

WALKABLE 29203



Crane Creek & North Main Areas Pedestrian Master Plan

OCTOBER 2016



ACKNOWLEDGEMENTS

PUBLIC PARTICIPANTS

The project team would like to recognize and express appreciation for the myriad of individuals who participated in the development of this plan. The vision and ideas you shared for the 29203 community provided the foundation of this study. Your support will be critical to the development of more safe and walkable neighborhoods.

WALK 29203 ADVISORY GROUP

Tracy Hegler, Richland County Planning
Ashley Powell, Richland County Planning
John Fellows, City of Columbia Planning
Leigh DeForth, City of Columbia Planning
Bob Schneider, The COMET
Samuel Scheib, The COMET
Gregory Sprouse, Central Midlands COG
Mary Roe, Palmetto Conservation Foundation
Kathie Williams, Eat Smart Move More Richland Co.
Bethany Bell, City of Columbia BPAC
Elizabeth Gerndt, DHEC Midlands Region
Suzanne Sanders, DHEC Midlands Region
Bryan Jones, SCDOT District
Tom Dodds, SCDOT Bike & Ped Coordinator
Rob Perry, Richland County Penny Sales Tax
Monique McDaniels, Columbia College

PROJECT CONSULTANTS

Alta Planning + Design
638 East Washington Street
Greenville, SC 29601



Designing4Health

Gather Consulting

John M. Newman Consulting





TABLE OF CONTENTS

SECTION I: PROJECT OVERVIEW

1. INTRODUCTION	9
2. DATA COLLECTION & ANALYSIS	21

SECTION II: CRANE CREEK (CC) STUDY AREA

3. CC COMMUNITY OVERVIEW & PUBLIC INPUT	49
4. CC OPPORTUNITIES & CONSTRAINTS	59
5. CC RECOMMENDATIONS	65
6. CC PRIORITY PROJECT CUT SHEETS	71

SECTION III: NORTH MAIN (NOMA) STUDY AREA

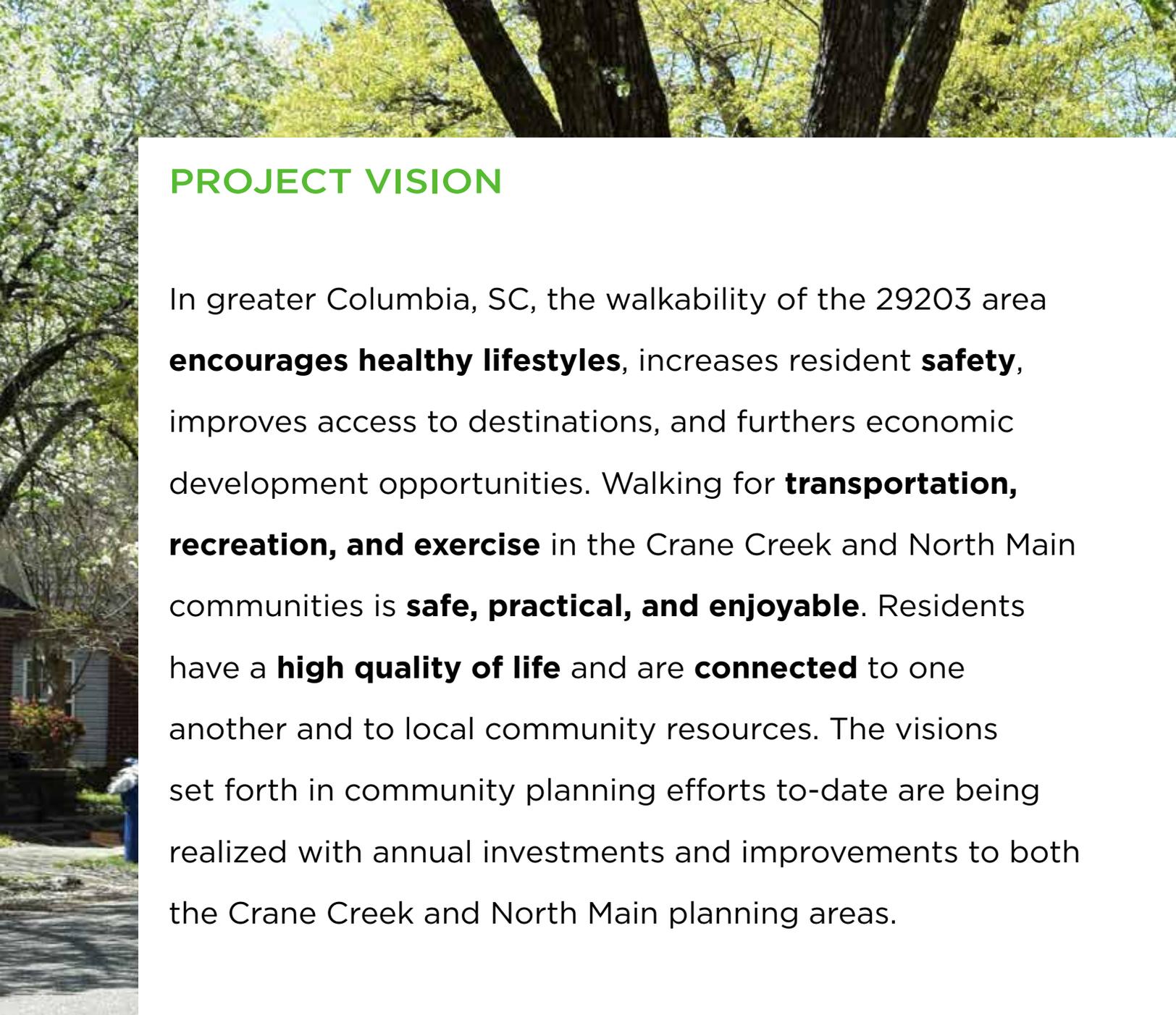
7. NOMA COMMUNITY OVERVIEW & PUBLIC INPUT	77
8. NOMA OPPORTUNITIES & CONSTRAINTS	87
9. NOMA RECOMMENDATIONS	93
10. NOMA PRIORITY PROJECT CUT SHEETS	99

SECTION IV: PROGRAMS, POLICIES, & NEXT STEPS

11. PROGRAMS & POLICY RECOMMENDATIONS	105
12. NEXT STEPS	121

APPENDIX

13. PEDESTRIAN FACILITY TYPES	129
14. FOCUS GROUP REPORTS, SURVEY REPORTS, EQUITY MAPS	135



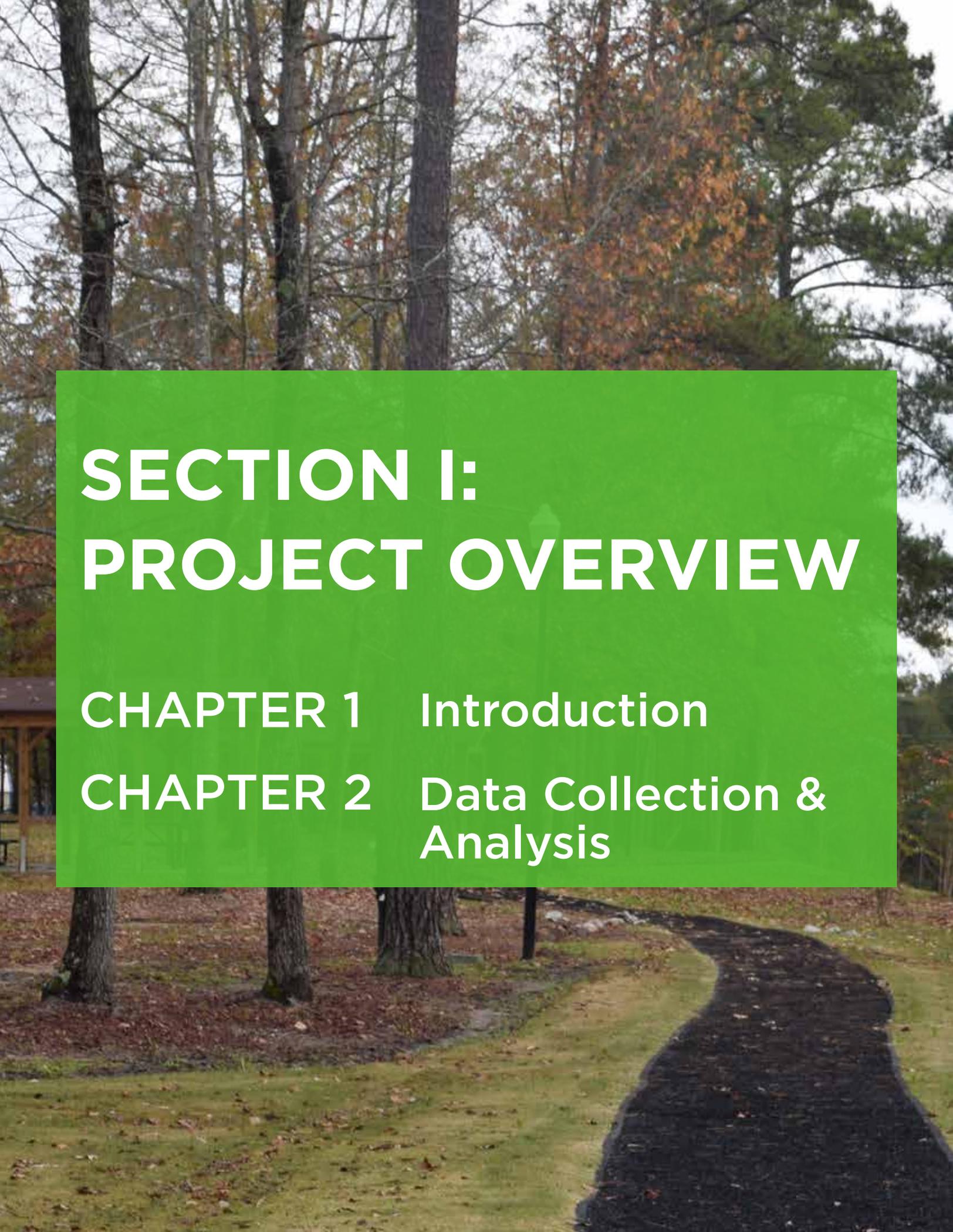
PROJECT VISION

In greater Columbia, SC, the walkability of the 29203 area **encourages healthy lifestyles**, increases resident **safety**, improves access to destinations, and furthers economic development opportunities. Walking for **transportation, recreation, and exercise** in the Crane Creek and North Main communities is **safe, practical, and enjoyable**. Residents have a **high quality of life** and are **connected** to one another and to local community resources. The visions set forth in community planning efforts to-date are being realized with annual investments and improvements to both the Crane Creek and North Main planning areas.

PROJECT GOALS

- Move the recommendations of prior plans in Crane Creek and North Main closer to **implementation**
- **Improve pedestrian connectivity** to grocery stores, community garden sites, local parks, and schools
- Prioritize **pedestrian safety** needs by improving crossing conditions on major roads and filling critical sidewalk gaps
- Leverage a **strong neighborhood network** and **sense of pride** through place-making projects and community programs
- Create synergy between **local healthy food production** and residents' access to that food
- Leverage the **existing trail network** to better **link residents** and visitors to **parks, trails, the Broad River, and downtown Columbia**
- Invest in **new trails** and connectors that **close gaps** between neighborhoods and in the overall pedestrian network
- Capitalize on **new investments** like the North Main TIGER-funded roadway project and the Crane Creek Park to support further **walkability investments**
- Improve **access to transit** and **pedestrian safety** at transit stops



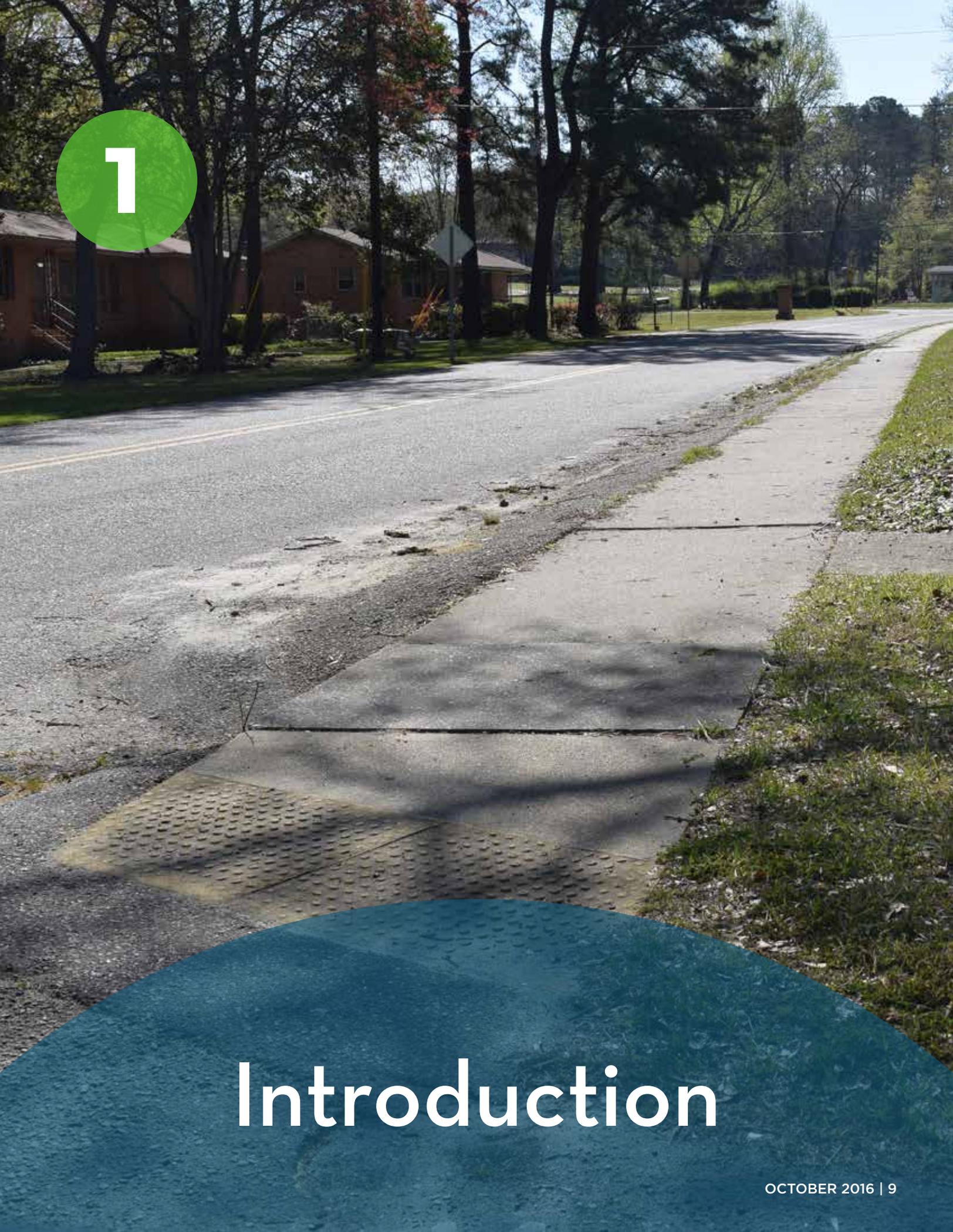
The background of the slide is a photograph of a park. In the foreground, a dark asphalt path curves from the bottom right towards the center. The ground is covered with fallen brown leaves. Several trees with thin trunks and sparse foliage are scattered throughout the scene. A wooden structure, possibly a gazebo or picnic shelter, is partially visible on the left side. The sky is overcast and grey.

SECTION I: PROJECT OVERVIEW

CHAPTER 1 Introduction

**CHAPTER 2 Data Collection &
Analysis**

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1

Introduction

PROJECT BACKGROUND

Through a recent grant from the Centers for Disease Control and Prevention (CDC), the South Carolina Department of Health and Environmental Control (DHEC) is leading an effort to increase pedestrian planning efforts throughout South Carolina. The effort is part of the DHEC South Carolina Prevention and Health Across Systems and Environments (SC PHASE) Pedestrian Planning Project.

SC PHASE Pedestrian Planning is a 3 year project to develop pedestrian plans for 16 communities in specific counties throughout the state. **Beyond the basic tenets of walkability and pedestrian safety, key elements of the program initiative are:**

- **Equity-based planning**
- **Community engagement**
- **Safe pedestrian access to healthy foods**

The 29203 zip code in Richland County is one of the 16 communities to participate in SC PHASE Pedestrian Planning.

Pedestrian plans and policies play a critical role in fostering more walk-friendly communities by establishing the conditions that support and encourage safe walking environments. Such plans provide the basis for new community norms where walking is seen as practical and appealing for people of all ages and abilities by providing for the infrastructure, programs, and amenities to support healthy choices and active transport. With 25.1 percent of South Carolinian adults reporting no leisure-time physical activity, and 56.6 percent of high school students reporting not being physically active on five or more days, **finding ways to support more walking as an accessible and convenient form of physical activity will be vital to improving the health of South Carolina's residents.**

COMMUNITY CONTEXT

The 29203 zip code encompasses the northern edge of the City of Columbia, the capital and largest city in the state, and extends northward into suburban and rural Richland County, South Carolina. Columbia serves as the seat of Richland County, part of a larger metro area of approximately 800,000 that is also home to the University of South Carolina flagship campus.

The 29203 zip code and greater Columbia are located in the Midlands region of South Carolina, near the confluence of the Broad River and the Saluda River. The Congaree National Park borders the city to the southeast and is a notable recreation and wildlife destination.

In the 1990s and 2000s, downtown Columbia experienced rapid revitalization, particularly in the historic Congaree Vista district near the Congaree River. Main Street in particular is a continued focus for investment. Many historic buildings are being redeveloped on Main Street along with major ongoing economic development projects and streetscape beautification efforts.



Reference map of the 29203 zip code within Richland County and the state.

Columbia has a council-manager form of government, with a 6-member city council and mayor. The city is divided into four districts with two at-large city councilors. The portions of the 29203 zip code that are located in the City of Columbia fall within Districts 1 and 2. Columbia has a full service city government, with departments that oversee planning and development, streets, traffic engineering, and parks and recreation.

The Central Midlands Council of Governments encompasses Columbia and Richland County and provides funding to active transportation projects in the region. The Central Midlands Regional Transit Authority (CMRTA) manages mass transit in the Columbia area, including Monticello Road.



Angelo's Zesto has served customers passing along North Main Street since it opened in the 1940s. Creating pedestrian access to neighborhood destinations like this one is critical to improving quality of life.

¹ U.S. Census Bureau, 2010 Census.

The primary focus areas within the 29203 zip code are the North Main planning area and the Crane Creek planning area. These planning areas were defined by previous planning efforts, specifically the Villages of North Columbia Master Plan and the Crane Creek Master Plan. (A review of these previous plans can be found on page 23).

The North Main (often referred to as NOMA) and Crane Creek communities are defined by strong residential neighborhoods with varying road typologies ranging from quiet neighborhood streets to major arterials. Many of these corridors that branch across the area lack pedestrian amenities and have seen considerable commercial disinvestment. Improving walking conditions and making logical network connections to key destinations and major activity centers can energize these static, uninviting corridors and improve quality of life for all residents.

The adjacent community profile presents a snapshot view of the interplay between walkability and socioeconomic conditions for residents of 29203.



COMMUNITY PROFILE

The racial make-up of the community within the 29203 zip code is predominantly Black (or African American) – with 81.5% of residents identifying as such and 14.3% of residents identifying as White. For comparison, Richland County is 45.9% Black (or African American) and 47.1% White, and South Carolina as a whole is 27.7% Black (or African American) and 67.2% White.

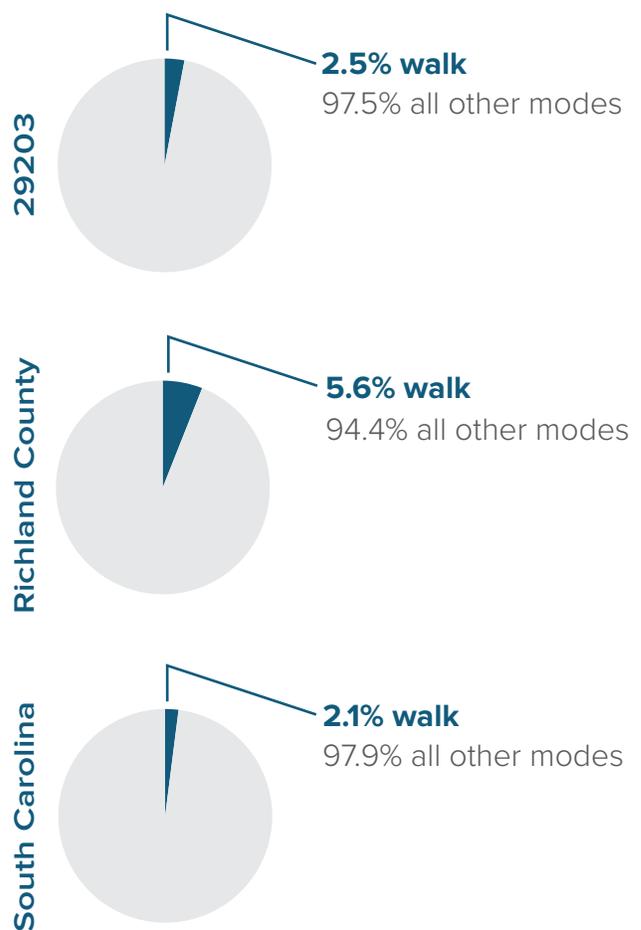
The median income for households in the 29203 zip code is \$30,333, a figure that is 38% below that of the county (\$48,674) and two-thirds of the median income for all of South Carolina (\$45,033).²

Over one-fifth (20.9%) of the labor force in the 29203 zip code is unemployed, compared to 10.4% and 10.6% for the county and state, respectively. Given this lower income level and higher rate of unemployment, it is not surprising then that **32.2% of all people in the 29203 zip code live below the poverty level.** The rate of poverty at the state level is drastically lower at 18.3% for comparison.

In terms of mode share, nearly 78.7% of area residents commute to work in private vehicles. A regionally significant percentage (9.1%) of residents carpool to work. Almost three percent of residents commute via public transportation, which is well above the county rate of 1.1% and 0.6% at the state level. Since most people walk to transit stops, it is important to ensure that adequate pedestrian facilities are in place in order to support and continue to encourage walking as a healthy and safe mode of travel. Two and a half percent of the working population walk to work compared to

5.6% for Richland County and just 2.1% for the state. Additionally, 28% of residents are within a 15 minute commute to work, which suggests potential for large growth in walking and biking to work. These statistics are represented graphically in the figure below.

Walking as a percentage of commuting mode share per geography:



² U.S. Census Bureau, 2014 American Community Survey 5-Year Estimate. www.factfinder.census.gov

It is important to note that mode share does not paint a full picture of need and demand, however. Mode share data is collected through an American Community Survey question which asks for the “primary” way a resident gets to work. This excludes walking commutes that occur as a secondary mode (for example, walking to a bus) and also excludes trips to destinations other than work. Moreover, those **households in the 29203 zip code who do not have access to vehicles (7.3%** – almost 3 times higher than the county rate of 2.5%) and those households with access to only one vehicle (35.5%) **may walk out of necessity**, and residents who currently drive might opt to walk to work if a safe and comfortable walking environment with adequate facilities existed.

Safety is key in encouraging and sustaining pedestrian activity. State traffic collision data show that Richland County has a pedestrian fatality rate of 2.3 deaths per 100,000 people, which is equivalent to the state rate. Almost two out of every three (65%) pedestrian fatalities in Richland County occurred on arterial roads. Finding ways to draw this rate closer to zero in the 29203 zip code will be an important goal for promoting walkability.



A pedestrian push button placed at the crest of a berm, in front of a utility box, and where sidewalks are lacking prevent pedestrians from being able to use this facility that aids in a safe crossing. This is at the skewed intersection of Clement Drive, River Drive, and Route 16.



WHAT IS WALKABILITY?

Walkability is more than the ability to walk. It is a holistic approach for evaluating a streetscape or community's design, and a means to understand the factors that influence and encourage pedestrian activity. The goals of a walkable place are multi-faceted and context-specific but typically strive for the following:

- Increase personal mobility by providing alternatives to driving private automobiles
- Increase personal mobility with ADA-accessible streetscapes
- Stimulate vibrancy in commercial and social realms of a community
- Increase access, proximity, and convenience to more destinations through a well-connected network of sidewalks, crosswalks, and walking trails
- Create an attractive place with inviting street orientations, landscaping, street furniture, and architectural design

There is no single, catchall walkability definition or one specific metric for measuring walkability. However, across the various attempts at a comprehensive definition, common themes emerge. Apart from the potentially obvious features that encourage walkability, like sidewalks and frequent, visible crossings, walkable places also incorporate the following key principles:

- Human-scaled environment
- Strong sense of place
- Physical access
- Connected walkways and street pattern
- Mix of land uses
- Density and location of facilities
- Managed parking

The community within the 29203 zip code is not yet an archetype of a walkable community, however, there is a basis of existing facilities and features that will support and contribute to the area's goal of becoming a more pedestrian-friendly space. This Plan presents opportunities to build off of those existing resources.



“What Makes a Neighborhood Walkable?” graphic from WalkDenver, a pedestrian advocacy group.

WHY PLAN FOR PEDESTRIANS?

Imagine 29203 in 20 years...

as a place where people choose to walk — not out of necessity, but because it is a convenient and enjoyable transportation choice.

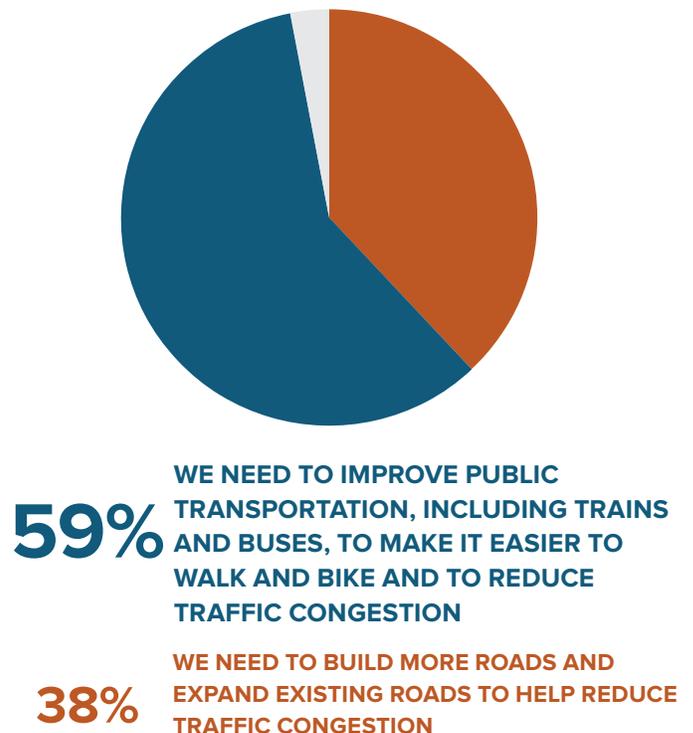
Development is well-designed and accessible so that residents have many of their everyday needs within walking distance. Pedestrian-friendly streets are prevalent throughout the community, and parents feel perfectly safe letting their children walk or bike to school, parks, or other destinations by themselves, or as part of an enjoyable and healthy family outing. Older adults who no longer drive can easily access grocery stores and medical appointments. Because the streets are safer and a growing pedestrian network connects more people to more places, people are walking in record numbers. Obesity rates decline, and families in all parts of the community can easily access healthy food. Serious pedestrian collisions have dropped substantially.

The cumulative result of this environment has resulted in substantial savings for the community and taxpayers. Road maintenance is less expensive as fewer cars are on the roads, and residents save money on gas while the air quality improves for everyone. Downtown attracts more local businesses that want to invest in a vibrant, active community and cater to the growing population.

An increasing number of communities and their leadership are seeing the potential of a future like this one; a future where better active transportation environments are critical parts of transforming and revitalizing our communities, making them more desirable places to live, work, and visit. This movement is a direct result of the nationwide demand for more livable communities and transportation options.

In 2010, Transportation for America conducted a nationwide survey that showed 59% of Americans in rural and urban areas preferred a transportation future that “[improves] public transportation and making it easier to walk and bike over building more roads and expanding existing roads.” See Figure 1.1 below. And 73% [of respondents felt] they ‘have no choice but to drive as much as they do’, with 57% desiring to spend less time in the car.”

Figure 1.1 Americans' Preference for Reducing Traffic Congestion



SUMMARY TABLE OF WALKABILITY BENEFITS

ECONOMIC BENEFITS	
Public infrastructure savings	Compact, walkable communities save costs on road building, maintenance other public infrastructure.
Attracts businesses	Walkable communities have lower vacancy rates and increasingly attract businesses that want to offer convenient amenities and short commutes.
Reduces individual transportation costs	Residents of walkable communities save money on costs associated with transportation, including vehicle ownership costs, operating costs, and parking costs.
Magnet for millennials and baby boomers	Demand for walkable communities is growing, especially among millennials and boomers - both generations that wish to drive less and be able to easily reach destinations on foot.
Increases housing values	Walkable communities have higher housing values and have higher stability than auto dependent communities during a recession.
Improves socioeconomic mobility	Walkable areas have concentrated amenities such as jobs that are easily accessible to low-income residents and provide greater opportunities for economic mobility.
Attracts visitors	Walkable communities attract tourist dollars with lively streets, engaging storefronts, short distances between attractions and a unique sense of place.
Attracts recreation spending	Walkable communities are great places for outdoor recreation. Multi-use trails and safe streets can attract bicyclists and events such as triathlons that pump money into the local economy.

HEALTH BENEFITS

Improves physical health	Places that encourage walking have lower rates of chronic disease related to physical inactivity such as diabetes, heart disease, and osteoporosis. A simple walk improves balance, limits sickness, strengthens muscles and builds bone mass, as well as burns more fat than jogging. People who live in walkable neighborhoods are two times as likely to get enough physical exercise as those who do not.
Improves mental health	Walkable communities can prevent the onset of cognitive decline and improve mental function. Walking can also prevent and reduce the symptoms of depression and anxiety, stimulating a sense of well-being through released endorphins.

SAFETY BENEFITS

Improves safety for all road users	Streets that are designed for pedestrians have safety benefits for all users of the road, including bicyclists and drivers. Sidewalks, medians, and traffic calming have particular direct effects. Safety in numbers - more people walking and biking - has proven to be an indirect safety improvement that reduces the risk of a collision.
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ENVIRONMENTAL BENEFITS

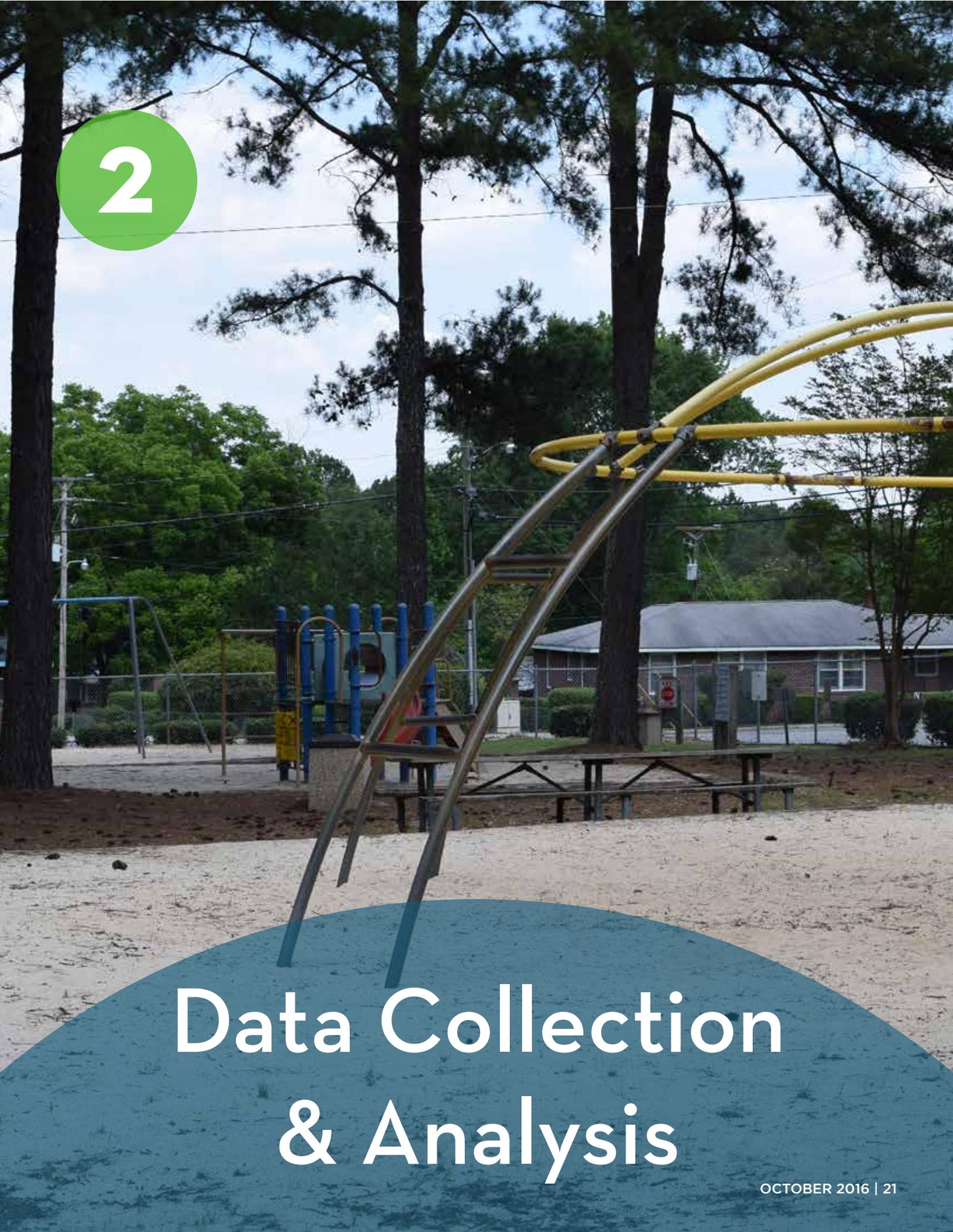
Improves air quality	By reducing the distance to amenities and increasing the safety of walking to destinations, more trips can be made by walking while reducing emissions and reliance on fossil fuels.
Preserves open space and greenspace	Compact, walkable development allows for more green space, water sources, and wildlife habitat to be preserved.

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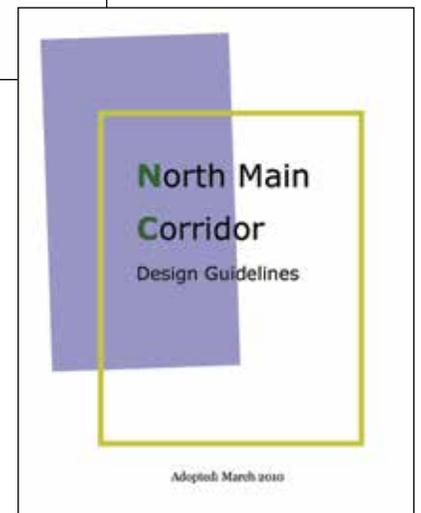
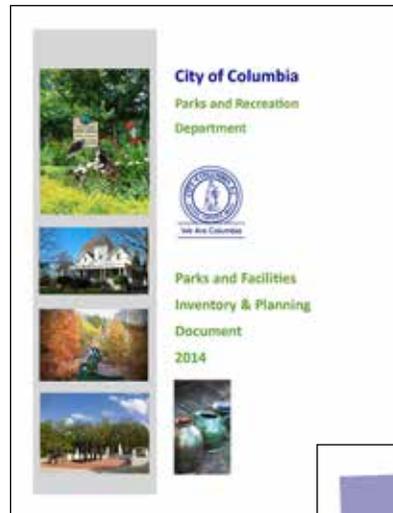
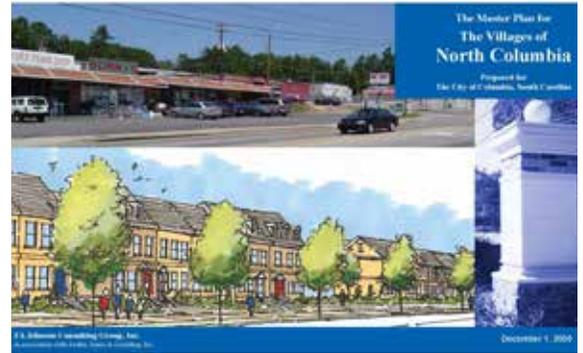


Data Collection & Analysis

OVERVIEW

This chapter provides an overview of the major data collection and analysis findings related to the existing environment for walking within the 29203 zip code. The project team conducted field work to support this analysis and assessment during the initial discovery phase of the project. The information they gleaned and the critical findings of that analysis process are shared in the following chapter subsections:

- Review of Existing Planning Efforts
- 29203 Base Map
- Pedestrian Safety Analysis
- Equity Analysis
- Access to Healthy Foods Analysis
- Access to Active Spaces Analysis



REVIEW OF PREVIOUS PLANNING EFFORTS

This plan combines, updates, and refines previous pedestrian network recommendations to present a proposed future network. This section describes the recent planning efforts relevant to walkability and transportation in the 29203 zip code. The City of Columbia and Richland County have adopted six primary transportation planning documents in recent years. These documents are listed in the table below. Additionally, Richland County voters approved a penny sales tax for transportation projects in 2012, which is funding pedestrian and greenway projects including the 29203 zip code.

Common themes emerge across the different plans. These **themes center on the need for an improved quality of life, including active transportation and safe pedestrian access to recreation in 29203 zip code.** To achieve a vision for walkability, the plans include the following recommendations:

- Provide a seamlessly connected walking network
- Provide a well-maintained greenway system
- Promote access to alternative transportation
- Improve land use and urban design to enhance walkability and quality of life.

Plan	Agency	Year
Walk Bike Columbia	Central Midlands Council of Governments and City of Columbia	2015
Richland County Comprehensive Plan	Richland County	2015
Richland County Transportation Study Update	Richland County	2012
North Main Corridor Design Guidelines	City of Columbia	2010
Crane Creek Master Plan	Richland County	2009
Villages of North Columbia Master Plan	City of Columbia	2005

WALK BIKE COLUMBIA

In 2014, the Central Midlands Council of Governments commissioned the development of a pedestrian and bicycle master plan and bike share plan for the City of Columbia. The study area of Walk Bike Columbia encompasses most of the North Main planning area. It does not include the Crane Creek planning area.

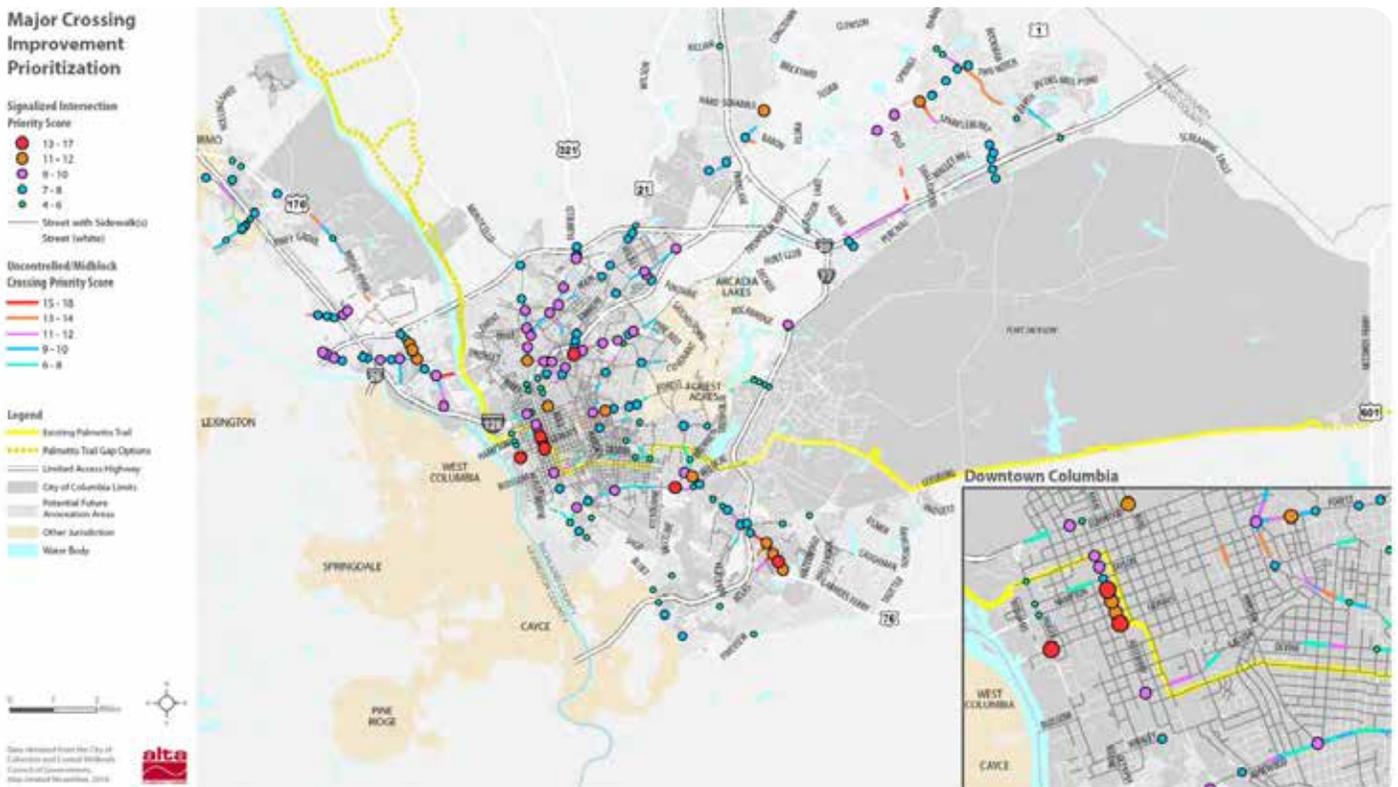
The Plan was a robust effort to analyze existing conditions for pedestrians and bicyclists and provide recommended improvements for infrastructure, programs, and policies. The following analyses conducted for Walk Bike Columbia provide a basis for understanding needs and opportunities in the North Main area:

- Pedestrian collision analysis
- Pedestrian suitability analysis
- Public comments

The Plan’s recommendations include linear improvements (sidewalks), signalized crossing improvements, and unsignalized crossing improvements. The results of the Pedestrian Suitability Analysis formed the basis for these recommendations. A scoring process using prioritization criteria yielded an implementation plan categorized by seven phases.

The recommendations of the Plan include a high priority signalized intersection improvement at Sunset Drive and North Main Street, with mid-tier priority crossings identified near Ridgewood Ave, Monticello Road at North Main Street, and near Columbia College. Linear improvements that fall within the first three implementation phases are centered along North Main Street and concentrated near Sunset Drive.

Walk Bike Columbia also provides pedestrian infrastructure design guidelines that were adopted by the City of Columbia and referenced in this Plan.



RICHLAND COUNTY COMPREHENSIVE PLAN

The *Richland County Comprehensive Plan* incorporates the area’s unique history, environment and culture to guide future growth and development. The plan functions as a blueprint for how and where Richland County will grow over the next 20 years. To renew focus on land planning, the plan was updated in 2013. A set of guiding principles inform the recommendations, which includes a focus on bridging land use and infrastructure upgrades. Another guiding principle is the creation of Livable communities with accessible transportation options.

The comprehensive plan is organized into the following elements;

- Population
- Land use
- Housing
- Transportation
- Economic development
- Natural resources
- Cultural resources
- Community facilities
- Priority investments

The transportation element identifies existing issues and improvements that can be funded through the Transportation Penny sales tax. The tax revenue provides almost \$81 million for new bike and pedestrian facilities, and all Transportation Penny projects will follow a Complete Streets approach.

25-Year Funding Needs for County Pedestrian, Bicycle, and Greenway Projects as identified in the Richland County Transportation Plan Update

Ped/Bike/Greenway	(Amount in Millions of 2012 Dollars)			
	High Priority	Medium Priority	Long-Term Priority	Total
Bikeways	\$22.0	50.7	131.4	204.1
Greenways	\$14.2	\$58.0	\$10.6	\$82.8
Pedestrian Facilities	\$27.0	\$28.2	\$22.2	\$77.4
Additive Projects	\$2.9	-	-	\$2.9
Total Need from Sales Tax	\$66.1	\$136.9	\$164.2	\$367.2

RICHLAND COUNTY TRANSPORTATION PLAN UPDATE

The *Richland County Transportation Plan Update* assesses needs and prioritizes funds for projects over the next 25 years. According to the plan, the 25 year cost estimate for all pedestrian project improvements is \$77.4 million, 27 million of which is needed for priority projects (see table below). Pedestrian, bicycle, and greenway trail projects account for 16% of the total transportation needs in Richland County.

NORTH MAIN CORRIDOR DESIGN GUIDELINES

The North Main Street corridor is the primary gateway street to many neighborhoods in North Columbia. Design guidelines were initiated by the Villages of North Columbia Master Plan but provide a more detailed analysis of land use regulations and obstacles to redeveloping the North Main corridor.

The North Main Corridor forms one of the major corridors of the 29203 area and thus is one of the two main focus areas for the Walkable 29203 Pedestrian Master Plan. The guidelines call for standards that create a welcoming environment for people on foot such as parking behind buildings, and for direct pedestrian access to building entrances.

Design standards outlined in the guidelines include:

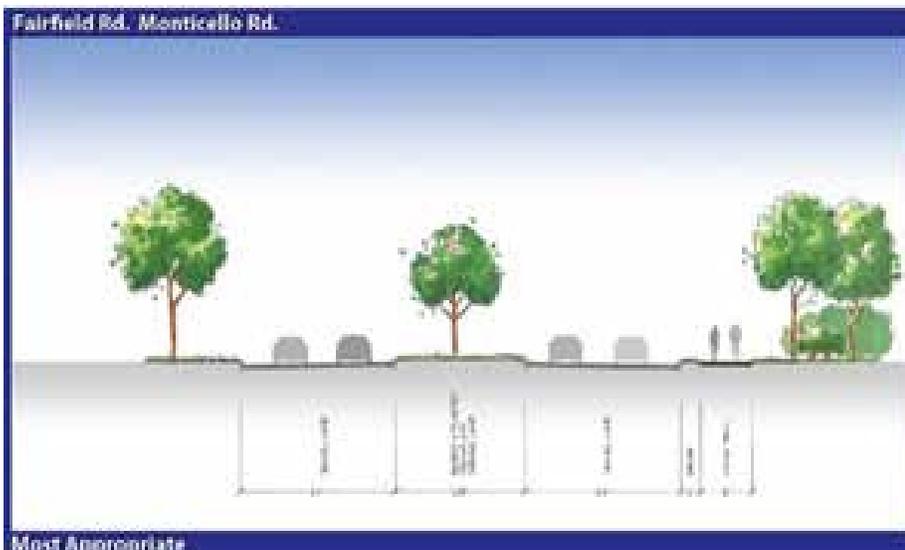
- Site planning
- Building design
- Parking placement
- Streetscapes

CRANE CREEK MASTER PLAN

The 29203 zip code includes the Crane Creek community in the north, and with the Crane Creek Master Plan as the basis for sustainable design principles in this area, the Crane Creek Community is the second of the two focus areas for the Walkable 29203 Pedestrian Master Plan. The Crane Creek Master Plan sets several goals relevant to creating a vibrant 29203 community:

- Reinvent the image of the Crane Creek community
- Create a walkable community with viable pedestrian and bike trails
- Increase community recreation facilities
- Preserve existing wetlands and create a community open space network

To achieve those goals, local residents were brought together for a design charrette to assess strengths, weaknesses, opportunities, and threats. Sidewalk connections and general connectivity were seen as opportunities for improvement. The charrette also produced a set of recommendations for development, open space, transportation, streetscapes, and utilities. Again, increasing road connectivity between



The Preferred Monticello Road cross-section from the Crane Creek Master Plan.

VILLAGES OF NORTH COLUMBIA MASTER PLAN

neighborhoods was listed, with the caveat that safety must be considered. For 29203 road streetscapes, recommendations include:

- Locate more sidewalks and complete gaps
- Security system needs to be present
- Sufficient street lights must be provided

A community image preference survey was used to determine favored designs for housing, mixed-use developments, and roads. For example, the preferred cross-section for Monticello Road includes buffered sidewalks with a landscaped median and a four-lane roadway.

Total cost estimates for streetscape improvements are also provided in the plan.

RICHLAND COUNTY PENNY SALES TAX FOR TRANSPORTATION

County voters approved a penny sales tax to fund transportation projects throughout Richland County. Monticello Road in Crane Creek is identified as a priority “Greenway” project from I-20 to the Three Rivers Greenway system.

The North Columbia Villages encompass twenty five neighborhood organizations in Richland County between the city center on the south, I-20 on the north, the Broad River to the west, and Farrow Road to the west.

The large neighborhood cluster includes portions of Monticello Road as well as Columbia College, the Lutheran Seminary, numerous parks and other amenities. Committee meetings and community workshops identified five primary goals:

1. Reinvent the image of North Columbia
2. Preservation of existing single-family neighborhoods
3. Develop supportive retail services
4. Maintain and develop new parks and community open spaces
5. Increase educational services and outreach programs

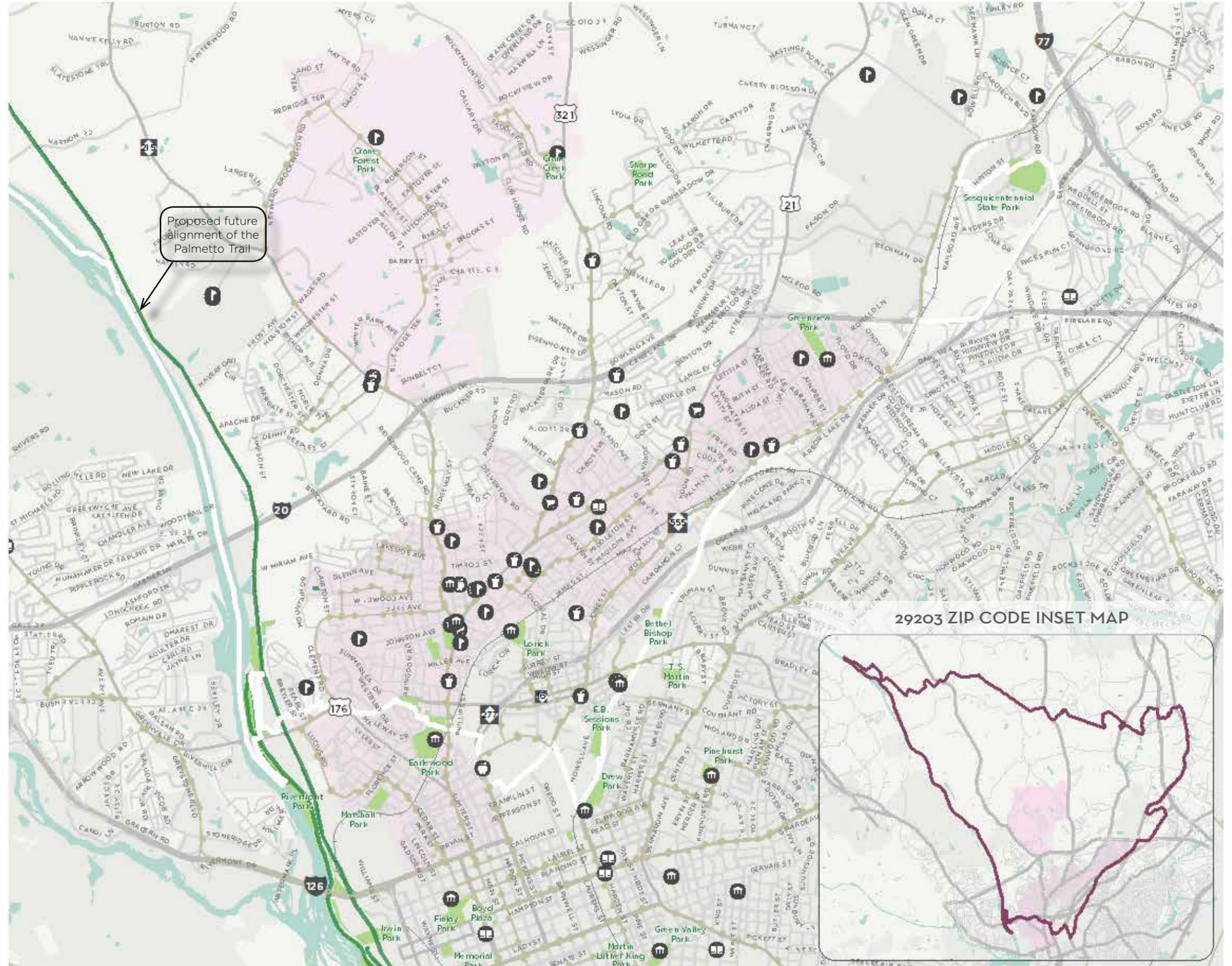
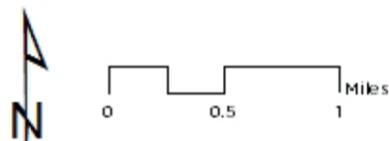
The Master Plan lists the intersection of Monticello Road and North Main Street as a “major node” and commercial/mixed use area. The Master Plan also assesses existing land use on the Monticello Road corridor and highlights destinations such as the former Eau Claire Town Hall, Eau Claire High School, and the Keenen House. The plan notes a lack of consistent pedestrian streetscapes and sporadic beautification efforts.

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29023 BASE MAP

A first step in evaluating the existing conditions of the 29023 zip code, is the development of a comprehensive base map. Based on GIS data collected by the project team, a base map was created to illustrate the neighborhood study area extents within the 29023 zip code (see inset map), as well as key supporting information such as schools, parks, community gardens, and grocery stores.

-  Farmers Market
-  Grocery Store
-  Informal Food Outlet
-  Library
-  School
-  Community Center
-  Community Garden
-  Neighborhood Study Area
-  Bus Stop
-  Bus Route
-  Palmetto Trail
-  Park
-  Water Body
-  Road
-  Railroad
-  Zip Code 29203 (white)
-  Surrounding Counties



PEDESTRIAN SAFETY ANALYSIS

Pedestrian fatalities are on the rise.

Between 2003 and 2012, 47,025 pedestrians were killed walking on streets in the U.S. In 2012 alone, 4,743 pedestrians died, an increase of 7% over 2011. Meanwhile, the number of vehicle drivers and passengers who died in traffic crashes declined by a third during this period. The rise in pedestrian fatalities while overall traffic fatalities declined means pedestrians now account for more than 15% of all traffic fatalities. A study by the Governors Highway Safety Association, the number of pedestrians killed in motor vehicle crashes is expected to rise by 10% in 2015 over 2014.*

Pedestrian safety is a growing concern in South Carolina. Pedestrian fatalities in the state rose 23.8% between 2008 and 2012, outpacing national trends. The table on the following page summarizes fatality figures for the state during this time.

South Carolina ranks 45th in the nation for levels of walking mode share, yet ranks 2nd in the nation for walking fatality rates.

Richland County has a pedestrian fatality

rate of 17.3 deaths per 100,000 people,

compared to the state rate of

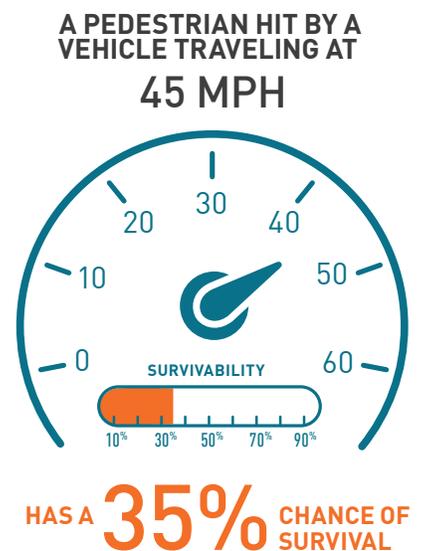
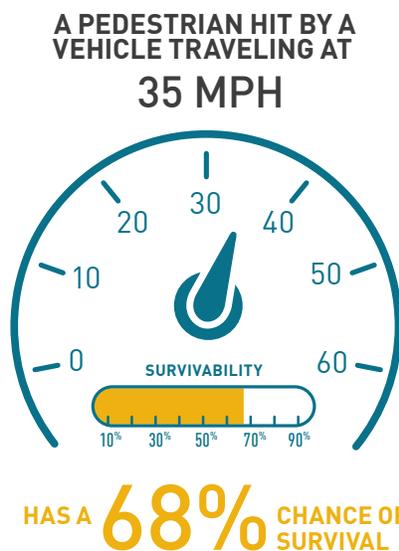
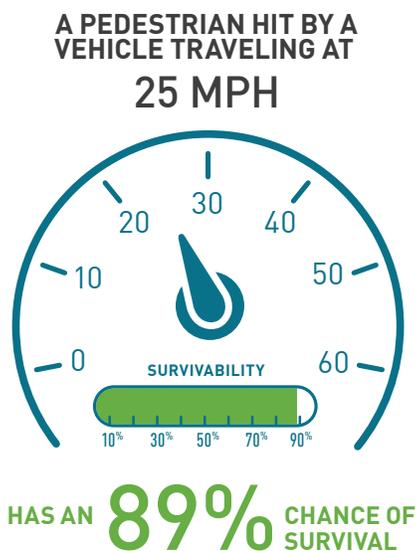
2.3 deaths per 100,000 people.†

This is by far the worst rate in the state.

While reasons for the increase in pedestrian crashes are difficult to pinpoint, more people walking, higher numbers of pedestrians on dangerous, high-speed arterials, and demographic shifts all likely play a role. A number of factors impact pedestrian safety. Visibility, driver behavior, time of day/year, access to safe crossings, and traffic volume all play a role. However, key factors such as speed, the number of traffic lanes, and roadway design disproportionately affect safety for vulnerable roadway users.

* Governors Highway Safety Association. (2015). "Pedestrian Traffic Fatalities by State: 2015 Preliminary Data."

† *Dangerous by Design - South Carolina* (2014).



In a study of the impact of vehicular speed on pedestrian fatalities, it has been found that the fatality rate drops dramatically as vehicular speed drops below 45 mph, as shown in the graphic below.

According to Fatality Analysis Reporting System data, 58.8% of all pedestrian deaths in South Carolina were on arterials — wide, high speed roads rarely built with pedestrian safety in mind. Similarly, 78.8% of South Carolina’s pedestrian fatalities occurred on roads with a speed limit of 40 mph or higher.* This data suggests that the high rate of pedestrian fatalities in South Carolina, and in the 29203 zip code in particular can be reduced by implementing speed limit reductions in corridors with high levels of pedestrian activity.

Some populations are disproportionately affected by unsafe walking conditions.

Households without access to vehicles are more reliant on walking, yet often live in areas where suburban street patterns and dangerous arterial roads predominate. Older adults require more time at crossings and are more vulnerable to

injury when a collision occurs. Older adults are also more susceptible to other non-collision events which do not involve a motor vehicle but which can cause injury. These “pedestrian only” events such as tripping on sidewalks and slipping on curbs, are not typically captured when discussing pedestrian safety but are important considerations in this plan.*

Children are also disproportionately affected by unsafe walking conditions. Children often walk to schools built along unsafe arterial or major roads, putting them at higher risk. Children also use neighborhood streets as areas to ride bikes and play games. They often go unseen by drivers though.

Nearly one-third of all Americans do not drive.

This includes all children and adolescents who are not of age, 21% of all seniors over 65 years-old, people with disabilities, and those who cannot afford to drive.*

Pedestrian injuries occur at a higher rate than pedestrian fatalities. Official crash statistics,

Pedestrian Fatality Figures for South Carolina:

	2008	2009	2010	2011	2012	% change
Pedestrian Fatalities	101	89	90	113	125	23.76%
Pedestrian Fatality Rate per 100,000 people	2.23	1.94	1.94	2.41	2.65	18.83%
Pedestrians as Percent of all Traffic Fatalities	10.97%	9.96%	11.12%	13.65%	11.6%	5.74%

however, do not capture a significant portion of these collisions. **Collisions that go unreported and near miss incidents are not reflected in most collision statistics, and thus may not be fully representative of safe walking conditions.**

This is especially true when accounting for whether a pedestrian injury occurred in the roadway (1.7 times more likely to report than non-roadway locations), the severity of the injury (1.3 times more likely to report when hospitalized), and the age of the pedestrian (ages 15-24 are significantly less likely to report a collision even after controlling for location and severity).*

In recent years, a series of successful national campaigns have targeted drunk driving, seat belt use, and distracted driving. For people in vehicles, the resources and focus dedicated to safety has saved thousands of lives. A similar dedication to creating safe streets for pedestrians will encourage walkability, improve health outcomes, and improve livability for all residents.

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"Dangerous by Design" is a report issued by Smart Growth America's National Complete Streets Coalition. The Smart Growth organization also issues state-specific versions with nuanced relevant data. The report documents preventable pedestrian fatalities and details measures that can be taken to make streets safer for all road users.

* Federal Highway Administration Office of Safety - Bike/Ped Documents
Police-reporting of Pedestrians and Bicyclists
Treated in Hospital Emergency Rooms

PEDESTRIAN COLLISION ANALYSIS MAP

In addition to collecting base map data, the project team and partners created a collision map to show where 45 pedestrian injuries and six pedestrian fatalities occurred between 2010 and 2014.

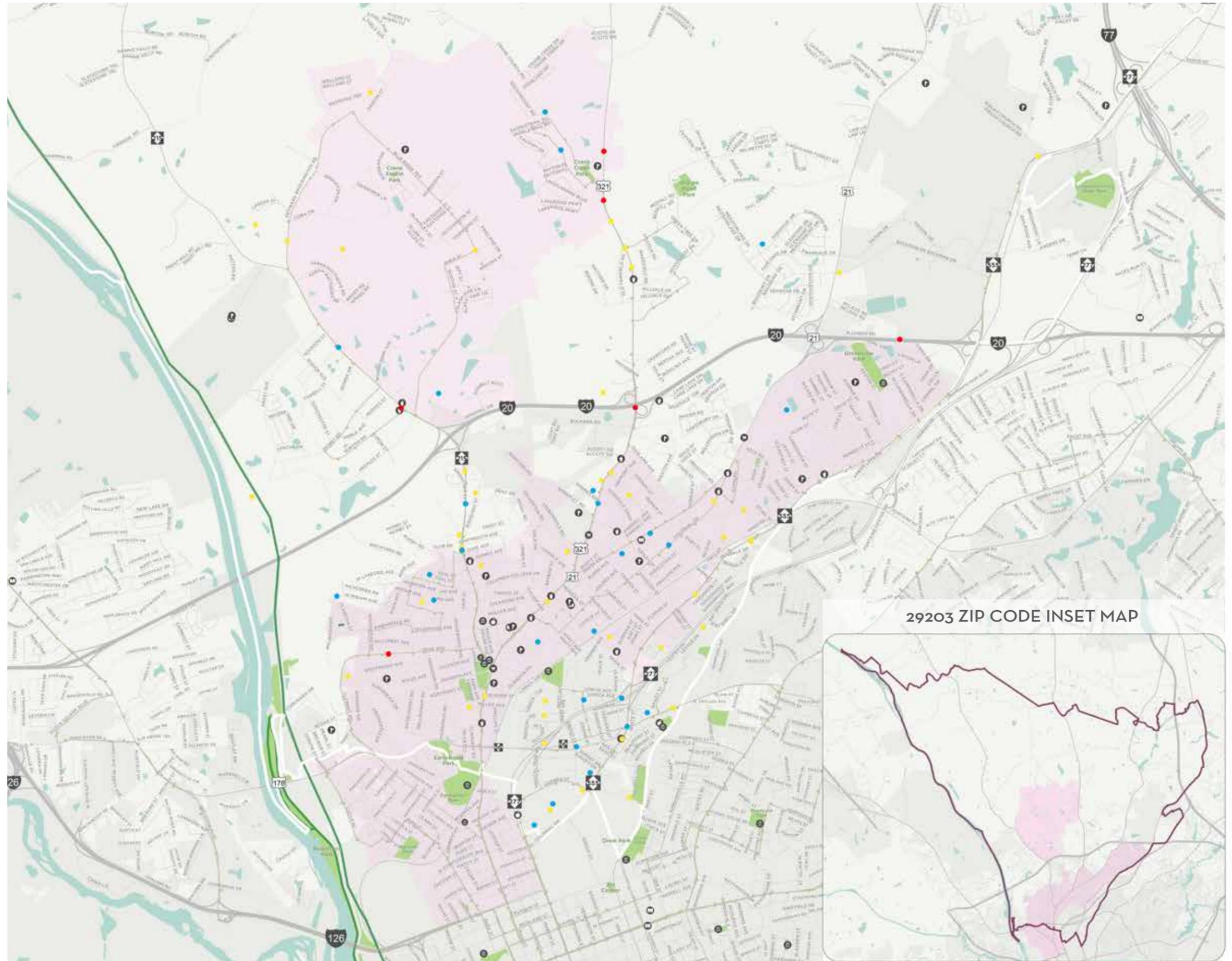
Two of these fatalities occurred along Fairfield Road, just north and south of the Crane Creek Community Center, where the speed limit is 45 mph and there are no sidewalks along this 5-lane road. Another occurred on Fairfield Road on the Interstate 20 overpass, where there is a narrow sidewalk. The other three fatalities occurred when pedestrians attempted to cross the road at unmarked locations, one along Interstate 20, one along Monticello Road near a busy interchange with food outlets nearby, and the third along a residential street.

Of the 45 pedestrian injuries, most occurred south of Interstate 20, within the city limits of Columbia, and along major arterials or bus routes. Three occurred in succession along Fairfield Road, north of Interstate 20. The clustering of collisions on Fairfield Roads signals a hotspot for both pedestrian activity and dangerous conditions for pedestrians. This plan's recommendations take these collisions into account by targeting improvements around some of the most unsafe corridors and intersections.

LEGEND

Pedestrian Crashes

- Fatality
- Injury
- Property Damage Only



Data Source: Office of Highway Safety and Justice Programs, South Carolina Department of Public Safety

EQUITY ANALYSIS

OVERVIEW

An equity analysis provides insight about the areas of the 29203 zip code that have higher concentrations of vulnerable populations. This information, coupled with an overlay of healthy food outlet locations and active space locations, can also distinguish which neighborhood areas may need improvements the most. Thus, this quantitative analysis gave the project team a starting point for identifying priority areas.

Ultimately though, recommendations were based on a synthesis of factors, including the equity analysis results, current best practices, public input, existing conditions analysis, and the pedestrian collision analysis,

This section describes the equity analysis process in more detail, and includes the following:

- Equity Analysis Methodology
- Equity Analysis Results
- Healthy Food Access Analysis
- Active Space Access Analysis

METHODOLOGY

The equity analysis incorporated the following seven socioeconomic criteria:

- Seniors
- Children
- Non-white populations
- Low-income households
- Vehicle access
- Linguistic isolation
- SNAP recipients

The measure and rationale for each criteria are further described below.

Seniors

Metric: senior citizens are defined as those who are 65 years old and older. This follows the *2010 Census Brief - The Older Population*.

Rationale: Walkable neighborhoods help seniors remain active, healthy, social and free to move around. Older adults socialize more when living in walkable neighborhoods, because regular social interaction is possible, convenient and more frequent. In a walkable neighborhood the senior citizens are more likely to know their neighbors, participate in politics, engage socially and even trust people.

According to Center for Disease Control and Prevention survey, 32.5 percent of Americans over the age of 65 don't have regular physical activity. There are many health benefits of walking, especially for people older than 50. Elderly adults who walk are less likely to suffer mental deterioration or dementia and physical activity may actually add years to their life. Therefore, living in a walkable neighborhood gives options for walking right out your front door.

A survey by AARP Public Policy Institute found that people over age 50 listed lack of walkability part of barriers to walking.

“Older adults perceive poor sidewalks, the absence of resting places and dangerous intersections as barriers to walking.”

Thus, walkable environment benefits seniors, keeping mind and body healthy through their surroundings and neighborhoods.

Children

Metric: children are defined as individuals 14 years old and younger. This threshold was determined based on the legal age for driving in South Carolina. At age 15, young adults are eligible for a learner's permit, and after 180 days young adults are eligible for a provisional driver's license. While conditional, even a permit and provisional driver's license broaden a young person's mode of choice, and significantly increase their mobility.

Rationale: As parents, physicians and policy makers look for ways to curb childhood obesity, they may need to look no further than a child's own backyard. Studies show that children are less likely to be obese if they live in a neighborhood that is safe and within walking distance of parks and retail services.

The U.S. has been experiencing a growing trend in overweight and obesity among youth and children and recent evidence shows that approximately 32 percent of youth are overweight or obese. Physical inactivity impacts weight and in an effort to curb the growing obesity epidemic there is an increasing research that has examined associations between local

area environmental factors and physical activity among youth. Greater availability of outdoor play/sports areas and parks, and access to commercial physical activity-related facilities have been associated with higher levels of youth and children physical activity.

Neighborhood design can also influence physical activity levels in youth and children. However, perceived environmental barriers, such as lack of access to these types of settings such as low connectivity street networks, have been associated with lower income neighborhoods. Whereas, high walkability (grid street network) neighborhoods have shown to have more physical activity and hence, less obesity among youth and children.

Non-White Populations

Metric: non-white is measured as the percentage of all races, excluding those that identified as white. This includes Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, or some other race.

Rationale: Communities with more racial and ethnic minorities and lower-income residents often lack specific features that support walking, such as clean and well-maintained sidewalks, trees and nice scenery and safety. Such deficits may undermine the generally favorable effects of walkable neighborhood design. The presence of parks, open space and other recreational facilities is consistently linked with higher physical activity levels among children and adolescents. However, many studies show that lower-income groups and racial and ethnic minorities have limited

access to well-maintained or safe parks and recreational facilities, and more crime and traffic.

The low leisure-time physical activity rates and high risk of obesity among racial or ethnic minority children, and those living in lower-income areas, can be partially explained by their generally poor access to parks and private recreation facilities. In light of this growing evidence, policy makers should pursue strategies that improve walkability, access to parks, green space and recreational facilities, and neighborhood safety.

Low-Income Households

Metric: low-income is measured as the percent of the population living below two times the federal poverty level. 2015 Federal Poverty Guidelines identified \$48,500 as the threshold for a four-person household. American Community Survey (ACS) data groups income by increments of \$4,999 so this analysis captures all household incomes at or below \$49,999.

Rationale: The U.S. Department of Housing and Urban Development (HUD) defines low income households as households earning less than 80% of the Area Median Income (AMI). Very low income households earn less than 50% of AMI.

These groups of people are the least likely to have access to a car and may depend on walking to reach work, school, public transportation, or other destinations. People with lower incomes are more likely to live in areas with high crime rates, perceive their neighborhoods as less safe, and report physical and social disorder in their neighborhoods, such

as broken windows, litter, graffiti, loitering and public drinking. These environmental variables may be why, in some cases, a higher proportion of lower-income children tend to be less active than their peers, overweight or obese. Walkable and safe access to healthy food outlets would support both nutrition and physical activity needs of low-income populations.

Vehicle Access

Metric: Vehicle access is measured from a question on the American Community Survey about whether a household has access to a car, truck, or van of 1-ton capacity or less.

Rationale: Access to private vehicles can be an indicator of mobility and access, particularly access to healthy food options and active spaces.

Linguistic Isolation

Metric: Linguistic isolation is measured as percentage of households in which those over the age of 5 speak English “not well” or “not at all”.

Rationale: Households that are linguistically isolated may have greater difficulty accessing services that are available to fluent English speakers, such as transportation services and social services.

SNAP Recipient

Metric: SNAP recipients measures the percentage of households who have received SNAP assistance in the past 12 months..

Rationale: Current regulations require food retailers who accept SNAP to stock three varieties of foods in each of the following four food groups: fruits and vegetables, dairy, breads and cereals, and meat, poultry and fish. While a new rule requiring seven varieties in each food group was proposed in February of 2016, SNAP recipients still travel farther to access their food and are more likely to be affected by diet-related diseases. Additionally, only 0.02% of SNAP funds are redeemed at farmers markets indicating limited outreach and education efforts aimed at attracting households that receive SNAP assistance.



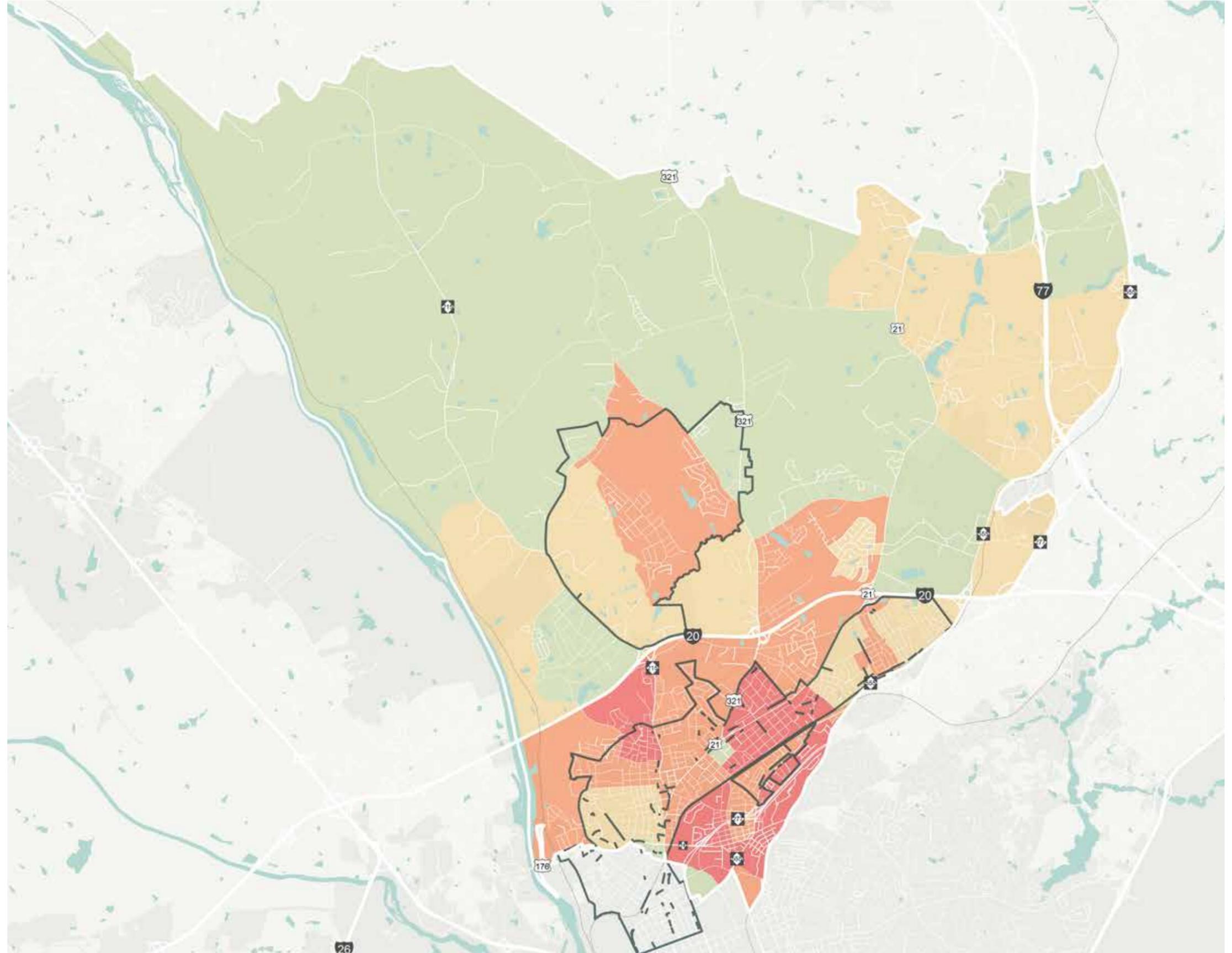
COMPOSITE EQUITY MAP

The adjacent map reflects concentrations of the seven aforementioned vulnerable populations by census block groups in the 29203 zip code.

Block groups shaded red and orange represent an area with the highest vulnerable population concentration. These areas are largely found in the City of Columbia's North Main area, extending from the river to the zip code boundary south of Interstate 20.

Parts of the Crane Creek area are also shaded orange and yellow indicating a greater concentration of vulnerable populations. The issues and needs of this area may be distinct from the North Main area since it is a more rural area and falls outside of the city.

Maps of the individual socioeconomic criteria can be found in the Appendix.



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HEALTHY FOOD ACCESS ANALYSIS

OVERVIEW

Walkable and safe access to supermarkets, grocery stores, farmers markets, and specialty markets is important, because they give consumers access to a variety of fruits and vegetables. Diets rich in fruits and vegetables offer a number of health benefits and have been linked to a lower prevalence of obesity.

Most Americans, especially those with a low income, consume far fewer fruits and vegetables than recommended by current dietary guidance. Communities with limitations in resources, disposable income, language proficiency, and transportation often have restricted access to, and knowledge about, a variety of healthy food options.

While there is general agreement that consumption of fresh, healthy foods such as fruits, vegetables, and whole grains are necessary for health and nutritional well-being, many communities across the region have negative health and economic consequences caused by a lack of access to high-quality food. Grocery stores, farmers markets, and community gardens tend not to be as readily available to people in low-income, low-access communities. The result is an over-dependence on neighborhood convenience stores with limited offerings of fresh foods sold, frequently for a high price. This leads to myriad health and nutritional and long-term sustainability implications.

Therefore, creation of active transportation routes such as sidewalks, pedestrian malls, and bicycle paths between all neighborhoods and grocery stores, farmers markets, or other healthy food outlets can ease this disparity in accessibility, and help lower rates of chronic disease and lower levels of obesity.



HEALTH RISKS

Specific health risk data at the zip code level does not exist, however, county level data from 2013 shows that:

- **34.7% of adults in Richland County are obese.** This is nearly 3 percent higher than the state rate of 31.8%. (Obesity is measured as a Body Mass Index [BMI] greater than 30.)²
- 34.3% of adults are overweight. This means that **nearly 70% of Richland County adults are overweight or obese.**²
- Projections for **adult obesity rates are only getting worse** in Richland County.²
- More than **20% of children are obese**, and an additional **18.2% are overweight.**²
- Almost **half of adults (46.8%) consume less than one serving of fruit** per day.²

- **More than 16% of Richland County adults have type 2 diabetes.**³
- **The CDC recommends eating healthy and staying active as two key ways to prevent, delay, and manage diabetes.**⁴

While Richland County is not considered part of the CDC-designated “Diabetes Belt”, the South Carolina Department of Health and Environmental Control (SC DHEC) offers a number of strategies and solutions to combat obesity including, eating more meals at home, eating more fruits and vegetables on a daily basis, opting for water over a soda or other sugary beverage, and right-sizing portions.

² SC DHEC. (2013). “2013 Richland County Obesity Fact Sheet.” Available at <https://www.scdhec.gov/Health/docs/Epi/obesity/Richland.pdf>.

³ SC DHEC. (2012). “Richland County Health Indicators.” Available at <https://www.scdhec.gov/Health/Docs/CHIT/Richland.pdf>.

⁴ CDC. (2011). “CDC Identifies Diabetes Belt.” Available at <http://www.cdc.gov/diabetes/pdfs/data/diabetesbelt.pdf>



FOOD RETAIL ENVIRONMENT

Food security, as a determinant of health, contribute to health status. Food security addresses the affordability, availability and accessibility of healthy foods. The contrast of city and rural setting of the 29203 zip code is a major element that inhibits healthy eating and healthy food access. Food insecure residents (18.3%) are more likely to have a poor diet. Poor diets significantly contribute to heart disease, obesity, diabetes, some cancers and stroke.

The 29203 zip code has about four grocery stores. The area also has about three seasonal farmers markets and two seasonal community gardens. While 29203 residents have grocery stores within zip code limits, a significant share of residents purchase groceries from discount variety stores like Family Dollar and Dollar General. It is common for these type of retail outlets to sell pre-packaged and processed foods in both non-perishable and frozen packages. These types of foods are more likely to have higher amounts of fat, sodium, sugar and calories. It is less likely these stores sell fresh and nutritious foods. Their popularity is likely attributed to their affordability and accessibility.

Residents also expressed their dissatisfaction with the freshness and quality of produce items at the grocery stores within 29203. Many residents who have the resources, travel to other towns for healthy food options. This has residual impacts on their quality of life and the area's economic vitality.

The table below looks at healthy food opportunities (accounting for the seasonal nature of community gardens and farmers markets) by calculating the density of grocery stores and farmers markets. These outlets are referred to as food retail establishments or FRE. A healthy food outlet density of 0.2 or greater is desirable.

Summary Table of 29203's Food Retail Environment:

Number of Food Retail Establishments (FRE)	9 (4 year round)
Number of People/FRE	4,427
Square Miles/FRE	7.0 (15.8 year round)
Number of Grocery Stores	4
Number of People/Grocery Stores	9,961
Square Miles/Grocery Stores	15.82
Healthy Food Outlet Density	0.14 (0.06 year round)

The Food Retail Environment analysis reveals that 29203 is considered a food desert, both year round and when community gardens and farmers markets are in full swing. This quantitative analysis, on its own, paints a high-level picture of the need to increase food security but does not describe who and what areas may be most in need.

Thus, the results of the Composite Equity Analysis are combined with a mapping study of the locations and walkability of healthy food outlets. Healthy food outlets are defined to include all grocery stores, farmers markets, and community gardens. The seasonality of farmers markets and community garden are a limitation in the data set.

A half-mile walkshed is a widely accepted catchment area for pedestrian analyses. A half-mile is about a 10 minute walk for most pedestrians. This distance also serves as the Federal Transit Authority's (FTA's) designated catchment area for pedestrian improvements that are eligible for transit enhancement funds. This diameter presumes that, barring barriers to mobility and accessibility, individuals within the catchment area would be willing to walk to these activities and destinations. **Walksheds, in combination with equity data, assess connectivity and reveal opportunities where infrastructure improvements may have the greatest impact.**

The healthy food access analysis map on the adjacent page reveals what neighborhoods and areas of 29203 are within a half-mile of the identified healthy food outlets. Further, the map is a starting point for directing pedestrian network improvements that increase accessibility for residents who do fall within the half-mile circumference. Accessibility is still a central issue, especially for residents with disabilities or residents with limited access to a vehicle.



Places like Bucks Market serve a local need for groceries, especially for residents who may not have a private vehicle. Increasing accessibility to healthy food outlets and expanding healthy food options at these informal food outlets can improve food security and health outcomes.

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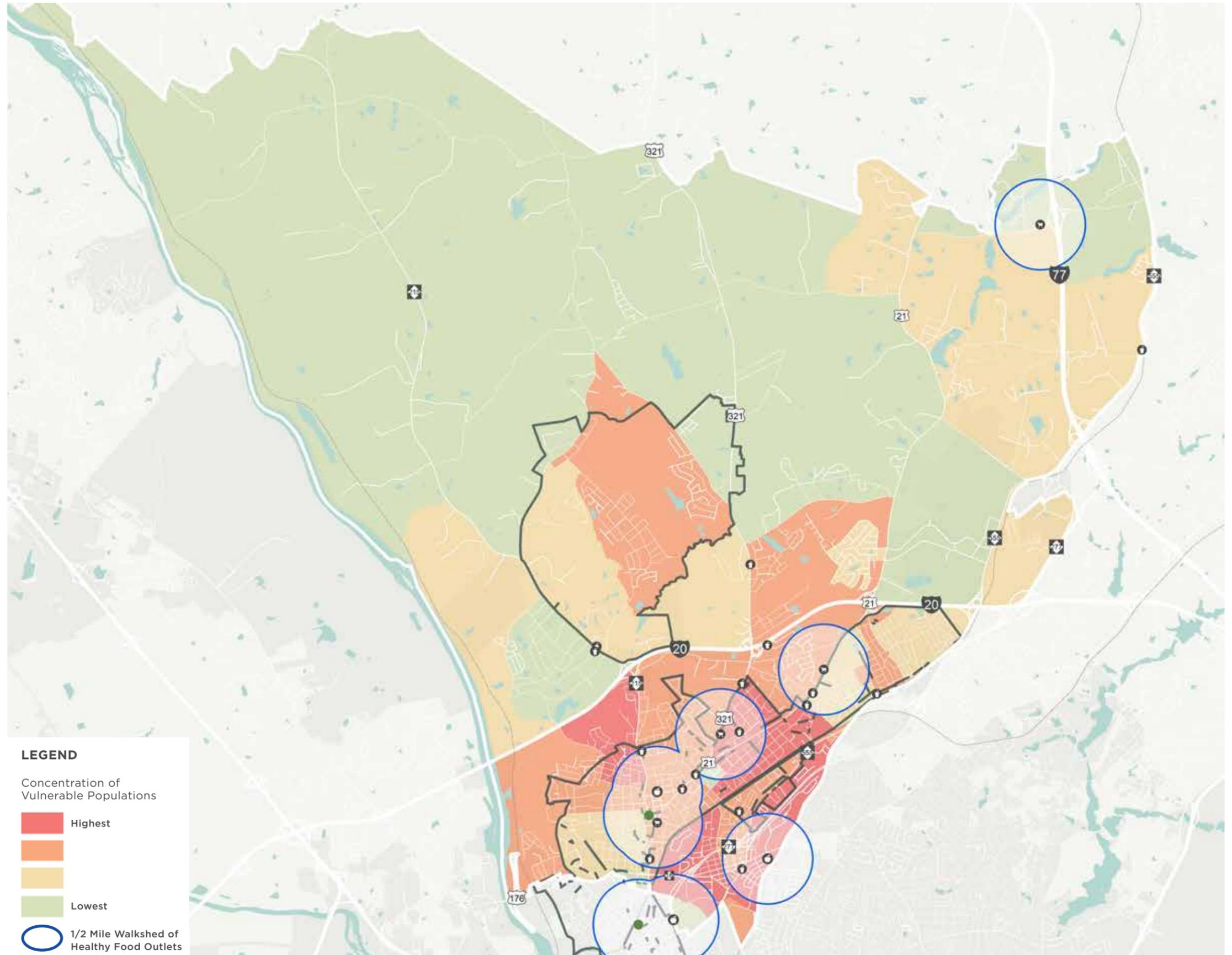
HEALTHY FOOD ACCESS ANALYSIS MAP

The results of the Composite Equity Analysis are combined with a mapping study of the locations and walkability of healthy food outlets. Healthy food outlets are defined to include all grocery stores, farmers markets, and community gardens. The farmers markets and community garden are seasonal.

A half-mile walkshed is a widely accepted catchment area for pedestrian analyses. A half-mile is about a 10 minute walk for most pedestrians. This distance also serves as the Federal Transit Authority's (FTA's) designated catchment area for pedestrian improvements that are eligible for transit enhancement funds. This diameter presumes that, barring barriers to mobility and accessibility, individuals within the catchment area would be willing to walk to these activities and destinations. **Walksheds, in combination with equity data, assess connectivity and reveal opportunities where infrastructure improvements may have the greatest impact.**

The walkability and food access connection runs primarily along major roads (Highway 321, Highway 21, and Main Street) and clustered at the southern end of the zip code close to the city. While density in this area of the zip code supports walkability, the major roads with grocery stores are wide, multi-lane corridors with few crossings and amenities for pedestrians.

The rural area of 29203 presents its own unique set of healthy food access challenges. This vast area is largely untouched by half-mile healthy food access walksheds. The dispersed population and built environment of this area can mean limited resources, a lack of transportation options, and a lack of sidewalks and lighting that supports an active lifestyle.



ACTIVE SPACE ACCESS ANALYSIS

OVERVIEW

Walking can be a critical form of transportation, particularly for older adults who no longer drive, young people who cannot yet drive, and for people who do not have access to a vehicle. Apart from walking as a means for transportation, however, walking serves a vital role in maintaining and improving one's health.

The CDC recommends 60 minutes of physical activity for children per day, 150 minutes of physical activity for adults per week, and 150 minutes of aerobic and muscle-strengthening activity per week. However, **county-level data show that:**

- **42% of residents do not have reasonable access to exercise opportunities** ⁵
- **27% of adult residents do not engage in regular physical activity** ⁶
- **Richland County ranks 10th out of 46th for health behavior.** Health behavior accounts for figures such as obesity, smoking, food environment index, and physical inactivity.⁷

Additionally, data on youth physical activity patterns show that:

- **Percent of children in poverty is steadily increasing at 22% in Richland County.** ⁶ This is significant because **children living below the poverty line are 159% more likely to be deprived of recess.** ⁸
- Students who are able to **walk to school every day had 24 more minutes of physical activity** per day. ⁹

Physical inactivity and obesity rates in Richland County have consistently worsened year after year. One way to reverse this trend, apart from diet and exercise, is to expand mobility options. Providing the freedom to walk to places in the 29203 area through safe and comfortable pedestrian facilities supports a healthy lifestyle. In turn, this boosts not only the area's physical activity level, but also increases mobility, accessibility, and quality of life for all citizens.

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Sources 5 - 7 are from the County Health Rankings & Roadmaps - Robert Wood Johnson Foundation
⁵ <http://www.countyhealthrankings.org/app/south-carolina/2015/measure/factors/132/map>
⁶ <http://www.countyhealthrankings.org/app/south-carolina/2015/rankings/richland/county/outcomes/overall/snapshot>
⁷ <http://www.countyhealthrankings.org/app/south-carolina/2015/rankings/factors/3>
⁸ <http://activelivingresearch.org/blog/2014/03/infographic-do-all-kids-have-safe-places-be-active>
⁹ http://activelivingresearch.org/files/ALR_Brief_ActiveTransport_0.pdf

ACTIVE SPACE ACCESS ANALYSIS MAP

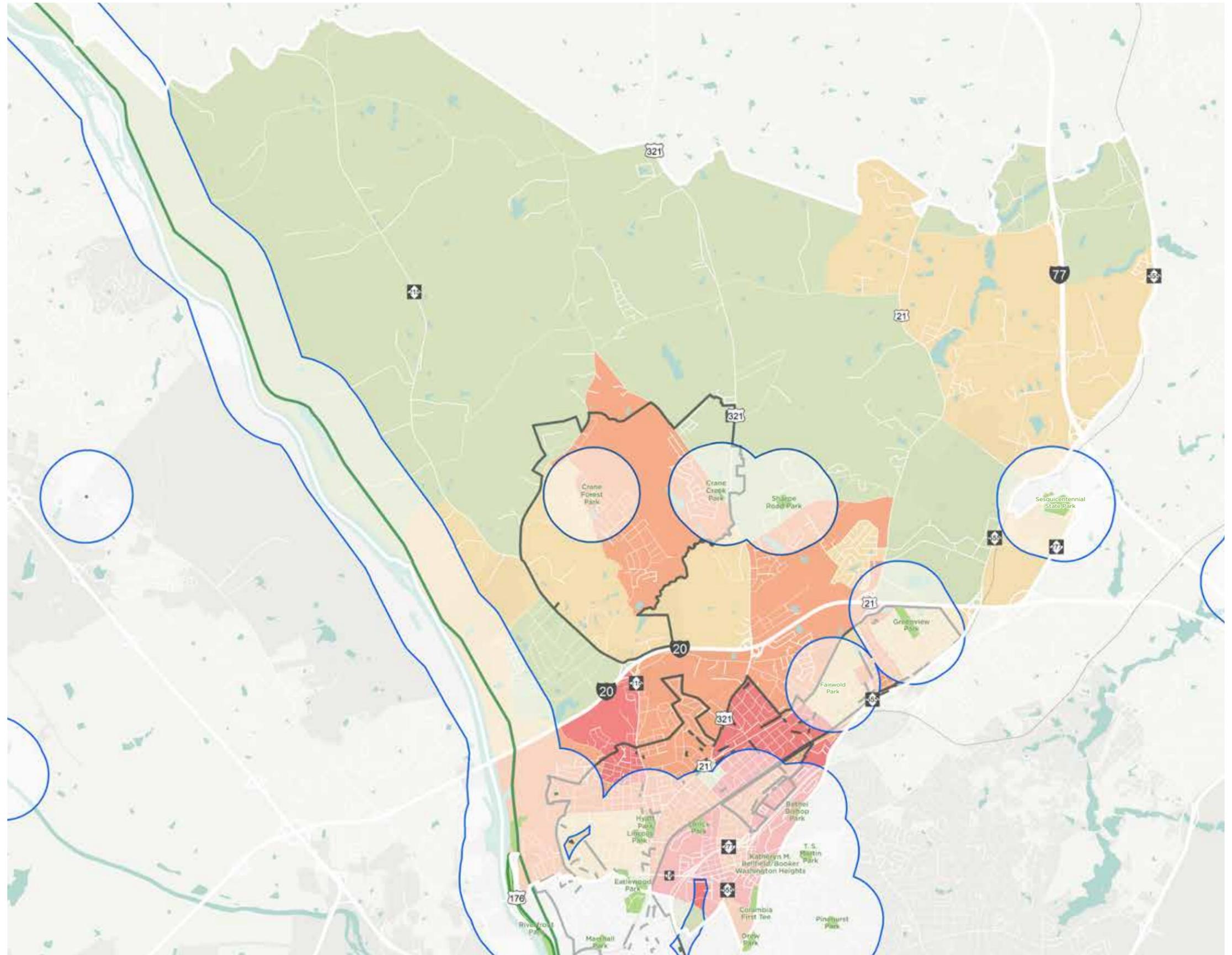
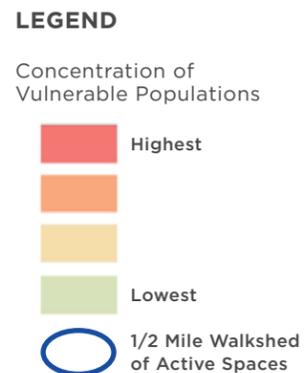
The results of the Composite Equity Analysis were also combined with a mapping study of the locations and walkability of active spaces. Active spaces are defined to include all existing parks, trails, greenspace, and the recreation centers.

This analysis again uses a half-mile walkshed or 10 minute walk for most pedestrians.

The resulting map is a starting point for understanding how to link areas in need to active space destinations through pedestrian infrastructure improvements.

Similar to the food access analysis map, active spaces in 29203 are clustered at the southern end of the zip code near the City of Columbia. The Crane Creek area has a few active spaces, especially with the addition of the new Crane Creek Park, however, the remaining rural parts of the zip code do not have such active space resources.

This analysis also accounts for the proposed Palmetto Trail alignment which runs along the Broad River as well as parts of the Saluda River. Finding ways to provide access to this planned resource is an important part of this plan. Leveraging existing parks and creating connections to these areas is also a critical goal of this plan.



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SECTION II: CRANE CREEK STUDY AREA

**CHAPTER 3 Community
Overview &
Public Input**

**CHAPTER 4 Opportunities &
Constraints**

CHAPTER 5 Recommendations

**CHAPTER 6 Priority Projects &
Cut Sheets**

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3



CRANE CREEK
COMMUNITY

Crane Creek Community Overview & Public Input

COMMUNITY OVERVIEW

At a glance...

The Crane Creek study area is situated just north of the city limits of Columbia. The area is bound by Interstate 20 to the south, Monticello Road to the west, Heyward Brockington Road to the north, and Fairfield Road to the east.

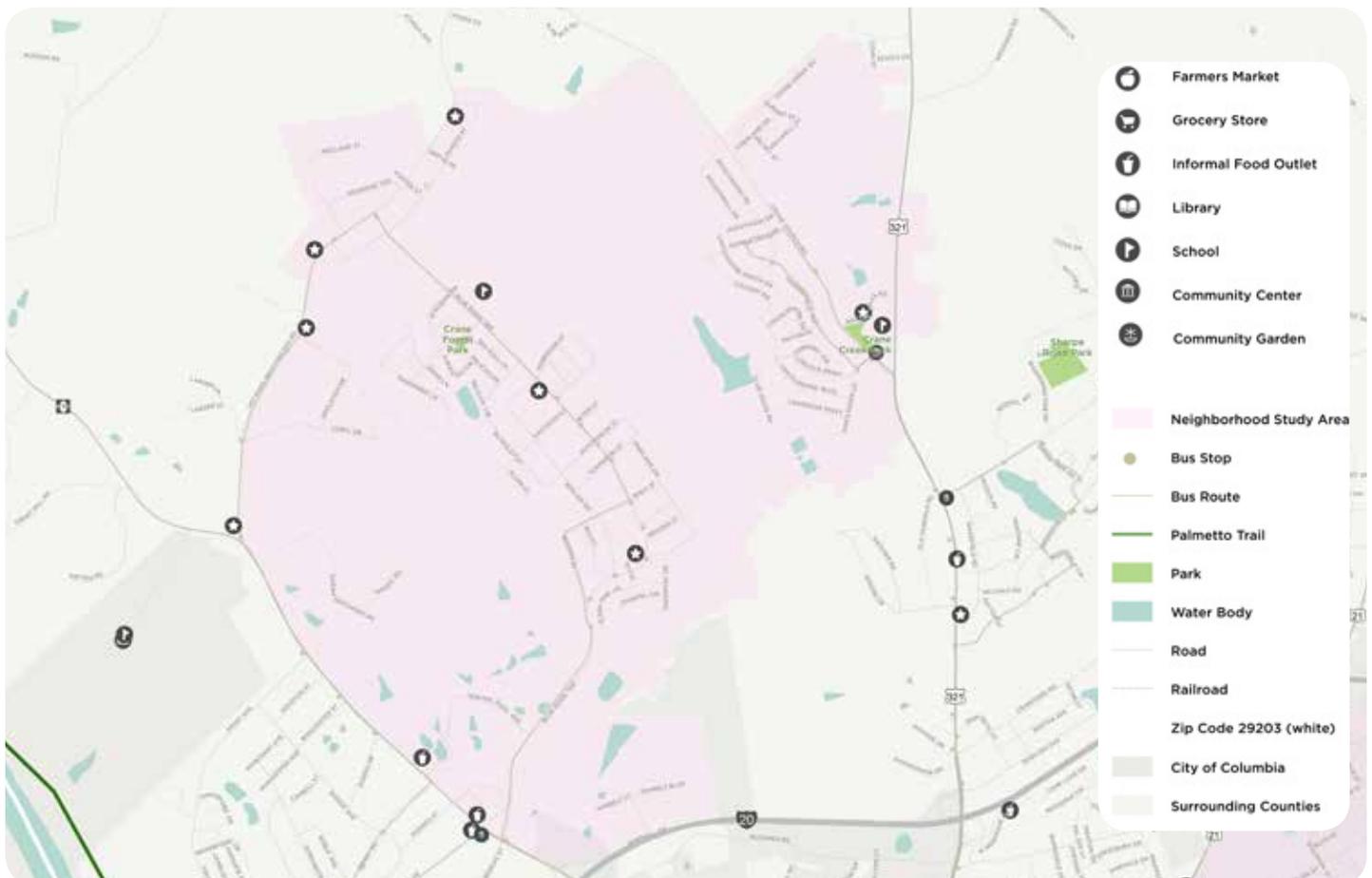
The Crane Creek community has two main corridors, Blue Ridge Terrace, and Crane Church Road, with many of the community's neighborhoods situated along these roads. The study area includes approximately 3,100 acres, and is comprised of seven distinct neighborhoods. As described in the *Crane Creek Master Plan*, the area's predominate land uses are single family residential and industrial.

The Crane Creek area has several churches, two schools, two parks, and a community center, as

well as a handful of gas stations, convenience stores, and eateries. It does not have any centralized shopping centers or grocery stores.

The lack of any retail outlets, coupled with the sprawling and rural layout, combine to create an auto-oriented landscape that is generally unfriendly, uninviting, and unsafe for pedestrians.

Efforts to address these conditions are evident in previous planning projects, such as the *Crane Creek Master Plan*. The project team has built upon the momentum from previous and current efforts through a public outreach process that seeks to identify and prioritize pedestrian projects, programs and policies.



Above: The Crane Creek study area is shown in pink.

PUBLIC INPUT

SUMMARY

As part of the data collection process and during the development of network recommendations, the project team solicited input from Crane Creek residents, community leaders, and project stakeholders. Feedback was collected in a number of ways in order to be most inclusive and representative of the community make-up. This includes:

- Focus group session
- Survey (online and hard-copy)
- Public Input Meeting
- Technical training

This section summarizes the key findings from each channel of public outreach.



Focus group participants share their thoughts about improving walkability in Crane Creek.

FOCUS GROUP

A focus group was conducted at the Richland County Meadowlake Park recreation center. Six community members participated in the focus group. Participants were chosen based on residency in the Crane Creek area, as well as interest in improving access to active living and healthy eating. To ensure that residents from all neighborhoods in the area were represented, members from each of Crane Creek's seven neighborhood association groups were invited to participate.

Specific objectives of the focus groups include the following:

- Identify where residents are currently walking in the Crane Creek area,
- Explore residents' perceptions of pedestrian safety issues,
- Seek input from residents on priority pedestrian planning projects and destinations, and
- Seek residents input on the level of accessibility to active living and healthy eating in the Crane Creek area.

"I see something moving. I see change. And I'm excited."

- Focus group participant

"The 29203 area is one of the highest diabetes areas in the whole country."

- Focus group participant

KEY FINDINGS

Question: What assets exist in Crane Creek? How can the pedestrian master plan build upon or leverage current assets?

- **Crane Creek Gymnasium**

The new, modern facility is popular among residents and many people use it. However, few people walk to the gym due to lack of sidewalks, poor lighting, and loose dogs.

The gym is also popular with residents of adjacent neighborhoods like Hollywood Hills and Sharp Terrace. Many teenagers from those neighborhoods walk along Sharp Road, Highway 321, and Crane Church Road to get to the gym.

- **Crane Creek Park**

The park and surrounding nature trail is popular and used frequently by walkers and joggers. However, focus group members said many in the community have never visited the park and they would like to see more done to advertise the park and generate interest in accessing it.

- **Crane Creek Community Garden**

Focus group members said they were excited about the fact that there is a community garden in Crane Creek Park. They said that many people in the community are interested in eating healthy and growing their own food. However, they said the garden is under-utilized and lacks adequate programming to engage residents.

Question: What are the biggest barriers to walkability in Crane Creek?

- Poor lighting,
- Lack of sidewalks,
- Loose dogs, and
- Speeding drivers

Focus group participants also identified specific improvements that they would like to see at the following locations:

Crane Church Road:

- Needs lighting all along the road.
- Needs improved traffic light and safer crossing near the old Crane Creek School.
- Needs improved intersection design at Fairfield Road. (Currently there is a bad 45 degree turn with low visibility for drivers and pedestrians.)

Lincoln Parkway off of Fairfield Road:

- Needs improved lighting along entire thoroughfare.
- Needs sidewalks and lighting near Crane Church Road.

Fairfield Road/US-321:

- Needs sidewalks leading to Crane Creek Gym.
- Needs intersection redesign at corner of Crane Church.

Sharpe Road

- Needs lighting and sidewalks.

Question: What are high priority projects, streets, neighborhoods, or destinations for improved access? Why are they priorities?

- **Connectivity between neighborhoods**

Focus group participants want improved connectivity between the neighborhoods that make up the area, using sidewalks and trails to connect residents to the various neighborhoods, as well as to Forest Heights Elementary School and Crane Creek Gym.

- **Forest Heights Elementary School**

The school, which serves as the polling station for the community, is centrally located and in walking distance to many homes. Focus groups participants want to see sidewalks and lighting added near the school so that more children are able to walk to it.

- **Crane Creek Gymnasium & Crane Creek Park**

The area has greatly benefited from the addition of the county gym and expansion of the park, but residents want improved walkability to both. They also want to see more programming at the park, such as organized community picnics or concerts, to build excitement about the resources that are available, like the community garden.

- **Bus Stops**

Many people in the community use the bus to get to work and grocery stores (there are no fresh food outlets within walking distance). Improving pedestrian access near bus stops should be a high priority.

- **Code enforcement**

Crime rates are dropping in the area, but focus group participants worry that gang violence is a problem in other parts of the county. Abandoned homes on streets such as Calvary Drive and Lincolnshire Boulevard add to the unease. Improved efforts to enforce county codes and reduce blight would improve the sense of safety in the community and encourage walkability.

"Everyday, we have groups of kids walking to the gym down the middle of the road. It is imperative that we get sidewalks out there [on Fairfield Road] and start saving lives."

- Focus group participant

"Just having the ability to walk in your community and feel safe is going to make the biggest difference when it comes to whether people walk or not. Not having a sidewalk impacts that greatly."

- Focus group participant

SURVEY SYNOPSIS

Walkable 29203 Surveys were used to build a better understanding of community needs and priorities related to walking for exercise or transportation. Surveys were distributed both through hard copies and online at the project website. The survey provided an important opportunity for input for those who could not attend public meetings. Twenty-two surveys were submitted.

Survey responses supported and supplemented the findings from other public input sources. Respondents confirmed that **Crane Creek Park and Crane Creek Community Center are two key destinations** in the area to which area residents prefer to walk.

Respondents also expressed a **preference to walk along the following streets:**

- Lincolnshire Boulevard
 - Denny Road
 - Dorchester Street
 - Bishop Avenue
 - Winchester Street
- The **top three factors that discourage walking in the Crane Creek area** were:
- Lack of sidewalks
 - Heavy and fast car traffic
 - Unsafe driving behaviors

A full report of survey results can be found in the Appendix.

WALKABLE 29203 SURVEY
 Through this effort, we hope to enhance and expand the walkability and active transportation options in the 29203 zipcode, while also increasing access to healthy foods.

1. Where do you live?
 Crane Creek Area | North Main Area | In another part of the 29203 zipcode | In a different zipcode

2. How are the current walking conditions in your community?
 Excellent | Fair | Poor

3. How important is it to you to make the walking conditions better in your community?
 Very important | Somewhat important | Not important

4. Why do you walk in your community? (Circle all that apply.)
 To get somewhere | Recreation | Exercise | To enjoy nature | Socialize | I do not walk
 Other (please specify): _____

5. What do you think stops people from walking in your community? (Please select up to 3 factors.)

<input type="checkbox"/> No sidewalks	<input type="checkbox"/> Unsafe driving behavior
<input type="checkbox"/> No accessible ramps	<input type="checkbox"/> Drivers not stopping and waiting for walkers
<input type="checkbox"/> No walking signals or crosswalks	<input type="checkbox"/> No places to walk to close by
<input type="checkbox"/> No safe street crossings	<input type="checkbox"/> Personal safety concerns (other than traffic)
<input type="checkbox"/> Heavy and fast traffic from cars	
<input type="checkbox"/> Other (please specify): _____	

6. Where are your favorite places or streets to walk? (Please note specific streets or destinations)
 Location 1: _____
 Location 2: _____

7. How likely would you be to walk if the following things were available?

	Very Unlikely	Unlikely	Likely	Very Likely
Signs providing direction and helping you to find your way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More sidewalks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wider sidewalks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sidewalks away from traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crosswalks or walk signals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paved pathways away from the streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good lighting and other safety features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ramps and even sidewalk surfaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WALKABLE29203.WEEBLY.COM

Example of the hard copy Walkable 29203 survey that was distributed during the public outreach process.

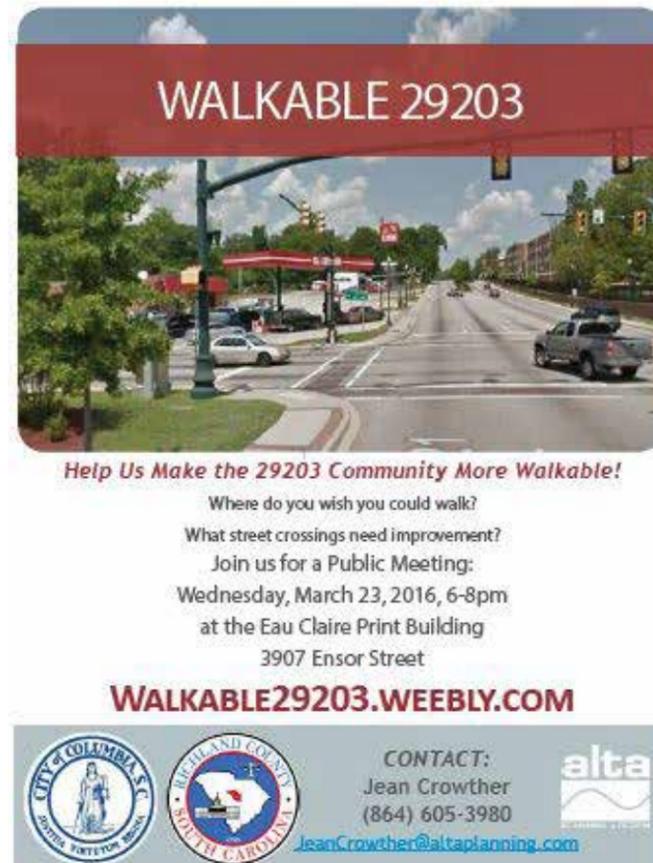
PUBLIC INPUT MEETINGS

Two public meetings were held as part of this plan's public input process. The Crane Creek public meeting was held jointly with the North Main public meeting so that residents could learn about the project, and share their thoughts with the project team and each other.

The first meeting was held during the kick-off phase as a way of voicing local needs and concerns related to walkability. The second meeting was held to refine feedback on draft recommendations that had been identified by the project team through stakeholder and public outreach.

At both meetings, detailed area maps were set up for residents to post their comments on. Project team members facilitated discussions about problem areas and potential desirable solutions while interacting with residents and the maps. A summary of the public comments drawn on the Crane Creek area map is on the following page.

Attendees at this open house meeting shared that there is a current, ongoing community picnic that is held annually in one of the local parks. This annual picnic may present an opportunity to expand the event to incorporate programming that encourages walking to and/or at the event.



Example of the public flyer that invited neighbors to join the public meeting.

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PUBLIC INPUT MAP

At right is a map showing input received from the community during focus groups and project team meetings. Residents and city officials identified areas of concern related to sidewalk conditions, pedestrian crossings, and railroad crossings. Popular walking destinations were also identified.

Public Input Notes

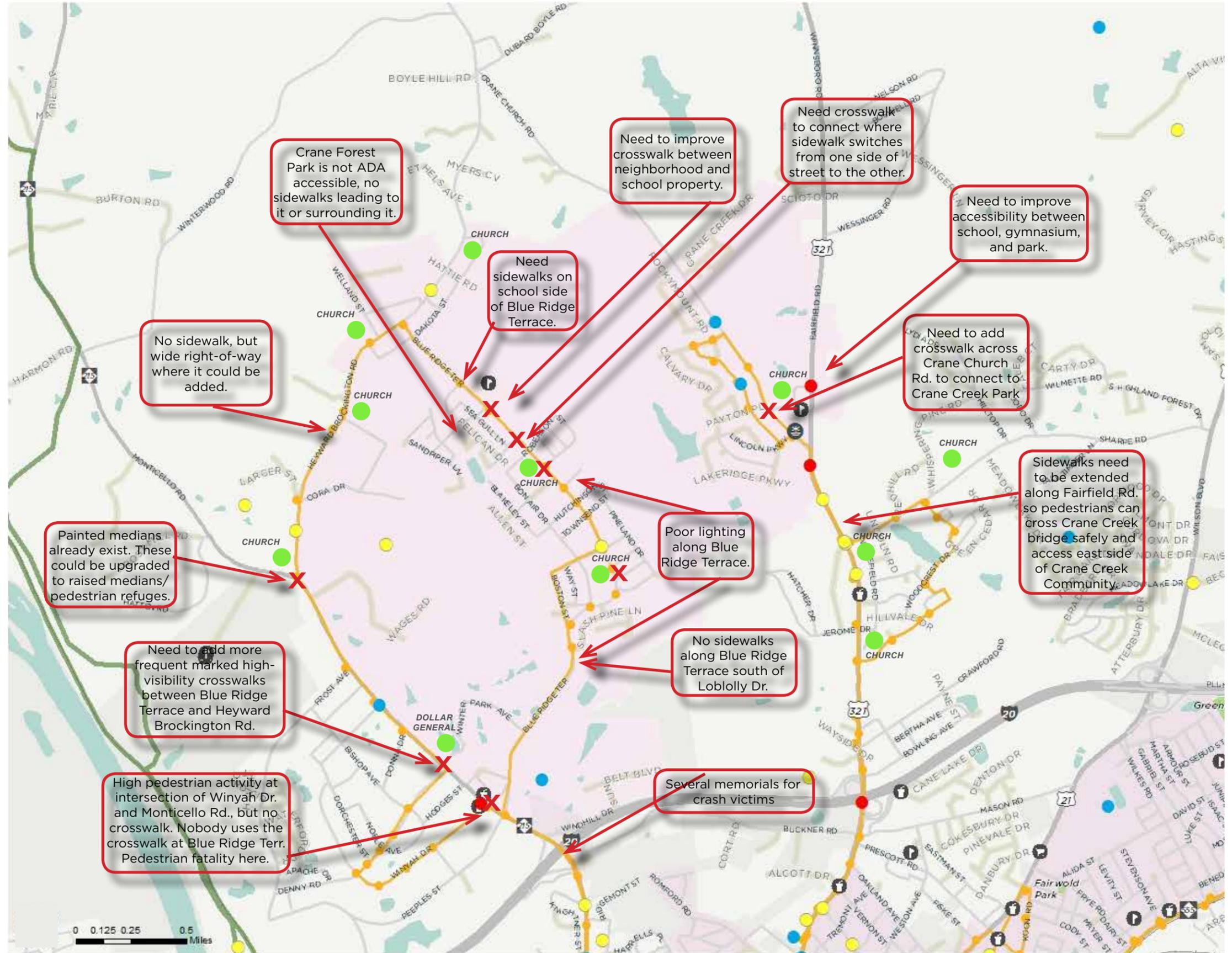
- Walking Destinations
- ✗ Street Crossing: needs improvement

PEDESTRIAN CRASHES

- Fatality
- Injury
- Property Damage Only

- Community Center
- Library
- Farmers Market
- Grocery Store
- Informal Food Outlet
- School
- Community Garden

- Palmetto Trail
- Bus Stop
- Bus Route
- Road
- City-Maintained Roads
- Railroad
- Neighborhood Study Area
- Park
- Water Body
- City of Columbia
- Surrounding Counties



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4



Crane Creek Opportunities & Constraints

OPPORTUNITIES

COMMUNITY STAKEHOLDERS



A strong group of community stakeholders are working hard to improve quality of life in their neighborhoods. Their efforts include the expansion of Crane Creek Park and Gymnasium and the creation of a community garden at that park. **Grassroots leadership and sustained support can be the catalyst for moving a recommendation to implementation.** Community stakeholders can also be **champions of programmatic recommendations** that encourage walking and an active lifestyle.

RIGHT OF WAY



Wide right-of-way along major corridors are potential areas for road diets, expanded sidewalks, street furniture, and transit shelters and amenities. In some instances, like Heyward Brockington Road, Crane Church Road, Blue Ridge Terrace, and Fairfield Road, **space already exists to incorporate these elements without have to relocate utility poles** and other costly fixtures. Additionally, **under-utilized utility easements also present an opportunity to make trail and greenway connections** between neighborhoods. In a few places, worn paths, also called "**desire lines,**" indicate an existing need and demand for pedestrian connections.

PROJECT PARTNERS



Schools are centrally located near neighborhoods, making walking to school feasible from a distance standpoint. The schools are located on Blue Ridge Terrace and Fairfield Road, both currently easy to reach by foot or bike from the neighboring communities. **There is also currently a Safe Routes to School program at Forest Heights Elementary.** COMET can also be a partner in moving recommendations forward since their mobility and safety interests align with the goals of this plan. Partnering with schools and transit will be two key ways to increase mobility and access, and bolster support for programmatic walking efforts.

EXISTING ACTIVE SPACE ASSETS



The presence of parks in residential neighborhoods is a great resource for Crane Creek communities. Crane Creek Park and Crane Forest Park, as well as school playgrounds, offer a local outdoor recreational areas for residents to enjoy. Ensuring **open-use agreements exist for after-school use** of school playgrounds can **help children reach their recommended amount of daily physical activity**, thus encouraging an active lifestyle. The nearby **Palmetto Trail alignment presents opportunities for spur connections** into neighborhoods. This resource is both **transportation and recreation focused**, helping to move rural residents to their jobs downtown and expanding exercise opportunities where they are currently limited.

CONSTRAINTS

NETWORK GAPS



There are **large gaps in the sidewalk network**, particularly within neighborhoods. The sidewalks that do exist do not always connect to destinations. **Sidewalks end abruptly** without connecting to popular destinations and pedestrians are faced with an obstacle course of perils, often having to walk in the road or make their own route. This not only limits accessibility for residents, but also poses mobility issues, especially for those who may have a physical impairment.

ADA COMPLIANCE



ADA accessibility is a systemic issue in 29203's pedestrian network. The CDC recognizes that walking and wheelchair rolling are rights, not luxuries, that each person should have. As such, **the County and SCDOT should design and invest in its pedestrian facilities** to encourage safe pedestrian activity and **integrate walking and wheelchair rolling as a normal part of daily life** for people of all ages and abilities.

PERCEPTION OF CRIME



Perception of crime and violence prevents many Crane Creek residents from walking, especially at night. Residents expressed their preference for walking in their neighborhoods on local streets. However, abandoned homes, **little streetlife activity**, and **a lack of pedestrian-oriented lights reduce their sense of safety so residents forego walking altogether**. Organizing neighborhood watches and partnering with law enforcement to establish recurring walking routes that are monitored can encourage walking, foster community relationships, and deter crime.

DISPERSED DESTINATIONS



The rural nature of the Crane Creek area inherently poses challenges for reaching key services and amenities on foot. The street (and sidewalk) network is not built on a grid like in urban areas so even where sidewalks exist, **direct access to destinations is limited**. Pedestrians instead must follow a long, circumvent route. Even where adjacent destinations exist, like Crane Creek Park and Crane Creek Gymnasium, the way the two properties interface discourage pedestrian access. The **dispersal of destinations makes identifying areas for improvement challenging**. Focus areas will need to include both **destinations that draw pedestrians and locations where people would like to walk**.

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5



Crane Creek Recommendations

OVERVIEW

This chapter presents the proposed pedestrian network improvements that were identified through input from the community, the project team, field work, existing conditions analysis, and the equity analysis conducted between January and May 2016. The proposed improvements are intended to **make walking safer and more accessible for everyone** in the Crane Creek area.

Improvements are organized according to two types — spot improvements and corridor improvements. Spot improvements include both signalized and unsignalized crossing locations. Corridor improvement types include:

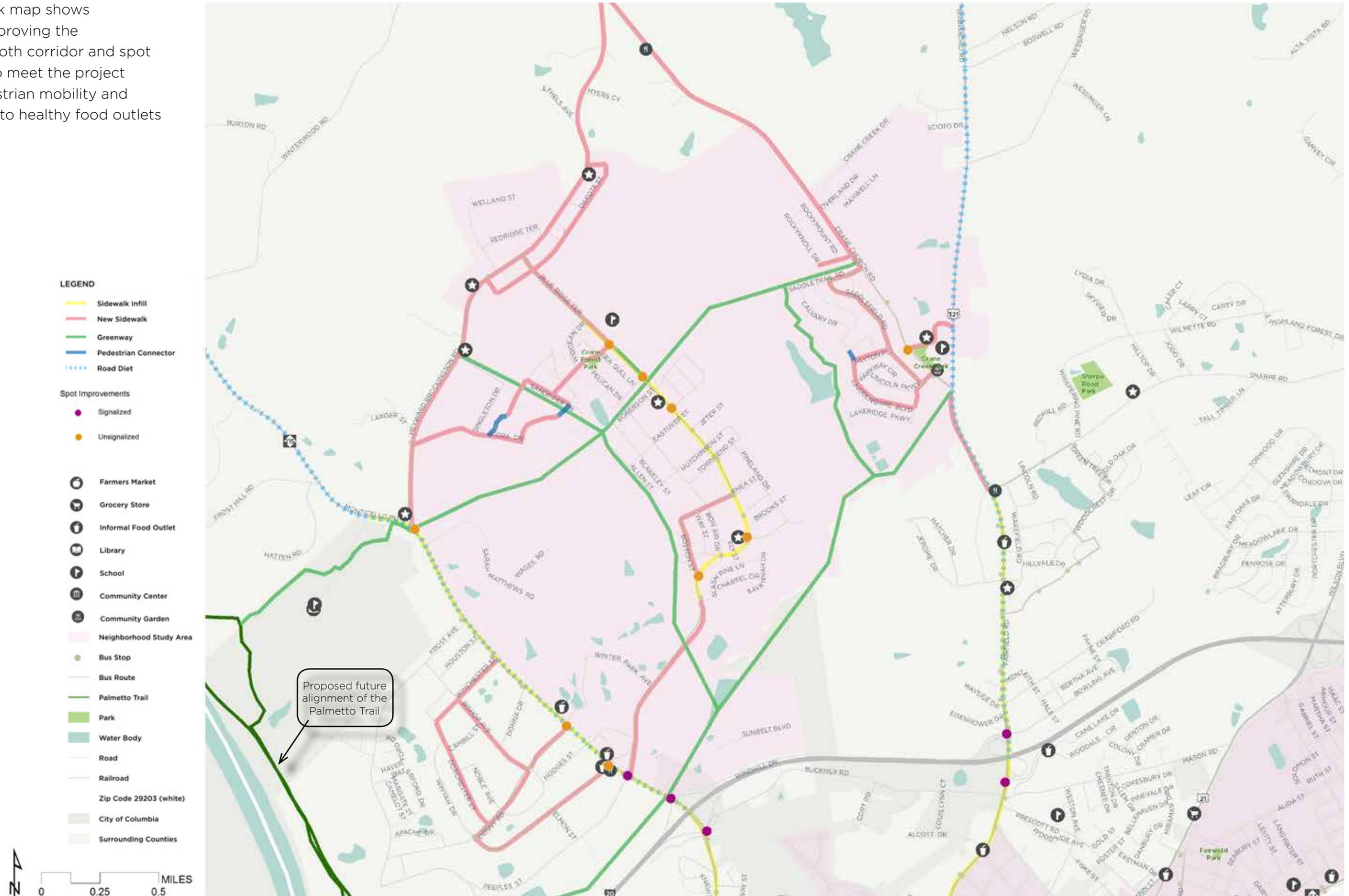
- sidewalk infill
- new sidewalk
- greenway
- pedestrian connector
- road diet

All recommendations are depicted on the map on the following page.

Apart from the adjacent recommendations map, this chapter also includes projects master tables. The project master tables highlight project-specific details including project extents and recommended pedestrian facilities. A description of pedestrian facilities types recommended in this Plan can be found in the Appendix.

PEDESTRIAN NETWORK RECOMMENDATIONS MAP

The adjacent Crane Creek map shows recommendations for improving the pedestrian network via both corridor and spot improvements in order to meet the project goals of increasing pedestrian mobility and access, and connectivity to healthy food outlets and active spaces.



Recommended Network Improvements- Corridor Improvements

CORRIDOR	BEGIN/END	POTENTIAL IMPROVEMENTS FOR CONSIDERATION
Monticello Road	Interstate 20/ Winterwood Rd.	Corridor study to examine feasibility of improving pedestrian safety through reduced traffic speeds, narrower lane widths, increased crossing opportunities, etc. Fill in gaps and fix problem spots along existing sidewalk.
Heyward Brockington Road	Monticello Rd./ Crane Church Rd.	New sidewalks to facilitate safe pedestrian travel along this corridor.
Cora Drive	Heyward Brockington Rd./ end of Cora Dr.	New sidewalks to facilitate pedestrian access to Heyward Brockington Rd., and also to greenways and school via pedestrian connectors (see below)
Crane Church Road	Fairfield Rd./ Heyward Brockington Rd.	New sidewalks to facilitate pedestrian access to Crane Creek Park, Community Center, and other amenities.
Fairfield Road	Interstate 20/Oak Hills Golf Club	New sidewalks from Sharpe Rd. to Crane Church Rd. to facilitate pedestrian access to Crane Creek neighborhood and amenities. Corridor study to examine feasibility of improving pedestrian safety through reduced traffic speeds, narrower lane widths, increased crossing opportunities, etc. Fill in gaps and fix problem spots along existing sidewalk.
Blue Ridge Terrace	Monticello Rd./Heyward Brockington Rd.	New sidewalks from Widgean Dr. to Heyward Brockington Rd. and from Loblolly Dr. to Monticello Rd. to facilitate pedestrian access to Forest Heights Elementary School, restaurants and service stations. Fill in gaps and fix problem spots along existing sidewalk from Widgean Dr. to Loblolly Dr. Add crosswalks at convenient intervals to facilitate safe pedestrian access where sidewalks are on only one side of the street.
Bishop Avenue	Winchester Ave./ Denny Rd.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Winchester and Denny Rds.
Winchester Avenue	Monticello Rd./ Dorchester St.	New sidewalks to facilitate safe pedestrian access to Monticello Rd.
Dorchester Street	Denny Rd./ Winchester Ave.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Winchester and Denny Rds.
Denny Road	Monticello Rd./ Winyah Dr.	New sidewalks to facilitate safe pedestrian access to Monticello Rd.
Winyah Drive	Monticello Rd./ Denny Rd.	New sidewalks to facilitate safe pedestrian access to Monticello Rd.
Sandpiper Lane	Birchwood Dr./ Swan Ln.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Peachwood Dr. and Forest Heights Elementary School.
New Street @ end of Cora Dr.	Cora Dr./end of new street	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Birchwood Dr. and sidewalk network to Forest Heights Elementary School.
Dakota Street	Welland St./ Heyward Brockington Rd.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Heyward Brockington Rd.
Welland Street	Heyward Brockington Rd./ Dakota St.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Heyward Brockington Rd.
Birchwood Drive	Sandpiper Ln./ south end of Birchwood Dr.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Sandpiper Ln. and sidewalk network to Forest Heights Elementary School.

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CORRIDOR	BEGIN/END	POTENTIAL IMPROVEMENTS FOR CONSIDERATION
Peachwood Drive	Sandpiper Ln./Blue Ridge Terr.	New sidewalks to facilitate safe pedestrian travel along this corridor to Forest Heights Elementary School.
Rhea Street	Blue Ridge Terr./Boston St.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Blue Ridge Terrace.
Boston Street	Rhea St./Blue Ridge Terr.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Blue Ridge Terrace.
Saddlefield Road	Lincoln Pkwy./Saddletrail Rd.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Saddletrail Rd. and Lincoln Pkwy.
Payton Place	Lincolnshire Blvd./Saddlefield Rd.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Saddlefield Rd. and Lincolnshire Blvd.
Lincolnshire Boulevard	Kings Down Ln./Payton Pl.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Kings Down Ln. and Payton Pl.
Lincoln Parkway	Crane Church Rd./Kings Down Ln.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Crane Church Rd.
Kings Down Lane	Lincoln Pkwy./Lincolnshire Blvd.	New sidewalks to facilitate safe pedestrian travel along this corridor to connect to Lincoln Pkwy.
Water Hills Road	Fairfield Rd./Crane Church Rd.	New sidewalks to facilitate safe pedestrian travel along this corridor between Crane Church Rd. and Fairfield Rd., improving access to Crane Creek Park, Community Center, and School.

Recommended Network Improvements- Greenways and Pedestrian Connectors

FACILITY TYPE	BEGIN/END
Greenway #1	Palmetto Trail near Columbia International University/Crane Church Rd. near Saddletrail Rd.
Greenway #2	Palmetto Trail near I-20/Fairfield Rd. near Crane Church Rd.
Greenway #3	Heyward Brockington Rd. near Singleton Dr./Greenway #2 near Sunbelt Blvd.
Greenway #4	Greenway #1 near Saddletrail Rd./Greenway #2 near Kings Down Ln.
Greenway #5	Peachwood Dr./Greenway #1 near Roberson St.
Pedestrian Connector	Cora Dr./Birchwood Dr.
Pedestrian Connector	New Street off of Cora Dr./Sandpiper Ln.
Pedestrian Connector	Lincolnshire N. Dr./Lincolnshire Blvd.

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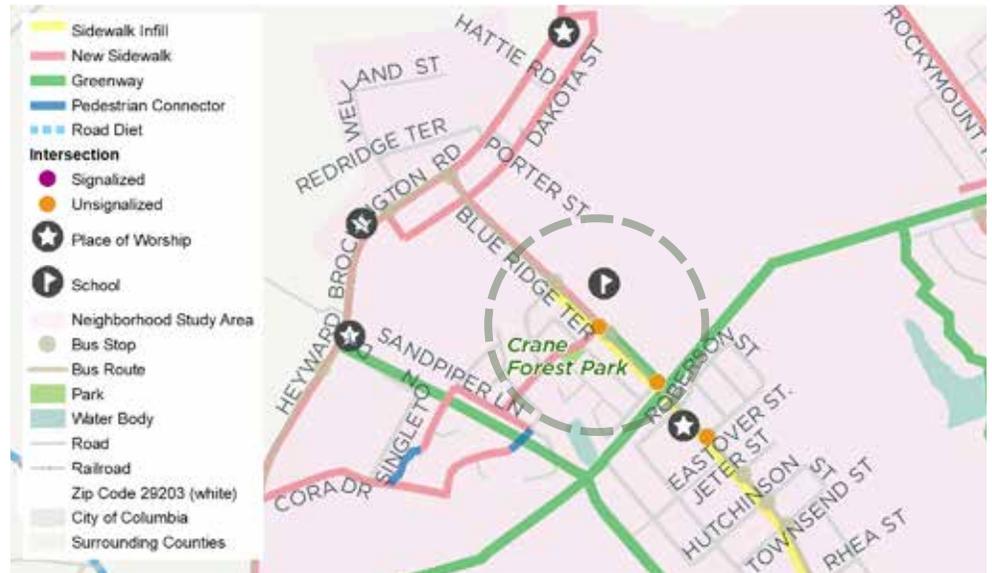
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Crane Creek Priority Project Cut Sheets

Blue Ridge Terrace

As a major spine through the area, Blue Ridge Terrace can benefit from a number of corridor and intersection improvements, including new sidewalks, sidewalk in-fill, maintenance of existing sidewalks, and increased and improved crosswalks.

A priority location for improvements is the intersection of Blue Ridge Terrace and Peachwood Drive, as this is the entrance to Forest Heights Elementary School, and thus a high-traffic area for pedestrians. Below, a photo-simulation offers a picture of how the intersection could be improved with new sidewalks, crosswalk markings, curb ramping, and a Pedestrian Hybrid (or HAWK) Beacon. These improvements will increase safety and comfort for pedestrians.



RECOMMENDED IMPROVEMENTS

- + Curb bulb-outs and high-visibility crosswalks
- + Sidewalks on both side of Blue Ridge Terrace
- + Greenway spur connecting to school
- + ADA compliant curb ramps



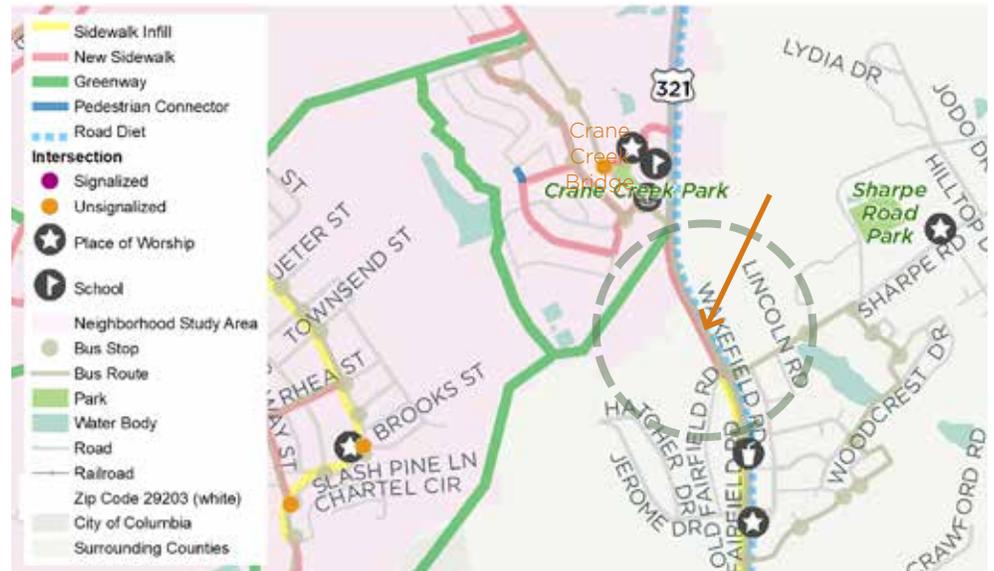
Blue Ridge Terrace near Forest Heights Elementary School

Fairfield Road

Fairfield Road is the primary access point to the Crane Creek neighborhood, but sidewalks only exist south of Sharpe Road. Worn paths in the grass and pedestrian collision reports indicate that there is a serious demand for pedestrian facilities and safety improvements.

This five-lane road is oversized for current traffic volumes and presents a road diet opportunity. Coupled with streetscaping, this would create a more attractive, comfortable, and safe environment for pedestrians (and bicyclists alike).

Additionally, the bridge over Crane Creek has no shoulder or space for pedestrians, thus creating a major obstacle and pinch-point for pedestrian activity. Pedestrian improvements should continue across the bridge.



RECOMMENDED IMPROVEMENTS

- + Sidewalks along Fairfield Road from Sharpe Road to Crane Church Road
- + Road diet and streetscaping to convert oversupply of lanes to bicycle/pedestrian facilities.



EXISTING



PROPOSED CORRIDOR IMPROVEMENTS

Fairfield Road



SECTION III: NORTH MAIN STUDY AREA

**CHAPTER 7 Community
Overview &
Public Input**

**CHAPTER 8 Opportunities &
Constraints**

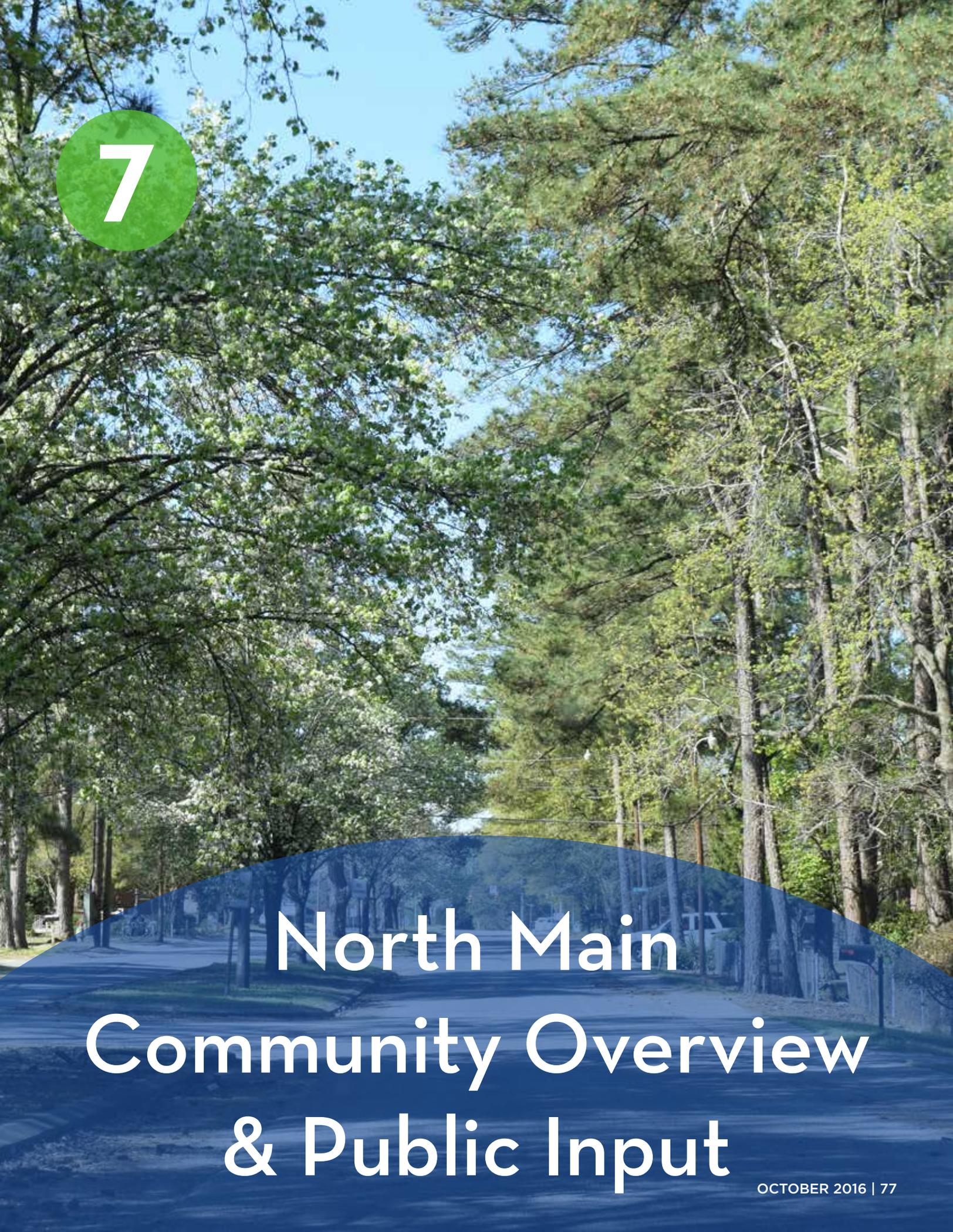
CHAPTER 9 Recommendations

**CHAPTER 10 Priority Projects &
Cut Sheets**

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7



North Main Community Overview & Public Input

COMMUNITY OVERVIEW

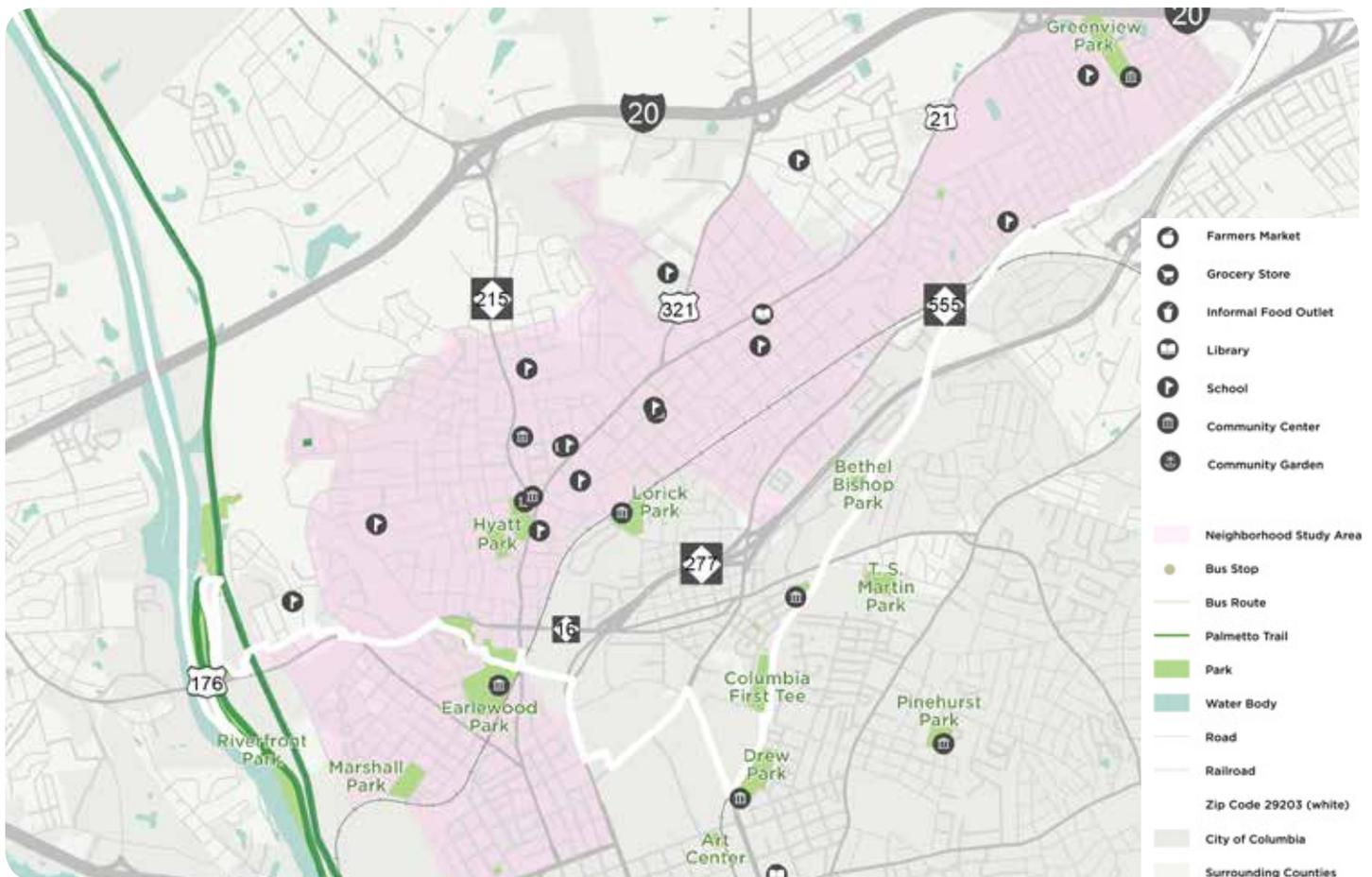
At a glance...

The North Main study area is situated within and north of the City of Columbia. The area is bounded by Interstate 20 to the north, Broad River to the west, downtown Columbia to the south, and parts of the railroad and Highway 277 to the east.

North Main Street is the defining corridor of the community, both as an obstacle that bisects the area and as an asset, serving as an extension of the downtown business district. The area surrounding the corridor is over 4,200 acres and comprises approximately 25 neighborhood associations. As described in the *Master Plan for the Villages of North Columbia*, the area is "best characterized by its beautiful, well established single-family neighborhoods... [and] proximity to downtown."

The North Main area is not without its challenges, however. The auto-oriented landscape of these adjoining neighborhoods have left them vulnerable to the strains of older suburban communities, including disinvestment, higher vacancy rates, and streetscape designs that are unfriendly and uninviting spaces for pedestrians.

Community members have been in tune with the challenges and opportunities at stake in the North Main area for a number of years, as demonstrated through their Master Plan. The project team tapped into their knowledge through a public outreach process aimed at building on past and current walkability efforts.



Above: The North Main study area is shown in pink.

PUBLIC INPUT

SUMMARY

As part of the data collection process and during the development of network recommendations, the project team solicited input from NOMA residents and community leaders. Feedback was collected in a number of ways, including:

- Focus group sessions
- Survey (online and hard-copy)
- Public input meetings
- Technical Training

This section summarizes the key findings of this Plan's public input process.



Public input participants share their thoughts about improving walkability in NOMA.

FOCUS GROUPS

Two focus groups were conducted at the Eau Claire Print Building. Eighteen community members participated in the focus groups. Participants were chosen based on residency in the North Main area, as well as interest in improving access to active living and healthy eating. A diverse mix of residents were invited to best reflect and represent the area's demographics.

Specific objectives of the focus groups include the following:

- Identify where residents are currently walking in the North Main area,
- Determine where residents want to walk but cannot because of poor accessibility
- Explore residents' perceptions of pedestrian safety issues,
- Seek residents' input on accessibility to grocery stores and healthy food outlet options
- Seek residents' input on priority pedestrian planning projects and destinations

"I am interested in seeing better connectivity."

- Focus group participant

"I would like to see the perception of this area change."

- Focus group participant

"Rehab the sidewalks and... connect them to the main thoroughfares."

- Focus group participant

KEY FINDINGS

Question: What assets exist in North Main? How can the pedestrian master plan build upon or leverage current assets?

- **Three Rivers Greenway & Vista Greenway**
Focus group participants expressed an appreciation for the connections provided by these greenways, the excitement and investment they have spurred, and the linear greenspace they provide. The greenways are used by a diverse group of community members and should be seen as an asset to attract new residents and developers who can invest in the community.
- **Earlewood Park**
This City-owned park is one of the largest and most-loved in the North Main area. Although the majority of the park is in a different zipcode, it acts as a great resource to the residents of our study area. It is home to the Earlewood Park Community Center, NOMA's "Bark Park", tennis courts, amphitheater, baseball fields, basketball court, and a walking path. Residents want to see safer, more convenient pedestrian access to the park from surrounding neighborhoods and along North Main Street.
- **Elmwood**
A lot of people walk on Elmwood Avenue and in the Elmwood neighborhood for both transportation and exercise. The corridor is a major link to Main Street and downtown Columbia. The greater area is a natural link between downtown, neighborhoods, NOMA community garden, Earlewood Park and Marshall Park, and the transit stops and retail on Main Street.

Question: What are the biggest barriers to walkability in the North Main area?

- **Lack of sidewalks**
- **Perception of Crime**
Although crime rates in the area have dropped over the past few years, focus group members said there is a perception that the area is dangerous. They said unwarranted fears about safety are the biggest barriers to getting people to walk outdoors.
- **Traffic Concerns**
Participants said they would like to see infrastructure and design improvements to slow traffic and buffer pedestrians at the following streets and intersections:
 - N. Main Street & Monticello Road
 - N. Main Street & Avondale Drive
 - N. Main Street & Lorick Avenue
 - Clement Road & River Drive
 - Park Street & Elmwood Avenue
- **Lighting Concerns**
Focus groups participants said they hope the pedestrian plan includes recommendations for improved lighting near the following areas:
 - BI-LO parking Lot
 - N. Main Street Branch of the Richland County Library
 - Sunset Drive
 - Monticello Road (from I-20 to Main Street)

"I would love to get to the parks on foot."

- Focus group participant

Question: What are high priority projects, streets, neighborhoods, or destinations for improved access? Why are they priorities?

Focus group participants identified priorities that fell into two distinct categories. Many said the pedestrian plan should **leverage the revitalization that is already happening** in the gentrifying NOMA planning area on the south end of the North Main Planning area. Others felt that priority should be placed on projects **north of NOMA** because they would have a **greater impact on residents with the highest health and financial needs**.

Each of the following priority projects or focus areas meet one or both of those objectives:

- **Complete sidewalk network**
Focus group participants identified a lack of sidewalks, particularly in high-demand and high-need areas like schools and parks, as one of the biggest barriers to walkability and getting people to walk. Closing network gaps and improving sidewalk conditions should be a priority for this plan.
- **Community Garden Program**
The ongoing community garden programs across NOMA are very popular, especially at Hyatt Park. Expanding safe pedestrian access to these locations is a priority for residents, and can help improve the program's success.

- **Access to the riverfront**
Focus group members said they want to see efforts made to improve bike and pedestrian access to the Columbia Canal and Riverfront Park (Riverwalk), particularly via the Riverview Terrace neighborhood. They said it would help to make the North Main area more attractive to new residents and developers.
- **Connection to transit**
Many residents of the North Main area rely on the COMET for their transportation needs. Getting to bus stops on foot, however, can be a challenging, unsafe, and unenjoyable venture. While the transit system has made strides to adequately mark bus stop locations, nearly all stops lack amenities like benches, shelters, and a buffer area from the arterial roads they are often located on, that make transit an inviting choice. COMET has set out to address this barrier and priority need through their "Bus Stop Project," a proposal which seeks to install bus shelters, bike racks, and other amenities and bus stop locations. The pedestrian master plan can work in tandem with this project to support and direct their efforts.

"Access to the river is really important to me."

- Focus group participant

"I want success for the most vulnerable parts of 29203."

- Focus group participant

SURVEY SYNOPSIS

As previously mentioned, Walkable 29203 Surveys honed in on community needs and priorities related to walkability, and reinforced findings uncovered during other public outreach efforts. This section highlights key findings as they relate to North Main. A full report of survey results can be found in the appendix.

KEY FINDINGS

- Respondents believe **improving walking conditions is very important**
- **Exercise is among the top reasons respondents say they walk in their community.**
- To enjoy nature, to get somewhere, and for recreation were the next most popular responses.
- **Arlington Avenue and the Seminary Ridge Neighborhood** were described as current popular walking routes.

- Respondents expressed a **preference to walk to** the following **key destinations**:
 - Grocery stores and other healthy food outlets (especially BI-LO and Publix)
 - Restaurants, delis, and dining options
 - Parks
- To increase walking, respondents said they prefer:
 - Sidewalks away from traffic
 - Paved pathways away from the street
 - Lighting and other amenities
- **Nearly all respondents** expressed that they **want to be able to walk to buy their groceries.**

"I drive out of our zip code for groceries weekly.."

- Survey respondent

"I use a walker and regularly walk 1 to 1.5 miles per day. The streets and sidewalks in this area are very uneven and crossing Monticello and North Main Street is dangerous for me. "

- Survey respondent

"I have the means to be able to travel to better grocery stores, but many of my neighbors may not have that ability."

- Survey respondent

"I would like to see a walking/biking route off N. Main Street connecting the Seminary Ridge neighborhood via the Earlewood Neighborhood to the Cottontown neighborhood."

- Survey respondent

PUBLIC INPUT MEETINGS

As mentioned in Section II, two public meetings were held as part of this plan’s public input process. The first meeting was held during the kick-off phase as a way of understanding local needs and concerns related to walkability, and the second meeting was held to get feedback on draft recommendations that had been identified by the project team through stakeholder and public outreach.

KEY FINDINGS OF MEETING #1

Top concerns expressed by meeting attendees were the **need for sidewalk connectivity** and an **increased sense of safety**. A number of residents also expressed a **willingness to walk if major corridors were improved for pedestrians** or if alternative routes that avoid those major corridors were identified and established as pedestrian-friendly.

Meeting participants voted on a ‘visual preference board’ (below) which asked “What Would Make You Walk More?”

The **top three things** which would motivate people to walk more were:

- **Lighting**
- **Vibrant storefronts**
- **Sidewalk maintenance and buffers**

What motivates you to walk?

WHAT WOULD MAKE YOU WALK MORE?



PLACE A STICKER TO VOTE FOR YOUR THREE FAVORITES!

 <p style="background-color: #f4a460; padding: 5px; color: white;">Safer Crossings</p> <p style="font-size: 8px; color: #333;">Sidewalk extensions, more visible crosswalks, crossing islands, and other improvements can make it safer to cross major streets.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Better Lighting</p> <p style="font-size: 8px; color: #333;">Highly visible pedestrian lighting along sidewalks helps make walking at night safer and more comfortable.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Improved Access to Destinations</p> <p style="font-size: 8px; color: #333;">Improved walking facilities to destinations such as grocery stores, schools, museums, parks, and theaters.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Slower Traffic</p> <p style="font-size: 8px; color: #333;">Enforcement and marketing campaigns, as well as physical roadway treatments and signs, can all help reduce the volume and speed of car traffic.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Better Railroad Crossings</p> <p style="font-size: 8px; color: #333;">Well-designed at-grade crossings for pedestrians at railroad tracks can provide safe and convenient access between neighborhoods and to downtown.</p>
 <p style="background-color: #f4a460; padding: 5px; color: white;">Sidewalk Maintenance & Buffers</p> <p style="font-size: 8px; color: #333;">Improvements to reduce bumps and cracks and add grassy buffer areas on major routes to provide a safe and comfortable place for pedestrians.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Walking Trails</p> <p style="font-size: 8px; color: #333;">Off-street trails and greenways can provide scenic and inviting options for people walking for recreation, exercise, or any other purpose.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Destination Signs</p> <p style="font-size: 8px; color: #333;">Wayfinding signs at lower heights with smaller, pedestrian-friendly text help people find popular destinations and encourage them to walk to those places.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Shade Trees and Landscaping</p> <p style="font-size: 8px; color: #333;">Mature trees provide needed shade for people walking, and other landscaping such as flowers and plants beautify the community.</p>	 <p style="background-color: #f4a460; padding: 5px; color: white;">Vibrant Storefronts</p> <p style="font-size: 8px; color: #333;">Active storefronts that face the street and interact with pedestrians provide a fun and interesting walking experience.</p>

KEY FINDINGS OF MEETING #2

A second public input meeting was held jointly in Crane Creek, with materials for both locations presented for review by residents, community leaders, and stakeholder, in an open house style setting. The joint meeting gave residents of both study areas the opportunity to see both the Crane Creek and North Main recommendations, and gain an understanding of the core purpose behind the Walkable 29203 Pedestrian Master Plan.

Materials presented at this meeting included a voting board where attendees could vote on their preferred type of pedestrian facility, and their preferred priority programs and policies, which helped inform the recommendations in this plan. The posters also included photo-simulations of recommended improvements

for several priority projects that were identified through input from the advisory group. Supplemental materials were also presented, including a summary poster of the project purpose and goals, and a summary of the equity analysis.

Walkable 29203 Priority Recommendations

Place a dot next to a picture to vote for your favorites!



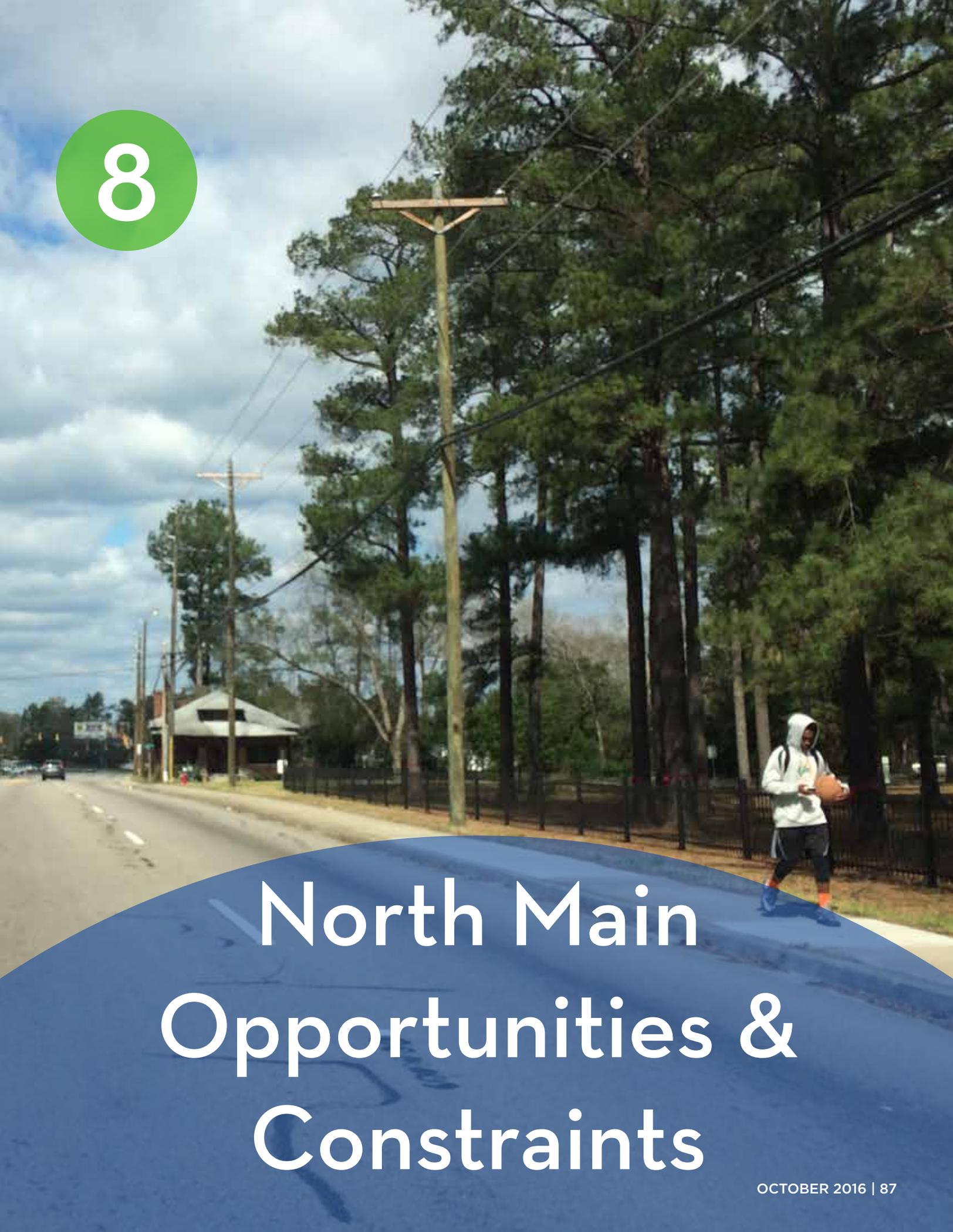
 <p style="font-size: 8px; margin: 0;">FITNESS IN THE PARK</p> <p style="font-size: 8px; margin: 0;">Reaching out to residents to encourage walking and other physical activities can help improve personal health and strengthen ties within the community. By partnering with course instructors from the Crane Creek Gymnasium, the park can host multiple outdoor activities.</p>	 <p style="font-size: 8px; margin: 0;">NATIONAL NIGHT OUT</p> <p style="font-size: 8px; margin: 0;">This annual community-building campaign promotes police-community partnerships and neighborhood camaraderie to make local neighborhoods safer. This also provides organizations the opportunity to promote safety awareness through fun activities for all ages.</p>	 <p style="font-size: 8px; margin: 0;">COMMUNITY PICNICS</p> <p style="font-size: 8px; margin: 0;">These events provide a low-key opportunity for residents to meet each other as well as members of City Council, City staff, and fire and rescue. Picnics or barbecues can be altered to focus on locally sourced healthy foods and what local leadership is doing to support a healthy lifestyle.</p>	 <p style="font-size: 8px; margin: 0;">EXISTING</p> <p style="font-size: 8px; margin: 0;">PROPOSED</p> <p style="font-size: 8px; margin: 0;">DRAFT PHOTOSIMULATION - Sidewalk Connectivity Fairfield Road</p>
 <p style="font-size: 8px; margin: 0;">VISION ZERO POLICY</p> <p style="font-size: 8px; margin: 0;">With the goal of zero fatalities, the Vision Zero policy takes a comprehensive approach to protecting vulnerable road users like bicyclists and pedestrians through street design, legislation, education, and enforcement. The policy includes targeted action steps to achieve zero traffic deaths.</p>	 <p style="font-size: 8px; margin: 0;">NEIGHBORHOOD FARMERS MARKET</p> <p style="font-size: 8px; margin: 0;">A neighborhood farmers market can provide a wide selection of fresh and affordable produce to the residents of Crane Creek. The neighborhood can leverage their proximity to local farmers or work with the State Farmers Market to assist in the implementation of a neighborhood-based market.</p>	 <p style="font-size: 8px; margin: 0;">SAFE ROUTES TO SCHOOL</p> <p style="font-size: 8px; margin: 0;">Programs educate youth and parents about safe bicycling and walking skills, encourage schools and communities to support bicycling and walking, and help communities make safer streets, trails, and sidewalks for bike riders and walkers of all ages.</p>	 <p style="font-size: 8px; margin: 0;">EXISTING</p> <p style="font-size: 8px; margin: 0;">PROPOSED</p> <p style="font-size: 8px; margin: 0;">DRAFT PHOTOSIMULATION - Crossing Improvement Blue Ridge Terrace at Forest Heights Elementary School</p>

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8



North Main Opportunities & Constraints

OPPORTUNITIES

PARK & RECREATION FACILITIES



NOMA residents have **a number of park and recreation facilities in their area as well as directly outside their zipcode, including greenways, to enjoy daily, helping to serve their physical activity needs.** Creating safe, convenient, and comfortable ways of accessing these areas on foot can only increase their popularity and increase the quality of life for all residents and visitors. **Adding wayfinding signage is one way to inform residents and visitors of their proximity to these wonderful places, and to inform users of the connections that exist between them.**

PARTNER WITH SCHOOLS & TRANSIT



NOMA is fortunate to have schools, particularly **elementary schools, situated in residential neighborhoods.** Developing a partnership with Safe Routes to School means increased funding opportunities related to active transportation, and increased physical activity levels for both children and adults. Also, **a partnership with COMET presents opportunities to further expand residents' mobility** - allowing them to reach more employment opportunities, shopping destinations, and recreational opportunities via public transit.

NEIGHBORHOOD STREETS



Residential areas of North Main, particularly the Seminary Ridge neighborhood, have **beautiful tree-lined streets, some with wide landscaped medians**. This makes for pleasant neighborhood walking conditions. **Preserving this character is key for retaining quality of life**. Adding traffic calming and other slow zone techniques can increase pedestrian safety. These neighborhood streets present an **opportunity to capitalize on and expand the success of an existing asset through low-cost improvements**.

HEALTHY FOOD OUTLETS



The City and NOMA leadership have recognized the **importance of healthy food outlets by establishing community gardens**. **Expanding healthy food options** to incorporate more community members, **particularly those who are most vulnerable and food insecure can stabilize the community and stimulate pride**. Creating **comfortable, safe, and convenient connections to existing healthy food options** like grocery stores, farmers markets, and even produce stands at the roadside can **encourage people to not only to walk but to eat better**.

CONSTRAINTS

WALKABILITY DISCONNECT



The auto-oriented streetscapes that dominate much of NOMA's **major corridors pit pedestrians immediately adjacent to wide travel lanes which encourage speeding**. A lack of buffer area makes residents traveling on foot **feel unsafe and unwelcome**. There is also a walkability disconnect occurring on calmer, well-designed streets that have **sidewalk network gaps**. These **limitations in mobility and accessibility discourage walking** and reinforce the use of a car to get around. Creating seamless connections between neighborhoods and to the primary destinations residents need and want to walk to will be a priority.

PERCEPTION OF SAFETY



Perception of crime and violence prevents many NOMA residents from walking, especially at night. Residents expressed their preference for walking in their neighborhoods on local streets. However, **there are few pedestrian-oriented lights to improve their sense of safety so residents forego walking altogether**. Organizing neighborhood watches and partnering with law enforcement to establish recurring walking routes that are monitored can encourage walking, foster community relationships, and deter crime.

RAILROAD CROSSINGS



Difficult railroad crossings mean residents in some neighborhoods have to walk further to reach destinations or are discouraged from walking altogether. The railroad tracks run along the entire eastern border of NOMA and through the heart of the Earlewood neighborhood. They are a particularly **troublesome obstacle at major intersections** like Farrow and Fontaine, as well as Farrow and Westmore. These **railroad tracks are a divisive barrier for connectivity** and **require special design attention to ensure access for all.**

COMPLIANCE & ENFORCEMENT



ADA accessibility is a systemic issue in 29203's pedestrian network. The CDC recognizes that walking and wheelchair rolling are rights, not luxuries, that each person should have. As such, **the city and county should design and invest in its pedestrian facilities** to encourage safe pedestrian activity and **integrate walking and wheelchair rolling as a normal part of daily life** for people of all ages and abilities. Apart from ADA compliance, there is a lack of enforcement for people who park their cars on sidewalks. This bad practice, which forces pedestrians into the roadway and signals a lack of consideration for the pedestrian, appears to be a cultural norm across various NOMA neighborhoods.

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9



North Main Recommendations

OVERVIEW

The following sections detail priority pedestrian infrastructure recommendations for the North Main neighborhoods. The intent of these recommendations is to present a vision of walkability priorities, ensuring citywide accessibility and mobility for pedestrians of all ages and abilities. Improvements focus on making walking safer and a more enjoyable experience to increase the overall quality of life for residents of and visitors.

To achieve such a vision, recommendations include:

- **Spot improvements** which account for both signalized and unsignalized crossing improvements.

Crossing improvement recommendations address pedestrian safety, comfort, and convenience by targeting specific areas with high foot traffic and problem areas.

Each identified spot recommendation will have a host of improvements that are typical of a well-designed crossing. These improvements include:

- High-visibility crosswalk
- Pedestrian push buttons
- Pedestrian countdown signals
- ADA compliant curb ramps
- Pedestrian warning signs
- Median refuge islands for long crossings
- Traffic calming

In total, 12 unsignalized and 10 signalized improvements have been identified.

- **Corridor improvements** which also address pedestrian safety, comfort, and convenience by looking holistically at the pedestrian experience along a stretch of the road.

Typical corridor recommendations include:

- ADA compliance
- Filling sidewalk network gaps
- Streetscape design elements such as landscaping, street furniture, wayfinding, and pedestrian-scale lighting
- Road Diet or "right-sizing" the road
- Traffic calming

While these infrastructure recommendations are considered priorities for North Main, the County and SCDOT should remain opportunistic and flexible. New developments, roadway reconstruction projects, and regularly programmed maintenance programs should not preclude other improvements from happening.

The recommended facility types described herein are based on national best practices for pedestrian and bicycle design and are compliant with state and national design guidelines. The pedestrian portion of the City of Columbia's Pedestrian Design Guidelines are included in the Appendix.

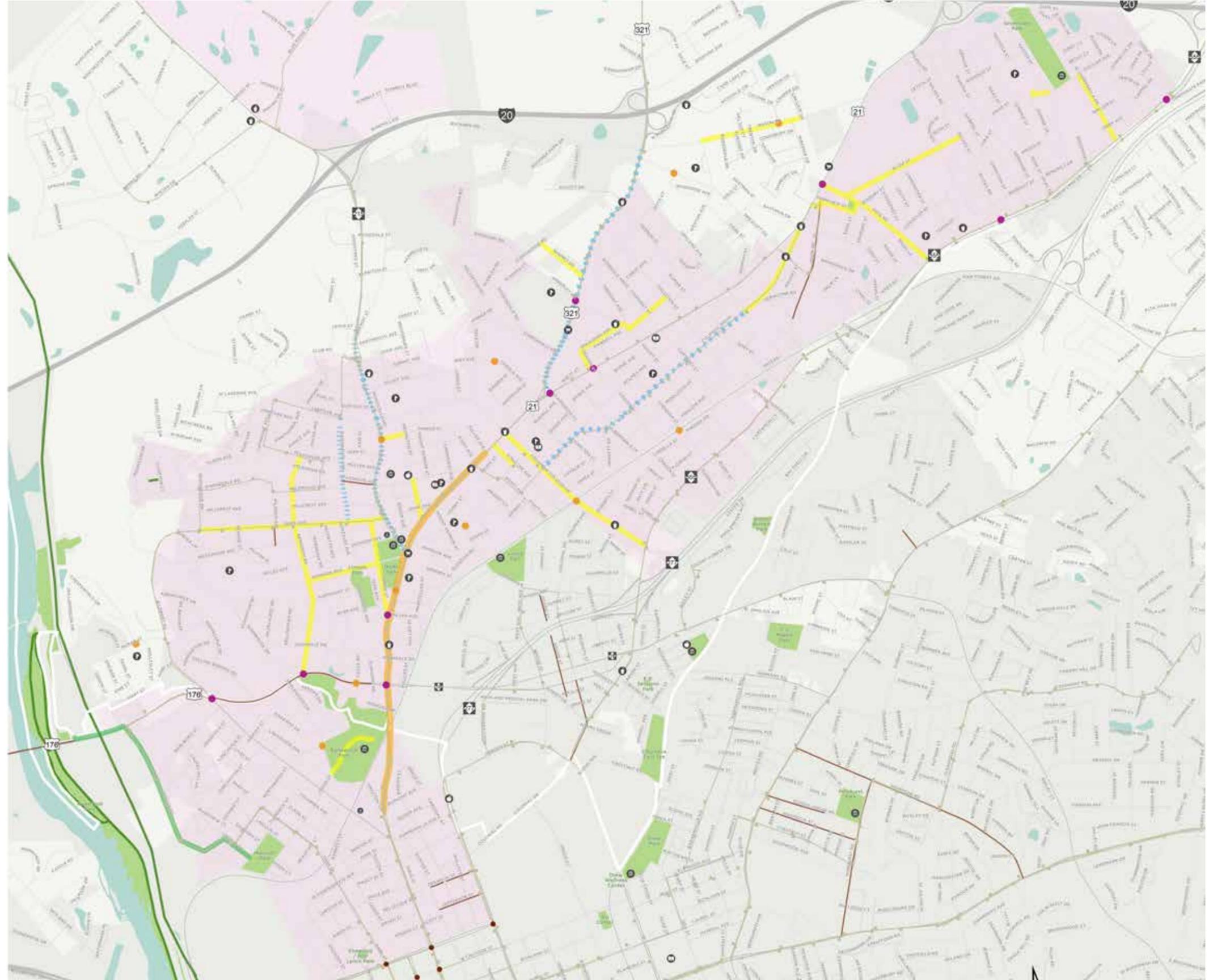
The map on the following page includes the following recommendation types:

- Sidewalk infill & traffic calming
- Greenway connection
- Road diet
- Signalized spot improvement
- Unsignalized spot improvement

PEDESTRIAN NETWORK RECOMMENDATIONS MAP

The adjacent NOMA map shows recommendations for improving the pedestrian network via both corridor and spot improvements in order to meet the project goals of increasing pedestrian mobility and access, and connectivity to healthy food outlets and active spaces.

- LEGEND**
- Corridor Improvements**
- Sidewalk Infill & Traffic Calming
 - Greenway Connection
 - - - Road Diet
- Spot Improvements**
- Signalized
 - Unsignalized
 - Planned Penny Sales Tax Sidewalk In-fill
 - Planned Penny Sales Tax Spot Improvement
 - Farmers Market
 - Grocery Store
 - Informal Food Outlet
 - Library
 - School
 - Community Center
 - Community Garden
 - TIGER Project
 - Neighborhood Study Area
 - Bus Stop
 - Bus Route
 - Palmetto Trail
 - Park
 - Water Body
 - Road
 - Railroad
 - Zip Code 29203 (white)
 - City of Columbia
 - Surrounding Counties



Recommended Pedestrian Network Improvements

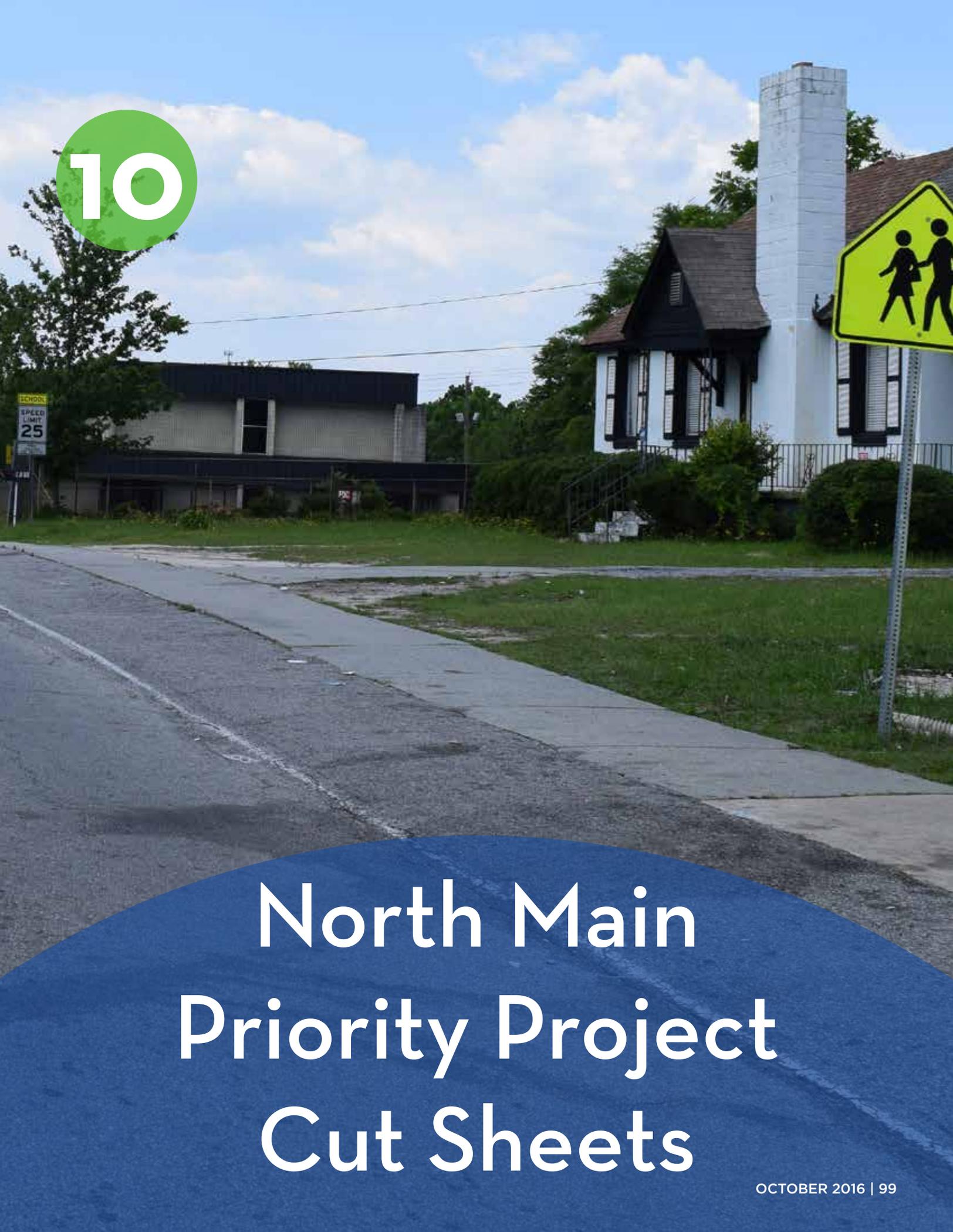
CORRIDOR	BEGIN/END	POTENTIAL IMPROVEMENTS FOR CONSIDERATION
Lindsay Street	Florence St./Lucius Rd.	Greenway Connection
Lucius Road	Lindsay St./River Dr.	Greenway Connection
River Drive	Lucius Rd./Three Rivers Greenway	Greenway Connection
N. Main Street	Anthony Ave./Fuller Ave.	TIGER Project
Parkside Drive	Earlewood Dr./Main St.	Sidewalk in-fill and traffic calming
Abingdon Road	Sunset Dr./Wildsmere Ave.	Sidewalk in-fill and traffic calming
Johnson Avenue	Abingdon Rd./Lamar St.	Sidewalk in-fill and traffic calming
Duke Avenue	Woodbridge Dr./Monticello Rd.	Sidewalk in-fill and traffic calming
Lamar Street	Main St./Duke Ave.	Sidewalk in-fill and traffic calming
Timrod Street	Monticello Rd./Arlington St.	Sidewalk in-fill and traffic calming
Arlington Street	Main St./Wildwood Ave.	Sidewalk in-fill and traffic calming
E. Muller Avenue	Main St./Windemere Ave.	Sidewalk in-fill and traffic calming
Columbia College Drive	Main St./Farrow Rd.	Sidewalk in-fill and traffic calming
Monticello Road	Main St./Lewis St.	Road diet
Ridgewood Avenue	Duke Ave./Lakeside Ave.	Road diet
Colonial Drive	Columbia College Dr./Oakland Ave.	Road diet
Colonial Drive	Oakland Ave./Eastman Dr.	Sidewalk in-fill and traffic calming
Spaulding Avenue	Craven St./Ashley St.	Sidewalk in-fill and traffic calming
Craven Street	Main St./Spaulding Ave.	Sidewalk in-fill and traffic calming
Ashley Street	Spaulding Ave./Randall Ave.	Sidewalk in-fill and traffic calming
Randall Avenue	Ashley St./Colleton St.	Sidewalk in-fill and traffic calming
Winmet Drive	Glenthorne Rd./Fairfield Rd.	Sidewalk in-fill and traffic calming
Mason Road	Weston Ave./Sinclair Dr.	Sidewalk in-fill and traffic calming
Farmview Street	Koon Rd./Eddy St.	Sidewalk in-fill and traffic calming
Meridian Drive	Main St./Koon Rd.	Sidewalk in-fill and traffic calming
Frye Road	Main St./Farrow Rd.	Sidewalk in-fill and traffic calming
Alida Street	Frye Rd./Wilkes Rd.	Sidewalk in-fill and traffic calming
David Street	Jasmine Ln./Easter St.	Sidewalk in-fill and traffic calming
W. Campanella Drive	Gavilan Ave./Farrow Rd.	Sidewalk in-fill and traffic calming

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10



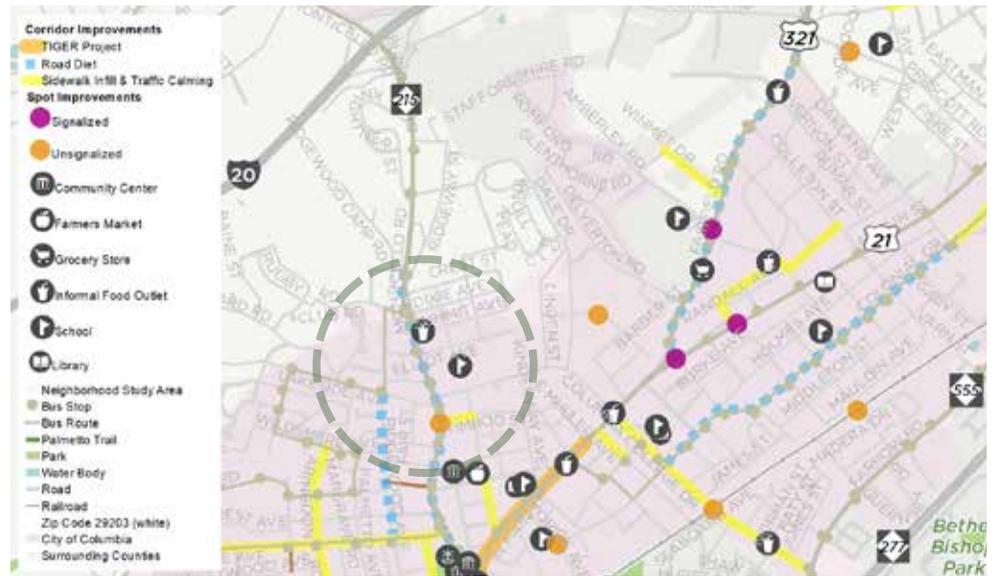
North Main Priority Project Cut Sheets

Monticello Road

Monticello Road is a primary arterial in this area, with many popular retail and service businesses located along it. Pedestrian safety and access to these businesses can be improved with corridor and spot improvements.

The Family Dollar is a priority location for improvements due to the high pedestrian traffic it attracts. High-visibility crosswalks and Rectangular Rapid Flash Beacons (RRFBs) will increase the visibility of pedestrians crossing the street.

The conversion of the outside lane into bike lanes will also provide a buffer from vehicle traffic for pedestrians on the existing sidewalks.



RECOMMENDED IMPROVEMENTS

- + High visibility crosswalks
- + RRFBs and refuge medians
- + ADA compliant curb ramps
- + Road diet to create bike lanes (buffers)



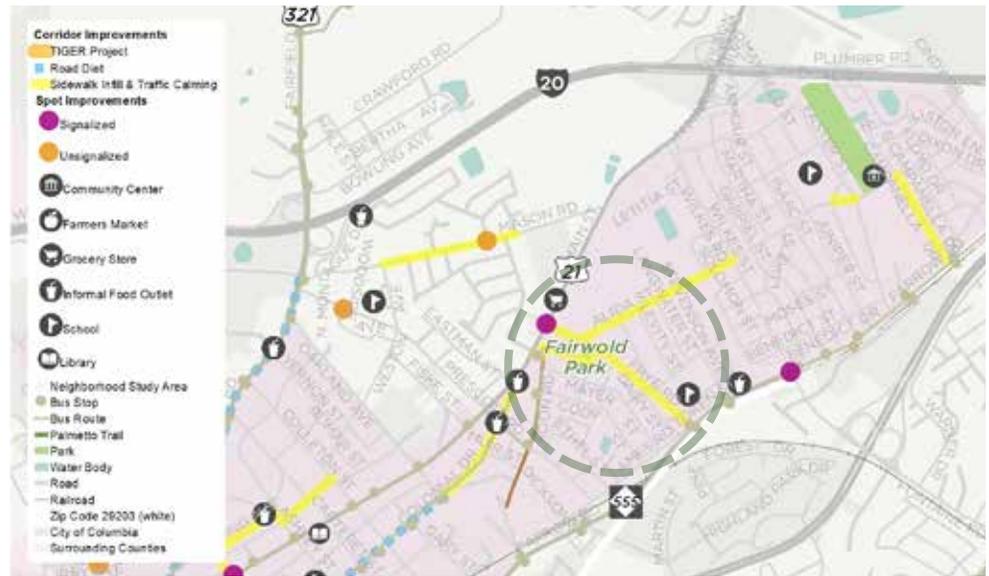
Monticello Road at Family Dollar

Frye Road

Frye Road is as a key link between Farrow Rd. and N. Main St. It is a main access point to a grocery store, Fairwold Park, and Pendergrass Fairwold School.

Safety can be improved along the corridor by reducing the speed limit from 30 to 20 MPH. A grassy buffer between the sidewalk and roadway will add a level of comfort and safety to the pedestrian experience too.

A raised crosswalk that acts as a speed bump and a speed-feedback sign will calm speeding and deter cut-through traffic. Bollards and paint can be used as a short-term solution to tighten the turning radius and reduce speeds at the intersection of Eddy Street, increasing safe pedestrian access to the park.



RECOMMENDED IMPROVEMENTS

- + Raised, high-visibility crosswalk
- + Buffers separating sidewalks from roadway
- + Reduced turning radius onto Eddy St.
- + Reduced speed limit from 30 to 20 MPH

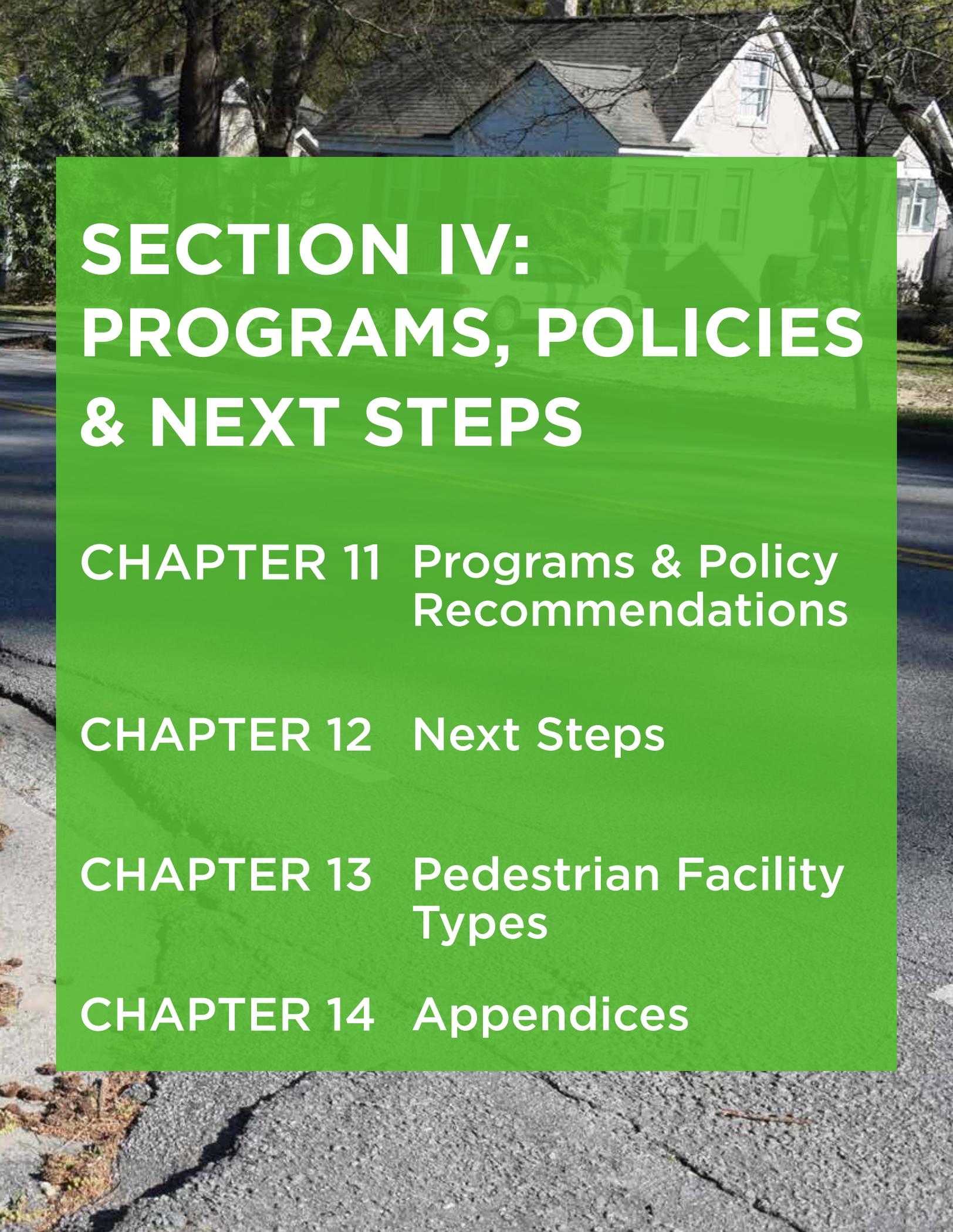
EXISTING



PROPOSED CORRIDOR IMPROVEMENTS

Frye Road near Fairwold Park





SECTION IV: PROGRAMS, POLICIES & NEXT STEPS

**CHAPTER 11 Programs & Policy
Recommendations**

CHAPTER 12 Next Steps

**CHAPTER 13 Pedestrian Facility
Types**

CHAPTER 14 Appendices

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11



Programs & Policy Recommendations

OVERVIEW

The Pedestrian Plan and infrastructure recommendations will provide safer, more comfortable places for residents and visitors alike, all while increasing livability, walkability, and local trail use; however, while improving infrastructure is critical to increasing walkability, the importance of education, encouragement, enforcement and evaluation efforts should not be underestimated.

Programs can ensure that residents will know about new and improved facilities, learn about the many benefits of walking, and receive positive reinforcement about why and how to integrate walking into an active and healthy lifestyle. In essence, programs can help to provide the maximum "return on investment" in the form of more people walking and a higher degree of safety and awareness around walking and pedestrians in North Main and Crane Creek.

Education and encouragement programs are designed to raise awareness of walking; connect users to existing and future resources; and to encourage residents to walk more often. These program recommendations will give the City and County, and their neighborhood and community partners, the tools they need to address travel choices, public health, and increase community-wide physical activity.



29203 AREA-WIDE PROGRAM & POLICY RECOMMENDATIONS

VISION ZERO POLICY

Vision Zero is based on the idea that traffic deaths on city streets are unacceptable and preventable. With the goal of zero fatalities, the Vision Zero policy takes a comprehensive approach to protecting vulnerable road users like bicyclists and pedestrians through street design, legislation, education, and enforcement.

For this policy to be effective for the health and safety of the 29203 community, this Plan recommends Vision Zero policy adoption by both Richland County and the City of Columbia. A Vision Zero policy should include an overarching vision for zero traffic fatalities.

The link between the urban and rural areas of the 29203 zip code presents a unique opportunity to pursue healthy food access initiatives that connect the farming and agriculture community directly with nearby neighborhoods and residents. With a goal of increasing healthy food availability, accessibility and affordability, the following two programs are recommended for further exploration:

Resources:

Policy Resource:

[More about Vision Zero](#)

Example Program:

[Austin, TX, Vision Zero](#)

PEDESTRIAN & BICYCLE COUNT PROGRAM

Understanding existing demand, trends in activity, and user needs is critical to improving the environment for active transportation. It can inform prioritization of investments, measure impact, and provide a useful tool for communicating need and value.

The Walk Bike Columbia plan included an inaugural Pedestrian & Bicycle Counts program led by the City of Columbia and implemented by volunteers. As Richland County works to implement the recommendations of Crane Creek planned improvements and the City of Columbia invests in the North Main Villages community, the County and the City should include pedestrian and bicycle count locations within each area. The two agency should partner in conducting the annual counts to allow efficiencies in the process and to ensure consistent data collection methods.

Resource:

Program Resource:

[More about Pedestrian & Bicycle Counts](#)

The link between the urban and rural areas of the 29203 zip code presents a unique opportunity to pursue healthy food access initiatives that **connect the farming and agriculture community directly with nearby neighborhoods and residents.** With a goal of increasing healthy food availability, accessibility and affordability, the following two programs are recommended for further exploration:

HEALTHY CORNER STORE INITIATIVE

A “healthy corner store” initiative works with area business owners and managers to increase healthy food options at small food retail stores or convenient stores that already exist in a community. The goal is to broaden the range of food and beverage choices available in retail outlets that already serve local community members and that are, by virtue of their “corner store” location, are walkable destinations. South Carolina DHEC is leading a pilot program to advance healthy corner stores in the state. Richland County and the City of Columbia should coordinate directly with DHEC regional staff to evaluate the findings and ‘lessons learned’ of that pilot program. The County and City should work with neighborhood leaders and regional farmers to craft a locally-oriented program to further that effort.

Resource:

Program Resource:

[More about Healthy Corner Store Initiatives](#)

FARM-TO-SCHOOL *or* FARM-TO-INSTITUTION

Farm-to-institution food service provides a substantial benefit to both the participating farmers and the institutions through increasing local economy, reducing transportation distribution costs, and developing a new revenue for farmers. When applied to schools, the students can benefit from the improved nutritional quality and taste as well as from related educational programs on local agriculture, nutrition and food systems. This is especially true for those from lower income families who rely on free and reduced price school meals.

The South Carolina Farm to School Program offers mini-grants and technical assistance for schools to implement the four core components of Farm to School. The call for applications for the 2016-17 school year closed in early May. Grant funding for schools is usually announced early spring, and the website has an example of the RFP from the 2016-17 announcement. Schools that have not received any funding from the SC Farm to Institution program in the past 3 school years are eligible to apply if they meet the following requirements: a) participate in the National School Lunch/Breakfast Program, and b) have an ADM (Average Daily Membership) that is 50% or more eligible for free and/or reduced-price lunch.

Resources:

Program Resources:

[More about Farm to School](#)
[More about Farm to Institution](#)

ADOPT ENGINEERING STANDARDS

Design guidelines were adopted by the City of Columbia City Council as part of policy guidance included in Walk Bike Columbia, the city's adopted bicycle and pedestrian master plan.

As a next step, the City, County, and its implementing partners should work with Utilities & Engineering and the Public Works Department to formally incorporate design specifications into Engineering Regulations.

Though the County has not adopted Walk Bike Columbia, it can take a similar step to adopt the Walk Bike Columbia design guidelines or other national guidance, such as NACTO-developed guidance, within County Engineering Regulations and Standards.



Resources:

Policy Resources:

[NACTO Urban Bikeway Design Guide](#)

[NACTO Urban Street Design Guide](#)

CRANE CREEK RECOMMENDED PROGRAMS

ACTIVATION OF CRANE CREEK PARK

Parks are essential to creating an active neighborhood, providing recreational opportunities, and supporting a neighborhood's identity. Activating this rich resource can encourage residents and visitors to enjoy nature and be active. Below are a list of potential events that will help to support physical activity, neighborhood cohesion, and access to healthy foods.

Fitness in the Park

Regular physical activity has been shown to have considerable health benefits, such as helping to maintain a healthy weight and reduce the risk of heart disease, high blood pressure, and Type 2 diabetes. Reaching out to residents to encourage walking and other physical activities can help to improve personal health and strengthen ties within the community. By partnering with course instructors from the Crane Creek Gymnasium, the park can host multiple outdoor activities to include:

- Yoga classes
- Meditation classes
- Tai chi classes
- Nature walks
- Boot camp
- Zumba classes
- Fitness walks or runs to the park

Resources:

Example Programs:

City of Saint Paul, MN:

[Fitness in the Park](#)

City of Johns Creek, GA:

[Free Outdoor Fitness](#)

Build Community

A fun way to build community is to host special events at Crane Creek Park. Crane Creek Park has the potential to become the “living room” of the community.

Community Concerts: The Ardenwald and Johnson Creek Neighborhood Association in Milwaukie, Oregon, hosts a family-friendly summer concert series in their neighborhood park. The neighborhood association and its volunteers are fully responsible for the event. The association even sells food and drinks to help support the event and their efforts.

National Night Out: This annual community-building campaign promotes police-community partnerships and neighborhood camaraderie to make neighborhoods safer. This event would give the neighborhood, city, and public health organizations the opportunity to promote safety awareness with a special emphasis on pedestrian safety, answer questions from citizens, and provide fun activities and materials for children that help support walking and physical activity.

Community Picnics: Picnics can be organized by the neighborhood association and local health and fresh food organizations. Each summer, the City of Wilsonville (Ore.) hosts neighborhoods barbecues that rotate to different residential areas of the community. These events provide a low-key opportunity for residents to meet with members of City Council and various City boards and commissions, along with staff of different departments. Representatives of the Library, Public Transit,

Parks and Recreation, Community Development and Planning, along with local Fire and Rescue attend with informational displays and booths. City and community leaders look forward to opportunities to answer questions, share information and hear feedback from the community. An event like this could be altered to focus on locally sourced foods, showcase delicious and healthy foods, and provide an opportunity for the neighborhood to learn about the City and County's future investments in pedestrian infrastructure.

Resources:

Program Resources:

Milwaukie, Oregon:

[Summer Concert Series](#)

Wilsonville, Oregon:

[Neighborhood Barbecues](#)

ACCESS TO HEALTHY FOODS

Physical activity and healthy eating improve overall public health and wellness. This important link can be highlighted in a fun and interactive manner through promoting healthy food outlets along with walking. The neighborhood, with the help of volunteers, should look to partnering with healthy food providers, local farmers, and promote the use of the community garden program.

Community Garden Tours: working with the Richland County Master Gardener Association, the neighborhood could create a community garden event where gardeners can share tips or best gardening practices, recipes, and allow visitors to explore the community garden(s).

Neighborhood Walking Tours: Working with residents, the neighborhood can identify individuals who are willing to showcase their gardens to the public. Either a resident volunteer or a representative from the Richland County Master Gardener Association could help lead walks and present at the stops. Guest presenter topics can include; how these gardens help to foster community, help feed the hungry, as well as discuss local gardening practices. The tour can also highlight more than just healthy food options. Other topics can include native wildflowers and storm water facilities. Because this program is volunteer based, it is recommended that the walking tour be an annual or semi-annual event.

Neighborhood Farmers Market: A neighborhood farmers market can provide a wide selection of fresh and affordable produce to the residents of Crane Creek. The neighborhood could leverage their proximity to local farmers or work with Soda City Market or State Farmers Market to assist in the implementation of a neighborhood based market.

Resources:

Example Program:

Columbia and Boone County, Missouri:

[Community Garden Coalition Walking Tour](#)

Program Resources:

New York City, New York:

[Healthy Bucks Program Guidelines for a Successful Market Tour](#)

University of California, Davis:

[Starting a New Farmers Market Guide](#)

University of Louisville,
Louisville, Kentucky:

[Growing a Farmers' Market in Your Neighborhood: Recommendation for Success](#)

SAFE ROUTES TO SCHOOL

Safe Routes to School (SRTS) programs use a “5 Es” approach that integrates Engineering, Education, Enforcement, Encouragement, and Evaluation strategies to improve safety and encourage children to walk and bicycle to school. Programs educate youth and parents about safe bicycling and walking skills, encourages schools and communities to support bicycling and walking, and help communities make the streets, trails, and sidewalks safe for bike riders and walkers of all ages.

To create a robust SRTS program involves assessing needs and identifying opportunities, collecting data, and convening an advisory committee to guide the City's and/or County's initiative. These steps are crucial in securing funding support to build sidewalks, bike lanes, and to increase traffic safety near schools.

Feedback received from the focus group indicated that improving connections between neighborhoods, Crane Creek Gym, and Forest Heights Elementary School were a priority for participants. Inadequate sidewalks and lighting were cited as barriers to encouraging walking and bicycling to and from school.

While SRTS programs encourage walking and bicycling through education and activities, a large component of the program includes evaluation. The insight gained from data collection can help to guide the planning process, provide information on how the program is working, show areas that need

improvements, and ensure all students and families are given equal opportunities to participate. Evaluation is often required for applicants and recipients of the SRTS funds. Furthermore, evaluation results can support other funding opportunities to enhance and maintain pedestrian and bicycle infrastructure.

It is recommended that Forest Heights Elementary School works with the City of Columbia, the Richland County School District, teachers, parents and students, and neighbors to promote and encourage walking and bicycling as a way to help fund sidewalk and infrastructure improvements in Crane Creek.

The following are some data collection methods that can be used to assess the status of walkers and bicyclists as well as the pedestrian infrastructure in the area:

Semi-Annual Student Hand Tallies: Students are asked how they got to and from school over a 2-3 day period. Students raise their hand when the mode they took is called out, and the teacher or a volunteer records this. Hand tallies are generally required of state and federal SRTS grant recipients.

Bicycle and Pedestrian Traffic Counts: Automatic counters or manual counts provide an estimate of walking and/or bicycling activity. Counts can track change over time and indicate program effectiveness or need. Manual counts can be more expensive, but can also collect information about gender, age, bike helmet use, and turning movements.

Parents Surveys: Parents are asked how their children got to/from school via a paper or online survey. Parent surveys also ask questions about the barriers to walking or biking to/from school, health information, or perception of crime and other social behaviors.

Walk Audits & Mobility Workshops: Walk Audit and Mobility Workshops involve the gathering of data about environmental conditions that affect walking and bicycling. Parents, teachers, and school staff can lead these audits, and they can also be easily integrated into a geography or civics course, in which students map existing conditions and help recommend improvements.



Resources:

Program Resources:

National Center for
Safe Routes to School:

[Data Collection Guidelines](#)

[Student Travel Tally](#)

[Parent Survey](#)

[Walking and Bicycling Audits](#)

Safe Routes to School

South Carolina:

[Statewide Resources](#)

Southern California Association of
Governments:

[Bike Count Data Clearinghouse](#)

NORTH MAIN RECOMMENDED PROGRAMS

PEDESTRIAN MEDIA CAMPAIGN

Pedestrian campaigns can promote a variety of messages to improve the behaviors of all road users. A high-profile marketing campaign can highlight active living, promoting new and future sidewalk infrastructure and improvements, encouraging support for investments in sidewalks, and can encourage mutual respect and improve safety for pedestrians and drivers. Pedestrian safety as it relates to traffic concerns was cited as a major barrier to walking. The findings pointed to the need to slow traffic and increase visibility of pedestrians. While a campaign will not directly effect the needed infrastructure improvements slow traffic, a campaign can influence how drivers perceive and interact with pedestrians. By promoting walking and encouraging drivers to recognize and respect pedestrians, North Main could increase the number of walkers on neighborhood streets. By increasing the number of users on the street, the perceptions of crime could be reduced.

Campaign goals that support walking could include the following:

- Raise the general awareness of pedestrians
- Encourage better etiquette among drivers and/or pedestrians
- Encourage pedestrians to “be seen” through bright colored clothes, lights, etc.
- Promote walking as a benefit to personal health, the environment, or as a way to save money
- Target specific demographics or groups such as children, older adults, men, women, or specific ethnic groups

A well-produced campaign will be memorable and effective and include clean, clear graphics in a variety of media. Effective campaigns are those that use positive, reinforce messaging and graphics, as opposed to shaming or frightening any type of road user. Campaigns can utilize a variety of media outlets, including billboards; print advertising; transit vehicles, stations, or shelters; informational brochures or handbills; web ads and social media; and branded promotional items.

Before launching a campaign, it is recommended that the City, with the guidance of North Main neighborhoods, develop a set of campaign goals that identify the problem behavior(s), desired outcomes, and the target audience. This will inform the campaign messaging and imagery. A stakeholder or focus group should be convened with individuals familiar with the community to ensure that the campaign messages and graphics will resonate with the target audience. The audience will also determine what types of media are utilized, but it is recommended that a variety of outlets be used to ensure coverage, reach, and repetition.

Resources:

Program Examples:

NYCDOT:

[LOOK Campaign](#)

North Carolina:

[Watch for Me NC](#)

City of Pasadena, California:

[Safe School Zones](#)

LAW ENFORCEMENT COLLABORATION

Proper enforcement comes from a strong, communicative relationship between transportation staff and local law enforcement. To contribute to a collaborative partnerships between the City, North Main residents, and local law enforcement, a representative of the Police Department should be invited to attend monthly neighborhood meetings and/or the City's Bike Pedestrian Advisory Committee to serve as the liaison between the CPD and transportation professionals and advocates. During these meetings, the Police Department can learn more about the unsafe behaviors of all road users and evaluate the best methods of enforcement. The Police Department will also have the opportunity to evaluate how new pedestrian and bicycle infrastructure might affect road user behavior and help predict public education needs.

The Police Department should seek their own funding to do targeted enforcement of illegal, unsafe behavior of motorists and pedestrians. Law enforcement officers could focus on behaviors known to be the most dangerous, such as not yielding to pedestrians or following posted speed limits.

SAFE ROUTES TO SCHOOL

As discussed in the Crane Creek Recommended Programs section on the previous pages, SRTS programs use a "5 Es" approach to develop strategies to improve safety and encourage children to walk and bicycle to school (see page 109 for detailed discussion).

The City should develop and implement a North Main SRTS initiative to help schools start programs or sustain and enhance existing efforts. This involves assessing needs and identifying opportunities, collecting data, and convening an advisory committee to guide the City's initiative.

SRTS programs provide the opportunity to educate and encourage both parents and students about active transportation, health, and safety through custom materials and events. Outreach events and programs that educate and support bicycle and pedestrian facilities include:

- Walk/Bike to school day
- Bike/Walk Safety Education class
- Bike to school challenge
- Walking school buses
- Speed and crosswalk enforcement near schools
- Educational materials for parents

Feedback received from the focus groups indicated that participants had several traffic related concerns. One of which was the need to reduce congestion around Hyatt Park Elementary. Safe Routes to Schools programs directly benefit schoolchildren, parents and teachers by creating a safer travel environment near schools and by reducing motor vehicle congestion at school drop-off and pick-up zones. Students that choose to bike or walk to

school are rewarded with the health benefits of a more active lifestyle, with the responsibility and independence that comes from being in charge of the way they travel, and learn at an early age that biking and walking can be safe, enjoyable and good for the environment.

The following are potential programs that can be used to help reduce congestion near schools:

Walking School Bus: Walking School Buses let students walk to school as a group, often with an adult volunteer. They may be daily, weekly, or monthly events. They can originate in specific neighborhoods, local parks, at places of worship, or another central location for children and parents to meet.

Golden Sneaker Competition: classrooms keep track of how many students get to school by walking, biking, taking the bus, or carpooling. Classrooms with the highest level of participation receive a Golden Sneaker trophy.

Suggested Routes to School Maps: Suggested route maps show existing sidewalks, trails, bikeways, crossing guards, and traffic control to help parents find the best walking and biking routes to school.

Early/Late Dismissal Policies: Early dismissal for walkers and bikers can serve as an incentive for more participation, while at the same time increasing safety by reducing or eliminating the interaction between pedestrians and bikers with carpool lines and buses. Conversely, late dismissal policies for walkers and bikers discourage active transport modes and should thus be reviewed and revised where possible.

It is recommended that Hyatt Park Elementary work with the City of Columbia, the Richland County School District, teachers, parents and students, and neighbors to promote and encourage walking and bicycling as a way to reduce congestion, encourage healthy behaviors, and to help fund sidewalk and infrastructure improvements in North Main.



Resources:

Program Resources:

[National Center for Safe Routes to School](#)
[Safe Routes to School South Carolina](#)
[South Carolina Walk to School Day](#)

Santa Clarita, California:

[SRTS Walking School Bus Training Guide](#)

Michigan State SRTS Program:

[Walking School Bus Volunteer Resources and Route Development Resources](#)

SRTS Alameda County:

[Golden Sneaker Contest Resources](#)

Washington State SRTS Program:

[Planning and Improving Walking and Biking to School Guide](#)

Davis, California:

[Safe Routes to School Maps](#)

Langston Hughes Elementary,

Lawrence, Kansas:

[Safe Passage Policy](#)

IMPROVING THE STREETScape

Focus group participants cited several barriers to walking. One barrier is the perception of crime and a general need to improve the aesthetics of the neighborhood streetscape. While the following recommendations do not directly reduce crime, they do improve the street conditions which has the potential to encourage pedestrian usage. By having more residents using the street, North Main can foster a community that looks out for each other.

Right-of-Way Gardens: Public right-of-way includes road shoulders, ditches, and spaces between sidewalks and the road. These often underused spaces are ideal for creating a source of food and pride for a community. By allowing adjacent property owner to use this space, the City could further enhance the streetscape, promote public health, bolster the already existing community garden program, and provide healthy food options to residents.

Neighborhood Little Free Libraries: Little free libraries are a fun way for residents to engage with each other. A owner creates a little library on their property close to the sidewalk. The property owner, with the help of neighbors, fills the library with free books. Columbia has 20 mini libraries throughout the community. Mini libraries could be adopted by local law-enforcement, health organizations, and city agencies to help promote community while also providing books and information on being safe and healthy.

Program Resources:

Little Free Library: Plans and tips for library builders

Resource:

Program Resource:

Little Free Library:

[Plans and Tips for Library Builders](#)

Resource:

Policy Example:

Portland, Oregon:

[Public Right-of-Way Planter Box Policy](#)

Neighborhood Walking Tours: self-guided or public tours are a great way to engage with residents and visitors. Walking tours can be themed, with a focus on historic homes or points of interest, community gardens, parks, public art and murals, green infrastructure, or a combination of interests. Historic Columbia offers several examples of online maps that highlight historic points of interest. Historic Columbia and North Main Community Association should provide guidance on historical and cultural information to be included in neighborhood walking maps. The City and North Main should work with local historians, professors, architects, or interested individuals to help lead walking tours and to inventory cultural and historic resources in the neighborhood and identify safe and enjoyable walking routes that connect to historic points of interest.

For self-guided tours, a map of points of interest, walking distances, facilities (restrooms, drinking water, safe crossing areas), and historical facts should be provided online and as a printed copy to be distributed by the City's visitors bureau and the residents and business of North Main. Printed maps and guides should be actively distributed to residents and visitors. The information should be updated on a regular basis as new pedestrian facilities are implemented (every three years or less).



Resources:

Program Resource:

Historic Columbia, South Carolina:

[Neighborhood Walking Maps](#)

City or Wilsonville, OR:

[Wilsonville Neighborhood Walking Maps](#)

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12



Next Steps



Now that priority programs and projects have been identified, what are our next steps?

The implementation of the Walkable 29203 Pedestrian Master Plan recommendations will require a comprehensive approach that includes multiple sources of funding, partnerships, design, construction, and management. It will also require the dedication of City and County staff and a commitment to the vision established by the advisory group and this plan.

As best practices for pedestrian facility design is a rapidly-evolving field, the recommendations in this plan should be re-evaluated at least every five years to ensure that these still constitute best-practices and still reflect Crane Creek and North Main's long-term vision for an active, walkable community.

Achieving the vision that is defined within this plan requires a stable and recurring source of funding. Communities across the country that have successfully implemented pedestrian programs have relied on multiple funding sources to achieve their goals. No single source of funding will meet the recommendations identified in this plan. Stakeholders will need to work cooperatively across a range of private sector, municipality, state, and federal partners to generate funds sufficient to implement this network.

The resources provided herein – the pedestrian safety analysis, the access to healthy foods assessment, program and infrastructure recommendations, coupled with

the following appendices resources – can serve as a daily reference material for the 29203 community and its implementing partners.

The 29203 community should strive to follow the priority recommendations, as each program, project, and policy was selected based on public input, need, and potential impact. However, City and County officials should also look for opportunities to coordinate pedestrian enhancements with regularly-programmed maintenance activities, new developments, and large roadway construction projects, regardless of whether enhancements occur on priority corridors or intersections.



The following steps provide direction to ensure the Walkable 29203 Pedestrian Master Plan serves as a valuable and accessible resource for the community.

SHARE THE PLAN

1

Continue to share the Plan with Crane Creek and North Main residents and affiliated groups and organizations. Spread the word about proposed improvements and program opportunities that directly respond to residents' concerns and ideas for improving their community.

IDENTIFY CHAMPIONS

2

Sharing the plan with community members also presents an opportunity to identify and foster community champions who can help to implement the Plan's priorities. Let residents, neighborhood groups, civic groups, and community organizations know what the City and County are prioritizing for 29203 and ask for funders and volunteers interested in making it happen.

PRIORITIZE FUNDING FOR INFRASTRUCTURE PROJECTS

3

Continue the Plan's momentum by sharing project priorities directly with the region's funding partners. This includes Central Midlands Council of Governments (by way of Guideshare funding), Richland County Penny Sales Tax Commission, SCDOT, City and County Councils, and private sector partners. Additionally, capitalize on this plan itself to garner regional, state, and federal funding, including health-oriented funding opportunities, as outlined in the Plan appendices.

4

IMPLEMENT BEST PRACTICES

Let funding and implementation partners know that when it comes to the pedestrian environment, design matters. Leverage the 2015 Walk Bike Columbia plan, which offers a comprehensive guide to best practices in pedestrian and bicycle facility design, by using it as a reference for the development of each improvement project. Work to ensure that as recommended projects of Walkable 29203 are implemented, the safety and comfort of residents walking is the primary goal maintained from concept to design to construction.

5

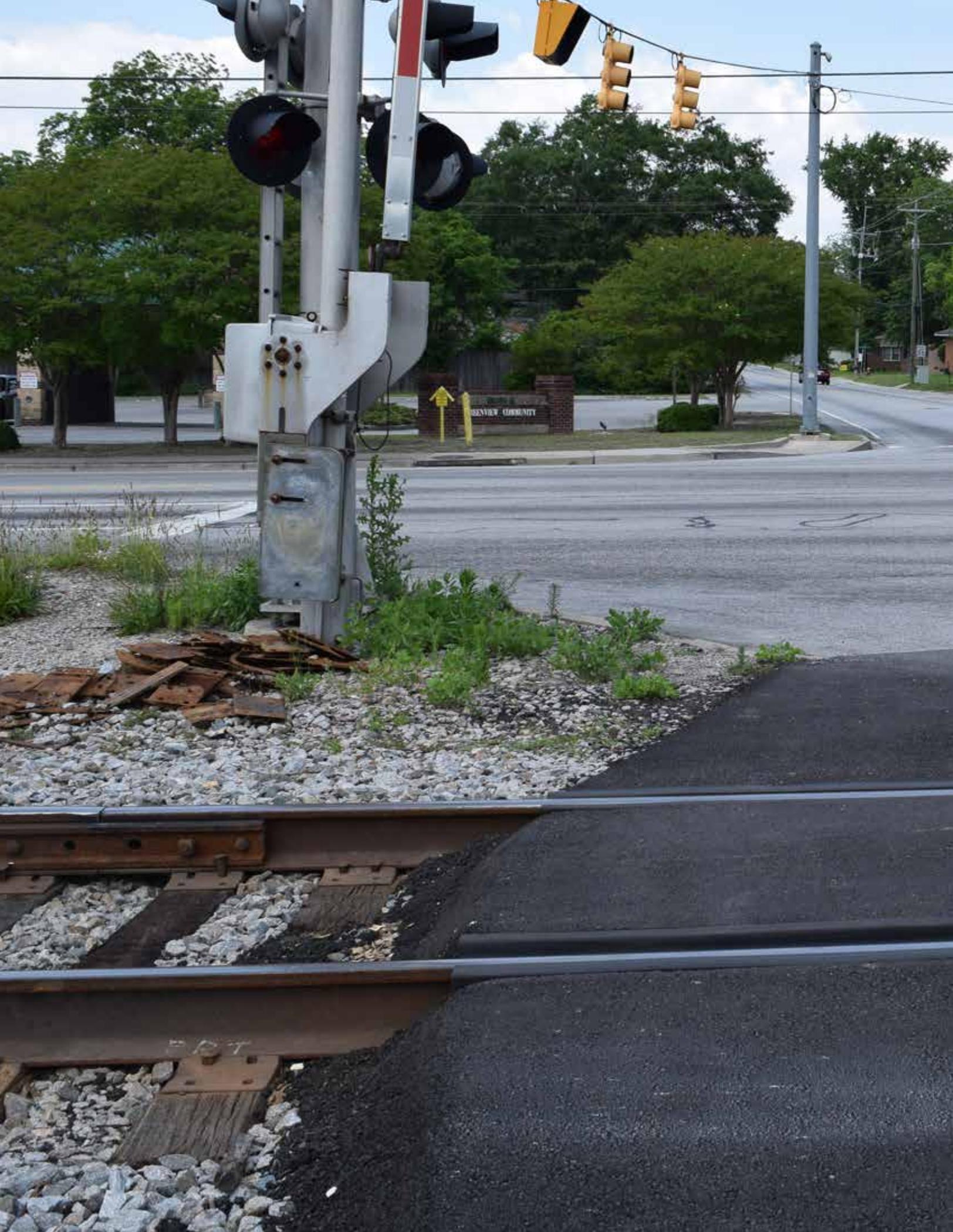
DEVELOP AND IMPLEMENT ONE PROGRAM AT A TIME

Programs have a big impact on walkability and are easy to accomplish without a major investment. A variety of community partners can assist by funding efforts or volunteering their time. Match identified “Champions” directly with a program concept that fits their skill set, personal priorities, or time commitment. Set a clear timeline for implementing each program within eighteen months of adopting this Plan.

6

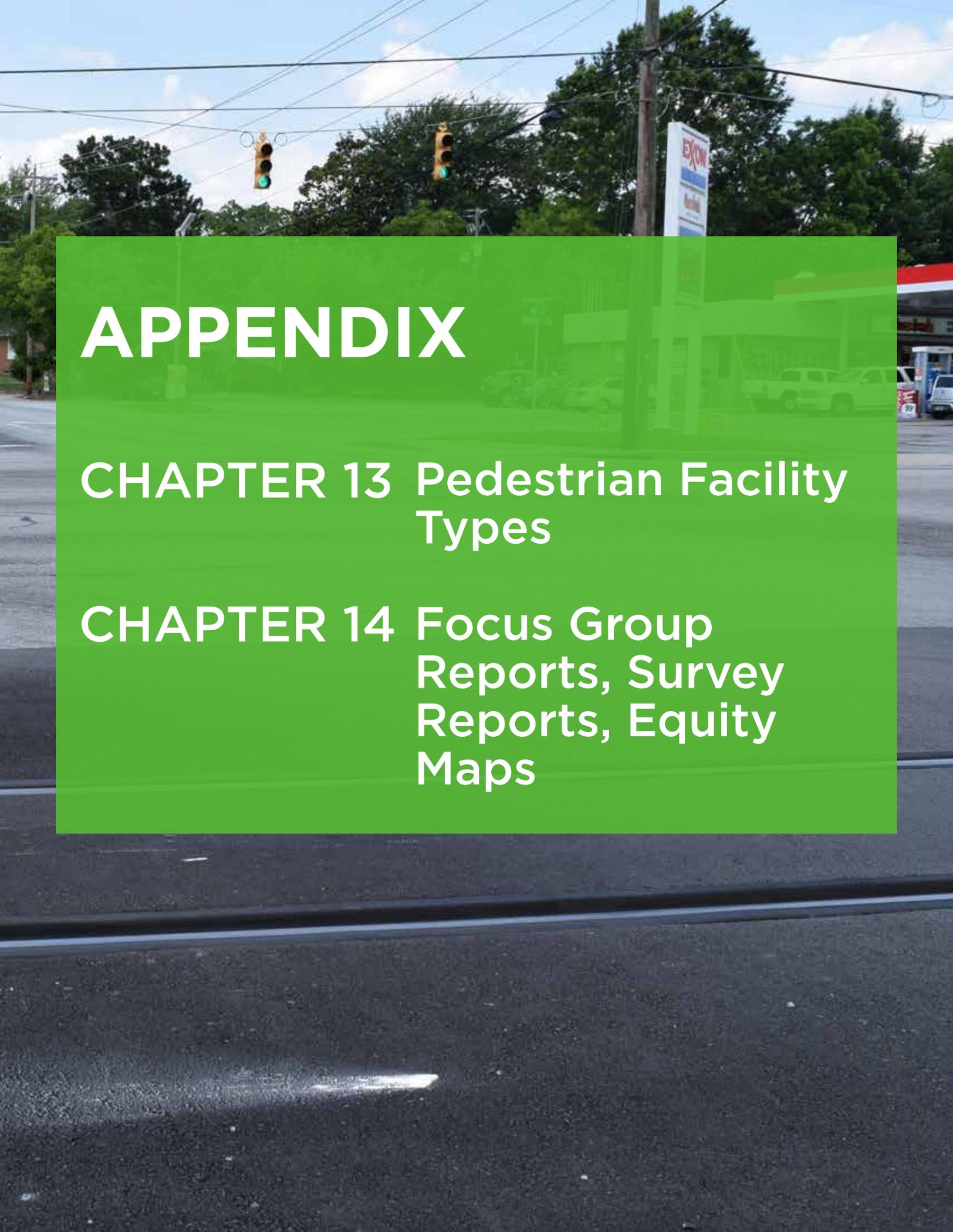
CONTINUE TO COLLABORATE

A team effort is required to move the plan forward. The County and City have forged a strong working relationship through this project and other cross-jurisdictional efforts. Continue this collaboration and information-sharing to ensure an efficient use of time and resources for both entities. Capitalize on the technical expertise and network offered by the project advisory group and continue to engage these partners with quarterly meetings to track progress, while continuing to set new goals and targets.



ROSEVIEW COMMUNITY

F&T

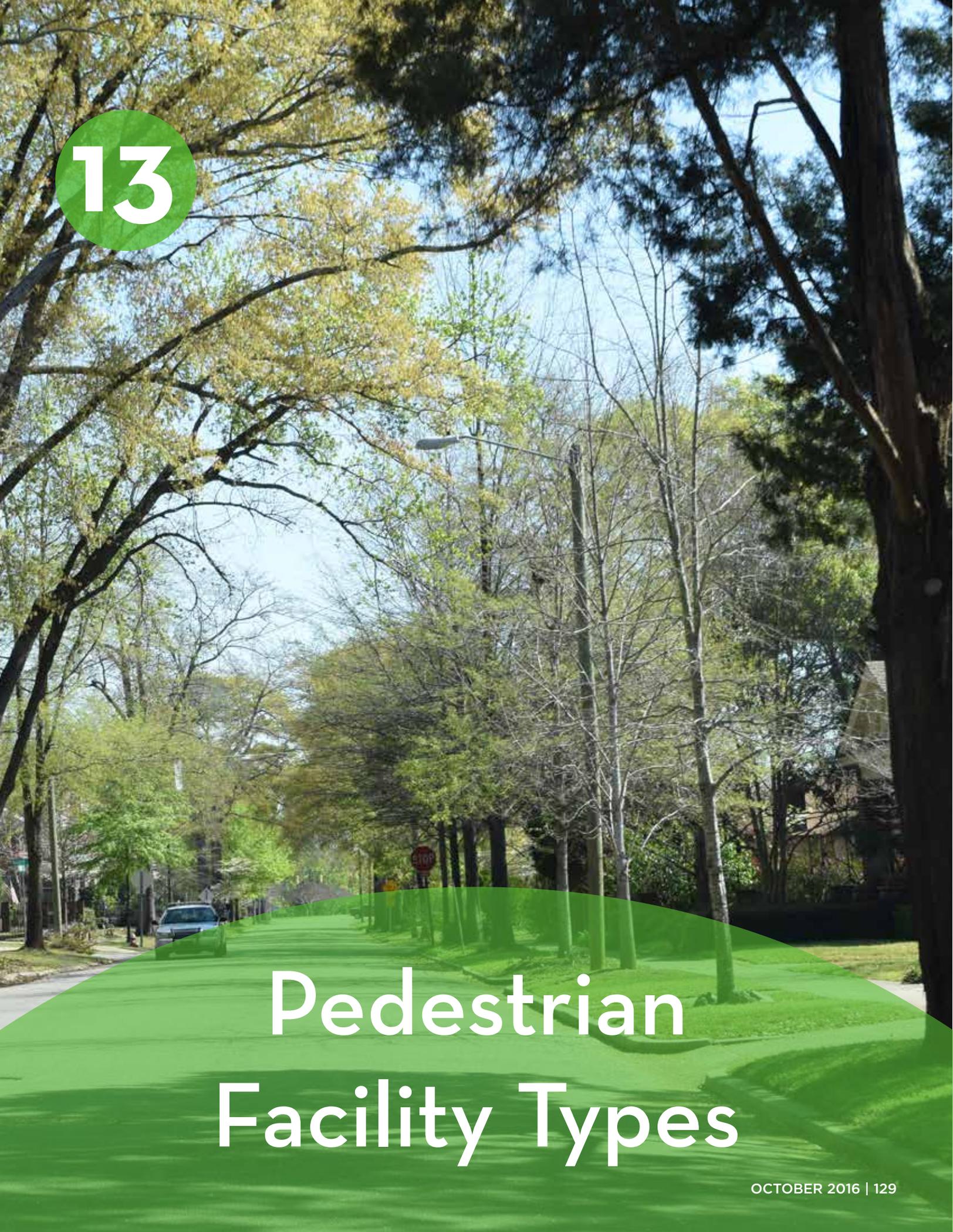
The background image shows a street intersection with two traffic lights hanging from a pole. In the distance, there is a building with a sign that says "EXXON". The scene is outdoors with trees and a clear sky.

APPENDIX

CHAPTER 13 Pedestrian Facility
Types

CHAPTER 14 Focus Group
Reports, Survey
Reports, Equity
Maps

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A photograph of a tree-lined residential street. The trees are in various stages of green, suggesting spring or early summer. A street lamp is visible in the middle ground. A car is parked on the left side of the road. The sky is blue with some light clouds. In the top left corner, there is a green circular graphic containing the number 13 in white.

13

Pedestrian Facility Types



Walkable 29203 recommends the pedestrian improvement types described in this section. Further guidance regarding best practices in pedestrian design is included in the attached pedestrian portion of the City of Columbia Pedestrian & Bicycle Design Guidelines.



PEDESTRIAN FACILITY TYPES

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.
- **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.

GREENWAYS

Greenways allow for two-way, off-street pedestrian use and also may be used by bicyclists, 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. Path facilities can also include amenities such as lighting, signage, and fencing (where appropriate). Key features of greenways include:

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



PEDESTRIAN CONNECTORS

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.



INTERSECTION IMPROVEMENTS

Intersection (spot) improvements refer to a variety of intersection treatments that can be applied to make a safer and more comfortable crossing environment for pedestrians. As seen in the examples below, push button signals, reduced curb radii, raised crosswalks, and refuge islands can help guide pedestrians to safe crossings, and help motorists predict where pedestrians will be.



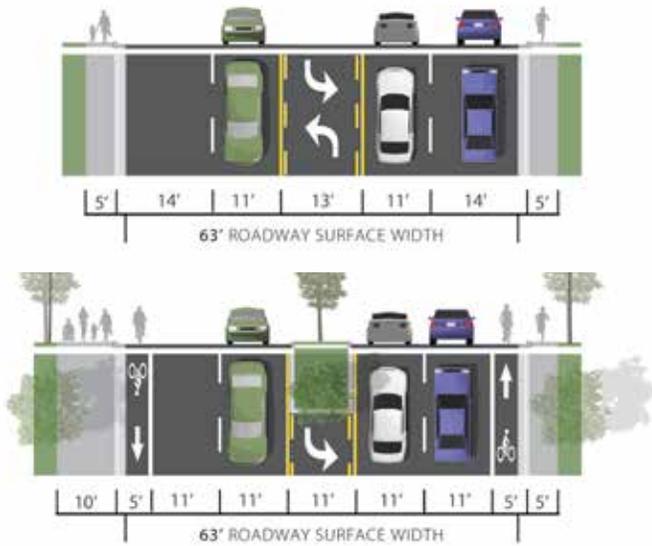
ROAD DIET & STREETSCAPING

Road diets, also referred to as road right-sizing, lane reconfiguration, rebalancing, or pavement reallocation projects, typically entail reducing the number and/or width of vehicular travel lanes to make room for pedestrians and bicyclists. This "diet" improves the safety of all road users by reducing conflict points, controlling access management, reducing crossing distances for pedestrians, and improving sight line distances. In some cases, road diets have the added benefit of providing

on-street parking which buffers pedestrians further from the road, stimulating economic development opportunities, and, when paired with streetscaping, beautifying a corridor.

Streetscaping can be used to improve the pedestrian experience through the addition of buffer strips of landscaping between the sidewalk and street, shade trees, and pedestrian refuge islands.

EXAMPLE CROSS SECTION

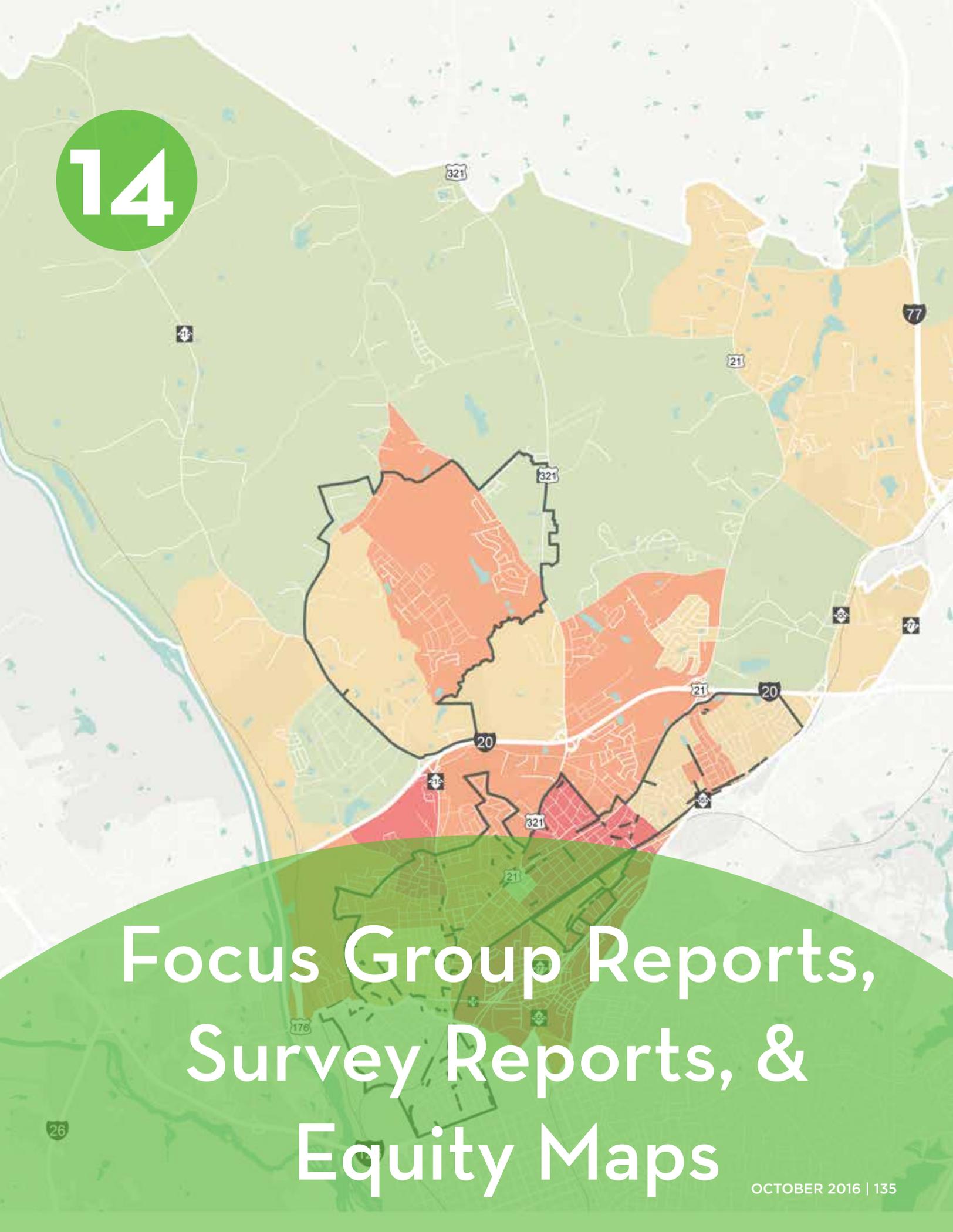


EXAMPLE BEFORE & AFTER



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14



Focus Group Reports, Survey Reports, & Equity Maps



GATHER
STRATEGY + ENGAGEMENT

Crane Creek 29203 Focus Groups Report

Prepared for:

Alta Planning + Design

Prepared by:

Gather Consulting

Submitted April 19, 2016

Table of Contents

OVERVIEW	2
Methodology	2
KEY FINDINGS	3
Assets	3
Barriers to Walking	3
Priority Improvements	4
APPENDIX A	5
APPENDIX B	6
APPENDIX C	7

OVERVIEW

Background and Objectives

- Alta Planning + Design contracted with Gather Consulting to conduct a focus group with neighborhood leaders of the Crane Creek Planning Area in Richland County.

- Specific objectives of the focus groups were to do the following:
 - Identify where residents are currently walking,
 - Determine where residents want to walk but cannot because of poor accessibility,
 - Seek residents' input on pedestrian accessibility to grocery stores and other fresh food outlets,
 - Explore residents' perceptions of pedestrian safety issues,
 - Seek input from residents on priority pedestrian planning projects and destinations.

Methodology

The focus group was conducted on Tuesday March 22 at 5 p.m. at the county's Meadowlake Park recreation center at 524 Beckman Road. Six community members participated in the group. Participants represented five of the seven major existing neighborhoods that make up the Crane Creek community: Bookert Heights, Crane Forest, Pine Forest, Haskell Heights, and Lincolnshire.

Focus group participants were chosen to prioritize the following criteria:

- Residents of the area,
- Stakeholders with a vested interest in improving access to active living and healthy eating,
- A diverse mix of residents who represent the area's demographics.

Limitations: The focus group methodology used for this study is qualitative in nature. The exact wording of each question and the discussion of each question area varied across groups. Also, the limited number of respondents involved in this type of research means the study should be regarded as exploratory in nature. Results should be used to develop directions rather than quantitatively precise or absolute measures.

KEY FINDINGS

Assets

Focus group participants named the following assets that should be leveraged as part of pedestrian planning:

- Crane Creek Gymnasium – The new, modern facility is popular among residents and many people use it. However, few people walk to the gym due to lack of sidewalks, poor lighting, and loose dogs. The gym is also popular with residents of adjacent neighborhoods like Hollywood Hills and Sharp Terrace. Many teenagers from those neighborhoods walk along Sharp Road, Highway 321, and Crane Church Road to get to the gym,
- Crane Creek Park – The park and surrounding nature trail is popular and used frequently by walkers and joggers. However, focus group members said many in the community have never visited the park and they would like to see more done to advertise the park and generate interest in accessing it,
- Crane Creek Community Garden – Focus group members said they were excited about the fact that there is a community garden in Crane Creek Park. They said that many people in the community are interested in eating healthy and growing their own food. However, they said the garden is under-utilized and lacks adequate programming to engage residents.

Barriers to Walking

Focus group participants said poor lighting, lack of sidewalks, loose dogs, and speeding drivers are the biggest barriers to walking in the Crane Creek community. They identified specific improvements that they would like to see at the following locations.

Crane Church Road:

- Needs lighting all along the road,
- Needs improved traffic light and safer crossing near the old Crane Creek School,
- Needs improved intersection design at Fairfield Road. (Currently there is a bad 45 degree turn with low visibility for drivers and pedestrians.)

Lincoln Parkway off of Fairfield Road

- Needs improved lighting along entire thoroughfare,
- Needs sidewalks and lighting near Crane Church Road.

Fairfield Road/US-321-

- Needs sidewalks leading to Crane Creek Gym,

- Needs intersection redesign at corner of Crane Church.

Sharpe Road

- Needs lighting and sidewalks.

Priority Improvements

Focus group participants identified the following high priority projects, streets, neighborhoods, or destinations for improved pedestrian access?

- **Connectivity between neighborhoods** – Focus group participants said they want to see improved connectivity between the seven neighborhoods that make up the area. They said they want to see a plan to use sidewalks and trails to connect the entire area so that it is easier for residents to walk to and from the various neighborhoods as well as to Forest Heights Elementary School and Crane Creek Gym.
- **Forest Heights Elementary School** – The school, which serves as the polling station for residents in the community, is centrally located and in walking distance to many homes in the area. Focus groups participants said they want to see efforts to add adequate sidewalks and lighting near the school so that more children are able to walk to it.
- **Crane Creek Gymnasium and Crane Creek Park** – Focus group residents said the area has greatly benefited from the addition of the county gym and expansion of the park, but they hope more can be done to improve walkability to both. They also want to see more programming at the park to build excitement about the resources that are available. They want organized community picnics or concerts and a better process for getting residents involved in the community garden.
- **Bus Stops** – Focus group participants said many people in the community use the bus to get to work and to the grocery store because there are no fresh food outlets within walking distance to the area. Improving pedestrian access near bus stops should be a high priority, they said.
- **Code enforcement** – Although crime rates are dropping in the area, focus group participants said they worry that gang violence is a problem in other parts of the county. They said abandoned homes on streets such as Calvary Drive and Lincolnshire Boulevard add to their unease. They said improved efforts to enforce county codes and reduce blight would improve the sense of safety in the community and encourage walkability.

APPENDIX A

At the end of each focus group session, participants were asked to share one word that described how they felt about the issues discussed during the meeting. Participants used the following words to describe their feelings:

- Interesting
- Hope
- Encouraged
- Excited
- Hopeful
- Optimistic

APPENDIX B

Direct quotes from focus group participants:

- “I see something moving. I see change. And I’m excited.”
- “The 29203 area is one of the highest diabetes areas in the whole county.”
- “Just having the ability to walk in your community and feel safe is going to make the biggest difference when it comes to whether people walk or not. Not having a sidewalk impacts that greatly.”
- “Everyday we have groups of kids walking to the gym down the middle of the road. It is imperative that we get sidewalks out there (Fairfield Road.) And start saving lives.”

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GATHER
STRATEGY + ENGAGEMENT

North Main 29203 Focus Groups Report

Prepared for:

Alta Planning + Design

Prepared by:

Gather Consulting

Submitted April 19, 2016

Table of Contents

OVERVIEW	2
Methodology	2
KEY FINDINGS	3
Popular Walking Areas	3
Major Barriers to Walking	3
Priority Improvements	4
APPENDIX A	6
APPENDIX B	7
APPENDIX C	8

OVERVIEW

Background and Objectives

- Alta Planning + Design contracted with Gather Consulting to conduct two focus groups with neighborhood leaders of the North Main Planning Area in the City of Columbia.

- Specific objectives of the focus groups were to do the following:
 - Identify where residents are currently walking,
 - Determine where residents want to walk but cannot because of poor accessibility,
 - Seek residents' input on pedestrian accessibility to grocery stores and other fresh food outlets,
 - Explore residents' perceptions of pedestrian safety issues,
 - Seek input from residents on priority pedestrian planning projects and destinations.

Methodology

The focus groups were conducted on Wednesday March 23 at 1 p.m. and 5 p.m. at the city's Eau Claire Print Building at 3907 Ensor Ave. Eighteen community members participated.

Focus group participants were chosen to prioritize the following criteria:

- Residents of the area,
- Stakeholders with a vested interest in improving access to active living and healthy eating,
- A diverse mix of residents who represent the area's demographics.

Limitations: The focus group methodology used for this study is qualitative in nature. The exact wording of each question and the discussion of each question area varied across groups. Also, the limited number of respondents involved in this type of research means the study should be regarded as exploratory in nature. Results should be used to develop directions rather than quantitatively precise or absolute measures.

KEY FINDINGS

Popular Walking Areas

Focus group participants said many people are already walking on the following streets or in the following areas:

- N. Main Street
- Monticello Road
- River Drive
- Fairfield Rd/U.S. 321
- Duke Avenue
- The College Place neighborhood
- Earlewood Park
- Meadowlake Park (In the county)
- Northwood Street (There is a lot of walking traffic to the bus stop.)
- Park Street – (There is a lot of walking traffic to the bus stop.)

Major Barriers to Walking

- Perception of Crime – Although crime rates in the area have dropped over the past few years, focus group members said there is a perception that the area is dangerous. They said unwarranted fears about safety are the biggest barriers to getting people to walk outdoors.
- Traffic Concerns – Participants said they would like to see infrastructure and design improvements to slow traffic and buffer pedestrians at the following streets and intersections.
 - Intersection of Abingdon Road & Duke Ave. Needs speed humps.
 - Intersection of Farrow Drive and Cushman Road. Add crosswalks and other safety measures to slow traffic and shield pedestrians.
 - Intersection of Colonial Drive & Lorick Ave. Needs traffic calming.
 - Intersection of Clement Road & River Drive. Needs traffic calming or traffic redirection. Cars cut through to get to nearby school.
 - Intersection of N. Main St. and Monticello Road. Needs landscaping and buffers.
 - Park Street & Elmwood Avenue. Needs traffic calming.
 - Intersection of N. Main Street and Avondale Drive. Dangerous intersection with low left turn visibility.
 - Bus stop near N. Main Street and Avondale Drive. No shelters. People stand close to the street creating a dangerous situation for both pedestrians and drivers.
 - Lorick Avenue & N. Main Street. High morning and afternoon traffic due to Hyatt Park Elementary. Needs traffic flow structures.

- Lighting Concerns – Focus groups participants said they hope the pedestrian plan includes recommendations for improved lighting near the following areas.
 - BI-LO parking lot
 - Richland Library N. Main Street branch
 - The entire stretch of Sunset Drive.
 - The stretch of Monticello Rd from I-20 to Main Street

Priority Improvements

Focus group participants identified priorities that fell into two distinct categories. Many said the pedestrian plan should leverage the revitalization that is already happening in the gentrifying NOMA planning area on the south end of the North Main Planning area. Others felt that priority should be placed on projects north of NOMA because they would have a greater impact on residents with the highest health and financial needs.

Each of the following priority projects or focus areas meet one or both of those objectives:

- Sidewalks – Focus group members said the biggest barrier to walking in the entire North Main area is lack of adequate sidewalks in areas where people need to walk such as around schools and near parks.
- Bus Stops – Focus group members said that many of their neighbors rely on the bus to get to work and to grocery stores. They said the pedestrian plan should include recommendations to slow traffic and shelter pedestrians at bus stops on the busiest roads.
- Sunset Drive – Participants said the thoroughfare which borders the southern edge of the Eau Claire neighborhood is narrow, dark at night, and feels dangerous. They said many people avoid crossing over the street into Eau Claire. Focus group participants said the street needs lighting, sidewalk upgrades, and aesthetic improvements.
- Bi-Lo Shopping Center – Many focus group participants spoke at length about difficulties related to walking to the Bi-Lo grocery store. They said better lighting and sidewalks near the shopping center would have a major impact on many residents.
- The Vista Greenway Rail-Trail – Focus group participants said the trail is creating a safe and accessible pedestrian conduit between the North Main area and downtown. Participants said they hope efforts are made to continue expanding the trail northward.

- Hyatt Park – The community garden program at Hyatt Park is extremely popular but access to the park could be improved. Focus group participants said that improving the conditions of sidewalks near Hyatt Park should be a priority.
- Riverwalk access– Many focus group members said they want to see efforts made to improve bike and pedestrian access to the Riverwalk via the Riverview Terrace neighborhood. They said it would help to make the North Main area more attractive to new residents and developers. (However, at least two residents of the Riverview Terrace neighborhood who attended the focus groups said they and their neighbors are opposed to making the neighborhood more pedestrian and bike friendly because they don't want to encourage people to walk through their neighborhood to get to the river.)

APPENDIX A

At the end of each focus group session, participants were asked to share one word that described how they felt about the issues discussed during the meeting. Participants used the following words to describe their feelings:

- Progress
- Connection
- Excitement
- Cost
- Optimistic
- Hopeful
- Feeling good
- Anticipation
- Success
- Cautiously optimistic
- Unity
- More public will

APPENDIX B

Direct quotes from focus group participants:

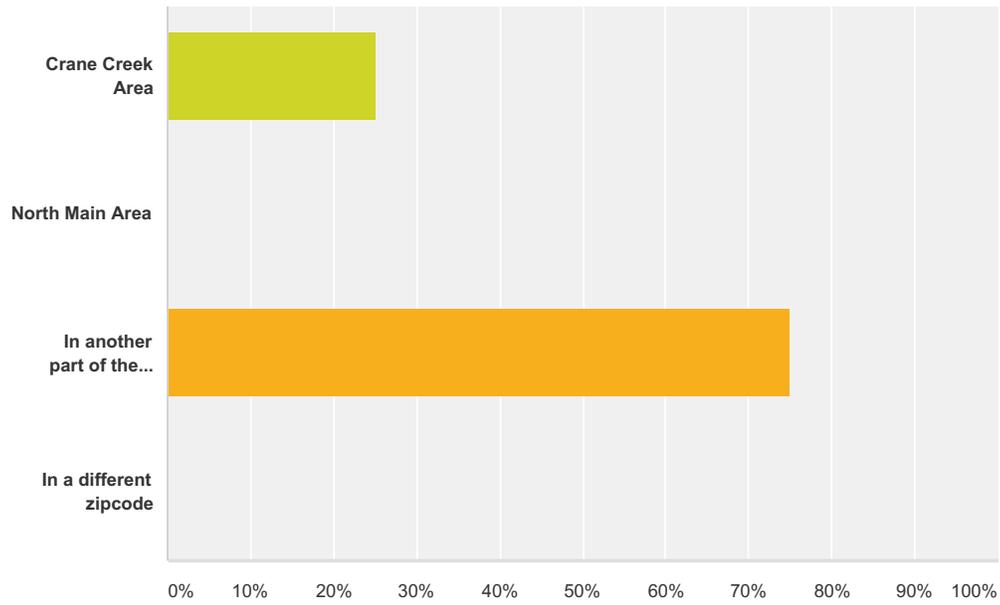
- “I am interested in seeing better connectivity.”
- “I can't imagine what kind of wonderful things y'all are planning.”
- “Access to the river is really important to me.”
- “I would love to get to the parks on foot.”
- “Rehab the sidewalks and...connect them to main thoroughfares.”
- “The sidewalks to nowhere drive me insane!”
- “I would like to see the perception of this area change.”
- “I want success for the most vulnerable parts of 29203.”

WALKABLE 29203 SURVEY REPORT

Walkable 29203: Pedestrian Master Plan Survey

Q1 Where do you live?

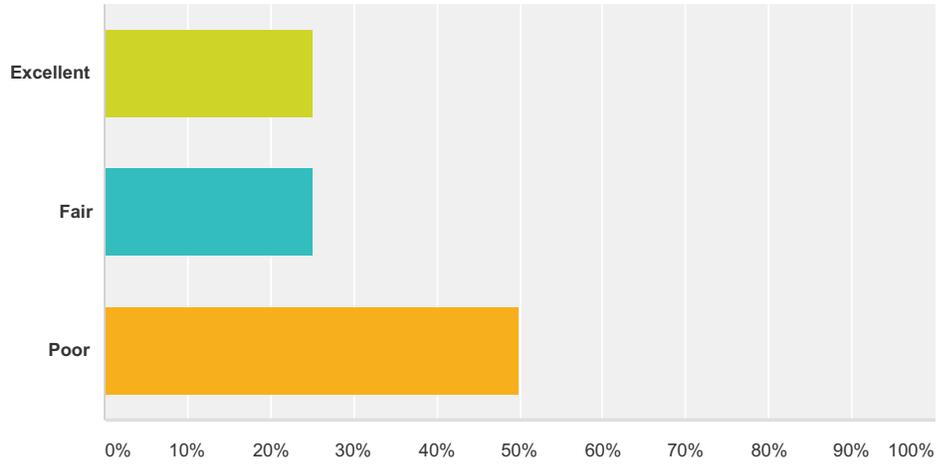
Answered: 4 Skipped: 0



Answer Choices	Responses
Crane Creek Area	25.00% 1
North Main Area	0.00% 0
In another part of the 29203 zipcode	75.00% 3
In a different zipcode	0.00% 0
Total	4

Q2 How are the current walking conditions in your community?

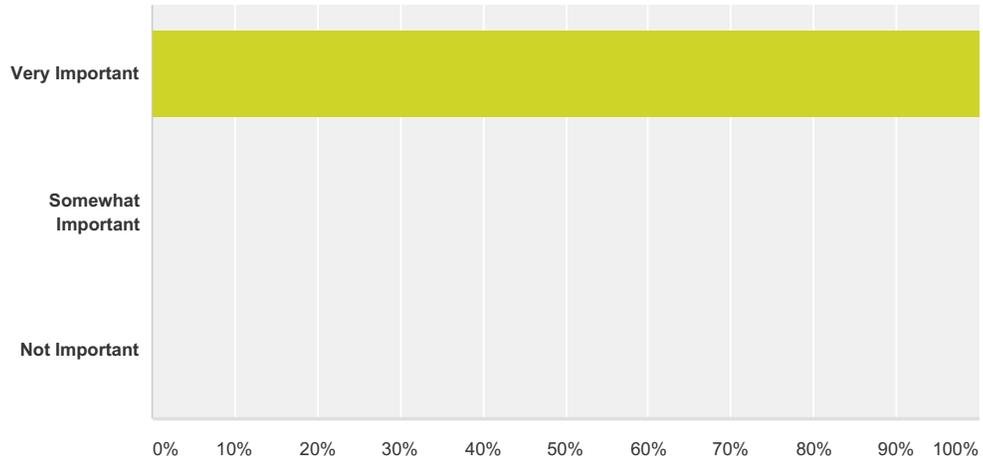
Answered: 4 Skipped: 0



Answer Choices	Responses
Excellent	25.00% 1
Fair	25.00% 1
Poor	50.00% 2
Total	4

Q3 How important is it to you to make the walking conditions in your community better?

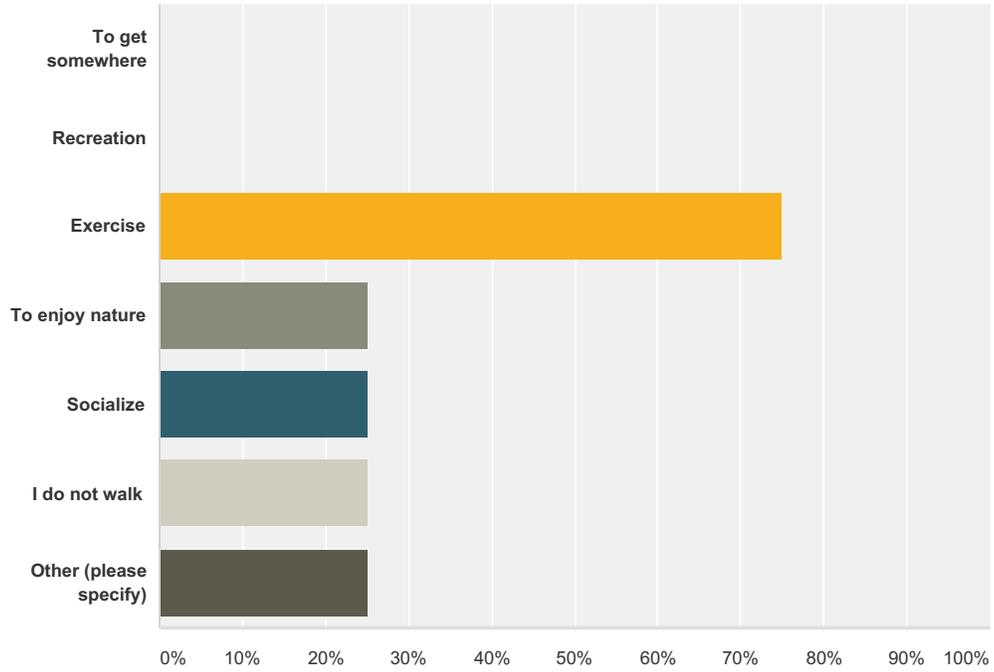
Answered: 4 Skipped: 0



Answer Choices	Responses	Count
Very Important	100.00%	4
Somewhat Important	0.00%	0
Not Important	0.00%	0
Total		4

Q4 Why do you walk in your community? (check all that apply)

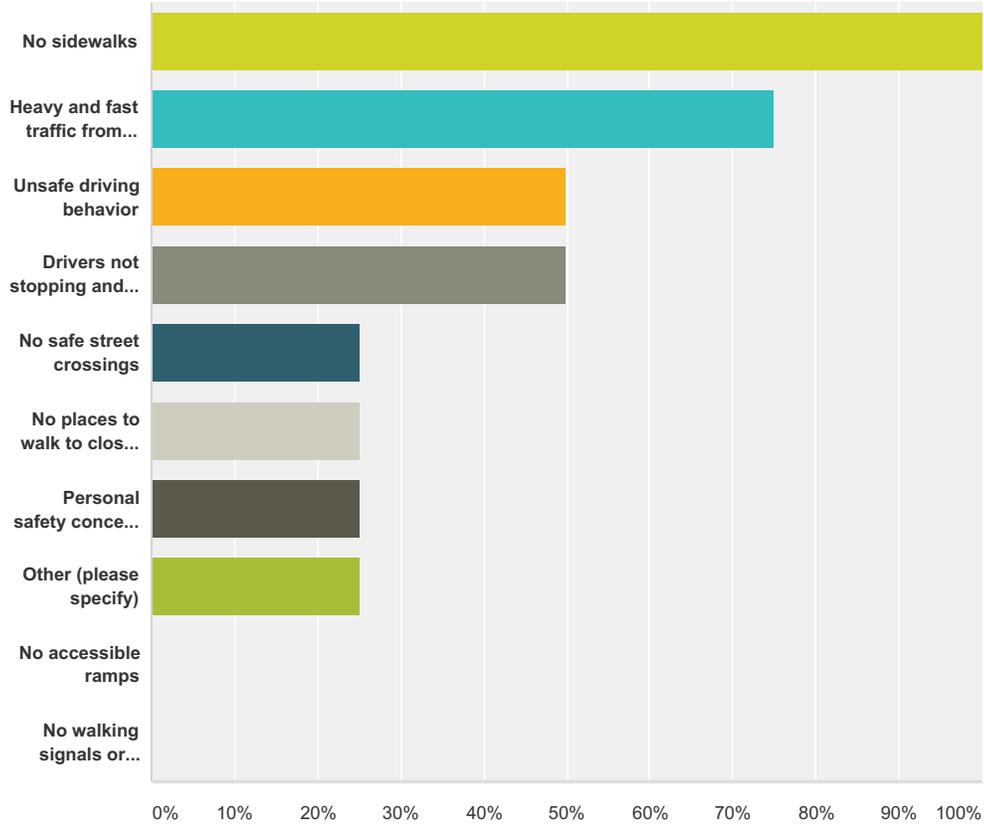
Answered: 4 Skipped: 0



Answer Choices	Responses
To get somewhere	0.00% 0
Recreation	0.00% 0
Exercise	75.00% 3
To enjoy nature	25.00% 1
Socialize	25.00% 1
I do not walk	25.00% 1
Other (please specify)	25.00% 1
Total Respondents: 4	

Q5 What do you think stops people from walking in your community? Please select up to 5 factors.

Answered: 4 Skipped: 0



Answer Choices	Responses
No sidewalks	100.00% 4
Heavy and fast traffic from cars	75.00% 3
Unsafe driving behavior	50.00% 2
Drivers not stopping and waiting for walkers	50.00% 2
No safe street crossings	25.00% 1
No places to walk to close by	25.00% 1
Personal safety concerns (other than traffic)	25.00% 1
Other (please specify)	25.00% 1
No accessible ramps	0.00% 0
No walking signals or crosswalks	0.00% 0
Total Respondents: 4	

Q6 What are your favorite places or streets to walk? (Please note specific streets or destinations)

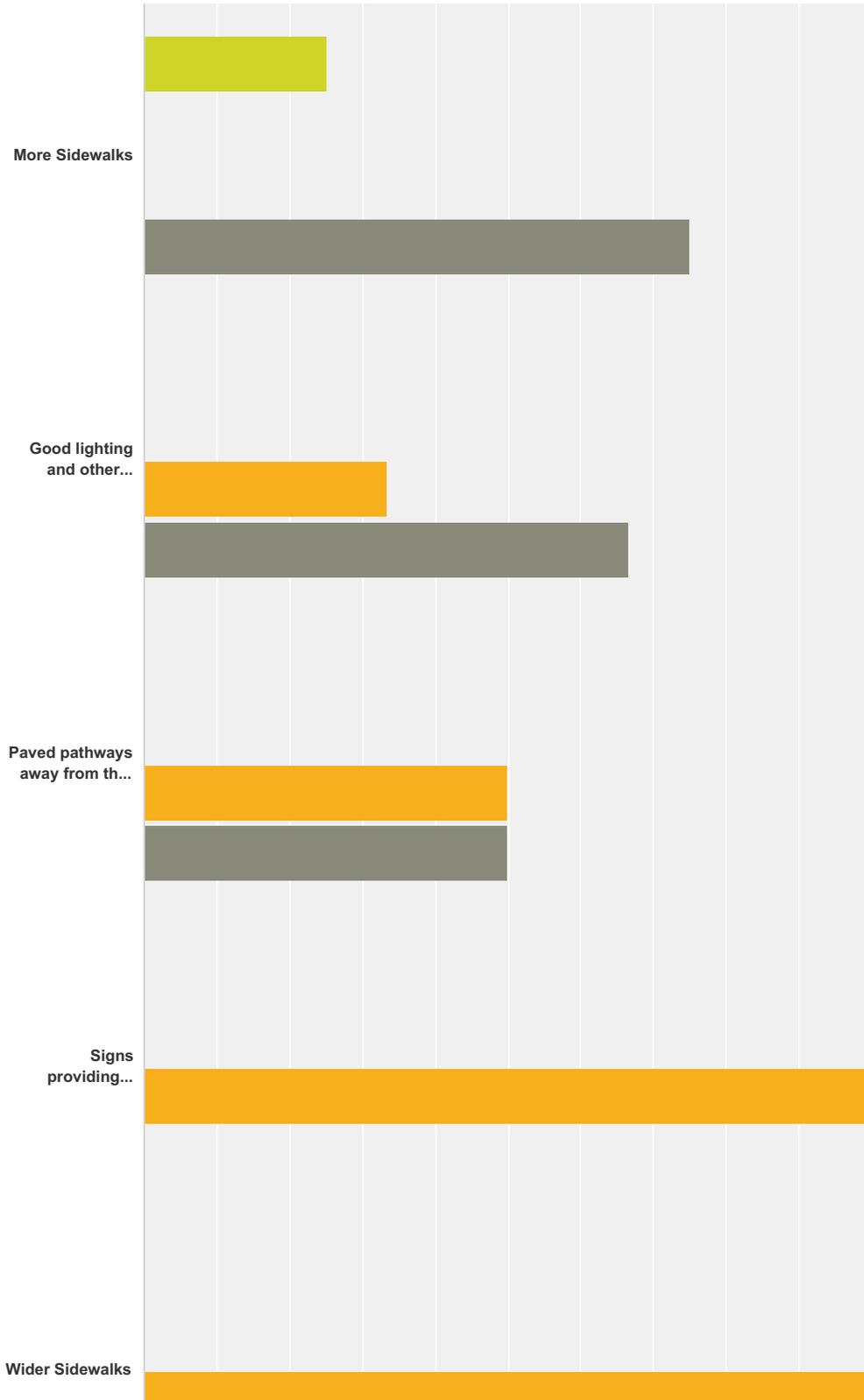
Answered: 3 Skipped: 1

Answer Choices	Responses
Location 1	100.00% 3
Location 2	33.33% 1

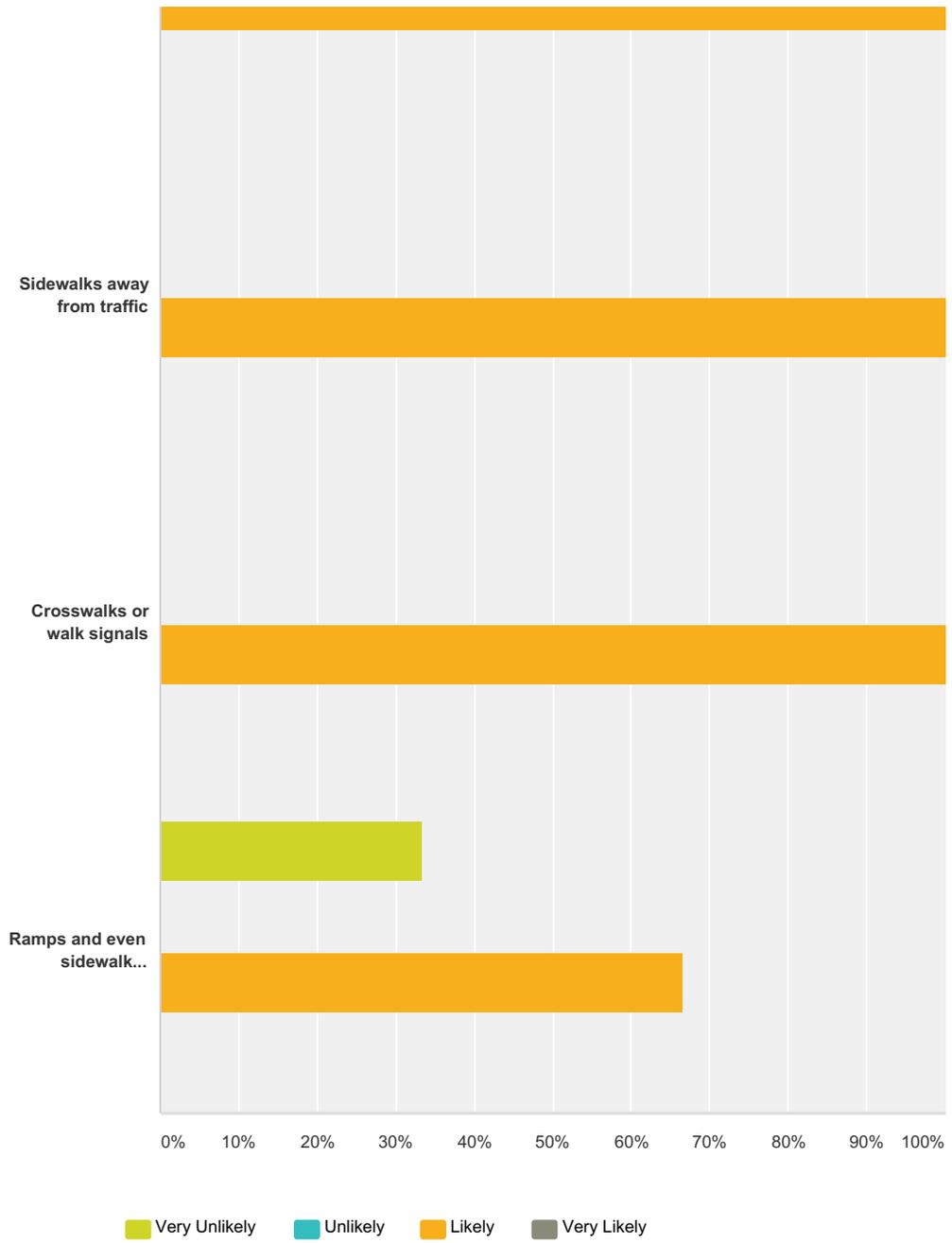
- I use Riverwalk
 5/18/2016 3:15 PM [View respondent's answers](#) [Categorize as...](#) ▼
- Crane Creek** Denny Road, Dorchester Street, bishop Avenue, Winchester Street
 3/24/2016 9:17 PM [View respondent's answers](#) [Categorize as...](#) ▼
- Crane Creek** Lincolnshire Blvd
 3/19/2016 7:23 PM [View respondent's answers](#) [Categorize as...](#) ▼
- Saddlefield Rd
 3/19/2016 7:23 PM [View respondent's answers](#) [Categorize as...](#) ▼

Q7 How likely would you be to walk if the following things were available?

Answered: 4 Skipped: 0



Walkable 29203: Pedestrian Master Plan Survey

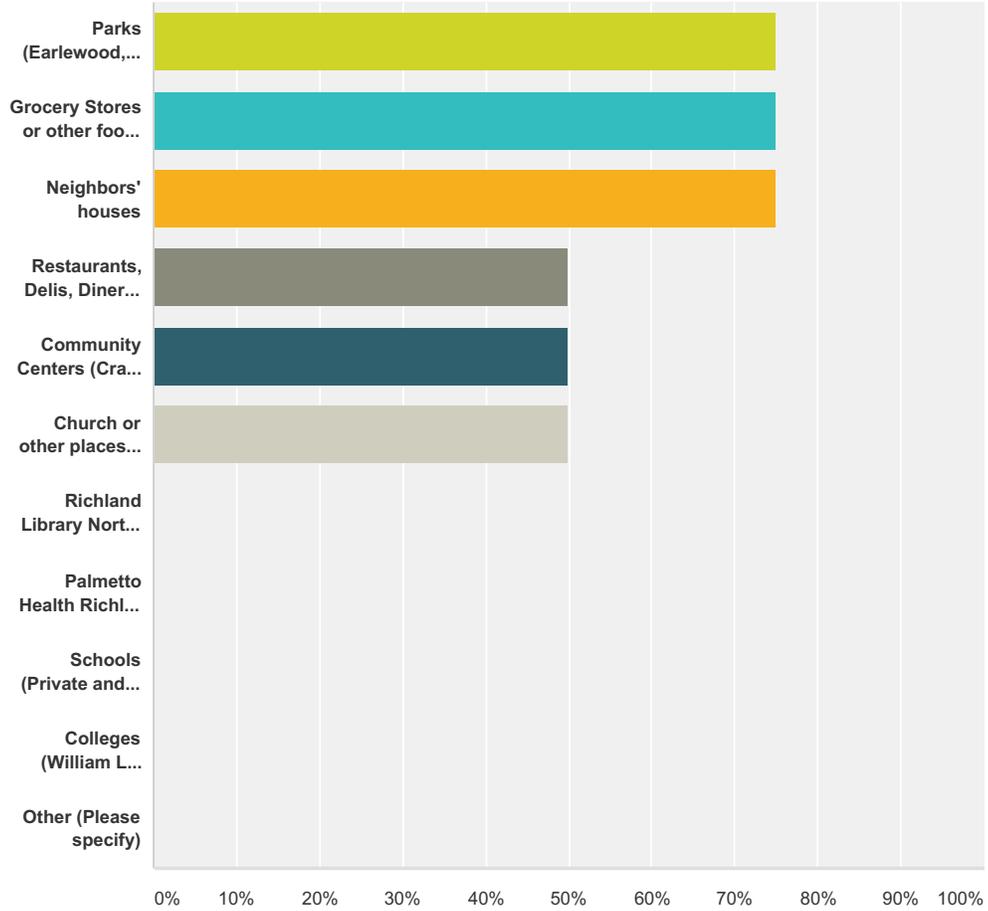


Walkable 29203: Pedestrian Master Plan Survey

	Very Unlikely	Unlikely	Likely	Very Likely	Total
More Sidewalks	25.00% 1	0.00% 0	0.00% 0	75.00% 3	4
Good lighting and other safety features	0.00% 0	0.00% 0	33.33% 1	66.67% 2	3
Paved pathways away from the street	0.00% 0	0.00% 0	50.00% 1	50.00% 1	2
Signs providing direction and helping you to find your way	0.00% 0	0.00% 0	100.00% 2	0.00% 0	2
Wider Sidewalks	0.00% 0	0.00% 0	100.00% 2	0.00% 0	2
Sidewalks away from traffic	0.00% 0	0.00% 0	100.00% 2	0.00% 0	2
Crosswalks or walk signals	0.00% 0	0.00% 0	100.00% 2	0.00% 0	2
Ramps and even sidewalk surfaces	33.33% 1	0.00% 0	66.67% 2	0.00% 0	3

Q8 If you chose to walk, where would you want to be able to walk to? (Check all that apply)

Answered: 4 Skipped: 0

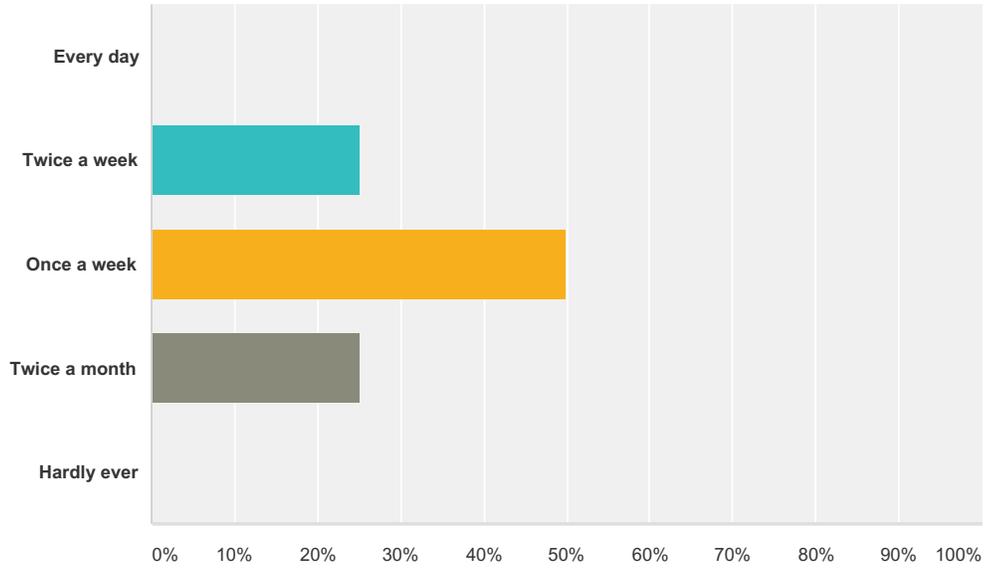


Walkable 29203: Pedestrian Master Plan Survey

Answer Choices	Responses	
Parks (Earlewood, Hyatt, Lincoln, Ridgewood, or others)	75.00%	3
Grocery Stores or other food outlets	75.00%	3
Neighbors' houses	75.00%	3
Restaurants, Delis, Diners, Coffee Shops, and similar places	50.00%	2
Community Centers (Crane Creek, Ridgewood Park, or others)	50.00%	2
Church or other places of worship	50.00%	2
Richland Library North Main	0.00%	0
Palmetto Health Richland Medical Park	0.00%	0
Schools (Private and Public)	0.00%	0
Colleges (William L Bonner, Columbia, Lutheran Theological Southern Seminary, or others)	0.00%	0
Other (Please specify)	0.00%	0
Total Respondents: 4		

Q9 How often do you go the store to buy food?

Answered: 4 Skipped: 0



Answer Choices	Responses
Every day	0.00% 0
Twice a week	25.00% 1
Once a week	50.00% 2
Twice a month	25.00% 1
Hardly ever	0.00% 0
Total	4

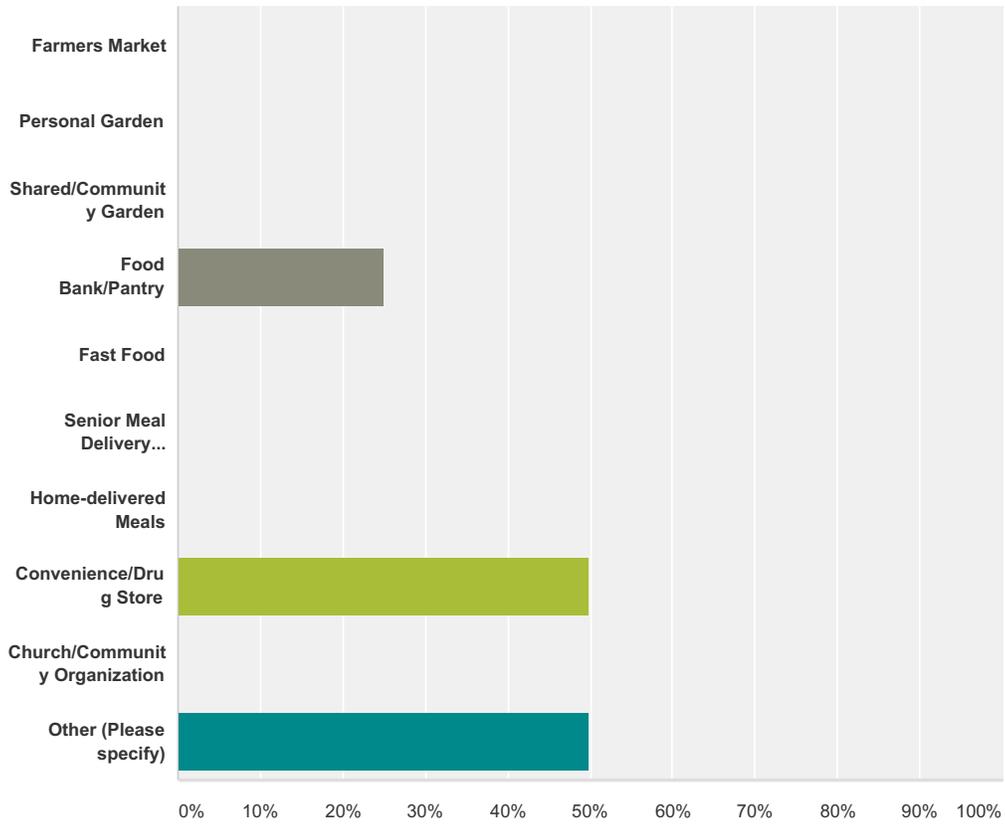
Q10 Where do you go to buy your groceries?

Answered: 4 Skipped: 0

<input type="checkbox"/>	Aldi	5/18/2016 3:17 PM	View respondent's answers	Categorize as... ▼
<input type="checkbox"/>	Food Lion	3/24/2016 9:18 PM	View respondent's answers	Categorize as... ▼
<input type="checkbox"/>	bi-lo	3/22/2016 10:05 PM	View respondent's answers	Categorize as... ▼
<input type="checkbox"/>	Walmart, Dutch Square or Killian Rd	3/19/2016 7:25 PM	View respondent's answers	Categorize as... ▼

Q11 Besides grocery stores, where else do you get food? (Check all that apply)

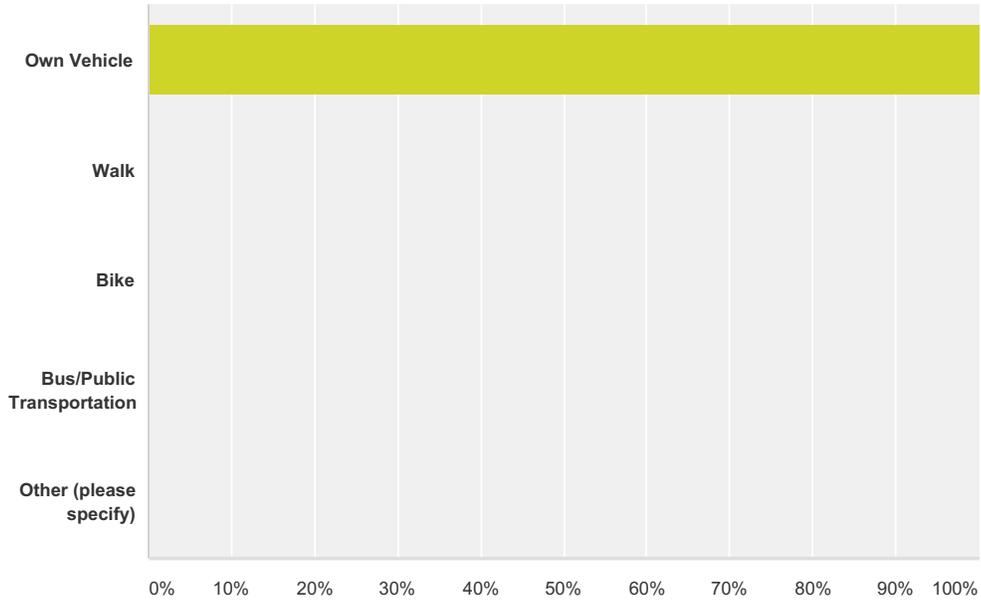
Answered: 4 Skipped: 0



Answer Choices	Responses
Farmers Market	0.00% 0
Personal Garden	0.00% 0
Shared/Community Garden	0.00% 0
Food Bank/Pantry	25.00% 1
Fast Food	0.00% 0
Senior Meal Delivery Program	0.00% 0
Home-delivered Meals	0.00% 0
Convenience/Drug Store	50.00% 2
Church/Community Organization	0.00% 0
Other (Please specify)	50.00% 2
Total Respondents: 4	

Q12 How do you get to the locations where you get your food? (Check all that apply.)

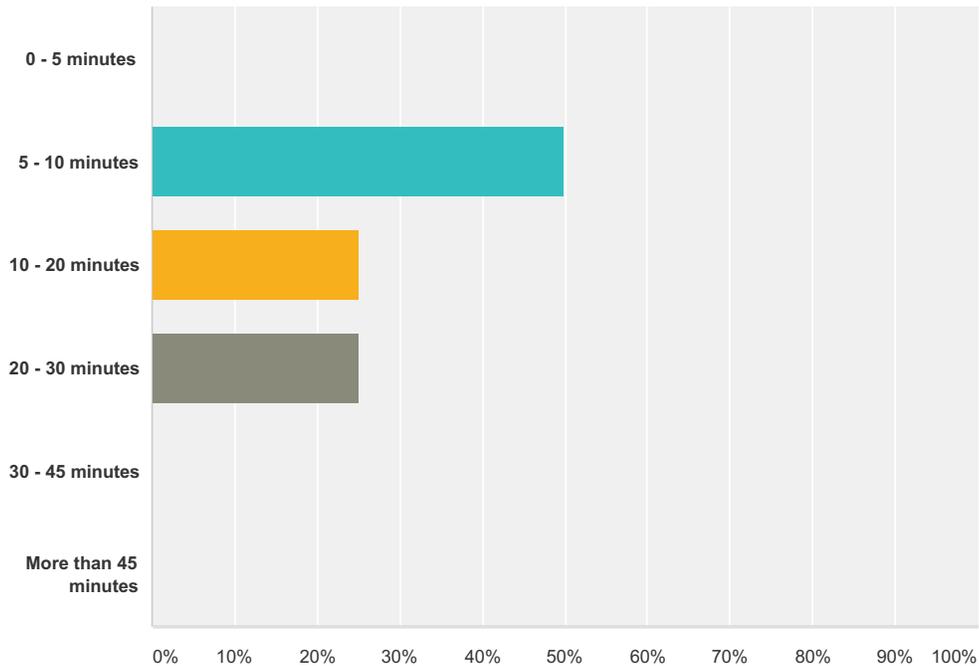
Answered: 4 Skipped: 0



Answer Choices	Responses	Count
Own Vehicle	100.00%	4
Walk	0.00%	0
Bike	0.00%	0
Bus/Public Transportation	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 4		

Q13 Based on your response to question 11, how long does it take you to get to where you buy your groceries? (One-way travel, not round-trip)

Answered: 4 Skipped: 0



Answer Choices	Responses
0 - 5 minutes	0.00% 0
5 - 10 minutes	50.00% 2
10 - 20 minutes	25.00% 1
20 - 30 minutes	25.00% 1
30 - 45 minutes	0.00% 0
More than 45 minutes	0.00% 0
Total	4

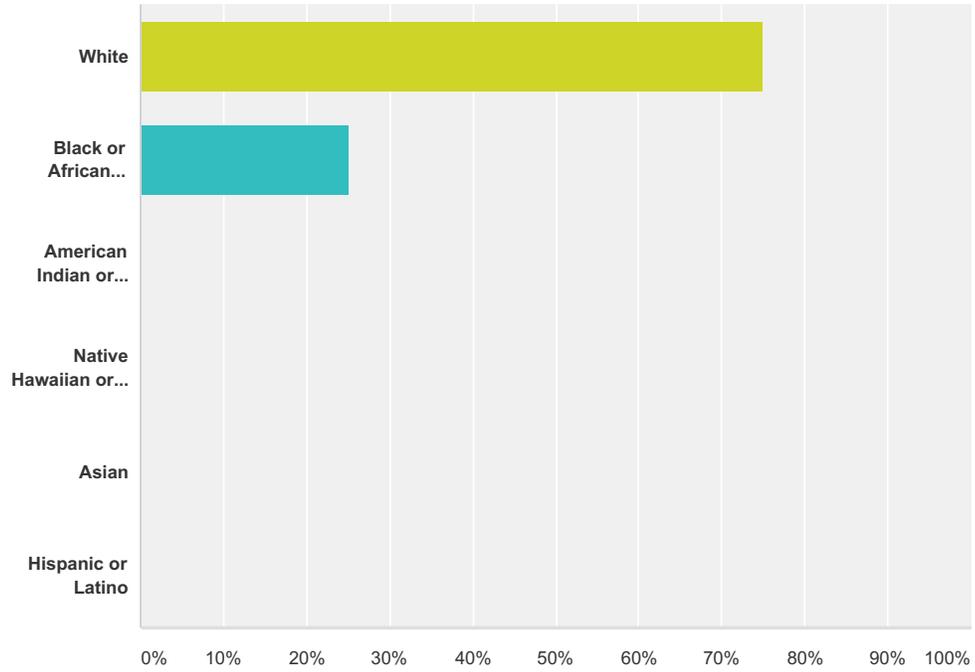
Q14 What is your age?

Answered: 4 Skipped: 0

<input type="checkbox"/>	63	5/18/2016 3:19 PM	View respondent's answers	Categorize as... ▼
<input type="checkbox"/>	68	3/24/2016 9:19 PM	View respondent's answers	Categorize as... ▼
<input type="checkbox"/>	53	3/22/2016 10:05 PM	View respondent's answers	Categorize as... ▼
<input type="checkbox"/>	73	3/19/2016 7:26 PM	View respondent's answers	Categorize as... ▼

Q15 What is your race/ethnicity? (Check all that apply.)

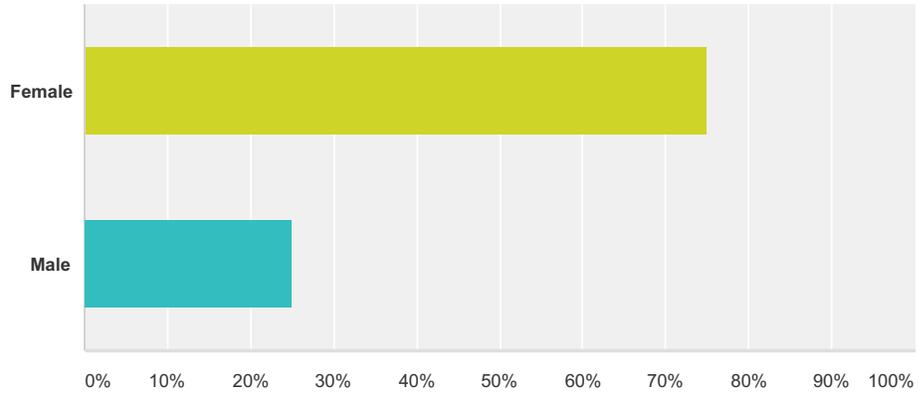
Answered: 4 Skipped: 0



Answer Choices	Responses
White	75.00% 3
Black or African American	25.00% 1
American Indian or Alaska Native	0.00% 0
Native Hawaiian or Other Pacific Islander	0.00% 0
Asian	0.00% 0
Hispanic or Latino	0.00% 0
Total Respondents: 4	

Q16 What is your gender

Answered: 4 Skipped: 0



Answer Choices	Responses
Female	75.00% 3
Male	25.00% 1
Total	4

Q17 Any additional comments?

Answered: 1 Skipped: 3

The biggest reason I exercise at Riverwalk is crime/safety concerns in my 29203 neighborhood
5/18/2016 3:19 PM [View respondent's answers](#) [Categorize as...](#) ▼

20 / 21

Q18 Thank you for your time! If you would like to receive updates on the plan's progress, please provide your email here (survey results are anonymous):

Answered: 2 Skipped: 2

21 / 21

WALKABLE 29203 EQUITY MAPS

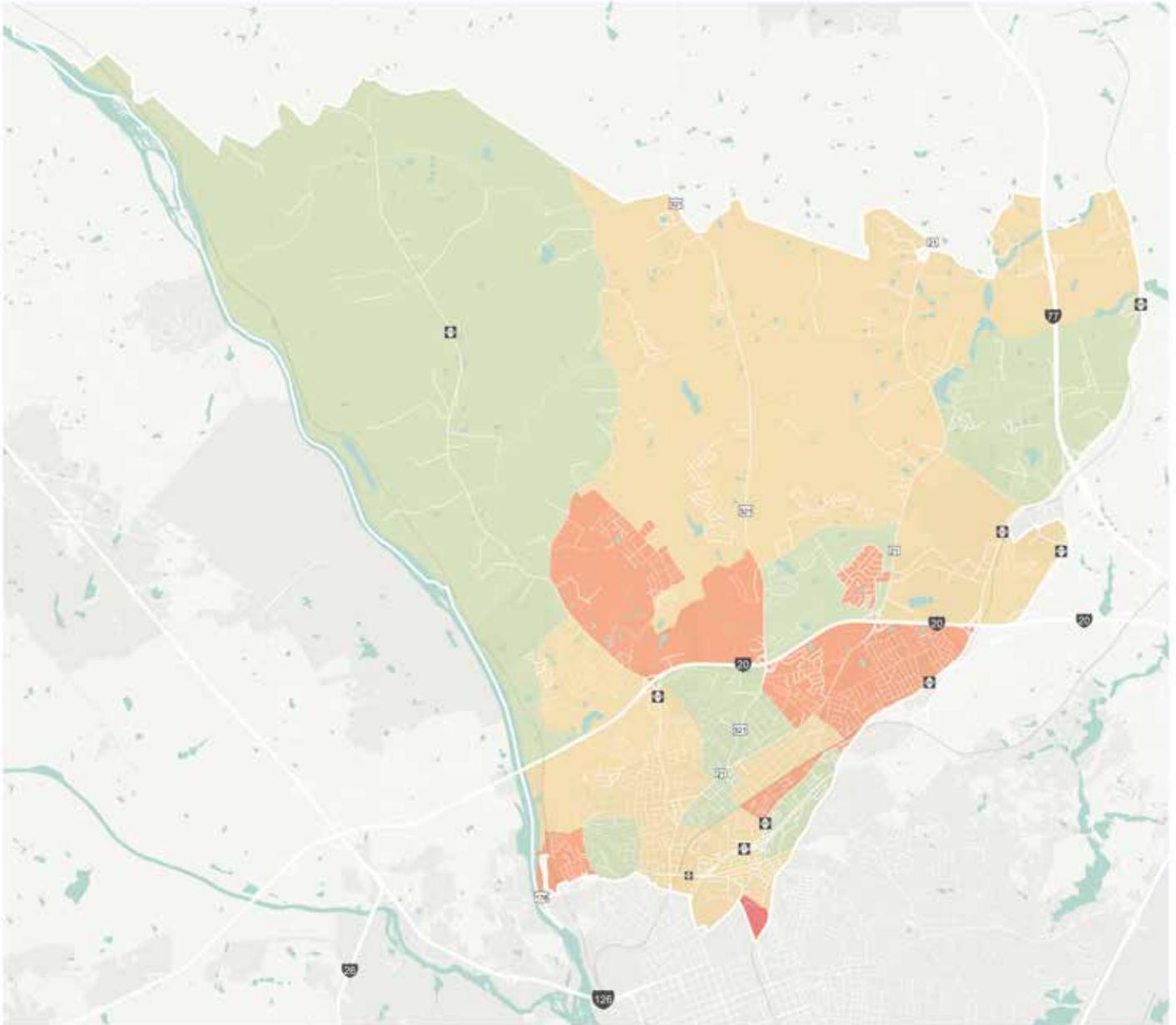
The following maps show the concentrations of the seven vulnerable populations used in the Composite Equity Analysis on page 37. These seven populations represent people and households who tend to have a higher risk of pedestrian mobility and access issues.

The seven vulnerable populations include:

- Seniors (65 years and older)
- Children (14 years and younger)
- Non-white populations
- Low-income households
- Households without access to a vehicle
- Non-English speaking households
- SNAP recipients

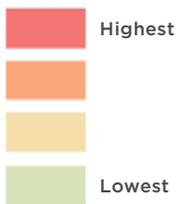
These vulnerable populations were mapped by census block groups in the 29203 zip code. Block groups shaded red and orange represent an area with the highest vulnerable population concentration. Greens and yellows reflect lower concentrations of vulnerable populations.

SENIORS (65 YEARS AND OLDER)

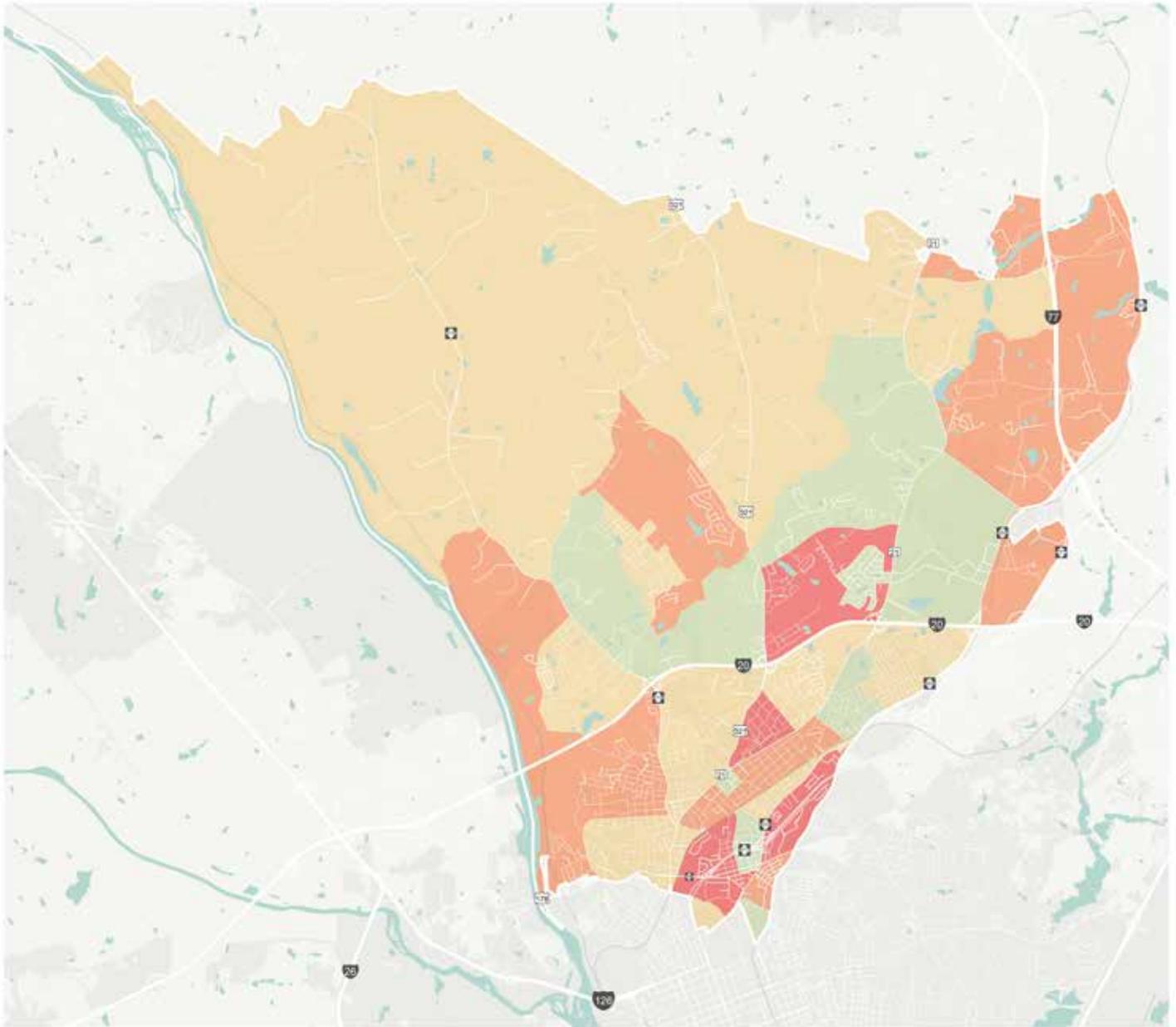


LEGEND

Concentration of Senior Population

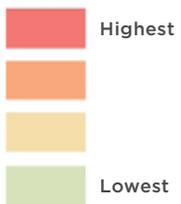


CHILDREN (14 YEARS AND YOUNGER)

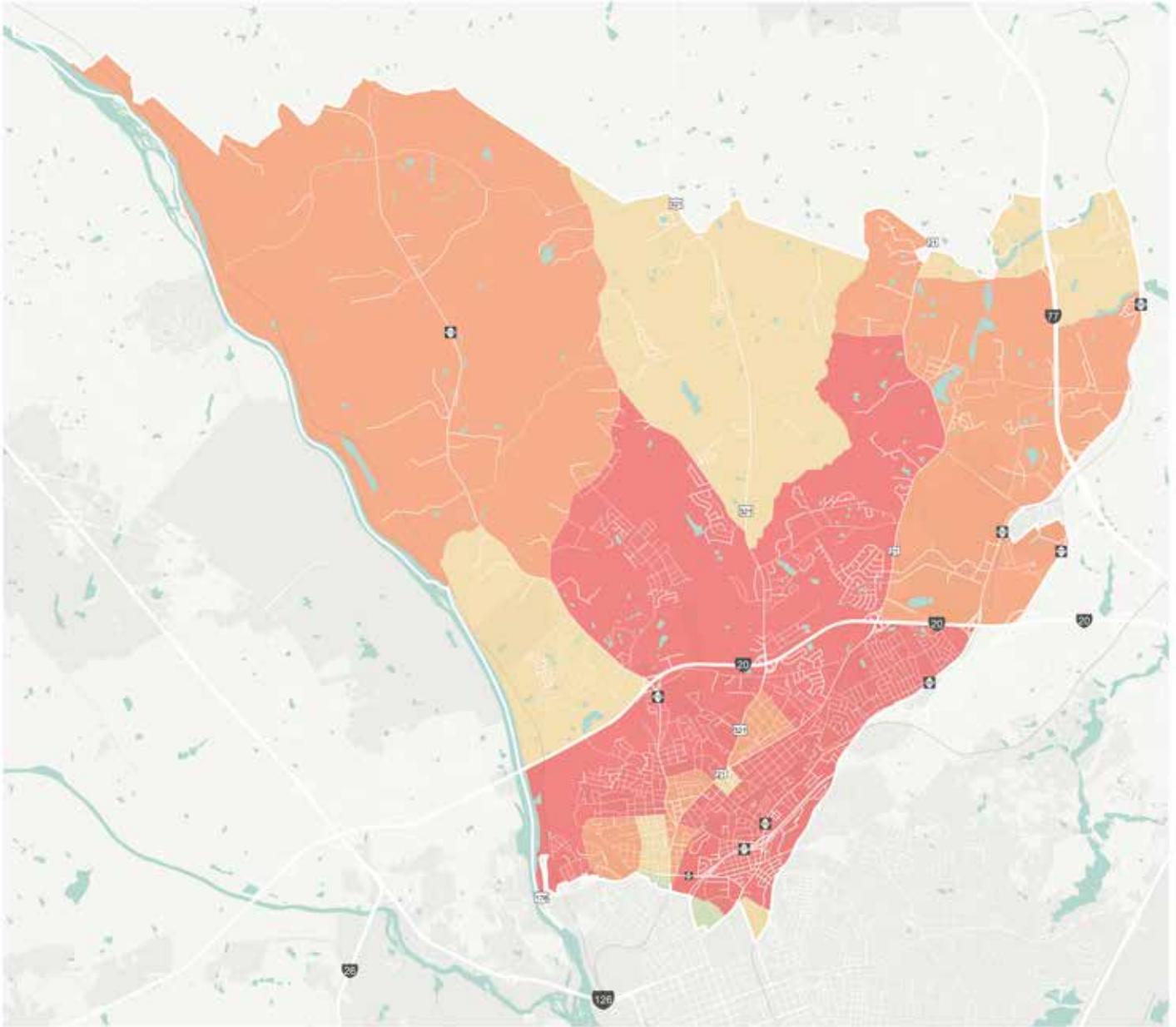


LEGEND

Concentration of
Child Population

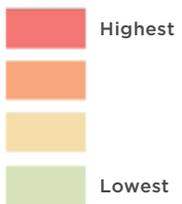


NON-WHITE POPULATIONS

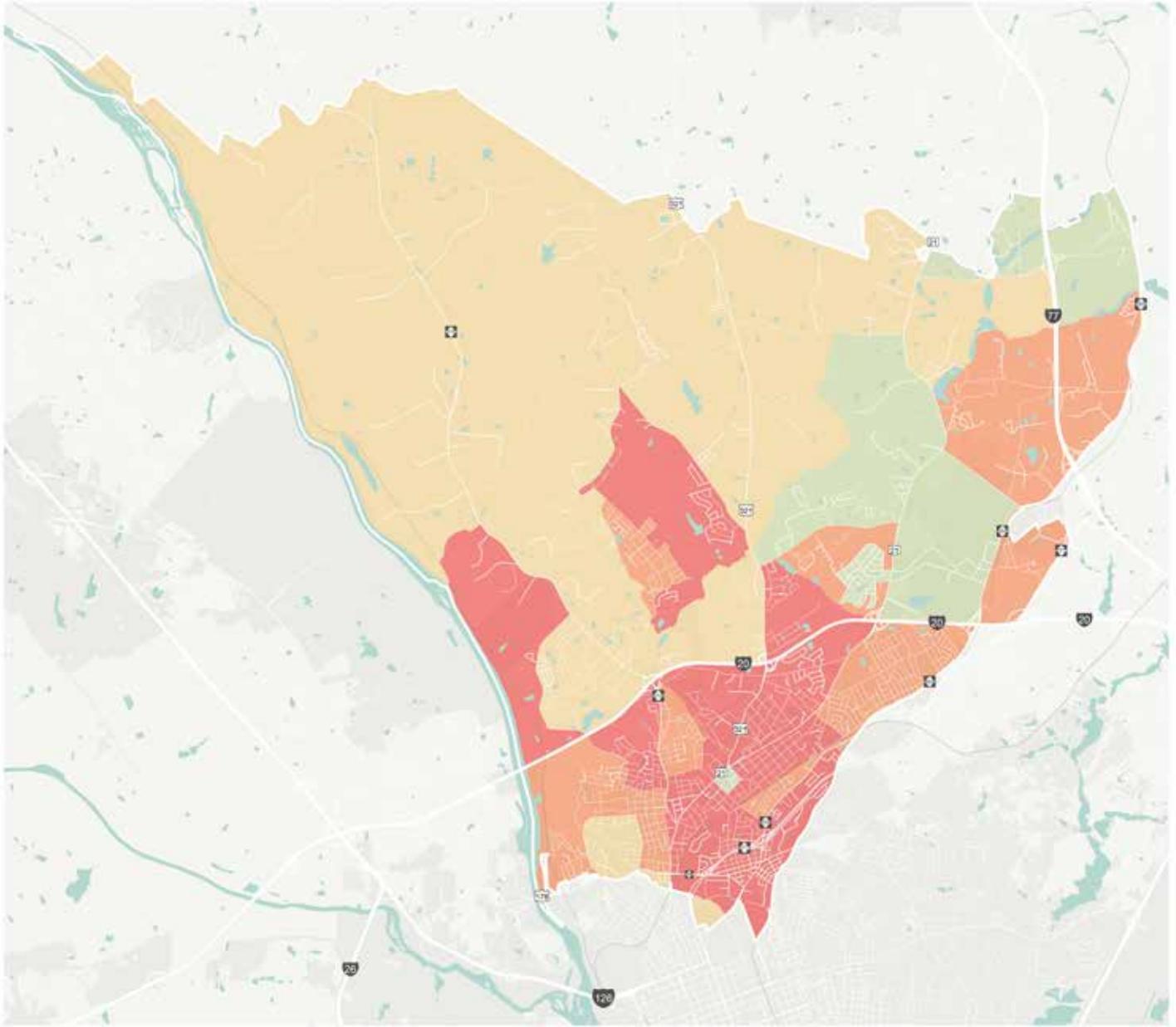


LEGEND

Concentration of
Non-White Populations

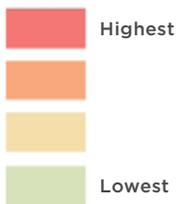


LOW-INCOME HOUSEHOLDS

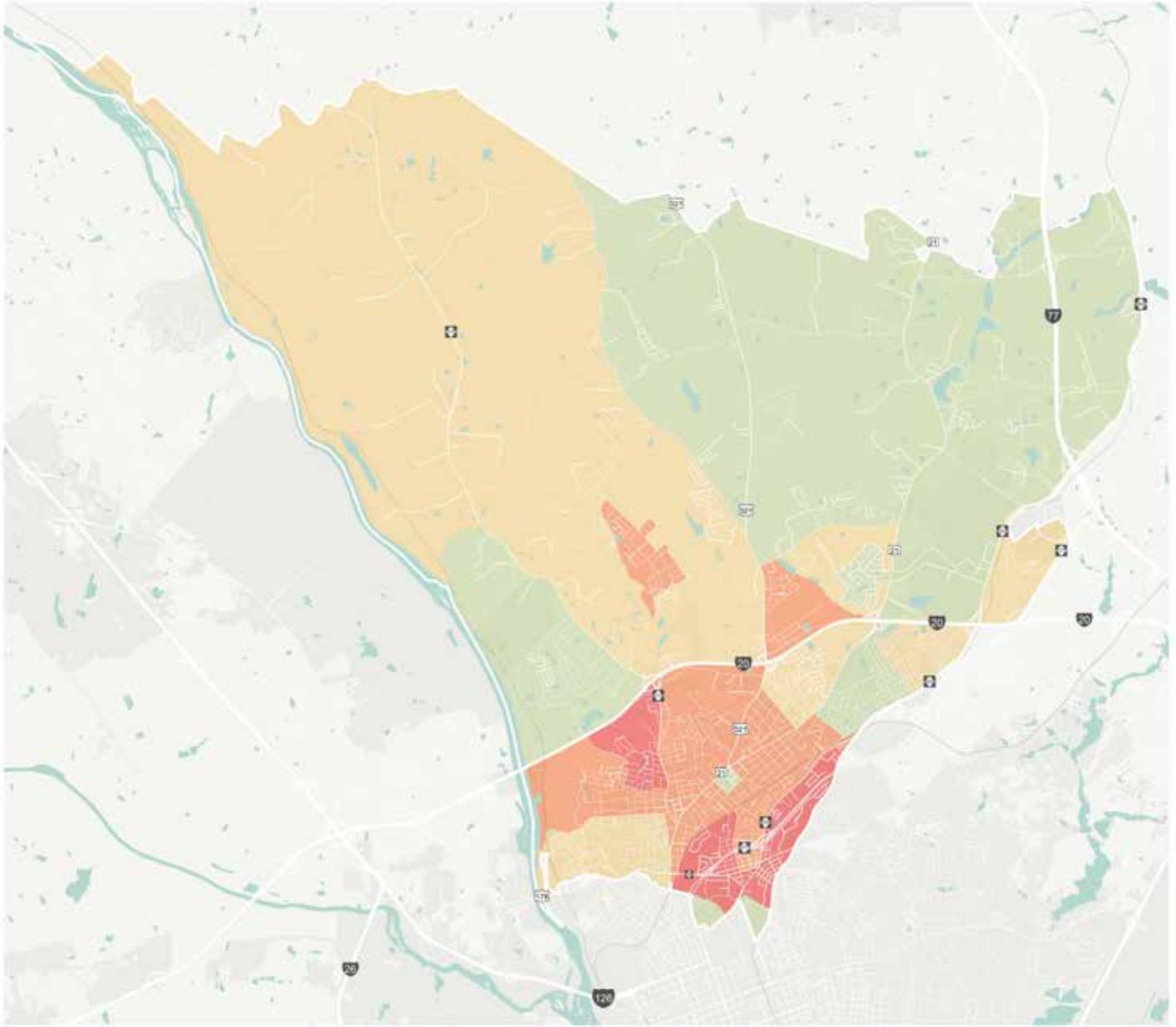


LEGEND

Concentration of Low-Income Households

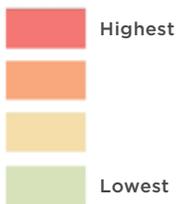


HOUSEHOLDS WITHOUT ACCESS TO A VEHICLE

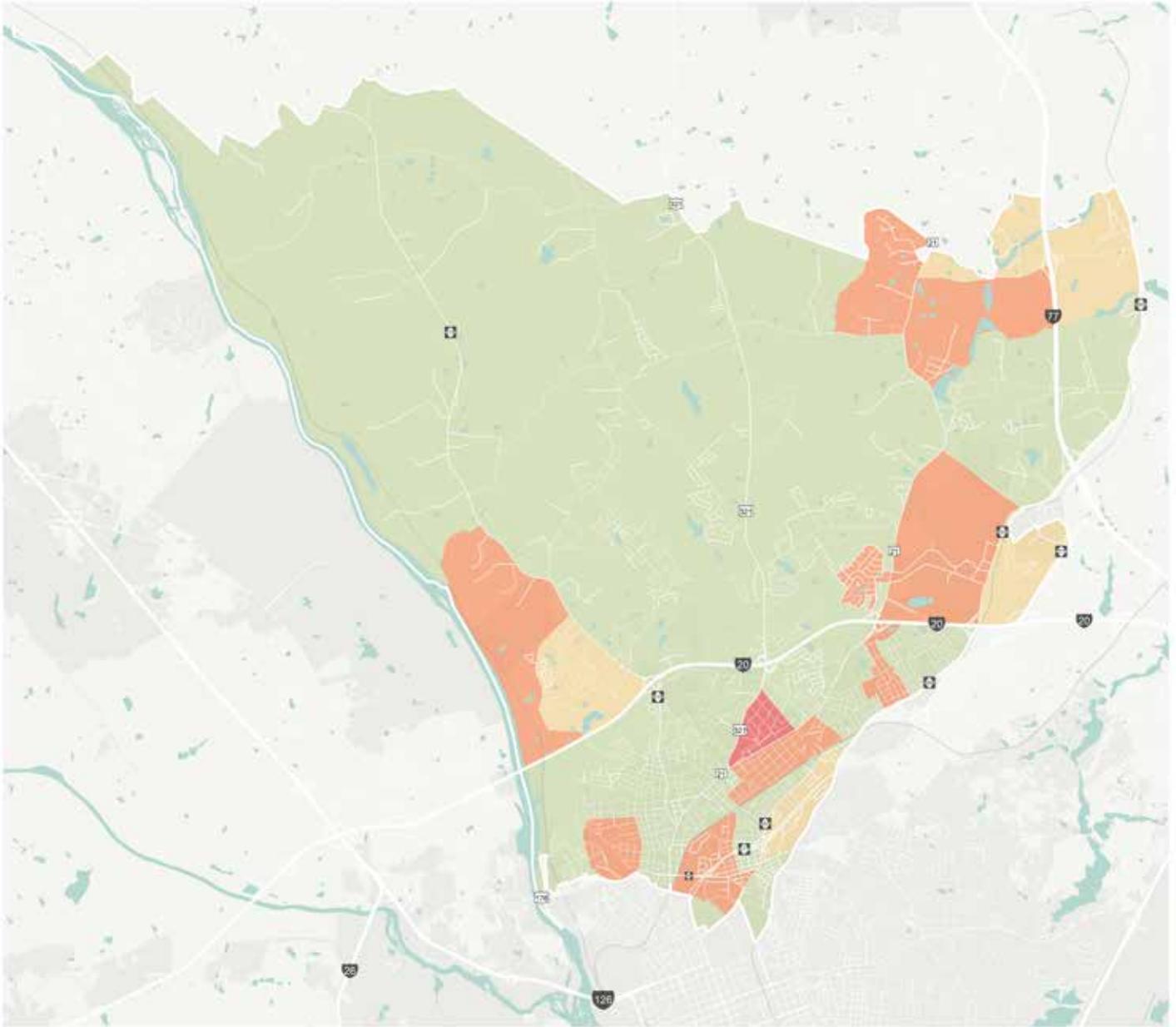


LEGEND

Concentration of Households without Vehicle Access

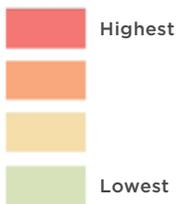


NON-ENGLISH SPEAKING HOUSEHOLDS

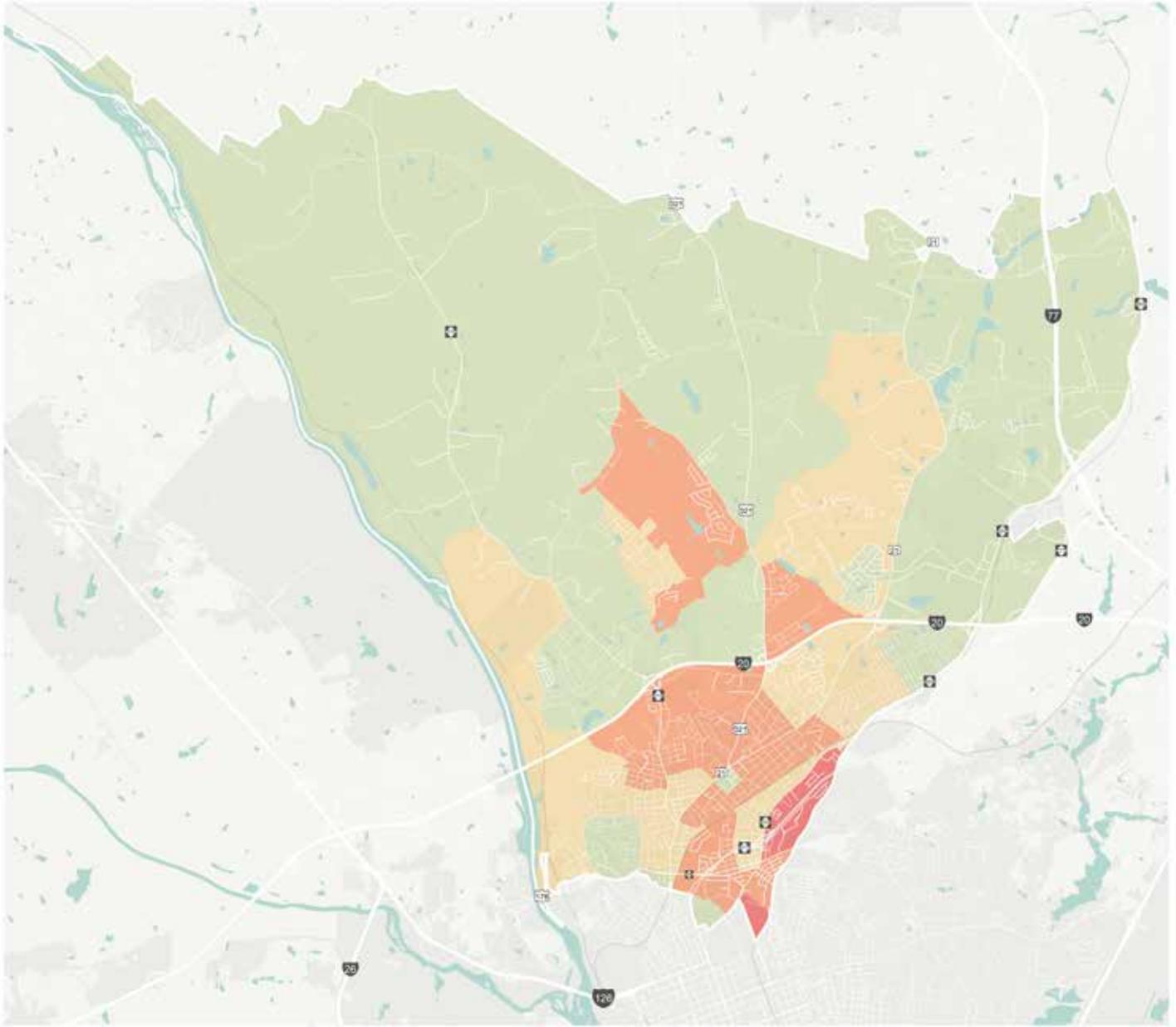


LEGEND

Concentration of
Non-English Speaking Households



SNAP RECIPIENTS



LEGEND

Concentration of SNAP Recipient Population

