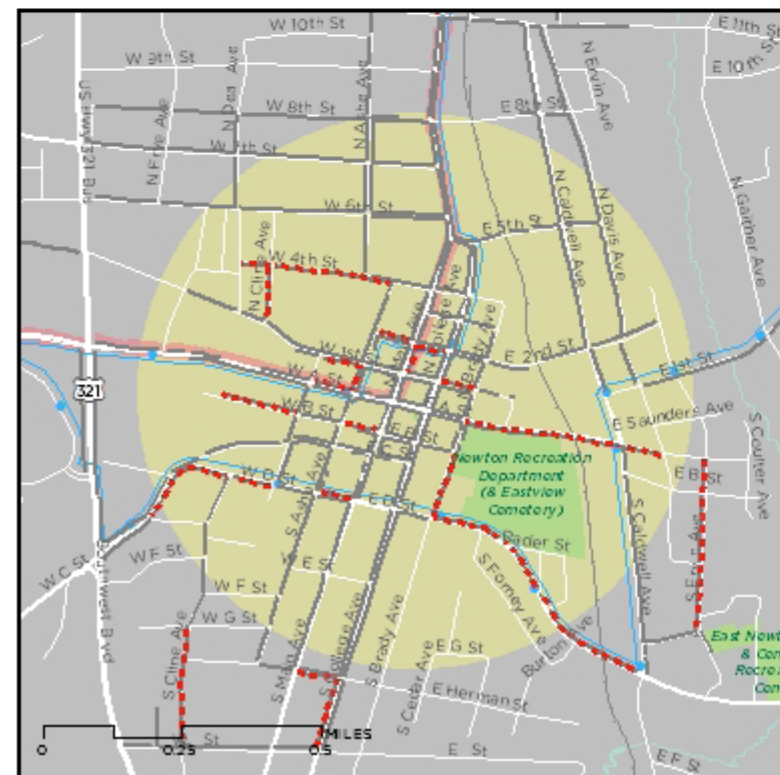
EXISTING PEDESTRIAN FACILITIES

- Sidewalk- existing
- Natural Surface Trail
- Greenway- existing
- Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

- ★ Point of Interest
- 🍷 Food Outlet
- 📮 Post Office
- 🏛️ Government / Cultural
- 🏦 Banks
- 🎓 College/University
- 🛒 Grocery Store
- 📖 Library
- 🎓 School
- Bus Stop
- Greenway Public Transit Route
- Railroad
- Streams
- Lakes & Ponds
- Parks
- Newton City Limits
- Extra Territorial Jurisdictions
- Half Mile (15-min walk) from Center of City

DOWNTOWN NEWTON INSET



MAP 5.3 RECOMMENDED FACILITIES - GREENWAYS & PEDESTRIAN CONNECTORS

PEDESTRIAN FACILITY RECOMMENDATIONS

- Greenway
- Ped Connector

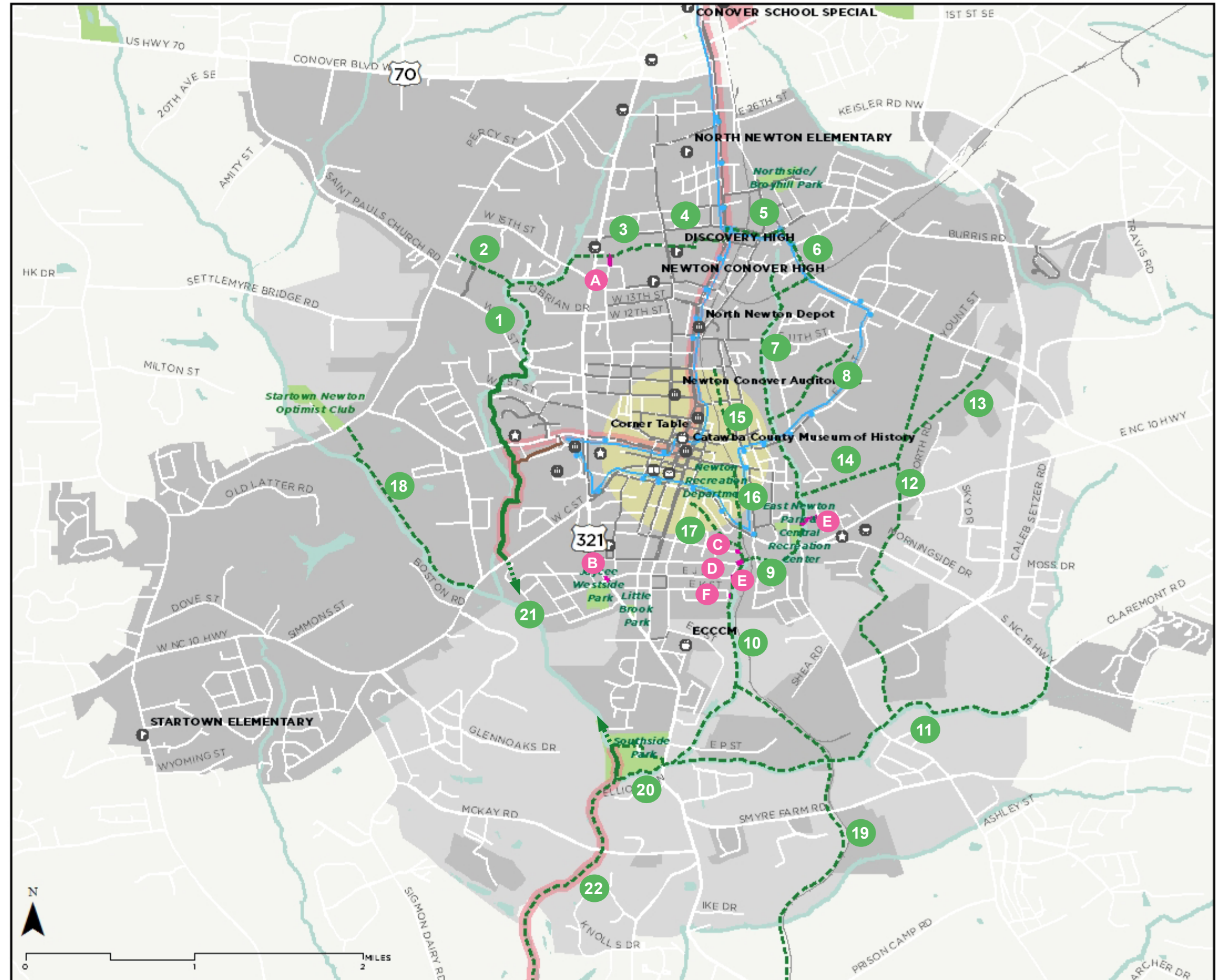
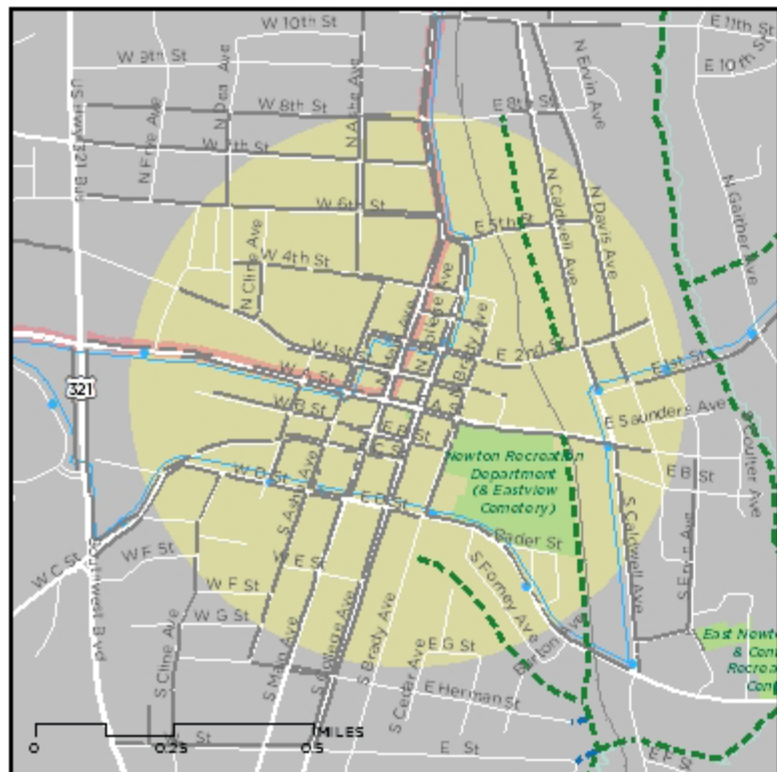
EXISTING PEDESTRIAN FACILITIES

- Sidewalk- existing
- Natural Surface Trail
- Greenway- existing
- Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

- Point of Interest
- Bus Stop
- Food Outlet
- Post Office
- Government / Cultural
- Banks
- College/University
- Grocery Store
- Library
- School
- Greenway Public Transit Route
- Railroad
- Streams
- Lakes & Ponds
- Parks
- Newton City Limits
- Extra Territorial Jurisdictions
- Half Mile (15-min walk) from Center of City

DOWNTOWN NEWTON INSET



Greenways

Map 5.3, on the facing page, shows existing and proposed greenways in Newton. Greenways are an integral part of the pedestrian network. These proposed greenways reflect recommendations from previous planning efforts in Newton, including the five area plans detailed in Chapter 2. Their alignment has also been evaluated and refined during the recent update of the Newton Parks & Recreation Master Plan, and during the planning phase of this project. Table 5.3 below outlines each greenway segment's extents, length, and whether the greenway was recommended in a previous plan; the number in the table corresponds to the numbered labels in Map 5.3.

Pedestrian Connectors

In addition to greenways, Map 5.3, at left, shows proposed pedestrian connectors- short, paved segments that connect pedestrian facilities across short distances, usually a retrofit solution to connect two streets or pathways. Pedestrian connectors provide residential areas with direct pedestrian access to parks, trails, greenspaces, and other recreational areas. They most often serve as small path connections to and from the larger pedestrian network, typically having their own rights-of-way and easements. Additionally, these smaller paths can be used to provide pedestrian connections between dead-end streets, cul-de-sacs, and access to nearby destinations not provided by the street network.

Qualities of well-designed pedestrian path connectors include:

- » Pedestrian connectors should remain open to the public.
- » Path pavement shall be at least 8' wide to accommodate emergency and maintenance vehicles, meet ADA requirements and be considered suitable for multi-use.
- » Path widths should be designed to be less than 8' wide only when necessary to protect large mature native trees over 18" in caliper, wetlands or other ecologically sensitive areas.
- » Paths should slightly meander whenever possible.

Table 5.3 Greenways

	Name/Description	From	To	Length (mi.)	Previous Plans Recs?
1	Heritage Trail- north extension	W. 7th St.	Northwest Blvd.	1.025	Heritage Trail Plan (HTP)
2	Heritage Trail- north extension spur	Old Conover-Startown Rd.	GW #1	0.323	HTP
3	Heritage Trail- 20th Street parallel	Northwest Blvd.	N. Ashe Ave.	0.345	Core Area Plan, HTP
4	Heritage Trail- Discovery HS	N. Ashe Ave.	N. Main Ave	0.315	Core Area Plan, HTP
5	Heritage Trail- northeast extension	N. Main Ave.	N. Rankin Ave.	0.363	Heritage Trail Plan
6	Heritage Trail- Rankin Rd.	E. 20th St.	Town Creek	0.520	Heritage Trail Plan
7	Heritage Trail- Town Creek NE	E. 18th St.	NC Hwy. 10	1.717	Core Area Plan, HTP
8	Heritage Trail- Town Creek NE- spur	GW #7	E. Trace Dr.	0.630	Core Area Plan
9	Heritage Trail- Town Creek EW	NC Hwy. 10	S. Caldwell Ave.	0.252	Core Area Plan, HTP
10	Heritage Trail- Town Creek SE	S. Caldwell Ave.	Southwest Blvd.	1.427	SE Area Plan, HTP
11	Smyre Creek	Southwest Blvd.	NC Hwy. 16	2.230	SE Area Plan
12	eastern Newton N-S greenway	Mt. Olive Church Rd.	Smyre Creek	2.448	SE Area Plan, HTP, Core Area Plan
13	eastern Newton N-S east spur	GW #12	Mt. Olive Church Rd.	0.665	Core Area Plan
14	eastern Newton N-S west spur	GW #7	GW #12	0.526	Heritage Trail Plan
15	Northeast Newton connector	E. 2nd St.	E. 8th St.	0.436	Core Area Plan
16	Southeast Newton Connector	E. A St.	GW #10	0.569	Core Area Plan
17	Brady Ave. Connector	S. Brady Ave	GW #10	0.376	Core Area Plan
18	Clark Creek Greenway	NC Hwy. 10	Old Conover-Startown Rd.	1.239	Parks & Rec Master Plan
19	Maiden Rail with Trail	GW #10	Main St., Maiden, NC	5.001	North Newton
20	Southside Park Trails	existing greenway	parking lot	0.640	
21	Heritage Trail- south extension*	NC Hwy. 10	Southside Park	1.953	Carolina Thread Trail (CTT)
22	Clark Creek	Southside Park	Rome Jones Rd.	2.680	Parks & Rec Master Plan, CTT

* The alignment for this connection is yet to be determined. Further study is recommended to identify connectivity options between NC-10 and Southside Park.

Table 5.4 Pedestrian Connectors

	Name/Description	From	To	Length (mi.)
A	N. Frye Ave. Connector	W. 16th St.	GW #3	0.065
B	W. J St. Connector	W. J St.	Southwest Blvd.	0.060
C	Herman St. Connector	E. Herman St.	GW #16	0.027
D	E. I St. Connector	E. I St.	GW #10	0.038
E	E. J St. Connector	E. J St.	GW #10	0.019
F	Eastview Ave. Connector	Eastview Ave.	GW #10	0.013
G	Ray Ave. Connector	GW #7	Ray Ave.	0.100

Sidepaths

A sidepath is a facility that is separated from the roadway and designed for a variety of users, including bicyclists, walkers, hikers, joggers, wheelchair users, and skaters. Also known as shared-use paths, they may be paved or unpaved and are the preferred facility for novice and average bicyclists. Shared-use paths are located within the roadway corridor right-of-way, adjacent to the roadway.

Proposed sidepaths for Newton are shown as a dashed yellow line on the Map 5.0 and 5.4 in this chapter. General characteristics include:

- Sidepaths in Newton should be 10'-12' in width.
- Surface types vary according to use, but paved asphalt is standard for shared-use paths accommodating bicyclists and other wheeled users.

Table 5.5 Sidepaths

Roadway	From	To	Length (mi.)
W. 7th St.	Old Conover-Startown Rd.	Northwest Blvd.	0.960
W. 15th St	Old Conover-Startown Rd.	Northwest Blvd.	0.720
E. 20th St.	N. Rankin Rd.	McLin Creek	0.819
Burris Rd.	E.20th St.	Travis Rd.	1.338
McLin Creek Rd.	McLin Creek	NC 16 Bypass	0.124
Mount Olive Church Rd.	N. Rankin Ave.	Travis Rd.	1.243
NC Highway 10	Pitts Ave.	Caleb Setzer Rd.	1.094
NC Highway 10	Southwest Blvd.	Jacob Fork Park	5.503
NC Highway 16	Eastmont Ave.	Shuford Circle Dr.	1.599
NC Highway 16 Bypass- east side	Conover Blvd.	NC Highway 16	6.657
NC Highway 16 Bypass- west side	Conover Blvd.	NC Highway 16	6.658
Old Conover-Startown Rd.	Boundary St.	Startown Rd.	3.502
E. P St. extension- east side	St. James Church Rd.	NC Highway 16	0.752
E. P St. extension- west side	St. James Church Rd.	NC Highway 16	0.735
Radio Station Rd.	Old Conover-Startown Rd.	Southwest Blvd.	1.157
Saint James Church Rd.	E. D St.	Smyre Farm Rd.	1.632
Saint Paul's Church Rd.	Conover Blvd.	Old Conover-Startown Rd.	1.657
Startown Rd.	Sandy Ford Rd.	Wyoming St.	1.989
US 321 Business- east side	Conover Blvd.	W. I St.	2.934
US 321 Business- east side	S. College Ave.	E. O St.	0.026
US 321 Business- west side	Conover Blvd.	Southside Park	4.162





MAP 5.5 RECOMMENDED FACILITIES - INTERSECTION IMPROVEMENTS

PEDESTRIAN FACILITY RECOMMENDATIONS

Intersection Improvements

-  Unsignalized
-  Signalized
-  RR xing

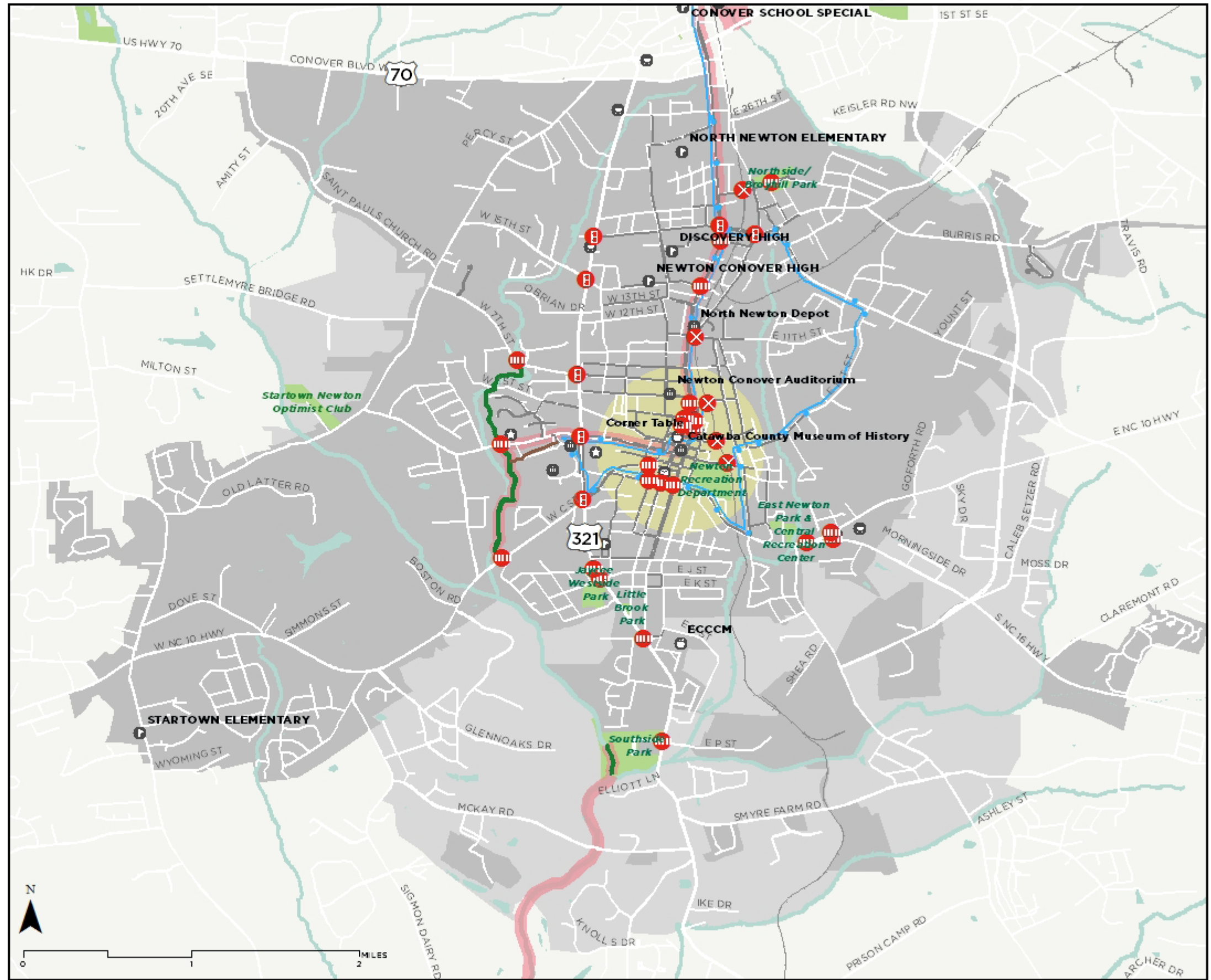
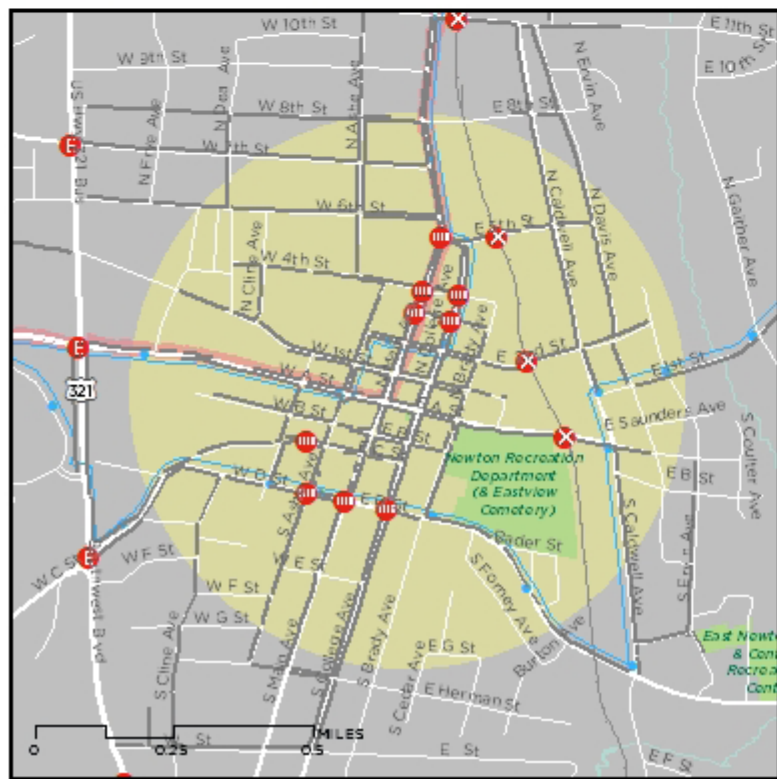
EXISTING PEDESTRIAN FACILITIES

-  Sidewalk-existing
-  Natural Surface Trail
-  Greenway-existing
-  Carolina Thread Trail alignment

BACKGROUND & BOUNDARIES

-  Point of Interest
-  Food Outlet
-  Post Office
-  Government / Cultural
-  Banks
-  College/University
-  Grocery Store
-  Library
-  School
-  Bus Stop
-  Greenway Public Transit Route
-  Railroad
-  Streams
-  Lakes & Ponds
-  Parks
-  Newton City Limits
-  Extra Territorial Jurisdictions
-  Half Mile (15-min walk) from Center of City

DOWNTOWN NEWTON INSET



INTERSECTION IMPROVEMENTS

A field analysis was conducted in order to assess existing facilities at intersections along key corridors in Newton. This analysis, coupled with steering committee input, and previous planning efforts helped to identify locations where crossing facility improvements are needed. Map 5.5, on the facing page, shows the locations of proposed intersection improvements overlaid with key destinations. Details of the recommendations are provided in Table 5.6 below and continuing on the following pages. In addition, the recommended improvements for five prioritized intersections are depicted in detailed cutsheets, starting on page 5-23.

General characteristics of intersection improvements include:

- » Crossings that link to sidewalks on each side of the road should possess curb cuts with ramps and marked crosswalks (which helps to satisfy the standards set forth by the American Disability Act of 1991)
- » Busy intersections could be improved with high-visibility crosswalks and crosswalk signage (see Appendix A for more design details.)
- » Crossings across (not just parallel to) busy streets are especially needed in the downtown district.



The figure above depicts a concept plan for realigning the intersection of Main Ave. and College Ave. to improve vehicular circulation and pedestrian safety. (Source: Newton Streetscape Master Plan & North Newton Master Plan)

Table 5.6 Intersection Improvements

Roadway 1	Roadway 2	Existing Condition	Recommended Improvement
N. Main Ave.	20th St.	signalized intersection	Add striped crosswalks and pedestrian-actuated crossing signals, Repair broken sidewalks and curb ramps where necessary
N. Main Ave.	19th St.	stop signs facing 19th St. on both sides, crosswalks across 19th St. on both sides	Add striped crosswalks across Main Ave., Repair broken sidewalks, crumbling asphalt in crosswalks, and curb ramps where necessary
N. Main Ave.	15th St.	stop signs facing 15th St. on both sides, crosswalks across 15th St. on both sides	Add striped crosswalks across Main Ave., Repair broken sidewalks and curb ramps where necessary
N. Main Ave.	E. 3rd St.	stop sign facing 3rd St., crosswalk across 3rd St.	Add striped crosswalks across Main Ave., Repair broken sidewalks and curb ramps where necessary
N. Main Ave.	N. College Ave.	unsignalized 3-way intersection	Add striped crosswalks across Main Ave. and College Ave., Realign intersection to improve vehicular and pedestrian traffic (See figure below from the Newton Streetscape Master Plan)
S. Main Ave.	D St.	signalized intersection	Add striped crosswalks in all 4 directions, with pedestrian-actuated crossing signals, Add/repair curb ramps where necessary
N. College Ave.	20th St.	signalized intersection	Add striped crosswalks on south and west sides, with pedestrian-actuated crossing signals Add/repair curb ramps where necessary
N. College Ave.	E. 4th St.	stop signs facing 4th St. on both sides, crosswalks across 4th St. on both sides	Add striped crosswalks across College Ave., Repair broken sidewalks and curb ramps where necessary
N. College Ave.	E. 3rd St.	stop signs facing 3rd St. on both sides, crosswalks across 3rd St. on both sides	Add striped crosswalks across College Ave., Repair broken sidewalks and curb ramps where necessary
S. College Ave.	E. D. St.	signalized intersection	Add striped crosswalks in all 4 directions, with pedestrian-actuated crossing signals, Add/repair curb ramps where necessary
S. Ashe Ave.	W. D St.	stop signs facing Ashe Ave. on both sides, crosswalk across Ashe Ave. on north side (faded)	Add striped crosswalks across D St., Repair broken sidewalks and curb ramps where necessary
US 321-Business	W. 20th St.	signalized intersection	Add crosswalks and sidewalks/sidepaths, pedestrian-actuated crossing signals (See Priority Project Cutsheets on page 5-21 for plan concept and photosimulation details)
US 321-Business	W. 15th St.	signalized intersection	Add crosswalks, pedestrian refuge islands, pedestrian-actuated crossing signals, sidewalks/sidepaths (See Priority Project Cutsheets on page 5-22 for plan concept and photosimulation details)
US 321-Business	W. 7th St.	signalized intersection	Add crosswalks, pedestrian-actuated crossing signals, sidewalks/sidepath, curb ramps where necessary
US 321-Business	W. A St./Radio Station Rd.	signalized intersection, pedestrian-actuated crossing signal across US 321-B (without crosswalk)	Add crosswalks, pedestrian refuge island, sidewalks/sidepaths (See Priority Project Cutsheets on pages 5-24 and 5-25 for plan concept and photosimulation details)

(continues on following page)

Table 5.6 Intersection Improvements (continued from previous page)

Roadway 1	Roadway 2	Existing Condition	Recommended Improvement
US 321-Business	W. C St. (NC Hwy. 10)	signalized intersection	Add crosswalks, pedestrian refuge islands, pedestrian-actuated crossing signals, sidewalks/sidepaths (See Priority Project Cutsheets on page 5-23 for plan concept and photosimulation details)
US 321-Business	Hamilton St.	stop sign facing Hamilton St.,	Add striped crosswalk as pedestrian facilities are added along US 321-B and Hamilton St.
US 321-Business	W. J St.	stop sign facing W. J St.	Add RRFB, crosswalk, pedestrian connector, sidewalks/sidepaths (See Priority Project Cutsheets on page 5-26 for plan concept and photosimulation details)
US 321-Business	E. O St.	stop signs facing E. O St. and N. Gate Rd.	Add striped crosswalk as pedestrian facilities are added along US 321-B and Hamilton St.
US 321-Business	Technibilt Dr.	stop signs facing Technibilt Dr. and Southside Park driveway	Add striped crosswalk across US 321-Business
NC Hwy. 16-Business	NC 10 - NC 16 connector	1 stop sign on connector	Add crosswalk across NC Hwy 16, Add sidewalks/sidepath and curb ramps
NC Hwy. 10	NC 10 - NC 16 connector	1 stop sign on connector	Add crosswalk across NC Hwy 16, Add sidewalks/sidepath and curb ramps
NC Hwy. 10	NC Hwy. 16-Business	1 stop sign facing NC 10 westbound	Add crosswalk across NC Hwy 10/16, Add sidewalks/sidepath and curb ramps
Heritage Trail Greenway	W. 7th St.	unsignalized intersection	As greenway is extended north of 7th St., add RRFB and striped crosswalk across 7th St.
Heritage Trail Greenway	Radio Station Rd.	unsignalized crossing, striped crosswalk	Add Rectangular Rapid Flashing Beacon (RRFB) and signage --> Added March 2017
Heritage Trail Greenway	NC Hwy. 10	unsignalized intersection	As greenway is extended south of NC 10, add RRFB and striped crosswalk across NC 10
RR Tracks	E. 22nd St.	RR crossing gates, sidewalk on north side of street ends before RR xing	Improve abrupt termination of sidewalk, Clarify pedestrian path with painted striped crossing
RR Tracks	E. 11th St.	RR crossing, sidewalk on north side of street	Repair broken sidewalk west of RR crossing, Repair uneven surface at track crossing
RR Tracks	E. 5th St.	RR crossing, sidewalk on north side of street	Repair broken sidewalk near RR crossing
RR Tracks	E. 2nd St.	RR crossing gates, sidewalk on south side of street ends before RR xing	Improve abrupt termination of sidewalk Clarify pedestrian path with painted striped crossing
RR Tracks	E. A St	RR crossing, sidewalk on south side of street	Repair broken sidewalk near RR crossing
W. C St.	Newton Library	midblock crossing	Add striped crosswalk across C St. between library & parking lot
E. 22nd St.	N. Thomas Ave. & Northside/Broyhill Park	stop sign facing Thomas Ave., 1 striped crosswalk across Thomas Ave. and 5 across 22nd St.	Improve crossings to be high-visibility crossings or crossing tables to increase pedestrian safety and access to Northside/ Broyhill Park

Heritage Trail Greenway Crossing Recommendations

The Heritage Trail Greenway intersects four roadways. Each of these intersections was examined and assessed for necessary improvements to crossing treatments. Key roadway factors influencing the selected treatment include the posted speed limit, traffic volume, line of sight, street width, roadway and trail geometry, and intersection configuration.

The Radio Station Road crossing was improved in March 2017 with the addition of a Rectangular Rapid-Flashing Beacon (RRFB), which is a pedestrian-activated flashing beacon that warns approaching vehicles of the presence of pedestrians in the crosswalk (pictured below).

As the trail is extended to the north and south, the installation of RRFBs at West 7th Street and West C Street/NC Highway 10 intersections should also be considered to allow safe crossing. The crosswalks should also have highly-visible painted crosswalk stripes. For further design guidance, refer to Appendix A.



This RRFB was installed in March 2017 at the Radio Station Road crossing of the Heritage Trail Greenway

Intersection Improvements

Newton is already actively working to improve the safety of intersection crossings throughout the community. In addition to the Heritage Trail Greenway crossing on Radio Station Road that was improved with the RRFB (see previous page), the City has installed flashing pedestrian signs along E. 22nd Street near Northside/Broyhill Park to improve safe pedestrian access to the park. A new high-visibility crosswalk has also been installed along N. Ashe Avenue between Newton-Conover High School and Discovery High School to improve safe travel between the schools.



Other recent intersection improvements include the installation of flashing pedestrian signs along East 22nd Street near Northside/Broyhill Park.

Railroad Crossings

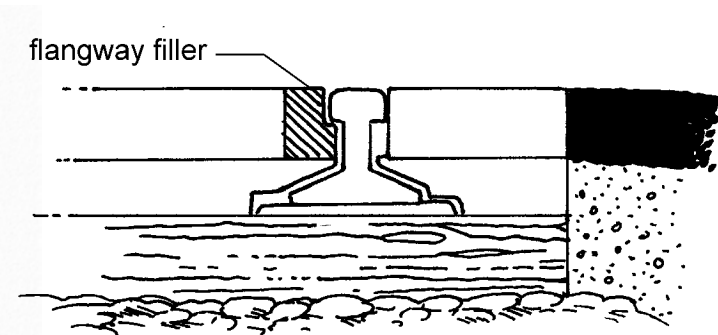
Railroad crossings present certain difficulties for pedestrians and are particularly hazardous to those who rely on wheeled devices for mobility. There are numerous railroad crossings in Newton with varying degrees of pedestrian safety and comfort issues. In general, there is poor access across railroad tracks. At-grade crossings are the most common type of crossing throughout Newton, and many of these are dangerous for pedestrians because of the uneven surfaces with the roadway and tracks. The railroad crossings have been evaluated in terms of how smooth the crossing is for pedestrians to cross and whether there is a clear path for pedestrians to follow safely across. Recommendations for improving pedestrian crossings on streets with high pedestrian-traffic are outlined in Table 5.6 on the following page.

General guidance for improving railroad crossings include:

- » Make the crossing level: Raise approaches to the tracks and the area between the tracks to the level of the top of the rail.
- » Use multiple forms of warning: Provide railroad crossing information in multiple formats, including signs, flashing lights, and audible sounds.
- » Clear debris regularly: Perform regular maintenance to clear debris from shoulder areas at railroad crossings.
- » Fill flangway with rubberized material or concrete slab (railroad crossings have flangway gaps that allow passage of the wheels of the train, but also have the potential to catch wheelchair casters and bicycle tires): Normal use of rail facilities causes buckling of paved-and-timbered rail crossings. Pavement buckling can be reduced or eliminated by filling the flangway with rubberized material, concrete slab, or other treatments. A beneficial effect of this is a decrease in long-term maintenance costs.



Installing a rubber surface rather than asphalt around railroad flangways reduces changes in level and other maintenance problems.



The "flangway filler" eliminates the gap in the path of travel for pedestrians crossing railroad tracks. The filler, consisting of a rubber insert, will deflect downward with the weight of a train and does not affect railway function.

INFRASTRUCTURE NETWORK & FUNDING ACTION STEPS

TASK	LEAD	SUPPORT	DETAILS	PHASE
Implement pedestrian facility design training for key staff.	City Manager, Planning & Zoning, Public Works	NCDOT Division 12	Become familiar with the design resources listed in Appendix A and available through NCDOT.	Short-term (2017)
Seek multiple funding sources and facility development options.	City Manager	City Council, Planning & Zoning, WPCOG, NCDOT Division 12	Chapter 6 contains project cost estimates and Appendix B contains potential funding opportunities. Explore available funding options and facilitate conversations with key stakeholders to identify potential partnerships. Leverage local funds or private investment towards federal funding opportunities, especially for larger investments such as Priority intersection projects.	Short-term/ Ongoing (2017 onward)
Develop a long- term funding strategy	City Manager & City Council	Planning & Zoning, WPCOG, NCDOT Division 12	To allow continued development of the project recommendations, capital funds for pedestrian facility construction should be set aside every year. Powell Bill funds should be programmed for facility construction. Funding for an ongoing maintenance program should also be included in the City's operating budget. Consideration for a transportation bond to fund priority projects should be given.	Short-term/ Ongoing (2017 onward)
Pursue funding through NC Parks and Recreation Trust Fund (PARTF) for Heritage Trail Greenway.	City Manager, Dept. of Transportation	Southwest Renewal Foundation	Review NC Parks and Recreation Trust Fund requirements and attend an informational workshop. PARTF funding announcements are made annually in August. Visit www.ncparks.gov for more information.	Mid-term (2018)
Ensure that priority projects are incorporated in NCDOT's prioritization process.	WPCOG	City Manager, Planning & Zoning, NCDOT Division 12	WPCOG, the City of Newton, and NCDOT Division 12 should coordinate to fund this plan's network recommendations over time. Use the plan cut-sheets and recommendation maps to communicate project details.	Mid-term (2018)
Improve crossing facilities across US 321-Business	Planning & Zoning, and NCDOT Division 12	City Manager, NCDOT Bike/Ped Division	City and NCDOT Division 12 should coordinate on design of future improvements to US 321-Business to ensure they accommodate pedestrian movement across the intersections.	Mid-term (2017-2019)
Maintain pedestrian facilities.	Public Works	City Manager, General Public (for reporting maintenance needs)	Newton should maintain existing and future pedestrian facilities, working with NCDOT where necessary. Adequate funding should be provided for maintenance activities every time a new pedestrian project or crossing improvement is design, funded, or implemented.	Ongoing (2017 onward)

PRIORITY PROJECTS CUTSHEETS

On the following pages, five priority projects are outlined in plan view concepts and photosimulations, depicting recommended pedestrian improvements for improving mobility, access and safety for pedestrians in Newton. These priority projects were identified through public input from the online survey, during the open house and charrette events, in consultation with the steering committee and city staff, and in order to meet on-going pedestrian facility and greenway development goals.

Criteria used to determine the priority projects included:

- » Connections to local destinations, such as downtown, schools, services (including the Catawba County Government Center), food outlets, and parks
- » Connections to existing trails, namely the Heritage Trail Greenway
- » Safety, especially in terms of crossing high-traffic arterials and high-crash locations
- » Public input during charrette



Intersection Improvements

INFRASTRUCTURE IMPROVEMENTS



US 321- BUSINESS CORRIDOR EVALUATED FOR INTERSECTION IMPROVEMENT

- + W. 20th St
- + W. 15th St.
- + W. C St
- + W. A St./Radio Station Rd.
- + W. I St./South Newton Elementary School

20th St. @ US 321-Business

Intersections, where pedestrians and vehicles come together, can be the most challenging part of a pedestrian network. If pedestrians cannot cross safely, mobility is limited and walking as a mode of transportation is discouraged. At right is the intersection of US 321-Business and W. 20th Street, with a before and after plan concept for how to improve pedestrian safety, mobility, and access at are around the intersection. These improvements include:

- New pedestrian facilities along US 321-Business (sidepaths) and 20th Street (sidewalks)
- New marked crosswalks at intersection and driveway crossings
- Pedestrian-activated crossing signals
- Reduced curb radii at intersection for traffic calming
- Potential lane reallocations to create bike lanes and planted medians to serve as pedestrian refuges in the crosswalks (not shown)





Intersection Improvements

INFRASTRUCTURE IMPROVEMENTS



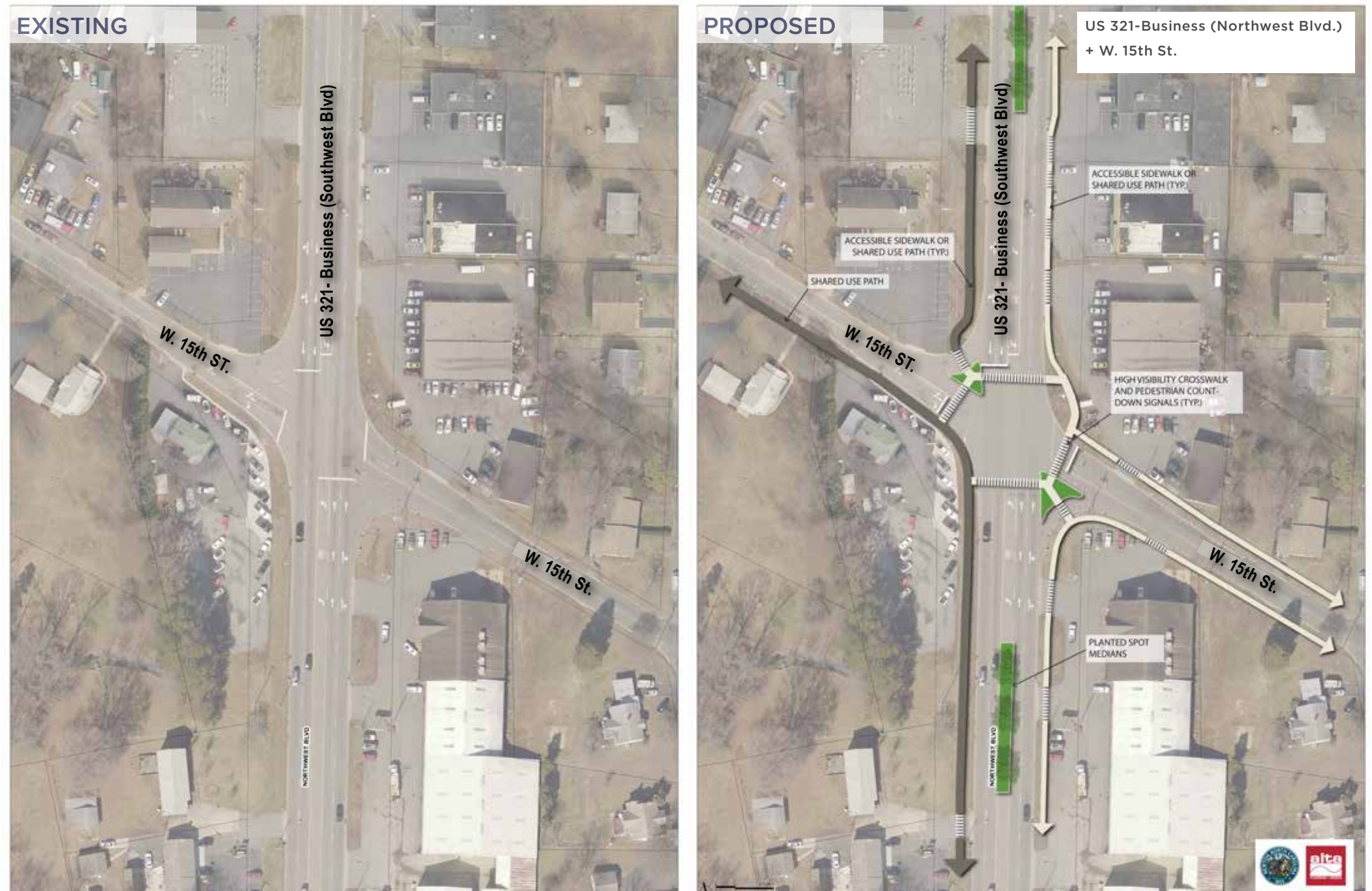
US 321-BUSINESS CORRIDOR EVALUATED FOR INTERSECTION IMPROVEMENT

- + W. 20th St
- + W. 15th St.
- + W. C St
- + W. A St./Radio Station Rd.
- + W. I St./South Newton Elementary School

15th St. @ US 321-Business

At right is the intersection of US 321-Business and W. 15th Street, with a before and after plan concept for how to improve pedestrian safety, mobility, and access at are around the intersection. Similar to the 20th Street intersection, these improvements include:

- New pedestrian facilities along US 321-Business (sidepaths) and 15th Street (sidewalks)
- New marked crosswalks at intersection and driveway crossings
- Pedestrian-activated crossing signals
- Planted median to calm traffic and improve aesthetics of pedestrian experience
- Pedestrian refuge islands to shorten crossing distance due to skewed intersection angle





Intersection Improvements

INFRASTRUCTURE IMPROVEMENTS



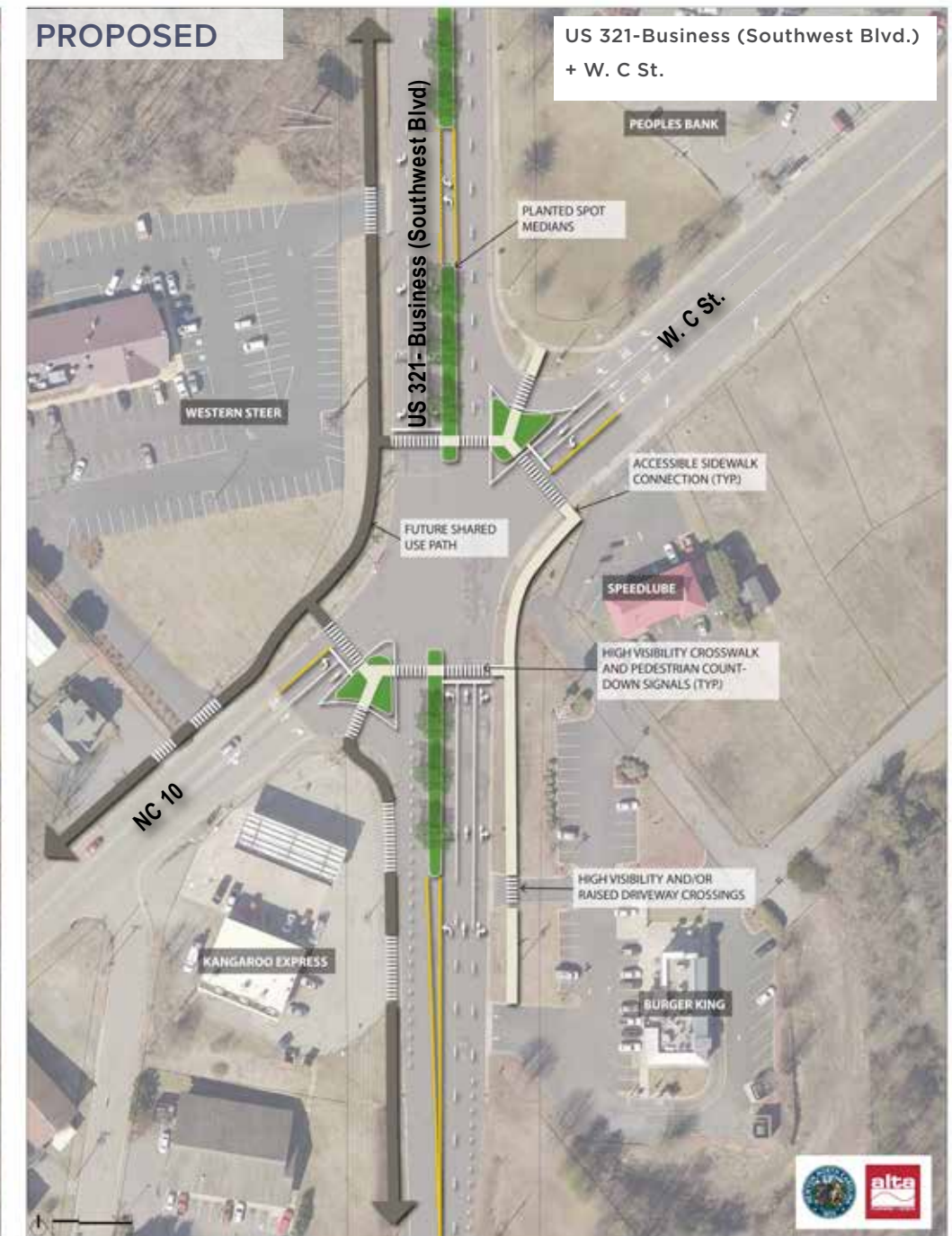
US 321-BUSINESS CORRIDOR EVALUATED FOR INTERSECTION IMPROVEMENT

- + W. 20th St
- + W. 15th St.
- + W. C St
- + W. A St./Radio Station Rd.
- + W. I St./South Newton Elementary School

W. C St. @ US 321-Business

At right is the intersection of US 321-Business and W. C Street (NC Hwy. 10), with a before and after plan concept for how to improve pedestrian safety, mobility, and access at are around the intersection. For this intersection, these improvements include:

- New pedestrian facilities along US 321-Business (sidepaths) and 15th Street (sidepath)
- New marked crosswalks at intersection and driveway crossings
- Pedestrian-activated crossing signals
- Potential lane reallocations to create planted medians to serve as pedestrian refuge islands to reduce crossing distance due to skewed intersection angle





Intersection Improvements

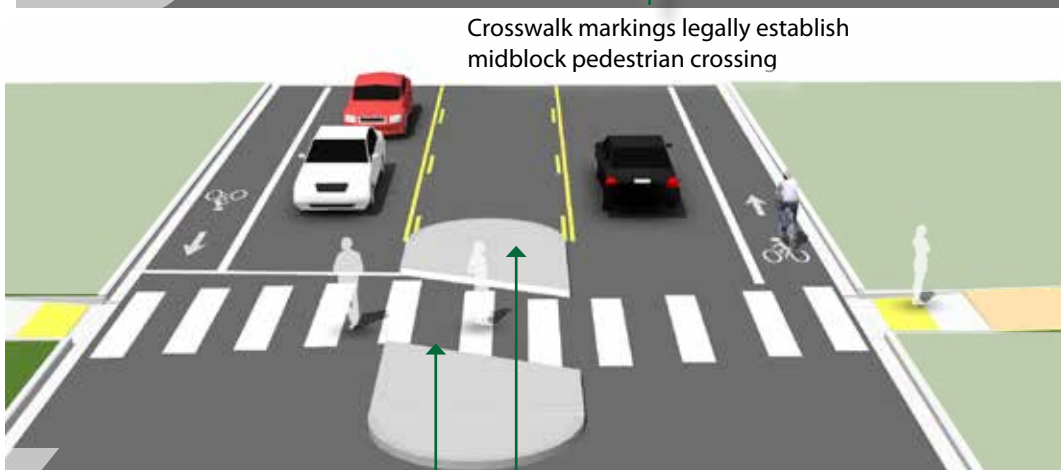
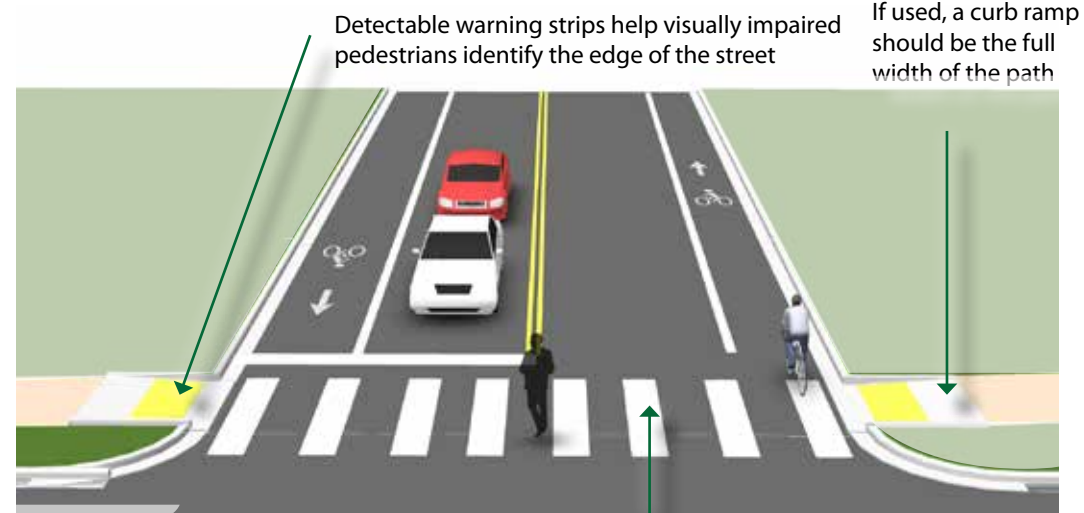
INFRASTRUCTURE IMPROVEMENTS



US 321 CORRIDOR EVALUATED FOR INTERSECTION IMPROVEMENT

- + W. 20th St
- + W. 15th St
- + W. C St
- + W. A St./Radio Station Rd.
- + W. I St./South Newton Elementary School

INTERSECTION DESIGN CONSIDERATIONS



Cut through median islands are preferred over curb ramps, to better accommodate bicyclists.

Can be landscaped to assist in positioning by pedestrians with vision disabilities.

W. A St./Radio Station Rd.

EXISTING



PROPOSED



Intersection at W.A Street/Radio Station Rd. at US 321



Intersection Improvements

INFRASTRUCTURE IMPROVEMENTS



US 321-BUSINESS CORRIDOR EVALUATED FOR INTERSECTION IMPROVEMENT

- + W. 20th St
- + W. 15th St.
- + W. C St
- + W. A St./Radio Station Rd.
- + W. I St./South Newton Elementary School

W. A St./Radio Station Rd.

The West A St./Radio Station Rd intersection with US 321-Business is a location that requires significant pedestrian improvements, as it is a key access point between the Catawba County Government Center and downtown Newton. It is a major gateway to the Heritage Trail Greenway to the west and the shopping centers to the east and north. This intersection already has pedestrian-activated crossing signals, but no marked crosswalks (a major concern for many public survey respondents). A pedestrian refuge island was recently added in the southeast corner of the intersection. The following additional improvements are recommended to increase safe pedestrian crossing at this busy intersection. These recommendations should be considered the next time US-321 Business is repaved:

- New pedestrian facilities along US 321- Business (sidepaths), Radio Station Rd. (sidepath) and W. A Street (sidepath and sidewalks) to connect to existing facilities, especially the Heritage Trail Greenway
- New marked crosswalks at intersection and driveway crossings
- Reduced curb radii at intersection for traffic calming





Intersection Improvements

INFRASTRUCTURE IMPROVEMENTS



US 321-BUSINESS CORRIDOR EVALUATED FOR INTERSECTION IMPROVEMENT

- + W. 20th St
- + W. 15th St.
- + W. C St
- + W. A St./Radio Station Rd.
- + W. I St./South Newton Elementary School

W. I St./South Newton Elementary School

A marked crossing at the intersection of West I Street and US 321-Business improves access to South Newton Elementary School and connectivity between Jaycee Park and Westside neighborhood, both of which were identified as key goals of the plan. An alternative crossing opportunity exists at Hamilton Street. A second alternative crossing location at J Street was evaluated (see following page), but was found to be less feasible due to the difficulty of meeting ADA requirements with its steep grade.

Pedestrian improvements at the I Street location include:

- New pedestrian facilities along US 321-Business (sidepath) to connect to the school and park
- Pedestrian-activated crossing signals (Rectangular Rapid Flash Beacon - 'RRFB')
- Wide landings to safely accommodate pedestrians while waiting to cross





Intersection Improvements

INFRASTRUCTURE IMPROVEMENTS



US 321-BUSINESS CORRIDOR EVALUATED FOR INTERSECTION IMPROVEMENT

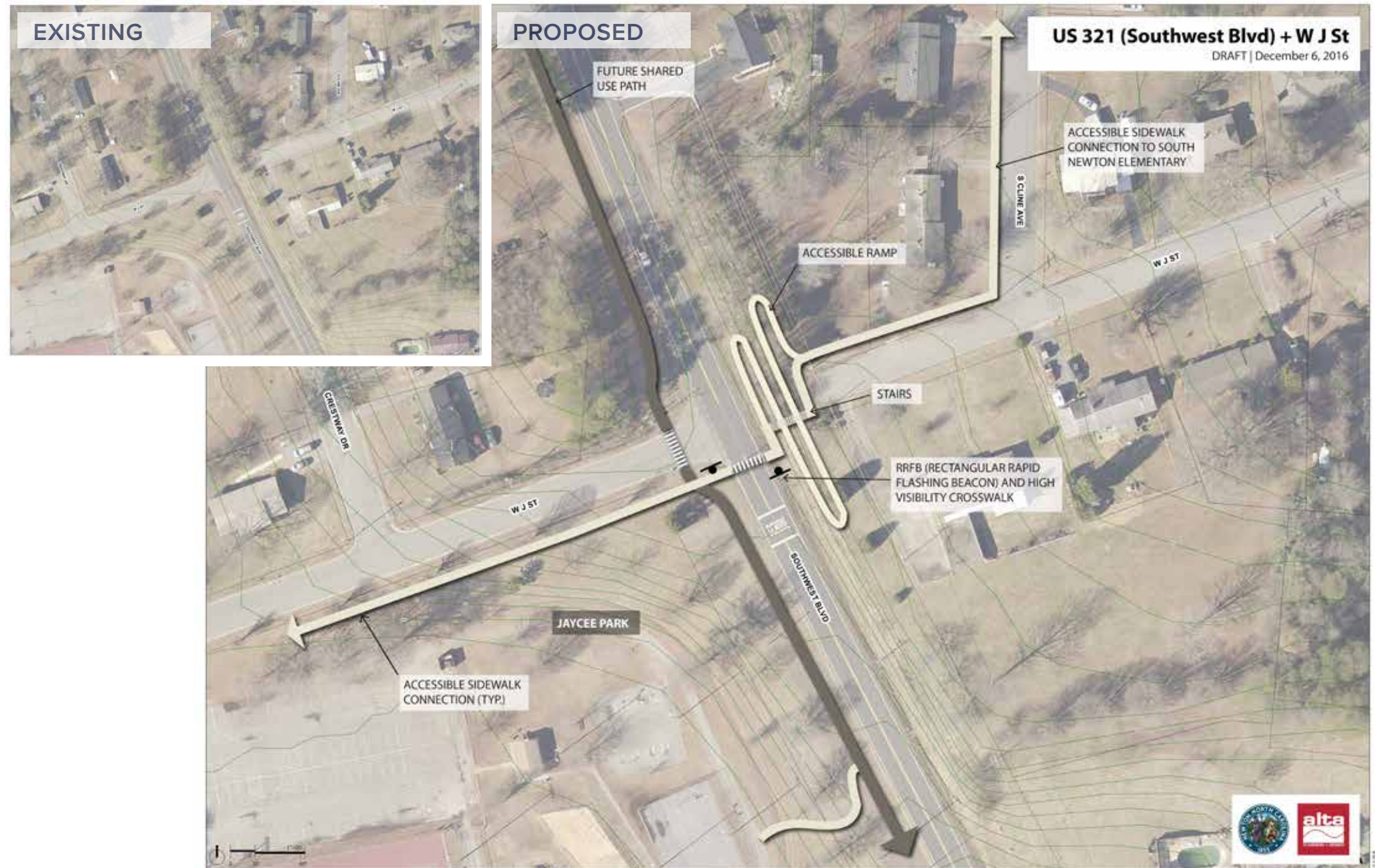
- + W. 20th St
- + W. 15th St.
- + W. C St
- + W. A St./Radio Station Rd.
- + W. I St./South Newton Elementary School

W. J St. Alternative

The feasibility of a marked crossing at the intersection of West J Street and US 321-Business was examined as an alternative to the I Street crossing on the previous page in order to improve access to Westside Jaycee Park and connectivity between South Newton Elementary School and Westside neighborhood. This crossing at J Street would require careful planning & engineering to meet ADA requirements across the steep grade. The I Street crossing was found to be the more feasible option.

Pedestrian improvements at J Street would include:

- New pedestrian facilities along US 321-Business (sidepaths), J Street (sidewalks), and S. Cline Ave (sidewalks) to connect to the park and school
- Pedestrian-activated crossing signals (Rectangular Rapid Flash Beacon - 'RRFB')
- Potential pedestrian refuge islands to shorten crossing distance due to skewed intersection angle (not shown in figure at right)





The murals throughout downtown Newton are great examples of street art that add to the appeal of the pedestrian experience in town.



These examples of sidewalk mosaic art might be considered for further enhancing Newton's pedestrian environment. Opportunities for partnering with the Arts Council and/or other non-profit organizations should be explored to fund and implement such beautification projects.



Moviegoers letting out from out from the theatre



6 Implementation

Chapter Contents:

Overview

How to Use this Plan

*Planning Level Cost
Estimates*

Performance Measures

*Organizational Framework
for Implementation*

*Implementation Action
Steps*

OVERVIEW

This chapter defines the priorities and structure for managing the implementation of the Newton Pedestrian Plan. Implementing the recommendations within this plan will require leadership and dedication to pedestrian facility development on the part of a variety of agencies. Equally critical, and perhaps more challenging, will be meeting the need for a recurring source of revenue. Even small amounts of local funding could be very useful and beneficial when matched with outside sources. Most importantly, the City need not accomplish the recommendations of this plan by acting alone; success will be realized through collaboration with regional and state agencies, the private sector, and non-profit organizations. Funding resources that may be available to Newton are presented in Appendix B of this plan.

Given the present day economic challenges faced by local governments (as well as their state, federal, and private sector partners), it is difficult to know what financial resources will be available at different time frames during the implementation of this plan. However, there are still important actions to take in advance of major investments, including key organizational steps, the initiation of education and safety programs, and the development of strategic, lower-cost sidewalk and crossing facilities. Following through on these priorities will allow the key stakeholders to prepare for the development of larger pedestrian and trail projects over time, while taking advantage of strategic opportunities as they arise.

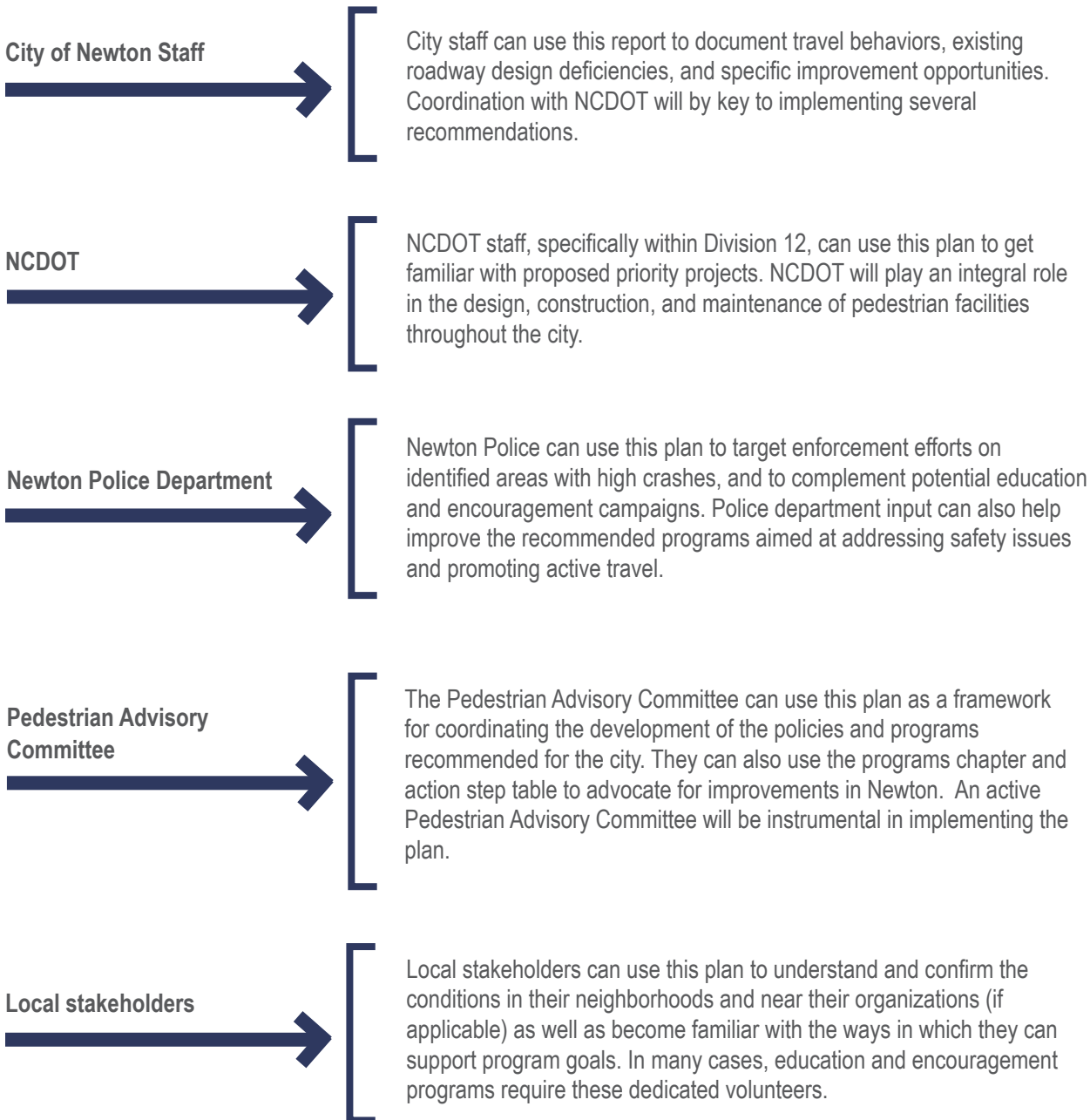


Members of the Pedestrian Plan steering committee could be good candidates for a standing Pedestrian Advisory Committee (PAC) for the City during implementation.

HOW TO USE THIS PLAN

At the heart of every successful pedestrian plan is a coordinated effort by City staff, law enforcement, and other partners to support safe travel on foot. Everyone has a key role to play in implementing this plan.

City of Newton staff should use this report to establish programs and policies that educate, encourage, and prioritize infrastructure investments proposed throughout the city.



PLANNING LEVEL COST ESTIMATES

Planning level cost estimates can be calculated based on the average quarter-mile cost estimates from the 2016 report out of UNC-Charlotte on the “Cost of Independent Bicycle and Pedestrian Facilities in North Carolina,” shown in the graphic below.

Minimum, Average and Maximum Construction Costs

Construction Costs	Facility Type							
	Sidewalk (0.25-mile)	Bicycle Lane (0.25-mile)	Shared Use Path (0.25-mile)	Mid-block Xwalk (1)	Paved Shoulder (0.25-mile)	Ped. Intersection Treatments (1)	Bicycle / Ped. Bridge (100 ft)	Shared Lane Markings (0.25-mile)
Minimum Cost	\$25,760	\$33,153	\$12,393	\$3,340	\$20,532	\$14,343	\$122,992	\$7,781
Percentile (10)	\$50,320	\$54,366	\$25,380	\$3,542	\$29,324	\$16,133	\$124,934	\$11,528
Percentile (25)	\$65,571	\$77,505	\$32,236	\$3,809	\$41,226	\$20,081	\$126,062	\$16,355
Percentile (50)	\$89,364	\$112,490	\$46,152	\$4,323	\$64,468	\$24,546	\$128,121	\$26,185
Average Cost	\$82,918	\$105,099	\$70,264	\$4,940	\$84,092	\$25,923	\$130,120	\$37,829
Percentile (75)	\$121,661	\$156,596	\$72,398	\$5,132	\$93,438	\$28,563	\$130,972	\$41,919
Percentile (90)	\$164,125	\$203,395	\$108,479	\$5,966	\$126,145	\$32,629	\$135,146	\$57,410
Maximum Cost	\$534,578	\$552,659	\$437,238	\$14,167	\$438,737	\$56,897	\$162,890	\$209,319

Source: Pulugurtha, S. (2017). “Cost of Independent Bicycle and Pedestrian Facilities.” a Presentation to the Participants of GLC MPO Training Session, March 2, 2017. Available at <https://connect.ncdot.gov/projects/BikePed/Documents/Bicycle%20and%20Pedestrian%20Facility%20Cost%20Tool%20-%20Report.pdf>

Based on the table above, the average cost to build a 5’ sidewalk is \$331,662/mile, and the cost to build a 10’-12’ wide sidepath is \$281,056/mile. However, it is important to note that costs for pedestrian and bicycle infrastructure vary greatly from city to city and site to site. All cost estimates should be used only for estimating purposes and not necessarily for determining actual bid prices for a specific infrastructure project. Furthermore, it is worth noting that the cost estimates calculated within the City of Newton Pavement & Sidewalk Condition Report of 2015 were approximately \$77,212/mile, far below the costs from the UNC-Charlotte report. The discrepancy lies in the fact that these cost estimates do not include right-of-way acquisition, utility conflicts, and other potential costs. Project cost estimates derived from these unit cost estimates should always be reevaluated by an engineer or project designer prior to implementation.

Cost estimates can be used to anticipate and identify funding sources. The order in which the projects are implemented will depend on a number of factors, including maintenance/resurfacing schedules, funding availability/schedules. Other factors that should be considered when prioritizing an implementation schedule are:

- » Near-term feasibility, such as facilities implemented through proposed or on-going projects or roadways slated for resurfacing
- » Equity: meeting the mobility needs of people throughout the Newton community, and especially those with limited mobility or access to other forms of transportation
- » Safety: safety from trip hazards, inadequate crossing facilities, deteriorating facilities, etc.
- » Previous plan recommendations
- » Connectivity: projects that bridge critical gaps in the network and connect to popular destinations, such as schools, parks, and downtown
- » Existing pedestrian demand, as evidenced through the Public Input process of this Plan and the equity analysis

PERFORMANCE MEASURES

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

The plan performance measures are based on the goals of the plan (see Page 1-2 in chapter 1). The performance measures are generally outcome-based, and the intent is to prioritize investments that do the best job of achieving desired plan outcomes. The performance measures were selected based on the Newton's ability to collect relevant data. Data and performance measures outlined in the following tables represent the way the Newton can track achievement of plan goals over time.

Table 6.2. Pedestrian Plan Performance Measure Targets

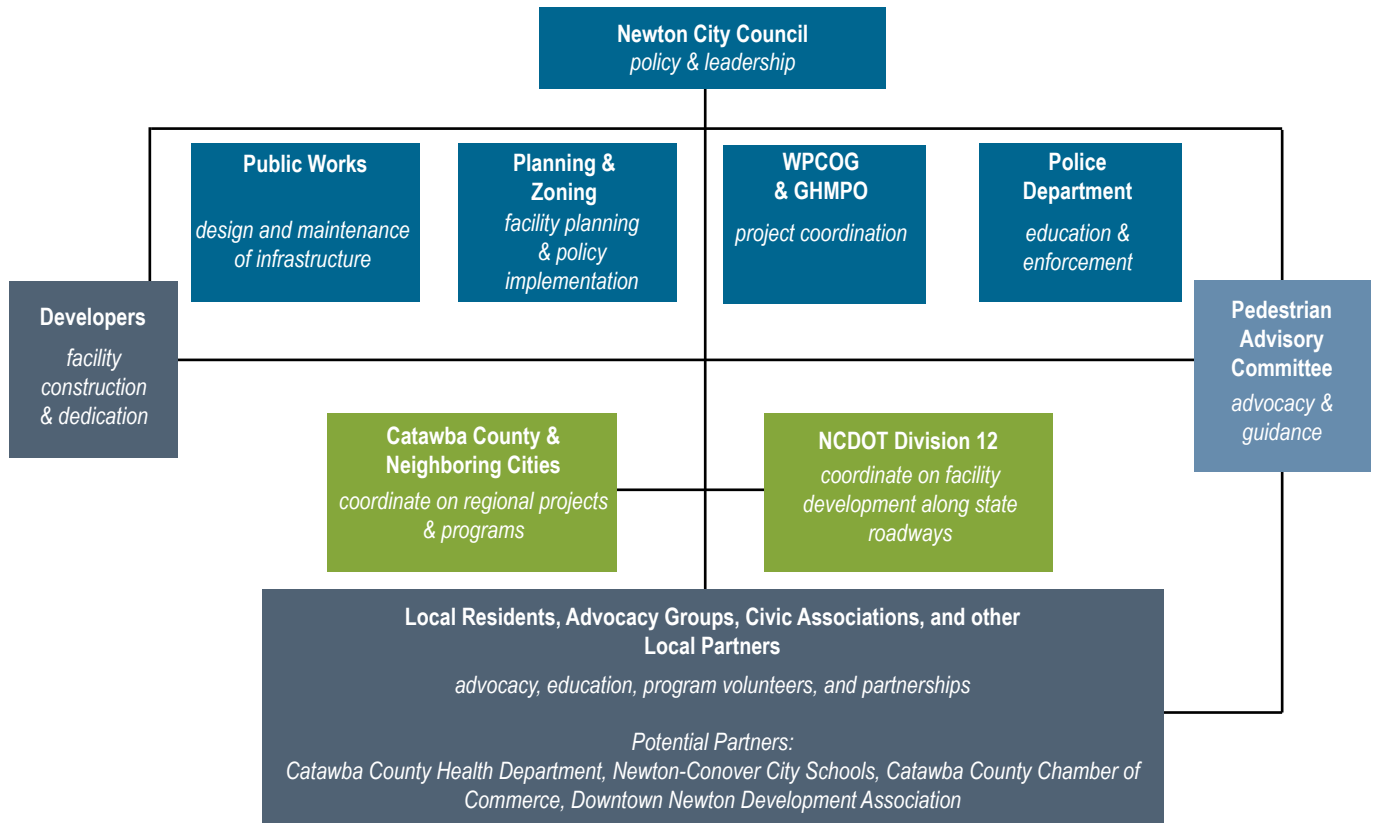
Goal	Performance Measure	Baseline Measurement	Performance Target
Safety	Pedestrian collision rate	2013 rate	Reduce pedestrian collision rate by half between 2017 and 2030
	Number of fatalities and serious injuries	2013 number	Zero fatalities by 2030
Connectivity	Percentage of pedestrian facility network completed	2017 percentage (calculate percentage based on final network map)	100 percent of pedestrian system constructed by 2030
Park Access	Percentage of pedestrian facility network completed within 1/4 mile of all Newton Parks & Recreation facilities	2017 percentage	100 percent of pedestrian system within 1/4 mile of Parks & Recreation facilities constructed by 2025
Livability & Well-being	Percentage of children and adults who meet physical activity recommendations	2016 percentage (according to Catawba County Health Department)	Increase childhood physical activity level by 5% and increase adult physical activity level by 5% by 2020

Table 6.3 Pedestrian Plan Performance Measure Trends

Goal	Performance Measure	Baseline Measurement	Desired Trend
Safety	Per capita pedestrian collision rate	2013 rate	Decrease
Connectivity	Key travel sheds completed	2017 percentage of key travel sheds completed	Increase
Park Access	Pedestrian network complete near P&R facilities	2017 percentage	Increase
Livability & Well-being	Self-reported physical activity	2015 Catawba County's Community Health Assessment	Increase

ORGANIZATIONAL FRAMEWORK FOR IMPLEMENTATION

The key players and steps involved in implementation are summarized in this organizational framework, and described in more detail within the action step tables in chapters 3, 4, 5, and 6.



IMPLEMENTATION ACTION STEPS

TASK	LEAD	SUPPORT	DETAILS	PHASE
Communicate the goals of this plan and its top priority projects to other local and regional groups.	City Manager, PAC	Planning & Zoning Department, WPCOG	The purpose of this step is to network with potential project partners, and to build support for implementing the top projects. Possible groups to receive a presentation: WPCOG, Catawba County Health Department, Newton-Conover City Schools Health Advisory Committee, Downtown Newton Development Association, Catawba County Chamber of Commerce, NCDOT Planning Branch, etc.	Short-term/ Ongoing (Beginning 2017)
Designate an advisory committee for the implementation of this plan.	City Council	City Manager, Project Steering Committee	Using the steering committee formed to oversee the development of this plan, a standing Pedestrian Advisory Committee should be formed to focus on implementation of this plan. For the purpose of these action steps, this group will be referred to as "PAC" below.	Short-term (2017)
Begin annual meeting with key project partners.	City Manager, PAC	NCDOT, and local & regional stakeholders	Key project partners (see org. chart on page 6-18) should meet on an annual basis to evaluate the implementation of this Plan. Meetings could also include on-site tours of priority project corridors.	Short-term/ Ongoing (Beginning Fall 2017)
Monitor NCDOT resurfacing program, and STIP allocations.	Planning & Zoning Department	WPCOG, Public Works Department, NCDOT Division 12	Provisions should always be made to include a walking and bicycling facility as a part of street resurfacing projects. A determination of providing sidewalks on one or both sides is made during the planning process. Facility design standards such as widths of facilities and heights of handrails are presented in Appendix A: Design Guidelines.	Short-term/ Ongoing (Fall 2017)
Conduct a project review meeting.	Planning & Zoning Department	City Manager and all Departments, WPCOG	Review all existing Newton plans and priorities to identify overlap and shared goals. Look for opportunities to combine resources, leverage funding, and facilitate a more efficient project development process.	Short-term/ Ongoing (Spring 2018)
Implement high priority projects.	Planning & Zoning Department, Public Works Department	City Manager, NCDOT Division 12	By quickly moving forward on priority projects, Newton will demonstrate its commitment to carrying out this plan and will better sustain the enthusiasm generated during the public outreach stages of the planning process. Refer to Chapter 5: Network Recommendations for priority project ranking and the prioritization methodology.	Mid-term/ Ongoing (2018 onward)

IMPLEMENTATION ACTION STEPS (CONTINUED)

TASK	LEAD	SUPPORT	DETAILS	PHASE
Implement a Wayfinding Program.	Planning & Zoning Department	Public Works Department, WPCOG	A relatively low-cost, mid-term action that the City of Newton can pursue immediately is to develop and adopt a wayfinding signage style, policy, and procedure, to be applied throughout the entire community, to make it easier for people to find destinations. Posting signage that includes walk travel times to major destinations can help to increase awareness of the ease and efficiency of pedestrian travel. See Appendix A: Design Guidelines for more detailed guidance on signage and wayfinding improvements.	Mid-term (2018 onward)
Monitor plan performance measures.	Planning & Zoning Department	City Council, City Manager	The performance measures outlined on page 6-17 should be stated in an official report within two years after the plan is adopted.	Mid-term (2018-2019)
Secure Priority Greenway Trail Easements .	Parks & Recreation	City Manager, Dept. of Transportation	Explore opportunities to revise existing easements to accommodate public access greenway trail facilities. Similarly, as new easements are acquired in the future, the possibility of public access should be considered. Sewer easements are very commonly used for this purpose, offering cleared and graded corridors that easily accommodate trails. This approach avoids the difficulties associated with acquiring land, and it better utilizes the City's resources.	Mid-term (2018 onward)
Update Plan.	City Council & Pedestrian Advisory Committee	Planning & Zoning Department	This plan should be updated by 2022 (about five years from adoption). If many projects and programs have been completed by then, a new set of priorities should be established. If not, a new implementation strategy should be established.	Long-Term (2022)



OLD POST OFFICE PLAYHOUSE

10

The Old Post Office Playhouse

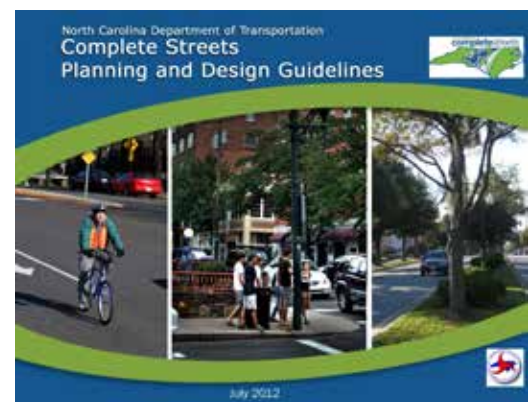
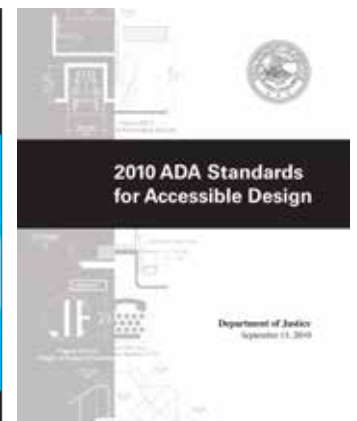
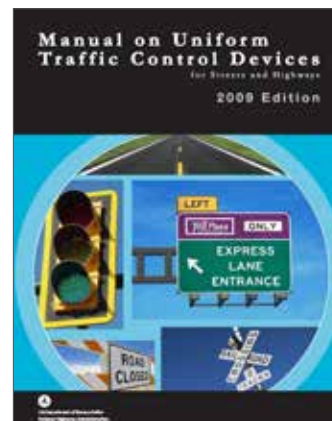


A Design Guidelines

OVERVIEW

The sections that follow serve as an inventory of pedestrian and bicycle design treatments and provide guidelines for their development. These treatments and design guidelines are important because they represent the tools for creating a walk- and bicycle-friendly, safe, and accessible community. The guidelines are not, however, a substitute for a more thorough evaluation by a landscape architect or engineer upon implementation of facility improvements. Some improvements may also require cooperation with the NCDOT for specific design solutions. The following standards and guidelines are referred to in this guide.

- The Federal Highway Administration's *Manual on Uniform Traffic Control Devices* (MUTCD) is the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings.
- Meeting the requirements of the Americans with Disabilities Act (ADA) is an important part of any bicycle and pedestrian facility project. The United States Access Board's *Public Rights-of-Way Accessibility Guidelines* (PROWAG) and the *2010 ADA Standards for Accessible Design* (2010 Standards) contain standards and guidance for the construction of accessible facilities.
- The *North Carolina Department of Transportation Complete Streets Planning and Design Guidelines*, released in 2012, provides NCDOT and municipality staff with a guide to planning and designing streets that meet the needs of all users, including pedestrians, bicyclists, and motor vehicles. The guidelines include detailed information on the processes, street types, and recommendations for creating complete streets in North Carolina.



Should these standards be revised in the future and result in discrepancies with this appendix, the standards should prevail for all design decisions. A qualified engineer or landscape architect should be consulted for the most up to date and accurate cost estimates.



PEDESTRIAN FACILITIES



DESIGN NEEDS OF PEDESTRIANS

Types of Pedestrians

Pedestrians have a variety of characteristics and the transportation network should accommodate 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. They also perceive the environment differently at various stages of their cognitive development. Older adults walk more slowly and may require assistive devices for walking stability, sight, and hearing. Table A-1 to the right summarizes common pedestrian characteristics for various age groups.

The MUTCD recommends a normal walking speed of three and a half feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to three feet per second for areas with older populations and persons with mobility impairments. While the type and degree of mobility impairment varies greatly across the population, the transportation system should accommodate these users to the greatest reasonable extent.

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 "dart out" intersection dash Poor judgment Sense of invulnerability
14-18	Improved awareness of traffic environment Poor judgment
19-40	Active, fully aware of traffic environment
41-65	Slowing of reflexes
65+	Difficulty crossing street Vision loss Difficulty hearing vehicles approaching from behind Could become disoriented or have limited cognitive abilities

PEDESTRIAN FACILITIES

Sidewalks

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel that is separated from vehicle traffic. Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped planting strip area. Sidewalks are a common application in both urban and suburban environments.

Attributes of well-designed sidewalks include the following:

- **Accessibility:** A network of sidewalks should be accessible to all users.
- **Adequate width:** Two people should be able to walk side-by-side and pass a third comfortably. Different walking speeds should be possible. In areas of intense pedestrian use, sidewalks should accommodate a high volume of walkers.
- **Safety:** Design features of the sidewalk should allow pedestrians to have a sense of security and predictability. Sidewalk users should not feel they are at risk due to the presence of adjacent traffic.
- **Continuity:** Walking routes should be obvious and should not require pedestrians to travel out of their way unnecessarily.
- **Landscaping:** Plantings and street trees should contribute to the overall psychological and visual comfort of sidewalk users, and be designed in a manner that contributes to the safety of people.
- **Drainage:** Sidewalks should be well graded to minimize standing water.
- **Social space:** There should be places for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can safely participate in public life.
- **Quality of place:** Sidewalks should contribute to the character of neighborhoods and business districts.



Sidewalk Widths



Sidewalk Obstructions and Driveway Ramps



Pedestrian Amenities



Pedestrian-Scale Lighting

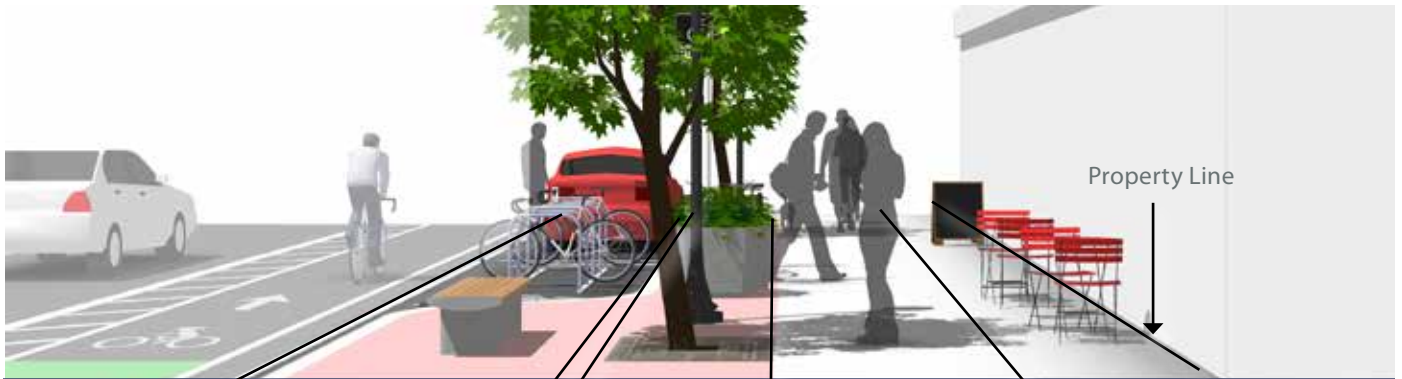
SIDEWALK WIDTHS

Description

The width and design of sidewalks will vary depending on street context, functional classification, and pedestrian demand. Below are preferred widths of each sidewalk zone according to general street type. Standardizing sidewalk guidelines for different areas of the city, dependent on the above listed factors, ensures a minimum level of quality for all sidewalks.

Guidance

It is important to provide adequate width along a sidewalk corridor. Two people should be able to walk side-by-side and pass a third comfortably. In areas of high demand, sidewalks should contain adequate width to accommodate the high volumes and different walking speeds of pedestrians. The Americans with Disabilities Act requires a 4 foot clear width in the pedestrian zone plus 5 foot passing areas every 200 feet.



STREET CLASSIFICATION	PARKING LANE/ ENHANCEMENT ZONE	FURNISHING/ GREEN ZONE	PEDESTRIAN THROUGH ZONE	FRONTAGE ZONE	TOTAL SIDEWALK AREA
Local Streets	7 feet	4 - 8 feet	5 - 6 feet	N/A	9 - 12 feet
Commercial Areas	8 - 10 feet	6 - 8 feet	6 - 12 feet	2 - 8 feet	14- 28 feet
Arterials and Collectors	8 - 10 feet	6 - 8 feet	4 - 12 feet	2 - 4 feet	12 -24 feet

↑
Areas that have significant accumulations of snow during the winter may prefer a wider furnishing zone for snow storage.

↑
Six feet enables two pedestrians (including wheelchair users) to walk side-by-side, or to pass each other comfortably

↑
Total sidewalk area excludes parking dimensions

Recommended dimensions shown here are based on the NCDOT Complete Streets Planning and Design Guidelines. Exact dimensions should be selected in response to local context and expected/desired pedestrian volumes.

MATERIALS AND MAINTENANCE

Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped boulevard. Surfaces must be firm, stable, and slip resistant.

ADDITIONAL REFERENCES

- USDOJ. (2010). ADA Standards for Accessible Design.
- United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).
- NCDOT. (2012). Complete Streets Planning and Design Guidelines.

SIDEWALK OBSTRUCTIONS AND DRIVEWAY RAMPS

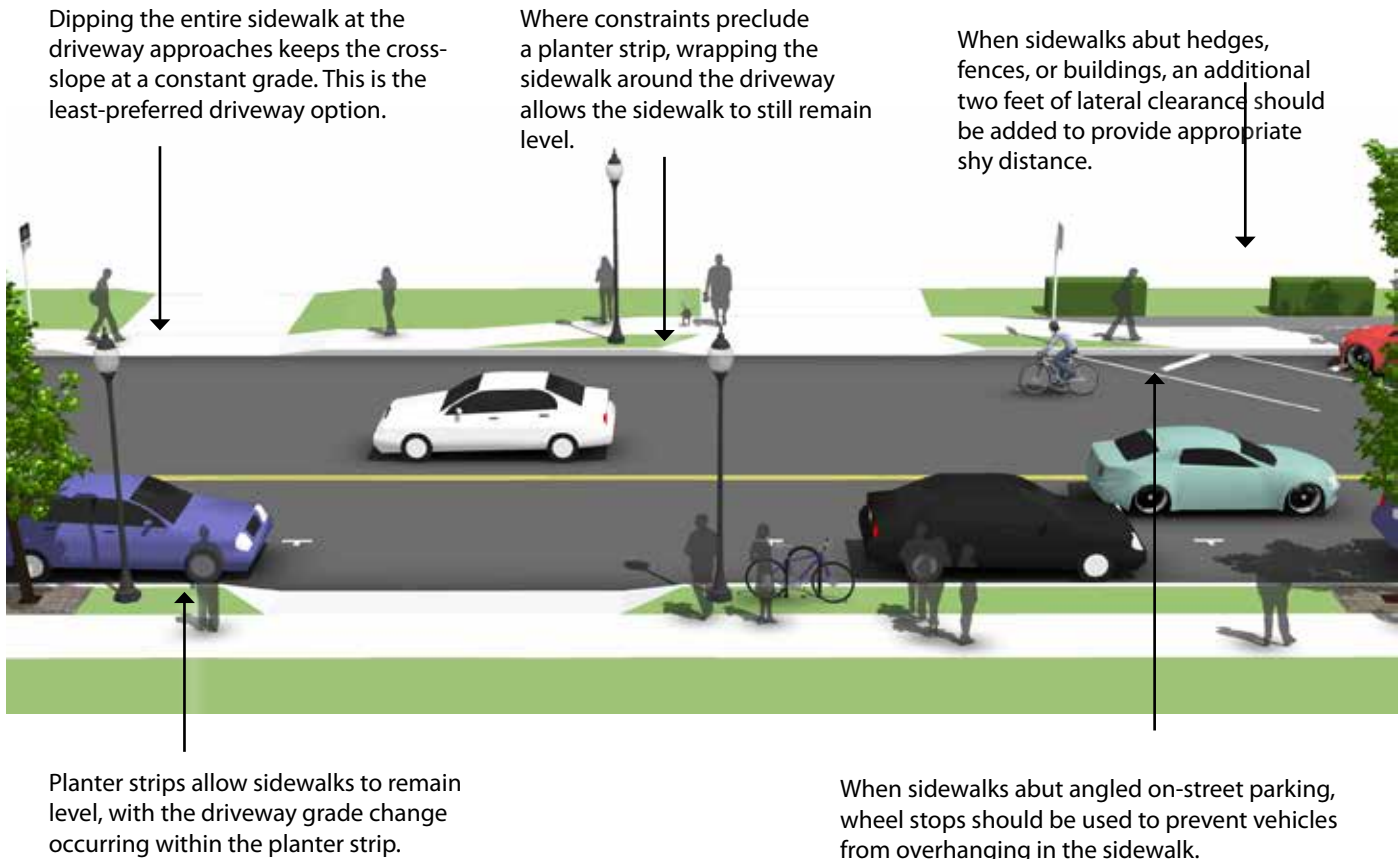
DESCRIPTION

Obstructions to pedestrian travel in the sidewalk corridor typically include driveway ramps, curb ramps, sign posts, utility and signal poles, mailboxes, fire hydrants and street furniture.

GUIDANCE

Reducing the number of accesses reduces the need for special provisions. This strategy should be pursued first.

Obstructions should be placed between the sidewalk and the roadway to create a buffer for increased pedestrian comfort.



Driveways are a common sidewalk obstruction, especially for wheelchair users. When constraints only allow curb-tight sidewalks, dipping the entire sidewalk at the driveway approaches keeps the cross-slope at a constant grade. However, this may be uncomfortable for pedestrians and could create drainage problems behind the sidewalk.

MATERIALS AND MAINTENANCE

Excessive cracks, gaps, pits, settling, and lifting of the sidewalk creates a pedestrian tripping hazard and reduces ADA accessibility; damaged sidewalks should be repaired.

ADDITIONAL REFERENCES

USDOJ. (2010). ADA Standards for Accessible Design.
United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).
AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

PEDESTRIAN AMENITIES

DESCRIPTION

A variety of streetscape elements can define the pedestrian realm, offer protection from moving vehicles, and enhance the walking experience. Pedestrian amenities should be placed in the furnishing zone on a sidewalk corridor. Signs, meters, and tree wells should go between parking spaces. Key features are presented below.

Street Trees

In addition to their aesthetic and environmental value, street trees can slow traffic and improve safety for pedestrians. Trees add visual interest to streets and narrow the street's visual corridor, which may cause drivers to slow down. It is important that trees do not block light or the vision triangle.

Street Furniture

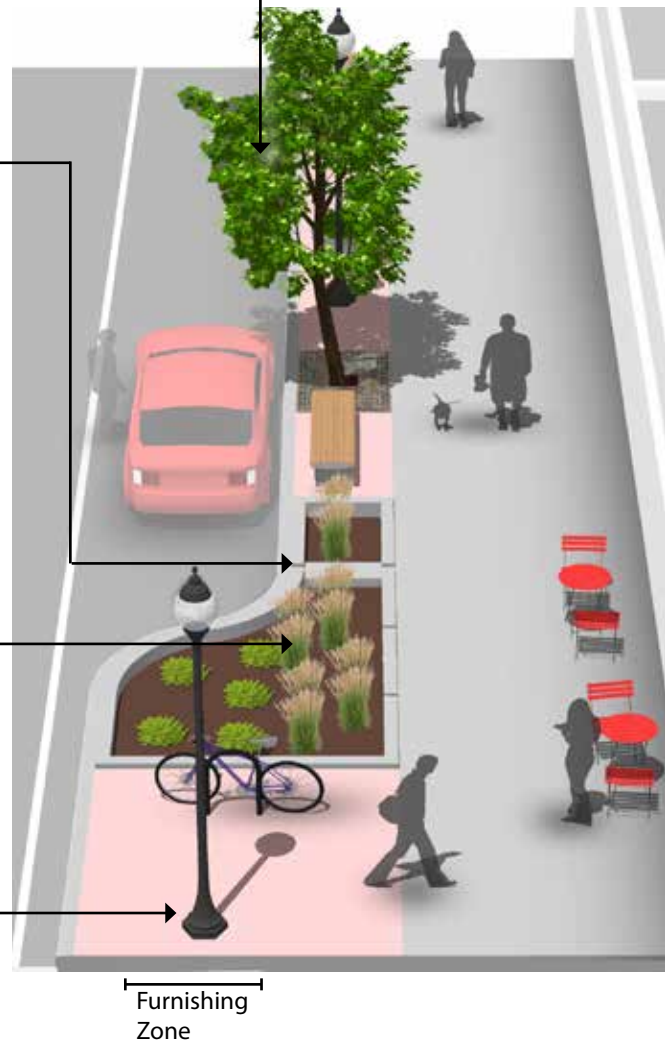
Providing benches at key rest areas and viewpoints encourages people of all ages to use the walkways by ensuring that they have a place to rest along the way. Benches should be 20" tall to accommodate elderly pedestrians comfortably. Benches can be simple (e.g., wood slats) or more ornate (e.g., stone, wrought iron, concrete). If alongside a parking zone, street furniture must be 3 feet from the curbface.

Green Features

Green stormwater strategies may include bioretention swales, rain gardens, tree box filters, and pervious pavements (pervious concrete, asphalt and pavers). Bioswales are natural landscape elements that manage water runoff from a paved surface. Plants in the swale trap pollutants and silt from entering a river system.

Lighting

Pedestrian scale lighting improves visibility for both pedestrians and motorists - particularly at intersections. Pedestrian scale lighting can provide a vertical buffer between the sidewalk and the street, defining pedestrian areas.



MATERIALS AND MAINTENANCE

Establishing and caring for your young street trees is essential to their health. Green features may require routine maintenance, including sediment and trash removal, and clearing curb openings and overflow drains.

ADDITIONAL REFERENCES

- United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).
- NCDOT. (2012). Complete Streets Planning and Design Guidelines.

PEDESTRIAN SCALE LIGHTING

DESCRIPTION

Pedestrian scale lighting improves visibility for both pedestrians and motorists - particularly at intersections and in areas of high pedestrian activity.

Pedestrian scale lighting is characterized by short light poles (around 15 feet high), close spacing, low levels of illumination (except at crossings), and the use of LED lamps to produce good color rendition, long service life and high energy efficiency.

Solar powered lights are available where utility connection is difficult in outlying areas.



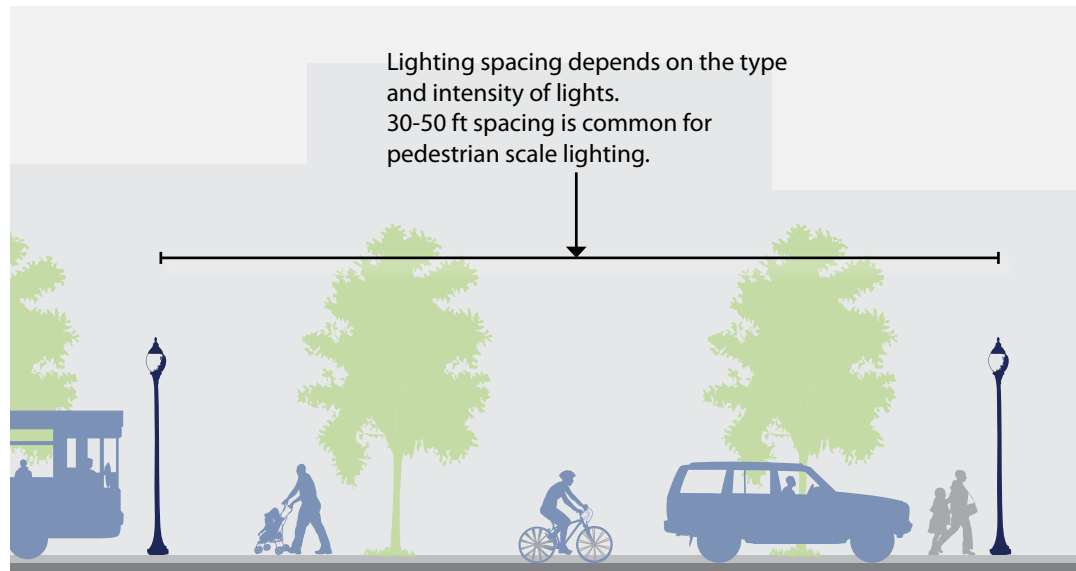
GUIDANCE

Locate lighting at the following locations:

- Pedestrian oriented areas
- Street crossings (intersection and mid block)
- Entrances and exits of bridges
- Areas near churches, schools, and community centers with nighttime pedestrian activity.

Placement details and dimensions:

- Spacing should be provided for minimum illumination levels while limiting excess light pollution
- Luminaries should direct light downward
- Lighting poles should be placed in the furniture zone of the sidewalk and not interfere with pedestrian travel.



DISCUSSION

Both street and pedestrian lighting levels should be considered for the same street corridor, especially in areas with tree canopy. "Dark Sky" lighting should be considered within residential districts.

MATERIALS AND MAINTENANCE

Low-cost light emitting diodes (LED) offer a wide range of light levels and can reduce long term utility costs.

ADDITIONAL REFERENCES

Illuminating Engineering Society of North America. (2005). American National Standard Practice for Roadway Lighting.
AASHTO. (2012). Guide for the Development of Bicycle Facilities.
FHWA. (2005). Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations.



PEDESTRIANS AT INTERSECTIONS

PEDESTRIANS AT INTERSECTIONS

Attributes of pedestrian-friendly intersection design include:

- **Clear Space:** Corners should be clear of obstructions. They should also have enough room for curb ramps, for transit stops where appropriate, and for street conversations where pedestrians might congregate.
- **Visibility:** It is critical that pedestrians on the corner have a good view of vehicle travel lanes and that motorists in the travel lanes can easily see waiting pedestrians.
- **Legibility:** Symbols, markings, and signs used at corners should clearly indicate what actions the pedestrian should take.
- **Accessibility:** All corner features, such as curb ramps, landings, call buttons, signs, symbols, markings, and textures, should meet accessibility standards and follow universal design principles.
- **Separation from Traffic:** Corner design and construction should be effective in discouraging turning vehicles from driving over the pedestrian area. Crossing distances should be minimized.
- **Lighting:** Adequate lighting is an important aspect of visibility, legibility, and accessibility.

These attributes will vary with context but should be considered in all design processes. For example, suburban and rural intersections may have limited or no signing. However, legibility regarding appropriate pedestrian movements should still be taken into account during design.



MARKED CROSSWALKS

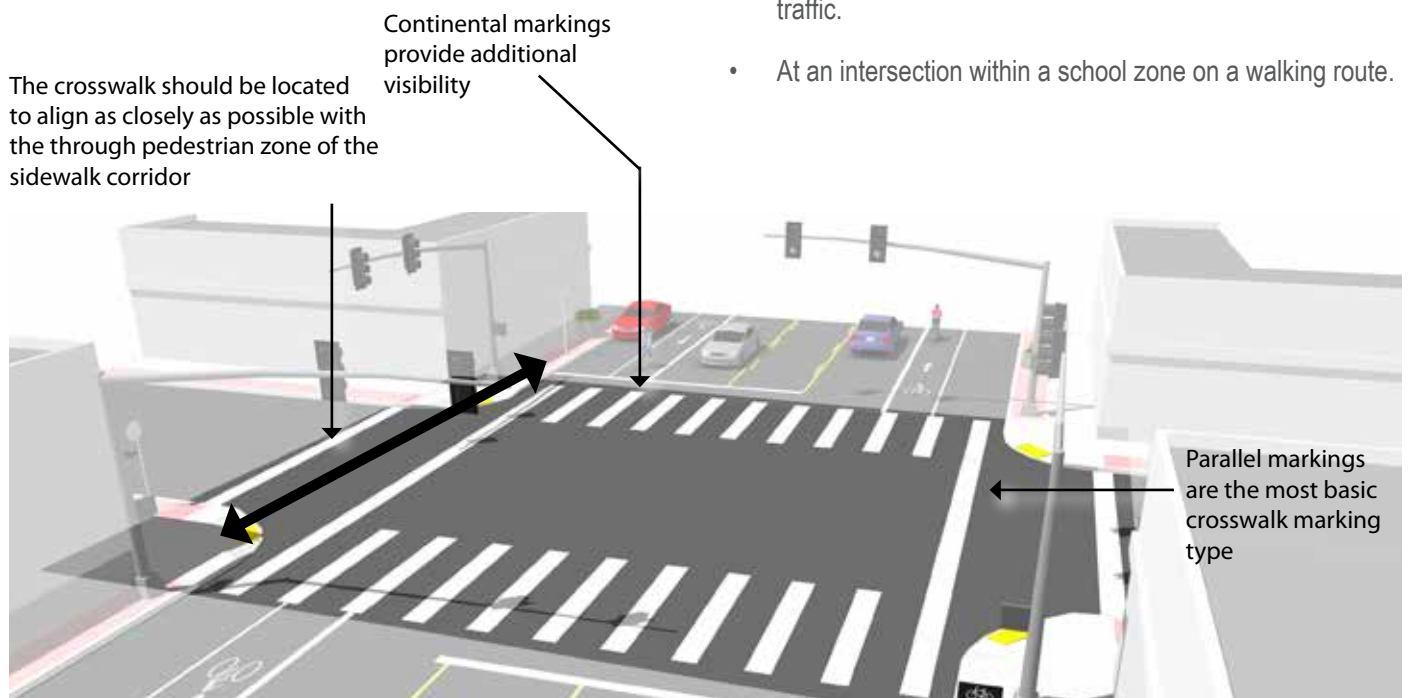
DESCRIPTION

A marked crosswalk signals to motorists that they must stop for pedestrians and encourages pedestrians to cross at designated locations. Installing crosswalks alone will not necessarily make crossings safer especially on multi-lane roadways.

At mid-block locations, crosswalks can be marked where there is a demand for crossing and there are no nearby marked crosswalks.

GUIDANCE

- At signalized intersections, all crosswalks should be marked. At unsignalized intersections, crosswalks may be marked under the following conditions:
- At a complex intersection, to orient pedestrians in finding their way across.
- At an offset intersection, to show pedestrians the shortest route across traffic with the least exposure to vehicular traffic and traffic conflicts.
- At an intersection with visibility constraints, to position pedestrians where they can best be seen by oncoming traffic.
- At an intersection within a school zone on a walking route.



Continental crosswalk markings should be used at crossings with high pedestrian use or where vulnerable pedestrians are expected, including: school crossings, across arterial streets for pedestrian-only signals, at mid-block crosswalks, and at intersections where there is expected high pedestrian use and the crossing is not controlled by signals or stop signs.

MATERIALS AND MAINTENANCE

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority. Thermoplastic markings offer increased durability compared to conventional paint.

ADDITIONAL REFERENCES

- FHWA. (2009). Manual on Uniform Traffic Control Devices. (3B.18)
- AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.
- FHWA. (2005). Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations.

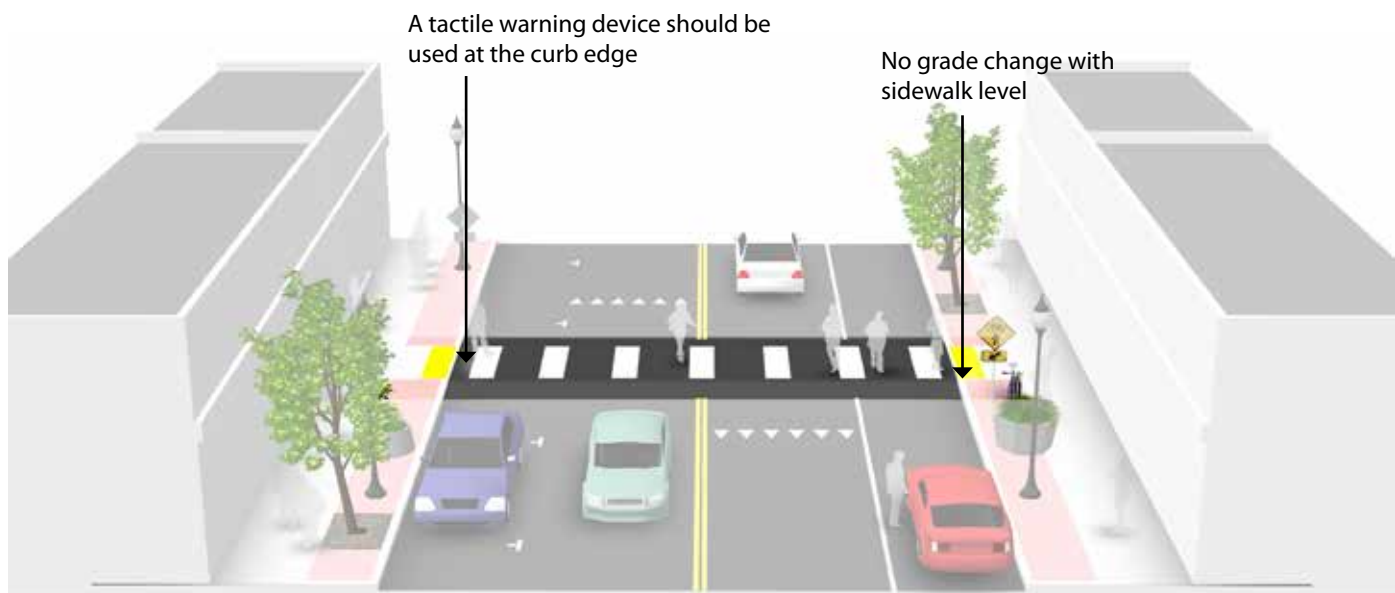
RAISED CROSSWALKS

DESCRIPTION

A raised crosswalk or intersection can eliminate grade changes from the pedestrian path and give pedestrians greater prominence as they cross the street. Raised crosswalks should be used only in very limited cases where a special emphasis on pedestrians is desired, and application should be reviewed on case-by-case basis.

GUIDANCE

- Use detectable warnings at the curb edges to alert vision-impaired pedestrians that they are entering the roadway.
- Approaches to the raised crosswalk may be designed to be similar to speed humps.
- Raised crosswalks can also be used as a traffic calming treatment.



Raised crosswalks have a traffic slowing effect which may be unsuitable on emergency response routes.

MATERIALS AND MAINTENANCE

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority.

ADDITIONAL REFERENCES

- FHWA. (2009). Manual on Uniform Traffic Control Devices. (3B.18)
- AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.
- USDOJ. (2010). ADA Standards for Accessible Design.
- NCDOT. (2012). Complete Streets Planning and Design Guidelines.

MEDIAN REFUGE ISLANDS

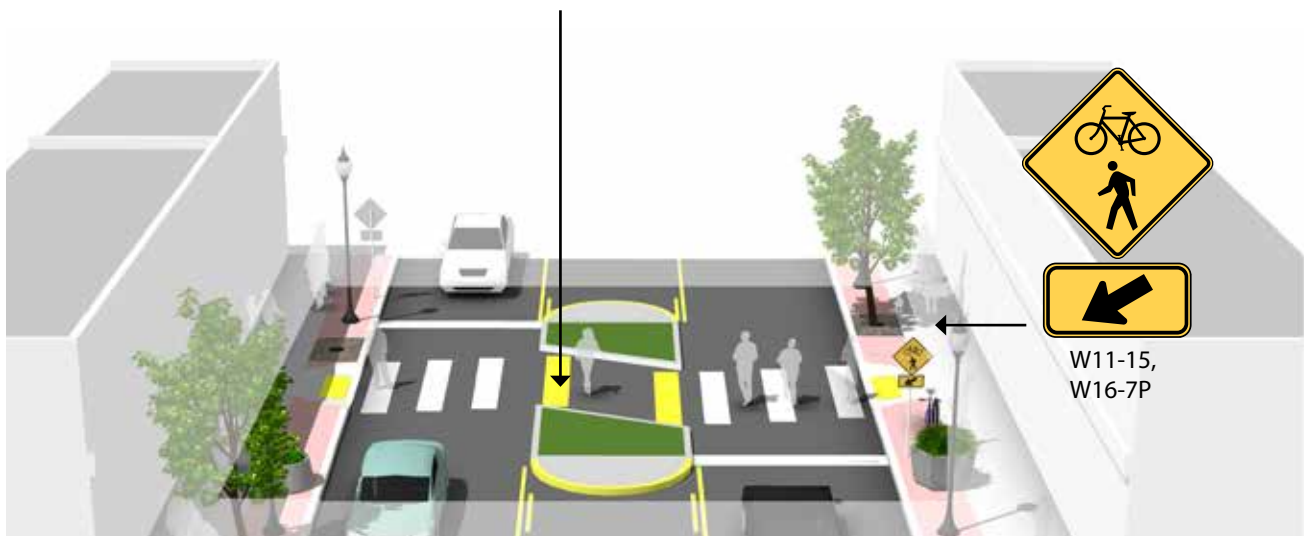
DESCRIPTION

Median refuge islands are located at the mid-point of a marked crossing and help improve pedestrian safety by allowing pedestrians to cross one direction of traffic at a time. Refuge islands minimize pedestrian exposure by shortening crossing distance and increasing the number of available gaps for crossing.

GUIDANCE

- Can be applied on any roadway with a left turn center lane or median that is at least 6' wide.
- Appropriate at signalized or unsignalized crosswalks
- The refuge island must be accessible, preferably with an at-grade passage through the island rather than ramps and landings.
- The island should be at least 6' wide between travel lanes (to accommodate bikes with trailers and wheelchair users) and at least 20' long.
- On streets with speeds higher than 25 mph there should also be double centerline marking, reflectors, and "KEEP RIGHT" signage.

Cut through median islands are preferred over curb ramps, to better accommodate bicyclists.



If a refuge island is landscaped, the landscaping should not compromise the visibility of pedestrians crossing in the crosswalk. Shrubs and ground plantings should be no higher than 1 ft 6 in. On multi-lane roadways, consider configuration with active warning beacons for improved yielding compliance.

MATERIALS AND MAINTENANCE

Refuge islands may collect road debris and may require somewhat frequent maintenance. Refuge islands should be visible to snow plow crews and should be kept free of snow berms that block access.

ADDITIONAL REFERENCES

FHWA. (2009). Manual on Uniform Traffic Control Devices.
AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.
NACTO. (2012). Urban Bikeway Design Guide.
NCDOT. (2012). Complete Streets Planning and Design Guidelines.

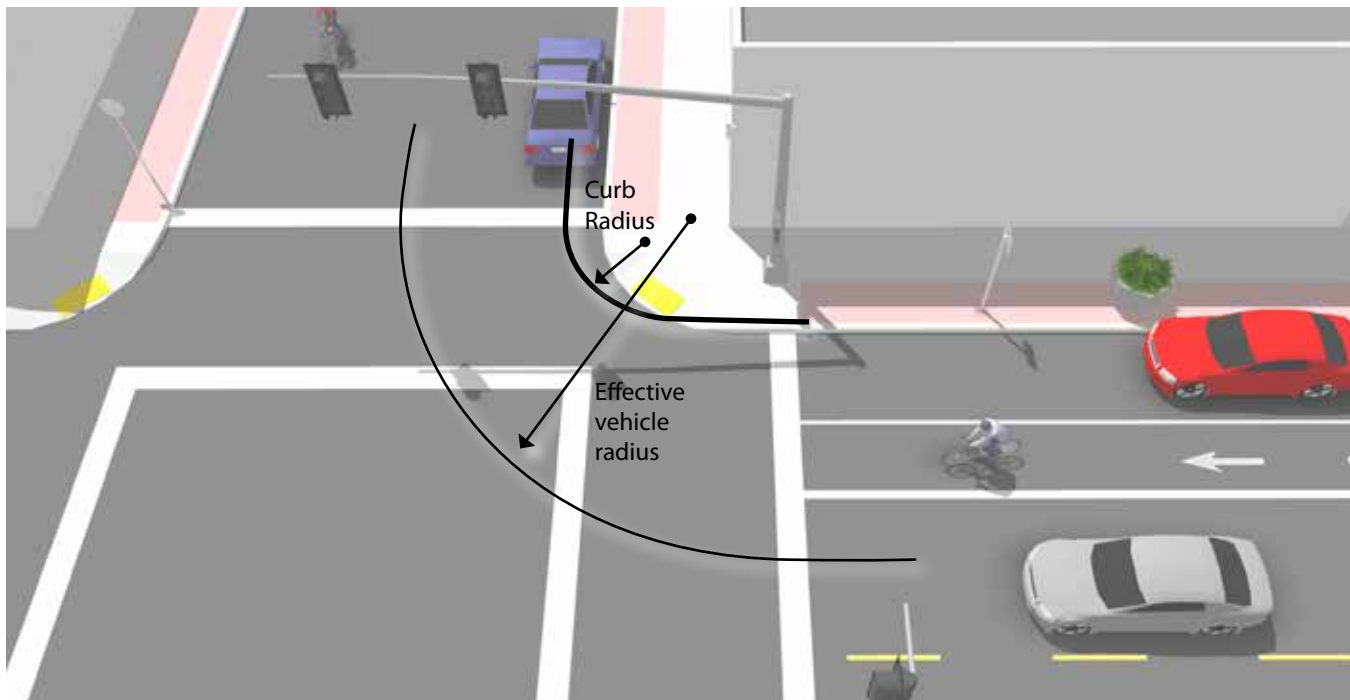
MINIMIZING CURB RADII

DESCRIPTION

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.

GUIDANCE

The radius may be as small as 3 ft where there are no turning movements, or 5 ft where there are turning movements, adequate street width, and a larger effective curb radius created by parking or bike lanes.



Several factors govern the choice of curb radius in any given location. These include the desired pedestrian area of the corner, traffic turning movements, street classifications, design vehicle turning radius, intersection geometry, and whether there is parking or a bike lane (or both) between the travel lane and the curb.

MATERIALS AND MAINTENANCE

Improperly designed curb radii at corners may be subject to damage by large trucks.

ADDITIONAL REFERENCES

- AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.
- AASHTO. (2004). A Policy on Geometric Design of Highways and Streets.
- NCDOT. (2012). Complete Streets Planning and Design Guidelines.

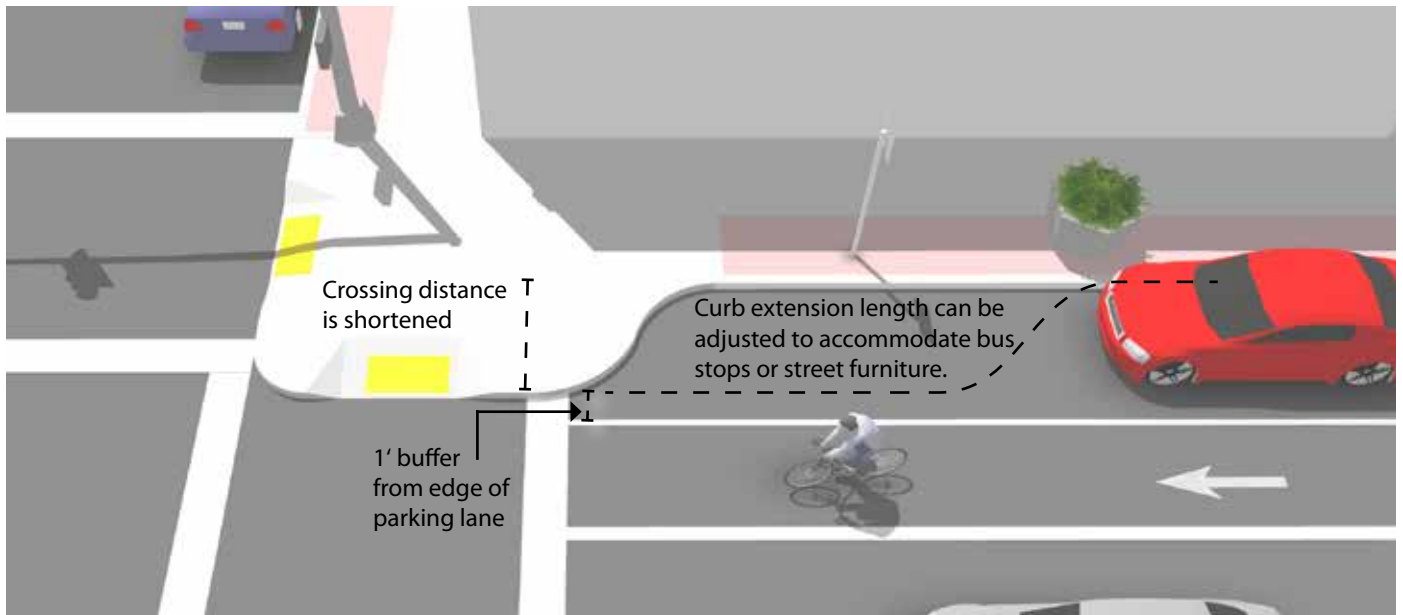
CURB EXTENSIONS

DESCRIPTION

Curb extensions minimize pedestrian exposure during crossing by shortening crossing distance and giving pedestrians a better chance to see and be seen before committing to crossing. They are appropriate for any crosswalk where it is desirable to shorten the crossing distance and there is a parking lane adjacent to the curb.

GUIDANCE

- In most cases, the curb extensions should be designed to transition between the extended curb and the running curb in the shortest practicable distance.
- For purposes of efficient street sweeping, the minimum radius for the reverse curves of the transition is 10 ft and the two radii should be balanced to be nearly equal.
- Curb extensions should terminate one foot short of the parking lane to maximize bicyclist safety.



If there is no parking lane, adding curb extensions may be a problem for bicycle travel and truck or bus turning movements.

MATERIALS AND MAINTENANCE

Planted curb extensions may be designed as a bioswale, a vegetated system for stormwater management.

ADDITIONAL REFERENCES

- AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities. AASHTO. (2004). A Policy on Geometric Design of Highways and Streets.
- NCDOT. (2012). Complete Streets Planning and Design Guidelines.

ADA COMPLIANT CURB RAMPS

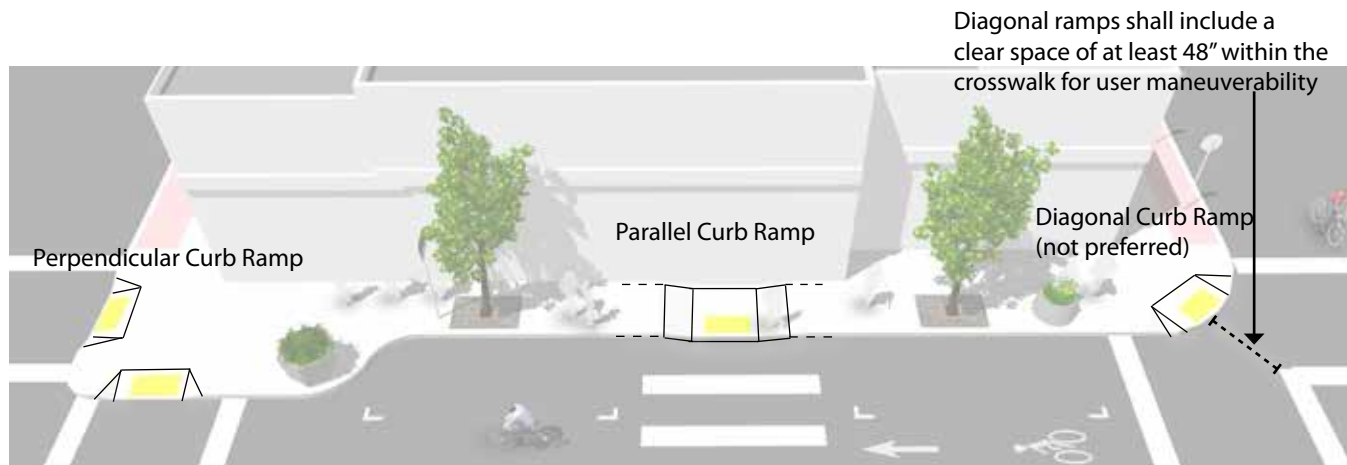
DESCRIPTION

Curb ramps are the design elements that allow all users to make the transition from the street to the sidewalk. There are a number of factors to be considered in the design and placement of curb ramps at corners. Properly designed curb ramps ensure that the sidewalk is accessible from the roadway. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access.

Although diagonal curb ramps might save money, they create potential safety and mobility problems for pedestrians, including reduced maneuverability and increased interaction with turning vehicles, particularly in areas with high traffic volumes. Diagonal curb ramp configurations are the least preferred of all options.

GUIDANCE

- The landing at the top of a ramp shall be at least 4 feet long and at least the same width as the ramp itself.
- The ramp shall slope no more than 1:50 (2.0%) in any direction.
- If the ramp runs directly into a crosswalk, the landing at the bottom will be in the roadway.
- If the ramp lands on a dropped landing within the sidewalk or corner area where someone in a wheelchair may have to change direction, the landing must be a minimum of 5'-0" long and at least as wide as the ramp, although a width of 5'-0" is preferred.



Crosswalk spacing not to scale. For illustration purposes only.

The edge of an ADA compliant curb ramp will be marked with a tactile warning device (also known as truncated domes) to alert people with visual impairments to changes in the pedestrian environment. Contrast between the raised tactile device and the surrounding infrastructure is important so that the change is readily evident. These devices are most effective when adjacent to smooth pavement so the difference is easily detected. The devices must provide color contrast so partially sighted people can see them.

MATERIALS AND MAINTENANCE

It is critical that the interface between a curb ramp and the street be maintained adequately. Asphalt street sections can develop potholes at the foot of the ramp, which can catch the front wheels of a wheelchair.

ADDITIONAL REFERENCES

- United States Access Board. (2002). Accessibility Guidelines for Buildings and Facilities.
- United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).
- USDOJ. (2010). ADA Standards for Accessible Design.

SIGNALIZATION

Crossing beacons and signals facilitate crossings of roadways for pedestrians and bicyclists. Beacons make crossing intersections safer by clarifying when to enter an intersection and by alerting motorists to the presence of pedestrians and bicyclists.

Flashing amber warning beacons can be utilized at unsignalized intersection crossings. Push buttons, signage, and pavement markings may be used to highlight these facilities for pedestrians, bicyclists and motorists.

Determining which type of signal or beacon to use for a particular intersection depends on a variety of factors. These include speed limits, traffic volumes, and the anticipated levels of pedestrian and bicycle crossing traffic.

An intersection with crossing beacons may reduce stress and delays for crossing users, and discourage illegal and unsafe crossing maneuvers.



Pedestrians at Signalized Crossings



Pedestrian Hybrid Beacon



Rectangular Rapid Flash Beacons



At right, a pedestrian has activated a Rectangular Rapid-Flashing Beacon (RRFB) in order to safely cross a busy street.

PEDESTRIANS AT SIGNALIZED CROSSINGS

DESCRIPTION

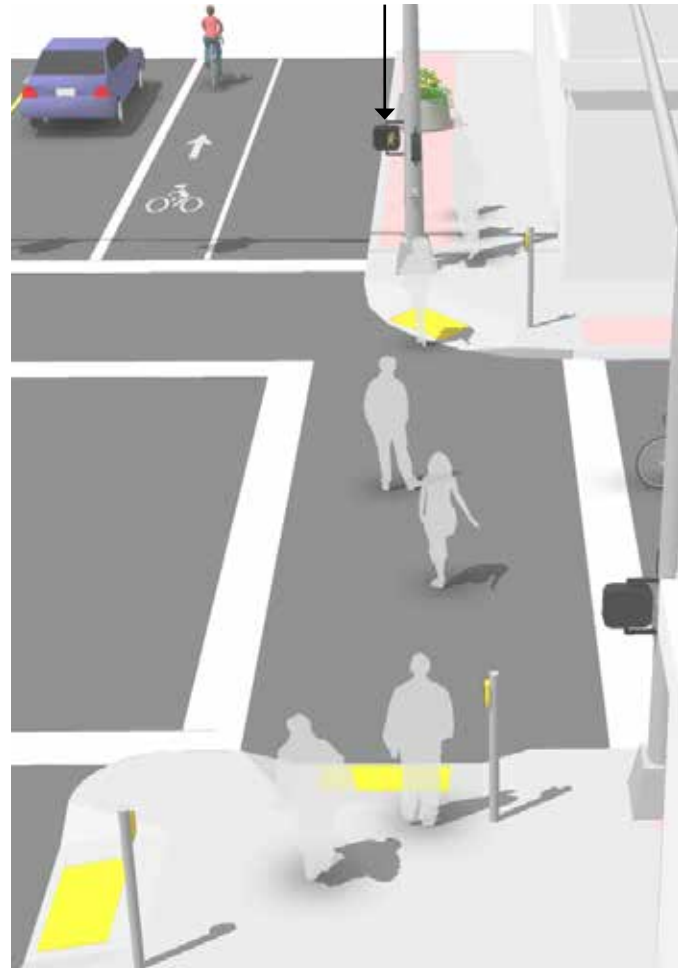
Pedestrian Signal Head

- All traffic signals should be equipped with pedestrian signal indications except where pedestrian crossing is prohibited by signage.
- Countdown signals should be used at all signalized intersections to indicate whether a pedestrian has time to cross the street before the signal phase ends.

Signal Timing

- Providing adequate pedestrian crossing time is a critical element of the walking environment at signalized intersections. The MUTCD recommends traffic signal timing to assume a pedestrian walking speed of 3.5' per second, meaning that the length of a signal phase with parallel pedestrian movements should provide sufficient time for a pedestrian to safely cross the adjacent street.
- At crossings where older pedestrians or pedestrians with disabilities are expected, crossing speeds as low as 3' per second may be assumed.
- In busy pedestrian areas such as downtowns, the pedestrian signal indication should be built into each signal phase, eliminating the requirement for a pedestrian to actuate the signal by pushing a button.

Audible pedestrian traffic signals provide crossing assistance to pedestrians with vision impairment at signalized intersections



Consider the use of a Leading Pedestrian Indication (LPI) to provide additional traffic protected crossing time to pedestrians

When push buttons are used, they 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, and 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.

MATERIALS AND MAINTENANCE

It is important to repair or replace traffic control equipment before it fails. Consider semi-annual inspections of controller and signal equipment, intersection hardware, and loop detectors.

ADDITIONAL REFERENCES

- United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).
- AASHTO. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.
- NCDOT. (2012). Complete Streets Planning and Design Guidelines.

PEDESTRIAN HYBRID BEACON

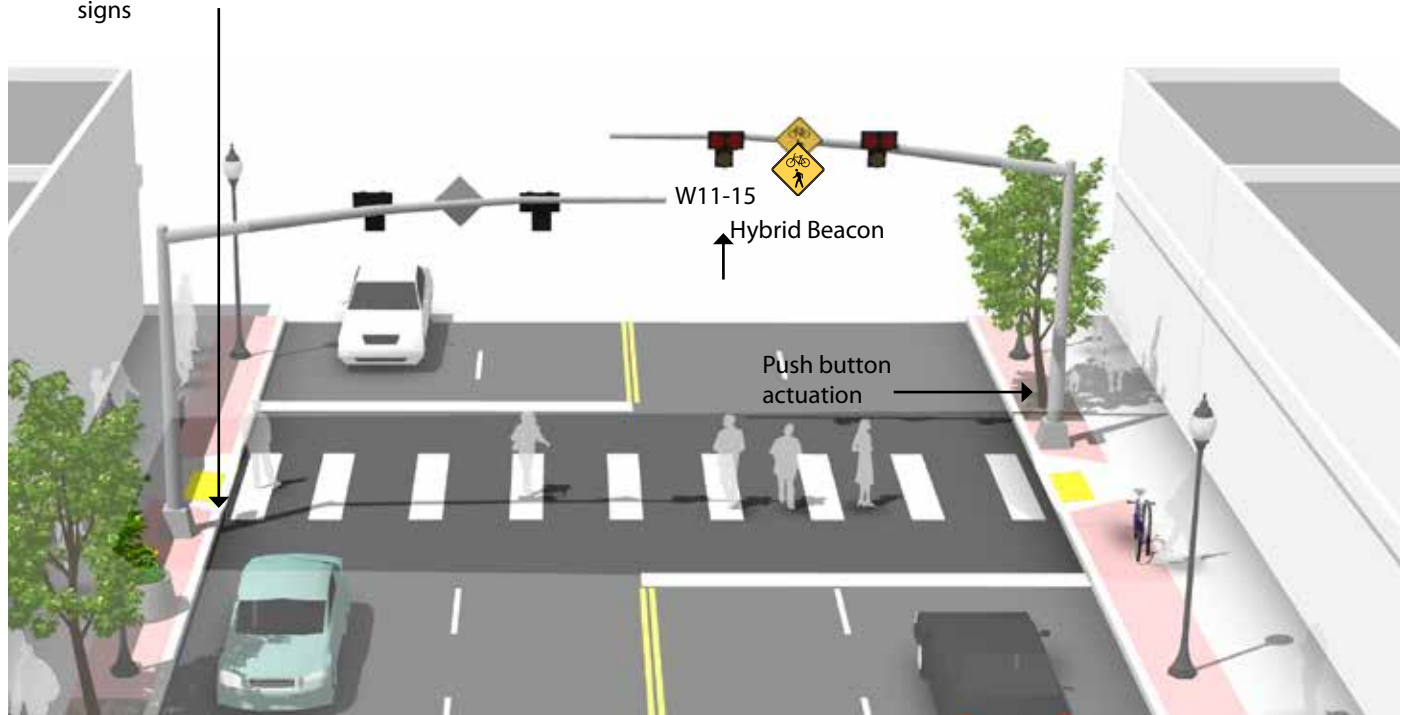
DESCRIPTION

Hybrid beacons are used to improve non-motorized crossings of major streets. A hybrid beacon consists of a signal-head with two red lenses over a single yellow lens on the major street, and a pedestrian signal head for the crosswalk.

GUIDANCE

- Hybrid beacons may be installed without meeting traffic signal control warrants if roadway speed and volumes are excessive for comfortable pedestrian crossings.
- If installed within a signal system, signal engineers should evaluate the need for the hybrid signal to be coordinated with other signals.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.

Should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs



Hybrid beacon signals are normally activated by push buttons, but may also be triggered by infrared, microwave or video detectors. The maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street. Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.

MATERIALS AND MAINTENANCE

Hybrid beacons are subject to the same maintenance needs and requirements as standard traffic signals. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

ADDITIONAL REFERENCES

- FHWA. (2009). Manual on Uniform Traffic Control Devices.
- NACTO. (2012). Urban Bikeway Design Guide.
- NCDOT. (2012). Complete Streets Planning and Design Guidelines.

RECTANGULAR RAPID FLASH BEACONS

DESCRIPTION

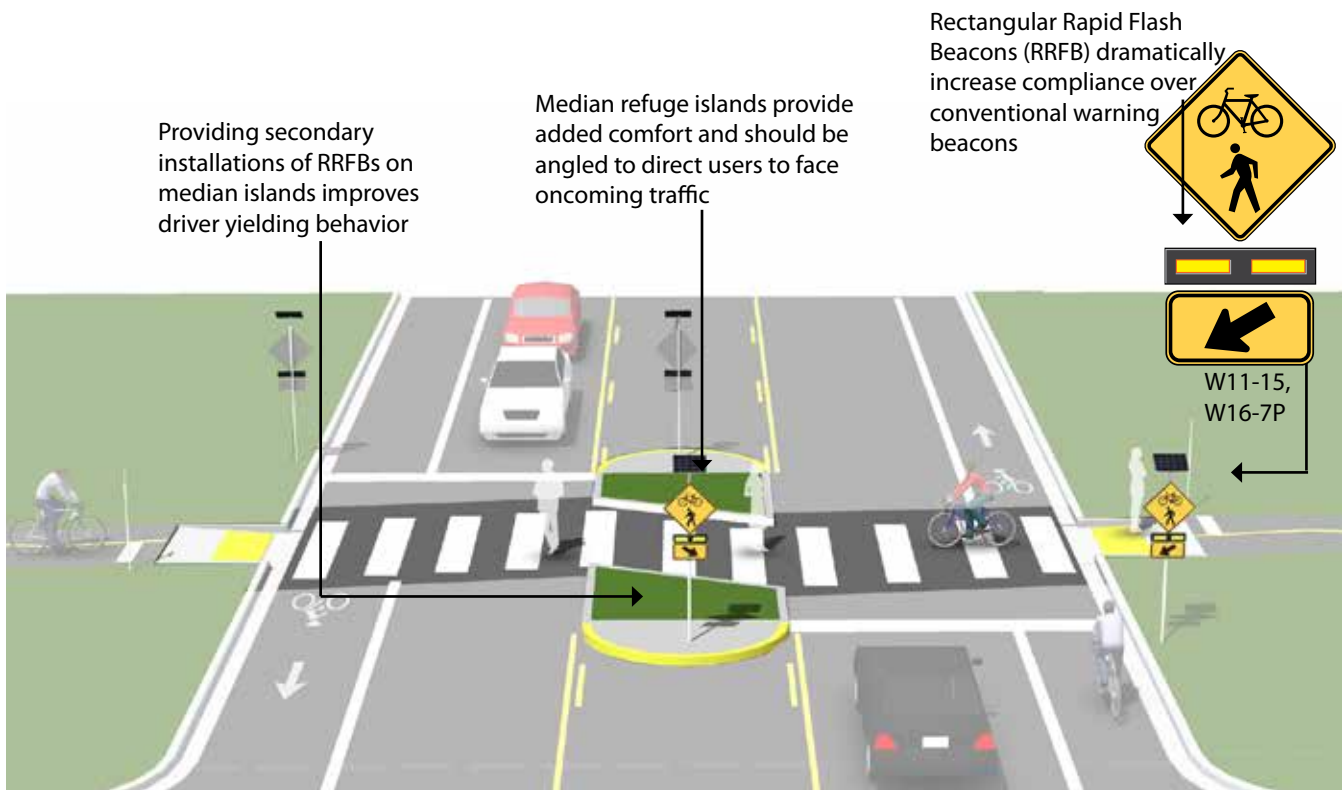
Enhanced marked crossings are unsignalized crossings with additional treatments designed to increase motor vehicle yielding compliance on multi-lane or high volume roadways.

- These enhancements include trail user or sensor actuated warning beacons, Rectangular Rapid Flash Beacons (RRFB) shown below, or in-roadway warning lights.
- Rectangular rapid flash beacons show the most increased compliance of all the warning beacon enhancement options.

GUIDANCE

Guidance for marked/unsignalized crossings applies.

- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.
- Warning beacons shall initiate operation based on user actuation and shall cease operation at a predetermined time after the user actuation or, with passive detection, after the user clears the crosswalk.



DISCUSSION

An FHWA report presented study results showing 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 show little to no decrease in yielding behavior over time. Additional studies in Oregon reported compliance rates as high as 99% when actuated.

MATERIALS AND MAINTENANCE

Locate markings out of wheel tread when possible to minimize wear and maintenance costs. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

ADDITIONAL REFERENCES

- FHWA. (2009). Manual on Uniform Traffic Control Devices.
- FHWA. (2008). MUTCD - Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11).
- FHWA. (2010). Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding at Multilane Uncontrolled Crosswalks. (2013).
- Alhajri, F., Carlso, K., Foster, N., Georde, D. A Study on Driver's Compliance to Rectangular Rapid Flashing Beacons.



MULTI-USE PATHS

MULTI-USE PATHS

A multi-use path (also known as a greenway) allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Trail facilities can also include amenities such as lighting, signage, and fencing (where appropriate). Key features of Multi-use paved trails include:

- Frequent access points from the local road network.
- Directional signs to direct users to and from the trail.
- A limited number of at-grade crossings with streets or driveways.
- Terminating the trail where it is easily accessible to and from the street system.
- Separate treads for pedestrians and bicyclists when heavy use is expected.



MULTI-USE PATHS (OR SHARED USE PATHS)

DESCRIPTION

Multi-use paths can provide a desirable facility, particularly for recreation, and users of all skill levels preferring separation from traffic. Bicycle trails should generally provide directional travel opportunities not provided by existing roadways.

GUIDANCE

Width

- 8 feet is the minimum allowed for a two-way bicycle trail and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users. A separate track (5' minimum) can be provided for pedestrian use.

Lateral Clearance

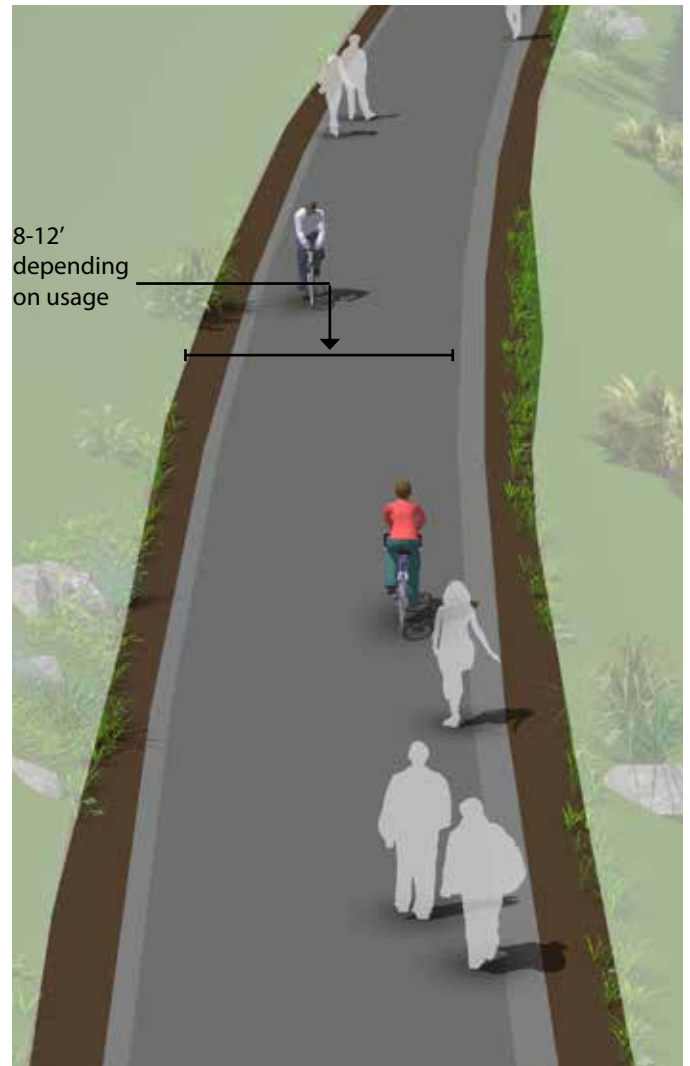
- A 2 foot or greater shoulder on both sides of the trail should be provided. An additional foot of lateral clearance (total of 3') is required by the MUTCD for the installation of signage or other furnishings.
- If bollards are used at intersections and access points, they should be colored brightly and/or supplemented with reflective materials to be visible at night.

Overhead Clearance

- Clearance to overhead obstructions should be 8 feet minimum, with 10 feet recommended.

Striping

- When striping is required, use a 4 inch dashed yellow centerline stripe with 4 inch solid white edge lines.
- Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.



DISCUSSION

Terminate the trail where it is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street.

MATERIALS AND MAINTENANCE

Asphalt is the most common surface for bicycle trails. The use of concrete for trails has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of trail users.

ADDITIONAL REFERENCES

AASHTO. Guide for the Development of Bicycle Facilities. 2012.
FHWA. Manual on Uniform Traffic Control Devices. 2009.
Flink, C. Greenways: A Guide To Planning Design And Development. 1993.

MULTI-USE PATHS ALONG ROADWAYS (SIDEPATHS)

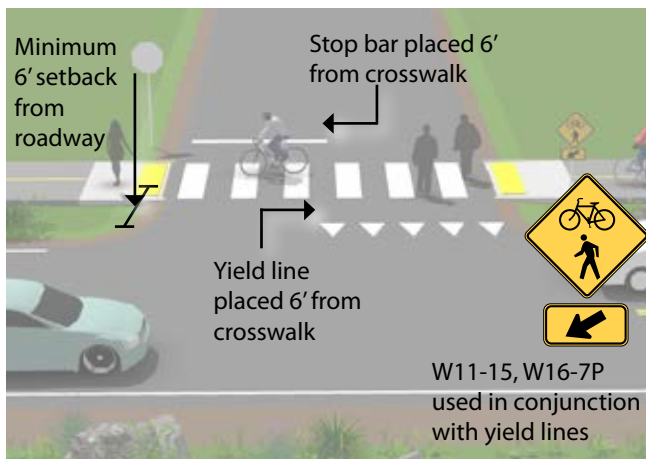
DESCRIPTION

Multi-use paths along roadways, also called Sidepaths, are a type of trail that run adjacent to a street.

- Because of operational concerns it is generally preferable to place trails within independent rights-of-way away from roadways. However, there are situations where existing roads provide the only corridors available.
- Along roadways, these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding where bicyclists enter or leave the trail.
- The AASHTO Guide for the Development of Bicycle Facilities cautions practitioners of the use of two-way sidepaths on urban or suburban streets with many driveways and street crossings.

In general, there are two approaches to crossings: adjacent crossings and setback crossings, illustrated below.

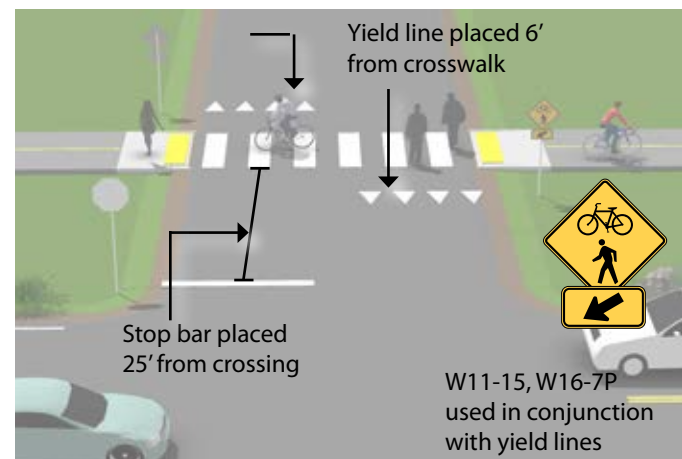
Adjacent Crossing - A separation of 6 feet emphasizes the conspicuity of riders at the approach to the crossing.



GUIDANCE

- Guidance for sidepaths should follow that for general design practices of multi-use trails.
- A high number of driveway crossings and intersections create potential conflicts with turning traffic. Consider alternatives to sidepaths on streets with a high frequency of intersections or heavily used driveways.
- Where a sidepath terminates special consideration should be given to transitions so as not to encourage unsafe wrong-way riding by bicyclists.
- Crossing design should emphasize visibility of users and clarity of expected yielding behavior. Crossings may be STOP or YIELD controlled depending on sight lines and bicycle motor vehicle volumes and speeds.

Setback Crossing - A set back of 25 feet separates the trail crossing from merging/turning movements that may be competing for a driver's attention.



DISCUSSION

The provision of a multi-use paved trail adjacent to a road is not a substitute for the provision of on-road accommodation such as paved shoulders or bike lanes, but may be considered in some locations in addition to on-road bicycle facilities. To reduce potential conflicts in some situations, it may be better to place one-way sidepaths on both sides of the street.

MATERIALS AND MAINTENANCE

Asphalt is the most common surface for bicycle trails. The use of concrete for trails has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of trail users.

ADDITIONAL REFERENCES

AASHTO. Guide for the Development of Bicycle Facilities. 2012.
NACTO. Urban Bikeway Design Guide. See entry on Raised Cycle Tracks. 2012.

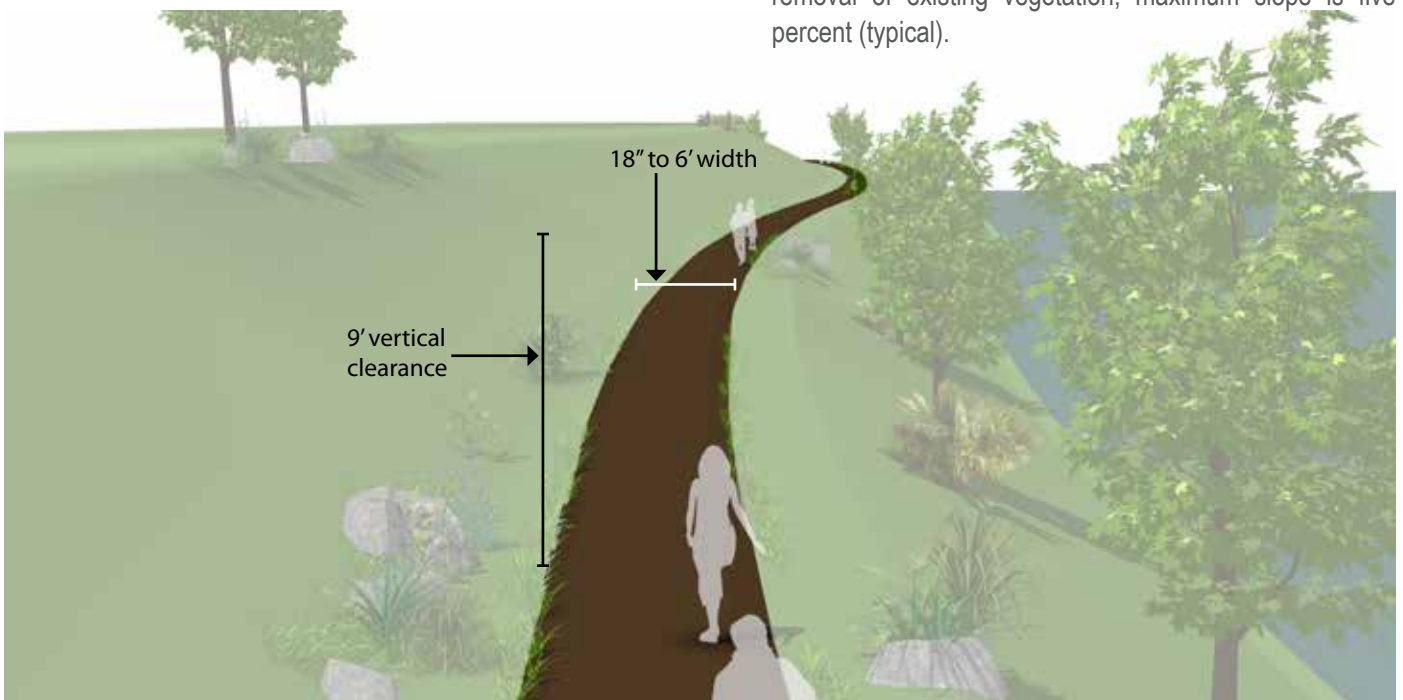
NATURAL SURFACE TRAIL

DESCRIPTION

Sometimes referred to as footpaths, hiking trails or single track trails, the soft surface multi-use trail is used along corridors that are environmentally-sensitive but can support bare earth, wood chip, or boardwalk trails. Natural surface trails are a low-impact solution and found in areas with limited development or where a more primitive experience is desired.

GUIDANCE

- Trails can vary in width from 18 inches to 6 feet or greater; vertical clearance should be maintained at nine-feet above grade.
- Mountain bike trails are typically 18-24 inches wide and have compacted bare earth or leaf litter surfacing.
- Base preparation varies from machine-worked surfaces to those worn only by usage.
- Trail surface can be made of dirt, rock, soil, forest litter, or other native materials. Some trails use crushed stone (a.k.a. “crush and run”) that contains about 4% fines by weight, and compacts with use.
- Provide positive drainage for trail tread without extensive removal of existing vegetation; maximum slope is five percent (typical).



DISCUSSION

Trail erosion control measures include edging along the low side of the trail, steps and terraces to contain surface material, and water bars to direct surface water off the trail; use bedrock surface where possible to reduce erosion. Due to their narrow width and ability to contour with the natural topography, single-track mountain bike trails typically require the least amount of disturbance and support features of all types of trails.

MATERIALS AND MAINTENANCE

Consider implications for accessibility when weighing options for surface treatments.

ADDITIONAL REFERENCES

- IMBA. Managing Mountain Biking. 2007.
- IMBA. Trail Solutions. 2004.
- Flink, C. Greenways: A Guide To Planning Design And Development. 1993.

BOARDWALKS

DESCRIPTION

Boardwalks are typically required when crossing wetlands or other poorly drained areas. They are usually constructed of wooden planks or recycled material planks that form the top layer of the boardwalk. The recycled material has gained popularity in recent years since it lasts much longer than wood, especially in wet conditions. A number of low-impact support systems are also available that reduce the disturbance within wetland areas to the greatest extent possible.

GUIDANCE

- Boardwalk width should be a minimum of 10 feet when no rail is used. A 12 foot width is preferred in areas with average anticipated use and whenever rails are used.
- When the height of a boardwalk exceeds 30", railings are required.
- If access by vehicles is desired, boardwalks should be designed to structurally support the weight of a small truck or a light-weight vehicle.



DISCUSSION

In general, building in wetlands is subject to regulations and should be avoided.

The foundation normally consists of wooden posts or auger piers (screw anchors). Screw anchors provide greater support and last much longer.

MATERIALS AND MAINTENANCE

Decking should be either non-toxic treated wood or recycled plastic. Cable rails are attractive and more visually transparent but may require maintenance to tighten the cables if the trail has snow storage requirements.

ADDITIONAL REFERENCES

- AASHTO. Guide for the Development of Bicycle Facilities. 2012.
- FHWA. Wetland Trail Design and Construction. 2007.

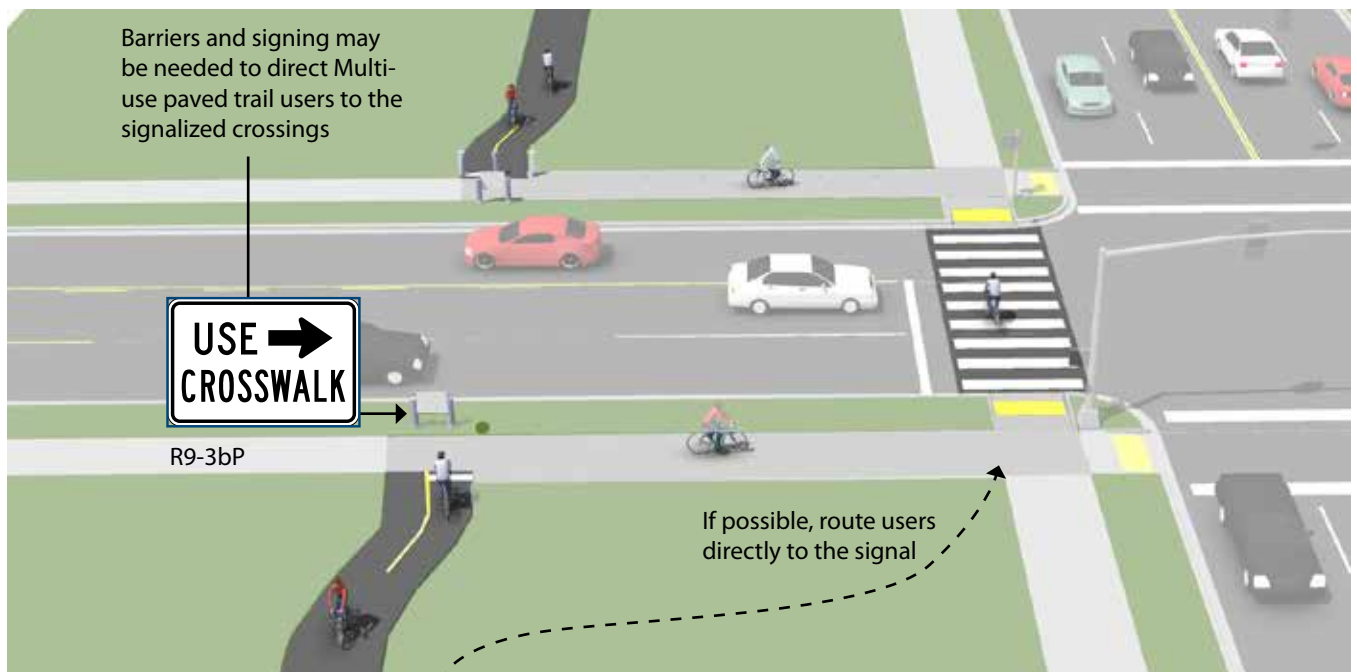
TRAIL/ROADWAY CROSSINGS: ROUTE USERS TO SIGNALIZED CROSSINGS

DESCRIPTION

Trail crossings within approximately 400 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection to avoid traffic operation problems when located so close to an existing signal. For this restriction to be effective, barriers and signing may be needed to direct trail users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.

GUIDANCE

- Trail crossings should not be provided within approximately 400 feet of an existing signalized intersection. If possible, route trail directly to the signal.



DISCUSSION

In the US, the minimum distance a marked crossing can be from an existing signalized intersection varies from approximately 250 to 660 feet. Engineering judgment and the context of the location should be taken into account when choosing the appropriate allowable setback. Pedestrians are particularly sensitive to out of direction travel and jaywalking may become prevalent if the distance is too great.

MATERIALS AND MAINTENANCE

If a sidewalk is used for crossing access, it should be kept clear of snow and debris and the surface should be level for wheeled users.

ADDITIONAL REFERENCES

AASHTO. Guide for the Development of Bicycle Facilities. 2012.
AASHTO. Guide for the Planning, Design, and Operation of Pedestrian Facilities. 2004.





B

Funding

OVERVIEW

When considering possible funding sources for Newton pedestrian 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 section outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and non-profit 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

The federal funding opportunities listed below are subject to change given the recent change in federal administration in January 2017. It is recommended that the status and availability of any federal funding listed here is confirmed through the provided links, or other appropriate channels.

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 construction of pedestrian and bicycle improvements.

Fixing America's Surface Transportation (FAST) Act
In December 2015, President Obama signed the FAST Act into

law, which replaces the previous Moving Ahead for Progress in the Twenty-First Century (MAP-21). The Act provides a long-term funding source of \$305 billion for surface transportation and planning for FY 2016-2020. Overall, the FAST Act retains eligibility for major formula programs – the Surface Transportation Block Grant Program (STBG, formerly the Surface Transportation Program), Transportation Alternatives (TA), the Highway Safety Improvement Program (HSIP), and the Congestion Mitigation and Air Quality Improvement Program (CMAQ) – and proportionate funding increases for both highways and transit. In North Carolina, federal monies are administered through the North Carolina Department of Transportation (NCDOT) and Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

For more information, visit: <https://www.transportation.gov/fastact>.

Surface Transportation Block Grant Program

The FAST Act provides an annual average of \$11.7 billion for the STBG program, inclusive of what used to be the Surface Transportation Program under MAP-21. The STBG provides states with flexible funds which may be used for a variety of highway, road, bridge, transit, and non-motorized transportation 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. Unlike most highway projects, STBG-

funded pedestrian facilities may be located on local and collector roads which are not part of the Federal-Aid Highway System. Funding for Transportation Alternatives (TA) is set aside from the overall STBG funding allocation, as is funding for bridges not on Federal-aid highways, after which a percentage of a State's STBG funds is sub-allocated based on population (51 percent in FY 2016 growing to 55 percent by FY 2020) and the remaining funds can be used in any area of the state. Additional new features of the FAST Act STBG include: the ability to use funds to create and operate a state office tasked with designing, implementing, and overseeing public-private partnerships eligible for Federal highway or transit funding, and to pay a stipend for unsuccessful public-private partnership bidders; the ability to use a State's STBG funding, upon request, to pay a subsidy and administrative costs for TIFIA credit assistance for an STBG-eligible project.

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

Transportation Alternatives

Transportation Alternatives (TA) is a set-aside funding source from the STGB fund that replaces the Transportation Alternatives Program (TAP) under MAP-21. TA provides monetary assistance for pedestrian and bicycle facilities, recreational trails, safe routes to school projects, historic preservation and vegetation management, and specific environmental mitigation projects. The FAST Act allocates an average of \$844 million per year for TA, which may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, and rail-trails. Unless states opt out, a specified portion of TA funding must go towards the State's Recreational Trails Program. TA funds may also be used for selected education and encouragement programming, such as Safe Routes to School, despite the fact that TA does not provide a guaranteed set-aside for this activity as SAFETEA-LU did. TA funds are sub-allocated based on population and the remaining funds may be used in any area of the state. For funds that can be used anywhere in the state, State's have the new ability to transfer up to 50 percent of those funds to other Federal-aid apportioned programs, including the National Highway Performance Program (NHPP), the National Highway Freight Program (NHFP), the STBG Program, the HSIP, and CMAQ.

Also new under TA, nonprofit entities responsible for the administration of local transportation safety programs are eligible to apply for funding; the "flexibility of excess reserved funding" provision that previously allowed excess TAP funds to be used

for any TAP or CMAQ project is eliminated; and urbanized areas with a population over 200,000 can use up to 50 percent of sub-allocated TA funds for any STBG-eligible purpose.

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

Highway Safety Improvement Program

HSIP provides an annual average of \$2.3 billion annually 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. Funding for HSIP is apportioned to each State based on a percentage in the law, and now due to program updates in the FAST Act, up to 50 percent of HSIP funds each year may be transferred to NHPP, NHFP, STBG, and CMAQ based on a State's discretion. Also new to HSIP, funding is limited to projects described in the statute, which include a number of pedestrian infrastructure improvements.

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

Congestion Mitigation/Air Quality Improvement Program

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides an estimated \$2.4 billion in average annual funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation-related emissions. States with no nonattainment areas may use their CMAQ funds for any CMAQ- or STBG-eligible project. These federal dollars can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. Communities located in attainment areas who do not receive CMAQ funding apportionments may apply for CMAQ funding to implement projects that will improve air quality. New to CMAQ funding under the FAST Act, a State may transfer up to 50 percent of annual CMAQ funds to the NHPP, NHFP, STBG, and HSIP, excluding set-asides.

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

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-seniorsindividuals-disabilities-section-5310>

TIGER Discretionary Grants

The U.S. Department of Transportation's (DOT) Transportation Investment Generating Economic Recovery (TIGER) discretionary grants are intended to fund capital investments in surface transportation infrastructure. The grant program focuses on "capital projects that generate economic development and improve access to reliable, safe, and affordable transportation for disconnected both urban and rural, while emphasizing improved connection to employment, education, services and other opportunities, workforce development, or community revitalization." Infrastructure improvement projects such as recreational trails and greenways with an emphasis on multi-modal transit qualify for this grant. While the deadline has passed for 2016, it is likely that the program will continue in 2017.

For more information: <https://www.transportation.gov/tiger>

Economic Development Administration

Under Economic Development Administration's (EDA) Public Works and Economic Adjustment Assistance programs, grant applications are accepted for construction, non-construction, technical assistance, and revolving loan fund projects. "Grants and cooperative agreements made under these programs are designed to leverage existing regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities." Application deadlines are typically in March and June.

For more information: <https://www.eda.gov/grants/>

Partnership for Sustainable Communities

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA),

the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to "improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide." The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure ("Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health").

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including both TIGER I and TIGER II grants). North Carolina jurisdictions should track Partnership communications and be prepared to respond proactively to announcements of new grant programs. Initiatives that speak to multiple livability goals are more likely to score well than initiatives that are narrowly limited in scope to pedestrian improvement efforts.

For more information:

<http://www.sustainablecommunities.gov/>

<http://www.epa.gov/smartgrowth/partnership/>

Resource for Rural Communities:

http://www.sustainablecommunities.gov/pdf/Supporting_Sustainable_Rural_Communities_FINAL.PDF

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. The program is administered by the Department of Environment and Natural Resources as a grant program for states and local governments. Maximum annual grant awards for county governments, incorporated municipalities, public authorities, and federally recognized Indian tribes are \$250,000. The local match may be provided with in-kind services or cash.

For more information: http://www.ncparks.gov/About/grants/lwcf_main.php

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only 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. This program may benefit trail development in North Carolina locales indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: <http://www.nps.gov/rtca/> or contact the Southeast Region RTCA Program Manager Deirdre “Dee” Hewitt at (404) 507-5691

National Scenic Byways Discretionary Grant Program

The National Scenic Byways Discretionary Grants program provides merit-based funding for byway-related projects each year, utilizing one or more of eight specific activities for roads designated as National Scenic Byways, All-American Roads, State scenic byways, or Indian tribe scenic byways. The activities are described in 23 USC 162(c). This is a discretionary program; all projects are selected by the US Secretary of Transportation.

Eligible projects include construction along a scenic byway of a facility for pedestrians and bicyclists and improvements to a scenic byway that will enhance access to an area for the purpose of recreation. Construction includes the development of the environmental documents, design, engineering, purchase of right-of-way, land, or property, as well as supervising, inspecting, and actual construction.

For more information: <http://www.bywaysonline.org/grants/>

Federal Lands Transportation Program (FLTP)

The FLTP funds projects that improve access within federal lands (including national forests, national parks, national wildlife refuges, national recreation areas, and other Federal public lands) on federally owned and maintained transportation facilities. \$300 million per fiscal year was allocated to the program for 2013 and 2014.

Eligible activities:

- Program administration, transportation planning, research, preventive maintenance, engineering, rehabilitation,

restoration, construction, and reconstruction of Federal lands transportation facilities

- Adjacent vehicular parking areas;
- Acquisition of necessary scenic easements and scenic or historic sites;
- Provision for pedestrians and bicycles;
- Environmental mitigation in or adjacent to Federal land open to the public to (1) improve public safety and reduce vehicle-caused wildlife mortality while maintaining habitat connectivity; and (2) to mitigate the damage to wildlife, aquatic organism passage, habitat, and ecosystem connectivity, including the costs of constructing, maintaining, replacing, or removing culverts and bridges, as appropriate;
- Congestion mitigation; and other appropriate public road facilities as determined by the Secretary.

For more information: <http://www.fhwa.dot.gov/map21/fltp.cfm>

Energy Efficiency and Conservation Block Grants

The Department of Energy’s Energy Efficiency and Conservation Block Grants (EECBG) may be used to reduce energy consumptions and fossil fuel emissions and for improvements in energy efficiency. Section 7 of the funding announcement states that these grants provide opportunities for the development and implementation of transportation programs to conserve energy used in transportation including development of infrastructure such as bike lanes and pathways and pedestrian walkways. Although the current grant period has passed, more opportunities may arise in the future.

For more information: <http://www1.eere.energy.gov/wip/eeecbg.html>

EPA’s Brownfields Program

With the possibility of a brownfield reclamation site along the greenway, funding could be acquired through EPA’s brownfield program for site assessment and/or cleanup. To facilitate the leveraging of public resources, EPA’s Brownfields Program collaborates with other federal partners, and state agencies to identify and make available resources that can be used for brownfield activities. Types of applicable programs include:

Area-Wide Planning Pilot Program:

The grant funding and direct assistance for an area-wide plan which will inform the assessment, cleanup and reuse of brownfields properties and promote area-wide revitalization.

Assessment Grants:

Assessment grants provide funding for a grant recipient to inventory, characterize, assess, and conduct planning and community involvement related to brownfield sites.

Cleanup Grants:

Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites.

Multi-Purpose Pilot Grants:

The EPA is piloting a new grant program that will provide a single grant to an eligible entity for both assessment and cleanup work at a specific brownfield site owned by the applicant.

EPA Brownfields and Land Revitalization: http://www.epa.gov/brownfields/grant_info/

For a detailed funding matrix and more information about federal programs and funds that can be applied to pedestrian and bicycle projects, please visit: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.pdf

STATE FUNDING SOURCES

There are multiple sources for state funding of bicycle and pedestrian transportation projects. However, the status of future funding sources at this level is subject to change. The availability of these funding resources should be confirmed during the implementation of a project.

North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program

The NCDOT's State Transportation Improvement Program is based on the Strategic Transportation Investments bill, signed into law in 2013. The Strategic Transportation Investments (STI) initiative introduces the Strategic Mobility Formula, a new way to fund and prioritize transportation projects to ensure they provide the maximum benefit to our state. It allows NCDOT to use its existing revenues more efficiently to fund more investments that

improve North Carolina's transportation infrastructure, create jobs and help boost the economy.

The new Strategic Transportation Investments initiative identifies projects in the 2016-2025 State Transportation Improvement Program, which identifies projects that will receive funding during that period. This is the first 10-year plan developed under the 2013 Strategic Transportation Investments law. The new Strategic Mobility Formula assigns projects for all modes into one of three categories: Statewide Mobility, Regional Impact, and Division Needs. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are ranked on the following five criteria:

- Safety
- Access
- Demand or density
- Constructibility
- Benefit/cost ratio

This ranking largely determines which projects will be included in the department's State Transportation Improvement Program (STIP). The STIP is a federally mandated transportation planning document that details transportation improvements prioritized by stakeholders for inclusion in the Work Program over the next ten years. The STIP is updated every two years. Recognizing the need to increase investment in the state's transportation infrastructure, the General Assembly took steps in the 2015-2017 state budget (House Bill 97) – passed in September 2015 – that will result in an estimated additional \$1.6 billion for transportation construction.

Since the 2016-2025 STIP was developed based on the 10-year revenue forecast in August 2014, NCDOT is amending the STIP to account for the additional funding – just over \$685 million for projects at the statewide level and more than \$500 million for projects at each the regional and division levels. Following requirements set forth in the Strategic Transportation Investments law and the Strategic Mobility Formula, NCDOT engineers used the same scoring weights and criteria used to develop the current STIP to re-evaluate proposed projects that were not originally funded. The STIP is the primary method for allocating state and federal transportation funds. However, beginning July 1, 2015, state funds cannot be used to match federally-funded projects. Only Powell Bill or local funds can be used as a match for federally-funded bicycle and pedestrian projects.

For more information on STIP: www.ncdot.gov/strategictransportationinvestments/

To access the STIP: <https://connect.ncdot.gov/projects/planning>

For more about the STIP process: <http://www.ncdot.org/performance/reform/>

SPOT Safety Program

The Spot Safety Program is a state funded public safety investment and improvement program that provides highly effective low cost safety improvements for intersections, and sections of North Carolina's 79,000 miles of state maintained roads in all 100 counties of North Carolina. The Spot Safety Program is used to develop smaller improvement projects to address safety, potential safety, and operational issues. The program is funded with state funds and currently receives approximately \$9 million per state fiscal year. Other monetary sources (such as Small Construction or Contingency funds) can assist in funding Spot Safety projects, however, the maximum allowable contribution of Spot Safety funds per project is \$250,000.

The Spot Safety Program targets hazardous locations for expedited low cost safety improvements such as traffic signals, turn lanes, improved shoulders, intersection upgrades, positive guidance enhancements (rumble strips, improved channelization, raised pavement markers, long life highly visible pavement markings), improved warning and regulatory signing, roadside safety improvements, school safety improvements, and safety appurtenances (like guardrail and crash attenuators).

A Safety Oversight Committee (SOC) reviews and recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SOC to select projects for recommendation to the BOT include, but are not limited to, the frequency of correctable crashes, severity of crashes, delay, congestion, number of signal warrants met, effect on pedestrians and schools, division and region priorities, and public interest.

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

Powell Bill Funds

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility

and qualify as provided by G.S. 136-41.1 through 136-41.4. Powell Bill funds shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways, greenways, or sidewalks along public streets and highways. House Bill 97 requires that a sum of \$147,500,000 be disbursed to the qualifying municipalities. The statutes also provide that funds be disbursed to the qualified municipalities on or before October 1st and January 1st, thereby allowing sufficient time after the end of the fiscal year for verification of information and to determine the proper allocations and preparation of disbursements. Beginning July 1, 2015 under the Strategic Transportation Investments initiative, Powell Bill funds may no longer be used to provide a match for federal transportation funds such as Transportation Alternatives.

More information: <https://connect.ncdot.gov/municipalities/state-street-aid/Pages/default.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).

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

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. 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. State Highway Applicants must use the web-based grant system to submit applications.

For more information: <http://www.ncdot.org/programs/ghsp/>

Eat Smart, Move More North Carolina Community Grants

The Eat Smart, Move More (ESMM) NC Community Grants program provides funding to local communities to support their efforts to develop community-based interventions that encourage, promote, and facilitate physical activity. The current focus of the funds is for projects addressing youth physical activity. Funds have been used to construct trails and conduct educational programs.

For more information: <http://www.eatsmartmovemorenc.com/Funding/CommunityGrants.html>

NC Parks and Recreation Trust Fund (PARTF)

The Parks and Recreation Trust Fund (PARTF) provide 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.

For more information: http://www.ncparks.gov/About/grants/partf_main.php

NC Department of Environment and Natural Resources – Recreational Trails and Adopt-a-Trail Grants

The State Trails Program is a section of the N.C. Division of Parks and Recreation. The program originated in 1973 with the North Carolina Trails System Act and is dedicated to 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. The Recreation Trails Program awards grants up to \$75,000 per project. The Adopt-A-Trail Program awards grants up to \$5,000 per project.

North Carolina Department of Commerce Rural Economic Development Division

The North Carolina Economic Development Competitive Grant Program for Underserved and Limited Resource Communities (the “Underserved and Limited Resource Communities Grant Program” or “ULRC Program”) provides grants to local governments and/or nonprofit organizations to encourage the development of economic development activities, services, and projects (hereinafter referred to collectively as “program(s)”) that benefit underserved populations and limited resource communities across the State.

Form more information: <http://www.nccommerce.com/Portals/2/Documents/RuralDev/ULRC%20Guidelines%20FY2015.pdf>

Community Development Block Grant Funds

Community Development Block Grant (CDBG) funds are available to local municipal or county governments that qualify for projects to enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low and moderate income. State CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) to the state of North Carolina. Some urban counties and cities in North Carolina receive CDBG funding directly from HUD. Each year, CDBG provides funding to local governments for hundreds of critically-needed community improvement projects throughout the state. These community improvement projects are administered by the Division of Community Assistance and the Commerce Finance Center under eight grant categories. Two categories might be of support to pedestrian and bicycle projects in ‘entitlement communities’: Infrastructure and Community Revitalization.

Clean Water Management Trust Fund (CWMTF)

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection, eligible for application by a state agency, local government, or non-profit. At the end of each year, a minimum of \$30 million is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies, and

conservation non-profits to help finance projects that specifically address water pollution problems. Funds may be used for planning and land acquisition to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits.

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 toward planning and establishing 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 a more effective and efficient management of urban and community forests. Grant requests should range between \$1,000 and \$15,000 and must be matched equally with non-federal funds. Grant funds may be awarded to any unit of local or state government, public educational institutions, approved non-profit 501(c)(3) organizations, and other tax-exempt organizations. First-time municipal applicant and municipalities seeking Tree City USA status are given priority for funding.

For more about Tree City USA status, including application instructions, visit: http://ncforestservice.gov/Urban/urban_grant_overview.htm

LOCAL GOVERNMENT FUNDING SOURCES

Municipalities often plan for the funding of pedestrian facilities or improvements through development of Capital Improvement Programs (CIP) or occasionally, through their annual Operating Budgets. In Raleigh, for example, the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from \$100,000 to \$500,000, administered through the Recreation and Parks Department. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. Typical capital funding mechanisms include the capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each category is described below. A variety of possible funding options

available to North Carolina jurisdictions for implementing pedestrian and bicycle projects are also described below. However, many will require specific local action as a means of establishing a program, if not already in place.

Capital Reserve Fund

Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose of the fund, the duration of the fund, the approximate amount of the fund, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants, and donations for the specified use.

Capital Project Ordinances

Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.

Local Improvement District (LID)

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects, such as streets, sidewalks, or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.

Municipal Service District

Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the town-wide property tax, and to use the proceeds to provide services in the district. Downtown revitalization projects are one of the eligible uses of service districts, and can include projects such as street, sidewalk, or bikeway improvements within the downtown taxing district.

Tax Increment Financing

Project Development Financing bonds, also known as Tax Increment Financing (TIF) is a relatively new tool in North Carolina, allowing localities to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Streets, streetscapes, and sidewalk improvements are specifically authorized for TIF funding in North Carolina.

Tax Increment Financing typically occurs within designated development financing districts that meet certain economic criteria that are approved by a local governing body. TIF funds are generally spent inside the boundaries of the TIF district, but they can also be spent outside the district if necessary to encourage development within it.

OTHER LOCAL FUNDING OPTIONS

- Bonds/Loans
- Taxes
- Impact fees
- Exactions
- Installment purchase financing
- In-lieu fees
- Partnerships

PRIVATE AND NON-PROFIT FUNDING SOURCES

Many communities have solicited funding assistance for pedestrian projects from private foundations and other conservation- and health-minded benefactors. Below are several examples of private funding opportunities available.

Catawba Valley Heritage Alliance

The Catawba Valley Heritage Alliance is an organization committed to the preservation of undeveloped land, improvements in bicycle and pedestrian access, and the protection of natural habitats through transportation reform,

historic preservation, and natural resource conservation. Their grants initiative has already helped bring the Heritage Trail Greenway to fruition in Newton. This small grants initiative is still available for similar projects that support the preservation of natural resources within the community.

For more information: www.heritagealliance.org/

The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To ensure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

For more specific information about what types of projects are funded : <http://www.rwjf.org/en/how-we-work/grants-and-grant-programs.html>

North Carolina Community Foundation

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for non-profit organizations and institutions throughout the state. Based in Raleigh, the foundation also manages a number of community affiliates throughout North Carolina, that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. The foundation also manages various scholarship programs statewide.

For more information: <http://nccommunityfoundation.org/>

Walmart State Giving Program

The Walmart Foundation financially supports projects that create opportunities for better living. Grants are awarded for projects

that support and promote education, workforce development/ economic opportunity, health and wellness, and environmental sustainability. Both programmatic and infrastructure projects are eligible for funding. State Giving Program grants start at \$25,000, and there is no maximum award amount. The program accepts grant applications on an annual, state by state basis January 2nd through March 2nd.

For more information: <http://foundation.walmart.com/apply-for-grants/state-giving>

Rite Aid Foundation Grants

The Rite Aid Foundation is a foundation that supports projects that promote health and wellness in the communities that Rite Aid serves. Award amounts vary and grants are awarded on a one year basis to communities in which Rite Aid operates. A wide array of activities are eligible for funding, including infrastructural and programmatic projects.

For more information: <https://www.riteaid.com/about-us/rite-aid-foundation>

Z. Smith Reynolds Foundation

This Winston-Salem-based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. They have two grant cycles per year and generally do not fund land acquisition. However, they may be able to offer support in other areas of open space and greenways development.

For more information: www.zsr.org

Bank of America Charitable Foundation, Inc.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

For more information: www.bankofamerica.com/foundation

Duke Energy Foundation

Funded by Duke Energy shareholders, this non-profit organization makes charitable grants to selected non-profits or governmental subdivisions. Each annual grant must have:

- An internal Duke Energy business “sponsor”
- A clear business reason for making the contribution

The grant program has three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training, and research around environmental and energy efficiency initiatives.

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

Duke Energy Water Resources Fund

The fund supports science-based, research-supported projects and programs that provide direct benefit to at least one of the following focus areas:

- Improve water quality, quantity and conservation
- Enhance fish and wildlife habitats
- Expand public use and access to waterways
- Increase citizens' awareness about their roles in protecting these resources

For more information: www.duke-energy.com/waterresourcesfund

American Greenways Eastman Kodak Awards

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design, and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying, or political activities.

For more information: www.conservationfund.org

National Trails Fund

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a \$200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than \$240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from \$500 to \$10,000 per project.

Projects the American Hiking Society will consider include:

- Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements.
- Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage.
- Constituency building surrounding specific trail projects - including volunteer recruitment and support.

For more information: <http://www.americanhiking.org/national-trails-fund/>

The Conservation Alliance

The Conservation Alliance is a non-profit 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. Since its inception in 1989, The Conservation Alliance has contributed \$4,775,059 to environmental groups across the nation, saving over 34 million acres of wild lands. The Conservation Alliance Funding Criteria:

- The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation.
- The Alliance does not look for mainstream education or scientific research projects, but rather for active campaigns.
- All projects should be quantifiable, with specific goals,

objectives, and action plans and should include a measure for evaluating success.

- The project should have a good chance for closure or significant measurable results over a fairly short term (one to two years).
- Funding emphasis may not be on general operating expenses or staff payroll.

For more information: <http://www.conservationalliance.com/grants>

National Fish and Wildlife Foundation (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, 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 awards matching grants under its Keystone Initiatives to achieve measurable outcomes in the conservation of fish, wildlife, plants, and the habitats on which they depend. Awards are made on a competitive basis to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year. Grants generally range from \$50,000-\$300,000 and typically require a minimum 2:1 non-federal match.

Funding priorities include bird, fish, marine/coastal, and wildlife and habitat conservation. Other projects that are considered include controlling invasive species, enhancing delivery of ecosystem services in agricultural systems, minimizing the impact on wildlife of emerging energy sources, and developing future conservation leaders and professionals.

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

National Fish and Wildlife Foundation: Five Star & Urban Waters Restoration 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. NFWF may use a mix of public and private funding sources to support any grant made through this program.

For more information: <http://www.nfwf.org/fivestar/Pages/2015RFP.aspx#.VGtMIPnF93W>

Environmental Solutions for Communities Grant Program
Wells Fargo and the National Fish and Wildlife Foundation (NFWF) seek to promote sustainable communities through Environmental Solutions for Communities by supporting highly-visible projects that link economic development and community well-being to the stewardship and health of the environment. Approximately \$2,500,000 is available nationwide for 2015 projects.

For more information: http://www.nfwf.org/environmentalsolutions/Pages/2015rfp.aspx#.VG11_fnF8gR

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 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>

Catawba County Department of Public Health

Catawba County Public Health provides health and education services to the community and fosters partnerships to promote, protect, and improve the health in Catawba County and surrounding communities. Its Catawba County Health Partners is the non-profit organization that carries out its partnerships

and initiatives to improve the health in the community.

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

Catawba Valley Medical Center

This not-for-profit hospital is the region's main health center and is an active supporter of community health initiatives in the Catawba Valley region. For instance, its Safe Kids Catawba County Coalition educates parents and children about how to prevent accidental injuries—the number one killer of children under 18.

For more information on Catawba Valley Medical Center's community health initiatives, visit: <https://catawbavalleymedical.org/about-us/community-health-initiatives/>

Frye Regional Medical Center

As part of the Duke LifePoint Healthcare system, Frye Regional Medical Center provides health and medical services to the Catawba County region. Its Community Health sponsorships offer opportunities for monetary and in-kind donations to support community organizations efforts to improve health and wellness in the region.

For more information about sponsorships, visit: <http://www.fryemedctr.com/community-health/sponsorship-request>

Blue Cross Blue Shield of North Carolina Foundation (BCBS)

In North Carolina, Blue Cross Blue Shield has funded the construction of parts of trail systems and other facilities in three different cities as part of their Get Outside North Carolina! program. This initiative was created to help reduce obesity and health problems related to physical inactivity. In 2012, Blue Cross Blue Shield supported over \$1 million worth of trail projects in Wilmington, Raleigh, and Charlotte.

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

Alliance for Biking & Walking: Advocacy Advance Grants
Bicycle and pedestrian advocacy organizations play the most important role in improving and increasing biking and walking in

local communities. Advocacy Advance Grants enable state and local bicycle and pedestrian advocacy organizations to develop, transform, and provide innovative strategies in their communities. With sponsor support, the Alliance for Biking & Walking has awarded more than \$500,000 in direct grants, technical assistance, and scholarships to advocacy organizations across North America since the Advocacy Advance Grant program's inception. In 2009 and 2010, these one-year grants were awarded twice annually to startup organizations and innovative campaigns to dramatically increase biking and walking. The Advocacy Advance Partnership with the League of American Bicyclists also provides necessary technical assistance, coaching, and training to supplement the grants.

For more information, visit www.peoplepoweredmovement.org

Active Routes to School

Active Routes to School is a North Carolina Safe Routes to School (SRTS) Project supported by a partnership between the N.C. Department of Transportation and the N.C. Division of Public Health. The Active Routes to School Project creates opportunities for youth to walk and bike to or at school. Active Routes to School Coordinators are available to provide technical assistance and support to schools and communities in planning Walk and Bike to School day events, building ongoing walk and bike to or at school programs, offering trainings on Safe Routes to School, building policy support for Safe Routes to School, and addressing safety features near schools. The goal of the project is to increase the number of elementary and middle school students who safely walk and bike to school.

Ten regional ARTS coordinators are based at local health departments across the state. Newton is in Region 4, which includes all of Catawba County and several neighboring counties.

For more information, visit www.communityclinicalconnections.com/What_We_Do/Active_Routes_To_School/index.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. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. 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. Municipalities typically create funds to facilitate and simplify a transaction from an individual's donation to the given municipality. 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 fund-raising, maintenance, and programming needs.



S. Cline Avenue near South Newton Elementary School



Public Survey

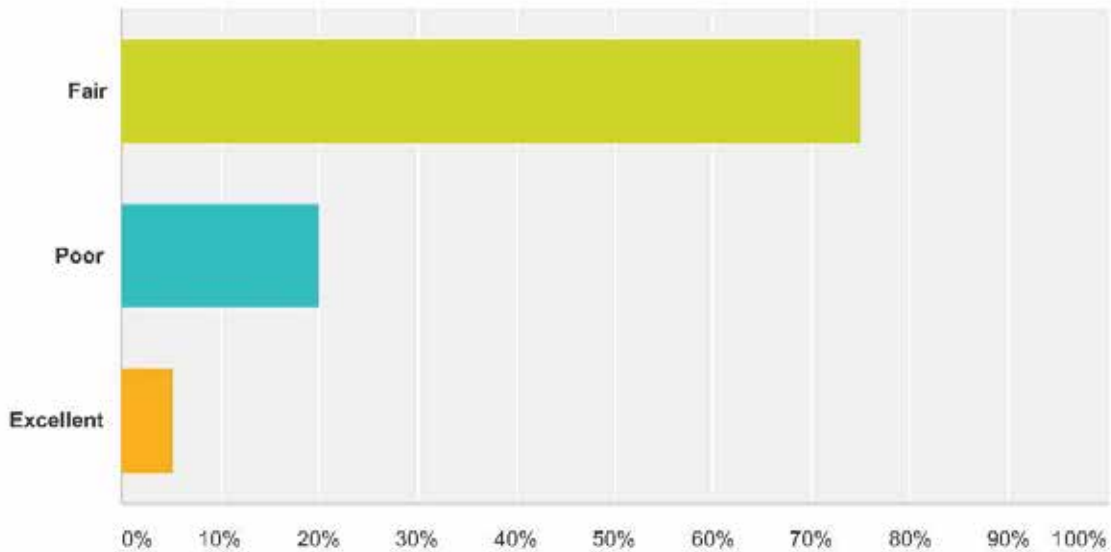
OVERVIEW

The public comment form was open from September to December 2016. The survey was available through the website www.surveymonkey.com/r/WalkNewton, and was also promoted on the City's website at www.newtonnc.gov/walk. A total of 326 responses was collected. The following charts display the survey results by question.

SURVEY RESULTS

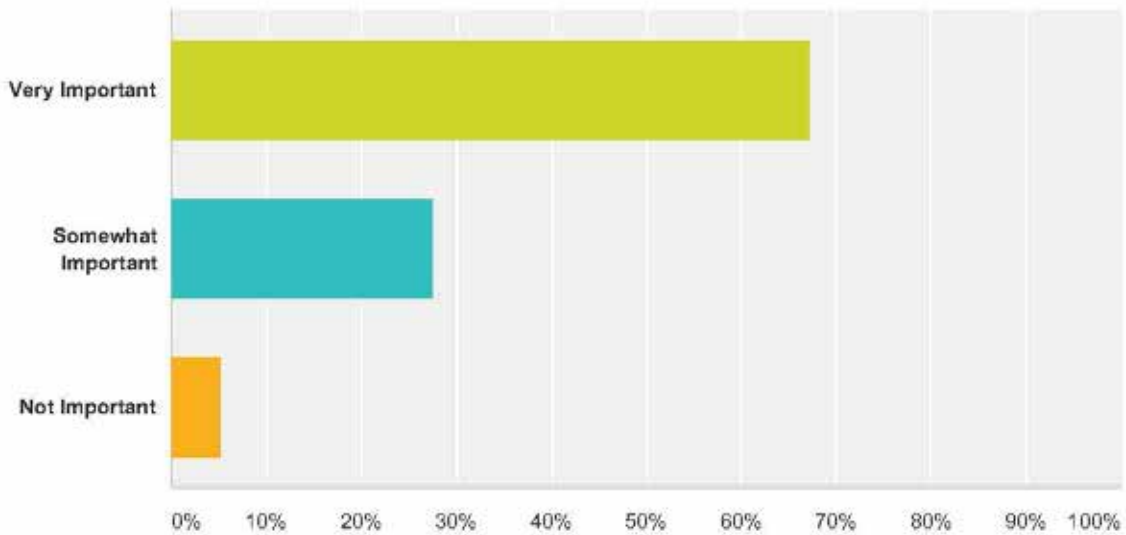
Q1 How do you rate walking conditions in Newton?

Answered: 326 Skipped: 3



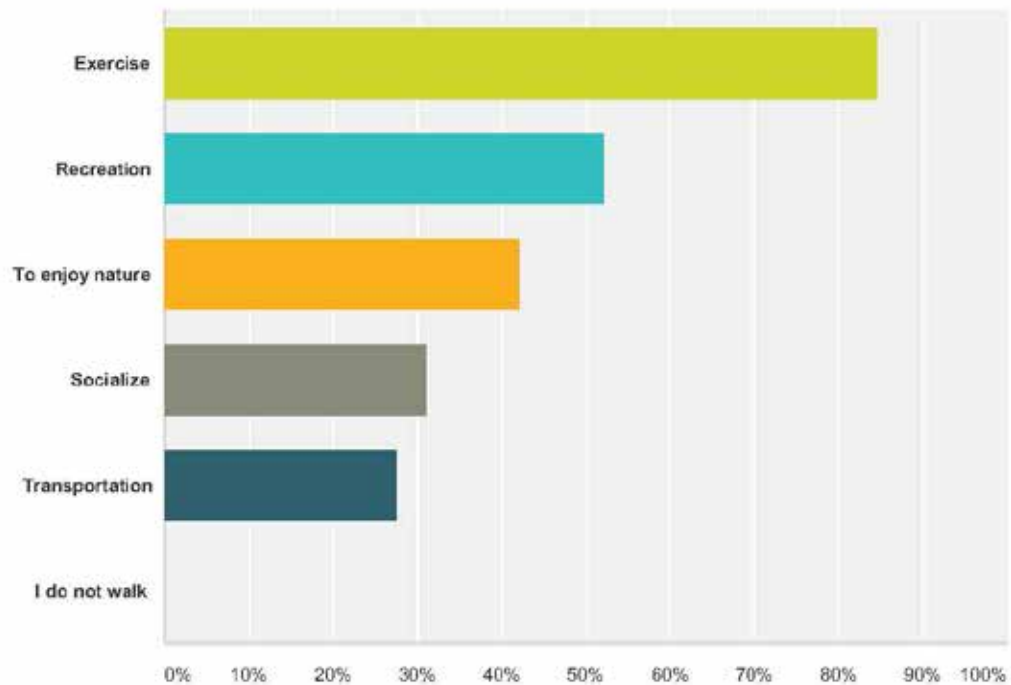
Q2 How important to you is improving walking conditions in Newton?

Answered: 327 Skipped: 2



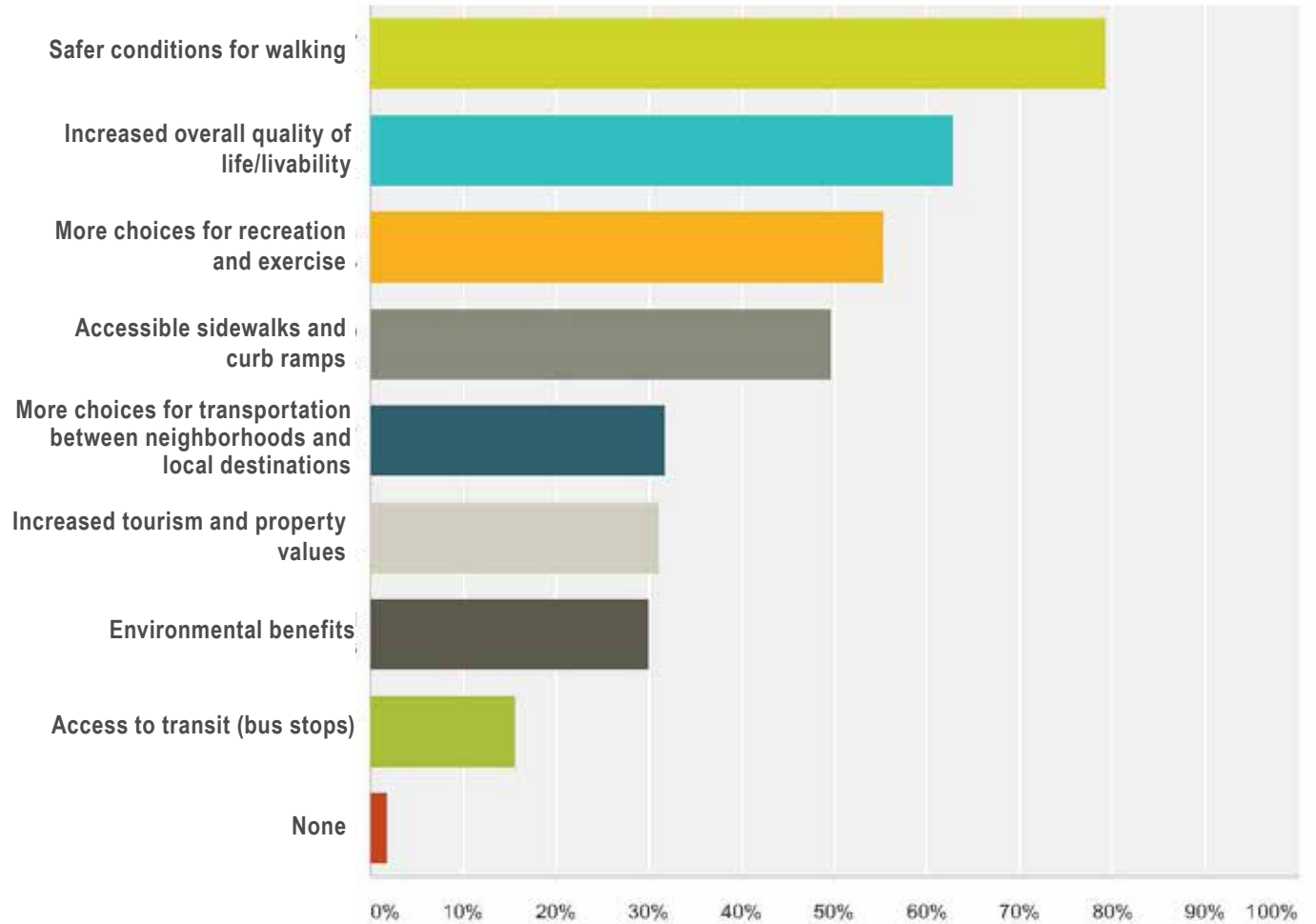
Q3 When walking in Newton, what is (or would be) the primary purpose of your trip? (check all that apply)

Answered: 322 Skipped: 7



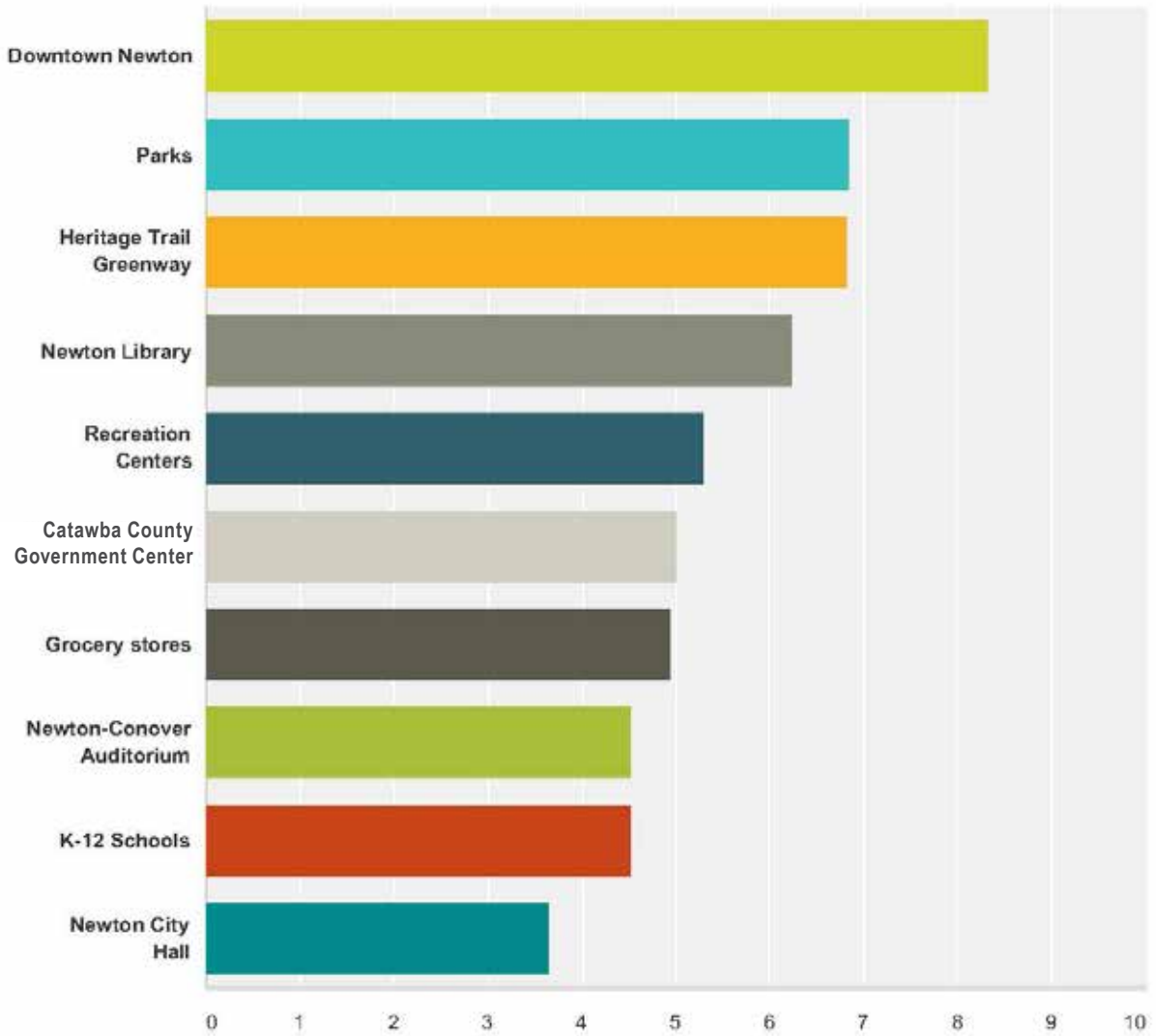
Q4 What should be the most important goals and outcomes of the Walk Newton Plan? (check all that apply)

Answered: 306 Skipped: 23



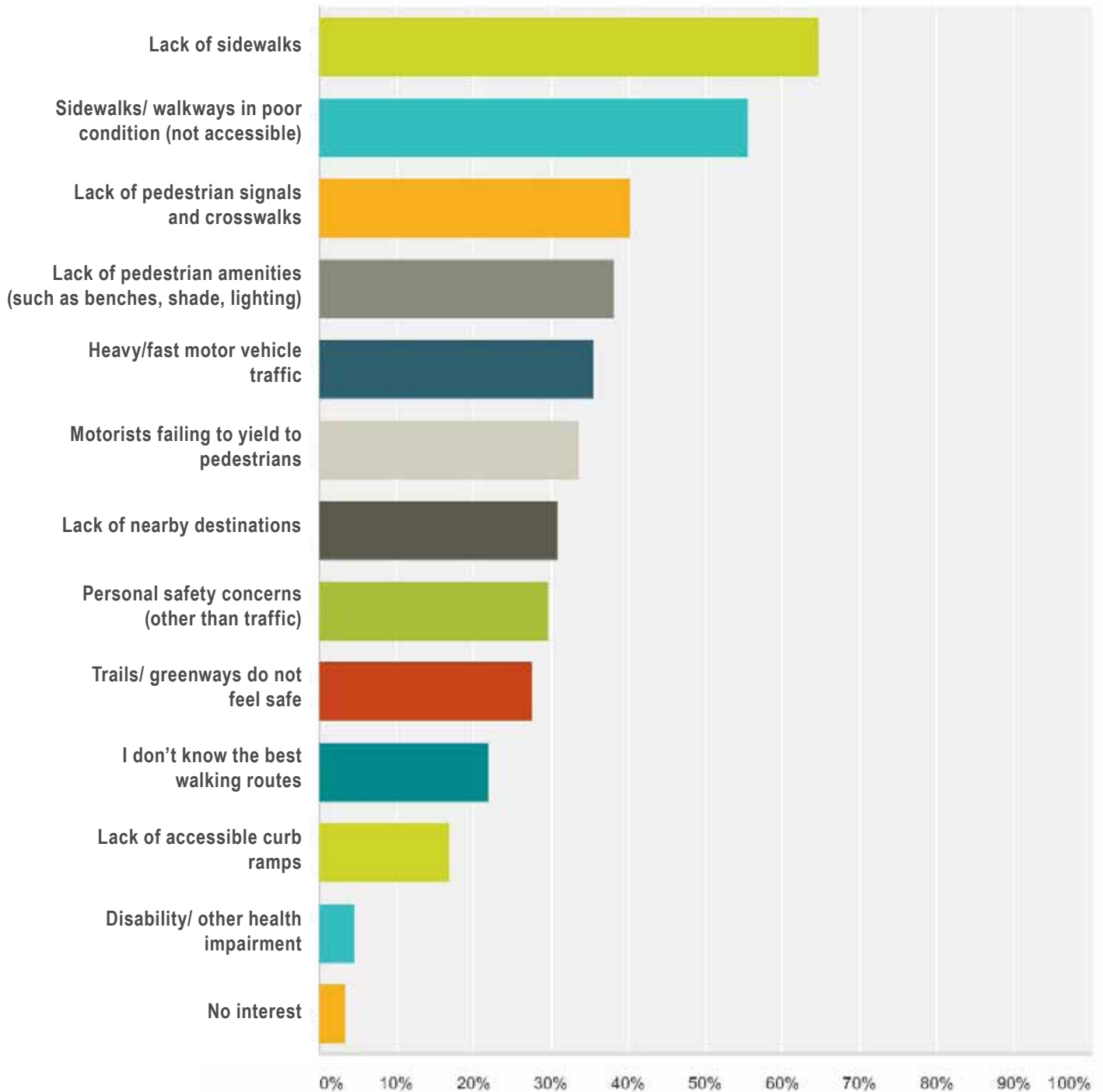
Q5 What destinations would you most like to be able to reach by walking? Please rank (1 = most like to reach, 10 = least like to reach)

Answered: 296 Skipped: 33



Q6 What do you think are the factors that most DISCOURAGE walking in Newton? Please select up to five factors.

Answered: 301 Skipped: 28



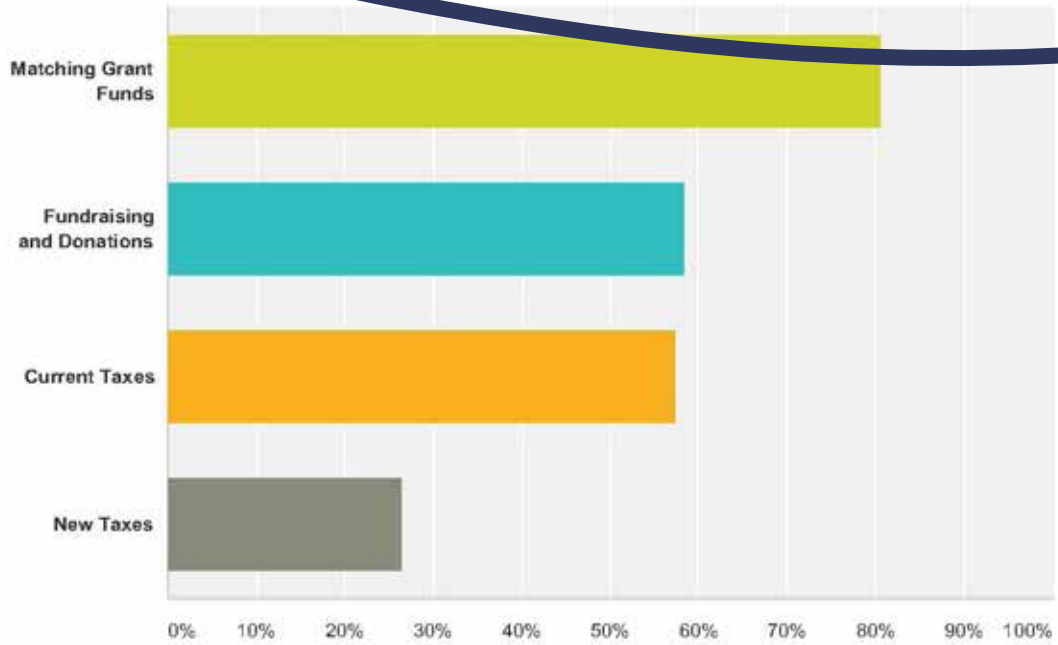
Q7 What are the top three locations for improving conditions for walking in Newton? Examples include locations where we need a sidewalk, crosswalk, or pedestrian signal.

Answered: 203 Skipped: 126

Town Auditorium **Conover** Hwy 16
Radio Station Road Main Ave
Government Center Bus **Crosswalks**
Justice Center **Crossing** North Newton
Downtown Heritage Trail
Sidewalks Northwest Blvd **Street**
NW Blvd **College** Library **Greenway**
Walmart Neighborhood **Business 321** Brady Ave
Pedestrian Signal Fix **Radio Station Rd**
Brady Town **Pin Station** Radio Tower **High School**
Radio Station Road **Crossing over 321** Bus 321
Hwy 10 Library **Parks**
South Newton Elementary School
Downtown Lighting **Side Walk**
Highway **Greenway** Square
Cross Walk South Side **Center** Main Avenue
Business 321 Neighborhoods **Pedestrian** Walmart
N College Intersection
Downtown Walmart **Hwy 10** Conover **Crosswalk**
West 7th **South Side Park** Pedestrian Signal

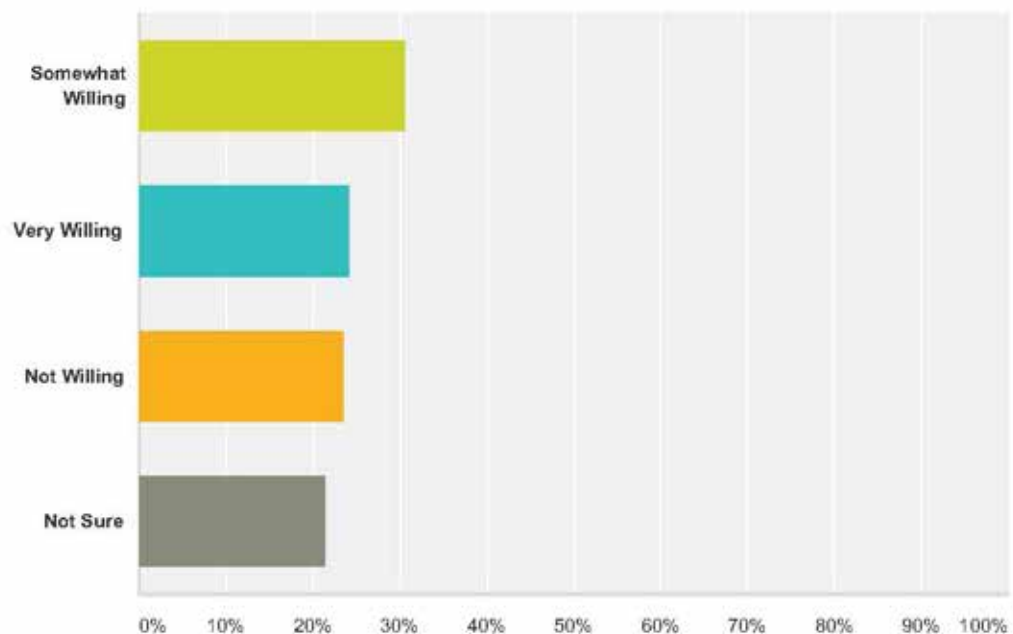
Q8 How should pedestrian facilities be funded within Newton? (Select all that apply)

Answered: 272 Skipped: 57



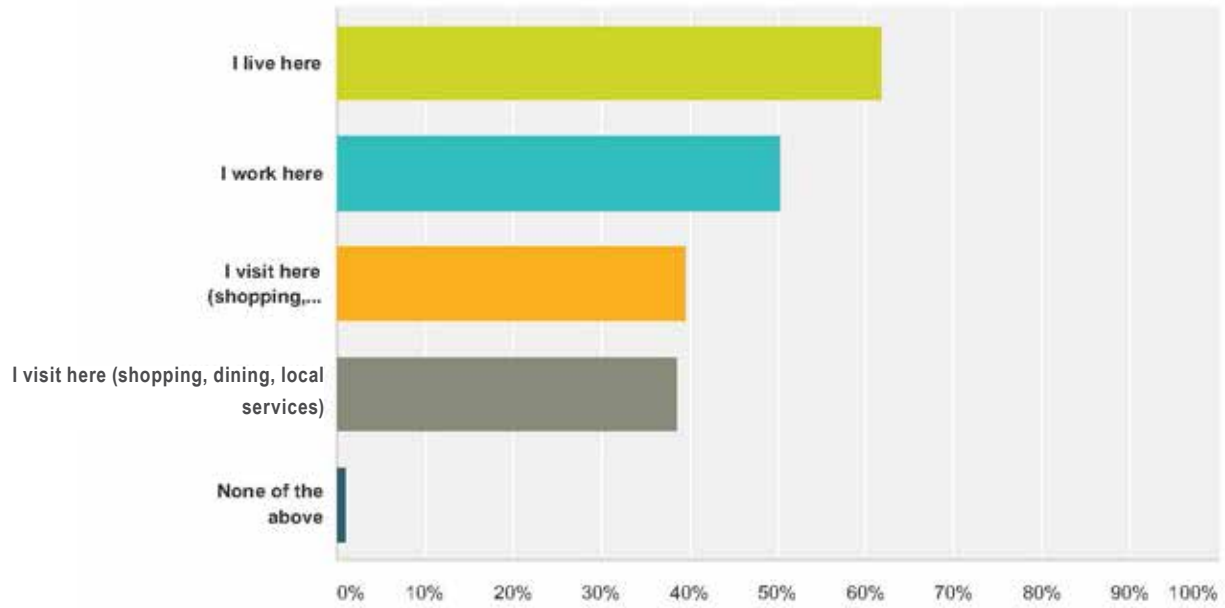
Q9 How willing would you be to pay some increase in taxes to fund pedestrian facilities in Newton?

Answered: 280 Skipped: 49



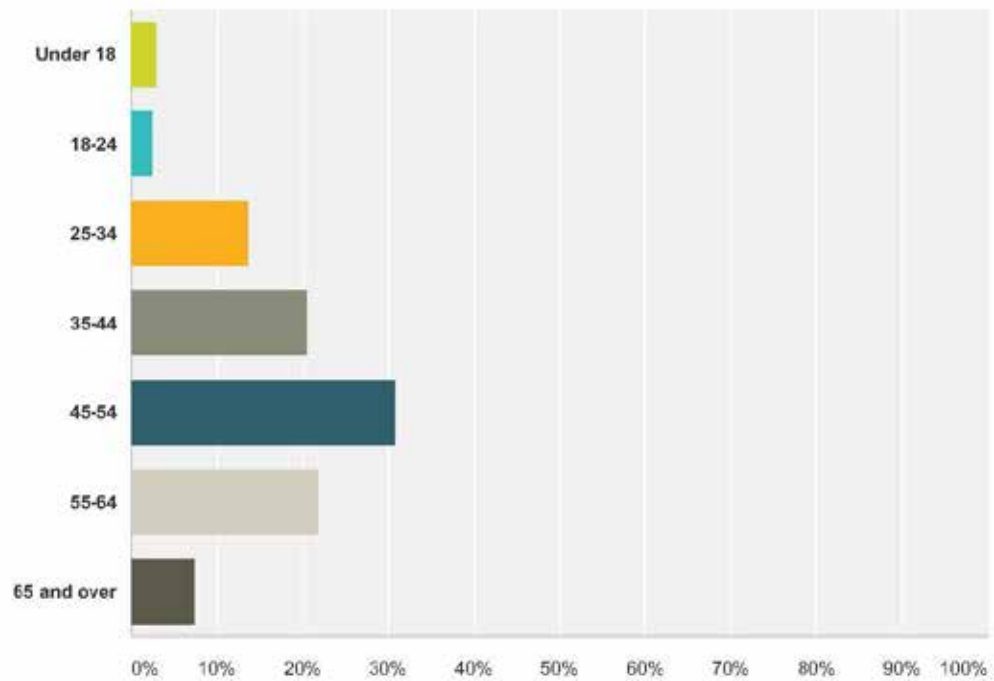
Q10 What is your relationship to Newton?

Answered: 282 Skipped: 47



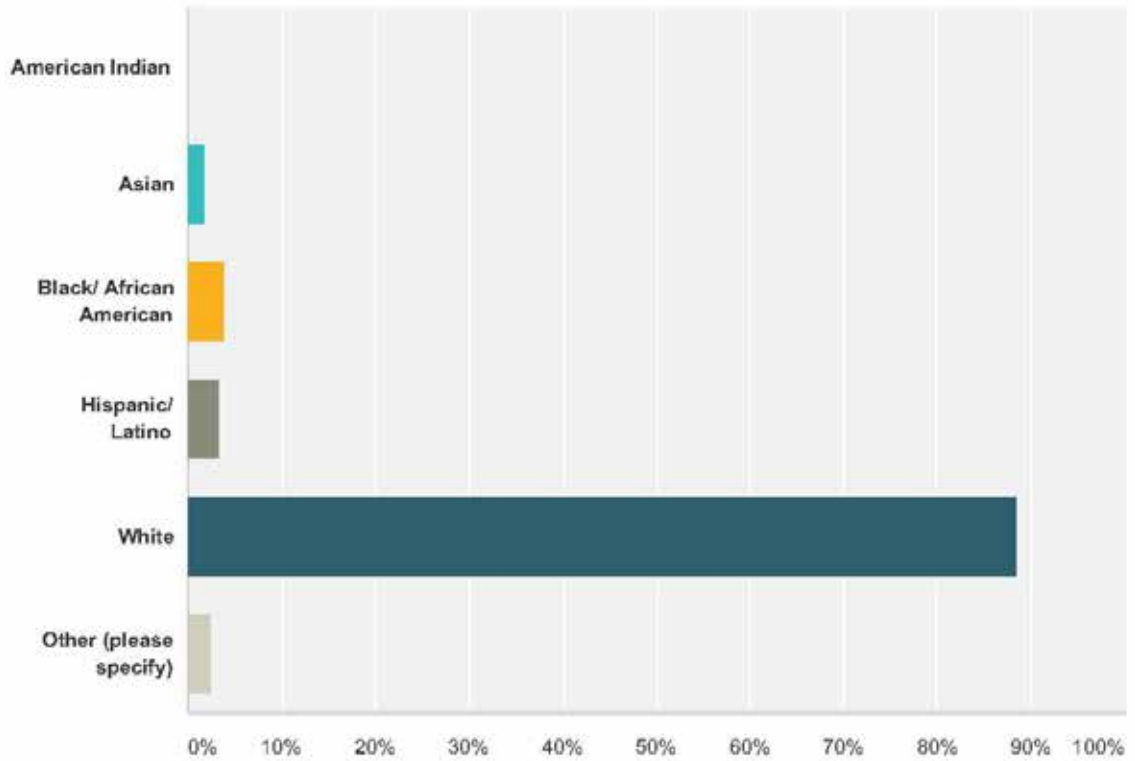
Q11 What age group are you in?

Answered: 282 Skipped: 47



Q12 What is your ethnic background?

Answered: 277 Skipped: 52





First Steering Committee Meeting