# Bessemer City Pedestrian Plan Update

**FINAL REPORT**

February 2022

Bessemer City

Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

## Acknowledgments

Thank you to the many residents, community leaders, and City staff who participated in the development of the Bessemer City Pedestrian Plan Update through meetings, workshops, and plan review. A special thank you to those who took on the added responsibility of serving on the Steering Committee.

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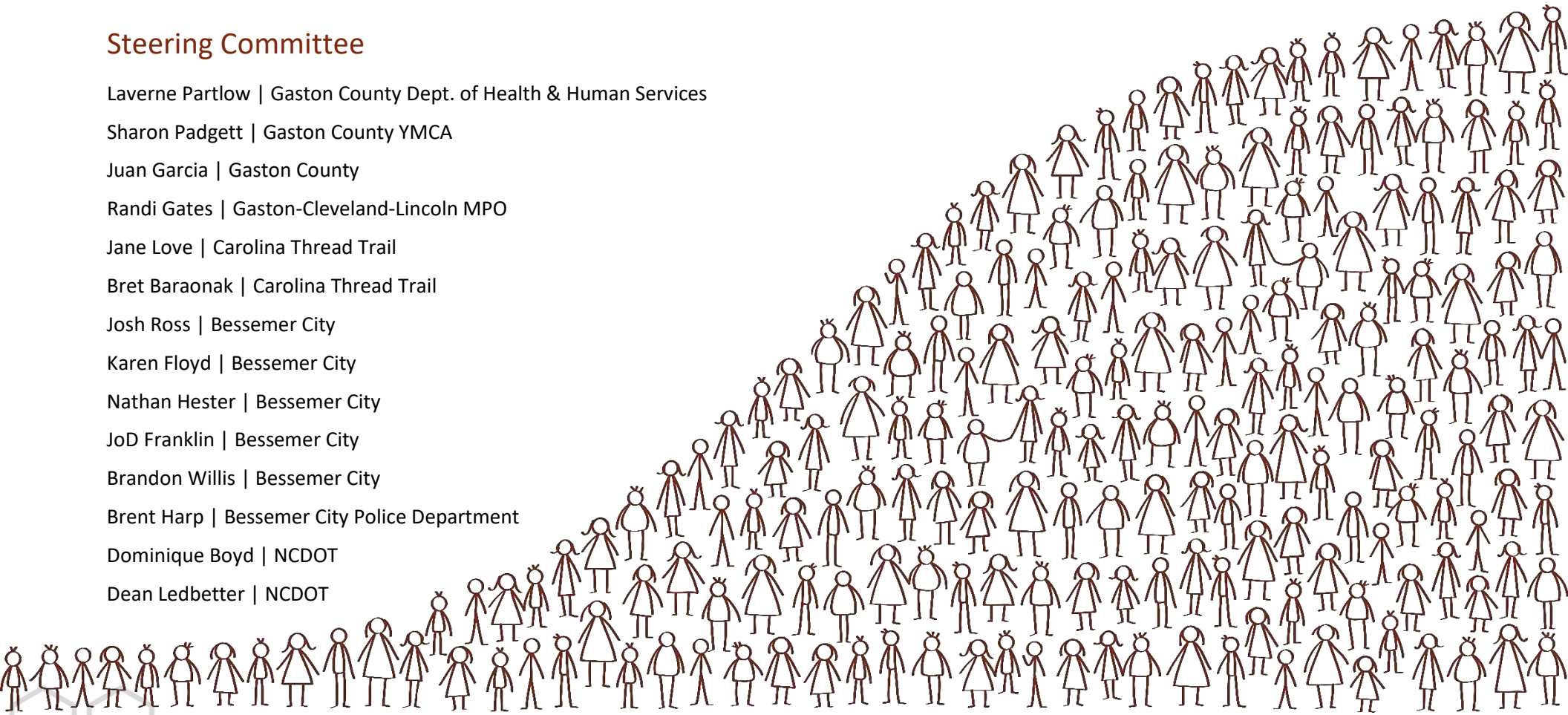

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Bessemer City
Pedestrian Plan Update

# Executive Summary

The Bessemer City Pedestrian Plan Update adapts the recommendations of the 2010 Pedestrian Plan to the City's needs and context today. The Pedestrian Plan Update is centered on the following community vision:

## Bessemer City will celebrate its family-oriented, small-town character by becoming a safer and more accessible place to walk for recreation and transportation.

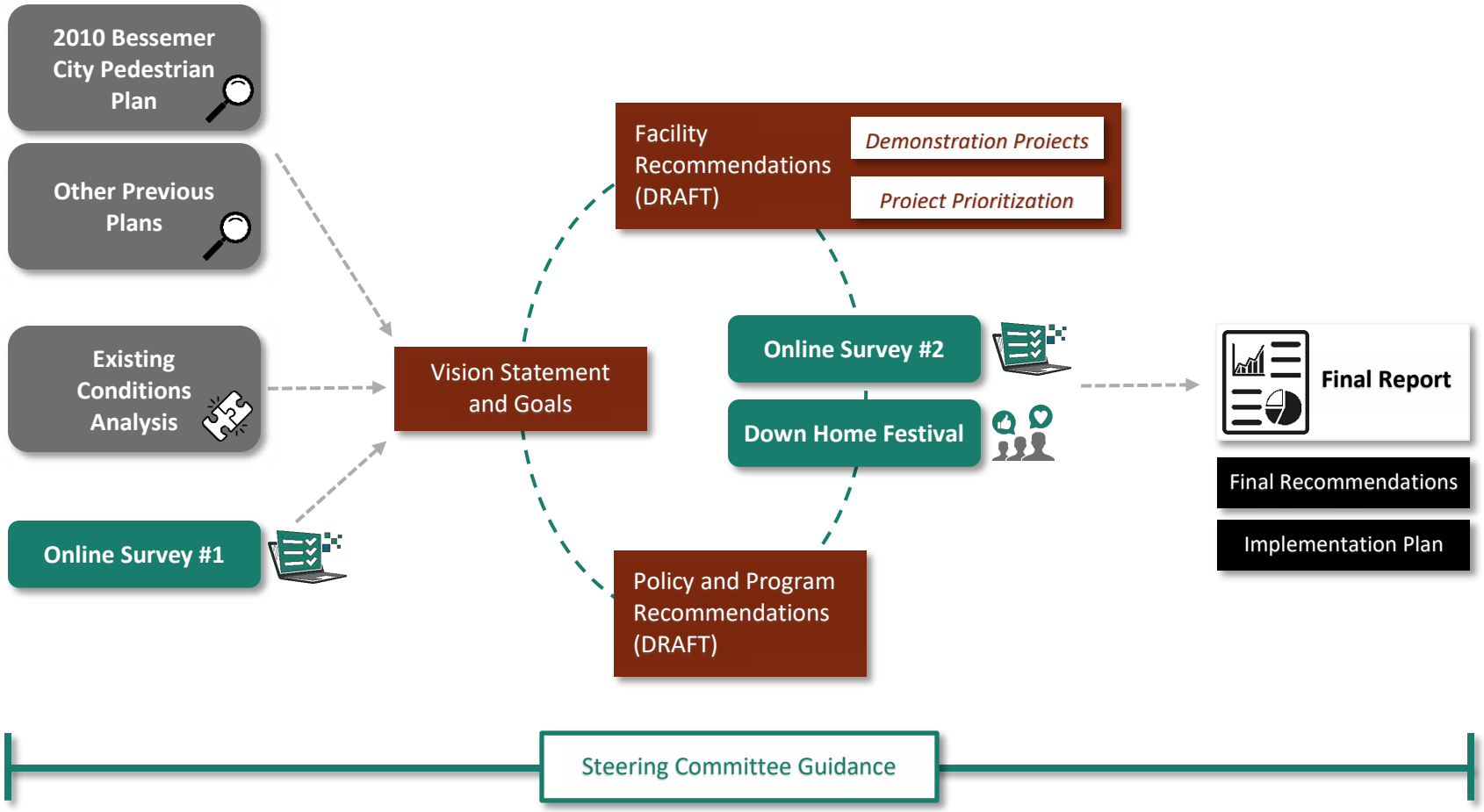
Development of the Pedestrian Plan Update relied extensively on input from Bessemer City leaders, stakeholders, and residents through three Steering Committee meetings, two public surveys, and a community event. This input was incorporated into the plan's recommendations and plan for action.

Many facility, program, and policy recommendations from the 2010 Plan remain, whereas others have been removed, edited, or added. All recommendations are explored in greater detail and prioritized according to what will be the most important to Bessemer City today and in the future.

Bessemer City has tremendous potential to become a truly walkable small town. Improving the pedestrian experience will contribute to the sense of community, safety, health, and the local economy in Bessemer City for years into the future. This plan guides investment toward achieving this vision.

## Plan Overview

The following diagram describes each of the inputs and intermediate steps used to develop the Bessemer City Pedestrian Plan Update.



## Summary of Priority Projects

Priority projects were selected based on public feedback, safety factors, significance to community accessibility, demographic factors, and cost effectiveness. More information about these projects, including scores for each category and cost estimates, can be found Chapter 5. Recommended pedestrian crossings can be found in Chapter 3.

**Table ES.1 – Top Priority Projects (Sidewalks and Multi-Use Paths)**

| Rank | ID | Project Description | Score (/100) |
|---|---|---|---|
| **SIDEWALK PROJECTS** | | | |
| **1** | **G** | Sidewalk along E Maine Ave from N 14th St to NC 274 | **75** |
| **2** | **B** | Sidewalk along N 12th St from M L Kiser Rd to Sunset Ln | **65** |
| **3** | **L** | Sidewalk along NC 161 from S 13th St to W Boston Ave | **60** |
| **4** | **A** | Sidewalk along Yellow Jacket Ln/Bess Town Rd from N 14th St to N 12th St | **59** |
| **5** | **R** | Sidewalk along NC 274 from N 9th St to E Ohio Ave | **56** |
| **MULTI-USE PATH PROJECTS** | | | |
| **1** | **D** | 14th Street Trail (W Maryland Ave to Windward Dr) | **63** |
| **2** | **Q** | 13th Street Connector (W Alabama Ave to W Virginia Ave) | **48** |
| **3** | **S** | Alabama Trail (S 14th St to S 8th St) | **47** |
| **4*** | **W** | Virginia to Southridge Trail (E Virginia Ave/Davis St to Edgewood Rd/I-85) | **36** |
| **4*** | **T** | Athenia and Edgewood Trail (S 8th St to I-85) | **36** |

## Summary of Programs and Policies

Supportive programs and policies are described in detail in Chapter 4 of this plan. To create a successful pedestrian network, Bessemer City should pursue as many of these programs and policies as time and resources permit.

Recommended policies and programs were grouped into five categories. Examples within each category are summarized below:

- **Pedestrian-Supportive Policies**
  Such as including pedestrian facilities in future roadway projects, establishing a Pedestrian Needs Committee, and adopting a Complete Streets and Traffic Calming policy
- **Strategic Coordination**
  Such as coordinating with the Carolina Thread Trail, coordinating with neighboring and surrounding jurisdictions, and identifying grant funding opportunities
- **Maintenance and Assessment**
  Such as repairing and enhancing existing sidewalks, assessing and improving street lighting, and establishing a data-driven method of annual evaluation
- **Encouragement**
  Such as community events, Safe Routes to School, and other school-based programs
- **Education**
  Such as awareness events and designations, wayfinding, and establishing a website for pedestrian facilities and needs in Bessemer City

## Summary of Funding Sources

A key piece of the implementation plan (discussed in Chapter 5) are possible identified funding sources to accomplish the goals of this plan.

Funding sources that may be leveraged include:

- Local Funds
- Powell Bill Funds
- RAISE Grants
- Non-Profit Organizations
- Private Development
- Transportation Bonds
- Parks and Recreation Trust Fund

The NCDOT design guidelines are identified as the basis of design for all identified projects, detailed on page 5-10 of this report. These design guidelines include guidance from the Federal Highway Administration (FHWA), the American Association of State Highway Transportation Officials (AASHTO), the National Association of City Transportation Officials (NACTO) and others.

Bessemer City
Pedestrian Plan Update

# CHAPTER 1

# Introduction

Bessemer City is a charming and friendly community located in the rolling hills northwest of Gastonia, with a distinctive charm as a historic rail town. Originally founded in 1893, Bessemer City developed along the major railroad that still runs through the city today. The train-oriented nature of the city contributed to a more pedestrian-friendly grid pattern with denser neighborhoods compared to other communities throughout the region. The City continues to build upon its reputation as a welcoming and historic community by improving the pedestrian environment and investing in mobility for residents and visitors.

## Project History and Background

Bessemer City, like many other municipalities in North Carolina, strives to provide its residents with a high quality of life. Many communities aim to become more walkable by providing a safe, accessible, and enjoyable transportation option that promotes health and environmental quality. Amenities for pedestrians have come to be increasingly expected by residents, and their ability to contribute to community vibrancy is well documented.

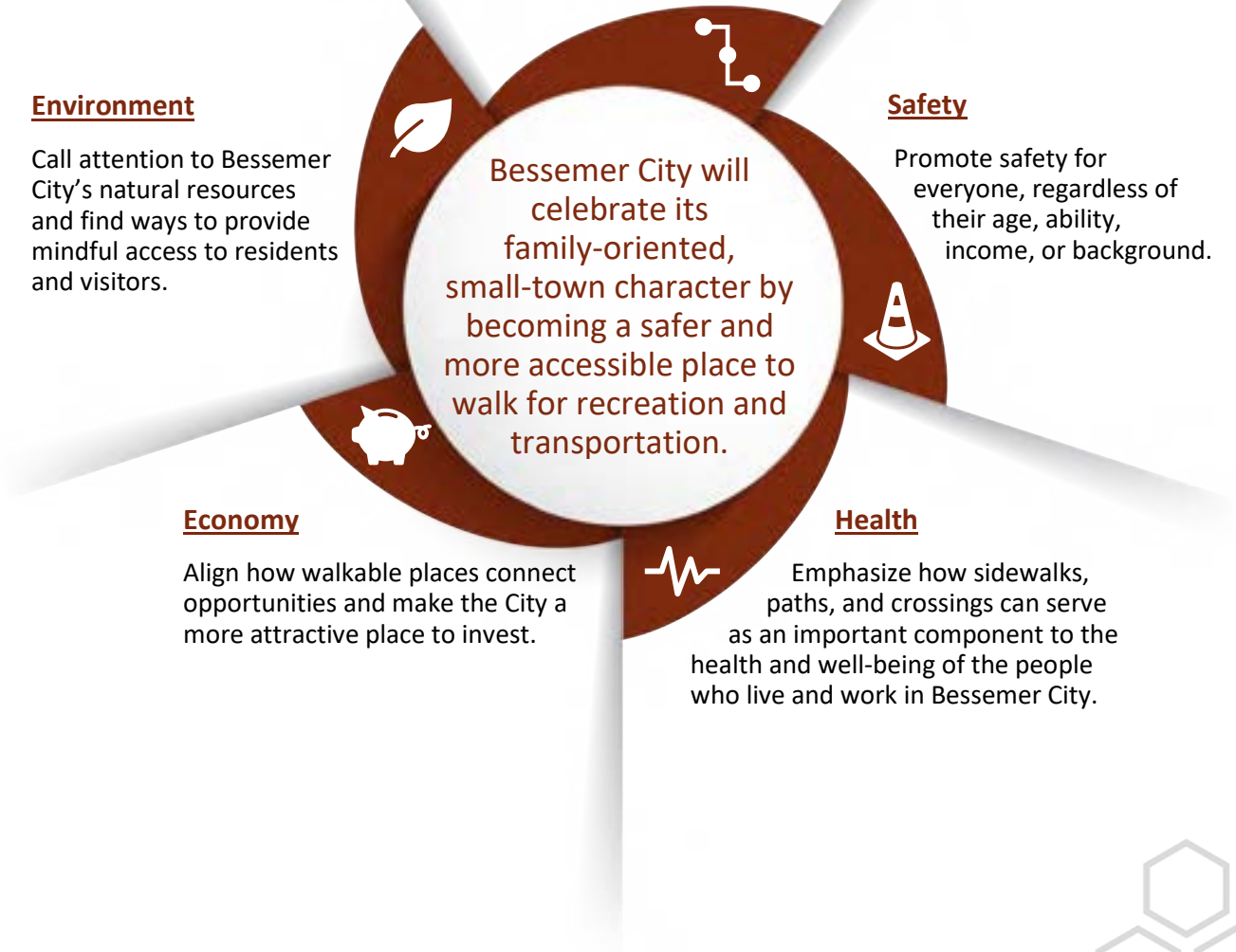
Bessemer City has a long-standing desire to improve its pedestrian infrastructure. In 2010, the first Pedestrian Plan was adopted. Over a decade later, Bessemer City applied for and received a grant through the North Carolina Department of Transportation to reevaluate the goals and recommendations of this plan and update the analysis with recent data. Through the Bessemer City Pedestrian Plan Update, the City also takes a closer look at the projects that are most important to realizing the community's goals, including both large-scale and small-scale projects with the most impact.

### *Walking in Bessemer City in a Post-COVID-19 World*

COVID-19 has changed many aspects of life, including how municipalities function and the types of improvements they are prioritizing. The Bessemer City Pedestrian Plan Update was conducted during the COVID-19 pandemic, which has emphasized the need to preserve and enhance the City's mobility options. As transportation needs continue to change, the Bessemer City Pedestrian Plan Update presents a roadmap toward a safer and more accessible pedestrian network, and outlines the steps needed to adapt to a continuously changing environment.

## Vision and Goals

As a guiding document, the Bessemer City Pedestrian Plan Update establishes a vision for walkability in the City and expresses a commitment to the five priorities expressed in the WalkBikeNC statewide bicycle and pedestrian plan.




*To learn more about WalkBikeNC, visit www.ncdot.gov/bikeped/walkbikenc.*

## Planning Process

The planning process began in early 2021 and followed a three-step process that began with establishing the vision for walkability in Bessemer City and documenting existing conditions and local needs. From there, a coordinated set of recommendations emerged from an analytical and community-driven process. Finally, the plan took shape through documentation. Stakeholder and community engagement occurred throughout the three phases.

## Community Engagement

For the Bessemer City Pedestrian Plan Update to reflect community values and be implementable, a community engagement process was needed to gather input from residents, business owners, agency representatives, and other stakeholders. Together, the community helped establish a vision for a more walkable Bessemer City, explore ways to achieve it, and prioritize a set of projects, programs, and policies to realize results. It was important to create a process that allowed participants to understand why decisions were made and the effect of those decisions as the plan took shape. Led by the project Steering Committee, the outcomes of the engagement process contributed significantly to the recommendations of this plan and helped enrich the results by ensuring the needs of the community were taken into consideration at every stage of the process.

### *Steering Committee*

The Steering Committee served a critical role in guiding the project and contributing to decisions being made. The group was composed of a variety of local experts and officials, including representatives from the Planning and Zoning, Economic Development, Parks and Recreation, and Police Departments of Bessemer City, as well as Gaston County, Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO), the Carolina Thread Trail, NCDOT, and others. The Steering Committee had three distinct roles:

1. Assist with the creation of the Pedestrian Plan Update
2. Provide feedback on plan elements throughout the process
3. Provide local knowledge and insight

### Steering Committee Meetings

**Meeting #1 | February 9, 2021**

Committee members were briefed on the overall project timeline and planning process. The findings of the existing conditions analysis were presented to the committee for initial feedback. A corridor inventory was shared and discussed, which included some of the key corridors for pedestrian mobility in Bessemer City. The first public survey launched immediately following this meeting.

**Meeting #2 | September 17, 2021**

This meeting focused on presenting the recommendations identified by the project team and the prioritization methodology used. Preliminary demonstration project selections were shown to the committee, who provided feedback on which sidewalk, multi-use path, and pedestrian crossing recommendations would be featured in the report. Draft policy and program recommendations were also presented, and feedback was solicited.

**Meeting #3 | December 8, 2021**

Following the meeting, the Committee provided feedback on final recommendations and structure of the report and helped the project team prepare for adoption.

## *Community Input*

The Bessemer City community weighed in on the Pedestrian Plan Update throughout the process. Two online surveys and participation at the Down Home Festival provided opportunities to collect input on vision, needs, recommendations, and priorities.

### ENGAGEMENT SNAPSHOT

The chapters that follow feature key outcomes from the online surveys and many community conversations that were held during the planning process.

### ONLINE SURVEY #1

*February 9, 2021 to March 14, 2021*

The first online survey to collect community input on which mobility themes were most important and what obstacles people faced when walking in Bessemer City. Participants also used an interactive map to identify specific issues and potential project ideas.

### DOWN HOME FESTIVAL

*May 8, 2021*

The City reserved space at the Down Home Festival to showcase the Pedestrian Plan Update and collect input on recommendations. The event, which typically draws close to 5,000 people to Downtown, provided a festive way to engage people about the needs and solutions related to walking the City.

### ONLINE SURVEY #2

*May 6, 2021 to June 2, 2021*

The second online survey launched in time for the Down Home Festival. The survey was designed to collect input on the draft project recommendations, inform the project prioritization process, and better understand the community's appetite for different types of programs.

## Benefits of Walking

The choices people have in how they move through their community is a key indicator for livability and vitality. Providing a safe and efficient pedestrian network gives residents an alternative to the automobile and helps to create a more efficient, healthier, and safer community. Walking as a means of transportation as well as recreation can benefit Bessemer City's mobility, safety, health, economy, environment, and quality of life. The Pedestrian Plan Update identifies numerous benefits for residents, businesses, and visitors that can be realized immediately and for years to come. Five of the six benefits listed here stem from the five pillars found in WalkBikeNC, North Carolina's Bicycle and Pedestrian Plan. The sixth benefit, quality of life, is often incidental and happens naturally as efforts are made to enhance mobility, safety, health, economy, and environment.

### Health

Walking is a form of physical activity that can be accomplished by most citizens. Walking is a low-impact form of exercise that can reduce stress and diseases such as high blood pressure and obesity. Evidence exists that investment in bicycle and pedestrian infrastructure can reduce the amount spent on medical costs. A 2005 study completed by CDC researchers in Atlanta, Georgia found an average $2.94 medical savings return for every $1 spent on bicycle and pedestrian infrastructure.[1]

### Mobility

Mobility is the equitable availability of transportation options for everyone. By providing the appropriate facilities, communities allow people to choose how they want to travel. For those who do not have the option to drive, such as adolescents, the elderly, those unable to afford a vehicle, and people with certain disabilities, this lack of choice in transportation creates an inconvenient and socially unjust barrier to mobility. In 2017, the National Household Travel Survey showed that 40% of all trips, both commute and non-commute, taken by Americans are less than two miles, equivalent to a 30-minute walk. Walking can be an attractive travel mode for short trips that would otherwise be made by driving.

Key accessibility improvements also improve quality of life for residents with mobility challenges. Accessibility standards set by the Americans with Disability Act (ADA) are increasingly enforced. These standards require that city facilities provide gentle slopes, well defined landings, and wide smooth pathways. These are conveniences for able-bodied users, but essential elements for people with disabilities.

1 "A Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails," Health Promotion Practice, Volume 6, Issue 2, pp. 174 - 179, 2005

## Economy

Walking is an affordable mode of transportation. Automobile ownership is expensive and consumes a major portion of many family incomes. And, households that cannot afford to own and operate a vehicle must walk or bicycle as a necessity. When safe facilities are provided for pedestrians, people can walk more and spend less on transportation, meaning they have more money to spend on other things. Those who must walk by necessity feel safer and more comfortable when going about their daily activities.

## Safety

Safe travel conditions result from effective design, enforcement, and education. Safety is a major reported obstacle to walking in Bessemer City and steps can be taken to further improve safety. In 2020, the Governors Highway Safety Association released pedestrian fatality counts for the first half of 2020 (January-June). North Carolina had 121 pedestrian fatalities during this time, placing it in the top five states for pedestrian fatalities.[2] Officials at the state and federal levels are making efforts to improve pedestrian safety. The North Carolina Department of Transportation (NCDOT) is increasing awareness of pedestrian and bicycle safety with the Watch for Me NC program. Watch for Me NC aims to use education, community engagement, and high-visibility enforcement to reduce the occurrence of pedestrian and bicycle injuries and fatalities.

## Quality of Life

The walkability and bikeability of a community are indicators of its livability/quality of life. This factor has profound impact on attracting businesses and workers as well as tourism. In communities where people can regularly be seen out walking and biking, a sense exists that these areas are safe and friendly places to live and visit. By providing appropriate pedestrian and bicycle facilities, communities enable the interaction between neighbors and other citizens that can strengthen relationships and contribute to a healthy sense of identity and place.

## Environment

More people walking can result in lower levels of motor vehicle emissions, cleaner air, and stronger preservation of streams and open spaces. As Bessemer City implements the programs, policies, and infrastructure projects recommended by this plan, it is anticipated that a portion of trips that would have been made by automobile, releasing harmful emissions, will instead be made on foot or by bike.

[2] "Pedestrian Traffic Fatalities by State: 2020 Preliminary Data," Governors Highway Safety Association, 2020.

Bessemer City
Pedestrian Plan Update

# CHAPTER 2

# Existing Conditions

This chapter provides an inventory of current conditions as they relate to pedestrian mobility in Bessemer City. This content provided a preliminary step in the creation of a comprehensive pedestrian plan update that will provide Bessemer City with a blueprint for identifying and prioritizing future investments. The geographic information system (GIS) data within this document was provided by Gaston County, NCDOT, and GCLMPO unless otherwise stated. This chapter includes a subset of the existing conditions data collected and analyzed.

Study Area Overview

Demographic Summary

Existing Infrastructure

Previous Plan Review

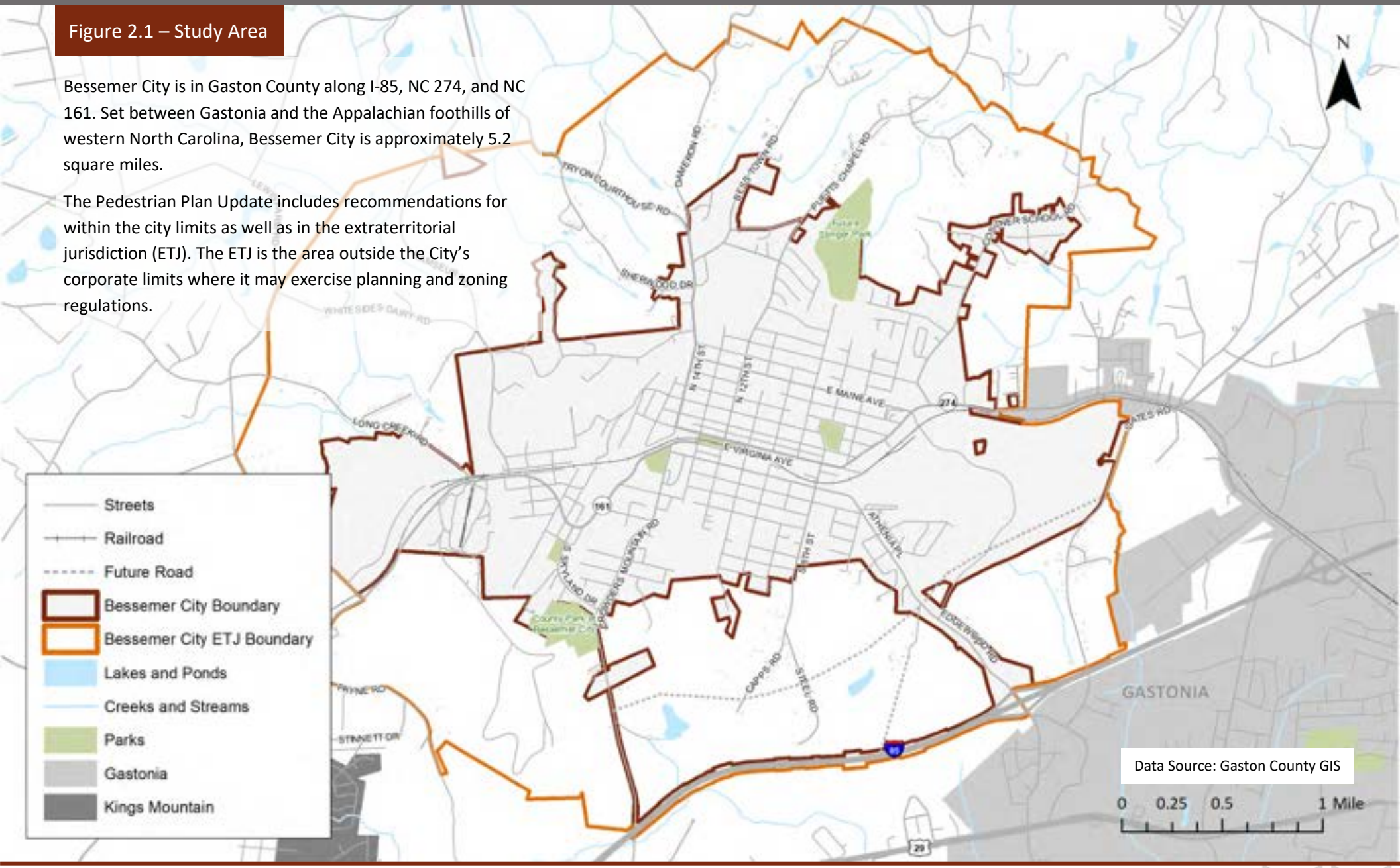
Corridor Inventory

Assets and Challenges

## Figure 2.1 – Study Area

Bessemer City is in Gaston County along I-85, NC 274, and NC 161. Set between Gastonia and the Appalachian foothills of western North Carolina, Bessemer City is approximately 5.2 square miles.

The Pedestrian Plan Update includes recommendations for within the city limits as well as in the extraterritorial jurisdiction (ETJ). The ETJ is the area outside the City's corporate limits where it may exercise planning and zoning regulations.



## Overview

The demographic makeup of the community is crucial when considering walking as a means of active transportation in Bessemer City. This section uses 2019 American Community Survey 5-year estimates from the US Census Bureau to summarize relevant data for the community. This data helps to better understand the needs of the community in Bessemer City, and was used in the project prioritization process to encourage equity and ensure adequate demand for facilities.

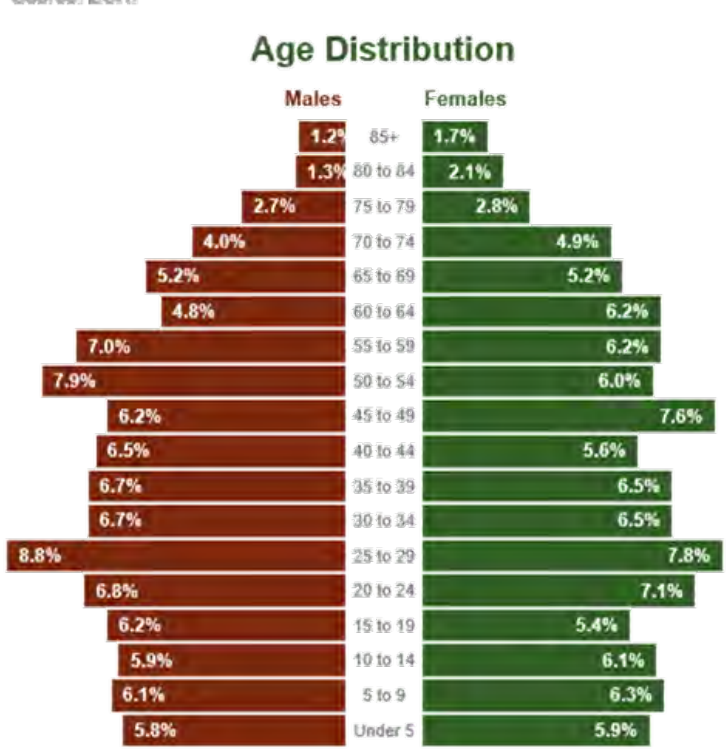
**Total Population**
*Source: ESRI*

5,375 (2010) → +4.0% → 5,591 (2020)

**Total Jobs**
*Source: LEHD*

1,142 (2010) → +78.5% → 2,039 (2018)

**Bessemer City Median Age: 38.2**
*Source: ESRI*




**Minority Population**
*Source: ESRI*

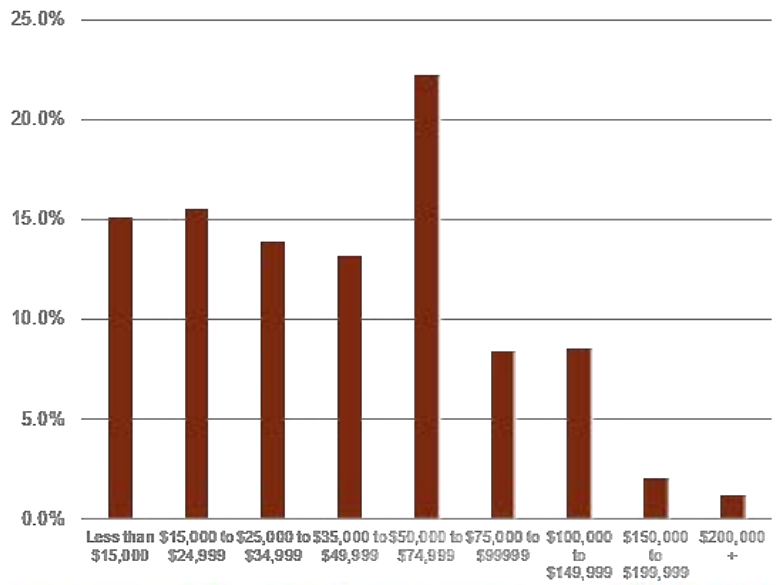
20.2% (2010) → +13.4% → 22.9% (2020)

## Top Industries (2018):

1. **Manufacturing:** 55.4%
2. **Administration & Support, Waste Management & Remediation:** 9.5%
3. **Educational Services:** 9.0%

*Source: LEHD*

## Household Income




| | |
|---|---|
| **Bessemer City Median Income:** | **$40,714** |
| *Gaston County:* | *$52,835* |
| *North Carolina:* | *$54,602* |

*Source: US Census, 2019*

## Commuting to Work:

*Source: ESRI*

**Walk** 0.4%

**Bike** 0.0%

**Carpool** 8.7%

**Drive Alone** 90.1%

Commuting **INTO** Bessemer City

1,928

**111** **Live** and **Work** in Bessemer City

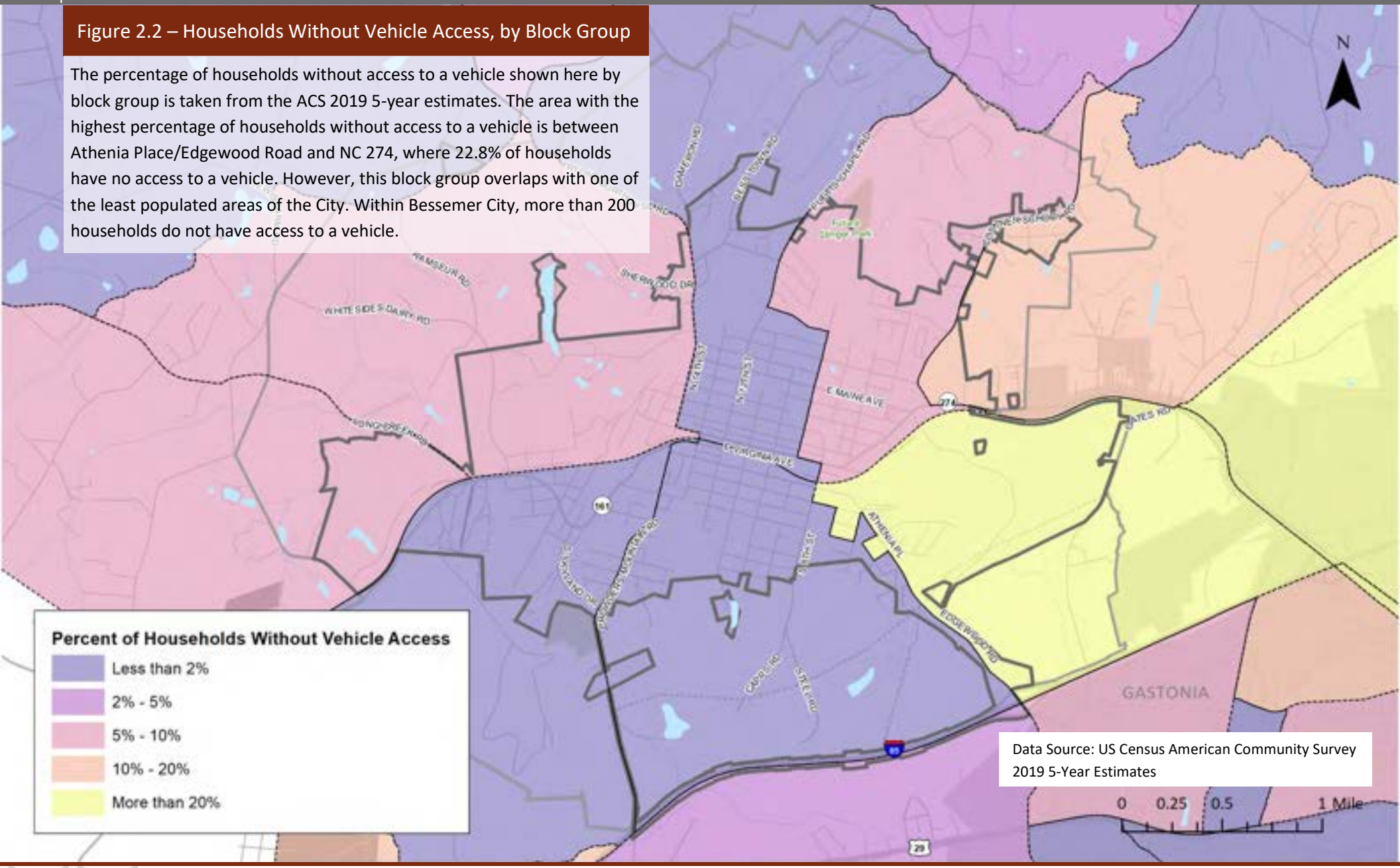
Commuting **OUT FROM** Bessemer City

2,531

*Source: LEHD*

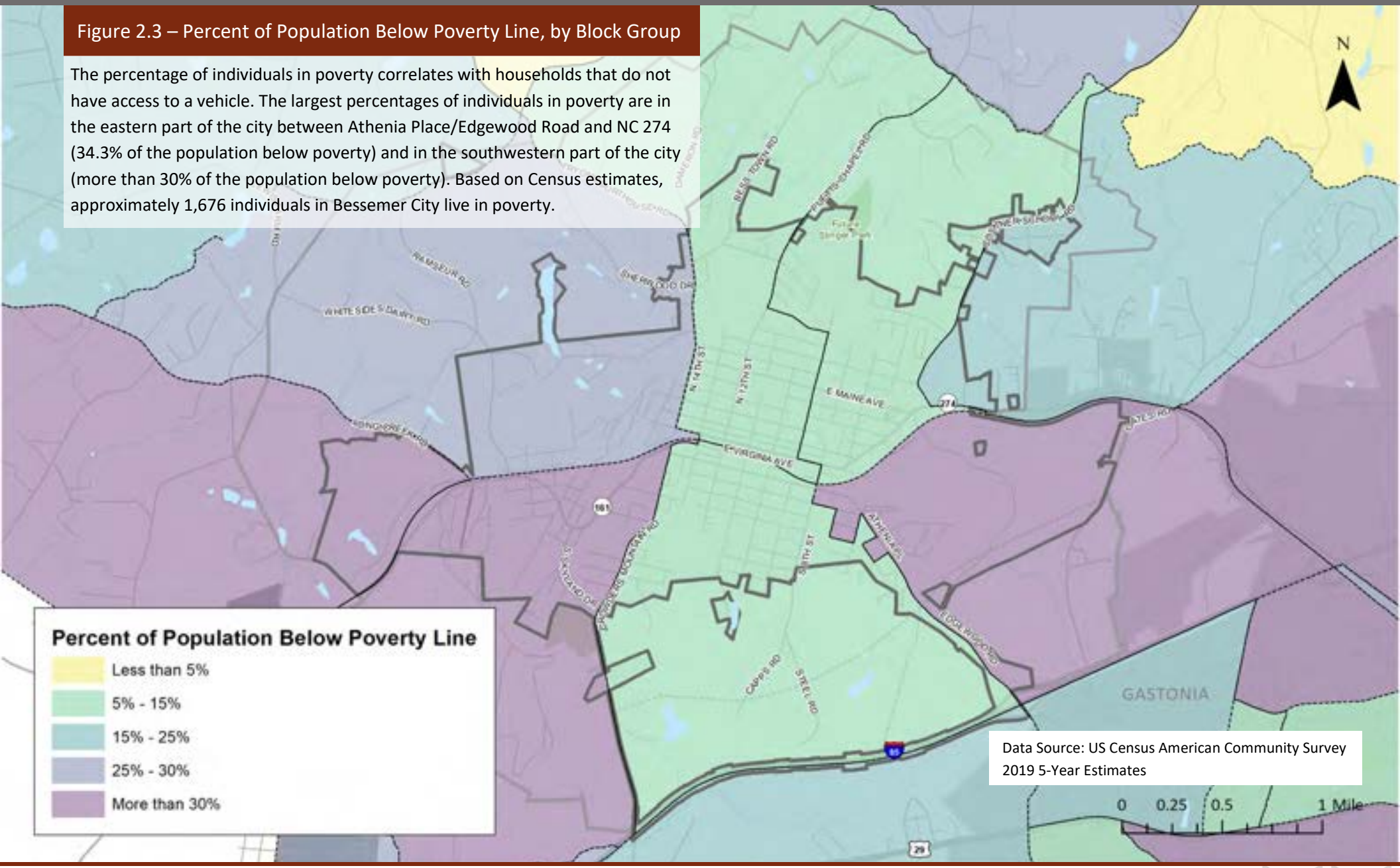
## Figure 2.2 – Households Without Vehicle Access, by Block Group

The percentage of households without access to a vehicle shown here by block group is taken from the ACS 2019 5-year estimates. The area with the highest percentage of households without access to a vehicle is between Athenia Place/Edgewood Road and NC 274, where 22.8% of households have no access to a vehicle. However, this block group overlaps with one of the least populated areas of the City. Within Bessemer City, more than 200 households do not have access to a vehicle.



## Figure 2.3 – Percent of Population Below Poverty Line, by Block Group

The percentage of individuals in poverty correlates with households that do not have access to a vehicle. The largest percentages of individuals in poverty are in the eastern part of the city between Athenia Place/Edgewood Road and NC 274 (34.3% of the population below poverty) and in the southwestern part of the city (more than 30% of the population below poverty). Based on Census estimates, approximately 1,676 individuals in Bessemer City live in poverty.



## Figure 2.4 – Percent Minority Population, by Block Group

The percent minority population in Bessemer City is 22.9% (15.4% Black or African American; 0.8% Asian; 0.4% Native American; 3.8% some other race; and 2.4% two or more races). Figure 2.4 maps the distribution of racial minorities in Bessemer City. It includes only the racial minorities in Bessemer City and does not include ethnic minorities such as the Hispanic population due to data availability from ACS. While not shown in this figure, approximately 6.7% of the population in Bessemer City identifies as Hispanic.

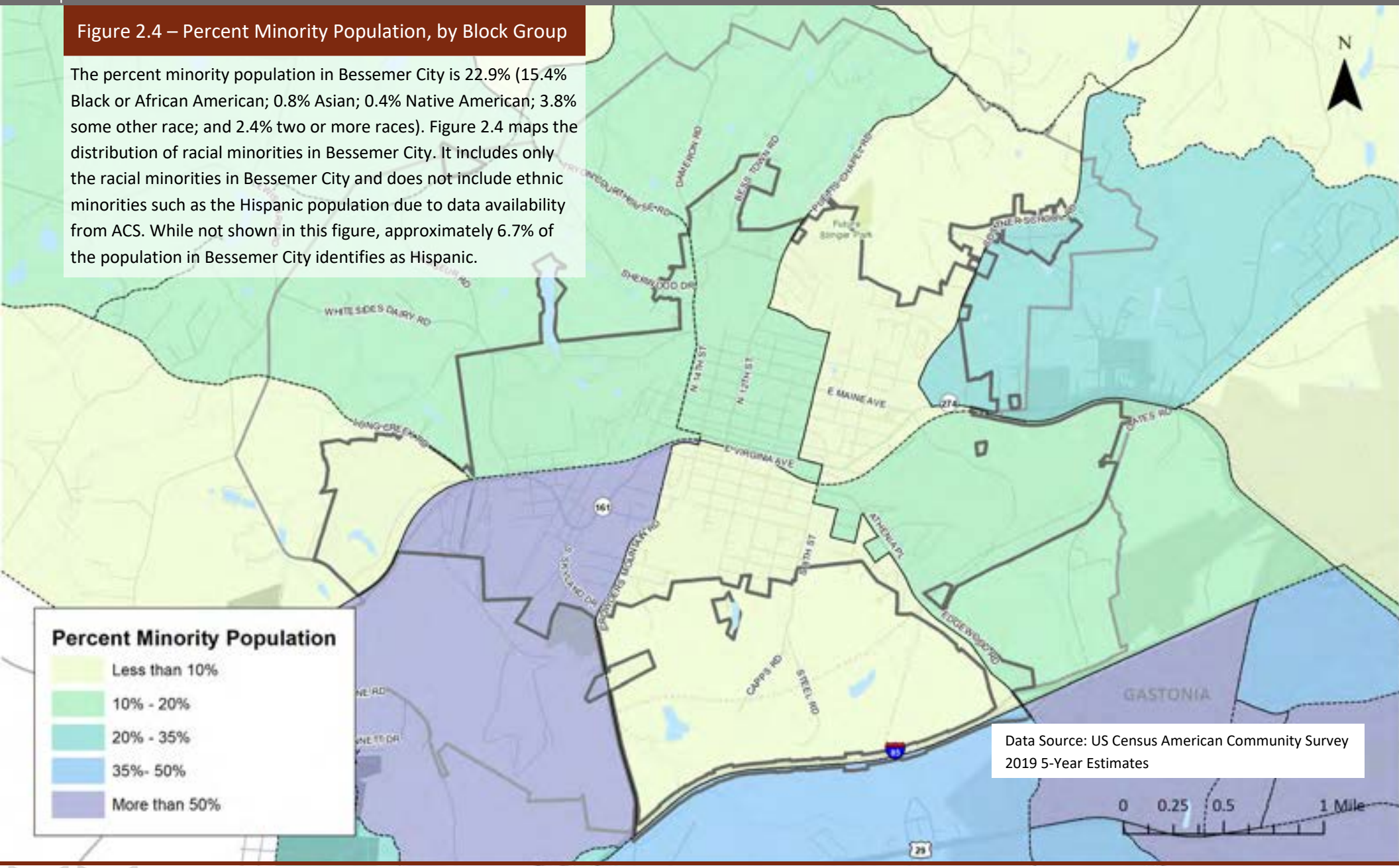
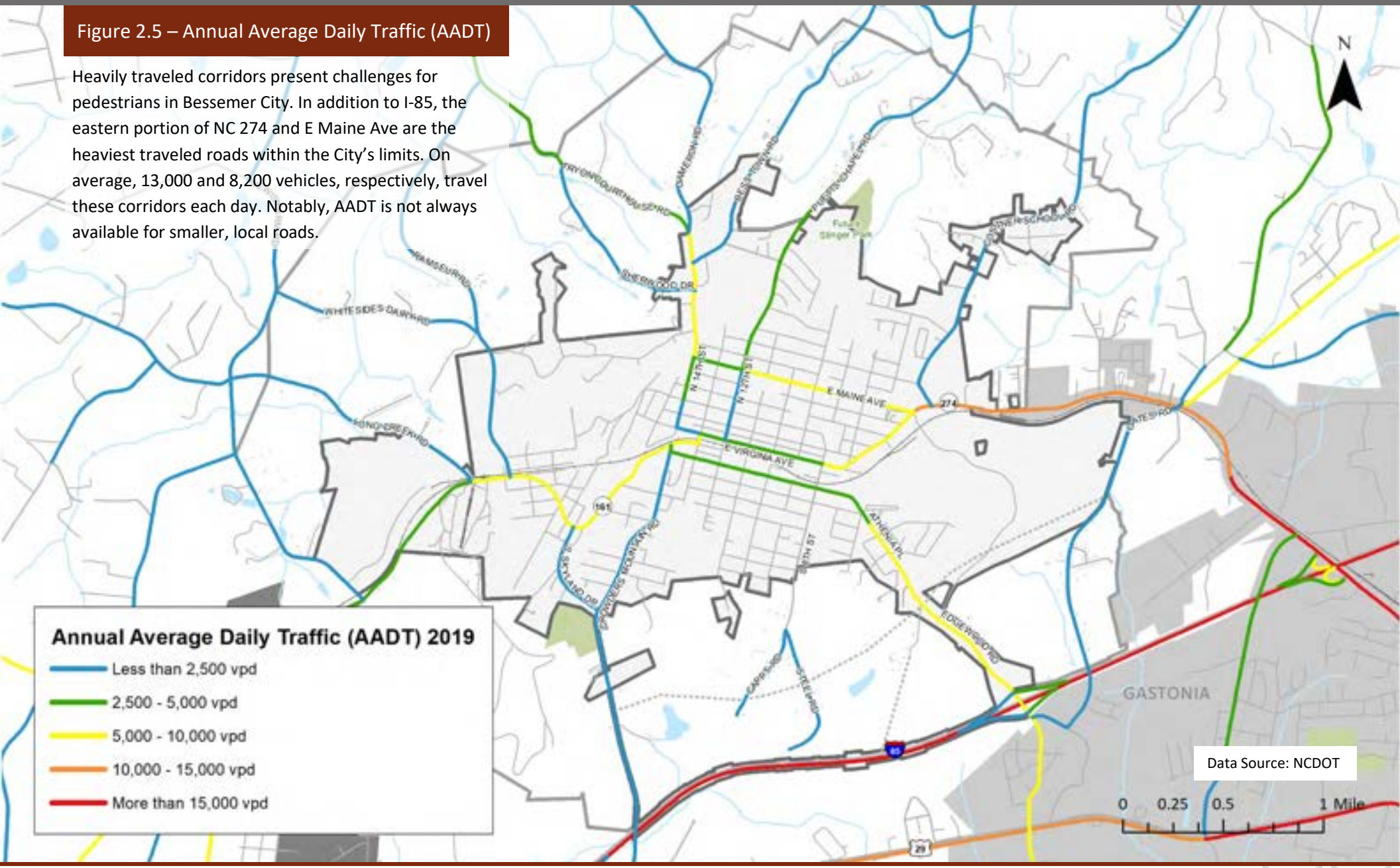


Figure 2.5 – Annual Average Daily Traffic (AADT)

Heavily traveled corridors present challenges for pedestrians in Bessemer City. In addition to I-85, the eastern portion of NC 274 and E Maine Ave are the heaviest traveled roads within the City's limits. On average, 13,000 and 8,200 vehicles, respectively, travel these corridors each day. Notably, AADT is not always available for smaller, local roads.



## Figure 2.6 – Roadway Designation

When considering improvements to the pedestrian system, it will be important to consider and coordinate with the entity responsible for the maintenance of and investment in each facility. Nearly all Bessemer City maintained roads are considered local streets according to the NCDOT functional class system, while the City's state-maintained roads are typically of higher functional class. The appropriateness of pedestrian facilities may depend on both functional class and responsible entity.

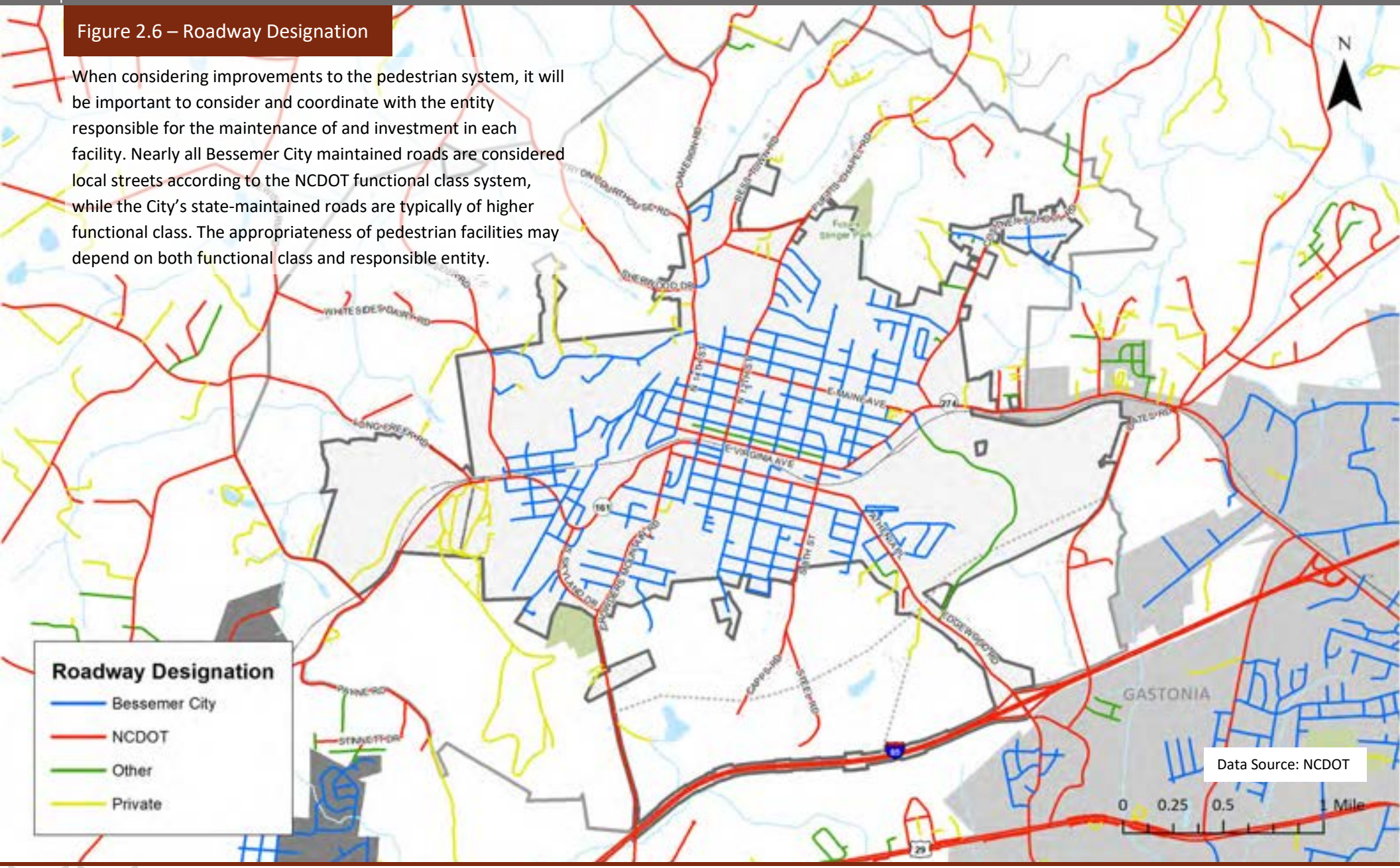
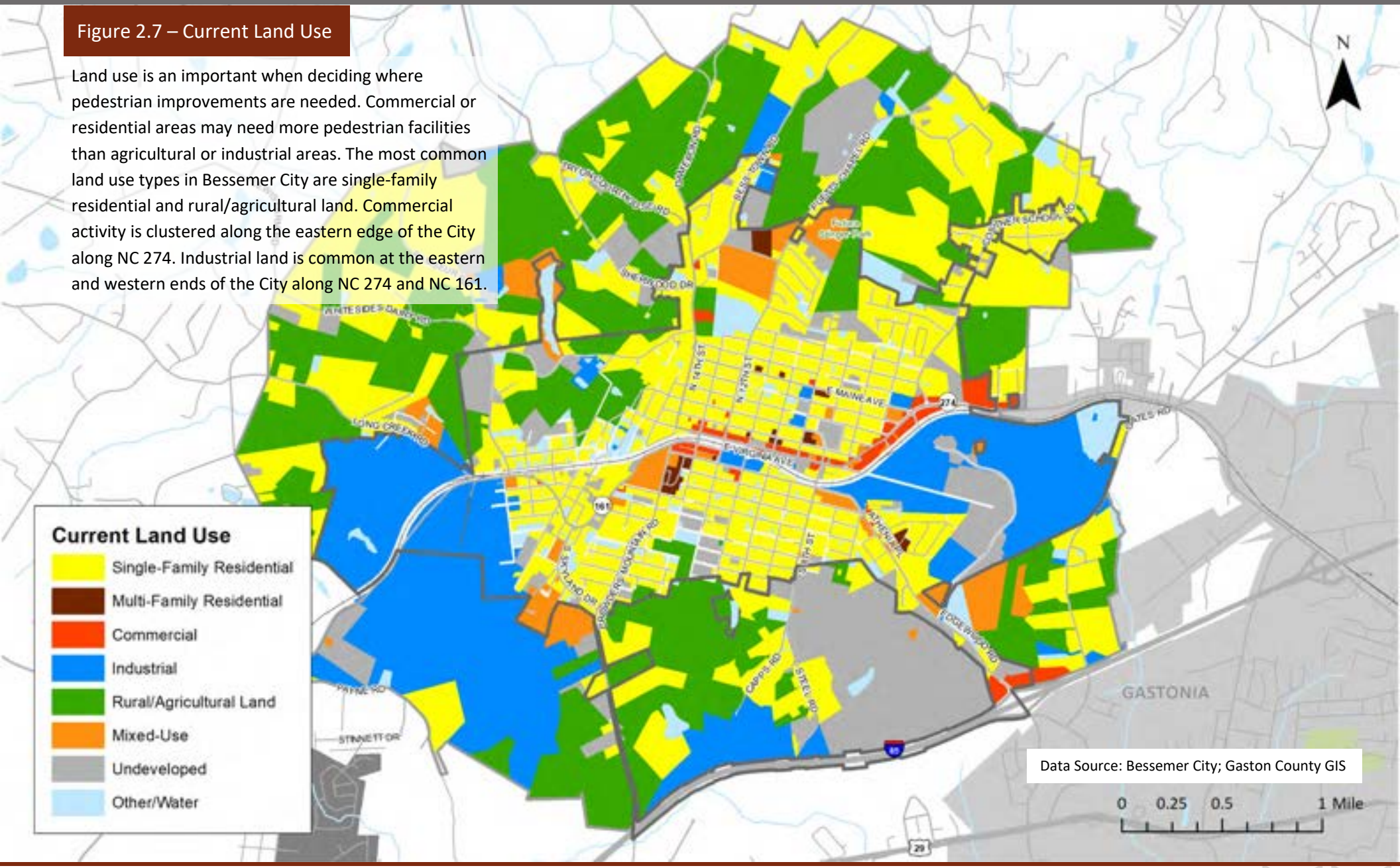


Figure 2.7 – Current Land Use

Land use is an important when deciding where pedestrian improvements are needed. Commercial or residential areas may need more pedestrian facilities than agricultural or industrial areas. The most common land use types in Bessemer City are single-family residential and rural/agricultural land. Commercial activity is clustered along the eastern edge of the City along NC 274. Industrial land is common at the eastern and western ends of the City along NC 274 and NC 161.



## Figure 2.8 – Other Physical Considerations

Natural and manmade features need to be referenced during the Pedestrian Plan Update. FEMA 100- and 500-year floodplains for the creeks in Bessemer City should be considered as they may present development challenges. Rail crossings are limited, and the tracks can be a barrier to pedestrian connectivity in the city. The City's topography, such as the large hill west of Downtown, also poses a challenge to pedestrian accessibility. Existing utility easements shown here may present right-of-way opportunities for future trail connections. The City is currently (as of March 2021) compiling a comprehensive inventory of utility easements.

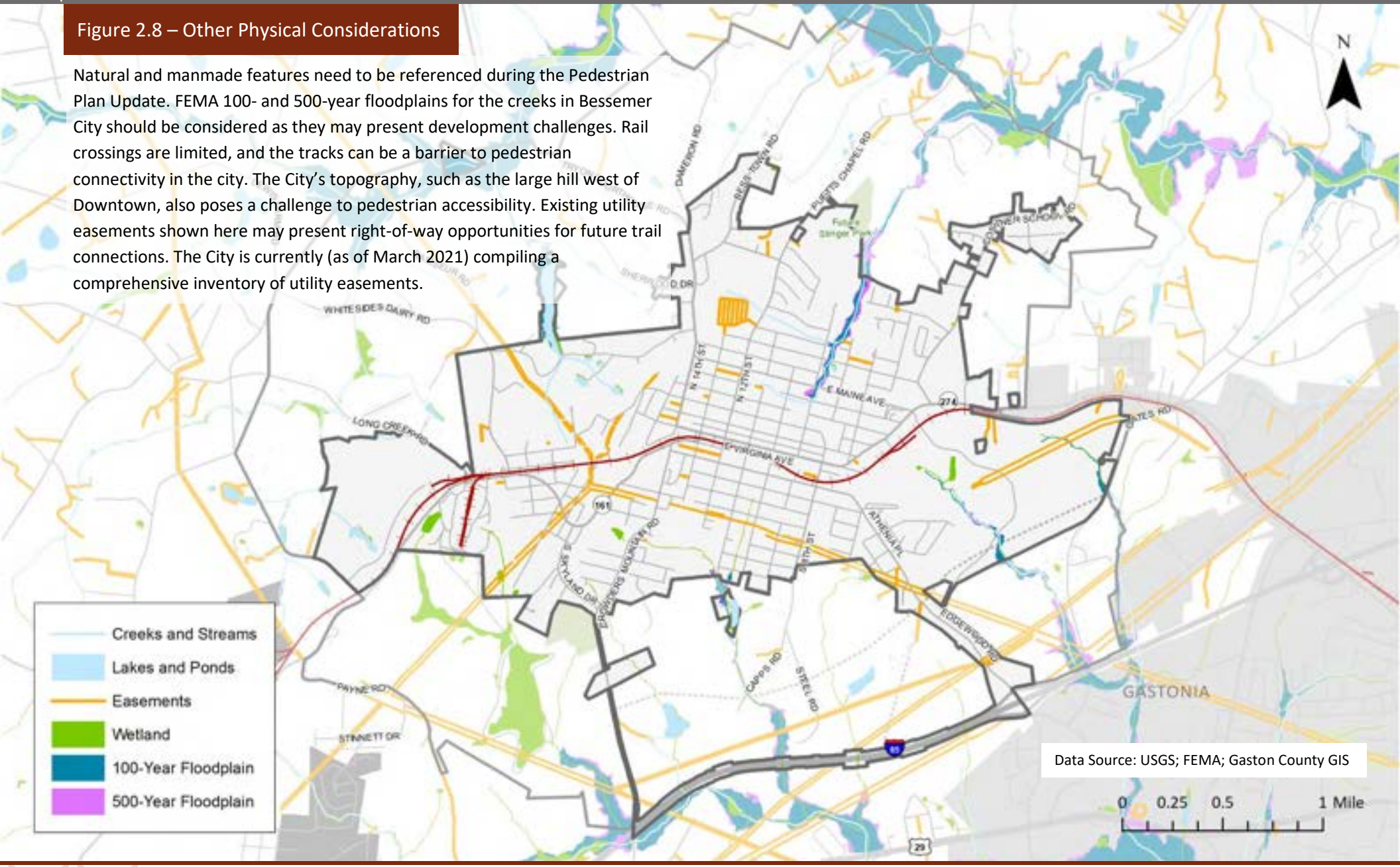
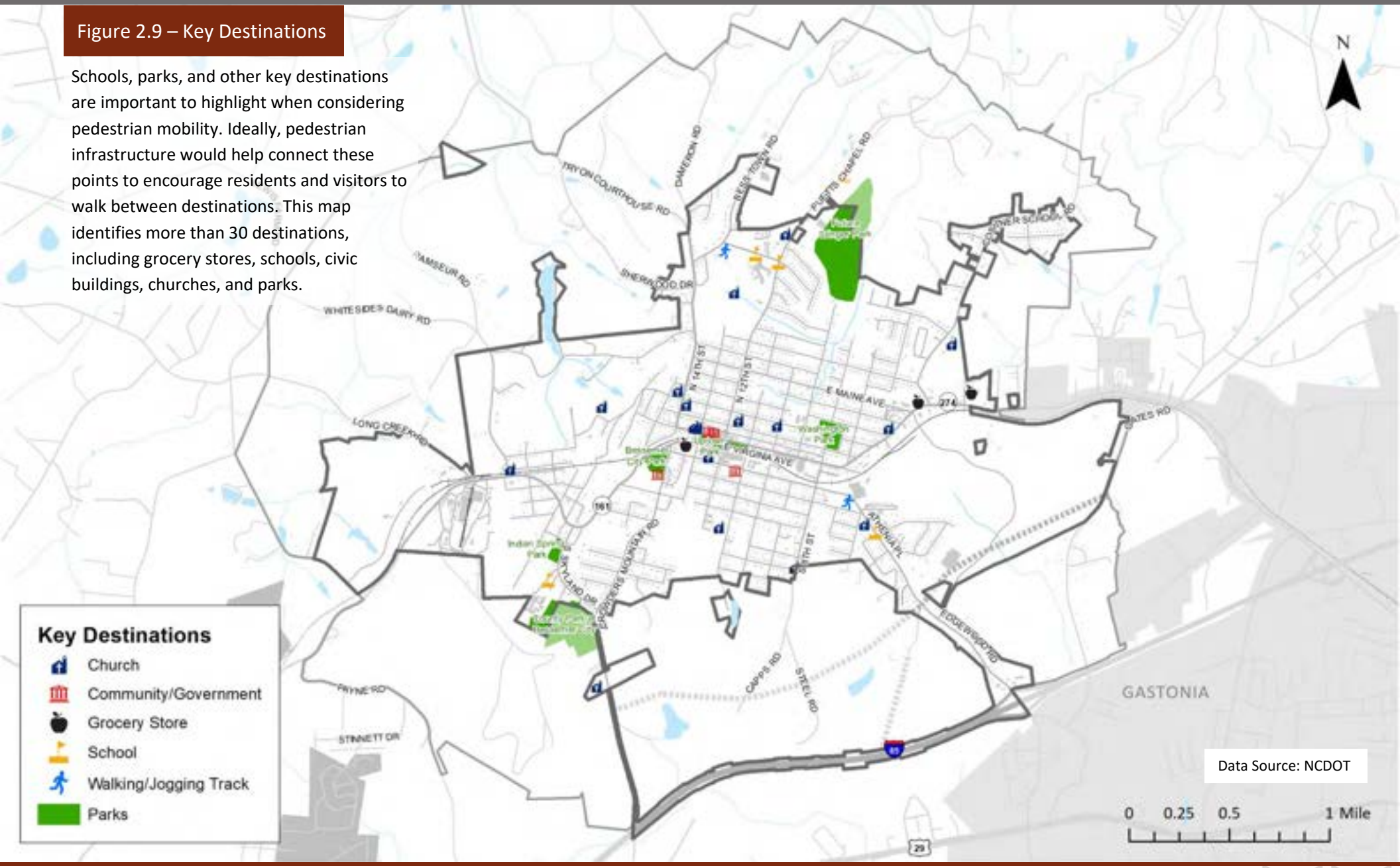


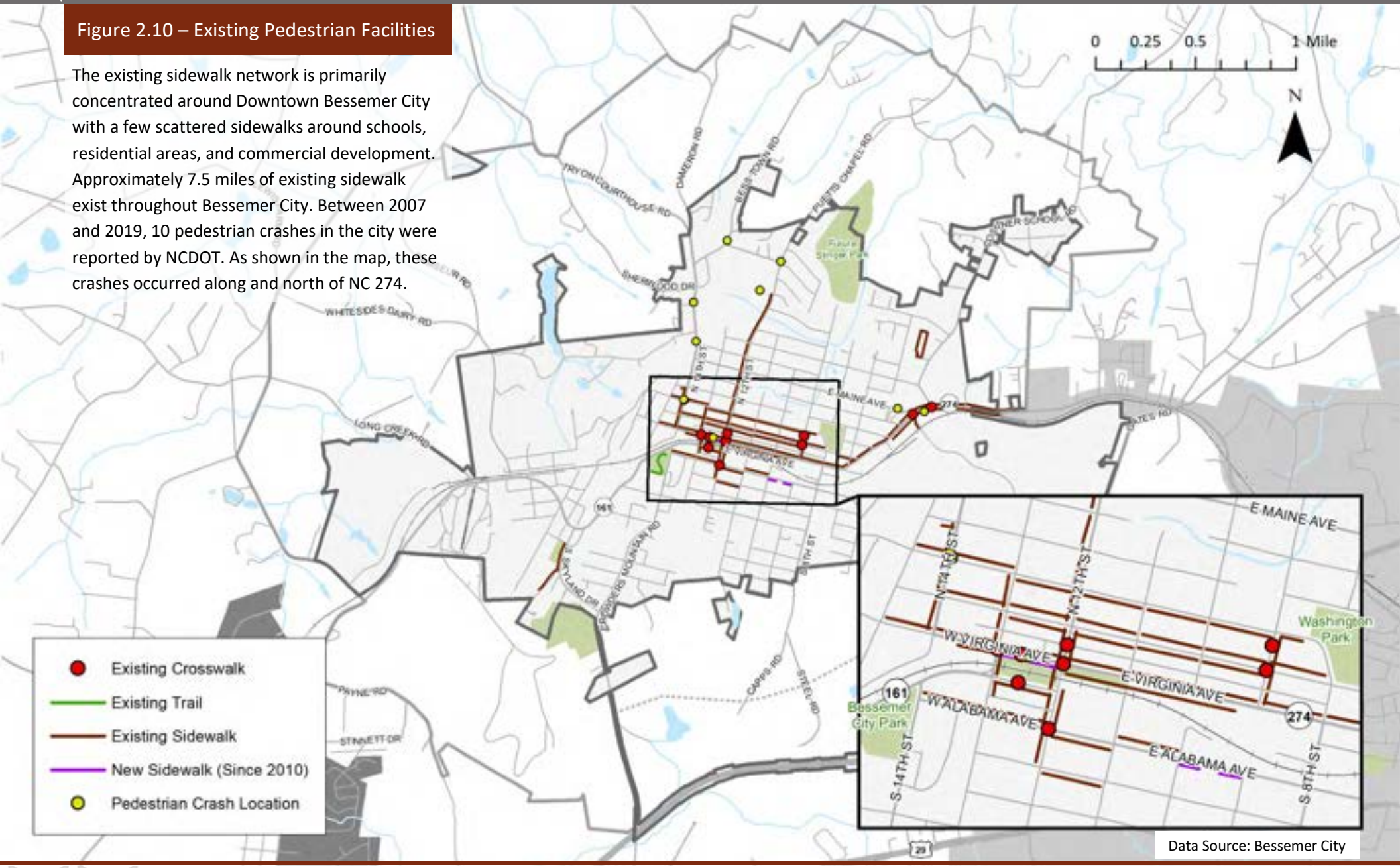
Figure 2.9 – Key Destinations

Schools, parks, and other key destinations are important to highlight when considering pedestrian mobility. Ideally, pedestrian infrastructure would help connect these points to encourage residents and visitors to walk between destinations. This map identifies more than 30 destinations, including grocery stores, schools, civic buildings, churches, and parks.



## Figure 2.10 – Existing Pedestrian Facilities

The existing sidewalk network is primarily concentrated around Downtown Bessemer City with a few scattered sidewalks around schools, residential areas, and commercial development. Approximately 7.5 miles of existing sidewalk exist throughout Bessemer City. Between 2007 and 2019, 10 pedestrian crashes in the city were reported by NCDOT. As shown in the map, these crashes occurred along and north of NC 274.




Data Source: Bessemer City

## Assets and Challenges

A key part of the planning process involved identifying areas of opportunity and challenges to walking in Bessemer City. These Assets and Challenges were determined based on fieldwork analysis, guidance from the City, and input from the Steering Committee. Later, further feedback from the Steering Committee and the first public survey confirmed the understanding of Assets and Challenges.

### *Assets*

Bessemer City has numerous assets that can contribute to the growth of the City's pedestrian network. These assets include characteristics of the community as well as attractive local destinations where residents and visitors gather.

- Bessemer City's street grid pattern supports walkability.
- Downtown businesses cater to pedestrians.
- Existing sidewalks and crosswalks connect many areas of the city, especially near Downtown.

### *Challenges*

Understanding the pedestrian constraints in Bessemer City will help identify improvements that enhance safety and access for pedestrians of all ages and abilities.

- Outside of Downtown, existing sidewalks and crosswalks are sparse, as are ADA curb ramps.
- The railroad poses a major barrier to pedestrian connectivity in the city due to limited crossings and frequent trains (~3 to 5 per day).
- Resources are constrained.

## Corridor Inventory

A review of the design characteristics for key streets in Bessemer City show a range of contexts and features that affect the comfort level for pedestrians. These same charactersitics have a bearing on how feasible or costly it will be to construct new sidewalks where gaps exists. Table 2.1 summarizes notable characteristics for seven key corridors in

Table 2.1 – Corridor Inventory

| Corridor | Roadway Width | Typical Cross Section | Speed Limit | AADT (vehicles per day) | Curb & Gutter | Sidewalk | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | **Coverage** | **Condition** | **Widths** |
| Alabama Ave / Athenia Pl / Edgewood Rd | 24 ft | 2-lane undivided | 35 mph | 2,700 to 8,100 | <25% | Limited | Fair | 4 to 5 ft |
| NC 161 | 24 ft | 2-lane undivided | 35 mph | 4,400 to 5,800 | 0% | None | N/A | N/A |
| Virginia Ave / NC 274 | 24 to 75 ft | 2-lane to 6-lane | 35 mph | 4,500 to 13,000 | 25-50% | Complete | Good | 3.5 to 7 ft |
| Maine Ave | 24 ft | 2-lane undivided | 35 mph | 4,800 to 8,200 | 0% | None | N/A | N/A |
| Washington Ave | 30 ft | 2-lane unmarked | 35 mph | Data not available | 25-50% | Complete | Fair | 3.5 to 4 ft |
| 12th St | 24 to 33 ft | 2-lane undivided | 35 mph | 1,900 to 4,600 | <25% | Complete | Fair | 3.5 to 6 ft |
| 14th St | 24 to 30 ft | 2-lane undivided | 35 mph | 2,000 to 6,100 | <25% | Limited | Poor | 3 to 4 ft |

Bessemer City. The Corridor Inventory table provides an at-a-glance overview of select roadway characteristics and pedestrian facilities.

## *Alabama Avenue/Athenia Place/Edgewood Road*

This 2.1-mile section is a key corridor in Bessemer City, connecting the southern side of Downtown directly to I-85. Five blocks of sidewalks exist along Alabama Avenue; however, many are disconnected or in poor condition. Few sidewalks exist in Bessemer City south of the railroad tracks, limiting pedestrian connectivity.

**Assessment**

The following characteristics have been observed and present a challenge to walking along the corridor.

| | | | | |
|---|---|---|---|---|
| **Lack of Sidewalks or Connectivity** | **Poor Crossings** | **Narrow/Worn Sidewalks** | Low Visibility | **High Traffic Road** |

## *NC 161*

NC 161 connects Bessemer City to Kings Mountain. Approximately two miles of NC 161 is within the study area and carries 4,400 - 5,800 vehicles per day. The road provides access to Downtown, Bessemer City Park, Bessemer City Middle School, and other destinations on the west side of town. No sidewalks or shoulders exist along NC 161.

**Assessment**

The following characteristics have been observed and present a challenge to walking along the corridor.

| | | | | |
|---|---|---|---|---|
| **Lack of Sidewalks or Connectivity** | **Poor Crossings** | Narrow/Worn Sidewalks | **Low Visibility** | **High Traffic Road** |

## *Virginia Avenue/NC 274*

This corridor runs from the heart of Bessemer City to I-85. Businesses along the corridor include small shops Downtown to large retailers to industrial/warehouse sites. Continuous sidewalks mostly exist along the entire corridor, including new sidewalks constructed since 2010. However, sidewalk gaps and a lack of safe crossings exist.

**Assessment**

The following characteristics have been observed and present a challenge to walking along the corridor.

| | | | | |
|---|---|---|---|---|
| **Lack of Sidewalks or Connectivity** | **Poor Crossings** | Narrow/Worn Sidewalks | Low Visibility | **High Traffic Road** |

## *Maine Ave*

Maine Avenue runs from N 14th Street to NC 274. The corridor lacks pedestrian facilities, but the mixed-use development allowed in the 2018 Zoning Map could make these more important in the future. Maine Avenue also lacks paved shoulders, making it especially dangerous for pedestrians.

**Assessment**

The following characteristics have been observed and present a challenge to walking along the corridor.

| | | | | |
|---|---|---|---|---|
| **Lack of Sidewalks or Connectivity** | **Poor Crossings** | Narrow/Worn Sidewalks | Low Visibility | **High Traffic Road** |

## *Washington Avenue*

Washington Avenue is a great option for pedestrians due to its lower traffic volume and good sidewalk connectivity. The 1-mile corridor passes through a mostly residential area with a few churches and other destinations, including Kevin Millwood Park. The road closely parallels the commercial activity along Virginia Avenue. Sidewalks are mostly quite narrow and sometimes worn. Crossings are limited.

**Assessment**

The following characteristics have been observed and present a challenge to walking along the corridor.

| | | | | |
|---|---|---|---|---|
| Lack of Sidewalks or Connectivity | **Poor Crossings** | **Narrow/Worn Sidewalks** | Low Visibility | High Traffic Road |

## *12th Street*

12th Street is one of Bessemer City's main north-south routes, connecting Downtown to Bessemer City High School, Bessemer City Central Elementary, and to residential areas south of Downtown. Existing facilities are present along the west side of 12th Street from Georgia Avenue to the entrance to the BCHS parking lot. The railroad tracks pose an additional barrier to pedestrians in this corridor.

**Assessment**

The following characteristics have been observed and present a challenge to walking along the corridor.

| | | | | |
|---|---|---|---|---|
| **Lack of Sidewalks or Connectivity** | **Poor Crossings** | **Narrow/Worn Sidewalks** | Low Visibility | High Traffic Road |

## 14th Street

14th Street is another important north-south connector in Bessemer City. It connects mostly residential areas and a few churches along a one-mile corridor between Downtown and the City's northern boundary. The only sidewalks present in this corridor are near Downtown on the west side of the street from Virginia Avenue to Ohio Avenue. A notable concentration of pedestrian crashes has been reported along this corridor.

**Assessment**

The following characteristics have been observed and present a challenge to walking along the corridor.

| Lack of Sidewalks or Connectivity | Poor Crossings | Narrow/Worn Sidewalks | Low Visibility | High Traffic Road |
|---|---|---|---|---|

# Previous Plan Review

## *Bessemer City Pedestrian Plan (2010)*

Bessemer City developed its original Pedestrian Plan in 2010 to articulate the City's vision of being a more pedestrian-friendly city. Plan development included a physical survey, mapping and analysis of existing facilities, community engagement including stakeholder interviews and a public meeting, and finally a report with prioritized project recommendations. The Plan also recommends revisions to City ordinances and supporting policies.

### Goals

- Walkability/connectivity
- Vitality
- Aesthetics/identity
- Make Bessemer City a regional destination for visitors and businesses

### Key Recommendations

- Proposed and estimated costs for 27 new sidewalk projects (including Alabama Ave/Athenia Pl/Edgewood Rd, Maine Ave, NC 161, and Southridge Pkwy), 26 trail projects, and 42 crosswalks
- Recommended programs such as community walking events, a sidewalk/trail program, and crossing guards

## *Small Area Plan for Downtown (2009)*

Bessemer City's Small Area Plan for Downtown aims to provide a plan to revitalize the City's enviable downtown core. The SAP makes recommendations to help build on Bessemer City's strong urban "bones" (including its intact street grid system, a variety of authentic local businesses, and a distinct historic small-town Downtown) to make it a more attractive place for residents, businesses, and visitors.

### Key Recommendations

- Expand Downtown boundaries
- Extend streetscaping and establish new trails/bike paths/sidewalks
- Improve and program open space
- Improve landscape maintenance
- Establish a continuous sidewalk connection across the railroad tracks along 12th Street, including significant landscaping and lighting
- Establish a Historic District

## *Edgewood Road Gateway Plan (2009)*

The corridor of Edgewood Road / Athenia Place / Alabama Avenue (referred to as Edgewood Road Gateway) has the potential to be a catalyst for economic development in Bessemer City. The goal of the Plan was to help guide the development of the corridor to support this goal. The document makes recommendations surrounding four initiatives to shape this corridor.

### Key Recommendations

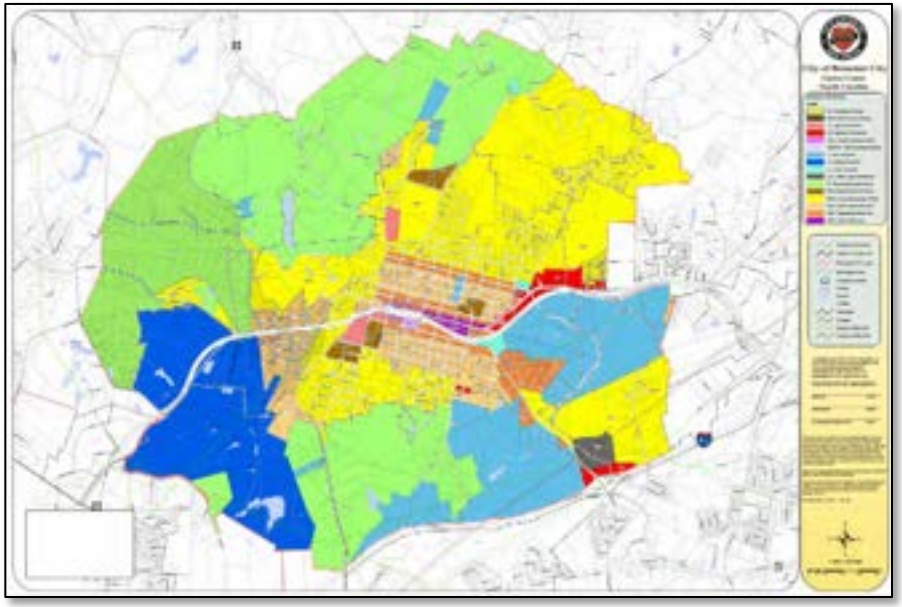
- Limit and separate paving, driveways and parking areas; require planting strips to separate pedestrians from streets and parking lots
- Mark business/industrial growth area (Southridge Business Park); make it more pedestrian and bicycle friendly
  - Add a crosswalk once Southridge Parkway is extended, develop guidelines requiring sidewalks and bike lanes
- Improve intersection of Edgewood Road and 12th Street to include sidewalks, crosswalks and wayfinding
- Link and locate community assets with sign at 8th St and Edgewood Road
  - Establish wayfinding to City destinations
  - Sign should be accessible via sidewalks
  - Stamped and painted asphalt crosswalks near sign

## *Unified Development Ordinance and Zoning Map (2018)*

Bessemer City's Unified Development Ordinance (UDO) was last updated in 2018. This document outlines the zoning code for the City and its ETJ. Land is classified according to 16 districts with different development rules and intended land uses. The UDO is currently (as of March 2021) being updated.

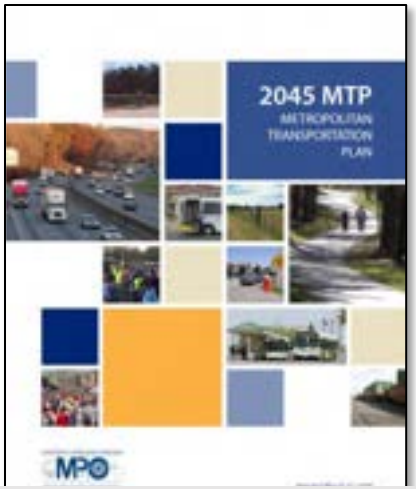
### Key Recommendations

- Sidewalks and greenstrips (discussed in section 9.18) are mandated in subdivisions and urban standards overlay (USO) districts.
- Sidewalks must be a minimum of 5 feet wide (arterials) or 4 feet (other streets).
- The Central Business District (CBD), Urban Mixed Use (UMU) and Traditional Downtown Overlay (TD) districts specifically mention pedestrian orientation.



## *GCLMPO Metropolitan Transportation Plan (2018)*

GCLMPO released their updated MTP in 2018 with recommendations for a more multimodal transportation system. Chapter 12 analyzes active transportation conditions and plans in the region and specifies approved pedestrian projects along 2025, 2035, and 2045 funding horizons.




### Goals

- Provide a transportation system that affords the public with mobility choices including walking, bicycling, aviation, freight, and transit options.
- Increase the design sensitivity of pedestrian and bikeway system for both recreation and transportation purposes.
- Increase pedestrian and bicycle safety through public awareness programs.

### Key Recommendations

- 2025 Horizon: Funded sidewalk on NC 161 from S 14th St to W Boston Ave
- 2045 Horizon: Funded sidewalk on Virginia Ave (south side, 12th St to 8th St)

## *GCLMPO Comprehensive Transportation Plan (2020)*

GCLMPO's CTP is a long-range planning document aimed to assist local governments in making transportation decisions over the next 30 years. The CTP Pedestrian Map recommends safe, efficient, and cost-effective pedestrian improvements, based on current and future travel needs.

### Key Recommendations

- Sidewalks, improved sidewalks, and multi-use paths are recommended in many locations, including:
  - Alabama Ave / Athenia Pl / Edgewood Rd (sidewalk and multi-use path)
  - Southridge Pkwy (sidewalk and multi-use path)
  - Maine Ave
  - NC 161
  - 8th St / Capps Rd
  - S 14th St / Crowders Mountain Rd
- Multi-use paths are recommended in many locations

## *Carolina Thread Trail Master Plan Gaston County (2009)*

The CTT Master Plan for Gaston County coordinates trail development within the municipalities and unincorporated areas of Gaston County to preserve and enhance quality of life. It integrates existing and proposed municipal and county trails with new trail segments to create a comprehensive network that connects people, places, and destinations.

### Key Recommendations

- Secondary priority segment proposed from US 29/74 north to Bessemer City
- Establish a Trail Advisory Committee to promote greenway development and advise the governing group on related issues
- Identify and maximize local trail opportunities through the development plan review process, open space acquisition, and floodplain regulations
- Review current and future utility corridors/easements for local greenway opportunities
- Establish criteria for trail priorities (i.e., cost, length of trail, location, etc.)
- Coordinate with local law enforcement and emergency services on trail design and safety

## ENGAGEMENT SNAPSHOT

### *Online Survey #1 – Foundation Building*

An online survey was distributed widely throughout the City via staff, the Steering Committee, and community partners. More than 125 participants provided nearly 2,000 data points between February 9 and March 14, 2021. This tool gauged participants' attitudes about walking in Bessemer City and asked them to prioritize general strategies for improving pedestrian conditions. A mapping activity allowed participants to identify specific destinations, safety concerns or project ideas in the City.

Participants:

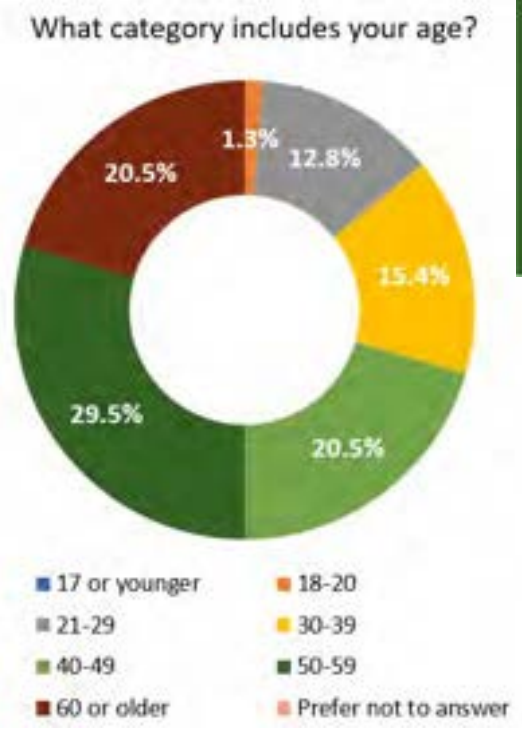
126

Data Points:

1,724

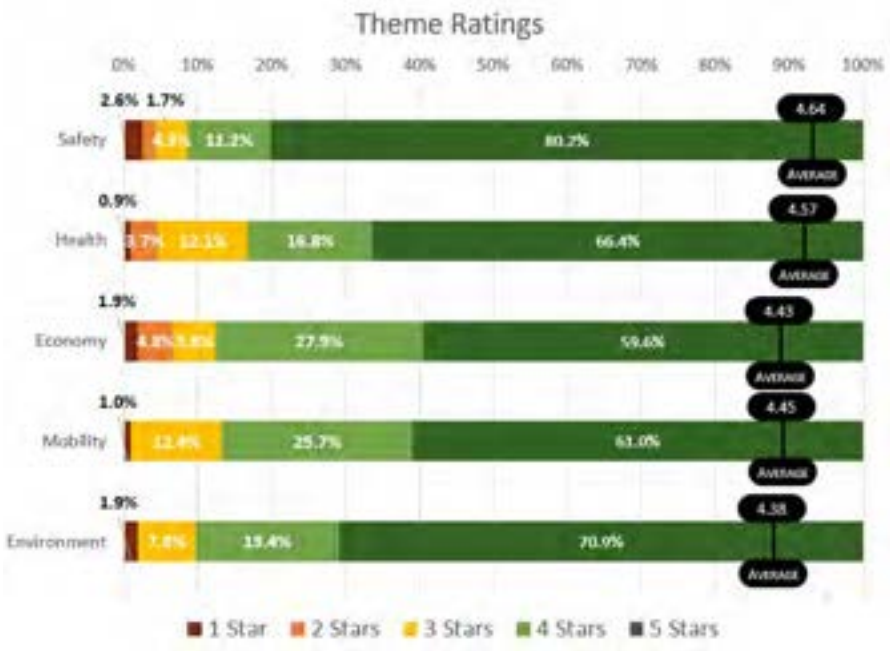
Comments:

120



## Themes

The survey introduced the five priorities expressed in the WalkBikeNC statewide bicycle and pedestrian plan and asked participants to rate the themes on a scale of 1 to 5. The results confirm the importance of each theme with extra weight given to Safety and Health.



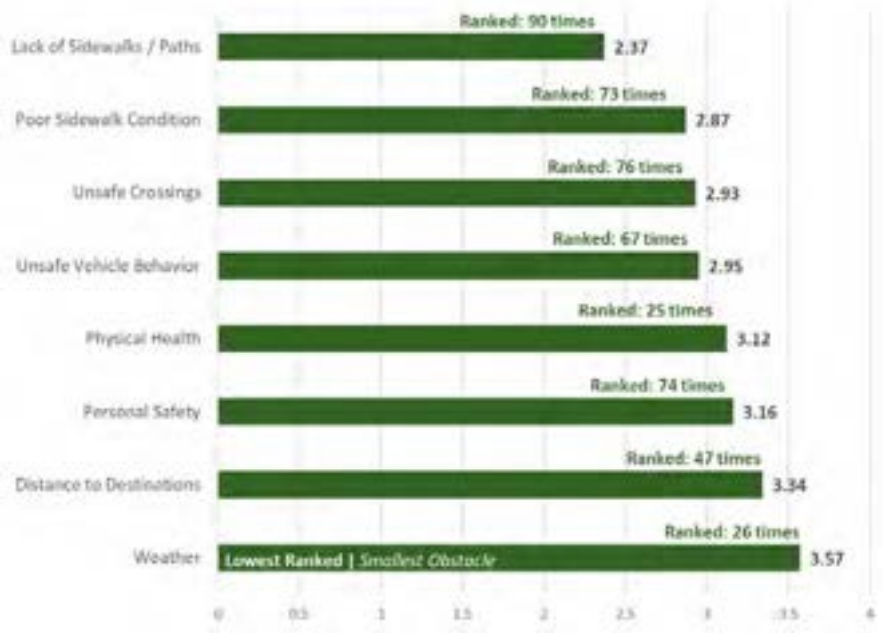

**Comments Received**

**Mobility:** "Please make it accessible for handicap with wheelchair ramps to get on the sidewalks and benches every half mile or closer together."

**Environment:** "We will also need a plan to keep the parks/playgrounds/walking tracks/natural areas in good repair and safe."

## Obstacles

Participants ranked the top five biggest obstacles they face when trying to walk in Bessemer City. The results pointed to a need for more sidewalks and paths as well as maintenance of existing facilities. Safety continued to be noted as an area of concern.




**Comments Received**

**Unsafe Crossings:** "People drive too fast and aren't considerate of people having to cross the road."

**Personal Safety:** "Our existing and any new sidewalks need to be very well lit."

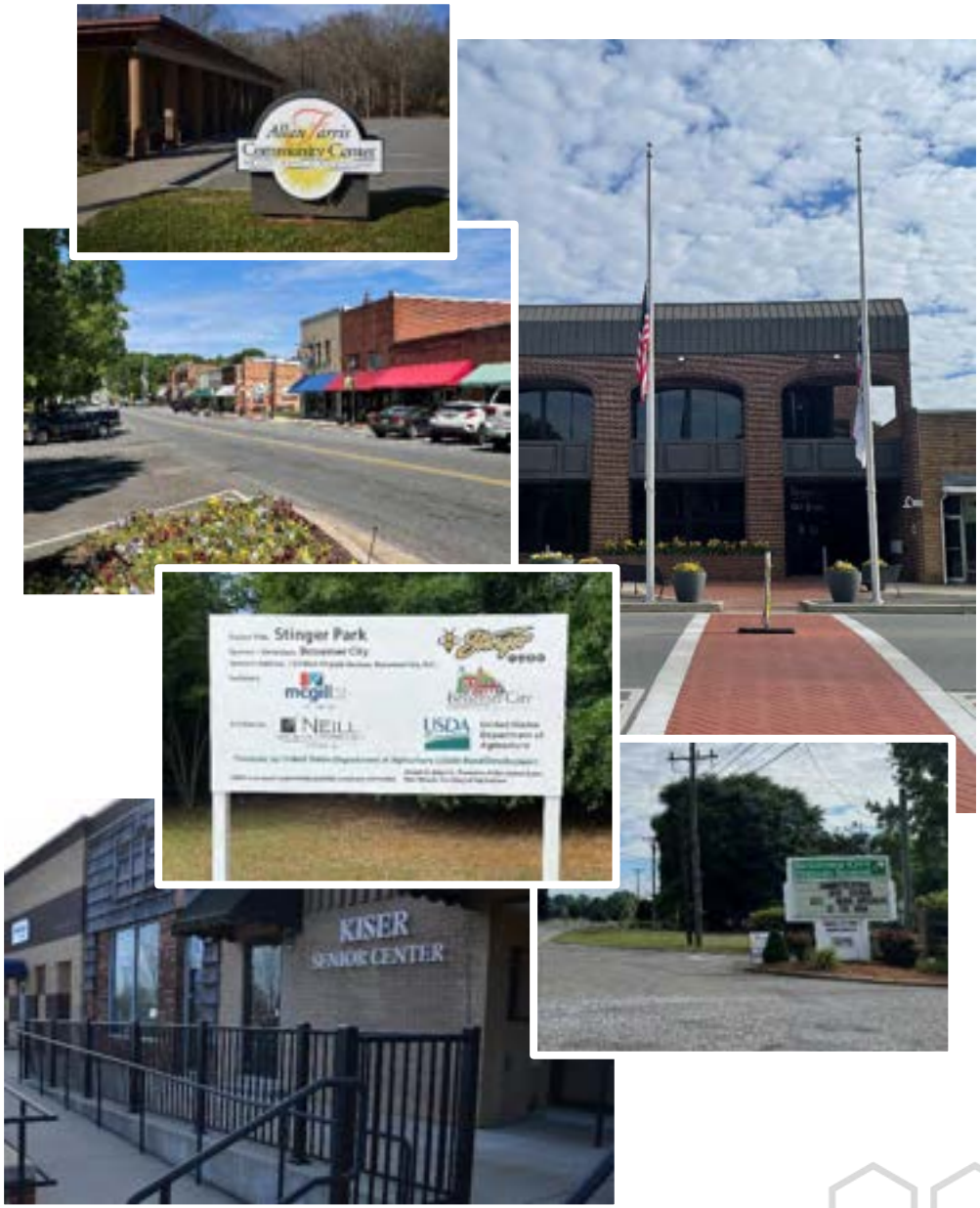
## *Issues & Ideas*

The survey also included a mapping screen that allowed participants to drag markers on a map to identify key locations for walking in Bessemer City. These included **destinations, safety concerns, project ideas, the participant's home,** and **anything else**. 224 data points in total were received on this question.

### Destinations

62 data points

Destinations identified were clustered Downtown, near Bessemer City Pool and Park, and at businesses along NC 274. When asked to specify the type of destination they would like to walk to, participants identified parks and places to recreate as well as restaurants, schools, and shops.



## Safety Concerns

63 data points

Participants identified unsafe crossings/inadequate pedestrian facilities near Bessemer City Pool and Park along South 14th Street as well as unsafe crossings along Virginia Avenue in Downtown. The lack of pedestrian facilities along Main Avenue also were noted.

## Project Ideas

66 data points

Many project ideas were suggested near Downtown, near Bessemer City High School, and near Bessemer City Pool and Park. Most of the project ideas were new sidewalks and crosswalks.

Bessemer City
Pedestrian Plan Update

# CHAPTER 3

# Facility Recommendations

The Bessemer City Pedestrian Plan Update includes more than 65 project recommendations. These recommendations are based on community feedback, steering committee guidance, input from City and NCDOT staff, and an analysis of existing conditions. The projects proposed will make it safer and easier for residents, employees, and visitors to walk throughout the City. The Bessemer City Pedestrian Plan Update focuses on improvements that connect people to key destinations, including schools, parks, shopping areas, and community facilities.

## Recommendations Development

Public feedback was crucial to the development of project recommendations. The results of these activities indicated that increasing pedestrian safety and connecting key destinations were among the top concerns. Safety was the biggest concern among survey participants in both surveys, which may indicate that streets in Bessemer City may be dangerous to walk along or cross. For some people, walking may be their only option to get to their jobs, schools, or homes. Participants identified obstacles to walking, which included the lack of sidewalks/paths, poor sidewalk condition, unsafe crossings, and unsafe vehicle behavior. Comments also emphasized the need for:

- Greater accessibility for the disabled (ADA ramps, etc.)
- Pedestrian access to local walking tracks (health was identified as a top benefit of walking in Bessemer City)
- Easy railroad crossings for pedestrians
- A better sidewalk repair/maintenance program
- Sidewalk access to/from schools

### *Facility Types*

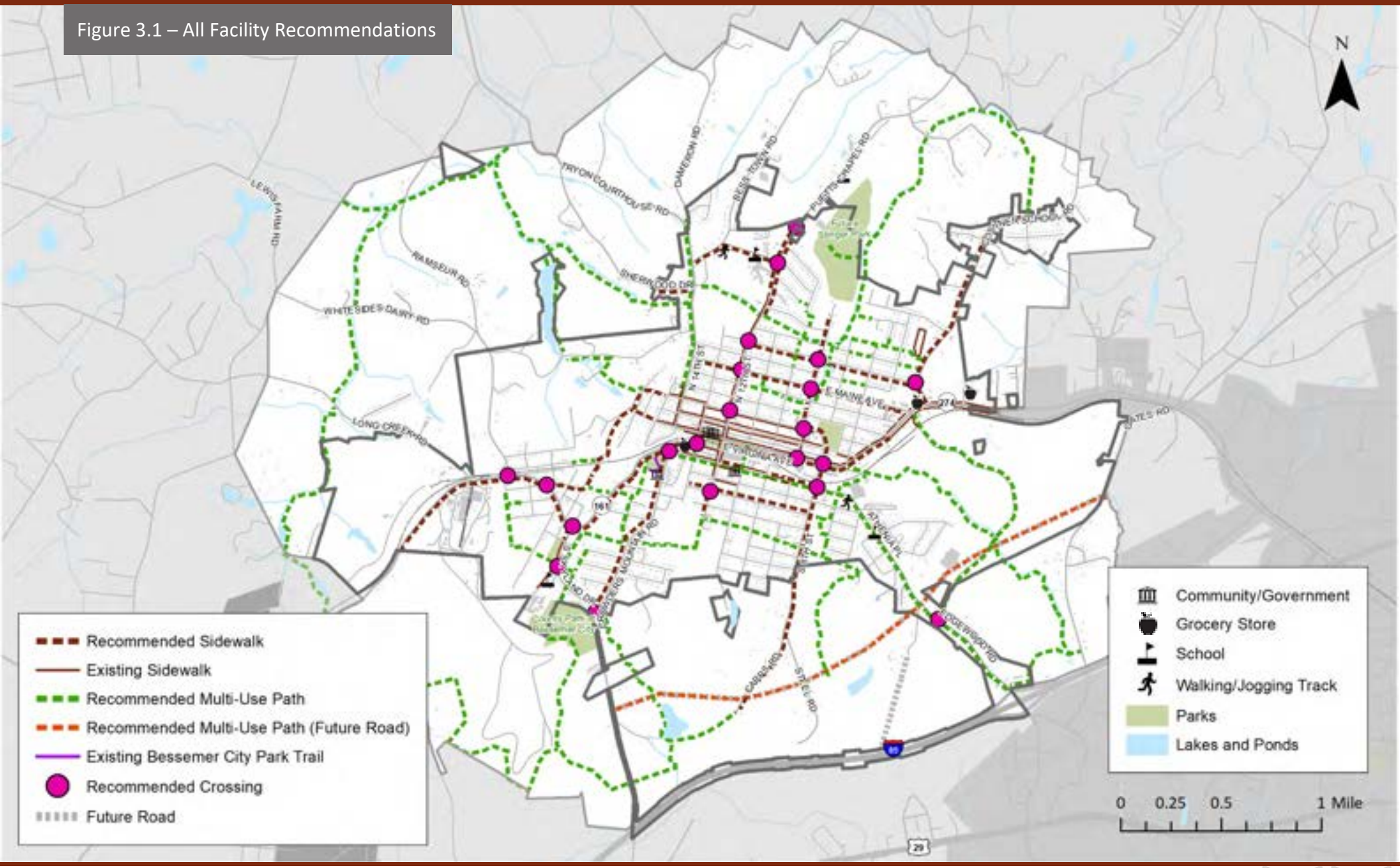
The following recommendations are divided into three facility types: sidewalks, multi-use paths, and pedestrian crossing improvements. Each of the three facility types include a recommendations table and map in the following pages.

**Sidewalk**

**Multi-Use Path**

**Pedestrian Crossing**

Figure 3.1 – All Facility Recommendations



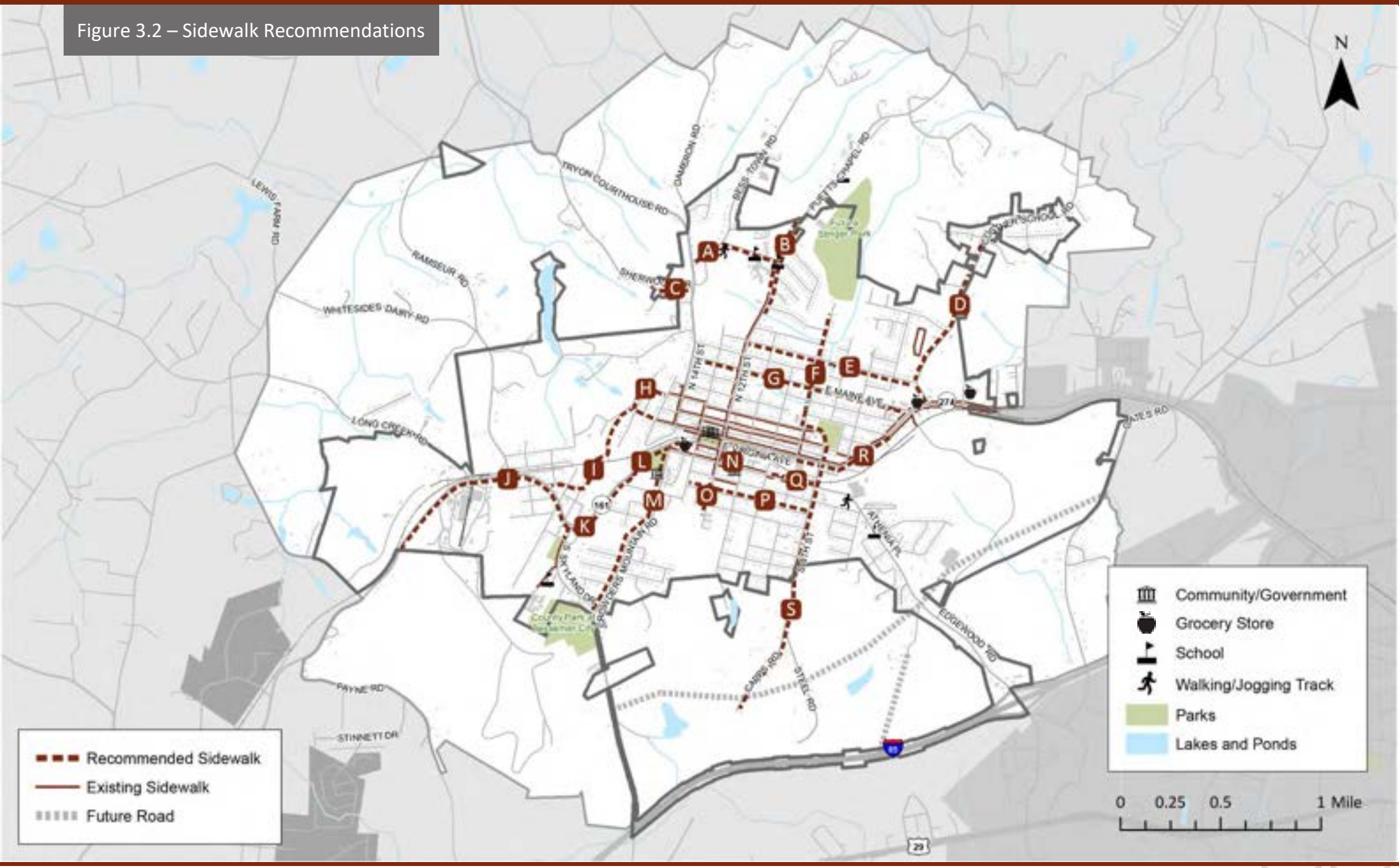
## Sidewalk Recommendations

Table 3.1 outlines the proposed sidewalk recommendations. The development of the sidewalk recommendations was largely informed by public input and by the recommendations of the 2010 Pedestrian Plan.

**Table 3.1 – Sidewalk Recommendations**

| ID | Road Name | Extent | Length |
|---|---|---|---|
| A | Yellow Jacket Ln/Bess Town Rd | N 14th St to N 12th St | 0.44 miles |
| B | N 12th St | M L Kiser Rd to Sunset Ln | 0.84 miles |
| C | Sherwood Dr | 14th St to J T Hall Dr | 0.19 miles |
| D | Costner School Rd | NC 274 to Arc St | 1.06 miles |
| E | E Iowa Ave | N 12th St to Costner School Rd | 0.95 miles |
| F | N 9th St | North of E Maryland Ave | 0.56 miles |
| G | Maine Ave | N 14th St to NC 274 | 1.05 miles |
| H | W Maryland Ave / N Skyland Dr | West of N Inman Ave / North of NC 161 | 0.21 miles |
| I | W Virginia Ave/W Maryland Ave/ S Mickley Ave/W Alabama Ave | West of N 14th St | 0.77 miles |
| J | NC 161 | S Skyland Dr to city limits (with extension on S Skyland Dr) | 1.17 miles |
| K | NC 161 | W Boston Ave to S Skyland Dr | 0.35 miles |
| L | NC 161 | S 13th St to W Boston Ave | 0.43 miles |
| M | S 14th St/Crowders Mountain Rd | NC 161 to S Skyland Dr | 0.93 miles |
| N | E Alabama Ave | S 11th St to S 12th St | 0.11 miles |
| O | S 12th St | South of Georgia Ave | 0.19 miles |
| P | W Louisiana Ave | S 13th St to S 8th St | 0.61 miles |
| Q | E Alabama Ave | S 8th St to S 10th St | 0.23 miles |
| R | NC 274 | N 9th St to E Ohio Ave | 0.55 miles |
| S | Capps Rd/S 8th St/E Maryland Ave | South of E 9th St | 1.54 miles |

Figure 3.2 – Sidewalk Recommendations



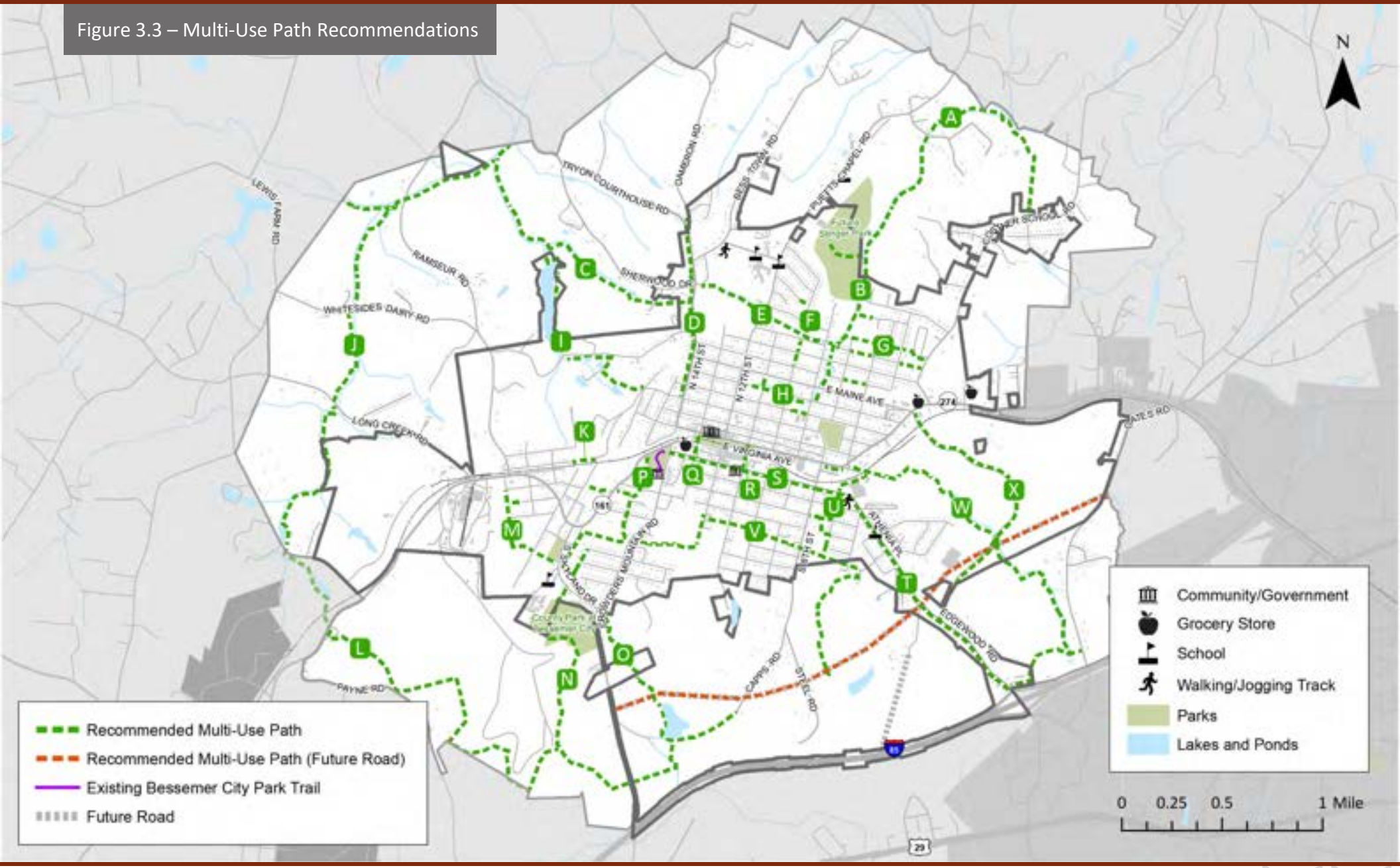
## Multi-Use Path Recommendations

A multi-use path is physically separated from vehicle traffic and is designed to be used by pedestrians, runners, bicyclists, and other non-motorized users. The pathways can be located alongside a road or within an independent right-of-way such as along a creek or a former rail line.

**Table 3.2 – Multi-Use Path Recommendations**

| ID | Facility Name | General Extents | Length |
|---|---|---|---|
| A | Stinger Trail (North) | Stinger Park to Costner School Rd/8th St | 1.69 miles |
| B | Stinger Trail (South) | E Florida Ave/8th St to Stinger Park | 1.06 miles |
| C | Reservoir North Trail | N 14th St/Nottingham Ct to Future Long Creek Trail (MUP J) | 1.40 miles |
| D | 14th Street Trail | W Maryland Ave to Windward Dr | 0.90 miles |
| E | North Crosstown Trail (West) | N 14th St/Pine St to E Florida Ave/9th St | 0.68 miles |
| F | 10th Street Connector | N 10th St/E Texas Ave to Future North Crosstown Trail (MUP E) | 0.32 miles |
| G | North Crosstown Trail (East) | N 9th St/E Florida Ave to Costner School Rd/Ashley Pl | 0.81 miles |
| H | Lee Avenue Connector | N 12th St to N 9th St | 0.42 miles |
| I | Reservoir South Trail | Future Reservoir North Trail (MUP C) to W Maryland Ave | 1.13 miles |
| J | Long Creek Greenway | NC 161 to Future Reservoir North Trail (MUP C) | 2.01 miles |
| K | Carolina to Mickley Connector | W Carolina Ave to S Mickley Ave | 0.11 miles |
| L | Deep South Greenway | NC 161 to Future Middle School Connector (MUP N) | 3.42 miles |
| M | G Street Connector | W Alabama Ave to S Skyland Dr | 0.58 miles |
| N | Middle School Connector | Bessemer City Middle School to Future Abernathy Creek Trail (MUP O) | 1.69 miles |
| O | Abernethy Creek Trail | S Skyland Dr to Terminus of Capps Rd | 1.54 miles |
| P | Park to Skyland Connector | S Skyland Dr to Bessemer City Park | 1.07 miles |
| Q | 13th Street Connector | W Alabama Ave to W Virginia Ave | 0.14 miles |
| R | 11th Street Connector | E Alabama Ave to E Virginia Ave | 0.14 miles |
| S | Alabama Trail | S 14th St to S 8th St | 0.75 miles |
| T | Athenia and Edgewood Trail | S 8th St to I-85 | 1.44 miles |
| U | Boston to Davis Connector | Davis St to Future South Crosstown Trail (MUP U) | 0.61 miles |
| V | South Crosstown Trail | S Skyland Dr/Ed Wilson Rd to Future Southridge Parkway | 1.97 miles |
| W | Southridge Trail | E Virginia Ave/Davis St to Edgewood Rd/I-85 | 2.30 miles |
| X | Parkway Trail | NC 274 to Edgewood Rd | 1.46 miles |

Figure 3.3 – Multi-Use Path Recommendations



## Pedestrian Crossing Recommendations

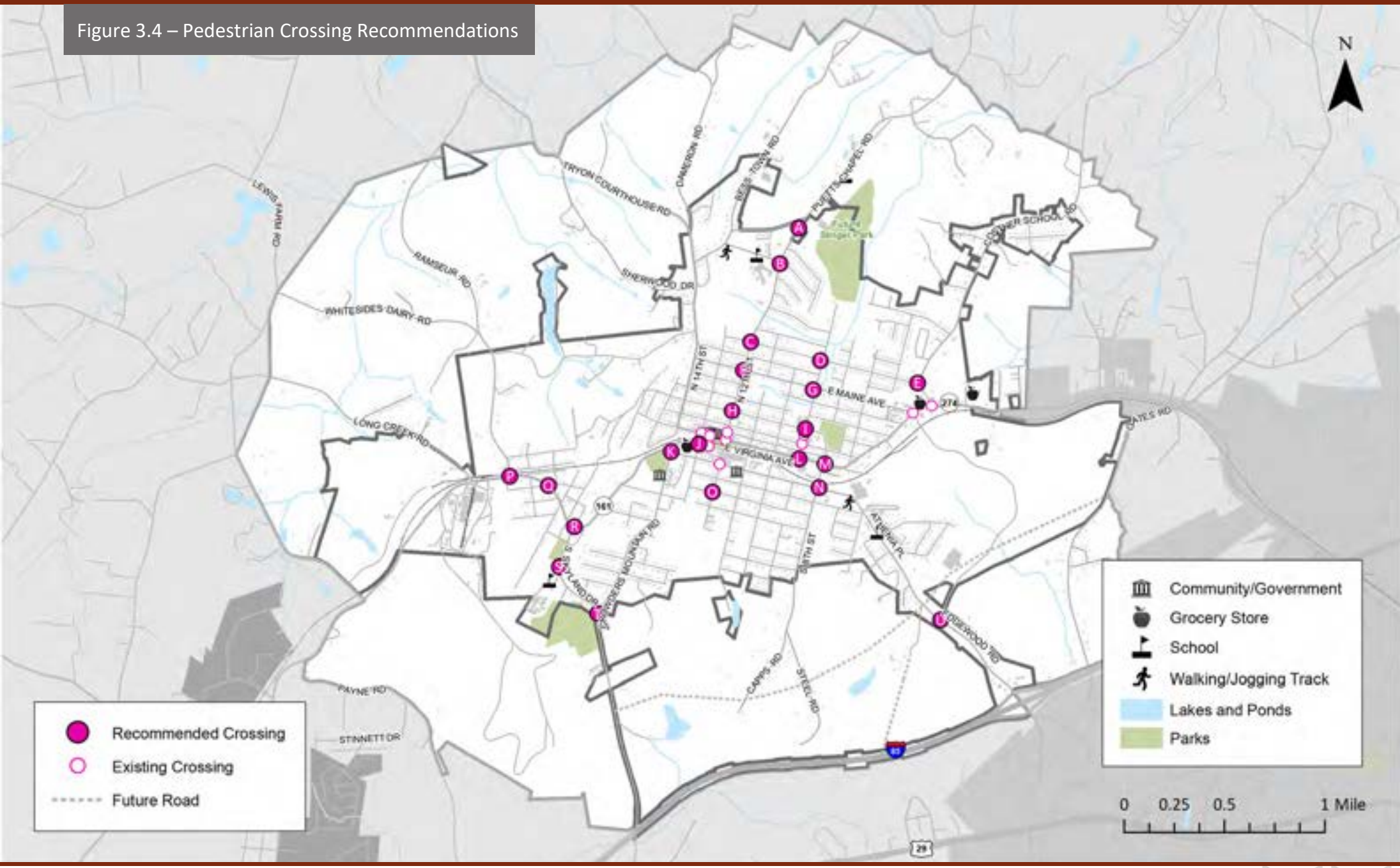
Pedestrian crossings are designed to provide a safe, designated place to cross a street. Most marked pedestrian crossings are located at intersections. This plan identifies locations where crosswalks, curb ramps, and pedestrian signals should be installed to enhance safety.

Many intersections in Bessemer City are difficult to cross but are not specifically recommended in the list at right. For example, these include intersections along NC 274 between Virginia Ave and Costner School Rd, where a skew and inadequate ADA ramps limit mobility. Also, the crossing of W Virginia Ave at 13th St could be improved. Although the recommendations of this plan are not exhaustive, additional crossing projects should be considered when improvement opportunities arise.

**Table 3.3 – Pedestrian Crossing Recommendations**

| ID | Intersection |
|---|---|
| A | N 12th St at Bessemer City Central Elementary School |
| B | N 12th St at Yellow Jacket Ln |
| C | N 12th St at Iowa Ave |
| D | N 9th St t E Iowa Ave |
| E | Costner School Rd at E Iowa Ave |
| F | N 12th St at E Maine Ave |
| G | N 9th St at E Maryland Ave |
| H | N 12th St at E Maryland Ave |
| I | N 9th St at E Maryland Ave |
| J | W Pennsylvania Ave at S 13th St |
| K | S 14th St at W Alabama Ave |
| L | E Virginia Ave at N 9th St |
| M | E Virginia Ave at N 8th St |
| N | E Alabama Ave/Athenia Pl at S 8th St |
| O | S 12th St at E Louisiana Ave |
| P | NC 161 at Ramseur Rd (including railroad crossing) |
| Q | NC 161 at W Alabama Ave |
| R | NC 161 at S Skyland Dr |
| S | S Skyland Dr at Ed Wilson Ave |
| T | S Skyland Dr at Crowders Mountain Rd |
| U | Edgewood Rd at Southridge Pkwy |

Figure 3.4 – Pedestrian Crossing Recommendations



## ENGAGEMENT SNAPSHOT

### *Online Survey #2 – Project Recommendations*

The second online survey focused gathering feedback from the public on draft sidewalk, multi-use path, and pedestrian crossing recommendations. The survey received **37 responses** and was open from May 6 to June 2, 2021. The survey solicited feedback on an initial draft of the project recommendations. The recommendations shown in the report reflect the feedback received, so some recommendations were split, combined, added, or renamed. The IDs here correspond to the maps in Figures 3.2 to 3.4. Participants generally rated the project recommendation categories highly.

### Overall Recommendations

**On a scale of 1 to 10, how would you rate the overall recommendations?**

**Comments Received**

Participants noted that some roads and sidewalks are in poor repair and could use maintenance. Comments received included the suggestion to install historical plaques around town (e.g., the Osage Mill) to add interest. It also was noted that Bessemer City's multi-use paths should be as interconnected as possible and be designed with fun bridges.

### Sidewalk Recommendations

**On a scale of 1 to 10, how would you rate the sidewalk recommendations?**

**Which sidewalk projects should be done first?**

| Rank | ID | Project Description | Number of Votes |
|---|---|---|---|
| 1 | A | Yellow Jacket Ln/Bess Town Rd from N 14th St to N 12th St | 19 |
| 2* | G | E Maine Ave from N 14th St to NC 274 | 11 |
| 2* | J + K + L | NC 161 from S 14th St to city limits (w/ extension on S Skyland Dr) | 11 |
| 4 | I | W Maryland Ave west of N 14th St; West Virginia Ave west of N 14th St; N/S Skyland Dr north of NC 161; W Maryland Ave/S Mickley Ave/W Alabama Ave | 10 |
| 5 | B | N 12th St from M L Kiser Rd to Sunset Ln | 9 |

**Comments Received**

Most responses supported the recommendations shown. Other suggestions included N 14th St to city limits and 13th St from cemetery to Maryland Ave.

## Multi-Use Path Recommendations

**On a scale of 1 to 10, how would you rate the multi-use path recommendations?**

Average Rating 7.8 / 10

**Which multi-use path projects should be done first?**

| Rank | ID | Project Description | Number of Votes |
|---|---|---|---|
| 1 | A + B | Path from E Florida Ave & 8th St to Costner School Rd & 8th St | 18 |
| 2* | E | Path from E Florida Ave & 9th St to N 14th St & Pine St | 10 |
| 2* | G | Path from E Florida Ave & 9th St to Costner School Rd & Ashley Pl | 10 |
| 2* | S + T | Path along Alabama Ave/Athenia Pl/Edgewood Rd from S 14th St to I-85 | 10 |
| 5 | H | Connection of Lee Ave from N 12th St to N 9th St | 9 |

**Comments Received**

Most responses indicated that the recommendations as shown were sufficient. Other proposed additions included: N 14th St to city limits; Stonesthrow neighborhood; and 13th St from cemetery to Pennsylvania Ave.

## Pedestrian Crossing Recommendations

**On a scale of 1 to 10, how would you rate the sidewalk recommendations?**

Average Rating 7.5 / 10

**Which pedestrian crossing projects should be done first?**

| Rank | ID | Project Description | Number of Votes |
|---|---|---|---|
| 1 | A | N 12th St at Bessemer City Central Elementary School | 19 |
| 2 | B | N 12th St at Yellow Jacket Ln | 15 |
| 3* | E | Costner School Rd at E Iowa Ave | 9 |
| 3* | U | Edgewood Rd at Southridge Pkwy | 9 |
| 5 | F | N 12th St at E Maine Ave | 7 |

**Comments Received**

Most participants agreed that the recommendations were sufficient. One response suggested more marked crossings of Virginia Ave going through Downtown.

## ENGAGEMENT SNAPSHOT

### *Engagement Activity – Down Home Festival*

Concurrent with the launch of the second survey, the project team engaged directly with the community through a booth at the 2021 Down Home Festival on **May 8th**. The Bessemer City Down Home Festival is an annual event featuring nightly entertainment, rides, food, and vendors. The event is one of Bessemer City's top draws for residents and visitors, making it a perfect opportunity to converse with community members about their pedestrian needs. **More than 30 participants** interacted with the Bessemer City Pedestrian Plan Update booth and provided feedback.

Down Home Festival
DOWNTOWN BESSEMER CITY, NC

### *Activities*

Participants learned about the process and the summary of existing conditions in Bessemer City, Then, they were asked to rate the overall recommendations on a scale of 1 to 10, answer some general questions about walking in Bessemer City, or make notes directly on the recommendations map. Most feedback was provided conversationally.

### *Feedback*

**Describe walking in Bessemer City today. _____**

- Challenging, unsafe, dangerous
- Sidewalks are disconnected, making it difficult to walk for recreation or transportation

**Where would you like to be able to walk to? _____**

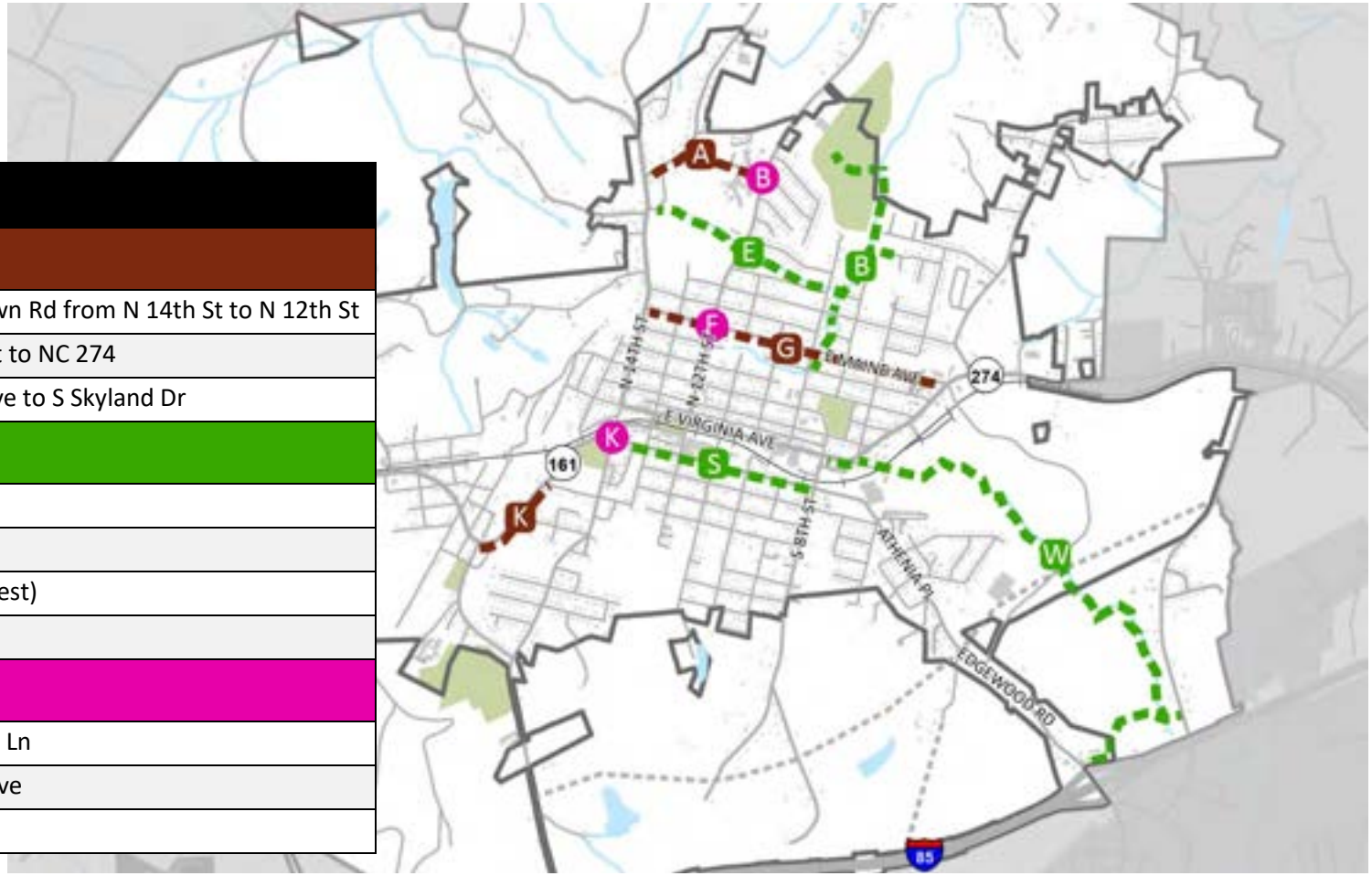
- I'd like my kids to be able to walk to school or to the park without worrying for their safety
- I would like to walk for exercise and easily access a walking track or trail
- New Stinger Park
- Along Edgewood Road to businesses near I-85

**Comments Received_____**

- Favorite recommendations included multi-use paths connecting northern Bessemer City, especially MUPs A, B, C and E.
- Participants expressed interest in staying involved in the process.

## Demonstration Projects

Based on the results of the prioritization, ten demonstration projects were selected for further analysis. These projects included:




| Table 3.4 – Demonstration Projects | |
|---|---|
| **Sidewalk Projects** | |
| A | Yellow Jacket Ln/Bess Town Rd from N 14th St to N 12th St |
| G | Maine Ave from N 14th St to NC 274 |
| K | NC 161 from W Boston Ave to S Skyland Dr |
| **Multi-Use Path Projects** | |
| B | Stinger Trail (South) |
| W | Southridge Trail |
| E | North Crosstown Trail (West) |
| S | Alabama Trail |
| **Pedestrian Crossings** | |
| B | N 12th St at Yellow Jacket Ln |
| K | S 14th St at W Alabama Ave |
| F | N 12th St at E Maine Ave |

**NOTE:** The photo simulations and cost estimates shown on the following pages are for demonstration purposes only. Cost estimates were calculated using the NCDOT P6 Bicycle and Pedestrian Project Cost Estimation Tool, which uses factors such as facility type, length, width, surrounding development type, stream crossings, curb presence, and roadways intersected to calculate a planning-level cost estimate. Some projects will require additional stormwater drainage infrastructure which may result in additional cost when engineering-level cost estimates are calculated. All cost estimates are planning-level, non-binding and preliminary.

Sidewalk
**A**

# Yellow Jacket Lane / Bess Town Road

*South 14th Street to South 8th Street*

**Length** | 0.75 mile

**Preliminary Cost Estimate** | $1,950,000

**BACKGROUND.** This sidewalk segment connects the streets just north of Bessemer City High School, providing a critical connection between the high school and the nearby walking track. Sidewalks near schools enable students to walk safely to and from school. Yellow Jacket Road is the primary access to the high school's north parking lot, making it a heavily traveled road during the before- and after-school hours.

**PROJECT DESCRIPTION.** This project would add a 5-foot sidewalk on the south side of Yellow Jacket Lane and Bess Town Road. The project scored in the top five projects in the project prioritization and was the top-voted sidewalk project in the second public survey.

*Existing*

**POTENTIAL CONSTRAINTS**

Right-of-way acquisition, existing stormwater ditches/uneven terrain, 35 mph traffic speeds, signage relocation, school parking lot crossings

Sidewalk
**G**

# Maine Avenue

*North 14th Street to NC 274*

**Length** | 1.05 mile

**Preliminary Cost Estimate** | $1,365,000

**BACKGROUND.** Maine Avenue is an important candidate for an east-west crosstown pedestrian connection. A lack of paved shoulders, fast-moving traffic following NC 274 around Downtown, and a ditch along the north side of the street make it challenging for pedestrians to use safely today. As one of the few streets continuously connecting the east and west sides of Bessemer City, a pedestrian connection here would be valuable to the network.

**PROJECT DESCRIPTION.** A 5-foot sidewalk along the south side of Maine Avenue is recommended from N 14th Street to connect to the existing sidewalk at E Maine Avenue and NC 274. Maine Avenue was frequently identified as a safety concern in both public surveys, and the project was the top-scoring sidewalk recommendation during prioritization.

*Existing*

**POTENTIAL CONSTRAINTS**

Moderate traffic volumes, right-of-way acquisition, existing stormwater ditches/uneven terrain, 35 mph traffic speeds, signage relocation

Sidewalk
**K**

# NC 161

*West Boston Avenue to South Skyland Drive*

**Length** | 0.66 mile

**Preliminary Cost Estimate** | $785,000

**BACKGROUND.** NC 161 is a busy highway, used by an average of 4,400 to 5,800 vehicles per day. The highway connects many important City destinations: the south side of Downtown, Bessemer City Pool and Park, and Bessemer City Middle School. BCMS is only about a mile from Downtown, but few students walk to school due to the treacherous nature of this road. Narrow shoulders and blind curves contribute to the danger.

**PROJECT DESCRIPTION.** A 5-foot sidewalk along the east side of NC 161 is proposed to connect these destinations to the existing sidewalk on S Skyland Drive. The northern portion of sidewalk (from W Boston Ave to S 13th St) has already been funded but will be more useful with this connection to the Middle School and southwestern Bessemer City.

*Existing*

**POTENTIAL CONSTRAINTS**
Moderate traffic volumes, right-of-way acquisition, uneven/sloped terrain, 35 mph traffic speeds, signage relocation

Multi-Use Path
**B**

## Stinger Trail (South)
*Stinger Park to East Florida Avenue & 8th Street*

**Length** | 1.06 mile

**Preliminary Cost Estimate** | $2,590,000

**BACKGROUND.** The new Stinger Park will be a tremendous asset to the community of Bessemer City. To maximize community access and enjoyment of the park, it should be easily accessible from town by pedestrians and bicyclists. Along with the Stinger Trail North (Multi-Use Path Recommendation A) that would extend this trail another 1.7 miles to Costner School Road and 8th Street), this was the top multi-use path recommendation according to survey participants. A relatively short multimodal connection could have great impact for the transportation and parks and recreation system in Bessemer City.

**PROJECT DESCRIPTION.** This ten-foot multi-use path would follow Gibbons Branch from the end of East Florida Avenue to the center of Stinger Park. An extension to Apple Lane will also be considered. Both pedestrians and bicyclists could easily share the trail.

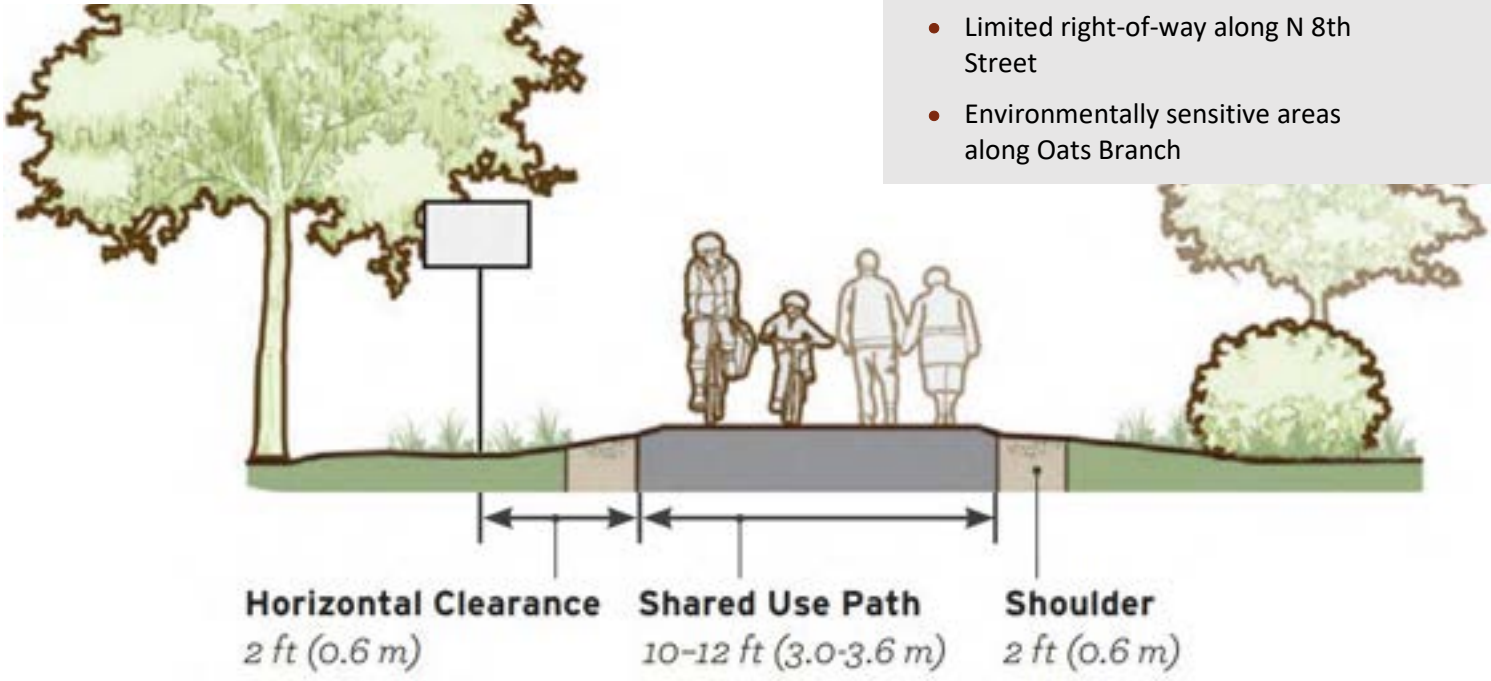
### Network Opportunities

- North-South connection from Stinger Park toward Downtown
- Connection to the Future North Crosstown Trail (MUP E and G)
- Extension to the north (MUP A)
- Enhanced access to Stinger Park

### Potential Constraints

- Limited right-of-way along N 8th Street
- Environmentally sensitive areas along Oats Branch

**Width and Surface.** A trail's width and surface should balance ease of use, user type, and the natural context of the trail. Decisions about the design of trail need to consider who will use the trail (e.g., pedestrians, cyclists, skateboarders, rollerbladers, etc.), the anticipated volume of users, available right-of-way, natural features, and amount of funds available for construction and maintenance. Trails are usually constructed with asphalt, concrete, crushed stone, and boardwalks.




*Source: Small Town and Rural Multimodal Networks, FHWA*

Multi-Use Path

**W**

# Southridge Trail

*East Virginia Avenue & Davis Street to Edgewood Road & I-85*

**Length** | 2.3 mile

**Preliminary Cost Estimate** | $6,520,000

**BACKGROUND.** This trail would connect the east side of Downtown Bessemer City to Southridge Parkway and Edgewood Road near I-85. The path would provide a pleasant, off-road alternative to Athenia Place/Edgewood Road to access businesses near the interstate. The construction of this path would be an important investment in multimodal transportation and recreation.

**PROJECT DESCRIPTION.** This project was in the top five projects in the prioritization. The route would follow the creek, providing a secluded environment. In the future, the multi-use path could connect with a multi-use path along Southridge Parkway.

## Network Opportunities

- Regional connection between Bessemer City and Gastonia
- Access to employment sites along Southridge Parkway
- Use of existing utility easements

## Potential Constraints

- Property ownership / easement coordination
- Environmentally sensitive areas along Oates Branch
- Intersection crossings

**Signage and Wayfinding.** Signage and surface markings along a trail should promote the safe and active use of the facility. Regulatory signs should comply with standards set by the Manual on Uniform Traffic Control Devices (MUTCD). These signs should be supplemented with wayfinding signs that help users find their way and be alerted to local destinations and typical travel times. Mile markers are a simple but useful addition. As the regional trail network expands, interpretive trailhead signs should be incorporated.

*Source: Carolina Thread Trail*

Multi-Use Path
**E**

# North Crosstown Trail (West)

*North 14th Street & Pine Street to East Florida Avenue & 9th Street*

**Length** | 0.68 mile

**Preliminary Cost Estimate** | $1,950,000

**BACKGROUND.** This path would provide a critical east-west connection along the northern portion of Bessemer City. The proposed facility connects North 14th Street to the proposed trail connection to Stinger Park with a crossing of North 12th Street near Bessemer City High School. A lack of street connectivity in northern Bessemer City makes this trail connection particularly useful.

**PROJECT DESCRIPTION.** This multi-use path was the second most popular recommendation according to the second survey. Community members also expressed interest in an off-road connection between 12th and 14th Streets during conversations at the Down Home Festival.

**Network Opportunities**

- East-West connection across for northern Bessemer City
- Enhanced access to Stinger Park and the high school
- Connection to the Future Stinger Trail (MUP B)
- Extension to the east (MUP G)
- Connections to future trails, including MUP F and MUP G

**Intersections.** As a crosstown connector, this facility will intersect several key roads in Bessemer City, including N 12th St and N 14th St. Best design practices increase the predictability of movement and visibility of users. Much design guidance is offered through FHWA and other sources. In general, travel speeds and traffic volumes of the intersection streets should dictate features such as marked crosswalks, median-enhanced crosswalks, or signalization. Accessibility guidelines must be adhered to.

*Source: Small Town and Rural Multimodal Networks, FHWA*

**Potential Constraints**

- Property ownership / easement coordination

Multi-Use Path

**S**

## Alabama Trail

*South 14th Street to South 8th Street*

**Length** | 0.75 mile

**Preliminary Cost Estimate** | $1,950,000

**BACKGROUND.** Alabama Avenue stretches from Bessemer City Pool and Park to Athenia Place, connecting destinations such as Allan Farris Community Center, the Post Office, many local churches, and the walking track near First Wesleyan Church. Sidewalks are present along this corridor, but some gaps exist, and some areas are narrow and/or worn. A wide multi-use path would open this corridor to pedestrians and bicyclists.

**PROJECT DESCRIPTION.** A ten-foot multi-use path on the south side of Alabama Avenue is recommended. This project was in the top three projects scored in the prioritization exercise, and in the top three according to the results of the second survey. In combination with multi-use path T, this project would help connect western Bessemer City to I-85.

*Existing*

**POTENTIAL CONSTRAINTS**

Right-of-way acquisition, partially existing sidewalk, visible utility relocation, 35 mph traffic speeds, signage relocation

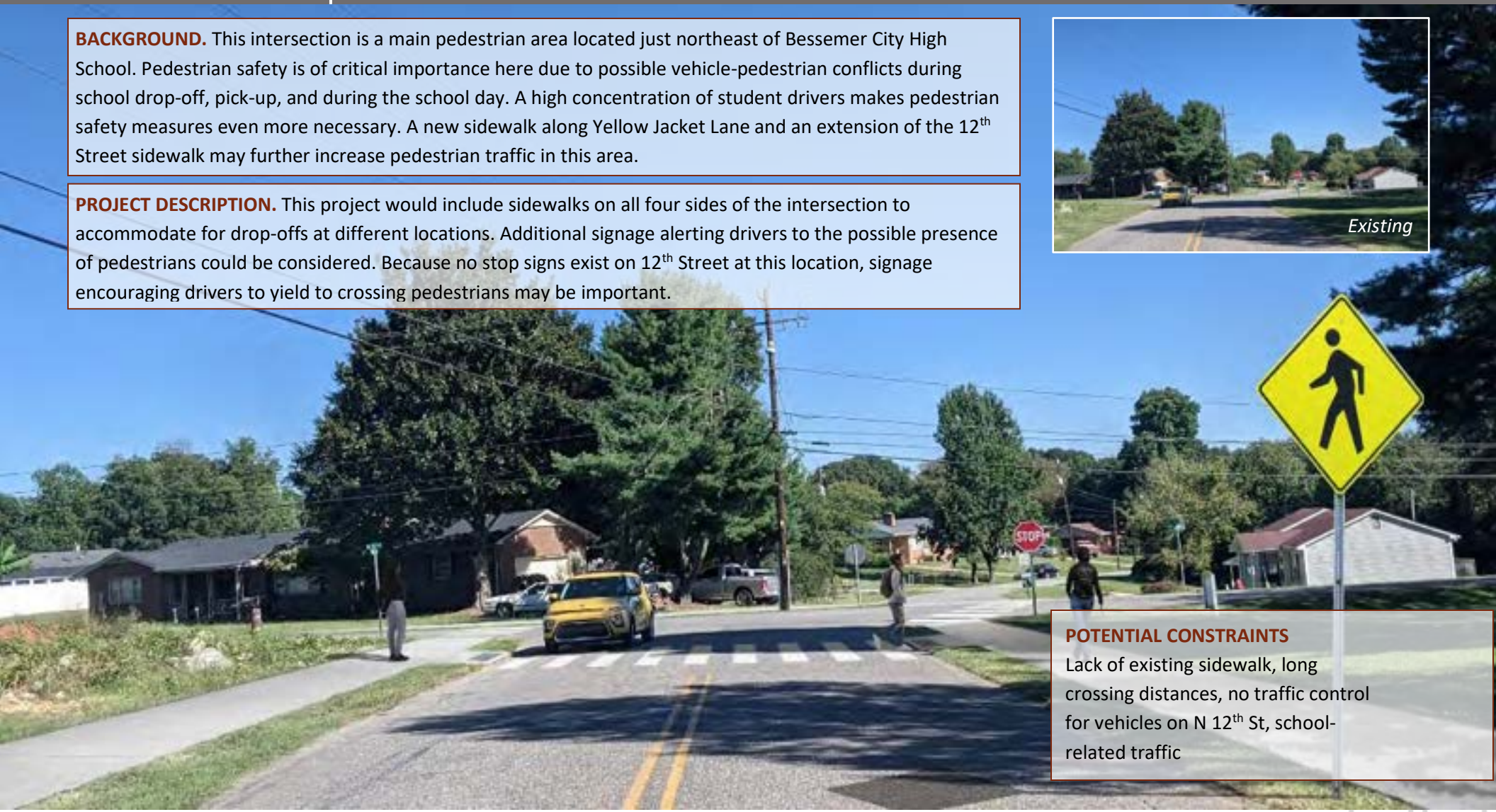
Pedestrian Crossing
**B**

# North 12th Street @ Yellow Jacket Lane

**BACKGROUND.** This intersection is a main pedestrian area located just northeast of Bessemer City High School. Pedestrian safety is of critical importance here due to possible vehicle-pedestrian conflicts during school drop-off, pick-up, and during the school day. A high concentration of student drivers makes pedestrian safety measures even more necessary. A new sidewalk along Yellow Jacket Lane and an extension of the 12th Street sidewalk may further increase pedestrian traffic in this area.

**PROJECT DESCRIPTION.** This project would include sidewalks on all four sides of the intersection to accommodate for drop-offs at different locations. Additional signage alerting drivers to the possible presence of pedestrians could be considered. Because no stop signs exist on 12th Street at this location, signage encouraging drivers to yield to crossing pedestrians may be important.


*Existing*




**POTENTIAL CONSTRAINTS**

Lack of existing sidewalk, long crossing distances, no traffic control for vehicles on N 12th St, school-related traffic

Pedestrian Crossing
**K**

# South 14th Street @ West Alabama Avenue

**BACKGROUND.** The intersection of these streets is a high-traffic area for pedestrians in Bessemer City, but is currently somewhat treacherous. Sidewalks connect W Alabama Ave to Bessemer City Pool, Park and Allan Farris Community Center, but no crosswalk exists to cross S 14th St. The Citgo gas station is likely a destination for users of the pool and park, but crossing the street here is difficult because of high-speed traffic coming from Highway 161. Pedestrian infrastructure mostly exists here, making this an easy fix to improve pedestrian safety near one of the City's most important recreation areas.

**PROJECT DESCRIPTION.** A crosswalk across S 14th Street is recommended to connect the two existing sidewalk segments. A sidewalk across S 14th Street at NC 161 could also be considered, serving pedestrian destinations along W Pennsylvania Avenue.

**POTENTIAL CONSTRAINTS**
Lack of existing sidewalk, long crossing distances, limited distance between intersections and park access

Pedestrian Crossing
**F**

# North 12th Street @ East Maine Avenue

**BACKGROUND.** With existing sidewalks on N 12th Street and proposed along Maine Avenue, this is likely to become more of a highly-trafficked intersection by pedestrians. Currently, the intersection is signalized but makes no accommodation for pedestrians. This corridor is especially important for those accessing Bessemer City High School or Stinger Park on foot from the Downtown area.

**PROJECT DESCRIPTION.** Since this is already a busy signalized intersection, adding crosswalks and pedestrian signals would be a logical next step to make so that pedestrians need not rely solely on the vehicular signal. Sidewalks are proposed at least on the south and west sides of the intersection. Vehicles are more likely to yield if leading pedestrian intervals and pavement markings exist.

*Existing*

**POTENTIAL CONSTRAINTS**
Coordination with existing signalized intersection, moderate traffic from all directions, visible utilities

Bessemer City
Pedestrian Plan Update

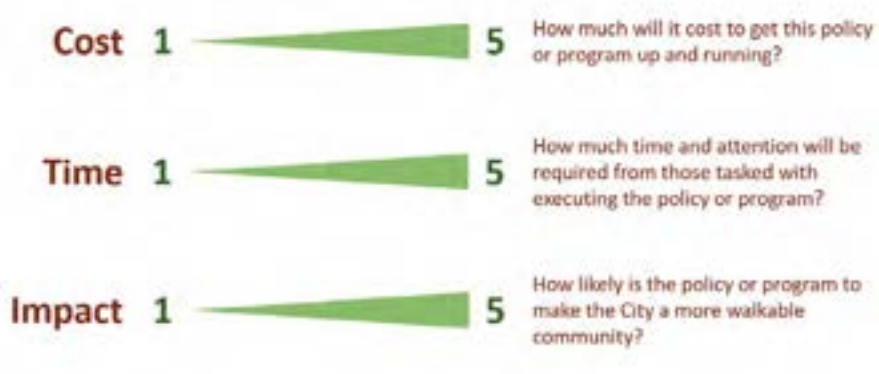
# CHAPTER 4

# Policy and Program Recommendations

## Policies and Programs

While constructing more sidewalks, multi-use paths, and pedestrian crossings is important, the City also needs a toolkit of programs and policies to encourage safe and active use of the pedestrian network. These policies and programs will help the City get the most use out of investments in infrastructure by encouraging people to walk more, educating the community about the safe use of pedestrian facilities, coordinating with other agencies, and ensuring that facilities remain in good repair. While infrastructure investments are necessary to achieve the vision outlined in the Bessemer City Pedestrian Plan Update, policies provide the systematic framework to ensure those investments succeed.

Each policy or program in rated on a scale of 1 to 5 according to the following categories:

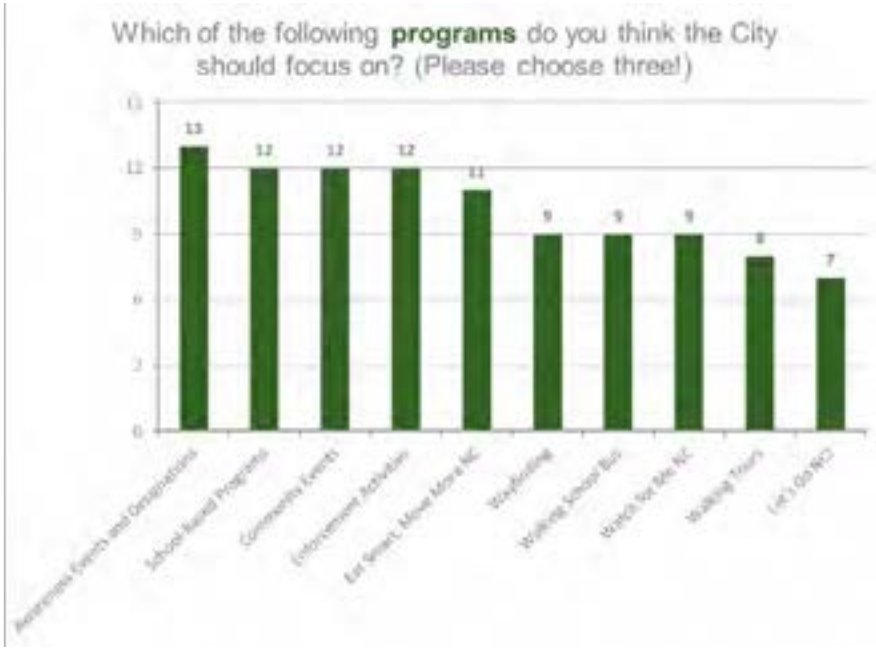



For instance, a policy with a cost score of 1 and an impact score of 5 indicates a low-cost policy with a high impact.

## ENGAGEMENT SNAPSHOT

### *Engagement Activity – Online Survey #2*

Policies and programs were presented in draft form, and participants voted on the ones they were most interested to see in Bessemer City.




The most popular program recommendation among participants was **awareness events and designations**, followed by **school-based programs** and **community events**. The least popular were **walking tours** and **Let's Go NC!**

## Pedestrian-Supportive Policies

Encourage the consideration of pedestrian needs in existing planning processes and ensure that the priorities of this plan are reflected in regulatory and enforcement activities.

| Policy/Program | Cost | Time | Impact |
|---|---|---|---|
| **Include Pedestrian Facilities in Future Roadway Projects:** Ensure appropriate pedestrian facilities are included in all future transportation projects. | 2 | 1 | 5 |
| **Establish a Pedestrian Needs Committee:** A stakeholder-based committee should help ensure agencies prioritize pedestrian safety and connectivity in projects. | 1 | 2 | 4 |
| **Implement the Land Development Code (LDC):** The Bessemer City LDC contains many pedestrian-supportive development policies that should be enforced. | 1 | 2 | 4 |
| **Adopt a Complete Streets and Traffic Calming Policy:** A complete street prioritizes the safety of all road users. Traffic calming strategies would promote the safety of all road users by reducing speeds where appropriate. | 2 | 3 | 5 |
| **Enforcement Activities:** Establish safety campaigns and enforcement programs to increase driver awareness of pedestrians and compliance with the rules of the road. | 3 | 3 | 4 |

## COMPLETE STREETS & TRAFFIC CALMING

For decades, transportation decisions locally and beyond have focused on moving vehicles, in effect encouraging nearly every trip—even very short ones—to be taken by vehicle. Traffic congestion and unsafe conditions for pedestrians and bicyclists are just a few of the consequences. Vehicle speed is a significant factor limiting pedestrian safety. By refocusing transportation strategy on moving people instead of vehicles and calming traffic where possible, street design can naturally prioritize safe and accessible bicycle and pedestrian facilities.

### KEY CONSIDERATIONS

**Complete Streets.** Complete Streets are designed to enable safe use and support mobility for all users and transportation modes. By prioritizing safety and accessibility, Complete Streets make it simple and inviting to cross the street, walk to a nearby destination, or commute to work by bicycle, while also accommodating motor vehicle travel. To achieve this, a combination of physical street design features, enforcement of regulations and traffic laws, and effective street operations is required. A local Complete Streets policy in Bessemer City should build upon NCDOT's Complete Streets Policy.

**Traffic Calming.** Traffic calming is a toolbox of design and management practices that aims to improve the pedestrian and bicyclist experience by decreasing vehicle speed and making travel patterns more predictable. These may include intersection treatments such as landscaping, mini-roundabouts, and pedestrian-activated beacon signals where appropriate. To achieve a safer environment for active modes of transportation in Bessemer City, traffic calming measures should be implemented where needed and designed in tandem with pedestrian safety and comfort and wayfinding techniques to further reduce the impact of vehicle traffic while fostering multimodal travel. Traffic calming solutions must be carefully selected based on the context of the street and consider the different types of uses competing for space within the right-of-way. Because traffic calming measures can also have economic and environmental impact, additional funding sources or grants may be available for these projects.

## Strategic Coordination

Making Bessemer City a more walkable place will require extensive coordination with other municipalities and jurisdictions both to align planning efforts and pursue funding opportunities.

| Policy/Program | Cost | Time | Impact |
|---|---|---|---|
| **Coordinate with Carolina Thread Trail:** Establish an ongoing relationship with CTT leadership to help define and establish Bessemer City's portions of the trail. | 1 | 2 | 4 |
| **Coordinate with Neighboring and Surrounding Jurisdictions:** Coordinate with surrounding municipalities (Gaston County, Gastonia, Kings Mountain) to coordinate facilities and seek funding through GCLMPO's planning processes. | 1 | 3 | 4 |
| **Identify Funding Opportunities:** Apply for regional, state, and federal grants, and explore partnerships with developers and businesses to fund the installation of pedestrian facilities. | 1 | 2 | 5 |
| **Encourage Connections with Interior Sidewalk Networks:** Work with developers and property owners to ensure that interior sidewalk networks are accessible to the rest of the City. | 1 | 1 | 3 |

### CAROLINA THREAD TRAIL

The Carolina Thread Trail (CTT) is a network of trails, greenways, blueways, and conserved corridors that links 15 counties in North and South Carolina, including Gaston County. Led by the Catawba Lands Conservancy, the CTT has quickly become a model for regional collaboration involving local governments, businesses, community groups, and the region's land trusts. In partnership with Bessemer City, the CTT can fulfill its goal of connecting the region and places of interest while conserving significant natural areas.

#### KEY CONSIDERATIONS

**Thread Trail Support.** The CTT offers support for local communities in three ways. 1) **Community Support.** The CTT assists with planning and implementation, including serving on the Pedestrian Plan Update's Steering Committee. 2) **Funding.** Through private fundraising, the CTT provides grant opportunities for planning, design, land acquisition, and construction. 3) **Expertise.** The CTT enhances the regional body of knowledge by hosting an annual trail forum and providing technical support to local communities.

**Current Routing in Bessemer City.** The CTT has been an advocate for trail planning in Bessemer City since the vision of the CTT was established in 2007. The 2010 Pedestrian Plan shows the CTT entering Bessemer City along Abernathy Creek from the south, entering Downtown, traveling North 14th Street, and exiting the City near Sherwood Drive and the Bessemer City Reservoir. The Pedestrian Plan Update supports the vision with a focus on a combination of greenway trails and sidepath connectors through the City.

## Maintenance and Assessment

Ensure that pedestrian facilities remain in good repair through predictable funding mechanisms. Use performance metrics such as pedestrian counts to determine demand and utilization.

| Policy/Program | Cost | Time | Impact |
|---|---|---|---|
| **Repair and Enhance Existing Sidewalks:** Many segments of existing sidewalks are in poor condition or are not accessible to disabled residents. Add accessible ramps where needed and respond as promptly as possible to resident concerns. | 4 | 4 | 5 |
| **Assess and Improve Street Lighting:** Survey existing street lighting to identify locations where low light impedes pedestrian safety. Include funding for street lighting in future improvements. | 4 | 4 | 4 |
| **Establish a Sidewalk Repair and Maintenance Program:** Identify a sustainable funding source for annual repairs and maintenance through City budget or predictable external sources. | 2 | 2 | 4 |
| **Establish a Data-Driven Approach for Annual Evaluation:** Starting with the prioritization process outlined in this plan, establish a continuous method of determining priority projects each year. | 2 | 4 | 5 |

## Encouragement

Seek opportunities to promote walking in Bessemer City and present the City as a pedestrian-friendly community. Continuously inform the public of the goals of the Pedestrian Plan to promote implementation.

| Policy/Program | Cost | Time | Impact |
|---|---|---|---|
| **Pedestrian Plan Update Promotion:** Publicize, promote, and present the Bessemer City Pedestrian Plan Update to the public. | 1 | 1 | 4 |
| **Community Events:** Organize road races and Open Streets events to encourage pedestrian activity and community health. | 2 | 4 | 3 |
| **School-Based Programs:** Create programs that encourage students to walk to school safely and comfortably. (e.g., Walk a Kid to School event, Walking School Bus, crossing guards) | 3 | 4 | 4 |
| **Safe Routes to School:** Establish a Safe Routes to School task force to promote infrastructure and policies supporting walkability and safety near schools. | 1 | 5 | 4 |

## Education

Educate residents about pedestrian safety and give information on opportunities to walk around town. Ensure that drivers are informed on how to safely encounter pedestrians.

| Policy/Program | Cost | Time | Impact |
|---|---|---|---|
| **Awareness Events and Designations:** Organize events that encourage walking throughout the City through education and awareness. (e.g., Walk to School Day, National Trails Day, Walk Friendly Communities, Active Towns) | 3 | 4 | 4 |
| **Watch for Me NC:** Become a partner community to receive educational and marketing material to support pedestrian safety in Bessemer City through a collaborative effort with NCDOT. | 1 | 3 | 5 |
| **Wayfinding:** Include signs and pavement markings to show destinations accessible on foot and the distances to each location. | 3 | 3 | 5 |
| **Website:** Establish a page on the City's website that can be used by the community as a resource for understanding where current bicycle and pedestrian facilities are and where future facilities may be. | 2 | 2 | 5 |

## WAYFINDING

A pedestrian wayfinding system and consistent signage design will encourage more foot traffic around Downtown by orienting pedestrians—and bicyclists—to key destinations and simply communicating travel times on foot or by bike. Investing in a pedestrian wayfinding program over time is an important step in creating a more cohesive, welcoming, and accessible active transportation environment in and around Downtown Bessemer City.

### KEY CONSIDERATIONS

**Signage Placement.** A consistent approach to where signage placement is necessary, with the most appropriate location at major intersections and decision points. The program should be selective and strategic to maximize the program's effectiveness.

**Signage Design.** Signage should reflect Bessemer City with familiar branding. Signage should be easily reproducible, since implementation will occur over numerous years.

**National Guidance.** National guidance on wayfinding signage can be found in the *Manual on Uniform Traffic Control Devices* (MUTCD) and the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bike Facilities*. The signage program should also be compliant with NCDOT standards.

Bessemer City
Pedestrian Plan Update

# CHAPTER 5

# Implementation Plan

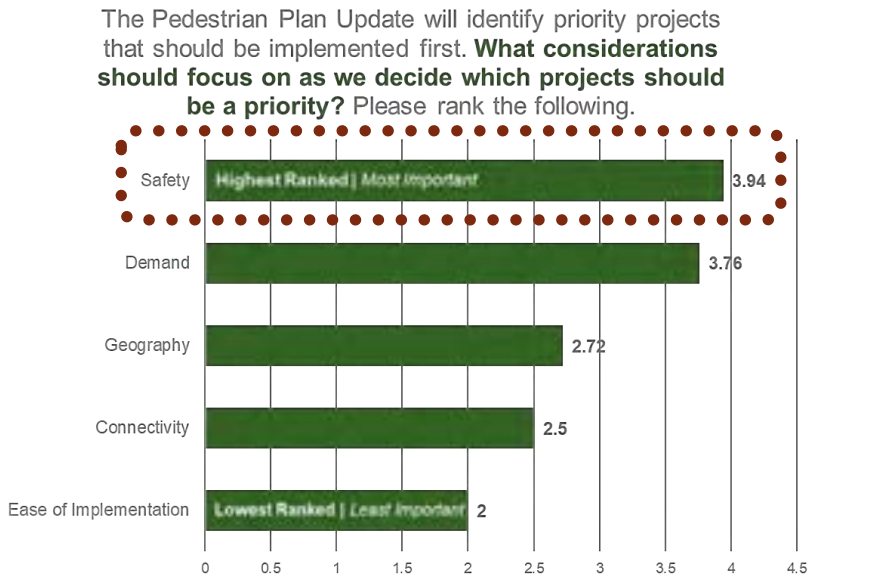
Improving walkability in Bessemer City requires ongoing coordination and sustained commitment among City staff, local elected officials, NCDOT, numerous community organization, and the people that live, work, and visit the City. Bessemer City and its partner agencies can balance investments in infrastructure with policies and programs that maximize the safe and active use of those investments. The Bessemer City Pedestrian Plan Update concludes with an implementation plan that identifies priority projects and a blueprint for the many recommended policies and programs.

## Project Prioritization

A discrepancy typically exists between the cost to plan, design, and construct all identified projects with available funding. Thus, it is important to identify projects that best use limited funds. The Pedestrian Plan Update includes a prioritization process based on five evaluation criteria: Safety, Accessibility & Connectivity, Demographics, Cost Effectiveness, and Public Input. Two main factors influenced the weighting: 1) NCDOT Priorities for Strategic Transportation (SPOT) methodology and 2) Feedback from the second survey (as shown to the right). Using similar prioritization criteria to statewide objectives positions the City to more easily obtain funding from NCDOT in the future. Likewise, aligning prioritization criteria with community input helps ensure the results reflect local priorities.

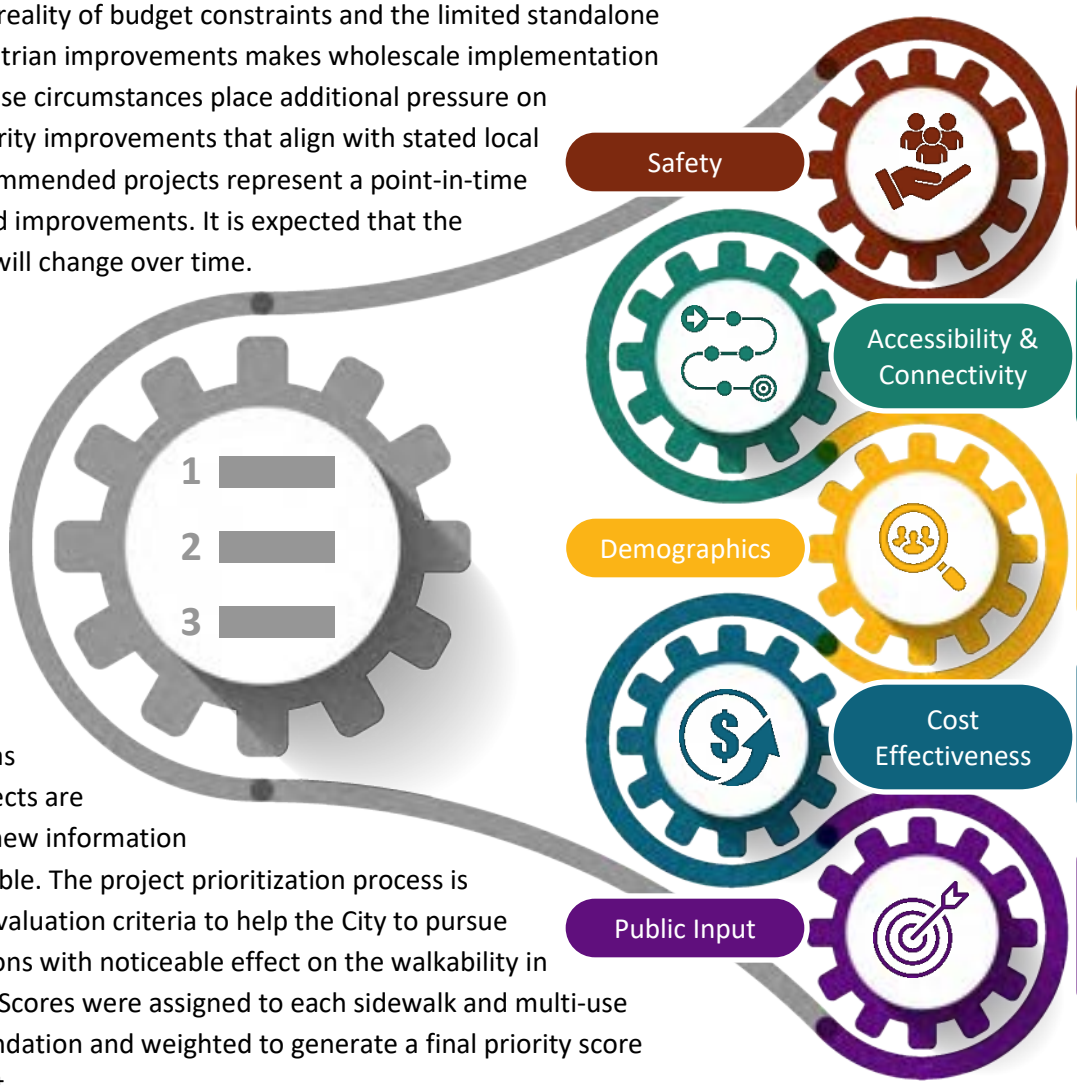
ENGAGEMENT SNAPSHOT

*Online Survey #2 – Priority Considerations*



## *Evaluation Criteria*

While identifying the need and describing the project scope is important, the reality of budget constraints and the limited standalone funds for pedestrian improvements makes wholescale implementation impossible. These circumstances place additional pressure on identifying priority improvements that align with stated local goals. The recommended projects represent a point-in-time list of suggested improvements. It is expected that the list of projects will change over time. Therefore, the Pedestrian Plan Update represents the first step in creating a local prioritization process that can be repeated in the years to come as additional projects are identified and new information becomes available. The project prioritization process is based on five evaluation criteria to help the City to pursue recommendations with noticeable effect on the walkability in Bessemer City. Scores were assigned to each sidewalk and multi-use path recommendation and weighted to generate a final priority score for each project.




| | Weight |
|---|---|
| • NCDOT Planning Level Section Safety Scores 2015-2019<br>• NCDOT Bicycle and Pedestrian Crash Locations 2007-2019 | 30% |
| • Points of Interest in Bessemer City<br>• Connections to Existing Pedestrian Facilities | 20% |
| • Total Population; Total Employment<br>• Percent Minority Population<br>• Percent of Population Below Poverty Line<br>• Percent of Households with No Vehicle Access | 20% |
| • NCDOT Bicycle and Pedestrian Cost Estimation Tool | 10% |
| • Online Survey #2 | 20% |

## Safety

**NCDOT Planning Level Section Safety Scores 2015-2019:** Source data comprised crash data grouped by half-mile roadway segments on State maintained roadways in Bessemer City. Segments were scored on a 0 (safest) to 100 (least safe) based on three components: the crash density of the segment versus the average crash density of similar facilities, an index of severity, and a ratio of "critical" (severe) crashes to total crashes. Project recommendations not along state-maintained roads were assigned a score of 0.

**NCDOT Bicycle and Pedestrian Crash Locations 2007-2019:** Crash locations and severity of reported bicycle-motor vehicle and pedestrian-motor vehicle collisions on roadways in Bessemer City. The number of crashes on each project recommendation segment was included, as well as the average severity of crashes along the segment (on a 0 to 5 scale).

Scores were added and normalized to generate a safety improvement score for each project recommendation.

## Accessibility & Connectivity

**Points of Interest in Bessemer City** (within ¼ mile of project recommendation)**:** Project recommendations were scored based on the number of the following features accessible within ¼ mile of each project: Schools, Churches, Community Centers, Government Buildings/Services, Grocery Stores, and Walking/Jogging Tracks.

**Connections to Existing Pedestrian Facilities:** Projects were given a binary (0 or 1) score based on whether they connect to existing facilities.

Variables were added and normalized to generate an accessibility & connectivity score for each project recommendation.

## Demographics

**Demographic Characteristics**: GIS was used to translate data at the Census block group level into an estimated value or average value of each criteria within ¼-mile of the project. Characteristics included **Total Population** (US Census ACS 2019 5-Year Estimates); **Total Employment** (US Census LEHD OnTheMap 2018 Employment Estimates); **Percent Minority Population** (US Census ACS 2019 5-Year Estimates); **Percent of Population Below Poverty Line** (US Census ACS 2019 5-Year Estimates); and **Percent of Households with No Vehicle Access** (US Census ACS 2019 5-Year Estimates).

All variables were normalized, added, and re-normalized to generate a demographic score for each project recommendation.

## Cost Effectiveness

**NCDOT Bicycle and Pedestrian Cost Estimation:** Project recommendations were analyzed using the NCDOT tool according to considerations such as facility type, length, width, surrounding development type, curb and gutter presence, stream or rail crossings, percent of ROW needed, and roadways intersected.

All other variables were divided by the cost (to establish "benefit" per dollar) and these values were normalized to generate a cost effectiveness score for each project recommendation.

## Public Input

**Public Survey #2 Responses:** Each project recommendation was scored based on the number of votes received.

The number of survey responses was normalized to generate a public input score for each project recommendation.

## *Priority Projects*

Table 5.1 shows the results of the prioritization process by featuring the top five sidewalk and top five multi-use path projects. While sidewalks and multi-use paths were prioritized using this process, pedestrian crossings were prioritized separately based on input from staff and the Steering Committee.

Top prioritization results included sidewalks along Maine Ave and N 12th Street, as well as multi-use paths along N 14th Street and an improved connection under the railroad tracks along 13th Street.

**Table 5.1 – Priority Projects**

| Rank | ID | Project Description | Overall Score (/100) | Category Scores (/100) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Safety | Accessibility and Connectivity | Demographics | Cost Effectiveness | Public Input |
| **SIDEWALK PROJECTS** | | | | | | | | |
| **1** | **G** | Sidewalk along E Maine Ave from N 14th St to NC 274 | **75** | 96 | 73 | 87 | 20 | 58 |
| **2** | **B** | Sidewalk along N 12th St from M L Kiser Rd to Sunset Ln | **65** | 100 | 60 | 59 | 21 | 47 |
| **3** | **L** | Sidewalk along NC 161 from S 13th St to W Boston Ave | **60** | 47 | 100 | 61 | 23 | 58 |
| **4** | **A** | Sidewalk along Yellow Jacket Ln/Bess Town Rd from N 14th St to N 12th St | **59** | 60 | 33 | 54 | 35 | 100 |
| **5** | **R** | Sidewalk along NC 274 from N 9th St to E Ohio Ave | **56** | 40 | 60 | 89 | 100 | 21 |
| **MULTI-USE PATH PROJECTS** | | | | | | | | |
| **1** | **D** | 14th Street Trail (W Maryland Ave to Windward Dr) | **63** | 100 | 88 | 39 | 40 | 17 |
| **2** | **Q** | 13th Street Connector (W Alabama Ave to W Virginia Ave) | **48** | 41 | 100 | 29 | 100 | 0 |
| **3** | **S** | Alabama Trail (S 14th St to S 8th St) | **47** | 47 | 94 | 39 | 37 | 11 |
| **4*** | **W** | Virginia to Southridge Trail (E Virginia Ave/Davis St to Edgewood Rd/I-85) | **36** | 0 | 41 | 100 | 9 | 33 |
| **4*** | **T** | Athenia and Edgewood Trail (S 8th St to I-85) | **36** | 53 | 18 | 63 | 16 | 11 |

## *Prioritization by Cost Tier*

Because numerous projects that scored highest on the overall prioritization were high-cost projects, staff recommended an additional layer of prioritization whereby these results were broken down into cost tiers. This clarifies which projects would have the most powerful impact at various budget levels.

Because multi-use paths are typically more expensive than sidewalks, each facility type was assigned into three independent tiers.

| Tier | Sidewalk | Multi-Use Path |
|---|---|---|
| A | More than $1.5 million | More than $4 million |
| B | $1 million to $1.5 million | $2 million to $4 million |
| C | Less than $1 million | Less than $2 million |

**Table 5.2 – Highest Ranked Sidewalk Projects by Cost Tier**

| ID | Project Description | Score (/100) | Length | Estimated Cost |
|---|---|---|---|---|
| **SIDEWALK COST TIER A (More than $1.5 million)** | | | | |
| J | NC 161 (S Skyland Dr to city limits; extension on S Skyland Dr) | **51** | 1.17 mi | $1,640,000 |
| **SIDEWALK COST TIER B ($1 million to $1.5 million)** | | | | |
| G | E Maine Ave (N 14th St to NC 274) | **75** | 1.05 mi | $1,365,000 |
| B | N 12th St (M L Kiser Rd to Sunset Ln) | **65** | 0.84 mi | $1,140,000 |
| M | S 14th St/Crowders Mtn Rd (NC 161 to S Skyland Dr | **51** | 0.93 mi | $1,085,000 |
| **SIDEWALK COST TIER C (Less than $1 million)** | | | | |
| L | NC 161 (S 13th St to W Boston Ave) | **60** | 0.43 mi | $950,000 |
| A | Yellow Jacket Ln/Bess Town Rd (N 14th St to N 12th St) | **59** | 0.44 mi | $595,000 |
| R | NC 274 (N 9th St to E Ohio Ave) | **56** | 0.55 mi | $715,000 |
| N | E Alabama Ave (S 11th St to S 12th St) | **54** | 0.11 mi | $165,000 |
| Q | E Alabama Ave (S 8th St to S 10th St) | **52** | 0.23 mi | $315,000 |

**Table 5.3 – Highest Ranked Multi-Use Path Projects by Cost Tier**

| ID | Project Description | Score (/100) | Length | Estimated Cost |
|---|---|---|---|---|
| **MULTI-USE PATHS COST TIER A (Over $4 million)** | | | | |
| W | Virginia to Southridge Trail | **36** | 2.30 mi | $6,520,000 |
| A | Stinger Trail (North) | **34** | 1.69 mi | $4,235,000 |
| **MULTI-USE PATHS COST TIER B ($2 - $4 million)** | | | | |
| D | 14th Street Trail | **63** | 0.90 mi | $2,470,000 |
| T | Athenia and Edgewood Trail | **36** | 1.44 mi | $3,670,000 |
| B | Stinger Trail (South) | **34** | 1.06 mi | $2,590,000 |
| G | North Crosstown Trail (East) | **32** | 0.81 mi | $2,000,000 |
| X | Southridge Parkway Trail | **31** | 1.46 mi | $3,435,000 |
| **MULTI-USE PATHS COST TIER C (Less than $2 million)** | | | | |
| Q | 13th Street Connector | **48** | 0.14 mi | $635,000 |
| S | Alabama Trail | **47** | 0.75 mi | $1,950,000 |

The recommendations of the Pedestrian Plan Update must serve Bessemer City's most vulnerable populations. Metrics of vulnerability such as lack of vehicle access, poverty, and minority status are shown below in combination with the facility recommendations. This plan seeks to ensure that more vulnerable areas of Bessemer City are adequately served by its recommendations. Metrics of vulnerability were also included in the prioritization process.

## Figure 5.1 – Recommendations Serving Households Without Vehicle Access

Many recommendations of this plan are intended to serve those areas in Bessemer City with the greatest concentration of households without vehicle access. These include four proposed multi-use paths in the east side of the City and a sidewalk along Costner School Road to the northeast. However, these block groups overlap with some of the least populated areas of the City.

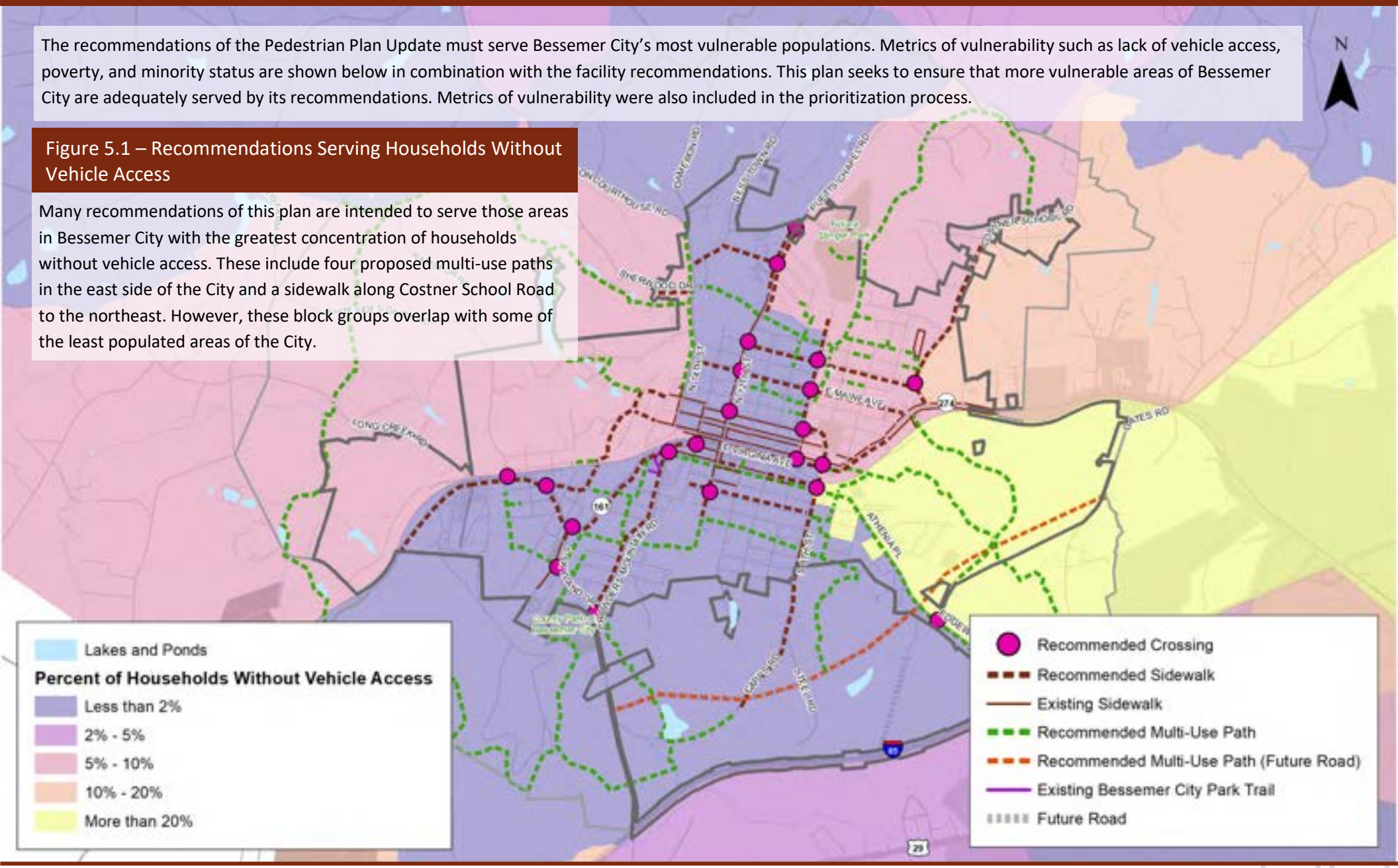


Figure 5.2 – Recommendations Serving Populations Below Poverty Line

Other recommendations serve parts of Bessemer City with significant populations in poverty. These include many sidewalks, multi-use paths, and pedestrian crossings in the area of southwest Bessemer City (near NC 161 and Bessemer City Middle School) and in southeast Bessemer City including four multi-use paths.

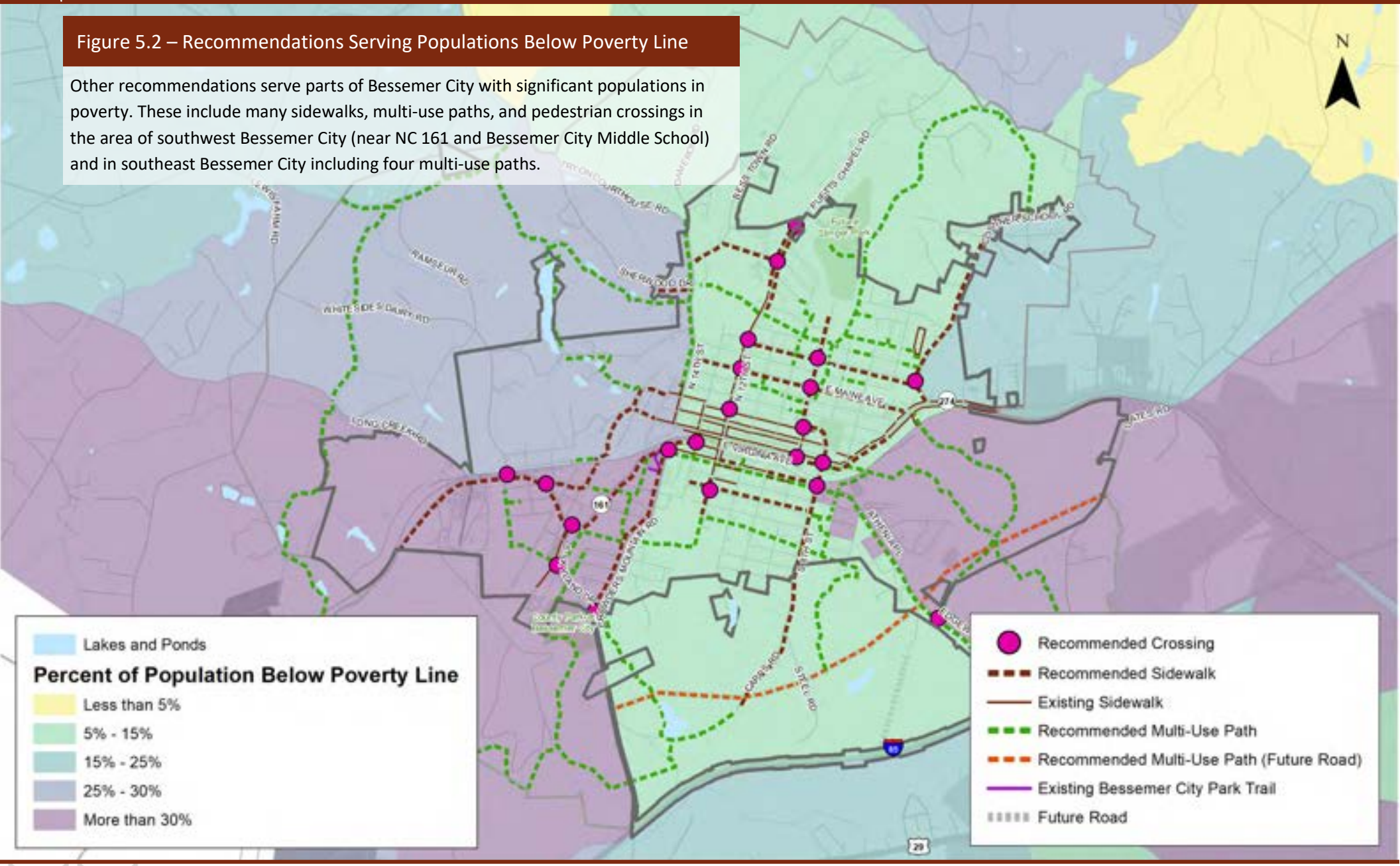
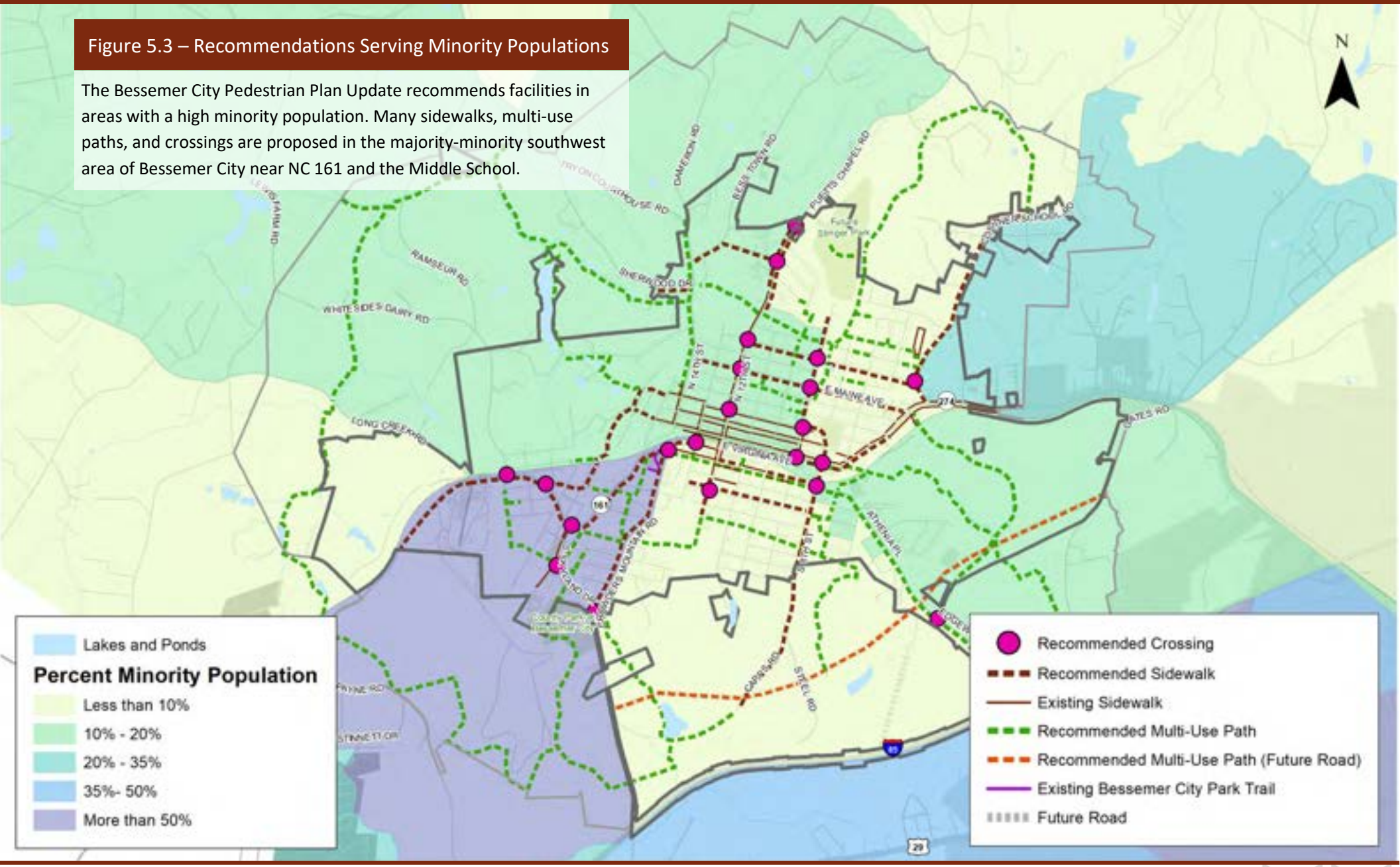


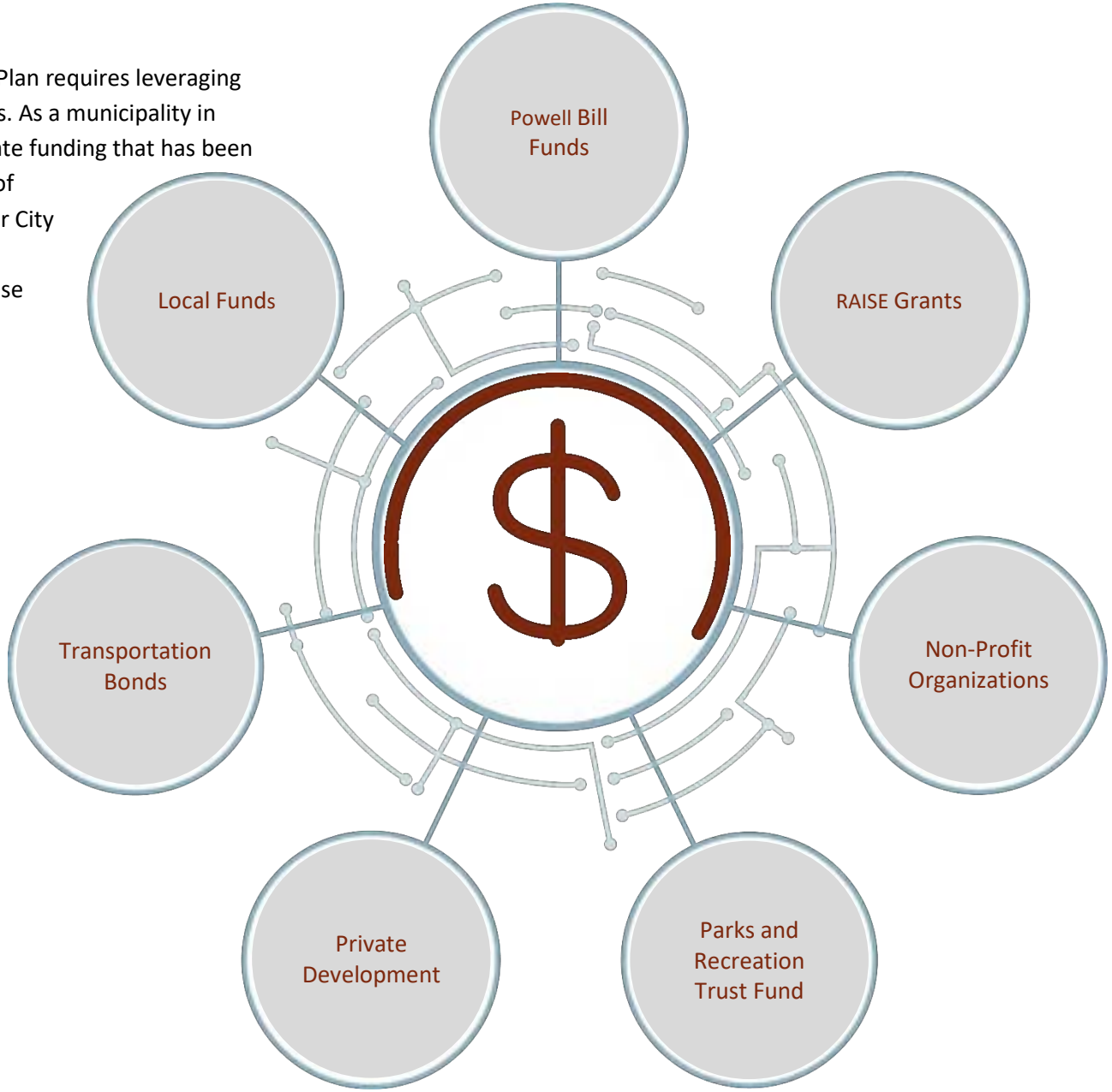
Figure 5.3 – Recommendations Serving Minority Populations

The Bessemer City Pedestrian Plan Update recommends facilities in areas with a high minority population. Many sidewalks, multi-use paths, and crossings are proposed in the majority-minority southwest area of Bessemer City near NC 161 and the Middle School.



## Funding Sources

The implementation of a successful Pedestrian Plan requires leveraging federal, state, and private funding opportunities. As a municipality in GCLMPO, Bessemer City can use federal and state funding that has been allocated to NCDOT Division 12. Other sources of funding for the implementation of the Bessemer City Pedestrian Plan Update are the City's capital improvement program and private entities. These funding sources are summarized in the sections below.



***Local Funds***

Bessemer City does not currently allocate local funds for sidewalk construction or maintenance. The City should explore ways to designate some funds to fund improvements outright or as a matching contribution for other funding sources. One option for consideration would be to re-evaluate water/sewer tap fees.

***Powell Bill Funds***

North Carolina's state street-aid program, also known as the Powell Bill program, provides funding for eligible municipalities based on mileage and population of locally-maintained roadways. The primary function of the Powell Bill program is to assist municipalities in funding resurfacing local streets; however, those funds may also be used for the planning, construction, or maintenance of sidewalks, multi-use paths, and bikeways. Powell Bill funds may be pursued as a match for future updates of this plan or a Bicycle and Pedestrian Plan. For Fiscal Year 2021-2022, Bessemer City received $155,000 in Powell Bill funding.

***RAISE Grants***

The Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant, formerly known and Better Utilizing Investment to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER), will award over $1 billion in grant projects in fiscal year (FY) 2021. Eligible projects for RAISE grant include both capital and planning projects. The capital projects could include roads or bridges, public transportation, passenger and freight rail, or intermodal projects. Planning projects include the planning, preparation, or design of eligible surface transportation projects. If projects are located in rural areas, up to 100 percent of the costs of the project may be funded by the RAISE grant. The City should identify eligible projects and consider submitting a formal application.

***Non-Profit Organizations***

Non-profit organizations including health care organizations or community funds are potential sources of funding for multimodal facilities. These funds have been used in some communities to complete small-scale projects, such as wayfinding, bike-rack installation, or improvements to existing facilities. The Carolina Thread Trail offers a grant program for regional trail implementation. Because Bessemer City contains portions of the planned trail alignment, the City may apply.

***Private Development***

The City's new land development code requires private developers to include sidewalks at least 5' wide along all streets in their site plans. This allows the City to build pedestrian facilities without paying for it directly. In future updates, the code could consider requiring both on- and off-street facilities in addition to pedestrian benches.

***Transportation Bonds***

Transportation bonds generate revenue from a tax increase on property values. In the state of North Carolina, bond referendums must be approved by the local council and later included on a ballot to be voted on by residents. The funds generated from the transportation bonds can be used toward roadway, bicycle, or sidewalk projects.

***Parks and Recreation Trust Fund***

Since 1994 the North Carolina Parks and Recreation Trust Fund (PARTF) awards matching grants to local governments for parks, public beach access, and improvements in state parks. A local government can request a maximum of $500,000 with each application and can be used to build or improve facilities for public use, or to acquire land for parks. PARTF funds may be used to improve the accessibility of existing facilities, including to bring them into compliance with current ADA standards. The grants require a 50% match from the applicant.

## Design Guidelines

The general design guidelines for pedestrian facilities are identified here. NCDOT adheres to these standards and guidelines in addition to the Complete Streets guidelines for pedestrian facilities.

| Document | Author |
|---|---|
| Guide for Planning, Design, and Operations of Pedestrian Facilities | The American Association of State Highway Transportation Officials (AASHTO) |
| Guide for Planning, Design, and Operations of Pedestrian Facilities | |
| Special Report: Accessible Public Rights-of-Way Planning and Design for Alterations | Access Board |
| ADA and ABA Accessibility Guidelines | Architectural and Transportation Barriers Compliance Board |
| Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians with Vision Disability | Federal Highway Administration (FHWA) |
| Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts | |
| Federal Highway Administration Bicycle and Pedestrian Planning, Program, and Project Development | |
| Manual on Uniform Traffic Control Devices (MUTCD) Part 4E: Pedestrian Control Features | |
| Manual on Uniform Traffic Control Devices (MUTCD) Part 7: Traffic Controls for School Areas | |
| Pursuing Equity in Pedestrian and Bicycle Planning | |
| Small Town and Rural Multimodal Networks | |
| Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians with Vision Disability | |
| Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts | |
| Federal Highway Administration Bicycle and Pedestrian Planning, Program, and Project Development | |
| Designing Walkable Urban Thoroughfares: A Context Sensitive Approach | Institute of Transportation Engineers (ITE) and Congress for the New Urbanism |
| Urban Street Design Guide | National Association of City Transportation Officials (NACTO) |
| 2009 NC Supplement to MUTCD | North Carolina Department of Transportation (NCDOT) |
| Special Report: Accessible Public Rights-of-Way Planning and Design for Alterations | Access Board |
| ADA and ABA Accessibility Guidelines | Architectural and Transportation Barriers Compliance Board |

## Conclusion

The recommendations communicated as part of the Bessemer City Pedestrian Plan Update provide a blueprint for how the City can achieve its vision for walkability.

> ***Bessemer City will celebrate its family-oriented, small-town character by becoming a safer and more accessible place to walk for recreation and transportation.***

The process has reinforced the community's desire to create a transportation network that promotes different ways to move around the City and supports long-held expectations for a quality of life that is uniquely Bessemer City. But the Pedestrian Plan Update is only one part of a broader vision for mobility that supports local goals related to land use, design, economic development, natural resources, and community services. The plan seeks to ensure that transportation decision-making will consider existing and future issues and needs. The plan provides transportation strategies that consider the existing and future needs of Bessemer City residents, visitors, and employers alike. It also sets expectations for a flexible implementation framework that aligns potential projects with reasonable expectations for funding. With this document, community leaders and the people that call Bessemer City home can set the stage for the City's future and how it will accommodate the needs of pedestrians and keep people, regardless of their age or physical ability, moving forward.