OCTOBER 2023

BELMONT
NORTH CAROLINA

Pedestrian Plan Update

**Prepared for the City of Belmont, North Carolina,
in partnership with the NCDOT Integrated Mobility Division**

Prepared by Alta Planning + Design

Acknowledgments

Thank you to the local residents, community leaders, and government staff that participated in the development of this plan through meetings, public engagement, and plan review. Special thanks to those who participated as Steering Committee members listed below.

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BELMONT NORTH CAROLINA

Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

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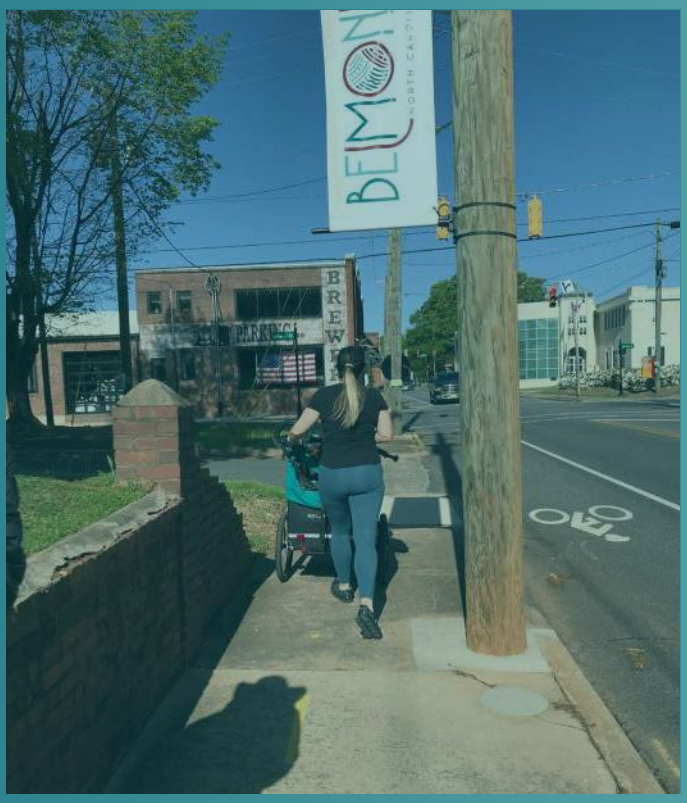
Introduction

The Belmont Pedestrian Plan update envisions the City of Belmont as a place where walking is safe, accessible, fun, and supportive of an active, healthy lifestyle; where people of all ages and abilities can move and access their daily needs safely by foot and by all forms of active transportation.



Project Purpose

This updated plan provides a framework for prioritizing and implementing infrastructure, programs, and policies to make walking in Belmont a safe and healthy option for all.

Recognizing a need to update the 2009 pedestrian plan, the City of Belmont requested and received funding from the North Carolina Department of Transportation (NCDOT) Integrated Mobility Division (IMD) and Transportation Planning Division as part of an annual Multimodal Planning Grant Program (MMPG). The purpose of the program is to encourage municipalities to develop comprehensive pedestrian plans and bicycle plans.

Communities throughout North Carolina have begun to place more emphasis on providing facilities for travel options beyond single-occupancy vehicle travel. A desire for better modal choices, the demand for more walkable and bikeable communities, and a focus on smart growth initiatives have combined to highlight the need for better, more complete multimodal, bicycle and pedestrian transportation systems. Comprehensive plans, such as this one, are an integral part of developing these systems, serving to guide both local and state efforts to improve conditions for multimodal connections and walking and bicycling.

This plan update is focused on pedestrian issues only; for information related to bicycling in Belmont, please refer to the 2013 City of Belmont Bicycle Plan.

Planning Background

2009
Belmont adopts the City's first Pedestrian Transportation Plan.

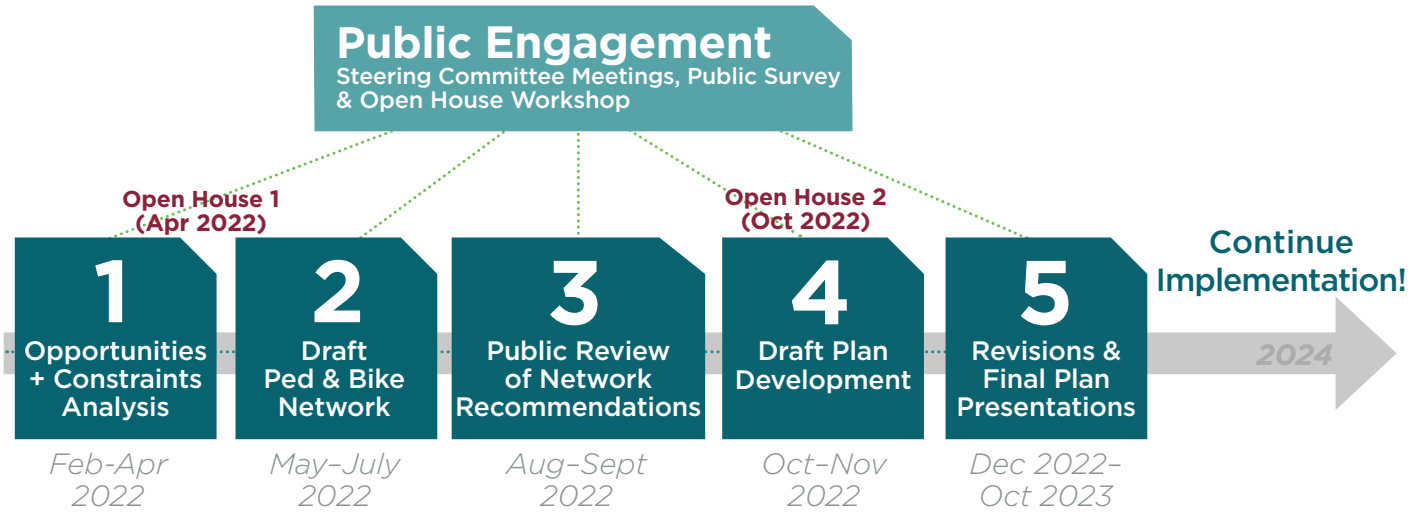
2010-2020
10-year implementation period, plus development of other citywide plans, such as the Bicycle Master Plan, Belmont Comprehensive Plan and the Parks and Recreation Master Plan.

2021-2022
Belmont submits a grant application to NCDOT to update the pedestrian plan; Belmont receives funding and begins the plan update process.

2023
Belmont adopts the updated Pedestrian Plan.

Planning Process

Every Pedestrian Plan should collect the most up-to-date data, but also focus on a comprehensive engagement strategy with the public and stakeholders. The planning process included public engagement, direction from a project steering committee, and presentations to the City Council. The time frame for these and other steps are outlined below:



Plan Vision, Goals, and Objectives

The plan vision, goals, and objectives provide a foundation for the entire plan:

Plan Vision

The Belmont Pedestrian Plan update envisions the City of Belmont as a place where walking is safe, accessible, fun, and supportive of an active, healthy lifestyle; where people of all ages and abilities can move and access their daily needs safely by foot and all forms of active transportation.

Plan Goals & Objectives

To fulfill the project vision, the Belmont Pedestrian Plan features the following eight goals for the City and its partners to work towards:

Enhance Connectivity, Accessibility, and Mobility

Promote Equity

Improve Safety

Increase Quality of Life

Identify Funding Strategies

Provide Access to Natural & Recreational Areas

Create More Choices for Exercise

Generate a Positive Economic Impact

The Plan Vision and each of these goals and objectives helped guide the process of preparing the plan, which included tasks such as data collection, needs analysis, prioritization, development of implementation strategies, and performance measures.

Why Invest in Walking?

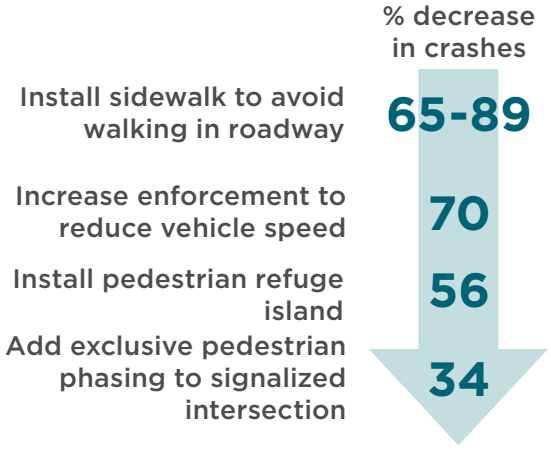
Safety Benefits

Pedestrian treatments and traffic calming help save lives and beat back the alarming current trend of increasing pedestrian injuries and deaths. Additionally, increased numbers of pedestrians and trail users help create an environment where safety and behavior is monitored by those using the trail.

From 2007-2020, NCDOT reported...

85 **CRASHES INVOLVING PEDESTRIANS IN BELMONT**

CRASH REDUCTION MEASURES



Federal Highway Administration, 2008

A PEDESTRIAN HIT BY A VEHICLE TRAVELING AT:

25 MPH

has an **89%** chance of survival

35 MPH

has a **68%** chance of survival

45 MPH

has a **35%** chance of survival

Rosén & Sander, 2009

Health Benefits

Sidewalks and greenways offer safe and accessible opportunities for physical activity. People who utilize pedestrian facilities are able to better connect, both physically and mentally, with more places around their communities.

30% **ADULT OBESITY** in Gaston County (compared with 30% for the state of North Carolina)

30% of adults are **PHYSICALLY INACTIVE** in Gaston County (compared with 23% for the state of North Carolina)

https://www.countyhealthrankings.org/app/north-carolina/2019/rankings/gaston/county/outcomes/overall/snapshot

Every **0.6 MILES WALKED** results in a

5%

REDUCTION in the likelihood of obesity.

Frank, 2004

THOSE WHO ARE PHYSICALLY ACTIVE GENERALLY LIVE LONGER and have a lower risk for heart disease, stroke, Type 2 diabetes, depression, some cancers, and obesity.

CDC, 2015

A study by the Carolina Thread Trail values the **PHYSICAL ACTIVITY BENEFITS** of walking, running, or other physical activities at

$7.20 **FOR EACH TRIP.**

Catawba Lands Conservancy, Mecklenburg County Park, City of Mount Holly, 2022, Trail Benefits: Evaluating the Economic, Physical Health, and Environmental Impacts of Completing Six Key Segments of the Carolina Thread Trail

20 MINUTES walking or biking each day is associated with a

21% **LOWER RISK OF HEART FAILURE FOR MEN**

29% **LOWER RISK FOR WOMEN**

Rahman, 2014 and 2015

Environmental Benefits

Decreasing reliance on automobiles and reducing congestion by utilizing sidewalks and trails will lead to improved air quality and better quality of life for all in Belmont. Trails and greenways serve as a tool for conserving open space and preserving wetlands.

AIR QUALITY in the **CHARLOTTE-CONCORD-GASTONIA** area was reported to have:

79 bad-air days in 2018 in which ground-level ozone and/or particulate pollution was **above the level** that the EPA has determined presents "little or no risk." This is within the top five worst levels of air pollutants measured in all metropolitan areas and rural counties in North Carolina.

https://environmentnorthcarolinacenter.org/sites/environment/files/reports/NC_TroubleintheAirReport.pdf

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If **8% more children** living within **2 miles of a school** were to walk or bike to school, the air pollution reduced from not taking a car would be **EQUIVALENT TO REMOVING 60,000 CARS** from the road for one year, nationally.

Pedroso, 2008, SRTS

A recent study by the **CAROLINA THREAD TRAIL** found that the 2.6-mile **Hector H Henry II Greenway** in Concord, NC supported the **ELIMINATION OF 2,890 CAR TRIPS** and **54,610 MILE REDUCTION** in vehicle miles traveled.

Catawba Lands Conservancy, Mecklenburg County Park, City of Mount Holly, 2022, Trail Benefits: Evaluating the Economic, Physical Health, and Environmental Impacts of Completing Six Key Segments of the Carolina Thread Trail

Economic Benefits

Connected walkways and trails often yield high returns on investment through economic revitalization, recreational tourism, increased property values, and small business opportunities.

Building sidewalk and bicycle facilities creates **36% more jobs** than building highways and **ALMOST DOUBLES** the amount of jobs gained compared to pavement improvements.

American Association of State Highway and Transportation Officials (AASHTO) Average Direct Jobs by Project Type, 2012, Job in terms of full-time equivalents (FTE).

American spend roughly 13% of household expenditure on transportation (**OR ABOUT 22% FOR THOSE MAKING $30K/YEAR**)—almost all used for automobile purchases and maintenance. Providing infrastructure to replace even just short trips could have a huge positive impact on quality of life due to cost savings.

https://www.itdp.org/2019/05/23/high-cost-transportation-united-states/

Institute for Transportation & Development Policy, 2019

21% of all trips made by a privately-operated vehicle in the US are **1 MILE OR LESS**

NHTSA, 2017

A recent study estimated that the **MOUNT HOLLY RIVER HAWK GREENWAY** facilitates approximately

$5.4 million

in annual business sales by providing sage, affordable, and aesthetically valued transportation access to nearby storefronts.

Catawba Lands Conservancy, Mecklenburg County Park, City of Mount Holly, 2022, Trail Benefits: Evaluating the Economic, Physical Health, and Environmental Impacts of Completing Six Key Segments of the Carolina Thread Trail

In 2021,

OUTDOOR RECREATION IN NORTH CAROLINA contributed over

$11.8 billion

to the state's GDP.

This accounts for over

130,000 jobs annually,

resulting in more than

$5.9 billion

in compensation for employees.

U.S. Department of Commerce Bureau of Economic Analysis, 2021, Outdoor Recreation Satellite Account

A study looking at the **ECONOMIC IMPACT OF FOUR GREENWAYS** in North Carolina (Brevard Greenway, Little Sugar Creek Greenway, American Tobacco Trail, and Duck Trail) found that every

$1.00 of initial trail construction supports $1.72 annually

from sales revenue, sales tax revenue, and benefits related to health and transportation. A one-time $26.7M capital investment in the four greenways supports:

$19.4M
Estimated annual sales revenue at local businesses along the four greenways

$684K
Estimated annual local and state sales tax revenue from businesses along the greenways

$25.7M
Estimated annual savings due to more physical activity, less pollution and congestion, and fewer traffic injuries from use of the greenways

$48.7M
Estimated business revenue from greenway construction

790 JOBS
Supported annually through greenway construction

North Carolina Department of Transportation, Division of Bicycle and Transportation, 2022, Evaluating the Economic Impact of Shared Use paths in North Carolina.

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Existing Conditions

This chapter explores how Belmont's existing transportation network and planned projects are shaping the future of walking in this growing city, drawing upon insights from the project steering committee, public comments, and data analysis.

Community Overview and Local Context

Belmont is a city in eastern Gaston County with a population of approximately 15,000. It is located about 10 miles to the west of downtown Charlotte, North Carolina and near the Catawba River, with adjoining waterfronts along much of its eastern and southwestern boundaries. The downtown acts as the city's center with attractions for residents and visitors. Surrounding suburban areas house most city residents, and there are many destinations spread across the city as well.

Among the many natural amenities in Belmont, some of the most popular parks include Rocky Branch Park to the west of downtown, the Kevin Loftin Riverfront Park to the east along the Catawba River, Stowe Park near downtown, and the Daniel Stowe Botanical Gardens (a regional destination) at the city's southwestern tip. Some of these areas have walking paths, and others, like Rocky Branch Park and Daniel Stowe Botanical Gardens, contain sections of the expanding Carolina Thread Trail, which provides many types of trails, including multiuse paths for both walking and bicycling.

Belmont

QUICK FACTS

POPULATION:
15,136

LAND AREA IN SQ. MILES:
12.16

MEDIAN HOUSEHOLD INCOME:
$73,968

14.5%
OF RESIDENTS LIVE BELOW THE POVERTY LINE

RESIDENT DEMOGRAPHICS:

80.5%	WHITE, NOT HISPANIC OR LATINO
11.1%	BLACK OR AFRICAN-AMERICAN
4.5%	TWO OR MORE RACES
3.4%	ASIAN
2.0%	HISPANIC OR LATINO
0.3%	AMERICAN INDIAN OR ALASKA NATIVE

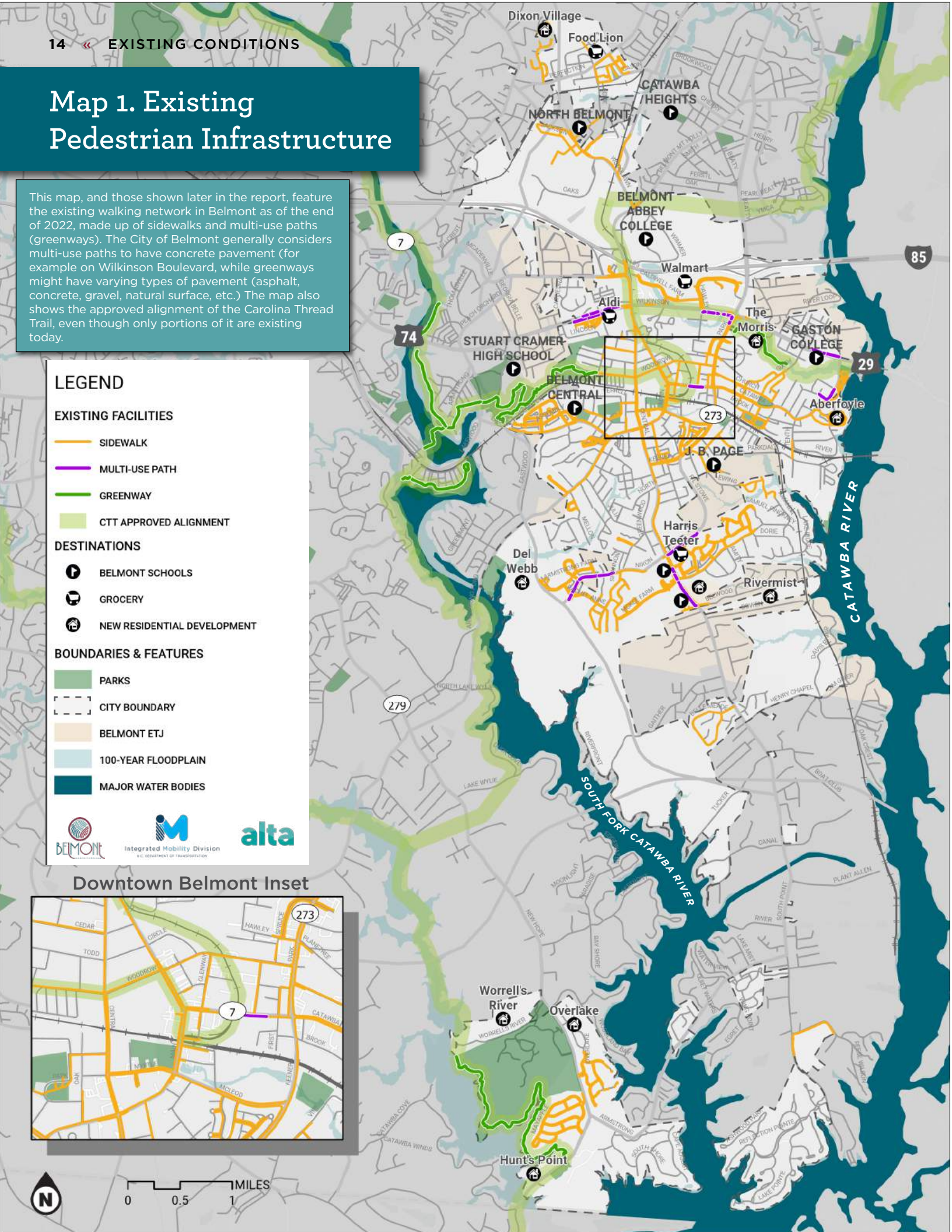
EXISTING SIDEWALK:
59 miles

EXISTING MULTI-USE PATH AND GREENWAY:
5.3 miles

https://www.census.gov/quickfacts/fact/table/belmontcitynorthcarolina (2021)

Map 1. Existing Pedestrian Infrastructure

This map, and those shown later in the report, feature the existing walking network in Belmont as of the end of 2022, made up of sidewalks and multi-use paths (greenways). The City of Belmont generally considers multi-use paths to have concrete pavement (for example on Wilkinson Boulevard, while greenways might have varying types of pavement (asphalt, concrete, gravel, natural surface, etc.) The map also shows the approved alignment of the Carolina Thread Trail, even though only portions of it are existing today.



Transportation Network

Like many cities in North Carolina, Belmont's current transportation network has been primarily focused on serving automobiles. There are two major highways north of downtown that run east-west (I-85 and US-29/Wilkinson Blvd) carrying a large amount of traffic through the city and providing regional connections. These parallel wide roads also create challenges, serving as a barrier for pedestrian crossings north of downtown.

Just south of Wilkinson Blvd, Central Ave, Main St and Catawba St are the major local arterials that provide access to downtown. Central Ave continues south of downtown, as it becomes South Point Rd, and it becomes the main north-south spine across the Belmont peninsula, providing access to quickly-developing areas south of downtown, both inside and outside city limits. Other roads, such as Armstrong Rd, Armstrong Ford Rd, Belmont Mt Holly Rd and Beatty Dr, connect Belmont to surrounding jurisdictions.

Belmont is also bisected by a railroad corridor running east-west. Railroad crossing opportunities are limited to three locations within town, including one at-grade downtown, and two as bridges over the railroad, east and west of downtown. If the LYNX Silver Line is constructed, the new route will create a Light Rail transit stop near Walmart and run east towards downtown Charlotte along Wilkinson Blvd.

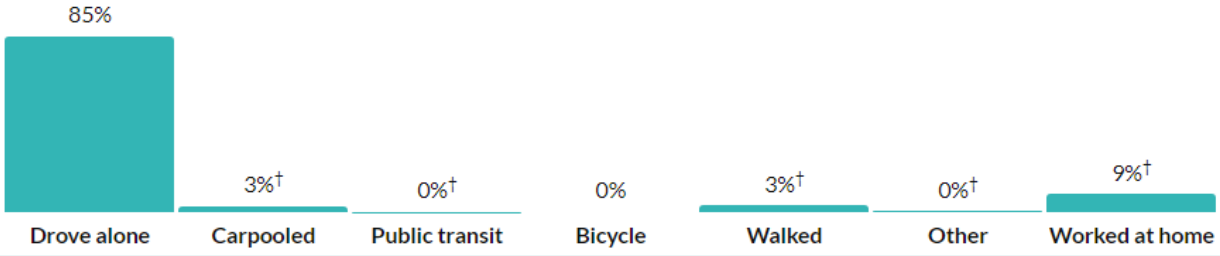
The public transportation system includes the CATS 85X Gastonia Express, connecting the City to the City of Gastonia bus system via the I-85 corridor, providing access to Gastonia and Charlotte. CATS Route 35 extends from Uptown Charlotte to the Amazon Distribution Center, east of Belmont on Wilkinson Blvd. On-demand service is available through Gastonia ACCESS.

Existing Walking Networks

Sidewalk segments of varying lengths can be found throughout Belmont, but many lack contiguous connections to nearby destinations. As residential subdivisions continue to develop in Belmont, new sections of sidewalk are being constructed, but often lack the complete connections that residents

MEANS OF TRANSPORTATION TO WORK IN BELMONT

Belmont's walk-to-work rate (3.2%) is more than double that of the surrounding the region (1.4%) and nearly double that of North Carolina (1.8%). Figures do not include non-work trips and are limited to ages 16 or older. (Source: https://censusreporter.org/profiles/16000US3704840-belmont-nc/).



need to walk safely to key destinations.

Only two currently complete trail segments exist in Belmont: the Duke Kimbrell/Seven Oaks Preserve Trail loop in South Belmont, and the Rocky Branch Trail, connecting to Cramerton. These create a partial trail network providing recreation opportunities for the City and are already designated as segments of the regional Carolina Thread Trail. Some natural surface trails also provide places to walk south of downtown, but are isolated from the larger network.

Key Destinations

Key destinations were identified by the public and Steering Committee during the planning process and are featured on Map 1, including:

- Downtown Belmont
- Belmont Abbey College
- Gaston College
- Rocky Branch Park
- Daniel Stowe Botanical Gardens
- Future CaroMont Hospital
- CityWorks/Recreation Center
- Future Silver Line station

Community Priorities, Needs and Concerns

Community members identified **increasing connectivity** as a common priority, particularly in closing gaps between existing sidewalks and within the larger regional greenway trail network. This includes connecting with new suburban areas, as new sidewalks are built at the time of development.

The need to **improve the overall experience** while walking in Belmont was also mentioned, with priorities such as street trees, placemaking, and fun walking activities. **Conflicts with cars** and **utility poles within the sidewalk** were noted as a key concerns. Such obstacles create barriers to pedestrian and ADA access within the network. These issues, as well as additional obstacles such as traffic volumes, speeding vehicles, and lack of appropriate pedestrian roadway crossings, need to be addressed to make walking a safer and lower-stress activity.

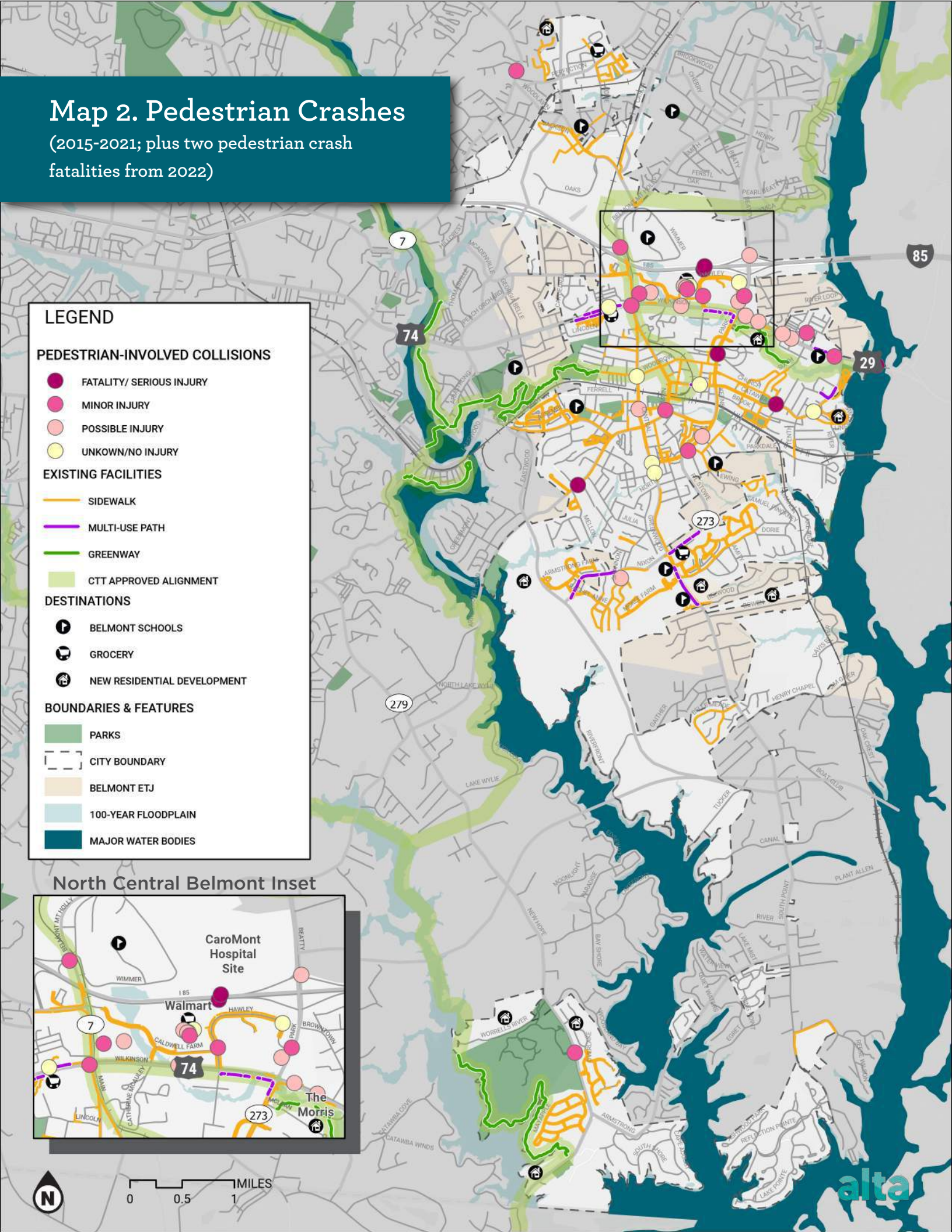
Pedestrian Crash Analysis

Map 2 on the following page shows crash locations between 2015 and 2021. It also includes the locations where two pedestrians were killed in July and August 2022, at Park St near Hawley Ave and Catawba St near Church St. These two fatalities were added to the data set due to their severity, even though 2022 data was not readily available. Both pedestrians in these incidences were killed while walking in the road at night.

The crash analysis starting on page 18 provides an overview of 88 pedestrian-involved crashes in Belmont (and the surrounding ETJ), from 2007 to 2021. Many of these crashes occurred on busy, high-speed streets and near major shopping centers, such as Wal-Mart.

Map 2. Pedestrian Crashes

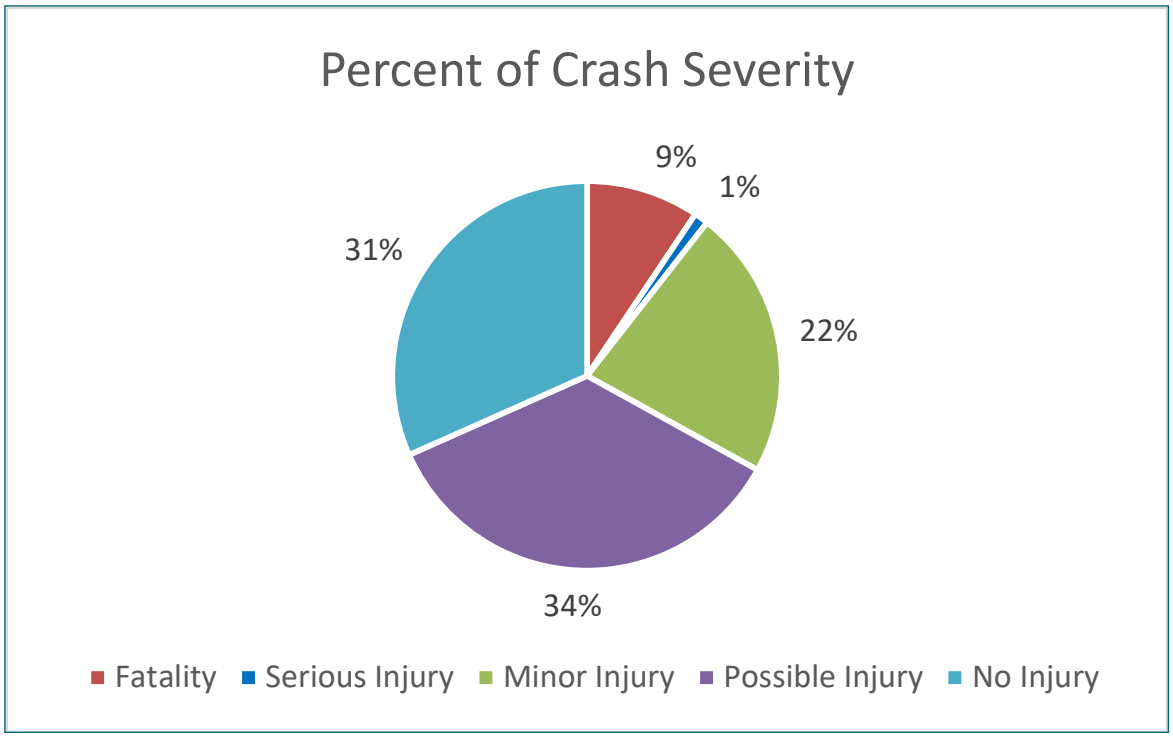
(2015-2021; plus two pedestrian crash fatalities from 2022)

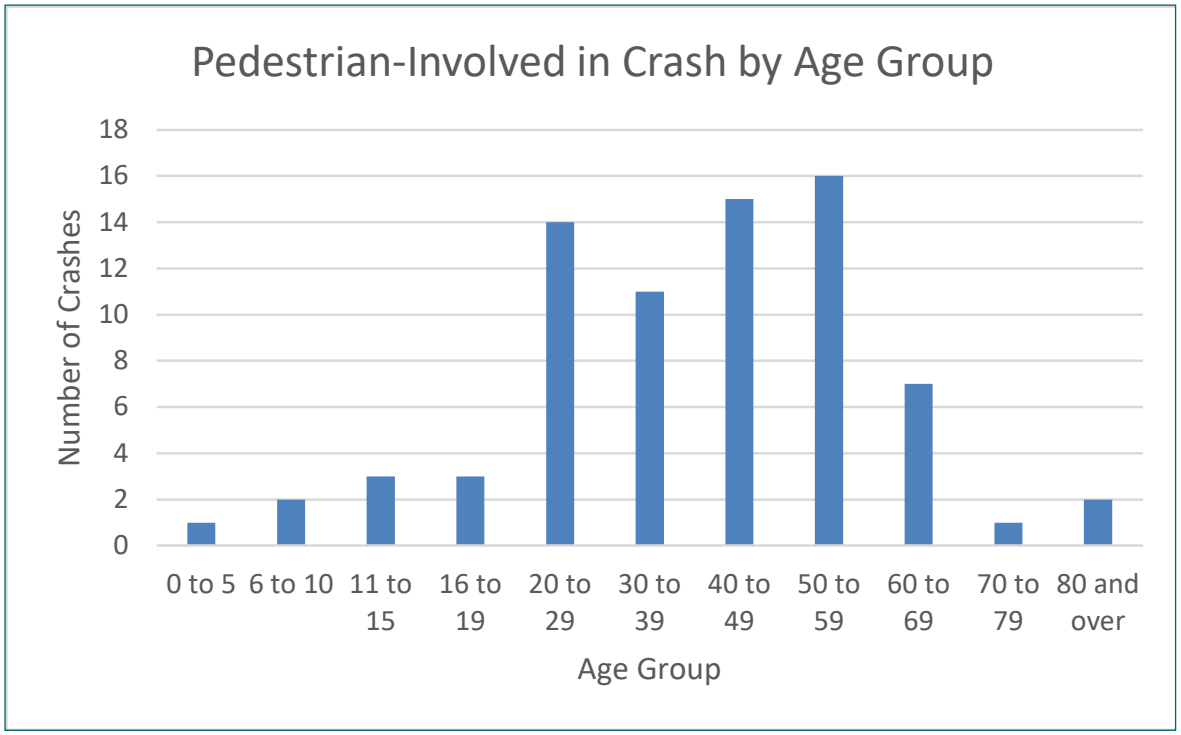


Pedestrian Crash Analysis: Severity & Age

(Source: NCDOT, 2007-2021)

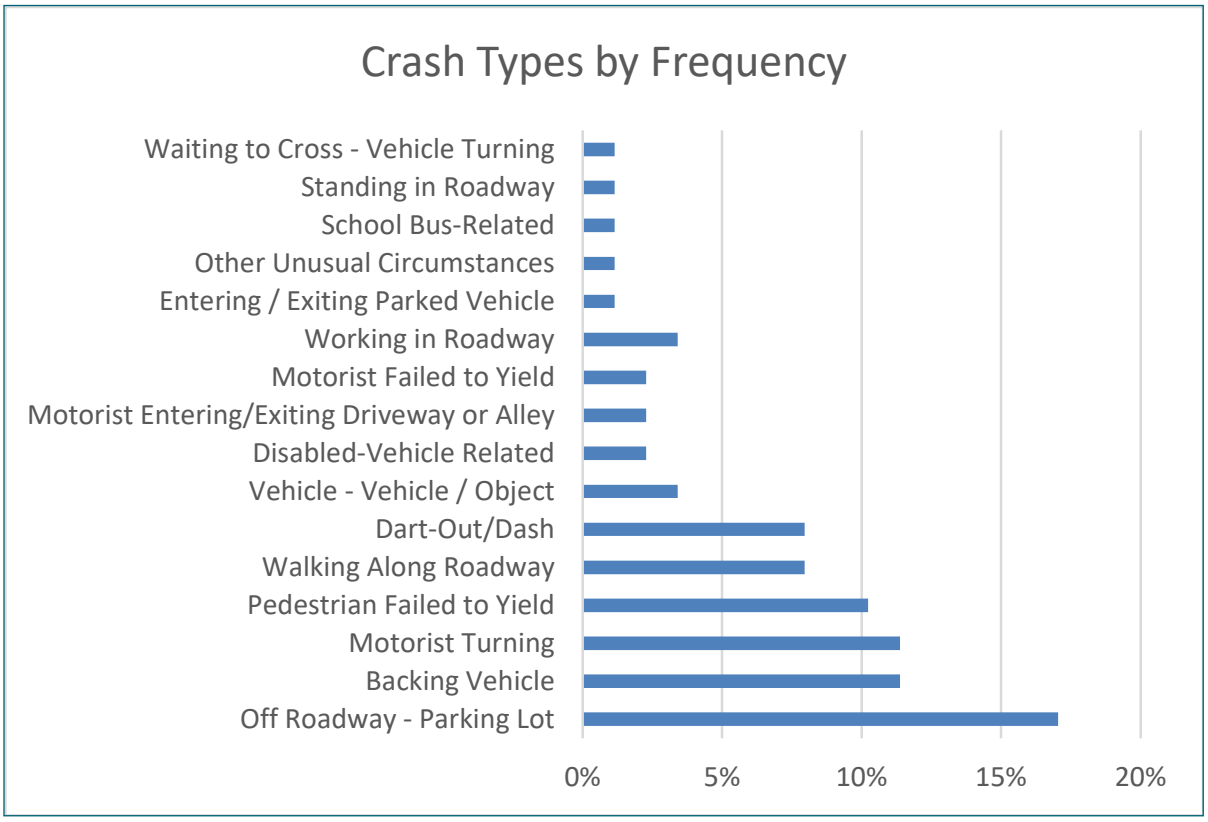
9% of pedestrian crashes resulted in a fatality

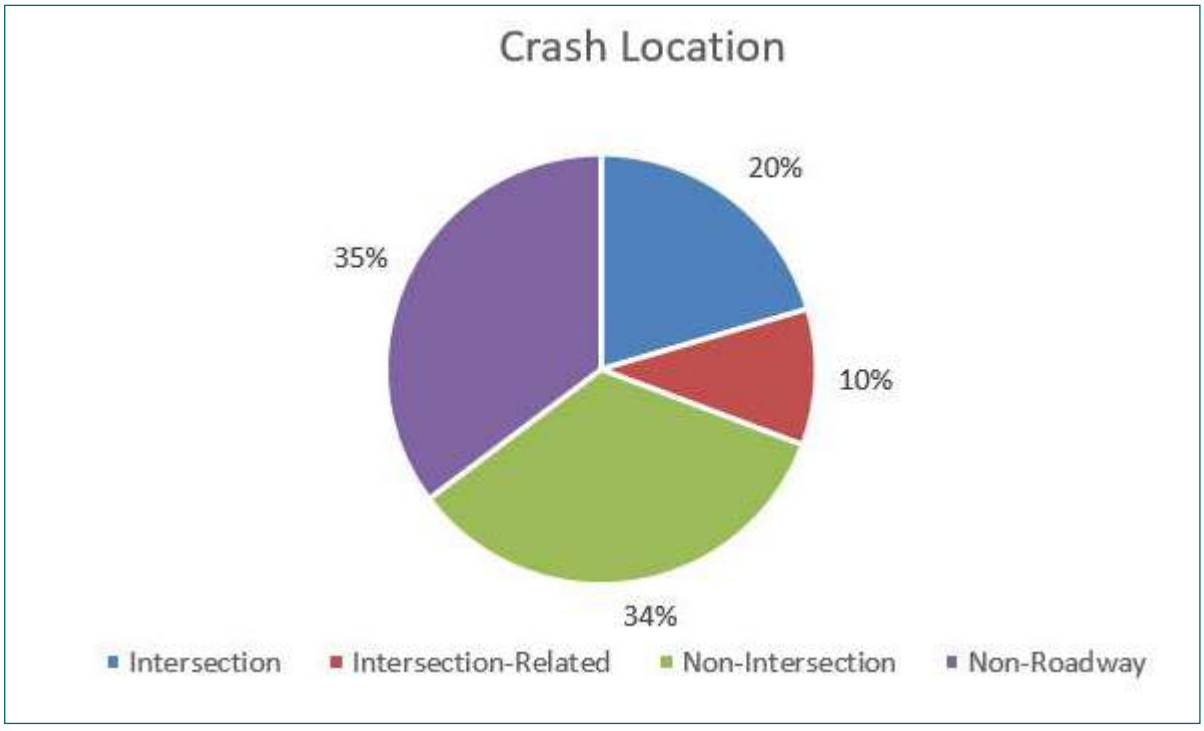




Pedestrian Crash Analysis: Crash Types and Location

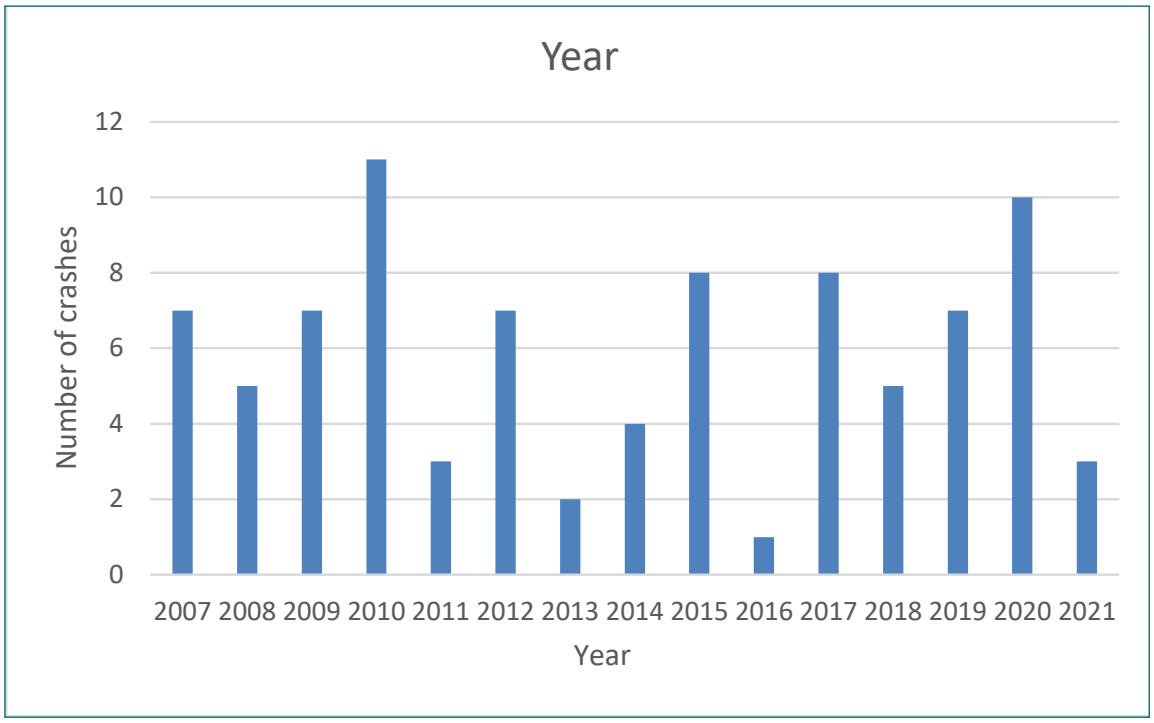
(Source: NCDOT, 2007-2021)

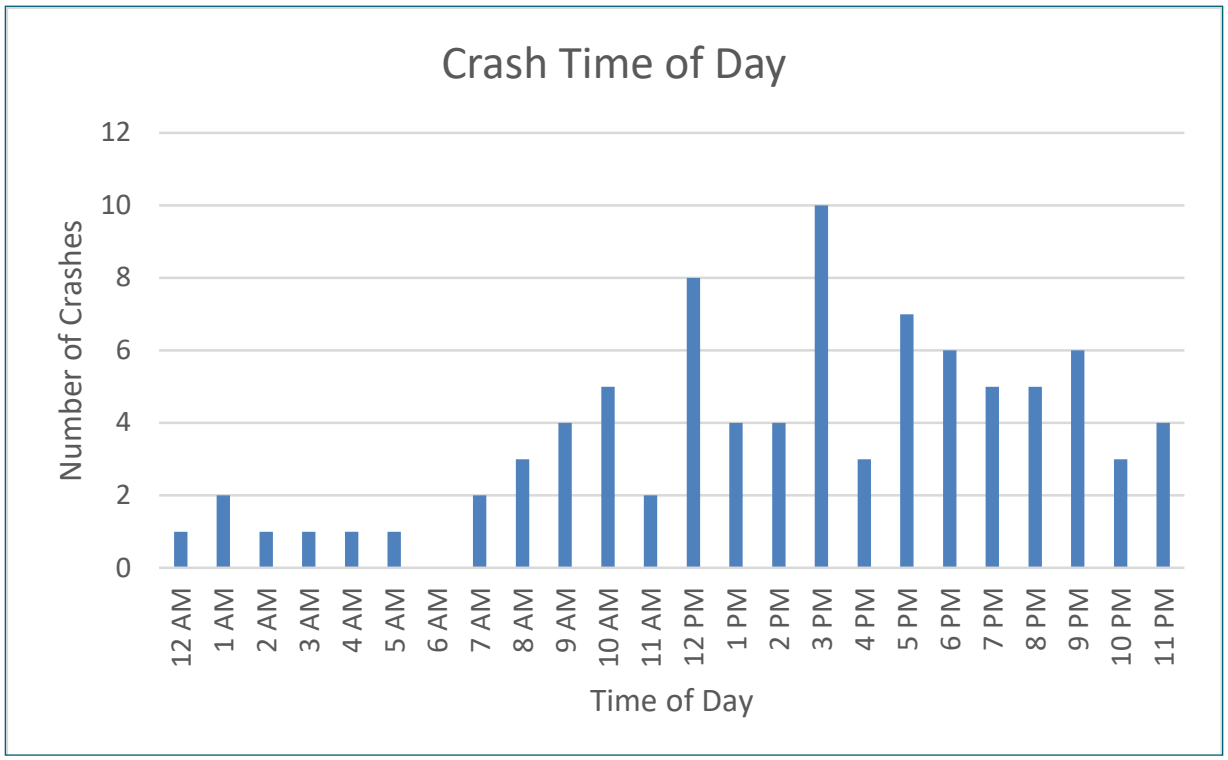




Pedestrian Crash Analysis: Year & Time of Day

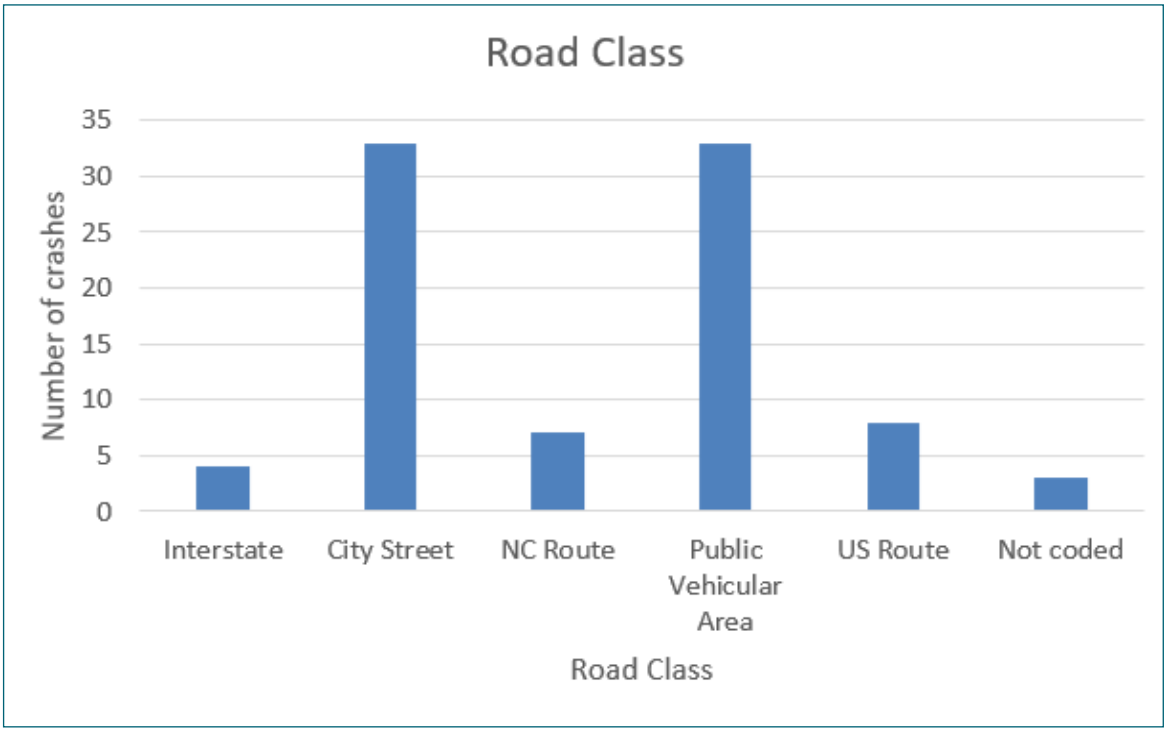
(Source: NCDOT, 2007-2021)

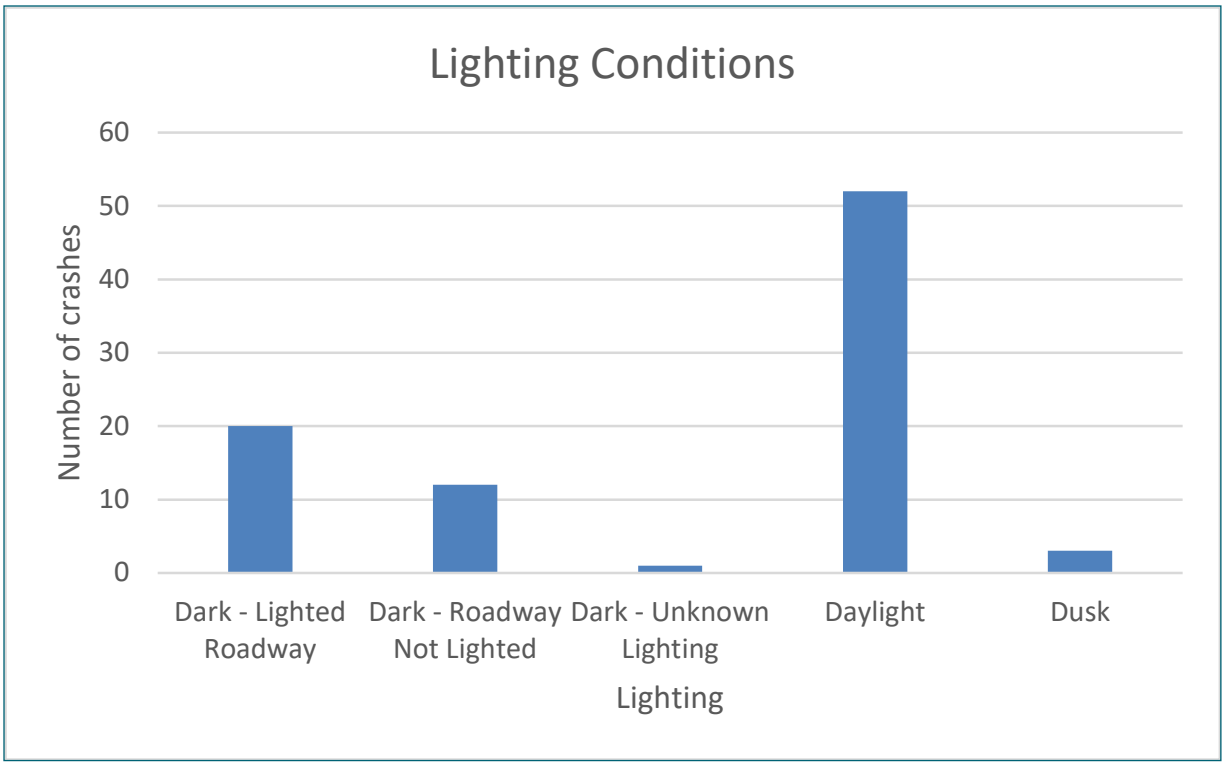




Pedestrian Crash Analysis: Road Class and Light Conditions

(Source: NCDOT, 2007-2021)





Related Plans and Studies

The following plans, studies, and projects were taken into consideration when weighing opportunities and constraints for this Pedestrian Plan update.

The Great Trails State Plan (2022)

The Great Trails State Plan was created by the N.C. Department of Transportation's Integrated Mobility Division, in coordination with the NCDOT Transportation Planning Division and North Carolina State Parks. It draws upon existing plans and new recommendations to identify a network of shared-use paths and trails that connect every county in North Carolina. The primary outcome was a statewide trail map coupled with an action-oriented implementation strategy. The recommended network aligns with the Carolina Thread Trail routes through Belmont and is available at: *www.ncdot.gov/divisions/bike-ped/great-trails-state*

Carolina Thread Trail Economic Impact Study (2022)

This study evaluated the economic, physical health, and environmental impacts of six key segments that were completed as part of the Carolina Thread Trail. By estimating the number of users on each trail, this report provides specific benefits provided by each trail segment.

2045 Metropolitan Transportation Plan (2018; amended in 2020)

This plan from the Gaston-Cleveland-Lincoln Metropolitan Planning Organization includes goals for improving mobility, transportation choices, and connectivity through pedestrian facilities. Pedestrian projects are listed by horizon year, those marked for 2025 being the Belmont Rail Trail and crossing improvements on S Main St and NC 273.

Rocky Branch Park Enhancement Project (2020)

The goal of this project is to enhance the park and its existing trail system in order to provide a safe, sustainable, fun and marketable outdoor experience for Belmont residents and visitors. The project focus is on recreational bicycling, but serves as a destination within Belmont's pedestrian network, especially for planning shared use path connections.

Belmont Parks & Recreation Comprehensive Plan (2019)

This plan includes a prioritized list of "Need Statements" that shows the top priority identified by the community is the connectivity of greenways, sidewalks, bike lanes, and trails. A public survey showed preferences of the community for developing greenways, improving pedestrian travel to and from parks, and developing new multi purpose trails, as walking and jogging are regular activities for respondents. Recommended priorities include developing shared-use trails, such as Abbey Creek Greenway, Rail Trail Project, Seven Oaks Trail, trails through Rocky Branch Park, and connecting trails to parks and other recreational use areas.

Build a Better Boulevard: Belmont Comprehensive Plan (2018)

This plan includes goals for improving transportation and mobility throughout the city, including improvements to capacity, connectivity, and choices within the transportation system. Recommendations include sidewalk improvements, streetscape improvements, and greenway development.

The Wilkinson Boulevard Corridor Study (2015)

This study explored how to transform Wilkinson Boulevard into an attractive gateway to the Catawba River communities of Belmont, Cramerton, and McAdenville. The study recommends a redesign of Wilkinson Boulevard to have six 10.5-foot travel lanes, with a planted center median, landscaped buffers, and bicycle and sidewalk facilities on either side. The study also recommends intersection improvements at Catawba/McAdenville Rd, Park Street, Main Street, Lakewood Road, and Market ST/Wesleyan Road.

Carolina Thread Trail Master Plan for Gaston County (2009)

This is the first plan to integrate existing and proposed municipal and county trails with additional segments to create a county-wide network of proposed trails. The recommended primary and secondary priority trail segments for implementation include a priority trail segment from Cramerton to Downtown Belmont near Highway 7 and a second priority trail segment from Belmont running north to Belmont Abbey College. The Great Trails State Plan (2022) also incorporates the proposed Carolina Thread Trail routes through Belmont.

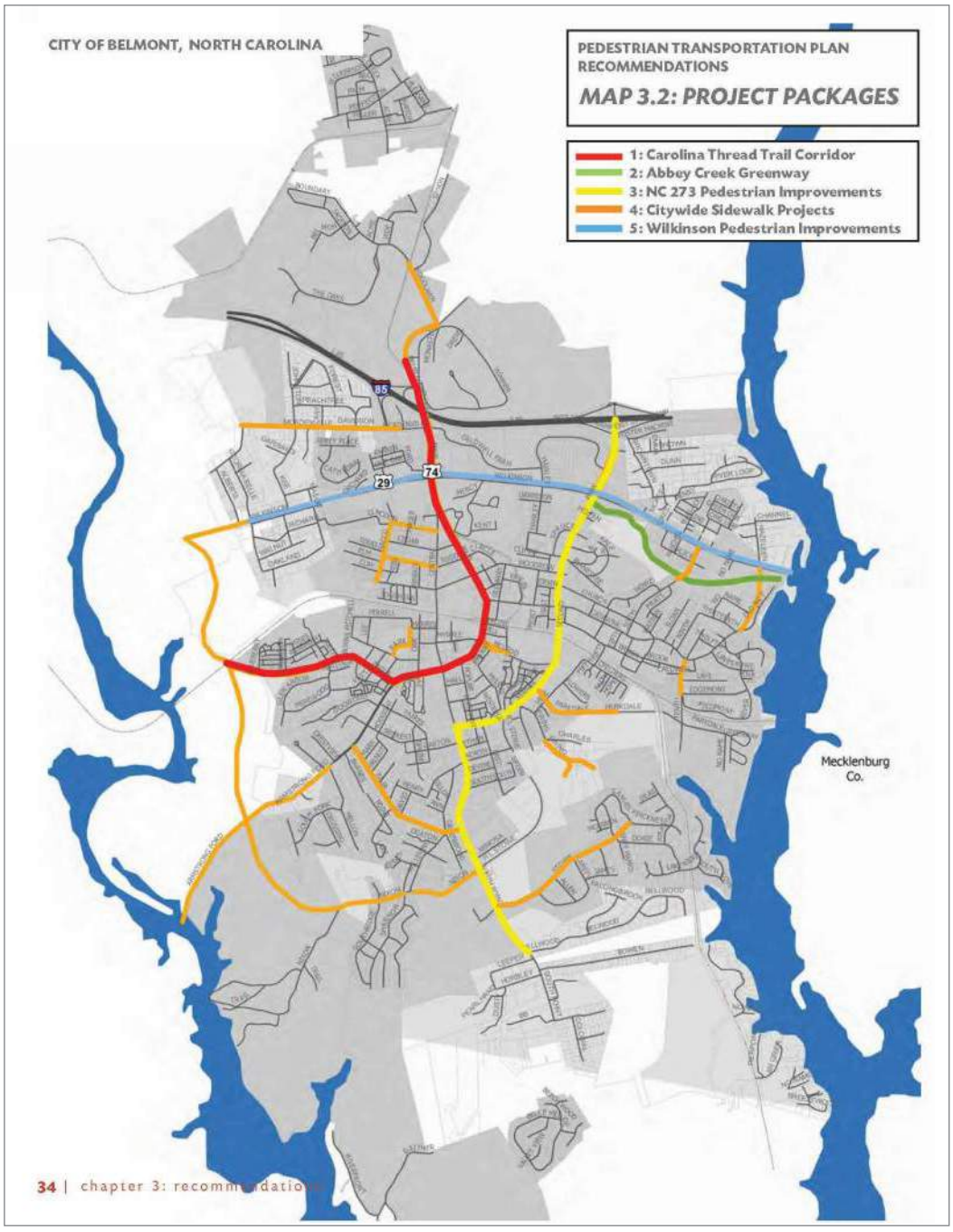
CAROLINA THREAD TRAIL

Belmont Pedestrian Transportation Plan (2009)

The purpose of this plan was to provide recommendations for making the City of Belmont a place where people can walk safely to their destinations—to schools, places of work, parks—and for daily errands, socializing, and exercise. The City of Belmont's vision for its pedestrian transportation system is to reduce dependence on motorized travel by connecting the various parts of the city with one another through sidewalks, safe street crossings, and greenways. This plan identified where greenways should be developed and provided strategies to fill the gaps in the existing sidewalk network. The current plan update (2023) builds from this 2009 plan.

Of the top 5 recommendations of the 2009 Plan, the first two have seen significant progress. Recommendation 1 was the Carolina Thread Trail (CTT) Corridor. The north-south segment of the CTT alignment is currently under development as a rail-trail, with the northern half (including the bridge over I-85) to be completed by NCDOT. Development of the southern half is to be led by the City and is currently under design down to south of the intersection of Main Street and Catawba Street. Temporary signage is also planned for the near future for interim on-street alignments. Recommendation 2 was the Abbey Creek Greenway, which is

also currently led by the City and under design. However, Recommendations 3 through 5 have proceeded only a few steps toward implementation, with some intersection and sidewalk improvements along Park Street and around downtown, but very few pedestrian improvements along Wilkinson Boulevard. Many of these pending items were incorporated into the new recommendations in this round of Pedestrian Plan updates.



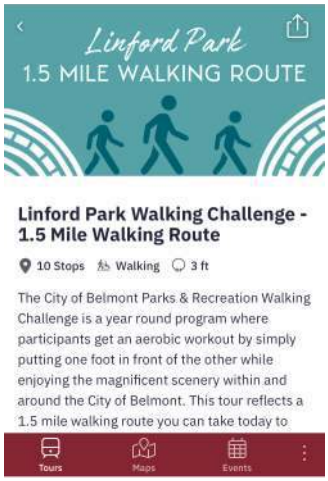
Map of Priority Project Recommendations from the 2009 Pedestrian Transportation Plan

Existing Programs & Policies

Belmont GO App

The Downtown Belmont Development Association (DBDA) developed a free app (also available as a standard website) to provide maps, self-guided tours, and walking routes for residents and visitors walking in Belmont. Users have convenient opportunities to experience the city's history while walking and exercising along designated routes. Destination maps are also available, showing Belmont's restaurants and retail establishments.

https://belmontgo.stqry.app/en/



General Street Design Principles

Chapter 8 of the City's Land Development Code encourages the development of a network of sidewalks and bicycle lanes that provide an attractive and safe mode of travel for pedestrians and cyclists. Visit the link below for the full set of principles. Related guidance is provided in Chapter 4 of this plan.

https://www.cityofbelmont.org/land-use-regulations/

Belmont Main Street Program

The Main Street Program is dedicated to revitalizing Belmont's downtown district in order to create jobs, help grow business, improve citizen satisfaction, and increase tourism. The program recognizes that most trips begin and end on foot, so parking, transit stops and bicycle facilities should provide safe and amenable transitions to walking. More on this program and topic is available through the links below.

https://www.cityofbelmont.org/main-street-program/

https://www.ncmainstreetandplanning.com/_files/ugd/a9c528_deb7515fdc1746d09ce2364f2b04c3bd.pd

Public & Stakeholder Input Summary

This planning effort included Steering Committee meetings, stakeholder interviews, public open houses, and a public survey. Existing conditions, project vision, goals, and preliminary recommendations were discussed.

Public workshops were advertised through a press release posted on social media and distributed through local media outlets. Project stakeholders helped spread the word about the workshops, as well as the online public survey. Information about the plan was posted on the Belmont Planning Department website.

During and after the public workshops and stakeholder meetings, stakeholders and residents marked up physical and online maps and shared comments with consultants about the pedestrian network and the online public survey was distributed for residents' participation. These responses helped shape the vision, goals, and ultimately the recommendations of this plan.

Additionally, City staff provided multiple opportunities for public feedback throughout the planning process.

See the full Public Engagement Summary in the appendix. Example survey responses are shown at right, with comments on key opportunities and constraints shown on the next page.

219 responses

How would you rate the condition of existing pedestrian infrastructure?

7% Excellent

63% Fair

29% Poor

1% Don't know/prefer not to answer

216 responses

What walking destinations would you most like to get to?

83% Parks

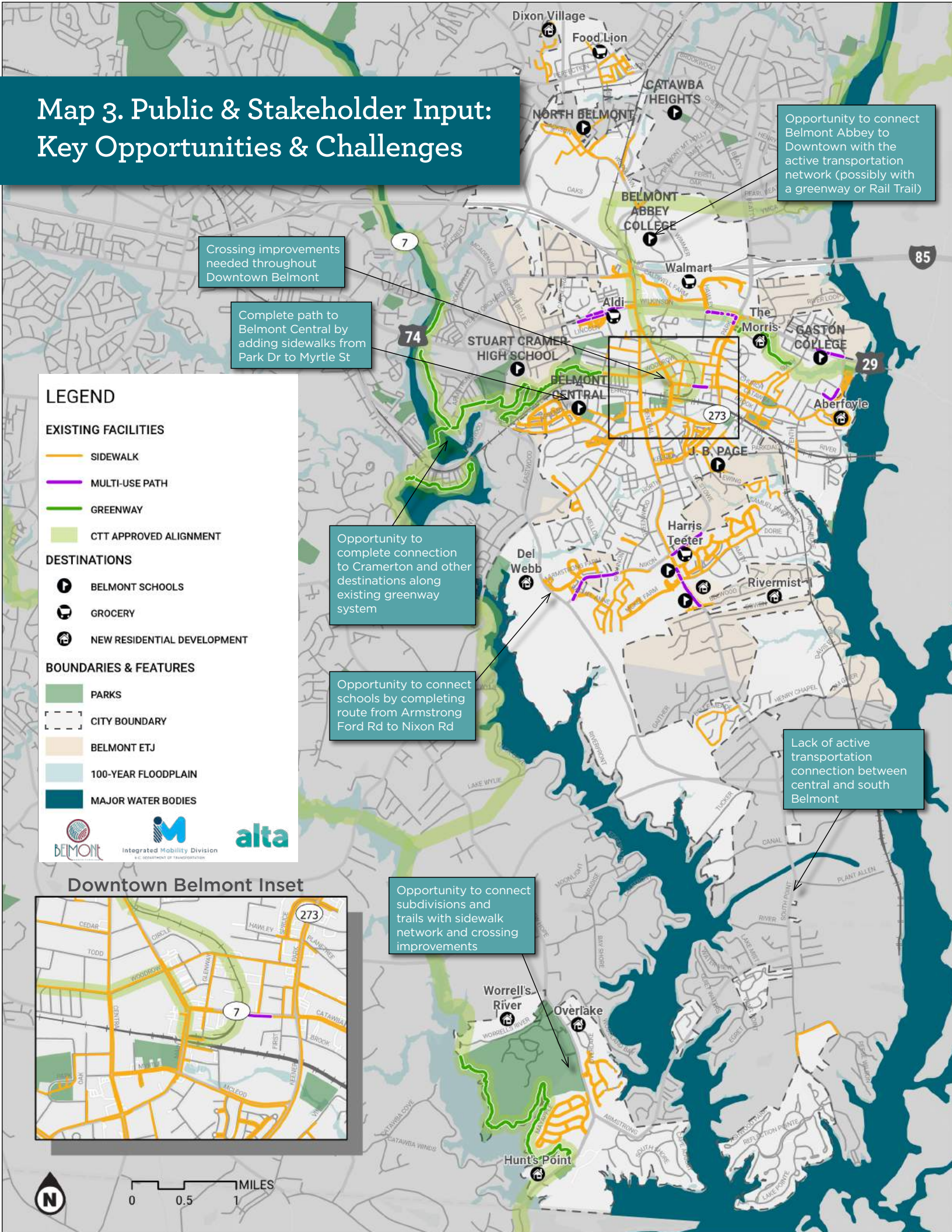
80% Restaurant/Bar/ Fast Food/Cafe

53% Grocery/ Convenience Store

53% Friend/Family Member's Home

35% Library

Map 3. Public & Stakeholder Input: Key Opportunities & Challenges



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Recommendations

This chapter presents the recommended pedestrian infrastructure projects that will advance safety and connectivity for people walking in Belmont.

Overview

Maps in this chapter document the proposed infrastructure, which would expand the City's pedestrian network with 68.4 miles of new sidewalks, 27.7 mile of greenways, and 67.1 miles of new mulit-use paths. The projects in this chapter are recommended as the highest-priority infrastructure projects to support the goals of a more walkable Belmont. Because there are many potential projects and limited time and funding available, prioritization was essential to developing the final recommended projects list. This chapter describes how the project team developed a prioritization process that reflected community and steering committee goals, and describes the resulting priority projects in detail.

From Plan Goals to Recommendations

KEY PLAN GOALS

Enhance Connectivity, Accessibility, and Mobility

Increase Safety

Promote Equity

KEY FACTORS FOR DEVELOPING RECOMMENDATIONS

Connections to Recreation and Schools

Pedestrian connections to trails, park entrances, and schools were especially important based on community feedback.

Connections to Employment and Housing

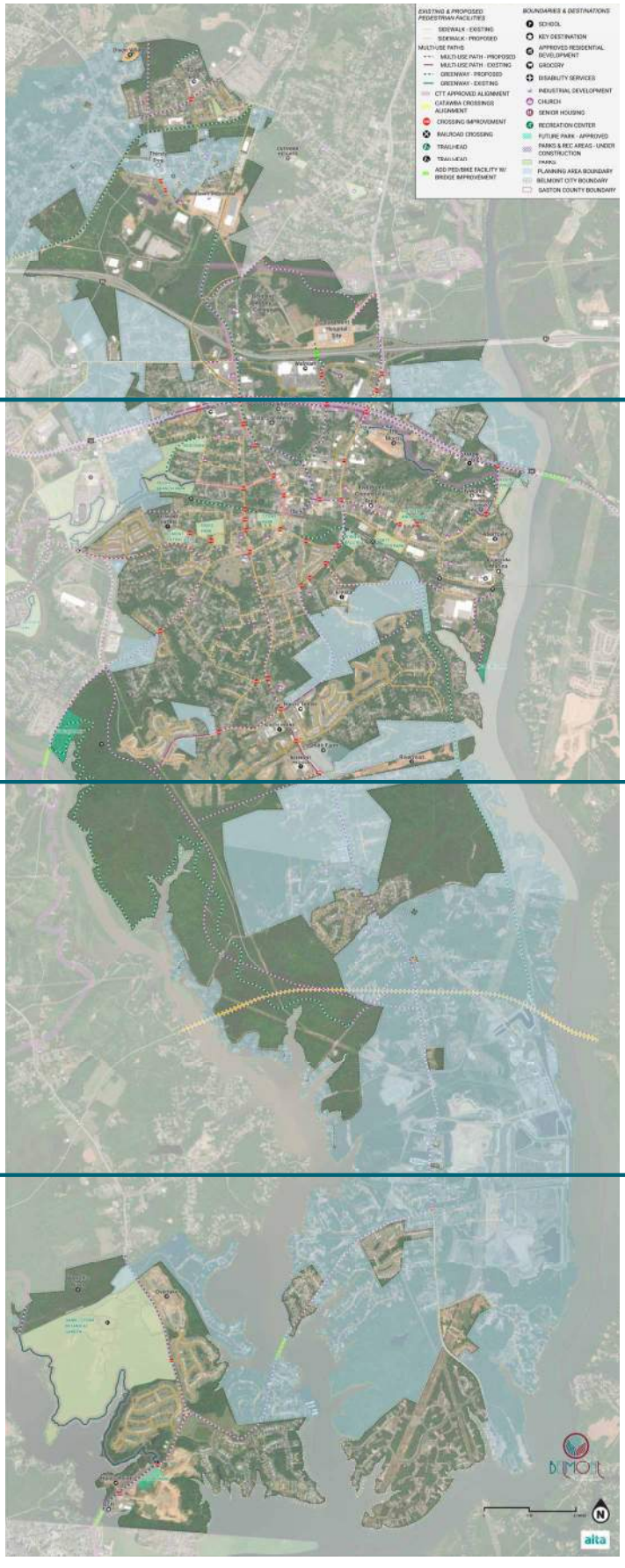
Projects to improve connections to employment centers and housing support the economic development and quality of life goals of Belmont. Access to senior housing and ADA accessibility were particular areas of focus.

Pedestrian High Injury Network

A safety analysis showed which streets in Belmont are the most dangerous for pedestrians. Proximity to high incidence of pedestrian crashes was a key criteria in developing the recommendations.

Transportation Disadvantage

Lower income and underrepresented groups typically have more difficulty accessing and navigating affordable transportation options. The equity analysis screened for areas with the greatest need for pedestrian projects, based on economic and demographic factors, including disability and age.



The city-wide recommendations map is displayed on the following pages broken down in sections that are outlined below.

Map 4. Recommendations: North Section (page 34)

Map 5. Recommendations: North Central Section (page 35)

Map 6. Recommendations: South Central Section (page 36)

Map 7. Recommendations: South Section (page 37)

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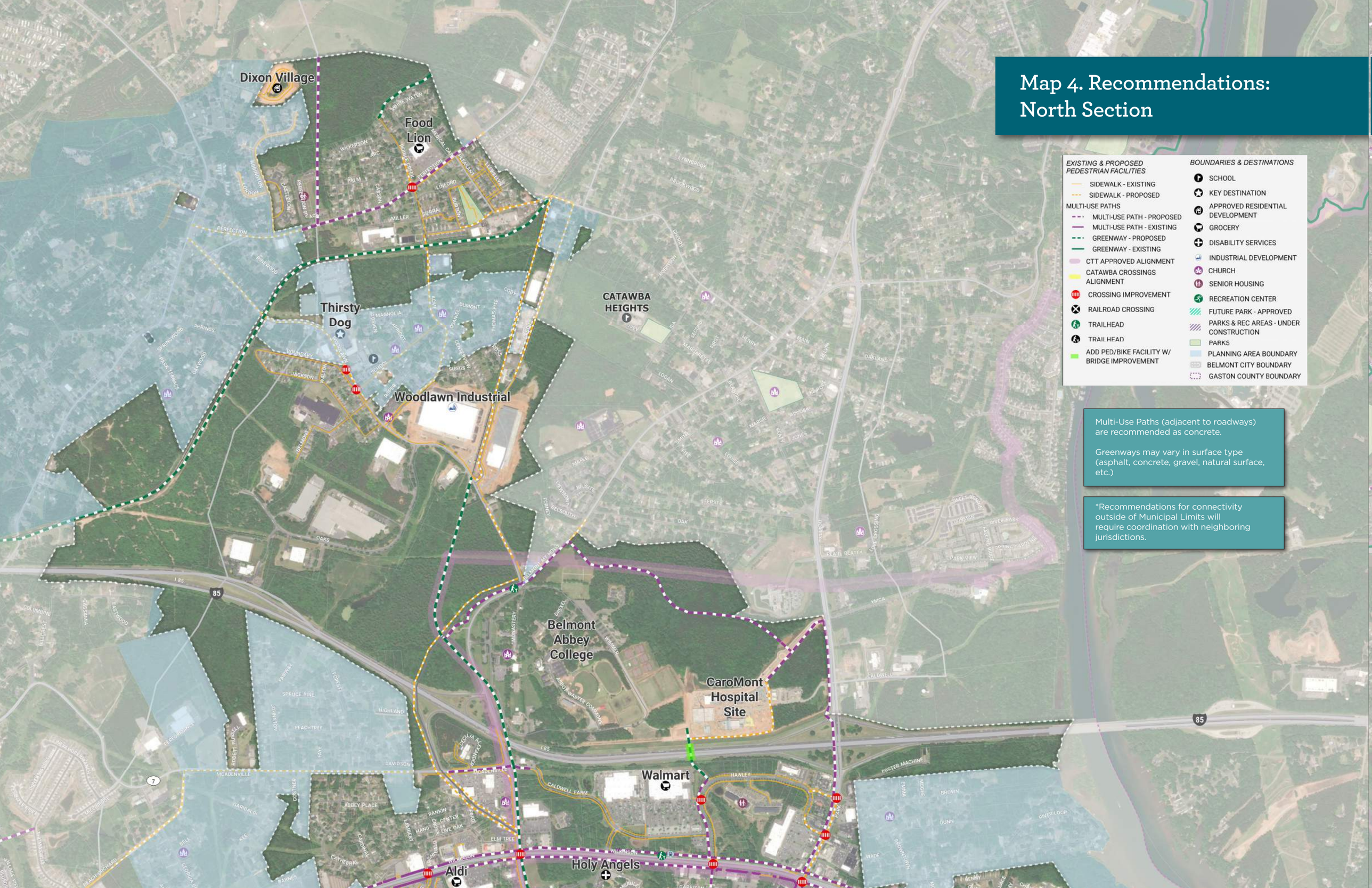
Map 4. Recommendations: North Section



EXISTING & PROPOSED PEDESTRIAN FACILITIES

- SIDEWALK - EXISTING
- SIDEWALK - PROPOSED

MULTI-USE PATHS

- MULTI-USE PATH - PROPOSED
- MULTI-USE PATH - EXISTING
- GREENWAY - PROPOSED
- GREENWAY - EXISTING
- CTT APPROVED ALIGNMENT
- CATAWBA CROSSINGS ALIGNMENT
- CROSSING IMPROVEMENT
- RAILROAD CROSSING
- TRAILHEAD
- TRAILHEAD
- ADD PED/BIKE FACILITY W/ BRIDGE IMPROVEMENT

BOUNDARIES & DESTINATIONS

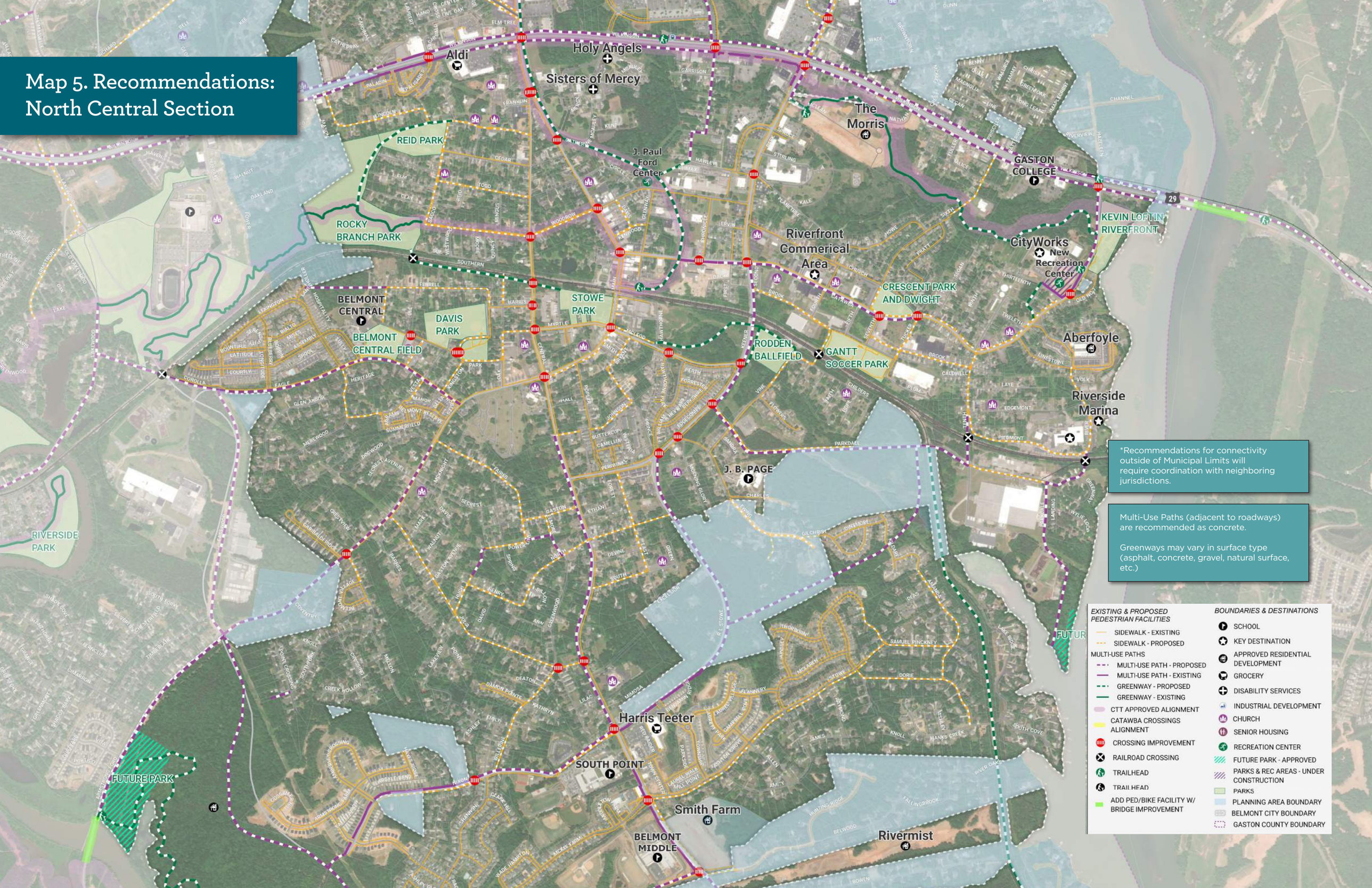
- SCHOOL
- KEY DESTINATION
- APPROVED RESIDENTIAL DEVELOPMENT
- GROCERY
- DISABILITY SERVICES
- INDUSTRIAL DEVELOPMENT
- CHURCH
- SENIOR HOUSING
- RECREATION CENTER
- FUTURE PARK - APPROVED
- PARKS & REC AREAS - UNDER CONSTRUCTION
- PARKS
- PLANNING AREA BOUNDARY
- BELMONT CITY BOUNDARY
- GASTON COUNTY BOUNDARY

Multi-Use Paths (adjacent to roadways) are recommended as concrete.

Greenways may vary in surface type (asphalt, concrete, gravel, natural surface, etc.)

*Recommendations for connectivity outside of Municipal Limits will require coordination with neighboring jurisdictions.

Map 5. Recommendations: North Central Section



*Recommendations for connectivity outside of Municipal Limits will require coordination with neighboring jurisdictions.

Multi-Use Paths (adjacent to roadways) are recommended as concrete.

Greenways may vary in surface type (asphalt, concrete, gravel, natural surface, etc.)

EXISTING & PROPOSED PEDESTRIAN FACILITIES

- SIDEWALK - EXISTING
- SIDEWALK - PROPOSED

MULTI-USE PATHS

- MULTI-USE PATH - PROPOSED
- MULTI-USE PATH - EXISTING
- GREENWAY - PROPOSED
- GREENWAY - EXISTING
- CTT APPROVED ALIGNMENT
- CATAWBA CROSSINGS ALIGNMENT
- CROSSING IMPROVEMENT
- RAILROAD CROSSING
- TRAILHEAD
- TRAILHEAD
- ADD PED/BIKE FACILITY W/ BRIDGE IMPROVEMENT

BOUNDARIES & DESTINATIONS

- SCHOOL
- KEY DESTINATION
- APPROVED RESIDENTIAL DEVELOPMENT
- GROCERY
- DISABILITY SERVICES
- INDUSTRIAL DEVELOPMENT
- CHURCH
- SENIOR HOUSING
- RECREATION CENTER
- FUTURE PARK - APPROVED
- PARKS & REC AREAS - UNDER CONSTRUCTION
- PARKS
- PLANNING AREA BOUNDARY
- BELMONT CITY BOUNDARY
- GASTON COUNTY BOUNDARY

Map 6. Recommendations: South Central Section

*Recommendations for connectivity outside of Municipal Limits will require coordination with neighboring jurisdictions.

Multi-Use Paths (adjacent to roadways) are recommended as concrete.

Greenways may vary in surface type (asphalt, concrete, gravel, natural surface, etc.)

EXISTING & PROPOSED PEDESTRIAN FACILITIES

- SIDEWALK - EXISTING
- SIDEWALK - PROPOSED

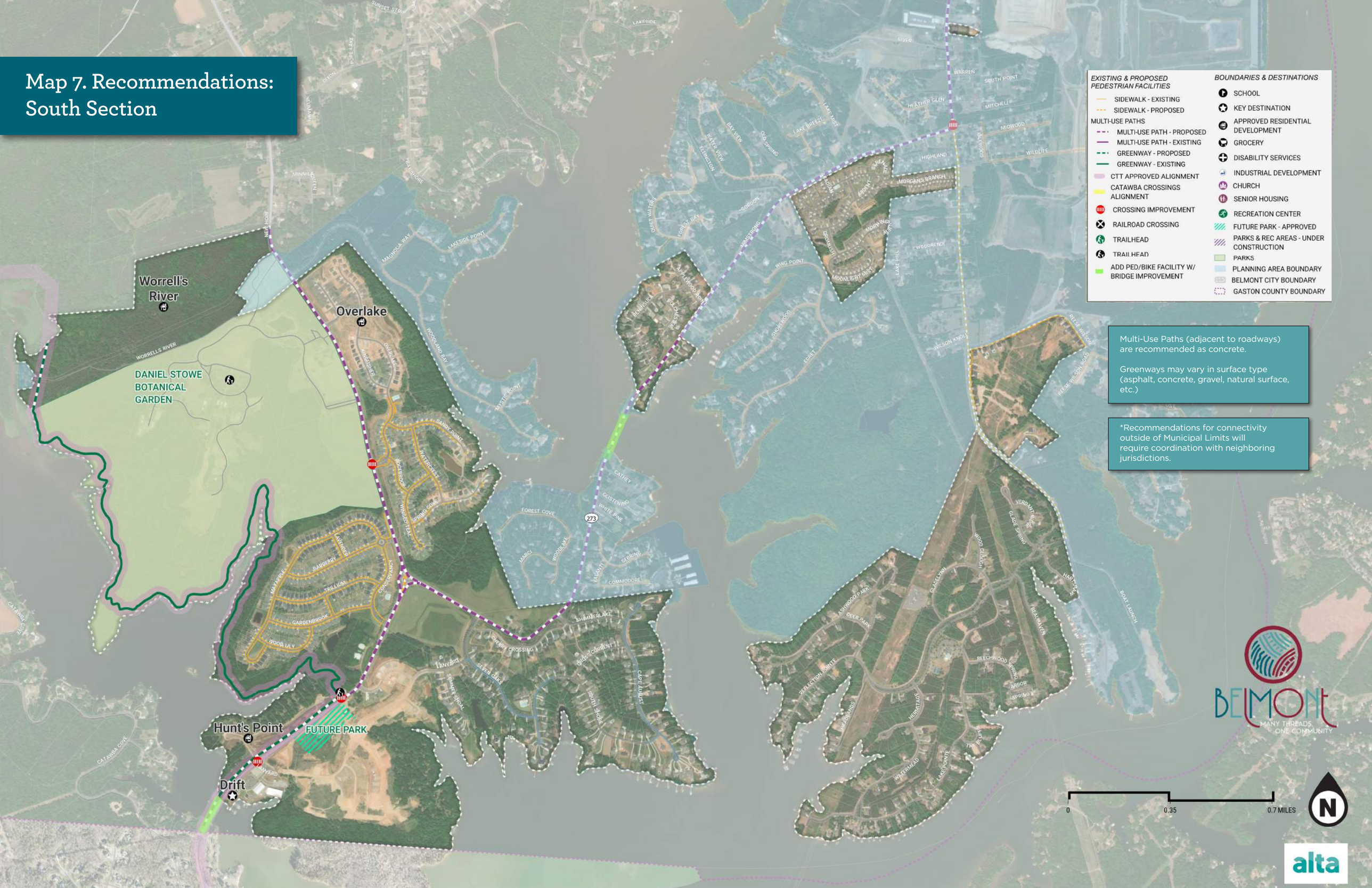
MULTI-USE PATHS

- MULTI-USE PATH - PROPOSED
- MULTI-USE PATH - EXISTING
- GREENWAY - PROPOSED
- GREENWAY - EXISTING
- CTT APPROVED ALIGNMENT
- CATAWBA CROSSINGS ALIGNMENT
- CROSSING IMPROVEMENT
- RAILROAD CROSSING
- TRAILHEAD
- TRAILHEAD
- ADD PED/BIKE FACILITY W/ BRIDGE IMPROVEMENT

BOUNDARIES & DESTINATIONS

- SCHOOL
- KEY DESTINATION
- APPROVED RESIDENTIAL DEVELOPMENT
- GROCERY
- DISABILITY SERVICES
- INDUSTRIAL DEVELOPMENT
- CHURCH
- SENIOR HOUSING
- RECREATION CENTER
- FUTURE PARK - APPROVED
- PARKS & REC AREAS - UNDER CONSTRUCTION
- PARKS
- PLANNING AREA BOUNDARY
- BELMONT CITY BOUNDARY
- GASTON COUNTY BOUNDARY

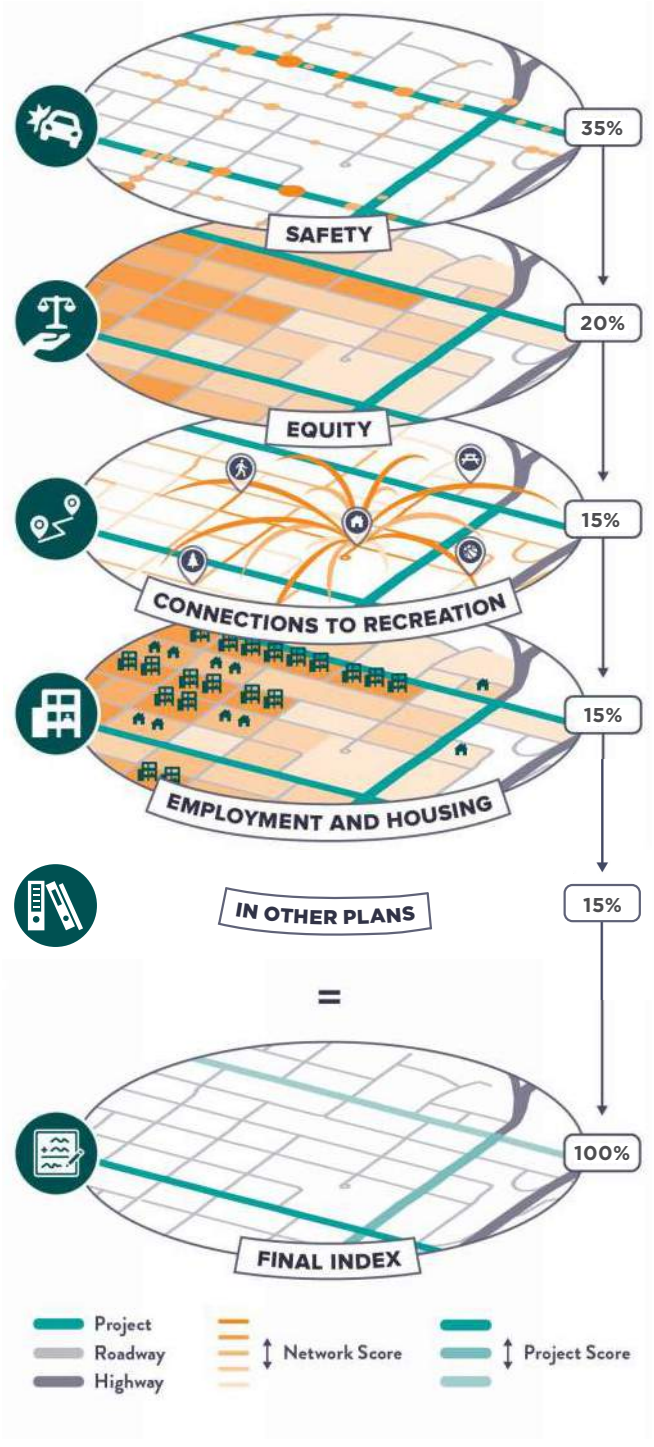
Map 7. Recommendations: South Section



Prioritization Process

The maps on previous pages show the many recommendations that were developed during the planning process. The Key Plan Goals helped guide the criteria used to score each recommendation. For example, to meet the Key Goal of "Enhancing Connectivity, Accessibility, and Mobility," the number of connections to recreation and educational destinations and senior housing facilities that would be served by a proposed recommendation were counted.

The graph at right summarizes the total number of points, from 0 to 100, that a recommendation could score. Based on feedback from stakeholders and the public, the Key Goal of "Safety" received the highest potential weight, 35% - the total of 35 points would be given only if a recommendation filled a critical gap in the pedestrian network and at the same time was located near a high accident rate location, and helped mitigate the risks at that location. The Key Goal of "Equity" came next, because of the increasing concern of funding programs and communities across the state to make sure the most at-risk communities receive attention and investments. Because the NCDOT's Transportation Disadvantaged Index did not contain sufficiently fine-grained data to identify these at-risk communities in Belmont, low-income or senior communities were identified and tagged in GIS maps, and projects that served these areas then received 20 points. Other Key Goals each then received a weighted average of 15 points each – Connectivity to Recreation and Schools; Connectivity to Employment and Housing and Economic Development; and the presence of a recommendation on other local and regional plans.



The following Recommendations scored the highest once the points for each Key Goal were added, in decreasing score order from the highest score. First we list larger packages of improvements for Priority Areas identified, which would carry a larger cost; then smaller projects for more targeted improvements:

Project Areas/Packages:

1. North Belmont Improvement Package – Interstate I-85 Improvement Project, rail trail, and sidewalk improvements

2. Downtown Pedestrian Safety Improvement Package – Crossing improvements and rail trail

3. Eastern Belmont Improvement Package – Abbey Creek Greenway, greenway connection, crossing improvements between CityWorks and Kevin Loftin Park, and pedestrian improvements along Catawba to Riverfront commercial area.

Additional Opportunities:

4. Sidewalk segment on Catawba St, Brook St, 10th St, and Piedmont Rd, connecting downtown and CityWorks (this is a smaller segment of Large Package #3, which could possibly be done sooner)

5. Pedestrian crossing improvements at the intersection of Church St and Catawba St (this is a smaller segment of Large Package #3, which could possibly be done sooner)

6. Pedestrian crossing improvements and new sidewalk on Park St from Wilkinson Boulevard to (North) Hawley Ave; and on Hawley Ave for a block west (this package would complement Large Packages #1 and #2)

7. Pedestrian Crossing on Wilkinson Boulevard and Park St (this package would complement Large Packages #1 and #2)

Other recommendations are summarized in the following table. They can be implemented as conditions and local needs change, and as more funding becomes available. For example, if the City completes the top 3 recommendations, then efforts can be focused on completing the next highest ranking ones, including an intersection improvement on the southern intersection of Hawley St with Park Ave and Planetree Dr, a package of improvements in Central Belmont (near Nixon Street), and a package of improvements in South Belmont.

Finally, there are also a significant amount of crashes documented in Belmont at off-street locations, such as commercial mall driveways and parking lots. The City can engage with these private property owners to manage projects to increase safety at these locations. Some of these efforts can be completed as part of the policy and programs recommended in the next chapter of this report.

The full list of prioritized infrastructure recommendations can be found in Appendix E, and the top three recommendations are further described starting on page 43.

Table 3.1 - Summary of Prioritized Infrastructure Recommendations

Project ID	Priority Project
1	Sidewalk facilities along Woodlawn St from Belmont Holly Rd to Hickory Grove Rd
2	Pedestrian facilities along Cason Street realignment
3	CTT Alignment through Belmont Abbey College and CaroMont
4	**NORTH BELMONT IMPROVEMENT PACKAGE: NCDOT I-85 project - include pedestrian recommendations in plan**
5	Rail Trail - segment from I-85 to Downtown
6i	Multiple Railroad Crossing Improvements
6ia	10th Street (bridge widening + sidewalks)
6ib	Eagle Rd (at grade improvements)
6ic	4th St / Chief (reopen w ped at-grade improvements)
6id	Belmont Brewing Company / Waterfront (at grade or below bridge boardwalk)

* Bold items mark the top 7 projects with the highest scores.

Project ID	Priority Project
6ii	Single Railroad Crossing Improvement (6ia or 6ib)
6iii	Two Railroad Crossing Improvements (6ia and 6ib)
7	**DOWNTOWN PED SAFETY IMPROVEMENTS PACKAGE: All pedestrian crossing improvements on Main; All pedestrian crossing improvements on Park/Keener; Rail-trail from Wilkinson to Downtown**
7a	This could be broken down into smaller packages as well, if desired
8	CITY WORKS ACCESS IMPROVEMENT PACKAGE: Abbey Creek Greenway connection, crossing improvement to CityWorks, Rec Center, and Kevin Loftin Park
8a	**EASTERN BELMONT IMPROVEMENT PACKAGE: Abbey Creek Greenway connection, crossing improvement to CityWorks, Rec Center, Kevin Loftin Park, and pedestrian improvements along Catawba to Riverfront commercial area**
9	CENTRAL PED IMPROVEMENTS PACKAGE: MUP along Nixon, MUP along South Point Rd from Julia to Belwood Dr, multiple crossing improvements
10	SOUTH BELMONT ACCESS IMPROVEMENTS PACKAGE: MUP and crossing improvements connection between developments, botanical gardens, Trailhead, CTT
11	**Pedestrian crossing improvements and new sidewalk on Park from Wilkinson to (North) Hawley; on Hawley for a block west**
12	**Pedestrian crossing improvements on Wilkinson/Park**
13	**Pedestrian crossing improvements on Church/Catawba**
14	Pedestrian crossing improvements on Park/(South) Hawley/Planetree intersection
15	Pedestrian crossing improvement on Hawley to Walmart

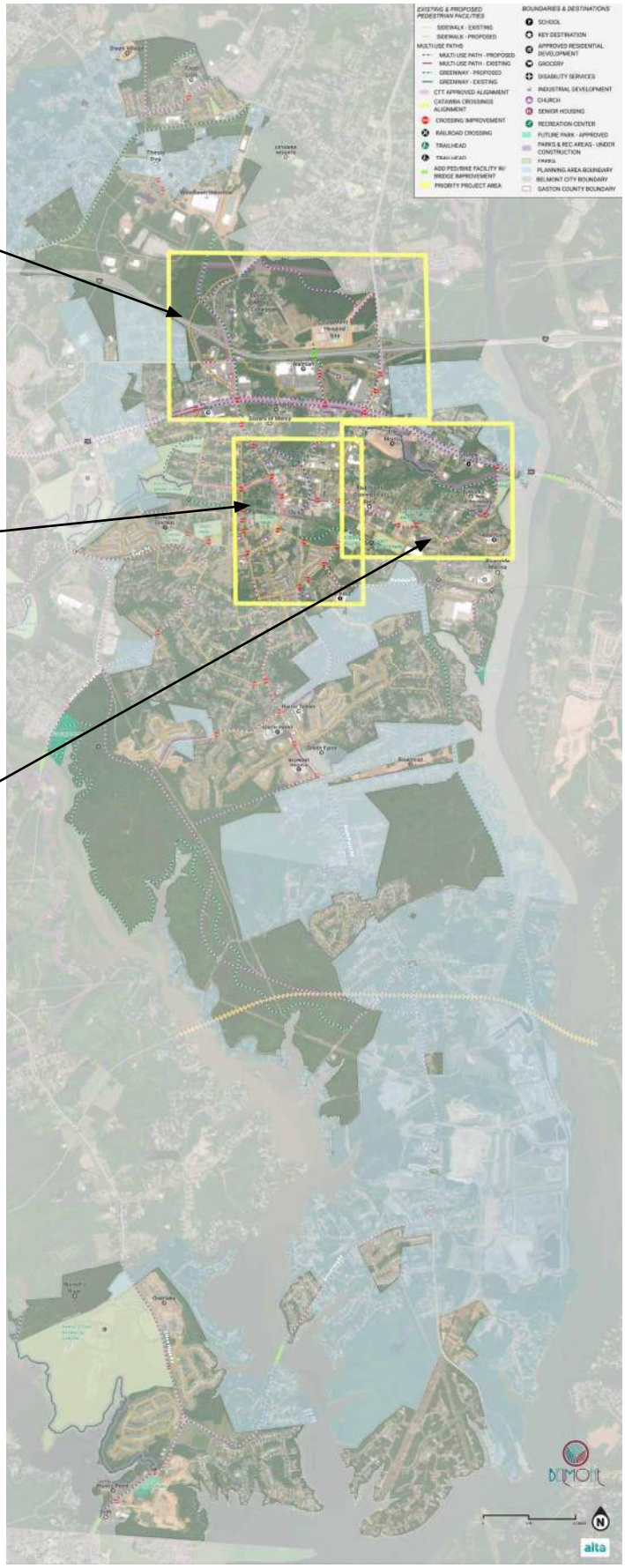
Project ID	Priority Project
MISSING SIDEWALK SEGMENT PACKAGES	
Near Downtown	
16	From Central Ave west to Reid Park and Rocky Branch Park
17	From Central Ave and Main St west to Belmont Central
Central Belmont	
18	Main St, McLeod St, Bryant St, and Johnson St southeast of downtown
19	East and west of Central Ave between Keener St and Julia Ave
20	On Stowe and connecting streets east of SouthPoint
East Belmont:	
21	**On Catawba, Brook, 10th, and Piedmont, connecting downtown and CityWorks**
North Belmont:	
22	Perfection Ave and Cason St in North Belmont

Draft Prioritized Map & List of Pedestrian Projects

1. NORTH BELMONT IMPROVEMENT PACKAGE

2. DOWNTOWN PEDESTRIAN SAFETY IMPROVEMENTS PACKAGE

3. EASTERN BELMONT IMPROVEMENT PACKAGE



1. North Belmont Improvement Package

DESCRIPTION:

Multiple long-term projects will influence the shape of the Belmont connections between Wilkinson Blvd and North Belmont, including the CaroMont Hospital campus development, future Belmont Abbey campus enhancements, and the proposed CATS Silverline light-rail line on Wilkinson Blvd.

The most immediate project, however, is the ongoing NCDOT Interstate I-85 Widening Improvement Project currently under design. It will incorporate major improvements not only to interchanges in Belmont, but also to arterials that provide direct access to Belmont Abbey College, Wilkinson Boulevard, and Downtown Belmont. It will also build a section of the proposed Rail-Trail from Wilkinson Boulevard to the College. However, it was noted that early design versions did not include all needed pedestrian and bicycle facilities. Accordingly, it is recommended that the City of Belmont persist in continued engagement with NCDOT and the project design team to ensure that the final design and construction proceeds according to the City's desires.

Many of the improvements needed will not be built by the projects listed above, and could be completed independently. For example, safety improvements to the intersections of Park St and Hawley Ave, shown in the rendering on Page 46, are sorely needed, and could address safety issues that have led to injuries and a fatality. We recommend that the City pursue funds to complete safety studies, feasibility studies, and conceptual designs for the elements not included in the I-85 Project, especially those on Park St; or safety improvements on Wilkinson Boulevard, which might not see the Silver Line built there for another decade or two.

The map on the next page zooms in on the recommendations included in this package. Beyond the improvements from the I-85 reconstruction project, the recommendations include, from north to south:

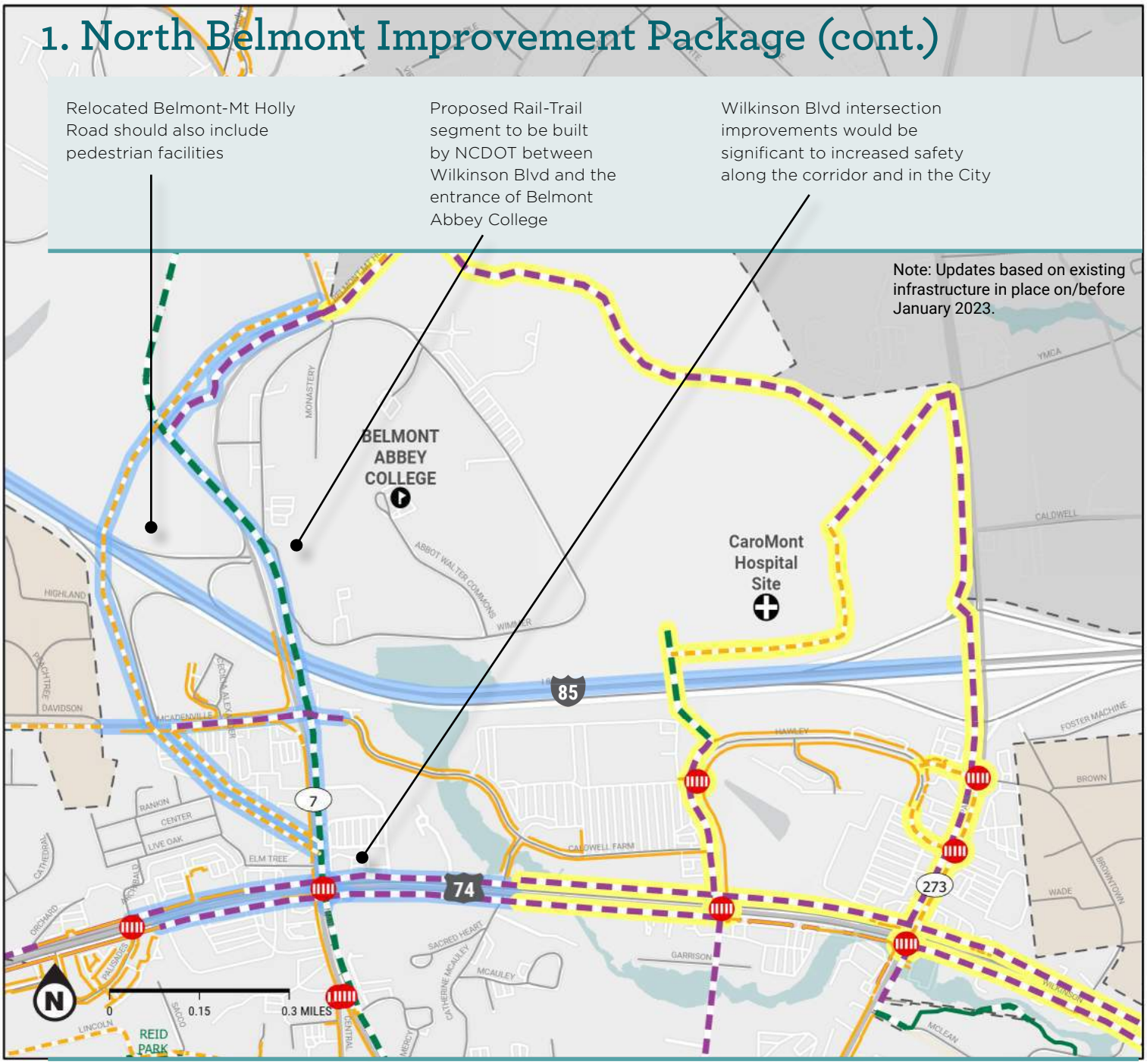
- *Future greenway and multi-use path connections to Belmont Abbey College and the growing CaroMont Hospital site*
- *A potential pedestrian and bicycle bridge over I-85, to connect the CaroMont Hospital site to the commercial destinations and senior living communities on the other side of the highway*
- *And intersection improvements on Wilkinson Boulevard, Park Street, Hawley Avenue, and Central Avenue*

1. North Belmont Improvement Package (cont.)

Relocated Belmont-Mt Holly Road should also include pedestrian facilities

Proposed Rail-Trail segment to be built by NCDOT between Wilkinson Blvd and the entrance of Belmont Abbey College

Wilkinson Blvd intersection improvements would be significant to increased safety along the corridor and in the City



Existing Features
- Greenway
- Multi-Use Path
- Sidewalk
- Belmont Schools
- Hospital
- Parks
- Railroad

Recommendations
- Greenway
- Multi-Use Path
- Sidewalk
- Crossing Improvement
- Elements of Package #1
- Project areas covered by NCDOT I-85 project

PLANNING-LEVEL COST ESTIMATE: *Costs for this project were not calculated during this planning process, since a majority of the recommendations are included in the NCDOT I-85 Widening project (STIP numbers I-5719 and U-5800), which has a total budget of $634.8 million. The proposed Beatty Rd sidepath is not included in the scope of the I-85 project.*

Proposed Improvements at Park Street and Hawley Ave

Rendering of potential pedestrian safety improvements at the intersection of Park St and Hawley Ave, and new multi-use path on the west side of Park St.

Note: Further safety and engineering analysis is required. Cost estimates for improvements were not developed for this intersection due to the uncertainty of the final engineering configuration of the intersection.

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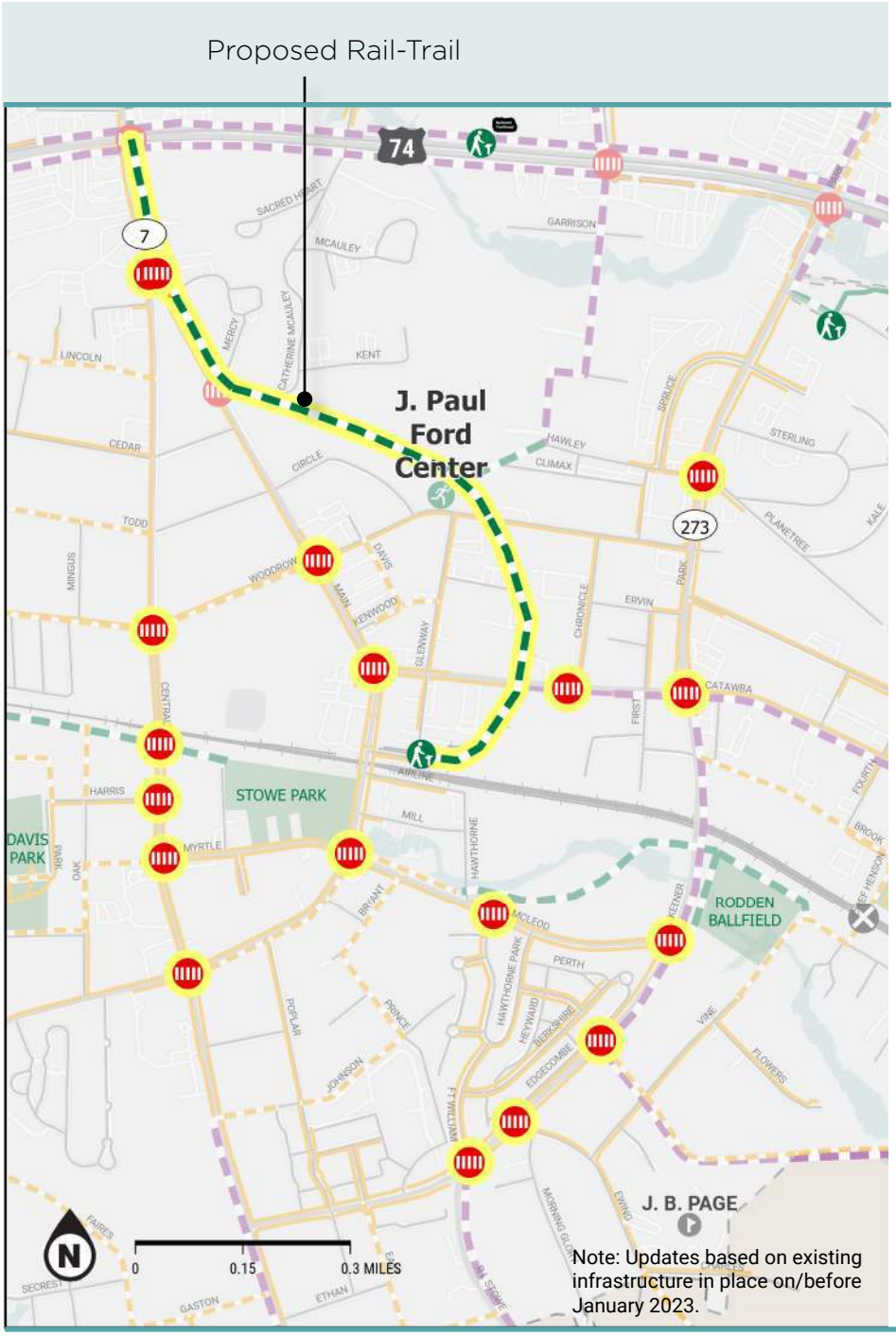
2. Downtown Pedestrian Safety Improvements



DESCRIPTION:

The second highest priority for the City of Belmont is the completion of multiple improvements in Downtown, including safety and pedestrian crossing improvements at 17 intersections and the completion of the Rail Trail from the end of the segment completed by NCDOT's Interstate I-85 Widening project down to Glenway St and Main St.

If funding is not available, or if it is desired to minimize one-time disruptions to Downtown, the project can be completed in phases, with each intersection improvement completed as funding, capacity, and conditions allow.

Existing Features
- Greenway
- Multi-Use Path
- Sidewalk
- Belmont Schools
- Recreation Center
- Parks
- Railroad

Recommendations
- Greenway
- Multi-Use Path
- Sidewalk
- Crossing Improvement
- Railroad Crossing
- Trailhead
- Elements of Package #2

PLANNING-LEVEL COST ESTIMATE:

Planning-level estimates come to $8.8M, about $3.2M for safety improvements and $5.6M for the Rail-Trail (2025 dollars). Feasibility studies and further engineering are required to further refine these costs.

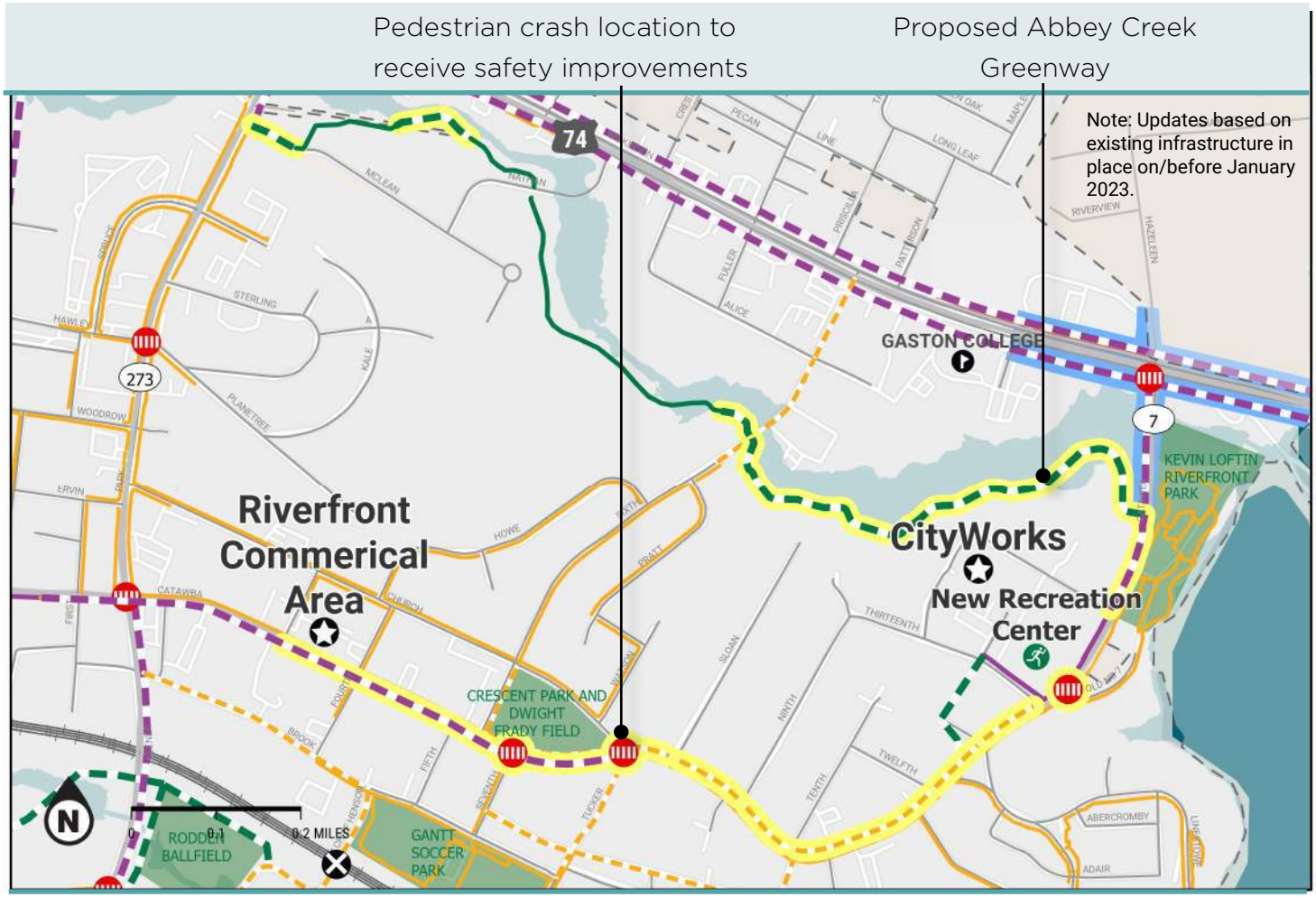
Proposed Improvements at Main Street and N Central Avenue

Rendering of potential pedestrian safety improvements at the intersection of Main St and N Central Ave, and new multi-use path on the east side of Main St.

3. Eastern Belmont Improvement Package

DESCRIPTION: *The third priority is the completion of improvements to better connect to East Belmont, and to increase safety at a few high injury locations. This package of projects would include the completion of the Abbey Creek Greenway, pedestrian crossing improvements between CityWorks and the new Recreation Center to the Kevin Loftin Park; pedestrian improvements all along Catawba Street to the Riverfront Commercial Area; and a key intersection improvement at the entrance of Crescent Park / Dwight Frady Field - at this location, at the intersection of Church and Catawba Streets, pedestrian crashes and injuries have been noted. Similarly to the Downtown Package, this package can be completed in phases if need be.*

Note: Cost estimates do not include the crossing improvement at Seventh St, which may be completed as part of a development as of October 2023.



Existing Features
- Greenway
- Multi-Use Path
- Sidewalk
- Belmont Schools
- Recreation Center
- Key Destination
- Parks
- Railroad

Recommendations
- Greenway
- Multi-Use Path
- Sidewalk
- Crossing Improvement
- Railroad Crossing
- Elements of Package #3
- Project areas covered by NCDOT Project (B-6051)

PLANNING-LEVEL COST ESTIMATE:

Planning-level estimates come to $6.2M, about $4.3M for safety improvements and $1.9M for the Greenway (2025 dollars). Feasibility studies and further engineering are required to further refine these costs.

Proposed Improvements at the Abbey Creek Greenway

The Abbey Creek Greenway is a planned 1.2 mile trail from Park Street to E Catawba Street. Following Abbey Creek, this trail will provide connections to destinations such as Kevin Loftin Park, the Belmont Recreation Center, and the commercial area along Park Street.

Rendering of Abbey Creek Greenway by ESP Associates, Inc. for the City of Belmont.

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Programs and Policies

In addition to infrastructure improvements, policy and programs are key components that contribute to a safe, equitable, and connected pedestrian network.

Policies and Guidelines

Policies and Guidelines are used by professionals - whether in government or private sector - to plan, design and build pedestrian infrastructure. Typically, they carry some legal or regulatory weight, and directly influence development. Here we list the most relevant ones that the City should keep in mind as the community continues to grow.

Programs on the other hand are generally related to educational campaigns or funding opportunities that help change attitudes. While they might not be related to regulations or enforcement, many times successful programs can have more immediate impact, by changing public attitudes or incentivizing change in the development community.

During Public Outreach efforts for this Pedestrian Plan, Belmont residents had the opportunity to learn more about different programs and give us their feedback. The public expressed greatest interest in attaining a "Walk-Friendly Community" designation for the city; followed by educational safety programs for drivers and pedestrians, and establishment of an Open Streets or ciclovia annual or summer event. For more information on these potential programs, please continue reading.

NCDOT Policies and Guidelines

These policies describe how bicycle and pedestrian projects are developed in North Carolina. For full policies, visit: *https://connect.ncdot.gov/projects/BikePed/Pages/Policies-Guidelines.aspx*

COMPLETE STREETS

NCDOT's Complete Streets Policy guides when and how planners and designers should design streets and roads to accommodate all users, including people walking and biking, in transportation projects. NCDOT updated the Complete Streets Policy in 2019, followed by the creation of the Integrated Mobility Division (combining bicycle, pedestrian, and transit functions).

The policy says: "**Bicycle and pedestrian and public transportation facilities that appear in a state, regional or locally adopted transportation plan will be**

included as part of the proposed roadway project. NCDOT will fully fund the cost of designing, acquiring right of way, and constructing the identified facilities."

In 2022, NCDOT released an *updated methodology for Complete Streets Review*. The new methodology is intended to standardize implementation of the policy for NCDOT project managers and includes several consultation points with local governments and MPOs/RPOs throughout the project development process. A summary of the updated process is below:

- **Step 1: Initial Screening and Data Input.** Screen planning documents such as the CTP and other adopted local and regional plans (see the *FAQ* for details about plan requirements), compile existing and future conditions data, conduct connectivity and gap analysis, review alternatives.
- **Step 2: Transportation Need Determination.** Estimate demand using NCDOT Demand Estimation Map, observed conditions, land use, and other data. Special considerations are made for areas where demand is "low" and "intermittent/none."
- **Step 3: Facility Type Selection.** Refine the demand estimation from Step 2, identify preferred facilities, and review other design elements such as transit, intersections, and crossings.
- **Step 4: Impact Assessment.** Conduct comprehensive cost analysis, evaluate schedule impacts, and review environmental risk.
- **Step 5: Final Analysis.** Evaluate cost and schedule impacts and document recommendations.

PEDESTRIAN POLICY & GUIDELINES

NCDOT policy and guidelines for planning, designing, building, maintaining and operating pedestrian facilities and accommodations.

GREENWAY ACCOMMODATIONS MEMO AND GUIDELINES

Approved in 2015, NCDOT guidelines, approaches and cost-sharing recommendations for proposed greenways under bridges.

ADMINISTRATIVE ACTION TO INCLUDE GREENWAY PLANS

NCDOT administrative guidelines for considering greenways and greenway crossings during the highway planning process to ensure that critical corridors for future greenways are not severed by highway construction.

BICYCLE POLICY & GUIDELINES

NCDOT policy and guidelines for planning, designing, building, maintaining and operating bicycle facilities and accommodations.

BRIDGE POLICY

Policy establishing design elements for new and reconstructed bridges

on the state's road system, including requirements for sidewalks and bicycle facilities on bridges.

TRAFFIC ENGINEERING POLICIES, PRACTICES AND LEGAL AUTHORITY

NCDOT policies and federal design guidelines for specific pedestrian and bicycle safety accommodations.

NACTO Guidelines for Regulating Shared Micromobility

Shared micromobility refers to fleets of bikes, e-bikes, and electric scooters available to the public on a pay-per-use basis. Bikeshare and scootershare programs have become increasingly popular in cities across the country. The City should be aware of regulatory challenges and best practices associated with these emerging micromobility modes, should they come to impact Belmont's pedestrian environment.

NACTO's *Guidelines for Regulating Shared Micromobility* outline best practices for cities and public entities regulating and managing shared micromobility services on their streets. Its recommendations were developed to reflect the wide variety of experiences that North American cities have had in regulating and managing shared micromobility. The guidelines cover:

- **Options for regulation**, including permits, pilots, and demonstrations;
- **General provisions that should be included in all agreements with providers**, such as insurance requirements, and when an operator is to be considered in breach of its agreement with a city;
- **Infrastructure investments**, including device parking options such as on-street corrals and docking points, and guidance on providing safe places to ride;
- **Safety provisions**, including vehicle speed, battery practices, and parking options that preserve the public-right-of-way;
- **Suggestions on operational requirements**, including fleet size, device relocation, rebalancing and fleet distribution, equipment and vehicle maintenance, customer service, and staffing;
- **Practices for equity**, including increased access to underserved communities;
- **Fee structures** that enable cities to recoup their costs for managing dockless mobility in their cities, as well as provide public benefits;
- **Public engagement**, including outreach materials, as well as pricing and discount programs;
- **Data management**, including how cities can ensure access to accurate, high-quality data while maintaining individual privacy;
- **Technology recommendations**, including the best uses for geofencing technology along with its limitations.

Belmont Land Development Code

Belmont's Land Development Code (LDC) encourages the development of an interconnected network of streets, sidewalks, and bicycle facilities. The following guidance from "Chapter 8: Streets and Greenways" supports walkable development in Belmont.

GENERAL STREET DESIGN PRINCIPLES (§8.1)

- "The City views streets as **the most important public space** and therefore has developed a set of principles which provide adequate facilities for all types of traffic, including motorists, **pedestrians, bicyclists, and transit users, and including of all levels of ability**, such as those in wheelchairs, the elderly and the young."
- "Streets shall be detailed to compliment neighborhoods and commercial centers and shall be **pedestrian in scale**."
- "All streets shall be **landscaped**."
- "Streets shall be bordered by **sidewalks on both sides**."
- "Street stubs should be provided with development adjacent to open land to **provide for future connections**."
- "The use of **traffic calming devices** such as raised intersections, landscaping bulb-outs, and traffic circles are encouraged as alternatives to conventional traffic control measures."

STREET TREES (§8.1, 8.2)

- "Streets shall be **designed with street trees** planted in a manner appropriate to their function."
- "All street trees shall be installed in accordance with City of Belmont Land Development Standards Manual. Large canopy trees shall be planted in a planting strip at an average distance of 40 feet on-center."

PLANTING STRIPS (§8.2)

- "The minimum width of all planting strips shall be **6 feet**. For streets with a design speed **greater than 25 miles per hour**, the minimum width shall be **8 feet.**"

SIDEWALKS (§8.2)

- "Sidewalks shall be constructed along **both sides of all streets** except alleys and lanes."
- "Residential sidewalks shall be a **minimum of 5 ft** in width. Sidewalks serving mixed use and commercial areas shall be a **minimum of 8 ft** in width (**10-12 ft is preferable** in front of shopfronts)."
- "All sidewalks shall be paved with brick or concrete pavers, concrete, or a similar material. Sidewalk material may vary according to the overall design and character of the development."

CUL-DE-SACS (§8.2)

- "Where practical, **a close should be used in place of a cul-de-sac**. Cul-de-sacs, if permitted, shall not exceed 250 ft in length from the nearest intersection with a street providing through access (not a cul-de-sac)."

CURB RADII (§8.2)

- Curb radii shall be designed to **reduce pedestrian crossing times** along all streets requiring sidewalks. In general, curb radii should not exceed 20 ft.

LIGHTING (§8.2)

- "Street lights shall be installed by the developer on all streets."

ACCESS MANAGEMENT (§8.2)

- For collector streets, the number of driveways is **limited to 10 driveways per 1,000 linear feet** of street, or a ratio of one driveway per 100 feet (on average) for street segments shorter than 1,000 linear feet.

STREET DESIGNS (§8.3)

- This section includes typical sections for different street types. The designs are context-sensitive and feature guidance for pedestrian elements where appropriate, including sidewalks and street trees.

GENERAL GREENWAY DESIGN PRINCIPLES (§8.5)

- "A. Greenways shall be **planned following the designated circulation system** shown on the Comprehensive Plan map, the Parks and Recreation Master Plan, and the City of Belmont Pedestrian Transportation Plan."
- "B. Greenways shall **connect to new development** wherever possible. Greenway stubs should be provided when development is adjacent to open land scheduled for greenway construction to **provide for future connections**. Stubs must extend to the neighboring property line."
- "C. Greenways should be designed to fit the contours of the land and should **minimize removal of significant trees**."

GREENWAY ENGINEERING AND DESIGN SPECIFICATIONS (§8.6)

- "Greenway designs shall permit **comfortable use by both bicyclists and pedestrians**."
- This section also describes different engineering standards for **greenways in floodways, floodplains, and upland** designed to preserve water quality and habitats near trails.
- This section includes specifications for **trail drainage, slope, vertical clearance, and bridges**.
- "**Long downhill grades should be avoided** through careful planning. A 5% grade is the maximum grade recommended. Sustained grades should be limited to 2%."

Program Recommendations

Watch for Me NC

Watch for Me NC is a comprehensive campaign aimed at reducing the number of bicyclists and pedestrians hit and injured in crashes with vehicles. The campaign consists of educational messages on traffic laws and safety, and an enforcement effort by area police.

This ongoing statewide grant program is administered by the NCDOT Integrated Mobility Division (NCDOT IMD). The City should contact the NCDOT IMD to request materials and guidance. As a part of this program, the City could:

- Distribute the educational materials made available by NCDOT at local festivals and other events and at local businesses.
- Work with police officers to hand out bicycle lights along with bicycle and pedestrian safety cards.
- Enforce motorist rates of yielding to pedestrians.

The City may participate by visiting the program website (*https://www.watchformenc.org/*) and downloading materials and information that may be used right away. The City should also apply when the Call for Participants is issued, typically in February of each year.

Watch For Me NC uses eye-catching educational materials like this bumper sticker.

Vision Zero Planning

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. First implemented in Sweden in the 1990s, Vision Zero has proved successful across Europe — and now it's gaining momentum in major American cities. A Vision Zero Plan is a specific plan intended to reduce conflicts between cars and other roadway users—drivers, cyclists, pedestrians, and others. By reducing conflicts between cars and other roadway users, Vision Zero will prioritize safety as it encourages all modes of transportation with the primary goal of reducing bicycle and pedestrian conflicts.

Federal funding for Vision Zero is now available through the USDOT's Safe Streets and Roads for All Program (SS4A). For more information, please see the Implementation section of this report.

Safe Routes to School (SRTS) Education Campaign

SRTS enables and encourages children to walk and bike to school. These programs facilitate the planning, development, and implementation of projects and activities that will improve safety, promote physical activity, and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Education is a key part of SRTS programs. Belmont should work with local schools to conduct a SRTS education campaign targeting all levels of the community, from hands-on curricula to teach children age-appropriate safety skills for walking and biking, to community-wide education messaging about how to share the road safely. The campaign should also encourage caretakers to practice safe walking and biking behaviors with their children.

Belmont can take advantage of resources such as Let's Go NC!—a comprehensive curriculum including lesson plans, materials, activities and instructional videos developed by NCDOT and NC State University.

The Let's Go NC! curriculum is intended to guide instructors at grade schools, community centers (YMCA, 4H-Clubs, etc), health programs, law enforcement agencies, and more.

Materials are available at *https://www.ncdot.gov/initiatives-policies/safety/lets-go-nc/Pages/default.aspx*

For schools seeking to implement Safe Routes programs, National Walk to School Day on October 12th can serve as a starting point. This event is organized by the National Safe Routes to School Partnership. More information is available at *www.walkbiketoschool.org*

NC's Year of the Trail: 2023

On August 18, 2021, the NC Legislature declared 2023 North Carolina's Year of the Trail, highlighting an opportunity to showcase, promote, and celebrate our state's extensive trail systems. The event organizer, the Great Trails State Coalition, envisions a future where each of NC's 100 counties enjoys the proven benefits of trails, including benefits to transportation, the environment, the

health and safety of our citizens, and tourism and economic development.

This statewide campaign will reach all communities and potential visitors with the message of how and where to experience the trails across the state. The City of Belmont and Gaston County should seek out opportunities to be involved in the Year of the Trail in 2023. Belmont and Gaston County could host an event to build support for trails proposed in this plan. Visit the Great Trails State Coalition website (*https://greattrailsnc.org/year-of-the-trail/*) to learn more about key aspects of the Year of the Trail, such as:

- Public Engagement
- Media Attention
- Educational Tracks
- Legislative Connections

Walk Friendly Community

The Walk-Friendly Community program is a national program that recognizes towns and cities across the U.S. that have created more walkable environments through comprehensive programs, plans, and policies. The City of Belmont can use the recommended guidelines and criteria for recognition to help improve conditions for walking as compared to peer communities in NC and nationwide. Visit *http://walkfriendly.org* for more information.

Speed Reduction/Traffic Calming Campaign

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

Law Enforcement Training

Law enforcement officers play a key role in pedestrian and bicycle safety through their enforcement of traffic laws. However, officers cannot enforce laws that they do not know or understand. Officers are also involved in recording and collecting data about collisions. Yet most officers have never received any specific training on pedestrian laws and safety. With better training in both documenting pedestrian- involved collisions and in enforcing pedestrian safety laws, police can be better stewards of the community's safety. Law enforcement training courses specific to pedestrian and bicycle laws and safety are available through WE BIKE (*webike.org*). Additional resources and information can be accessed through Bike Cleveland's Enforcement website (*www.bikecleveland.org/enforcement*)

Open Streets events/ Ciclovias

Car-free, open street events have many names-Sunday Parkways, Ciclovias, Summer Streets, and Sunday Streets- and involve periodic street "openings" that create a temporary park that is open to the public for walking, bicycling, dancing, and other physical activity. The purpose of the event is to encourage physical activity by providing a fun, welcoming environment for activity. Carfree street events have been very successful internationally and are rapidly becoming popular in the US. Local businesses open doors and set up tables along sidewalks to support the event and generate foot and bike traffic for their businesses. See http://openstreetsproject.org/ for more information.

Open Streets event in Charlotte, NC.

Belmont Go app

The Belmont GO app provides free maps and tours along certain walking routes that residents and visitors can use to explore the city while exercising. This app already exists but can be expanded with more routes to serve the needs of Belmont's residents. In addition to routes, this app or others could be used to educate the public on pedestrian safety issues, identify safest walking routes to school, and connections to key destinations in town.

Parking Lot Improvements for Pedestrian Safety and Circulation

The pedestrian crash analysis of Belmont showed that a majority of pedestrian crashes occur in parking lots. Large parking lots, such as those at commercial centers and strip malls, traditionally prioritize vehicle movement, making them dangerous and difficult for pedestrians to navigate.

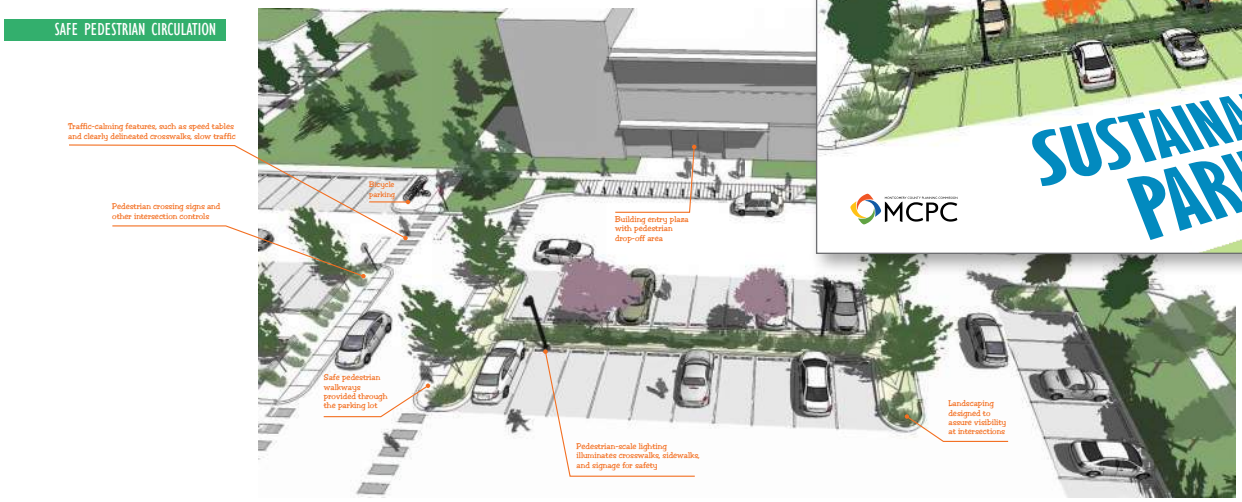
Belmont's Land Development Code "Chapter 9: Parking" contains policies designed to ensure that new parking lots are more pedestrian friendly, including requirements for pedestrian circulation within the parking lots. Belmont should also consider working with developers or commercial landlords to retrofit its existing surface lots, especially those where crashes have occurred.

These upgrades can include measures that enhance safety as well as provide economic and environmental benefits. Examples include pedestrian walkways and crossings, small plazas or gathering areas, energy-efficient lighting, shade trees and green areas, and permeable parking surfaces.

The city should share information with commercial property owners and developers about the potential economic benefits of parking lot retrofits, including:

- Decreased liability costs, increased property values
- Increased pavement lifespan
- Reduced infrastructure costs
- Improved customer experience (encourages patrons to linger longer and spend more money)

The Montgomery County Planning Commission's *Sustainable Green Parking Lots Guidebook* describes ways to improve pedestrian safety and circulation in existing parking lots.



CASE STUDY:

Parking Lots for People

Municipalities and other entities with a surplus of surface parking are rethinking how these traditionally vehicle-centric spaces can become more walkable. The Montgomery County Planning Commission developed the ***Sustainable Green Parking Lots Guidebook*** as a resource for retrofitting existing surface parking lots and updating design principles for new parking lots. The guidebook identifies issues with traditional parking design and focuses on elements that make parking lots more sustainable, including detailed information about designing parking lots for pedestrian safety.

The guidebook describes the many benefits of "greening" surface parking lots, including:

- Improving pedestrian safety and circulation by providing dedicated walkways and crossings
- Mitigating stormwater runoff and excess heat by using green drainage infrastructure and shade trees
- Creating inviting places through the creation of small parks or plazas within underutilized parking lots

A recent example of a successful parking lot retrofit comes from Texas Tech. In 2021, the university renovated an existing surface parking lot to improve pedestrian safety. The project reduced the number of vehicle entrances to the parking lot and added pedestrian walkways and crossings. The new design includes a tree-filled plaza with space to stroll and relax, and upgraded drains to help manage stormwater.

Adding a linear plaza through the center of this large parking lot created a safe and attractive walkway for pedestrians. (Project rendering: Texas Tech Today)

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Implementation

Realizing the vision for Belmont's safe, comfortable, all-ages-and-abilities pedestrian network will require ongoing efforts from City and MPO staff, elected officials, local organizations, and community groups over the coming years. This chapter outlines the near-term actions needed to achieve the goals in this plan.

Introduction

This Pedestrian Plan document serves as a roadmap for expanding the pedestrian network, network quality, and improving overall walkability in the next few years. The pedestrian plan should be updated again by 2030 with a reassessment of progress at that time. In the meantime, over the next five years, the City should focus on the following action steps to build upon this plan's vision and goals.

Action Steps

ACTION: CONTINUE SETTING ASIDE FUNDS, AND ALSO INCREASE THE BUDGET FOR NEW SIDEWALK, SIDEWALK IMPROVEMENTS, AND GREENWAYS.

The City budget for sidewalk improvements from FY22-23 was $30,000 with an increase to $50,000 in FY23-24. Because the expressed needs of this Pedestrian Plan exceeds current budgeted amounts, the City should seek out ways to increase yearly allocations for sidewalk improvements, as well as set aside funds for matching future federal and state grant pursuits.

ACTION: UTILIZE A TWO-TIERED FUNDING STRATEGY.

In the first tier, utilize City funds to address smaller projects that improve existing sidewalk and fill in smaller sidewalk gaps across the full geography of Belmont. Use the 2022 City sidewalk evaluation/condition inventory to prioritize sidewalk improvement projects, and continue collaboration with private developments to fill in sidewalk network gaps.

In the second tier, utilize City funds as match (typically 20% match required) for larger projects that would compete well for NCDOT STIP and federal funds (locally administered projects through the MPO, as well as larger discretionary grant programs such as RAISE, SS4A, or Reconnecting Communities). This would be for longer or larger projects that "check the boxes" for grant program scoring criteria, such as connecting to schools, addressing a documented safety issue, or connecting to a regional trail. Budgets for these larger projects are typically in the $2 million to $50 million range; thus, a City and/or state match would be in the range of $400,000 to $10 million.

ACTION: TACKLE THE THREE PRIORITY PACKAGES IDENTIFIED AND DESCRIBED IN CHAPTER 3.

When possible, begin design of project components and ensure they are included in NCDOT's prioritization process. Specific package recommendations are included

below:

- *North Belmont Improvement Package* – Work closely and stay engaged with NCDOT to ensure high-quality pedestrian facilities are included in future design and construction with the I-85 widening. This includes connected pedestrian facilities and the improvement of intersections for pedestrian safety. In addition, seek safety funding to increase the City's capacity and funding to address key safety / crash locations.
- *Downtown Pedestrian Safety Improvements Package* – Due to the size of the project and the potential competitiveness, consider applying for a larger federal grant such as RAISE or SS4A, or bundle into a project for the NCDOT STIP. If this is not a feasible option due to other challenges, break this package into smaller projects and set aside City budget to tackle in phases. The City should pursue design in order to get the project more shovel-ready and to better understand costs.
- *Eastern Belmont Improvement Package* – Similar to the Downtown project, this could be funded through smaller phased improvements over time or through a larger grant. The set aside in the City's 5-Year Capital Improvement Program could be used as match for the Abbey Creek Greenway and beyond. As a first step, the City should coordinate with NCDOT on safety improvements for Catawba Street (which is state-owned NC Route 7 and could separately pursue design funds in order to better understand potential safety countermeasures, design options, and costs in order to get NCDOT support and to get the project more shovel-ready .

ACTION: ENSURE GEOGRAPHIC AND SOCIOECONOMIC EQUITY IN PROJECT DEVELOPMENT.

Projects in this Plan identified in Central Belmont and southern Belmont should also be advanced as possible to ensure geographic equity. Projects should also be carefully examined for potential benefits to key socioeconomic target audiences, such as the elderly or underrepresented or disadvantaged communities.

ACTION: CONSIDER ADDRESSING CAPACITY CHALLENGES IN STAFFING AND CITY BOARDS/COMMITTEES.

As the City continues to grow, the City should consider adding additional staff to support implementation of this Plan and assist with development coordination and grantwriting. The departments with the most significant roles for the implementation of this Plan include Planning and Zoning, Community Development, Parks and Recreation, and Public Works. In the short term, ensure pedestrian plan interests are being heard through the existing Main Street/DBDA Board, Planning and Zoning Board, Parks and Recreation Citizens Advisory Board, and Environmental Sustainability

Board. Some members of this Pedestrian Plan Steering Committee already participate in these Boards. Pedestrian plan implementation should be a regular agenda item for these Boards.

ACTION: ENSURE CITY POLICIES AND CODES ARE FOLLOWED WITH NEW DEVELOPMENT.

The Belmont Land Development Code (pedestrian-focused highlights described in Chapter 4) is strong in regards to pedestrian-focused development requirements and should be adhered to. The City should consider tighter and stronger language regarding requiring not only sidewalks/greenways through development, but also ensuring connections to existing sidewalks and greenways are completed.

ACTION: WORK TOWARDS BECOMING A WALK-FRIENDLY COMMUNITY (WFC).

The City has taken great strides already towards becoming a WFC, and this was a top recommendation of the public in this planning process. Below is an assessment of what the City is doing and what it can do to be successful, organized around the Highway Safety Research Center's WFC strategies. The City could begin tackling just 2-3 items from the following list this year and then consider applying for WFC status in the next two years.

- *Community Data and Evaluation:* The City just completed its existing sidewalk condition assessment which is a strong and unique aspect of the City's commitment. The City will need to continue tracking safety/crashes annually along with assessing trail/sidewalk usage (pedestrian counts).
- *Planning and Policy:* The City's commitment to planning is strong with the previous pedestrian plan and this update. In addition, the City's Land Development Code has strong pedestrian requirements.
- *Engineering and Design:* The City will need to continue filling in gaps in the pedestrian network over time. Showing projects in progress and City funding commitment will be essential.
- *Education and Encouragement:* The City can work towards education and encouragement programs that "inform, inspire, motivate, or reward" people for walking. Immediate actions could include an open streets event, expanding the Belmont Go app, an education campaign, and Safe Routes to School non-infrastructure program. These are described in Chapter 4. The existing mental health walk program where students track their mileage at Belmont Middle School is a strong start. Gaston County Schools should consider applying for SRTS non- infrastructure grant with NCDOT. Finally, City elected officials should visit

nearby small towns and communities who have invested in greenway/sidewalk infrastructure and have seen positive economic impacts – examples might include Wake Forest, NC, Travelers Rest, SC, Greenville, SC, and others.

- *Law Enforcement:* Although a challenge in today's society and capacity, the City will need to ensure traffic laws are being followed, with an approach that acknowledges and prioritizes equity.

ACTION: ENSURE GCLMPO LONG-RANGE PLANS (MTP AND CTP) ARE UPDATED WITH THE RECOMMENDATIONS OF THIS PEDESTRIAN PLAN.
Coordinate with the MPO to ensure these recommendations are included in future planning documents but also in the current GIS recommendation databases if possible.

ACTION: MEET WITH STEERING COMMITTEE YEARLY TO REVISIT PLAN AND IMPLEMENTATION EFFORTS.
Continue to advance plan and implementation efforts and update goals in line with changes to the City's needs.

Near-Term Federal Funding Opportunities

In relation to state and federal grant opportunities that will help successfully complete these actions, the following are upcoming grant deadlines that the City could tap in 2023 and 2024:

- USDOT Reconnecting Communities and Neighborhood Access and Equity Program – September 2023
- NCDOT IMD Feasibility Studies – January 2024
- NC Recreational Trail Grant Program – February 2024
- USDOT RAISE Grants – likely late winter/early spring 2024
- NCDOT IMD Multimodal Planning – April 2024
- USDOT Safe Streets and Roads for All – Spring 2024
- USDOT Infra/Mega/Rural Grant – August 2024

For more funding information, please see Appendix C.

Framework for Implementation

GASTON-CLEVELAND-LINCOLN METROPOLITAN PLANNING ORGANIZATION (GCLMPO)

- ★ Coordinate with partners on project development.
- ★ Support and assist the City of Belmont and Gaston County with additional planning, permitting, public engagement, and implementation.
- ★ Pursue project opportunities, including ways to leverage funds across federal, state, local, private, and non-profit sources.

LOCAL LAND TRUSTS

The City of Belmont and Gaston County should work with a local land trust to help secure trail conservation easements along proposed trail/greenway corridors.

CITY OF BELMONT AND GASTON COUNTY

- ★ Coordinate with local stakeholders, such as community leaders and local/regional non-profits, to involve them in project development tasks as needed.
- ★ Coordinate with GCLMPO and NCDOT to leverage local project funding.
- ★ Work with local landowners (and a local land trust, if necessary) to secure trail easements along planned routes.
- ★ Work with local utility operators (such as Duke Energy) and developers to dedicate right-of-way for projects such as greenways.
- ★ Work with developers to make sure new development and redevelopment projects comply with Belmont's Land Development Code, specifically policies that promote walkability and connectivity.

GASTON COUNTY SCHOOLS

Leaders from Gaston County Schools should continue to stay involved in project planning by leveraging their relationships within the community to support projects that improve walking and biking.

NON-PROFIT AND ADVOCACY PARTNERS

Non-profit and advocacy partners could include Carolina Thread Trail, Downtown Belmont Development Association, Gaston Business Association, Catawba Lands Conservancy, and many others. These partners could lead or support in many different areas of project implementation, as they:

- ★ Promote public awareness of the benefits of investing in walkability, especially safety benefits.
- ★ Promote safe walking, bicycling, and driving behaviors.
- ★ Advocate for access to trails and the outdoors.
- ★ Coordinate volunteer trail projects and maintenance of trails.
- ★ Advocate for adoption of local and regional walking, biking, and trail plans.
- ★ Advocate for safe and sustainable active transportation.
- ★ Advocate for walkable places as a tool for economic development.

TRANSPORTATION AND UTILITY PARTNERS

- ★ NCDOT Division 12 is responsible for the construction and maintenance of pedestrian facilities on NCDOT-owned roadways in Belmont (unless Belmont takes responsibility through an encroachment agreement).
- ★ NCDOT Integrated Mobility Division administers bicycle and pedestrian grants, provides regional technical assistance, and is responsible for implementing the statewide Complete Streets Policy.
- ★ Utility providers, such as Duke Energy, can be amenable to trails and walking paths through certain utility easements, as long as the facilities comply with their requirements.
- ★ Railroad operators should be engaged as stakeholders when projects would impact an at-grade rail crossing or when long-term railbanking is desired.

PRIVATE PARTNERSHIPS

- ★ Project partners should communicate the benefits of more walkable communities as described in this plan to local businesses.
- ★ Local and regional businesses should help promote project funding and could possibly capitalize on increased business that results from project completion.
- ★ Consultants should provide guidance to GCLMPO, City of Belmont, Gaston County, and partners on project development, ROW/ permitting, design, and construction.
- ★ Developers in Gaston County should recognize the quality of life benefits that walkable communities bring; champion the development of bicycle and pedestrian infrastructure through development partnerships; and market walkability as a key feature and selling point to prospective buyers/residents.

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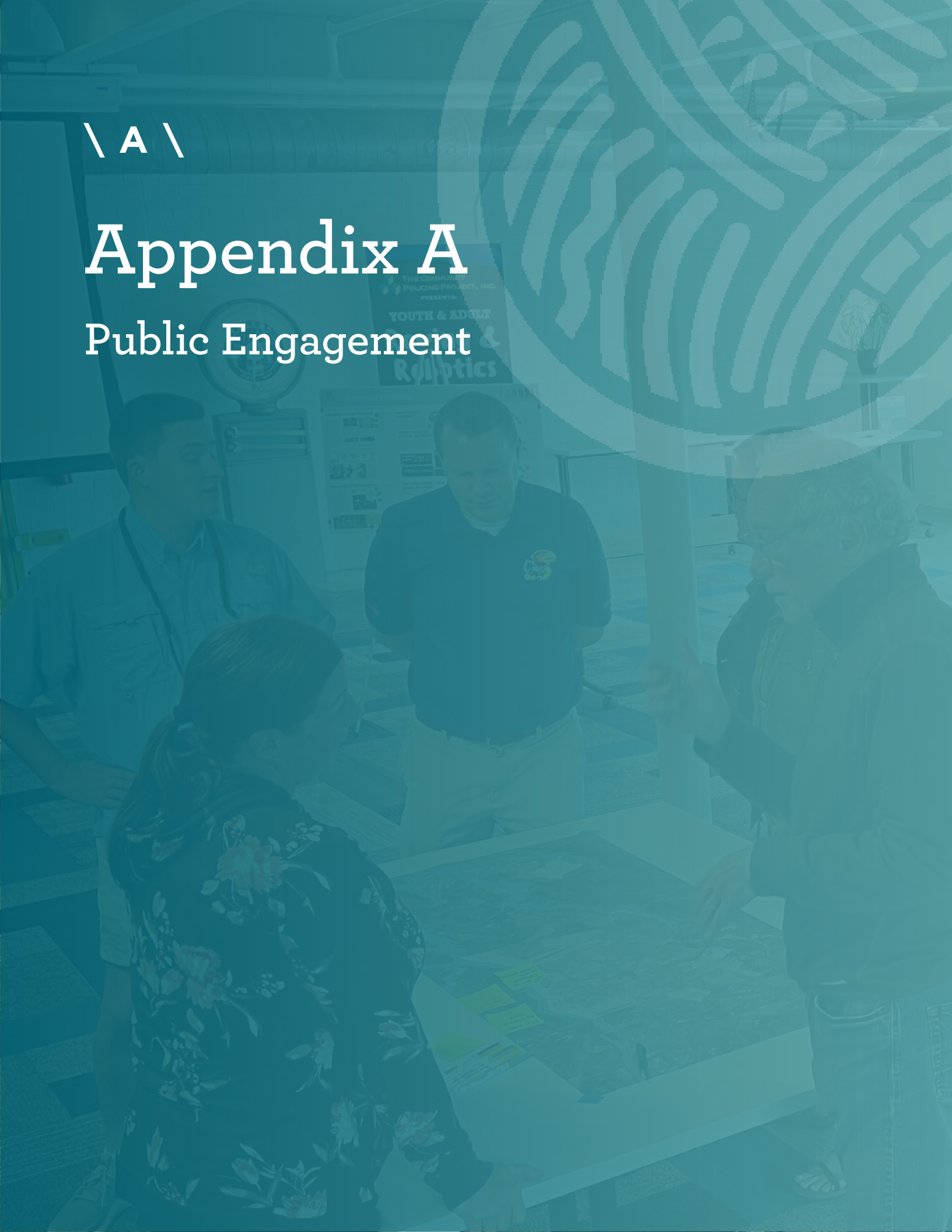
Appendix A

Public Engagement



Summary of Public Meeting #1

Many residents provided feedback that improvements of pedestrian intersections in downtown areas were needed, including pedestrian walk signals. Specific improvements were suggested along Keener Blvd at intersections with Fort William Ave, Central Ave, Catawba St. Along Main Street, intersections with McLeod Ave and Central Ave were suggested as places for pedestrian crossing improvements. A pedestrian bridge across I-85 was suggested from Hawley Ave to the CaroMont Site.

Minor gaps in the existing sidewalk network to connect loops within residential areas were marked across the maps. In some areas, residents identified sidewalk currently on one side of a street, such as Catawba St, that should cover both sides of the street. Other small sidewalk gaps identified were to neighborhood parks throughout central Belmont. In the southern suburban developments, sidewalk connections throughout the residential area and to Daniel Stowe are suggested, as well as various crossing improvements near trail entrances.

Larger pedestrian connections needed throughout Belmont include from Downtown Belmont to Belmont Abbey College and from the South Point area to the south of Belmont. A repeated recommendation was for a greenway or rail trail from downtown Belmont to Belmont Abbey College, as well as various extensions of the existing sidewalk from the downtown area towards North Belmont. Some suggested sidepaths or multi use paths from 74 to South Point.

Suggestions for improving the experience of walking in Belmont were provided, like adding trees along Park St and traffic calming in multiple areas. General improvements included maintaining safe and unobstructed sidewalks, as well as wider sidewalks and better lighting.

Summary of Public Meeting #2

Draft network recommendations were presented to the public and feedback was given on remaining gaps and opportunities within the network. Several potential trail segments were discussed to create a more complete trail network and connect areas of Belmont such as North Belmont and Downtown. New sidewalk segments connecting developments were suggested, along with crossing improvements to improve pedestrian safety. Key locations for pedestrian improvement include Bowen Dr. and South Point Rd, Downtown to Belmont Abbey College, between Amberley and South Point Ridge subdivisions, McLeod Ave./Main St. and Stowe Rd./ Keener Blvd. Areas with poor pedestrian access include South Point Rd, Wal-Mart, Stuart Cramer High School, Belmont Middle School, and Page Elementary. Suggestions for Open Street events were Downtown and Reid Park.

Additional Public Engagement

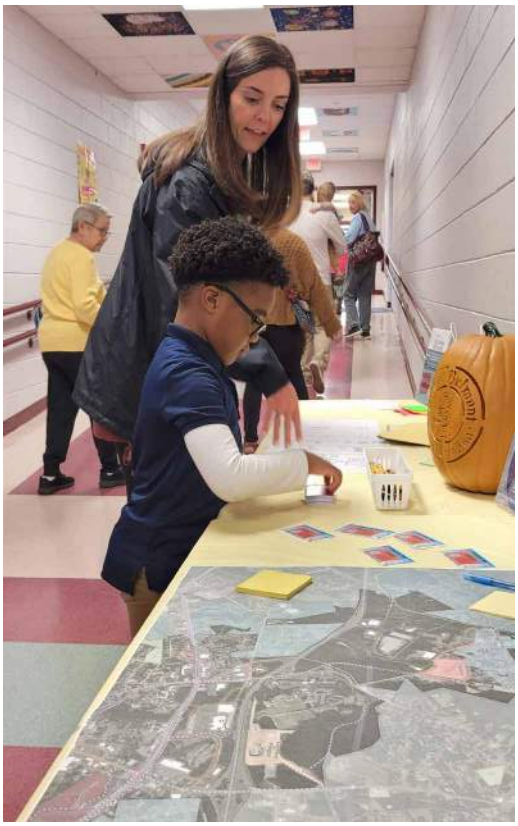
City Staff also provided additional opportunities for public feedback throughout the planning process by.

Garibaldi Festival

The City of Belmont hosted a booth during the Garibaldi Festival held at Stowe Park in April 2023. Feedback received at the event showed that residents considered dream streets to have features like sidewalks, slow speeds, bike lanes, nature and trees, landscaping, other walk friendly amenities.

Neighborhood Meetings

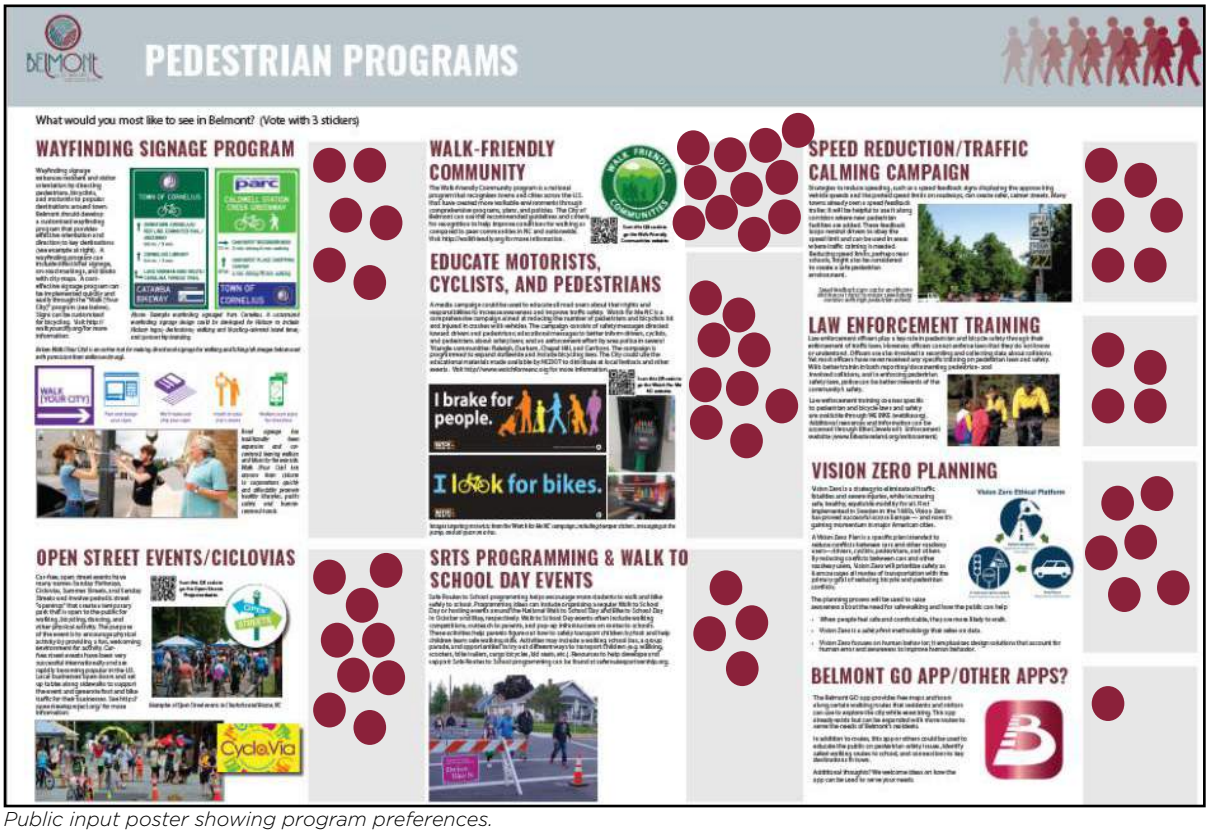
The City hosted neighborhood meetings during November 2023 located in North Belmont, the Reid Community, and the Peninsula Area to collect additional feedback from community members. Feedback during these events emphasized safety and additional key destinations.



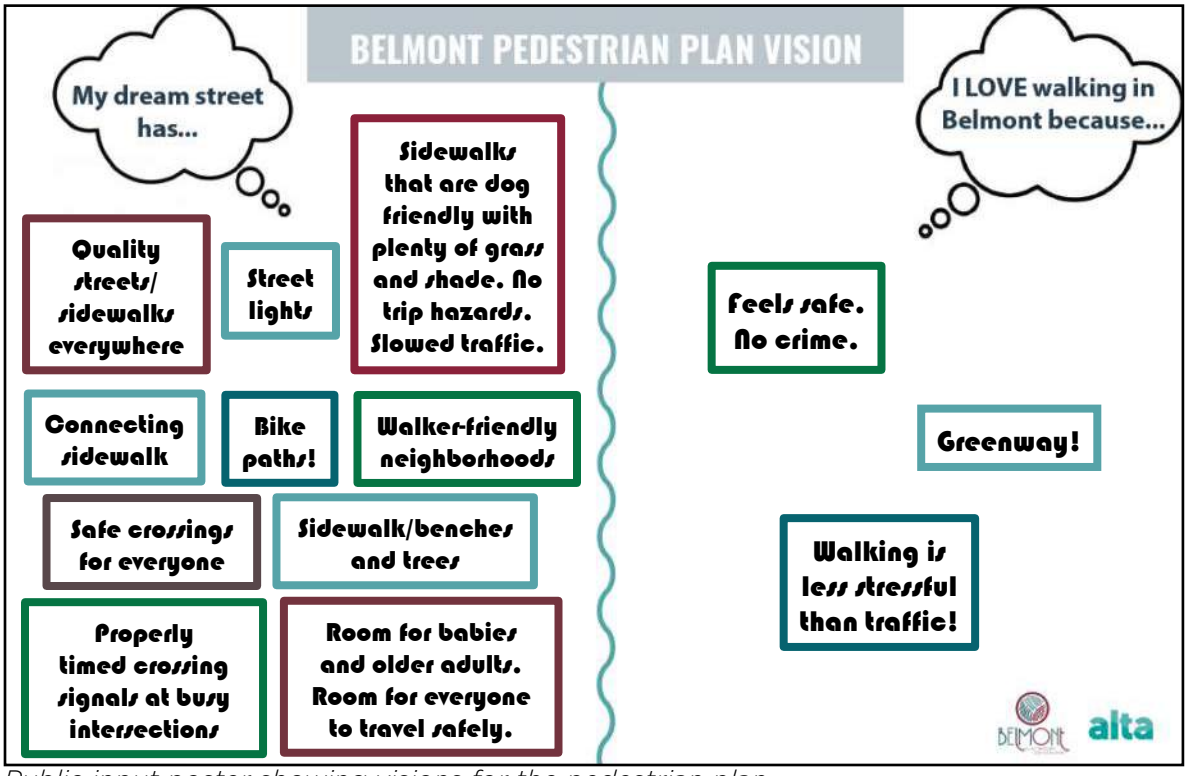
Library Pop-Up

City staff hosted a pop-up event located at the Gaston County Library - Belmont Branch during November 2023 as another opportunity for residents to learn about the plan and provide feedback.

PUBLIC MEETING INPUT



Public input poster showing program preferences.

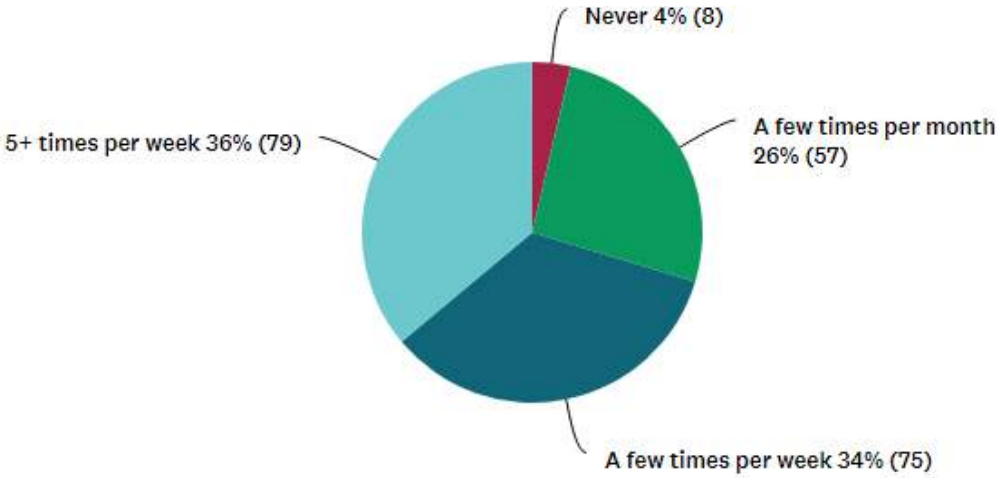


Public input poster showing visions for the pedestrian plan.

SURVEY RESPONSES

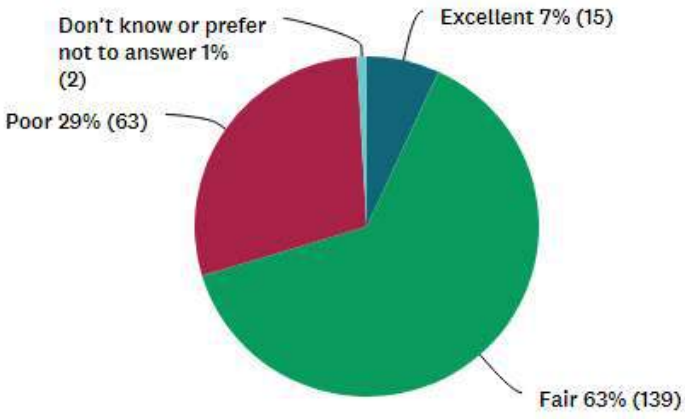
219 responses

How often do you walk/run in Belmont?



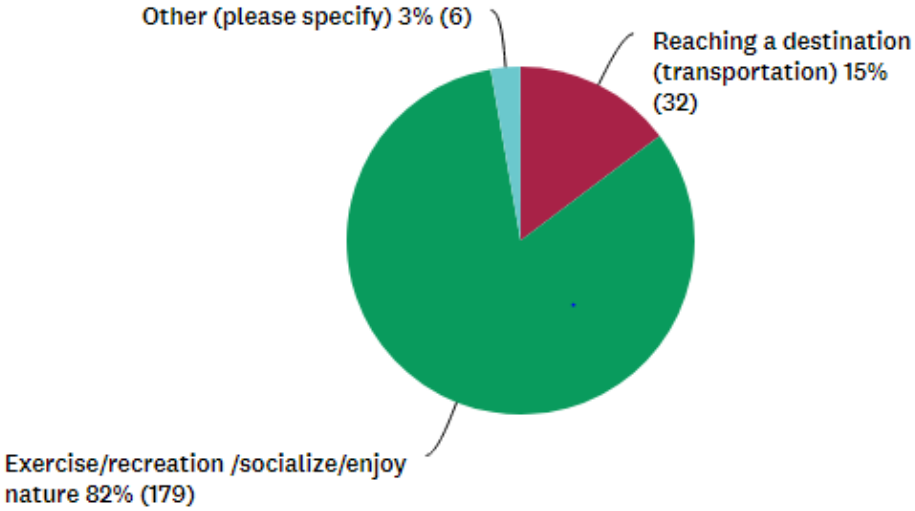
219 responses

How would you rate the condition of existing pedestrian infrastructure?



217 responses

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



SURVEY RESPONSES, CONTINUED

209 responses

Do you walk to any of the following places?

79% Downtown Belmont

71% Parks

68% Restaurants

52% Trails and Greenways

---

216 responses

What walking destinations would you most like to get to?

83% Parks

80% Restaurant/Bar/Fast Food/Cafe

53% Grocery/Convenience Store

53% Friend/Family Member's Home

35% Library

SURVEY RESPONSES, CONTINUED

217 responses

How should pedestrian facilities be funded within Belmont?

#1 State and federal grants (79%)

#2 Installed at the time of new development (67%)

#3 Installed with roadway improvements (66%)

#4 Capital Improvement Budget (59%)

#5 Local taxes (42%)

---

218 responses

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

#1 Fill gaps in sidewalk network (64%)

#2 Better maintained sidewalks (56%)

#3 Additional crossing opportunities/improvements (56%)

#4 More paved greenways (47%)

---

219 responses

How would you rate the condition of existing pedestrian infrastructure?

7% Excellent

63% Fair

29% Poor

1% Don't know/prefer not to answer

SURVEY RESPONSES, CONTINUED

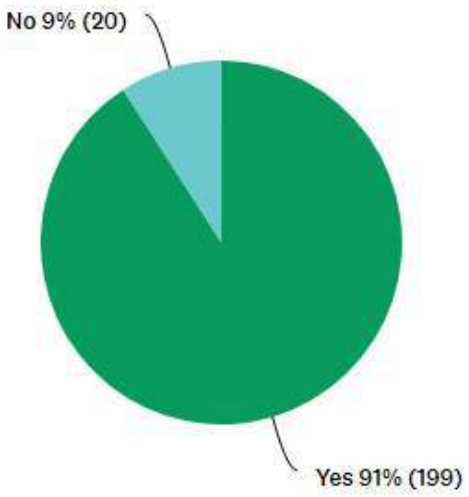
216 responses

What walking destinations would you most like to get to?

83%	Parks
80%	Restaurant/Bar/ Fast Food/Cafe
53%	Grocery/ Convenience Store
53%	Friend/Family Member's Home
35%	Library

219 responses

Would you walk more often if additional sidewalks, trails, and safe roadway crossing were provided?



SURVEY RESPONSES, CONTINUED

219 responses

What do you think are the most important goals and outcomes of the Belmont Pedestrian Plan?

#1 Better connectivity throughout the sidewalk network (75%)

#2 Safer conditions for walking overall (73%)

#3 Identify funding strategies to build more sidewalk and greenways (38%)

#4 Increased accessibility for all pedestrians (35%)

#5 More choices for recreation and exercise (35%)

#6 Increased accessibility for all pedestrians (35%)

---

215 responses

What crossing types would you like to see in order to feel safe crossing roadways?

#1 High visibility crosswalks (24%)

#2 Pedestrian signal (21%)

#3 Raised crosswalk (20%)

#4 Refuge island within median (13%)

\ B \

Appendix B

Design Resources

Overview

This toolbox presents guidance for local agency staff, elected officials and community advocates to create a more walkable and bicycle-friendly community for people of all ages and abilities. Planners and project designers should refer to these guidelines in developing the infrastructure projects recommended by this plan, but they should not be used as the sole reference for any detailed engineering design.

As a starting point, the following list of resources are from the NCDOT website for "Bicycle & Pedestrian Project Development & Design Guidance," located here (resources listed are linked through this page; Last retrieved in December 2021):

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

North Carolina Guidelines

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)

- WalkBikeNC: Statewide Pedestrian & Bicycle Plan
- Glossary of North Carolina Terminology for Active Transportation
- NCDOT Complete Streets: This policy directs the department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure. The link below is a landing page with resources such as the Complete Streets policy, the Implementation Guide, Evaluation Methodology, Flowchart, FAQs, and more. *https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx*
- Evaluating Temporary Accommodations for Pedestrians
- NC Local Programs Handbook
- Traditional Neighborhood Development Guidelines

GREENWAY CONSTRUCTION STANDARDS

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

National Guidelines

RAILS-TO-TRAILS CONSERVANCY

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

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

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

THE FEDERAL HIGHWAY ADMINISTRATION (FHWA)

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

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

- Part 4E: Pedestrian Control Features
- Part 7: Traffic Controls for School Areas
- Part 9: Traffic Controls for Bicycle Facilities

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS (NACTO)

- Urban Bikeway Design Guide
- Urban Street Design Guide

SAFE ROUTES TO SCHOOL (SRTS) NON-INFRASTRUCTURE

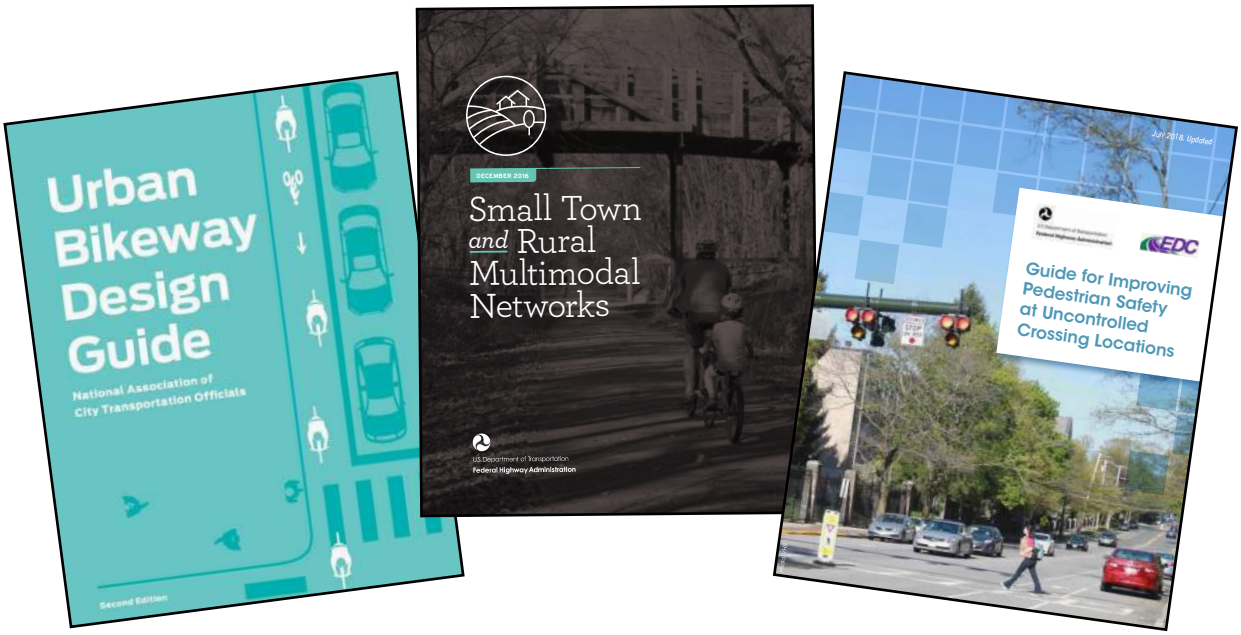
- National Center for Safe Routes to School
- National Partnership for Safe Routes to School

US ACCESS BOARD

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

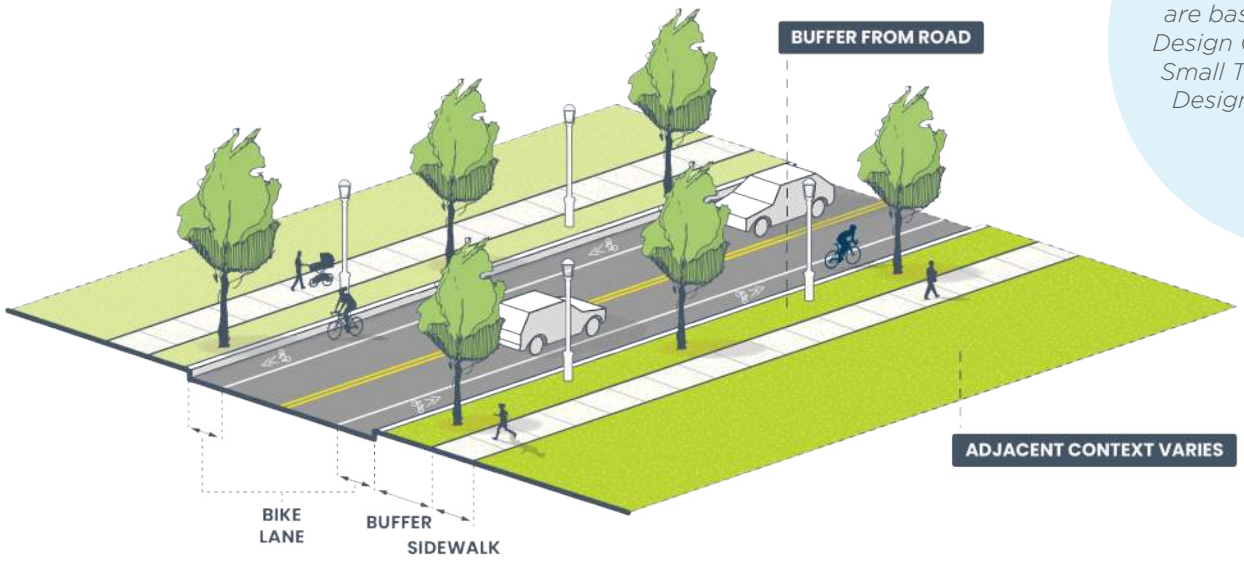
ADDITIONAL FHWA RESOURCES

- Achieving Multimodal Networks (2016): https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/
- Small Town and Rural Multimodal Networks Design Guide (2017): https://ruraldesignguide.com/
- Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (2018): https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf



Sidewalks

Design guidelines are based on NACTO Design Guides and the Small Town and Rural Design Guide (2016)



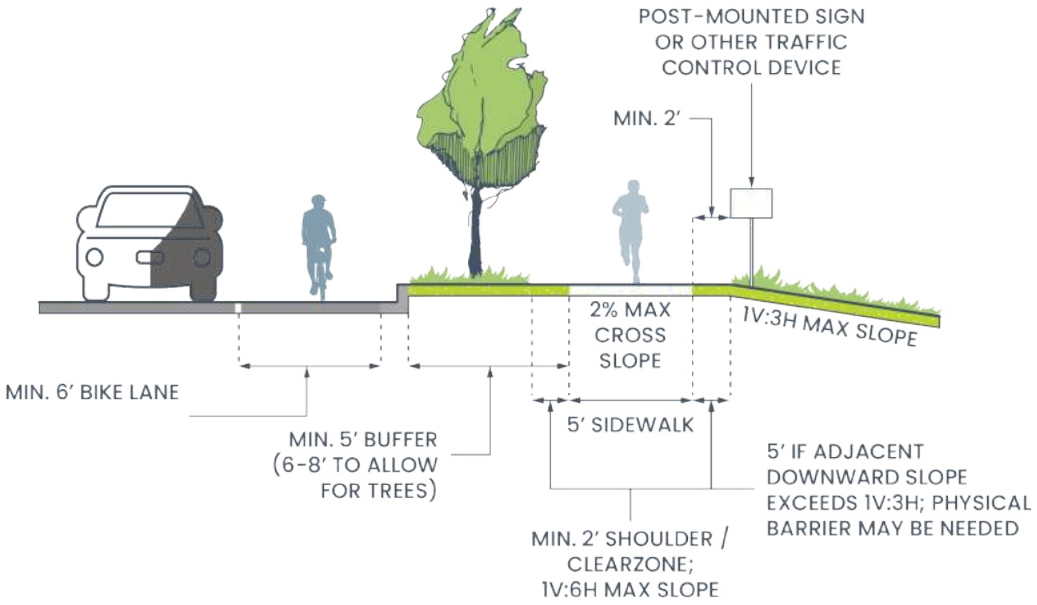
Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel separated from vehicle traffic. Providing adequate and accessible facilities can lead to increased numbers of people walking, improved safety, and the creation of social space.

Typical Applications

Sidewalks should be provided on both sides of urban commercial streets, and should be required in areas of moderate residential density. (1-4 dwelling units per acre).

When retrofitting gaps in the sidewalk network, locations near transit stops, schools, parks, public buildings, and other areas with high concentrations of pedestrians should be the highest priority.

In rural areas, no curb and gutter is necessary to establish a sidewalk. Instead, the sidewalk should feature a wide furnishing zone, which may be configured as an open ditch for stormwater catchment and infiltration. Ditches can be retrofitted into bioswales or rain-gardens for filtration and water purification.



Design Guidelines

WIDTH

It is important to provide adequate width along a sidewalk corridor. A pedestrian through zone width of 6' enables two pedestrians (including wheelchair users) to walk side-by-side, or to pass each other comfortably.

In areas of high demand, sidewalks should contain adequate width to accommodate the high volumes and different walking speeds of pedestrians.

BUFFER

Appropriate placement of street trees in the furnishing zone (minimum width 4') helps buffer pedestrians from the travel lane and increases facility comfort.

OTHER DESIGN CRITERIA

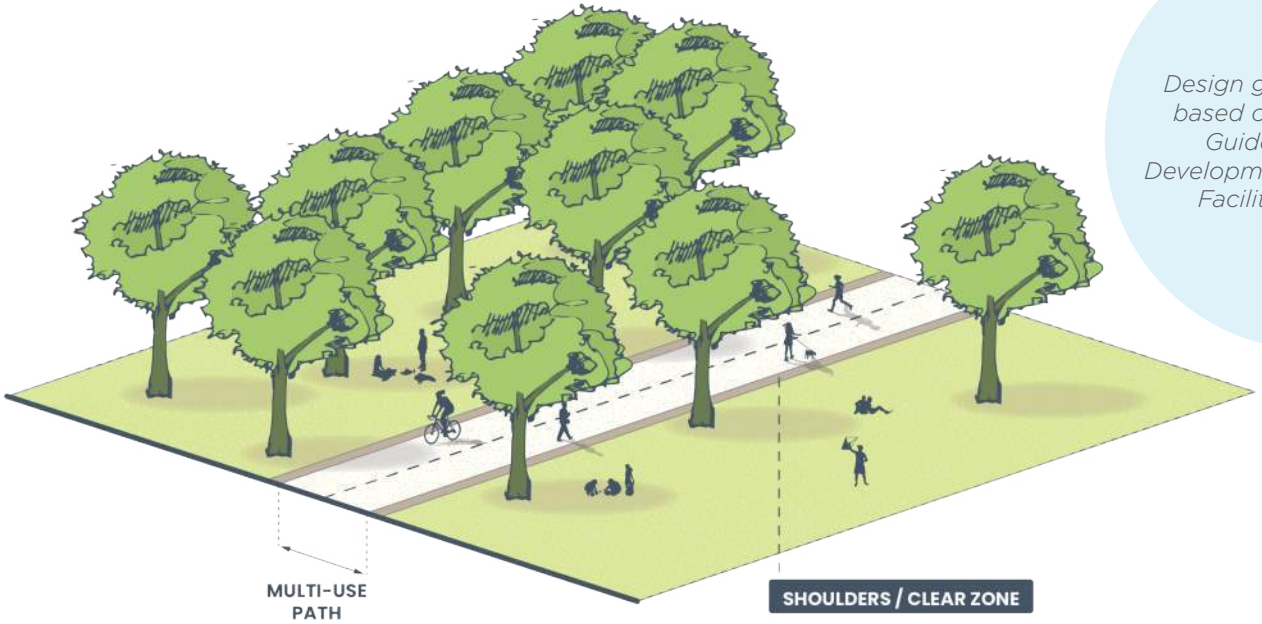
At a minimum, the Americans with Disabilities Act requires a 3' clear width in the pedestrian zone plus 5' passing areas every 200'.

The clear width may be reduced to a minimum of 32 inches for short, constrained segments of up to 24 inches long, provided that constrained segments are separated by regular clear width segments that are a minimum of 48 inches long and 36 inches wide.

Providing a 6' clear width across the full corridor for all new sidewalks (and 12' or greater in downtown and pedestrian-priority areas) meets requirements for passing and maneuverability.

Existing deficient-width sidewalks are to be retrofitted to meet citywide standards.

Shared Use Path



Design guidelines are based on AASHTO, Guide for the Development of Bicycle Facilities (2012)

A shared use path (SUP), labeled in the graphic above as a multi-use path, provides a travel area separate from motorized traffic for cyclists, pedestrians, skaters, wheelchair users, joggers, and other users. SUPs are desirable for cyclists of all skill levels preferring separation from traffic. These off-road travelways generally provide routes and connections not provided by existing roadways. Most SUPs are designed for two-way travel of multiple user types. Designs vary depending on factors such as the grade of the land, size and amount of vegetation present, and proximity to waterways, structures, and other elements.

Typical Application

SUPs are typically located in independent rights-of-way, separate from roadways.

Refer to guidance on sidepaths for information on shared use paths adjacent to roadways.

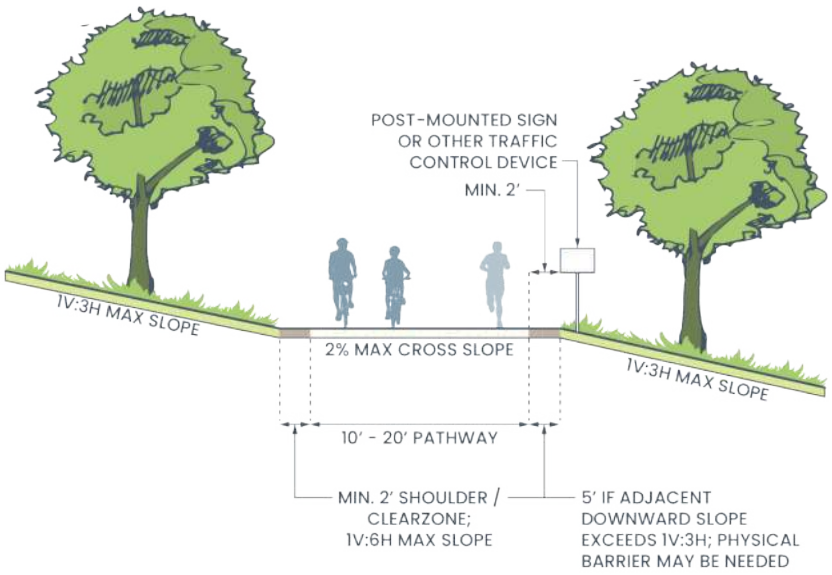
REAL WORLD EXAMPLES

American Tobacco Trail
Durham, NC

Art to Heart Trail
Raleigh, NC

Salisbury Greenway
Salisbury, NC

Source: Carolina Thread Trail



Design Guidelines

WIDTH

A demand analysis, combined with the use of FHWA's SUPLOS Calculator, should be conducted to determine appropriate widths. 10-12' is a typical default SUP width, and 8' width is acceptable only in constrained conditions and for short distances (AASHTO Bike Guide Section 5.2.1).

SHOULDER / CLEAR ZONE

Minimum 2' graded area (maximum 1V:6H slope) should be provided for clearance from landscaping or other vertical elements such as fences, light poles, sign posts, etc.; recommend aggregate or turf grass to prevent weeds from spilling onto trail.

VERTICAL CLEARANCE

8' minimum, 10' typical.

SLOPE

Trail slopes should be designed at 5% (greater slope is permitted, but should be limited, see AASHTO); SUP cross slope should not exceed 2%.

PHYSICAL BARRIER

If the land beyond the shoulder/clear zone has a slope exceeding 3:1, a physical barrier may need to be added.

OTHER DESIGN CRITERIA

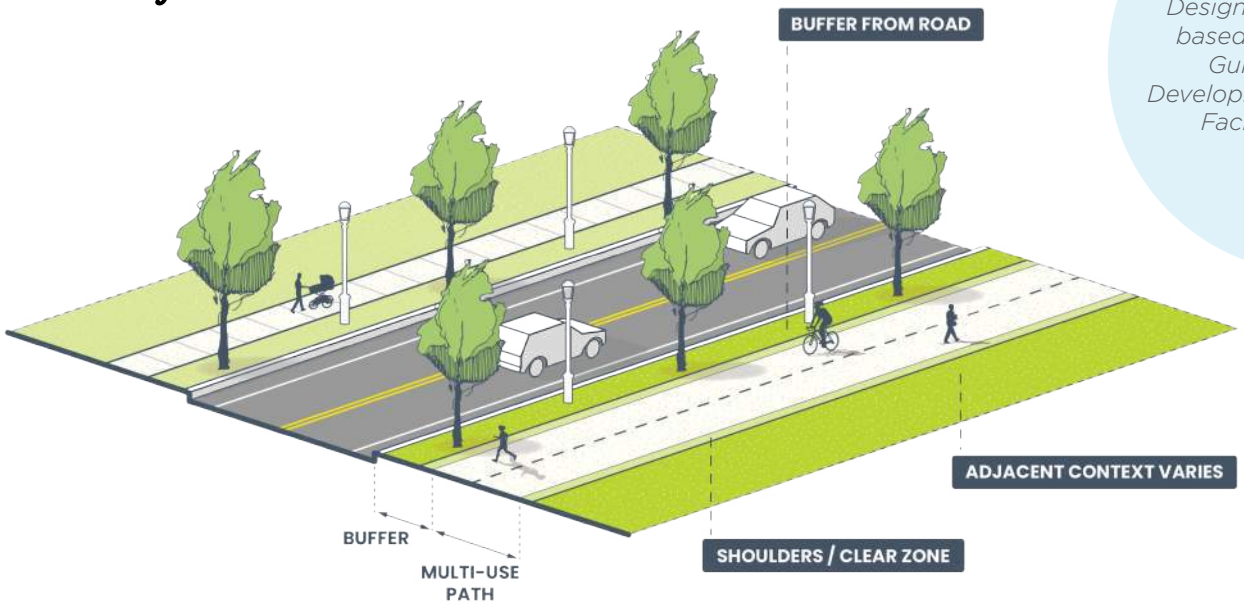
With the great variety of users on open space trails, amenities such as benches, trash and recycling receptacles, bike racks, and appropriate lighting should be included along trails.

Trail design should comply with all AASHTO requirements for shared use paths related to design speed, sight distances, stopping distances, and grades.

Shared Use Path

Roadway Corridor

Design guidelines are based on AASHTO, Guide for the Development of Bicycle Facilities (2012)



Shared use paths which are located alongside roadway corridors, also known as sidepaths, serve as both recreational and utilitarian routes. While this placement poses unique SUP challenges, such as driveway crossings and close proximity to moving vehicles, these trails create direct and important routes through the community.

Typical Application

When SUPs run alongside a roadway corridor, standard shared use path characteristics should be maintained in order to reinforce the continuity of the SUP and create a distinction between sidewalks and other nearby facilities. Buffer space of at least 5' between the roadway and SUP can include smaller vegetation, light and utility poles, and other physical barriers. A buffer must be at least 8' wide to accommodate trees.

REAL WORLD EXAMPLES

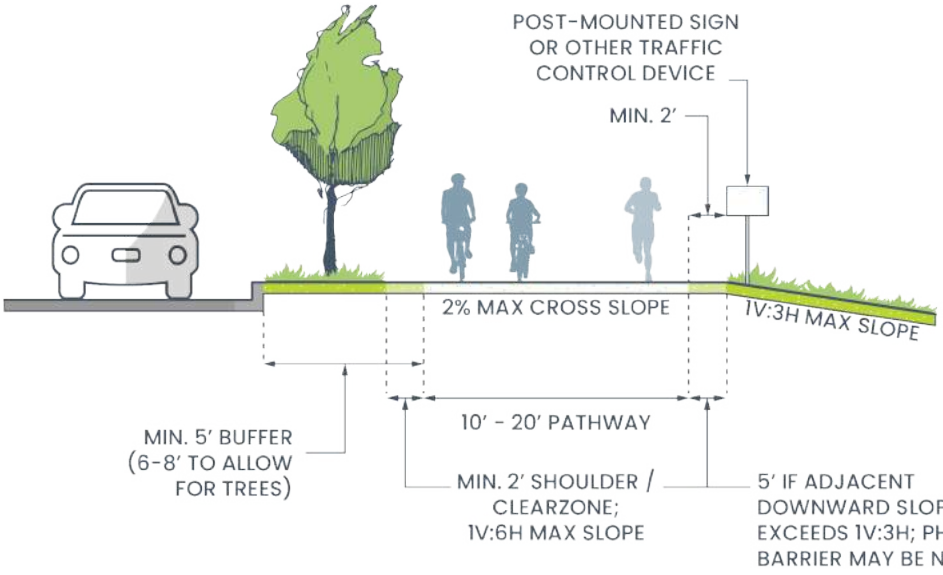
High Point Greenway
High Point, NC

Source: City of High Point

Research Triangle Park Trails
Cary and Raleigh, NC

Wilma Dykeman Greenway
Asheville, NC

Source: Connect Buncombe



Design Guidelines

WIDTH

A demand analysis, combined with the use of FHWA's SUPLOS Calculator, should be conducted to determine appropriate widths. 10-12' is a typical default SUP width, and 8' width is acceptable only in constrained conditions and for short distances (AASHTO Bike Guide Section 5.2.1).

BUFFER

A wide separation should be provided between the trail and adjacent roadway. The buffer is measured from the face of curb (if present) or the edge of the paved roadway, and should not be less than 8'. Paved shoulders do not count towards the overall buffer width. Greater separation is desirable along high-speed roadways. In either case, if proper separation is not achievable, a physical barrier or railing should be provided.

SHOULDER / CLEAR ZONE

Minimum 2' graded area (maximum 1V:6H slope) should be provided for clearance from landscaping or other vertical elements such as streetscape amenities, light poles, sign posts, etc.; recommend aggregate or turf grass to prevent weeds from spilling onto trail.

VERTICAL CLEARANCE

8' minimum, 10' typical.

SLOPE

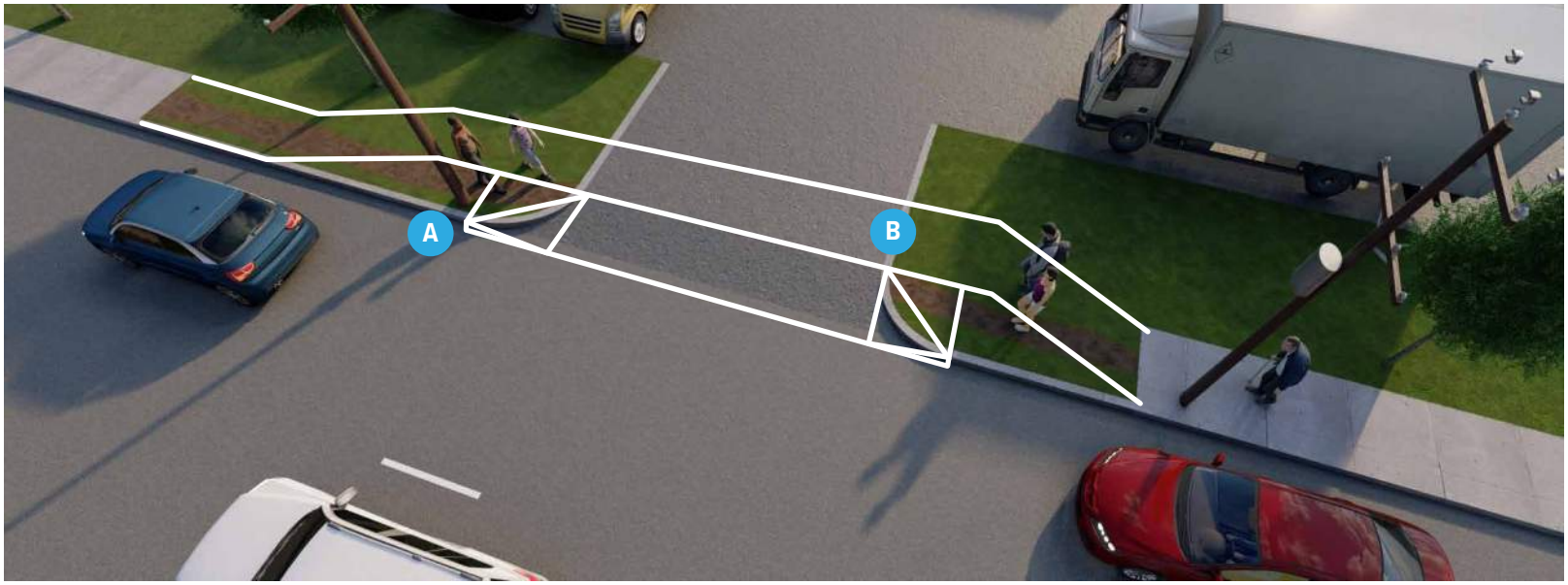
SUP slopes should be designed at 5% (greater slope is permitted, but should be limited, see AASHTO); SUP cross slope should not exceed 2%.

OTHER DESIGN CRITERIA

Trail design should comply with all AASHTO requirements for shared use paths related to design speed, sight distances, stopping distances, and grades. See AASHTO p. 5-8 for roadway corridor conflict considerations.

SIGNAGE

Wayfinding or other informational signage, if located within buffer between roadway and trail, should be mounted at 7' from trail to bottom of sign and 2' from the side of the SUP (see MUTCD).



Sidewalk Infill and Improvements

Due to historic development patterns, sidewalks may be missing or underbuilt for limited segments along an otherwise continuous corridor, or may be provided on only one side of the street where demand exists for access on both sides. Sidewalk infill and improvement strategies should identify and prioritize gaps in order to provide complete, accessible facilities. Providing a sidewalk along a roadway can reduce pedestrian crashes by 88%[1].

Typical Application

- Missing segments in an otherwise complete corridor
- Missing on one side of a corridor
- Where sidewalks are completely absent from the roadway
- The AASHTO Guide for the Development of Pedestrian Facilities states "Wherever there is developed frontage along a road or street, there will be people walking for exercise, visiting neighbors, accessing bus stops, or walking for pure enjoyment. Sidewalk or pathways are needed to safely accommodate these activities." (2004, p.25)

Design Features

- Sidewalk width will vary depending on the available public right-of-way between the curb line and private property line.
- Generally, sidewalk infill projects do not change the configuration of the roadway travel area.
- When filling gaps in a corridor, sidewalk segments should provide adequate width and landscaped buffer. A buffer zone of four to six feet is desirable to separate pedestrians from the street.

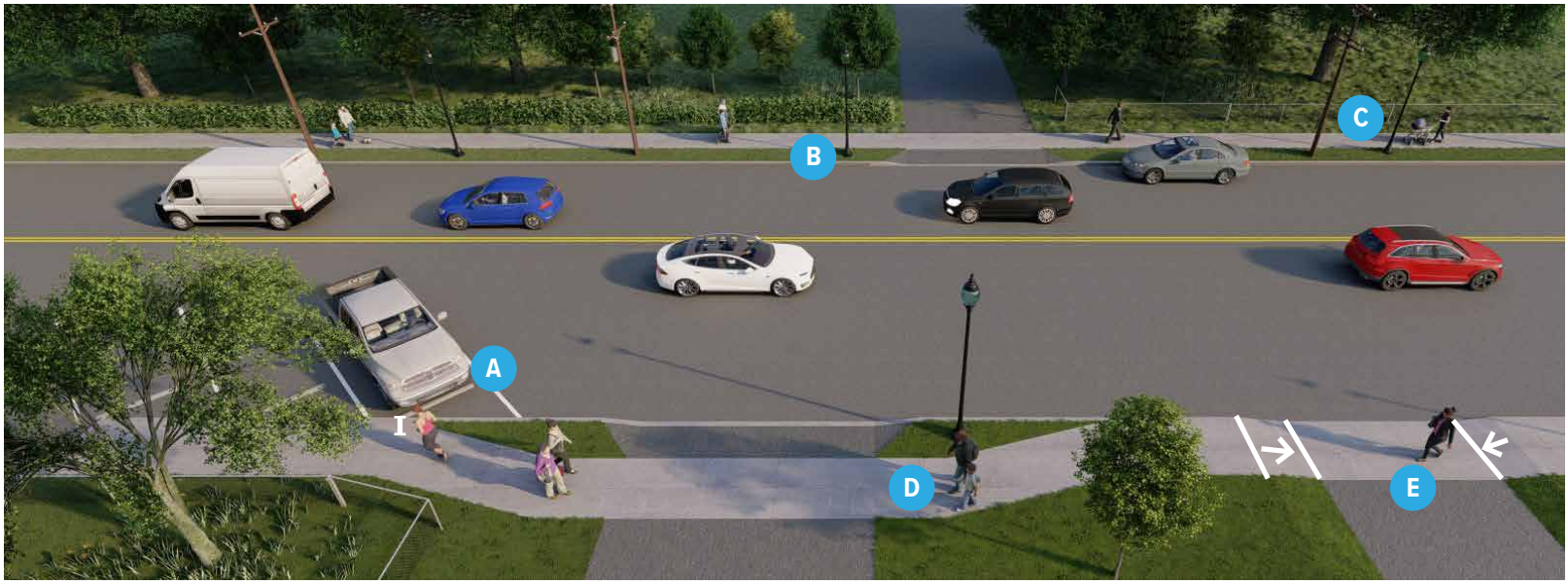
A Infill sidewalks may need to transition at the ends of the segments to connect to existing sidewalk alignment and design.

B New and reconstructed sidewalks must meet accessibility guidelines. This includes the design of curb ramps and driveway curb cuts.

Planning-Level Cost Estimate

- Varies significantly dependent on project specifications

[1] http://www.cmfclearinghouse.org/index.cfm



Sidewalk Obstructions and Driveways

Obstructions to pedestrian travel in the sidewalk corridor typically include driveway ramps, curb ramps, sign posts, utility and signal cabinets, pull boxes and poles, mailboxes, fire hydrants and street furniture. Driveways and entrances to parking structures can also be challenging due to the restricted visibility of exiting motorists.

Typical Application

- Limiting the number and width of access points reduces the need for special provisions.
- Obstructions such as utility boxes, pull boxes and traffic signal cabinetry should be placed in the furnishing or utility zone between the sidewalk and the roadway, or behind the sidewalk. They should be set back from driveway entrances to increase visibility of pedestrians.

Design Features

A When sidewalks abut angled on-street parking, increase the width of the sidewalk by 3' to account for vehicle overhang.

B Planter strips allow sidewalks to remain level, with the driveway grade change occurring within the planter strip. The furnishing or utility zone also serves as the extended area where driveway grade changes should occur. This ensures a continuous elevation along the pedestrian through zone.

C When sidewalks abut hedges, fences, or buildings, an additional two feet of lateral clearance should be added to provide appropriate shy distance.

D Where constraints preclude a planter strip, or where the planter strip is narrow, wrapping the sidewalk around the driveway allows the sidewalk to still remain level.

E Driveways are a common sidewalk obstruction, especially for wheelchair and other mobility assisted device users. When constraints only allow curb-tight sidewalks, lowering the entire sidewalk at the driveway approach keeps the cross-slope at a constant grade. However, this may be uncomfortable for pedestrians and could create drainage problems behind the sidewalk. Frequent driveways in this configuration create a "roller coaster" effect forcing pedestrians to constantly be climbing or descending.

Further Considerations

Pedestrians easements may allow for the installation of sidewalks outside of the available right-of-way.

Planning-Level Cost Estimate

- Varies significantly dependent on project specifications

Raised Crosswalks

Typically limited to 2 and 3-lane roadways (30mph max), raised crosswalks slow vehicles and have a studied crash reduction factor of 45%[1]. Raised crosswalks create a special emphasis on crossing pedestrians and should be used on a limited basis. Schools and Neighborhood Greenways are good candidate locations. Some raised crossings can eliminate the need for grade changes over the pedestrian path of travel and improve comfort for users.

Typical Application

- Use detectable warnings at the curb edges to alert vision-impaired pedestrians that they are entering the roadway.
- Approaches to the raised crosswalk may be designed to be similar to speed humps.
- Drainage improvements may be required depending on the grade of the roadway.

Design Features

A. A tactile warning device should be used at the curb edge.

B. No grade change with sidewalk level is preferred.

Further Considerations

Like a speed hump, raised crosswalks have a traffic slowing effect which may be unsuitable on high-speed streets, designated transit or freight routes, and in locations that would reduce access for emergency responders. The noise of vehicles traveling over raised crosswalks may be of concern to nearby residents and businesses.

Planning-Level Cost Estimate

- $300-400 per linear foot of crossing width utilizing concrete construction. Does not include bulbouts as depicted in graphic.

[1] http://www.cmfclearinghouse.org/index.cfm

Pedestrian Hybrid Beacon

Hybrid beacons or High-Intensity Activated Crosswalks (HAWK) are used to improve non-motorized crossings of major streets. A hybrid beacon consists of a signal head with two red lenses over a single yellow lens on the major street, and a pedestrian signal head for the crosswalk. Hybrid beacons are only used at marked mid-block crossings or unsignalized intersections. They are activated with a pedestrian pushbutton at each end. If a median refuge island is used at the crossing, another pedestrian pushbutton can be located on the island to create a two-stage crossing.

Typical Application

- Suitable for arterial streets where posted speeds are 30-45 mph and multiple travel lanes. In some cases, PHBs are also being implemented along 2-lane roadways.
- Where off-street bicycle facilities intersect major streets without signalized intersections.
- At intersections or midblock crossings where there are high pedestrian volumes.

Design Features

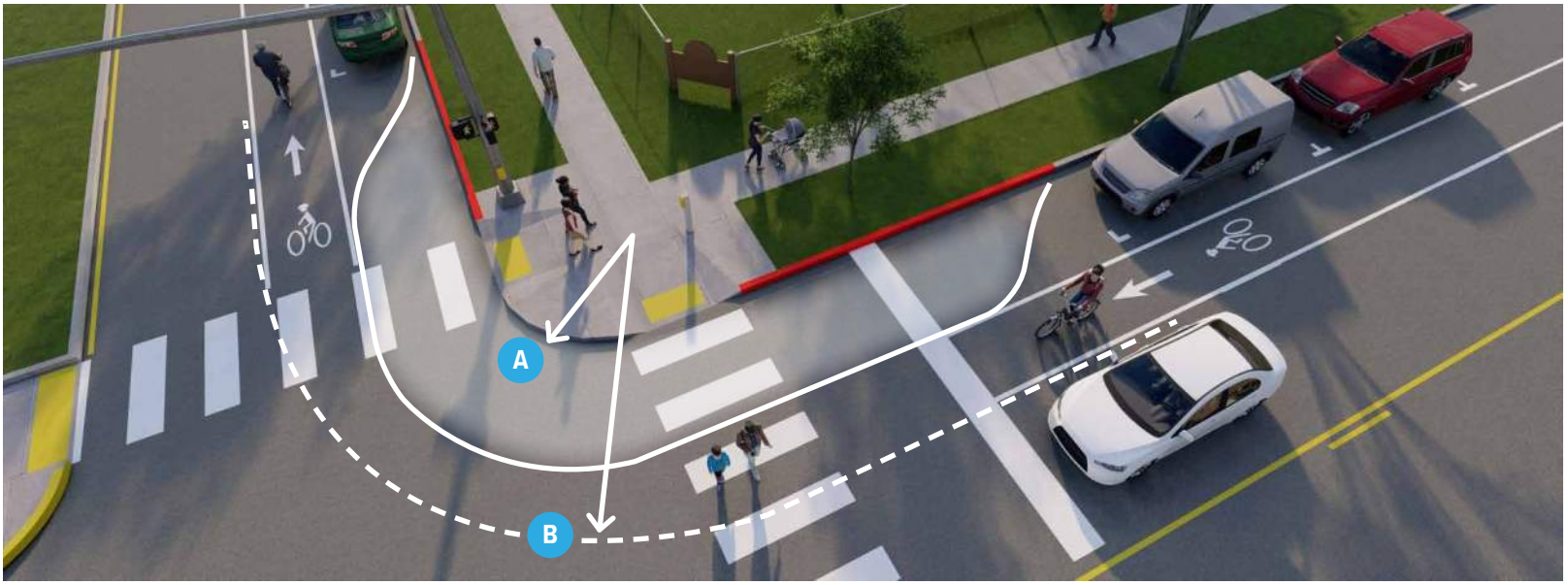
- Hybrid beacons may be installed without meeting traffic signal control warrants based on engineering judgment if roadway speed and volumes are excessive for comfortable pedestrian crossings.
- If installed within a signal system, signal engineers should evaluate the need for the hybrid beacon to be coordinated with other signals. To maximize pedestrian compliance, the PHBs should activate on demand.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.
- Crossings with a median refuge and no more than two lanes in each direction may utilize side mounted beacons for reduced cost and complexity.

Further Considerations

- Hybrid beacons are normally activated by push buttons, but may also be triggered by infrared, microwave, or video detectors. If not on-demand, the maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street, but a much shorter delay is strongly preferred.
- Each crossing, regardless of traffic speed or volume, requires review to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.
- The installation of hybrid beacons should also include public education and enforcement campaigns to ensure proper use and compliance.

Planning-Level Cost Estimate

- $30,000-$150,000 depending on complexity and overhead vs side mounted configuration.



Corner Radii

The size of a curb's radius can have a significant impact on pedestrian comfort and safety. A smaller curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crossing distance and requires vehicles to slow more on the intersection approach. During the design phase, the chosen radius should be the smallest possible for the circumstances and consider the effective radius in any design vehicle turning calculations.

Typical Application

The curb radius may be as small as 3 ft where there are no turning movements, or 5 ft where there are turning movements and adequate street width. On-street parking and bike lanes create a larger effective turning radius and can therefore allow a smaller physical curb radius.

Design Features

Corners have two critical dimensions which must be considered together.

- **A** The physical radius controls the pedestrian experience.
- **B** The effective radius is the widest turning arc that a vehicle can take through the corner and is larger than the physical radius. The effective radius should be considered when studying design vehicle accommodation.

Further Considerations

Several factors govern the choice of curb radius in any given location. These include the desired pedestrian area of the corner, traffic turning movements, street classifications, design vehicle turning radius, intersection geometry, and whether there is on-street parking or a bike lane (or both) between the travel lane and the curb. This is a complex topic and many strategies can be employed to balance the trade-offs between accommodating large vehicles and maximizing pedestrian safety. Truck aprons, mountable corners, and wider turning into multiple receiving lanes can help keep turning speeds low for the vast majority of vehicles.

For more information on corner design, including policy support, recommendations, case studies and more, see *Corner Design for All Users: A review of geometric design practices to improve safety for pedestrians and bicyclists at intersection corners*.

Pedestrians at Signalized Intersections

Typical Application

PEDESTRIAN SIGNAL HEADS

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

Countdown pedestrian signals should be retrofitted at existing signals with older style pedestrian signals and on any new installation. Countdown signals have a crash reduction factor of between 25 and 52% in varied studies[1].

SIGNAL TIMING AND THE PEDESTRIAN PHASE

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

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

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

A Consider the use of a Leading Pedestrian Interval (LPI) to provide additional traffic-protected crossing time to pedestrians. See *Pedestrian Traffic Signal Enhancements* for additional detail.

B Accessible Pedestrian Signals (APS) provide crossing assistance to pedestrians with vision impairment at signalized intersections

Further Considerations

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

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

[1] http://www.cmfclearinghouse.org/index.cfm

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Appendix C

Funding Resources

Overview

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

Federal Funding Sources

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

Transportation Alternatives Program (TAP) Bike/Ped Scoping Guide

In January 2020, NCDOT released the Transportation Alternatives Program (TAP) Bike/Ped Scoping Guide. This document provides detail and guidance on the Project Delivery Process and important elements to consider in bike/ped project development.

For more information: *https://connect.ncdot.gov/projects/BikePed/Documents/BikePed%20Project%20Scoping%20Guidance%20for%20Local%20Governments.pdf*

STBGP-DA & TASA-DA Funds

The Surface Transportation Block Grant Program Direct Attributable (STBGP-DA) and Transportation Alternative Set Aside Direct Attributable (TASA-DA) are federal funding sources distributed by the GCLMPO. Member jurisdictions of the GCLMPO are eligible to apply for these funds through a competitive funding process that prioritizes locally administered projects in the Region. These projects are funded using the federal funding sources directly attributed to the region with a minimum 20% local match.

The Infrastructure Investment and Jobs Act (IIJA)

The following is a preliminary summary of how IIJA may affect funding sources related to bicycle, pedestrian, and trail infrastructure based on what is known at the time this plan was written (Q3 2022).

FORMULA FUNDS (STATE DOTS ADMINISTER TO LOCALS)

Transportation Alternatives Program (TAP)

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

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

CMAQ Will increase by 10% to $13.2 billion. This program funds interchange improvements, local transit operations, and bike and pedestrian infrastructure to help meet the National Ambient Air Quality Standard in non-attainment areas; Gaston County is eligible for CMAQ funds.

Highway Safety Improvement Program

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

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

DISCRETIONARY GRANTS (US DOT ADMINISTERS TO LOCALS)

Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

In the first RAISE grant cycle, nearly one in five funded grant applications involved trail development. In addition, the selection committee awarded another 21% of funding to projects focused on making roads safer for vulnerable road users like cyclists and pedestrians. Many trail and greenway projects have a chance to compete well for the RAISE program when they focus on connecting people to local and regional destinations.

Under the IIJA, the RAISE grant program will have $7.5 billion available over the next five years. Competitive applications to this program have the following in common:

1. The project can demonstrate broad community support and is a recognized local or regional priority.
2. The project explicitly considers how it will address climate change and racial equity.
3. The project documents direct and significantly favorable local or regional impact relative to the scoring criteria:
   - » Safety
   - » Environmental Sustainability
   - » Quality of Life
   - » Economic Competitiveness
   - » State of Good Repair
   - » Innovation
   - » Partnership
4. The project has a high benefit to cost ratio.
5. The project demonstrates readiness by providing a detailed scope of work and budget, a realistic project delivery schedule, an understanding of the environmental risks, permit requirements, and mitigation measures, and is within the public right-of-way.
6. A United States Senator or Congress member actively champions the project.

For more information on RAISE program guidelines and upcoming Notice of Funding Opportunities, see: *www.transportation.gov/RAISEgrants*

NEW: *Safe Streets for All (SS4A)*

SS4A is a new federal grant program that will award up to $5 billion over the next five years to support the US DOT's goal of zero deaths and serious injuries on our nation's roadways. Grants are available for developing safety action plans, implementing projects or programs identified in an action plan, and conducting supplemental planning activities to support or enhance an existing action plan.

MPOs, municipalities, and Tribal governments are eligible to apply. The program requires a 20% non-federal match. Applications for the 2022 cycle were due September 15th, 2022.

Successful grant applications will demonstrate engagement with public and private stakeholders and seek to adopt innovative technologies and strategies to promote safety, including: low-cost/high-impact systemic safety improvements, equitable investment, and evidenced-based strategies. Applications should also show how proposed projects align with US DOT's mission and priorities such as equity, climate and sustainability, quality job creation, and economic strength and global competitiveness. For more information: *https://www.transportation.gov/grants/SS4A*

Two other new programs, the *Healthy Streets Program* and the *Active Transportation Infrastructure Investment Program*, are still subject to appropriations and may become available in 2023.

Other Federal Funding Sources

Safe Routes to School (SRTS) Program

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

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

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

Federal Transit Administration Enhanced Mobility of Seniors and Individuals with Disabilities

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.

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

Federal Lands Transportation Program (FLTP)

The FLTP funds projects that improve transportation infrastructure owned and maintained by the following Federal

Lands Management Agencies: National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), USDA Forest Service, Bureau of Land Management (BLM), U.S. Army Corps of Engineers, Bureau of Reclamation, and independent Federal agencies with land and natural resource management responsibilities. FLTP funds are available for program administration, transportation planning, research, engineering, rehabilitation, construction, and restoration of Federal Lands Transportation Facilities. Transportation projects that are on the public network that provide access to, adjacent to, or through Federal lands are also eligible for funding. Under the IIJA, $2.2 billion has been allocated to the program for FY 2022-2026.

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

Federal Land and Water Conservation Fund

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

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

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

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program that provides technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program only provides planning assistance; there are no implementation funds available. Projects are prioritized for assistance based on criteria, including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. Project applicants may be state and local agencies, tribes, nonprofit organizations, or citizen

groups. National parks and other federal agencies may apply in partnership with other local organizations. This program may benefit trail development in North Carolina indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

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

Environmental Contamination Cleanup Funding Sources

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

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

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

The Five Star & Urban Waters Restoration Grant Program seeks to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance to diverse local partnerships for wetland, riparian, forest and coastal habitat restoration, urban wildlife conservation, stormwater management as well as outreach, education and stewardship. Projects should focus on water quality, watersheds and the habitats they support. The program focuses on five priorities: on-the-ground restoration, community partnerships, environmental outreach, education and training, measurable results, and sustainability. Eligible applicants include nonprofit organizations, state government agencies, local governments, municipal governments, tribes, and educational institutions. Projects are required to meet or exceed a 1:1 match to be competitive.

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

State and State-Administered Funding Sources

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

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

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

STI's Quantitative Scoring Process

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

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

Bicycle and Pedestrian Project Eligibility Requirements

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

Specific Improvement Types

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

Bundling Projects

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

More Information on Prioritization 6.0

NCDOT's Prioritization Data page has training slides that explain the prioritization process: *https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx*

See the "Prioritization Training" folder and the following session information within:

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

High Impact/Low Cost Funds

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

Project Selection Criteria

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

- The average daily traffic volume of a roadway and whether the proposed project will generate additional traffic.

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

NCDOT Technical Review & Approval

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

Incidental Projects

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

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

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

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

NC Highway Safety Improvement Program

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

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

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

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

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

Highway Hazard Elimination Program

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

Governor's Highway Safety Program

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

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

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

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

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

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

NC Parks and Recreation Trust Fund (PARTF)

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

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

Clean Water Management Trust Fund

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

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

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

Urban and Community Forestry Grant

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

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

Local Funding Sources

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

Private and Nonprofit Funding Sources

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

Carolina Thread Trail

The Carolina Thread Trail is a private, non profit organization working to complete the regional trail. The organization offers financial and technical support for local communities and partners in the area to create and implement their own community-based trail that is part of the Carolina Thread Trail. Communities can apply for grants from the private pool of capital that can also help to attract public funding sources.

For more information: *https://www.carolinathreadtrail.org/resources/grant-program-funding-sources/*

Rails-To-Trails Conservancy

Under the Doppelt Family Trail Development Fund, RTC will award approximately $85,000 per year, distributed among several qualifying projects, through a competitive process. Eligible applicants include nonprofit organizations and state, regional, and local government agencies. Two types of grants are available - community support grants and project transformation grants. Around three to four community support grants are awarded each year, ranging from $5,000-$10,000 each. Community Support Grants support nonprofit organizations or "Friends of the Trail" groups that need funding to get trail development or trail improvement efforts off the ground. Each year, 1-2 Project Transformation Grants are awarded that range from $15,000-$50,000. The intention of these grants is to enable an organization to complete a significant trail development or improvement project. For both types of grants, applications for projects on rail-trails and rails-with-trails are given

preference, but rail-trail designation is not a requirement. The trail must serve multiple user types, such as bicycling, walking, and hiking, and must be considered a trail, greenway, or shared use path.

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

National Fish and Wildlife Foundation (NFWF)

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

The Foundation provides grants through more than 70 diverse conservation grant programs. One of the most relevant programs for bicycle and pedestrian projects is Acres for America. Funding priorities include conservation of bird, fish, plants and wildlife habitats, providing access for people to enjoy outdoors, and connecting existing protected lands. Federal, state, and local government agencies, educational institutions, Native American tribes, and non-profit organizations may apply twice annually for matching grants. Due to the competitive nature of grant funding for Acres for America, all awarded grants require a minimum 1:1 match.

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

The Trust for Public Land

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

For more information: *http://www.tpl.org*

Land for Tomorrow Campaign

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries

for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come.

For more information: *http://www.land4tomorrow.org/*

The Conservation Alliance

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

- The project should seek to secure lasting and quantifiable protection of a specific wild land or waterway. We prioritize landscape-scale projects that have a clear benefit for habitat.
- The campaign should engage grassroots citizen action in support of the conservation effort. We do not fund general education, restoration, stewardship, or scientific research projects.
- All projects must have a clear recreational benefit.

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

Blue Cross Blue Shield (BCBS) of North Carolina Foundation

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

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

Duke Energy Foundation

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

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

Z. Smith Reynolds Foundation

This Winston-Salem-based Foundation

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

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

Bank of America Charitable Foundation

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

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

Local Trail Sponsors

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

Corporate Donations

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

Private Individual Donations

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

Fundraising/Campaign Drives

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

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Appendix D

Complete Set of Pedestrian Improvement Recommendations

These recommendations are tagged in the project's GIS map files provided to the City of Belmont. Project ID #s listed in the tables that follow are georeferenced in those files. The tables also list the current state of the pedestrian network at proposed improvement locations (in the "Existing Facility" column) and the proposed improvement (in the "Proposed Facility" column).

Table D.1 - Pedestrian Crossing Recommendations

Project #	Crossroad 1	Crossroad 2	Crossroad 3	Existing Facility	Proposed Facility
15	Old Nc 7 Rd			Marked Crosswalk	Crossing Improvement
50	Keener Blvd	Ewing Dr		Marked Crosswalk	Crossing Improvement-HiVis crosswalk
74	N Central Ave	Proposed Greenway		No Crossing	Crossing Improvement
75	N Main St	Proposed Greenway		No Crossing	Crossing Improvement
76	N Main St	Mercy Dr		No Crossing	Crossing Improvement
77	Julia Ave	Greenwood Ave	Willerene St	No Crossing	Crossing Improvement
78	South Point Rd	Julia Ave		No Crossing	Crossing Improvement
79	South Point Rd	Rl Stowe Rd	Nixon Rd	No Crossing	Crossing Improvement
80	South Point Rd	Rl Stowe Rd	Nixon Rd	No Crossing	Crossing Improvement
81	S Main St	N Central Ave		No Crossing	Crossing Improvement
82	S Main St	Mcleod Ave	W Myrtle St	No Crossing	Crossing Improvement
83	Keener Blvd	Mcleod Ave		No Crossing	Crossing Improvement
84	Keener Blvd	Parkdale Dr		No Crossing	Crossing Improvement
85	Keener Blvd	Ft William Ave	Rl Stowe Rd	No Crossing	Crossing Improvement

Project #	Crossroad 1	Crossroad 2	Crossroad 3	Existing Facility	Proposed Facility
86	E Catawba St	Park St	Keener Ave	No Crossing	Marked Crosswalk; Ped Signals
87	Myrtle St	Central Ave		Marked Crosswalk	Ped Signals
88	Park Dr			Marked Crosswalk	Crossing Improvement
89	Lee St			Marked Crosswalk	High Visibility Crosswalk
90	Mcleod Ave	Hawthorne Park Ave		No Crossing	Crossing Improvement
91	Woodlawn St			Marked Crosswalk	Crossing Improvement
92	Woodlawn St	Boundary St		Marked Crosswalk	Crossing Improvement
93	Perfection Ave	Pebble Creek Dr	Acme Rd	No Crossing	Crossing Improvement
94	E Catawba St	Church St	Tucker St	No Crossing	Crossing Improvement
95	S New Hope Rd	Overlake Dr		No Crossing	Crossing Improvement
96	N Main St	Catawba St		Marked Crosswalk	Improve ADA; Ped Signals
97	E Woodrow Ave	N Main St		Marked Crosswalk	Ped Signals
98	N Central Ave	W Woodrow Ave		No Crossing	High Visibility Crosswalks; Ped Signals
99	Park St	Wilkinson Blvd		No Crossing	Crossing Improvement; Ped Signals

Project #	Crossroad 1	Crossroad 2	Crossroad 3	Existing Facility	Proposed Facility
100	Wilkinson Blvd	Railroad		No Crossing	Crossing Improvement with Rail Trail
101	South Point Rd	Armstrong Rd		No Crossing	Crossing Improvement with Rail Trail
102	Wilkinson Blvd	Archibald St		No Crossing	Crossing Improvement with Rail Trail
103	South Point Rd	Belwood Dr		Marked Crosswalk	Crossing Improvement - Planned Traffic Signal
105	S New Hope Rd	Timberlake Pt		No Crossing	Crossing Improvement - Planned Traffic Signal
106	Park Dr			No Crossing	ADA improvement
107	Chief Henson Rd	Railroad		No Crossing	Railroad Crossing
108	Eagle Rd	Railroad		No Crossing	Railroad Crossing
109	Fifth St Ext			No Crossing	Railroad Crossing
110	Tenth St	Railroad		No Crossing	Railroad Crossing
111	Railroad	Proposed MUP		No Crossing	Railroad Crossing
116	S New Hope Rd	Proposed MUP		No Crossing	Crossing Improvement
117	Stowe Rd	South Point Rd	Mckee Farm Ln	No Crossing	Crossing Improvement

Project #	Crossroad 1	Crossroad 2	Crossroad 3	Existing Facility	Proposed Facility
118	Park St	Hawley Ave		No Crossing	Crossing Improvement
119	Park St	Hawley Ave		No Crossing	Crossing Improvement
120	Nixon Rd	West Of Shannon Dr		No Crossing	Crossing Improvement
121	Wilkinson Blvd	Hawley Ave		No Crossing	Crossing Improvement
122	Hawley Ave	Wal-Mart Driveway Entrance		No Crossing	Crossing Improvement
123	Railroad	Proposed Greenway		No Crossing	Railroad Crossing
124	N Central Ave	Proposed Greenway		No Crossing	Crossing Improvement
125	N Central Ave	Harris St		No Crossing	Crossing Improvement
126	Catawba St	Wilkinson Blvd		No Crossing	Crossing Improvement
127	E Catawba St	Chronicle Mill		No Crossing	Crossing Improvement
128	Armstrong Ford Rd	Mellon Rd		No Crossing	Crossing Improvement
129	Park St	Browntown Rd	Hawley Ave	No Crossing	Crossing Improvement
130	E Catwaba St	Seventh St		No Crossing	Crossing Improvement

Table D.2 - Multi-Use Path Recommendations

Project #	Corridor	From Street	To Street	Proposed Facility
1	Off Road	R L Stowe Rd	Parkdale Dr	Multi-Use Path
2	Off Road	E Catawba St	Sixth St	Greenway
3	Off Road	Point Crossing		Multi-Use Path
4	Wilkinson Blvd	Paladin Ct	Belmont City Limits	Multi-Use Path
5	Parkdale Dr	Keener Blvd	Tenth St	Multi-Use Path
6	Off Road	Misty Harbor Cir	Lincoln St	Multi-Use Path
9	Off Road	Cason St	Belmont City Limits	Multi-Use Path
11	Eastwood Dr	Eagle Rd	Armstrong Ford Rd	Multi-Use Path
12	Eagle Rd	Eastwood Dr	Assembly St	Multi-Use Path
13	R L Stowe Rd	Keener Blvd	Existing MUP	Multi-Use Path
14	Eagle Rd	S Main St	Assembly St	Multi-Use Path
15	South Point Rd	Second Ave	Belwood Dr	Multi-Use Path
16	Nixon Rd	Existing MUP	South Point Rd	Multi-Use Path
19	Off Road	Caromont Entry Road	Belmont Mt Holly Rd	Multi-Use Path
20	Off Road	Caldwell Farm Rd	Woodlawn St	Greenway
21	N Main St	Wilkinson Blvd	Caldwell Farm Rd	Greenway
23	Off Road	S New Hope Rd	Greenway	Multi-Use Path
24	N Main St	Wilkinson Blvd	Caldwell Farm Rd	Greenway
25	S New Hope Rd	Belmont City Limits	South Carolina State Line	Multi-Use Path

Project #	Corridor	From Street	To Street	Proposed Facility
50	Armstrong Rd	S New Hope Rd	South Point Rd	Multi-Use Path
51	S New Hope Rd	Seven Oaks Preserve Trailhead	Armstrong Rd	Multi-Use Path
52	South Point Rd	Armstrong Rd	Second Ave	Multi-Use Path
53	Wilkinson Blvd	Orchard St	Belmont City Limits	Multi-Use Path
54	Wilkinson Blvd	Park St	Belmont City Limits	Multi-Use Path
55	Off Road	E Woodrow Ave	Glenway St	Greenway
56	N Main St	Mercy Dr	N Central Ave	Greenway
57	N Main St	N Central Ave	Wilkinson Blvd	Greenway
58	Wilkinson Blvd	Belmont City Limits	Park St	Multi-Use Path
59	Wilkinson Blvd	Caldwell Farm Rd	Park St	Multi-Use Path
60	Off Road	Armstrong Ford Rd	South Point Rd	Multi-Use Path
61	South Point Rd	Nixon Rd	Lilac Ln	Multi-Use Path
62	South Point Rd	Nixon Rd	Lilac Ln	Multi-Use Path
63	South Point Rd	Lilac Ln	Julia Ave	Multi-Use Path
64	South Point Rd	Nixon Rd	Lilac Ln	Multi-Use Path
65	South Point Rd	Nixon Rd	Lilac Ln	Multi-Use Path

Project #	Corridor	From Street	To Street	Proposed Facility
66	South Point Rd	Julia Ave	North St	Multi-Use Path
67	S Central Ave	North St	Gaston Ave	Multi-Use Path
68	S Central Ave	Gaston Ave	Johnson St	Multi-Use Path
69	Ferrell Ave	Hospitality Ln	Burns Mitchell Dr	Multi-Use Path
70	S Main St	Garibaldi Ridge Ct	Dogwood Ln	Multi-Use Path
71	Perfection Ave	Perfection Place	W Catawba Ave	Multi-Use Path
72	Off Road	Elmore St	North St	Multi-Use Path
73	Off Road	Hugh St	Power Line Ave	Multi-Use Path
74	Off Road	Elmore St	Power Line Ave	Multi-Use Path
75	Belmont Middle School Driveway/Off Road	South Point Rd	Proposed MUP	Multi-Use Path
76	New Road Alignment	Perfection Ave	Belmont City Limits	Multi-Use Path
78	Lakewood Rd	Lake Dr	Eighth Ave	Multi-Use Path
79	Park St	Hawley Ave	Hawley Ave	Multi-Use Path
80	Park St	Hawley Ave	Wilkinson Blvd	Multi-Use Path
81	Parks St	Bridge	I-85 Off-ramp	Multi-Use Path
82	Park St	I-85 Off-ramp	Hawley Ave	Multi-Use Path
84	Off Road	Proposed MUP	Armstrong Ford Rd	Greenway
85	Off Road	Proposed MUP	Armstrong Ford Rd	Greenway
86	S New Hope Rd	Belmont City Limits	S New Hope Roundabout	Multi-Use Path

Project #	Corridor	From Street	To Street	Proposed Facility
87	Armstrong Ford Rd	Belmont City Limits	Eastwood Dr	Multi-Use Path
88	Eagle Rd	Railroad	Eastwood Dr	Multi-Use Path
89	Eagle Rd	Railroad	Lakewood Rd	Multi-Use Path
92	Wilkinson Blvd	Caldwell Farm Rd	Existing MUP	Multi-Use Path
99	Wilkinson Blvd	Hawley Ave	Existing MUP	Multi-Use Path
102	Wilkinson Blvd	Archibald St	Existing MUP	Multi-Use Path
112	E Catawba St	Cityworks Driveway	Proposed Greenway	Multi-Use Path
113	Off Road	Nixon St	Proposed MUP	Multi-Use Path
117	Armstrong Ford Rd	Eastwood Dr	Garibaldi Ridge Ct	Multi-Use Path
120	Off Road	Sixth St	Existing Greenway	Greenway
121	E Catawba St	Wilkinson Blvd	Proposed Greenway	Multi-Use Path
122	Parkdale Dr/ Off Road	River Dr	Belmont City Limits	Multi-Use Path
123	Railroad	Parkdale Dr	New Road Alignment	Greenway
124	Off Road	Proposed MUP	Tucker Rd	Greenway
125	Off Road	N Main St	E Woodrow Ave	Greenway
126	Mcadenville Rd	Collegetown Shopping Center	Existing Sidewalk	Multi-Use Path
127	Off Road	Hawley Ave	Caldwell Dr	Greenway
128	Belmont Mt Holly Rd	Woodlawn St	New Road Alignment	Multi-Use Path
129	Off Road	Cason St	Belmont City Limits	Greenway

Project #	Corridor	From Street	To Street	Proposed Facility
130	Caromont Entry Rd	Beatty Dr	Caromont Hospital Site	Multi-Use Path
131	Caromont Entry Rd	Beatty Dr	Caromont Hospital Site	Multi-Use Path
132	Beatty Dr	Ymca Dr	Exit 27 Ramp	Multi-Use Path
133	Beatty Dr	I-85 On-ramp	Bridge	Multi-Use Path
134	Hawley Ave	Wal-Mart Driveway	Wilkinson Blvd	Multi-Use Path
135	Park St	Wilkinson Blvd	Mclean Ave	Multi-Use Path
136	Off Road	Existing MUP	Catawba St	Greenway
137	Off Road	Keener Blvd	Rodden Ballfield/ Proposed Greenway	Greenway
138	Off Road	Rodden Ballfield	Hawthorne St	Greenway
139	Keener Blvd	E Catawba St	Parkdale Dr	Multi-Use Path
140	Tucker Rd	Proposed Greenway	South Point Rd	Multi-Use Path
141	Off Road	Armstrong Ford Rd	South Point Rd	Multi-Use Path
142	Tucker Rd	Proposed Greenway	South Point Rd	Multi-Use Path
143	New Road Alignment	Belmont City Limit West	Belmont City Limit East	Multi-Use Path
144	New Road Alignment	Belmont City Limit West	Belmont City Limit East	Multi-Use Path
145	New Road Alignment	Belmont City Limits West	Belmont City Limits East	Multi-Use Path
146	New Road Alignment	Belmont City Limits West	Belmont City Limits East	Multi-Use Path

Project #	Corridor	From Street	To Street	Proposed Facility
147	Tucker Rd	Proposed Greenway	South Point Rd	Multi-Use Path
148	S New Hope Rd	Belmont City Limits	Seven Oaks Preserve Trailhead	Greenway
149	Off Road	Pebble Creek Dr	Belmont City Limits	Greenway
150	Belmont Mt Holly Rd	Woodlawn St, Wimmer Cir	Forney Ave	Multi-Use Path
151	Off Road	Rodden Bellfield/ Proposed Greenway	Vine St	Greenway
152	Off Road	Existing Greenway	Belmont City Limits	Greenway
153	Off Road	Stowe Park	Rocky Branch Park	Greenway
154	Hawley Ave	Wilkinson Blvd	Garrison St	Multi-Use Path
155	Off Road	Hawley Ave	Proposed Rail Trail	Greenway
161	E Catawba St	Tucker St	Chronicle Mill	Multi-Use Path
162	Mclean Ave	Park St	Brewer St	Greenway
163	Off Road	Existing Greenway	Existing Greenway	Greenway
164	Off Road	Sixth St	Existing Greenway	Greenway
165	Off Road	Sixth St	E Catawba St	Greenway
166	Off Road	Lincoln St	Existing Trail	Greenway
167	Railroad	Parkdale Dr	New Road Alignment	Greenway

Table D.3 - Sidewalk Recommendations

Project #	Corridor	From	To	Recommendation
1	Ewing Dr	Ewing Dr		Sidewalk
2	Parkdale Dr	Keener Blvd	Vine St	Sidewalk
3	Cason St	Belmont City Limits	Cherry St	Sidewalk
4	Cason St	Existing Sidewalk	Belmont City Limits	Sidewalk
5	Woodlawn St	Existing Sidewalk From Wimmer	Existing Sidewalk From Cason St	Sidewalk
6	Stowe Rd	South Point Rd	Amity Cir	Sidewalk
7	Stowe Rd	Amity Cir	Allen St	Sidewalk
8	Stowe Rd	Allen St	Amity Cir	Sidewalk
9	Nixon Rd	Southridge Dr	Belmont City Limits	Sidewalk
10	Ewing Dr	Ewing Dr		Sidewalk
11	Julia Ave	Gaston Avenue Ext	Walnut St	Sidewalk
12	Julia Ave	Mark St	Walnut St	Sidewalk
13	Willerine Dr	Damon Pointe Dr	Deaton Dr	Sidewalk
14	Pebble Creek Dr	Perfection Ave	Palm Ln	Sidewalk
15	Pebble Creek Dr	Palm Ln	Arc St	Sidewalk
16	Julia Ave	David St	Greenwood Ave	Sidewalk
17	Julia Ave	Lakeview Dr	David St	Sidewalk
18	Julia Ave	Hugh St	Lakeview Dr	Sidewalk

Project #	Corridor	From	To	Recommendation
19	Julia Ave	Gaston Avenue Ext	Hugh St	Sidewalk
20	Lincoln St	N Central Ave	Hager St	Sidewalk
21	Sacco St	W Woodrow Ave	Clay St Ext	Sidewalk
22	Todd St	N Central Ave	Mingus St	Sidewalk
23	Sixth St	Alice Ave	Wilkinson Blvd	Sidewalk
24	Julia Ave	S Main St	Mark St	Sidewalk
25	Park Dr	Oak St	Existing Sidewalk	Sidewalk
26	Julia Ave	Greenwood Ave	South Point Rd	Sidewalk
27	Willerine Dr	Deaton Dr	Julia Ave	Sidewalk
28	W Woodrow Ave	Reid St	Sacco St	Sidewalk
29	Sacco St	Clay St	Clay St Ext	Sidewalk
30	Sacco St	Clay St Ext	Elm St Ext	Sidewalk
31	Sacco St	Elm St Ext	Todd St	Sidewalk
32	Sacco St	Todd St Ext	Todd St	Sidewalk
33	Sacco St	Todd St	Cedar St	Sidewalk
34	Sacco St	Cedar St	Lincoln St	Sidewalk
35	Todd St	Reid St	Sacco St	Sidewalk
36	Todd St	Mingus St	Reid St	Sidewalk
37	Lincoln St	Hager St	Reid St	Sidewalk
38	Lincoln St	Reid St	Sacco St Ext	Sidewalk
39	Lincoln St	Sacco St Ext	Sacco St	Sidewalk

Project #	Corridor	From	To	Recommendation
40	Sixth St	Alice Ave	Existing Sidewalk	Sidewalk
41	Ewing Dr	Charles St	Ewing Dr	Sidewalk
42	Johnson St	Beechnut Ln	S Central Ave	Sidewalk
43	Peach Orchard Rd	Mcadenville Rd	Lake Dr	Sidewalk
44	Nixon Rd	Existing Sidewalk	Southridge Dr	Sidewalk
45	Stowe Rd	Existing Sidewalk	Samuel Pinckney Dr	Sidewalk
46	Samuel Pinckney Dr	Existing Sidewalk	Stowe Rd	Sidewalk
47	Parkdale Dr	Vine St	Belmont City Limits	Sidewalk
48	Tenth St	Edgemont Ave	Laye St	Sidewalk
49	Tenth St	Laye St	Caldwell St	Sidewalk
50	Mellon Rd	Armstrong Ford Rd	Belmont Village Dr	Sidewalk
51	Perfection Ave	Belmont City Limits	Hickory Grove Rd	Sidewalk
52	Nixon Rd	South Point Rd	Existing Sidewalk	Sidewalk
53	Tenth St	Caldwell St	Brook St	Sidewalk
54	Tenth St	Brook St	E Catawba St	Sidewalk
55	Mcadenville Rd	Davidson St (East)	Peach Orchard Rd	Sidewalk
56	Belmont Mt Holly Rd	Forney Ave	Belsouth Dr	Sidewalk

Project #	Corridor	From	To	Recommendation
57	Cason St	Railroad Tracks	Pleasant St	Sidewalk
58	Perfection Ave	W Catawba Ave	Pleasant St	Sidewalk
59	Cason St	Pleasant St	Burton St	Sidewalk
60	Armstrong Rd	S New Hope Rd	Seven Oaks Lndg	Sidewalk
61	S New Hope Rd	Roundabout	Conservancy Dr	Sidewalk
62	Nixon Rd	Southridge Dr	Existing Sidewalk	Sidewalk
63	Woodlawn St	Existing Sidewalk Near Cason St	Existing Sidewalk	Sidewalk
64	Belmont Mt Holly Rd	Forney Ave	Existing Sidewalk	Sidewalk
65	Oak St	Harris St		Sidewalk
66	Parkdale Dr	Tenth St	Greenway Cir	Sidewalk
67	Woodlawn St	School St	Hickory Grove Rd	Sidewalk
68	Samuel Pinckney Dr	Stowe Rd	Amanda Ln	Sidewalk
69	Dorie Dr	Stowe Rd	Lake Ridge Dr	Sidewalk
70	Willerine Dr	Damon Pointe Dr	Nixon Rd	Sidewalk
71	Myrtle St	Oak St	N Central Ave	Sidewalk
72	Kingston St	Park Dr	Eagle Rd	Sidewalk
73	Elizabeth St	Eagle Rd	Park Dr	Sidewalk
74	Ferrell Ave	Burns Mitchell Dr	Harris St	Sidewalk

Project #	Corridor	From	To	Recommendation
75	S Main St	Central Ave	Poplar St	Sidewalk
76	S Main St	Poplar St	Smith St	Sidewalk
77	S Main St	Smith St	Mcleod Ave	Sidewalk
78	Mcleod Ave	S Main St	Hawthorne St	Sidewalk
79	Kenwood St	N Main St	Glenway St	Sidewalk
80	Davis St	Kenwood St	E Woodrow Ave	Sidewalk
81	Lincoln St	Sacco St Extension	Wilkinson Blvd	Sidewalk
82	School St	Roper St	Apricot St	Sidewalk
83	Acme Rd	Cason St	Existing Sidewalk	Sidewalk
84	Vine St	Existing Sidewalk	Chief Henson Dr	Sidewalk
85	Piedmont St/ River Dr	Linestowe Dr	Tenth St	Sidewalk
86	E Catawba St	Sixth St	Church St	Sidewalk
87	E Catawba St	Church St	Sloan St	Sidewalk
88	E Catawba St	Sloan St	Ninth St	Sidewalk
89	E Catawba St	Ninth St	Tenth St	Sidewalk
90	E Catawba St	Tenth St	Twelfth St	Sidewalk
91	E Catawba St	Twelfth St	Riverside Dr	Sidewalk
92	E Catawba St	Riverside Dr	Thirteenth St	Sidewalk
93	Sixth St	E Catawba St	Church St	Sidewalk
94	Tucker St	Brook St	E Catawba St	Sidewalk

Project #	Corridor	From	To	Recommendation
95	Brook St	Keener Blvd	Chief Henson Dr	Sidewalk
96	Brook St	Seventh St	Tenth St	Sidewalk
97	Faires Ave	S Main St	Gaston Ave	Sidewalk
98	North St	Henry Ave	Central Ave	Sidewalk
99	North St	S Central Ave	East Ave	Sidewalk
100	North St	East Ave	Rl Stowe Rd	Sidewalk
101	East Ave	Keener Blvd	South St	Sidewalk
102	Johnson St	Poplar St	Prince St	Sidewalk
103	Vesta St	Manor Way	Eagle Rd	Sidewalk
104	Merewood Rd	Eagle Rd	Vesta St	Sidewalk
105	Vesta St	Summerfield Pl	Merewood Rd	Sidewalk
106	Hugh St	Julia Ave		Sidewalk
107	Power Line Ave	Gaston Ave		Sidewalk
108	Elmore St	Gaston Ave		Sidewalk
109	Belwood Dr	South Point Rd	End of Existing Sidewalk	Sidewalk
110	Stowe Rd	Amity Cir	Raymond St	Sidewalk
111	Stowe Rd	Raymond St	Dorie Dr	Sidewalk
112	N Main St	Existing Sidewalk at Driveway Start	Existing Sidewalk at Driveway End	Sidewalk
113	W Woodrow Ave	Reid St	N Main St	Sidewalk
114	Belmont Mt Holly Realignment	Woodlawn St	N Main St	Sidewalk

Project #	Corridor	From	To	Recommendation
115	Belmont Mt Holly Realignment	Mcadenville Rd	N Main St	Sidewalk
116	Caromont Hospital Site	Caromont Entry Road	Proposed Greenway Connection	Sidewalk
117	Chief Henson Dr	Railroad Tracks	Brook St	Sidewalk
118	South Point Rd	Armstrong Rd	Reflection Pointe Blvd	Sidewalk
119	Gilchrist Cit	Ewing Dr	Existing Sidewalk	Sidewalk
120	Amanda Ln	Dorie Dr	Existing Sidewalk	Sidewalk
121	Stowe Rd	Dorie Dr	Samuel Pickney Dr	Sidewalk
122	South Point Rd	Stowe Rd	Smith Farm Existing Sidewalk	Sidewalk
123	Cason St	Woodlawn St	Railroad Tracks	Sidewalk
124	Railroad Tracks	Cason St	Cason St	Sidewalk
125	Bryant St	Prince St	Mcleod Ave	Sidewalk
126	Prince St	Bryant St	Johnson St	Sidewalk
127	South St	East Ave	South Point Rd	Sidewalk
128	Chief Henson Dr	Vine St	Railroad Tracks	Sidewalk
129	Oak St	Park Dr	Myrtle St	Sidewalk
130	Cason St	Cason St	Railroad Tracks	Sidewalk
131	Henry Ave	North St	Hugh St	Sidewalk
132	Gaston Ave	S Central Ave	Faires Ave	Sidewalk

Project #	Corridor	From	To	Recommendation
133	Burns Mitchell Dr	Park Dr	Ferrell Ave	Sidewalk
134	Park St	Hawley Ave	Wilkinson Blvd	Sidewalk
135	Hawley Ave	Park St	Existing Sidewalk	Sidewalk
136	Hawley Ave	Parks St	Existing Sidewalk	Sidewalk
137	School St	Existing Sidewalk	Existing Sidewalk	Sidewalk
138	Main St	Mercy Dr	N Central Ave	Sidewalk

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Appendix E

Project Prioritization Table

Table E.1 - Project Prioritization Table

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
		Safety		Connections	Employment and Housing	Equity	Other Plans		
1	Sidewalk facilities along Woodlawn St from Belmont Holly Rd to Hickory Grove Rd	10		5	15			City / County / NCDOT	30
2	Pedestrian facilities along Cason Street realignment						15	City / Private Development	15
3	CTT Alignment through Belmont Abbey College and CaroMont	10		10			15	Private Development	35
4	**NORTH BELMONT IMPROVEMENT PACKAGE: NCDOT I-85 project - include pedestrian recommendations in plan**	**10**	**25**	**15**	**15**	**20**	**15**	**NCDOT**	**100**

* Bold items mark the top 7 projects with the highest scores.

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
5	Rail Trail - segment from I-85 to Downtown	10		10	15	20	15	City / NCDOT	70
6i	Multiple Railroad Crossing Improvements	10		10				City	20
6ia	10th Street (bridge widening + sidewalks)					20		City	20
6ib	Eagle Rd (at grade improvements)	10						City	10
6ic	4th St / Chief (reopen w ped at-grade improvements)			10		20		City	30
6id	Belmont Brewing Company / Waterfront (at grade or below bridge boardwalk)			5		20		City	25

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
6ii	Single Railroad Crossing Improvement (6a or 6b)			0				City	TBD
6iii	Two Railroad Crossing Improvements (6a and 6b)			0				City	TBD
7	**DOWNTOWN PED SAFETY IMPROVEMENTS PACKAGE: All pedestrian crossing improvements on Main; All pedestrian crossing improvements on Park/Keener; Rail-trail from Wilkinson to Downtown**		**25**	**15**	**15**	**20**	**15**	**City / Private Development**	**90**
7a	#7 could be broken down into smaller packages as well, if desired								TBD

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
8	CITY WORKS ACCESS IMPROVEMENT PACKAGE: Abbey Creek Greenway connection, crossing improvement to CityWorks, Rec Center, and Kevin Loftin Park	10		10		20	15	City	55
8a	**EASTERN BELMONT IMPROVEMENT PACKAGE: Abbey Creek Greenway, greenway connection, crossing improvement to CityWorks, Rec Center, Kevin Loftin Park, and pedestrian improvements along Catawba to Riverfront commercial area**	**10**	**25**	**10**	**15**	**20**	**15**	**City**	**95**

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
9	CENTRAL PED IMPROVEMENTS PACKAGE: MUP along Nixon, MUP along South Point Rd from Julia to Belwood Dr, multiple crossing improvements	10		10	15		15	City / Private Development	50
10	SOUTH BELMONT ACCESS IMPROVEMENTS PACKAGE: MUP and crossing improvements connection between developments, botanical gardens, Trailhead, CTT	10		15			15	City	40

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
11	**Pedestrian crossing improvements and new sidewalk on Park from Wilkinson to (North) Hawley; on Hawley for a block west**	**10**	**25**	**10**	**15**	**20**		**City / Private Development**	**80**
12	**Pedestrian crossing improvements on Wilkinson/Park**	**10**	**25**	**5**	**15**	**20**		**City**	**75**
13	**Pedestrian crossing improvements on Church/Catawba**	**10**	**25**	**10**	**15**	**20**		**City**	**80**
14	Pedestrian crossing improvements on Park/(South) Hawley/Planetree intersection		25	5	15	20		City	65
15	Pedestrian crossing improvement on Hawley to Walmart		25	5		20		City / Private Development	50

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
MISSING SIDEWALK SEGMENT PACKAGES									
Near Downtown:									
16	From Central Ave west to Reid Park and Rocky Branch Park	10		10	15			City / Private Development	35
17	From Central Ave and Main St west to Belmont Central	10		15	15			City / Private Development	40
Central Belmont:									
18	Main St, McLeod St, Bryant St, and Johnson St southeast of downtown	10	25	5	15			City / Private Development	55
19	East and west of Central Ave between Keener St and Julia Ave	10						City / Private Development	10
20	On Stowe and connecting streets east of SouthPoint	10		10	15			City / Private Development	35

ID	Priority Project	Missing Link	Near Pedestrian Crash	Within 1/4 mile of a Destination (Park, recreation center, school, senior housing)	Access to downtown core and commercial corridors/business areas	Within Disadvantaged Community Census Tract (Historically Disadvantaged Communities)	In an adopted plan	Implementing Agencies	Total Points
East Belmont:									
21	**On Catawba, Brook, 10th, and Piedmont, connecting downtown and CityWorks**	**10**	**25**	**15**	**15**	**20**		**City / Private Development**	**85**
North Belmont:									
22	Perfection Ave and Cason St in North Belmont	10			15			City / Private Development	25

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Appendix F

Cost Estimates

Alta Engineering SE, PLLC

PLANNING ESTIMATE

BELMONT, NORTH CAROLINA PEDESTRIAN PLAN UPDATE

LOCATION: Downtown Belmont Improvement Package

DESCRIPTION:
- Main St and Central Ave (north of downtown)
- Main St and Mercy St
- Central Ave and Woodrow Ave
- Main St and Catawba St
- Catawba St and Chronicle St
- Keener Blvd and McLeod Ave
- McLeod Ave and Hawthorne Park Ave
- Central Ave and Harris St
- Park Dr intersection in front of American Legion
- Park Dr and Lee St

CITY: Belmont COUNTY: Gaston

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0000100000-N	800	MOBILIZATION	1	LS	$25,000.00	$25,000.00
0043000000-N	226	GRADING	1	LS	$29,000.00	$29,000.00
2535000000-E	846	6"X 12" CONCRETE CURB	160	LF	$35.00	$5,600.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	775	LF	$40.00	$31,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	350	SY	$85.00	$29,750.00
2605000000-N	848	CONCRETE CURB RAMP	35	EA	$3,000.00	$105,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	30	SY	$165.00	$4,950.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	$50,000.00	$50,000.00
4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	1,475	LF	$2.00	$2,950.00
4710000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	1,800	LF	$12.00	$21,600.00
7980000000-N	SP	GENERIC SIGNAL ITEM - RECTANGULAR RAPID FLASHING BEACON ASSEMBLY	8	EA	$10,000.00	$80,000.00
		DECORATIVE BRICK SIDEWALK	150	SY	$325.00	$48,713.89
		DECORATIVE THERMOPLASTIC CROSSWALK	800	SF	$35.00	$28,000.00
		DRAINAGE ALLOWANCE	1	LS	$35,000.00	$35,000.00
		MINOR ITEMS (5%)	1	LS	$24,000.00	$24,000.00

			CONSTRUCTION COST SUBTOTAL	$521,000.00
			CONTINGENCY (30%)	$156,300.00
			NCDOT ADMINISTRATION FEE (10%)	$68,000.00
			UTILITIES (ABOVE GROUND)	$90,000.00
		OPINION OF TOTAL CONSTRUCTION COST (2023)		**$836,000.00**
	INFLATION FACTOR	2 YEARS	8.0%	$140,000.00
		OPINION OF TOTAL CONSTRUCTION COST (2025)		**$976,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2023 UNIT PRICES, INFLATED TO 2025
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY: BMB

DATE: 7/17/2023

These cost estimates were completed in 2023. It should be noted that we have recently seen construction inflation rates of 7.5% per year or higher.

Alta Engineering SE, PLLC

PLANNING ESTIMATE

BELMONT, NORTH CAROLINA PEDESTRIAN PLAN UPDATE

LOCATION: Downtown Belmont Improvement Package
DESCRIPTION: Catawba Street and Park Street

CITY: Belmont COUNTY: Gaston

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
0000100000-N	800	MOBILIZATION	1	LS	$28,000.00	$28,000.00
0043000000-N	226	GRADING	1	LS	$20,000.00	$20,000.00
2535000000-E	846	6"X 12" CONCRETE CURB	300	LF	$35.00	$10,500.00
2591000000-E	848	4" CONCRETE SIDEWALK	175	SY	$100.00	$17,500.00
2605000000-N	848	CONCRETE CURB RAMP	6	EA	$4,000.00	$24,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	50	SY	$165.00	$8,250.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	$10,000.00	$10,000.00
		TRAFFIC SIGNAL (FULL INTERSECTION)	1	EA	$200,000.00	$200,000.00
		DRAINAGE ALLOWANCE	1	LS	$20,000.00	$20,000.00
		MINOR ITEMS (10%)	1	LS	$31,000.00	$31,000.00

			CONSTRUCTION COST SUBTOTAL	$370,000.00
			CONTINGENCY (30%)	$111,000.00
			NCDOT ADMINISTRATION FEE (10%)	$49,000.00
			UTILITIES (ABOVE GROUND)	$45,000.00
			OPINION OF TOTAL CONSTRUCTION COST (2023)	**$575,000.00**
	INFLATION FACTOR	2 YEARS	8.0%	$96,000.00
			OPINION OF TOTAL CONSTRUCTION COST (2025)	**$671,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2023 UNIT PRICES, INFLATED TO 2025
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY: BMB
DATE: 7/17/2023

Alta Engineering SE, PLLC

PLANNING ESTIMATE

BELMONT, NORTH CAROLINA PEDESTRIAN PLAN UPDATE

LOCATION: Downtown Belmont Improvement Package
DESCRIPTION: Main Street and Central Avenue Intersection (South of Downtown)

CITY: Belmont COUNTY: Gaston

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
0000100000-N	800	MOBILIZATION	1	LS	$14,000.00	$14,000.00
0043000000-N	226	GRADING	1	LS	$3,000.00	$3,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	100	LF	$50.00	$5,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	60	SY	$100.00	$6,000.00
2605000000-N	848	CONCRETE CURB RAMP	6	EA	$4,000.00	$24,000.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	$10,000.00	$10,000.00
		TRAFFIC SIGNAL (FULL INTERSECTION)	1	EA	$200,000.00	$200,000.00
		MINOR ITEMS (10%)	1	LS	$25,000.00	$25,000.00
					CONSTRUCTION COST SUBTOTAL	$287,000.00
					CONTINGENCY (30%)	$86,100.00
					NCDOT ADMINISTRATION FEE (10%)	$38,000.00
					UTILITIES (ABOVE GROUND)	$10,000.00
					OPINION OF TOTAL CONSTRUCTION COST (2023)	**$422,000.00**
		INFLATION FACTOR	2 YEARS		8.0%	$71,000.00
					OPINION OF TOTAL CONSTRUCTION COST (2025)	**$493,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2023 UNIT PRICES, INFLATED TO 2025
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY BMB
DATE 7/17/2023

Alta Engineering SE, PLLC

PLANNING ESTIMATE

BELMONT, NORTH CAROLINA PEDESTRIAN PLAN UPDATE

LOCATION: Downtown Belmont Improvement Package
DESCRIPTION: Park Street and Hawley Avenue / Planetree Drive Intersection

CITY: Belmont COUNTY: Gaston

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0000100000-N	800	MOBILIZATION	1	LS	$14,000.00	$14,000.00
0043000000-N	226	GRADING	1	LS	$4,000.00	$4,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	80	LF	$50.00	$4,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	50	SY	$100.00	$5,000.00
2605000000-N	848	CONCRETE CURB RAMP	5	EA	$4,000.00	$20,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	50	SY	$165.00	$8,250.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	$10,000.00	$10,000.00
		TRAFFIC SIGNAL (FULL INTERSECTION)	1	EA	$200,000.00	$200,000.00
		MINOR ITEMS (10%)	1	LS	$25,000.00	$25,000.00
					CONSTRUCTION COST SUBTOTAL	$291,000.00
					CONTINGENCY (30%)	$87,300.00
					NCDOT ADMINISTRATION FEE (10%)	$38,000.00
					UTILITIES (ABOVE GROUND)	$30,000.00
					OPINION OF TOTAL CONSTRUCTION COST (2023)	**$447,000.00**
		INFLATION FACTOR	2 YEARS		8.0%	$75,000.00
					OPINION OF TOTAL CONSTRUCTION COST (2025)	**$522,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2023 UNIT PRICES, INFLATED TO 2025
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY BMB
DATE 7/17/2023

Alta Engineering SE, PLLC

PLANNING ESTIMATE

BELMONT, NORTH CAROLINA PEDESTRIAN PLAN UPDATE

LOCATION: East Belmont Improvement Package

DESCRIPTION: Catawba St and Tucker St / Church St
Catawba St and Old State Highway 7
MUP on Catawba from Park/Keener to Tucker
Sidewalks adjacent to Frady Field
Sidewalk on Tucker from Catawba to Gantt Soccer Field
Sidewalk on Catawbafrom Church to 13th
MUP on Catawba from New Recreation Center to Abbey Creek Greenway

CITY: Belmont COUNTY: Gaston

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0000100000-N	800	MOBILIZATION	1	LS	$100,000.00	$100,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$62,000.00	$62,000.00
0043000000-N	226	GRADING	1	LS	$260,000.00	$260,000.00
2535000000-E	846	6"X 12" CONCRETE CURB	3,200	LF	$30.00	$96,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	250	LF	$40.00	$10,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	6,300	SY	$75.00	$472,500.00
2605000000-N	848	CONCRETE CURB RAMP	55	EA	$3,000.00	$165,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	1,150	SY	$120.00	$138,000.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	$200,000.00	$200,000.00
7980000000-N	SP	GENERIC SIGNAL ITEM - RECTANGULAR RAPID FLASHING BEACON ASSEMBLY	6	EA	$10,000.00	$60,000.00
8801000000-E	SP	MSE RETAINING WALL NO ****	3,000	SF	$100.00	$300,000.00
		CONCRETE STAIRS AT 10TH ST	1	LS	$15,000.00	$15,000.00
		CONCRETE STAIRS AT BAPTIST CHURCH	1	LS	$25,000.00	$25,000.00
		DRAINAGE ALLOWANCE	1	LS	$80,000.00	$80,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$65,000.00	$65,000.00
		MINOR ITEMS (5%)	1	LS	$97,000.00	$97,000.00

			CONSTRUCTION COST SUBTOTAL	$2,146,000.00
			CONTINGENCY (30%)	$643,800.00
			NCDOT ADMINISTRATION FEE (10%)	$279,000.00
			UTILITIES (ABOVE GROUND)	$120,000.00
			OPINION OF TOTAL CONSTRUCTION COST (2023)	**$3,189,000.00**
INFLATION FACTOR	2 YEARS	8.0%		$531,000.00
			OPINION OF TOTAL CONSTRUCTION COST (2025)	**$3,720,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2023 UNIT PRICES, INFLATED TO 2025
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY BMB

DATE 7/17/2023

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Appendix G

Glossary of Terms

AASHTO: American Association of State Highway and Transportation Officials: a nonprofit, nonpartisan association representing highway and transportation departments of all transportation modes in the 50 states, the District of Columbia and Puerto Rico.

ADA: American Disabilities Act of 1991: The Act gives civil rights protections to individuals with disabilities including equal opportunities in public accommodations, employment, transportation, state and local government services, and telecommunications.

Buffer: That portion of a highway, road or street between the curb-face or edge of the pavement and the sidewalk that provides a spatial buffer between vehicular traffic and pedestrians on sidewalks.

Capital Improvement Plan (CIP): The Capital Improvement Plan (Program) is a short-range plan which identifies capital projects and equipment purchases, provides a planning schedule, and identifies options for financing the plan. It is the principal planning tool designed to advance the priorities of the Town.

Complete Street: A transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Complete Streets allow for safe travel by those walking, cycling, driving automobiles, riding public transportation, or delivering goods.

Connectivity: the logical and physical interconnection of functionally related points so that people can move among them.

Corridor: a spatial link between two or more significant locations.

Crosswalk: a designated point on a road at which some means are employed to assist pedestrians who wish to cross a roadway or intersection. They are designed to keep pedestrians together where they can be seen by motorists, and where they can cross most safely with the flow of vehicular traffic.

Curb Ramp: a ramp leading smoothly down from a sidewalk, greenway or multi-use path to an intersecting street, rather than abruptly ending with a curb. Driveway Apron – the section of a driveway between a sidewalk or greenway and the curb.

Extra-Territorial Jurisdiction (ETJ): Designated area outside of a municipality's boundary where typical powers of a municipality can be exercised.

FHWA: Federal Highway Administration

Grade-Separated Crossings: a grade-separated crossing that provides continuity of a bicycle/pedestrian facility over or under a barrier. A bicycle/pedestrian crossing structure may be either a bridge or an underpass.

Greenway: a linear path or open space, often composed of natural vegetation. Greenways can be used to create connected networks of open space that include

traditional parks and natural areas specifically designed for pedestrian and bicycle use. Greenways provide an off-street component to the bicycle network and can be made of various materials. The City of Belmont considers greenways to have a variety of options for pavement types, such as asphalt, concrete, gravel, natural surface, etc.

Highway: a general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Integrated Mobility Division: a division of NCDOT focused on public transportation and active transportation, such as bicycling and walking.

Median: a barrier, constructed of concrete, asphalt, or landscaping, that separates two directions of traffic. MPO – Metropolitan Planning Organization.

Metropolitan Planning Organization (MPO): federally mandated and federally funded transportation policy-making organization in the United States that is made up of representatives from local government and governmental transportation authorities.

Multimodal: A transportation term which refers to planning that considers various modes (walking, cycling, automobile, public transit, etc.) and connections among modes. Multimodal transportation includes the mixing of different modes and supports the needs of all users whether they choose to walk, bike, use transit or drive. It means more connections and more choices.

Multi-Use Pathways: a multi-use pathway that is physically separated from motor vehicle traffic, and can be either within the highway right-of-way or within an independent right-of-way. Multi-Use pathways include bicycle paths or other facilities built for bicycle and pedestrian traffic. The City of Belmont generally considers these facilities to have concrete pavement.

MUTCD: Manual of Uniform Traffic Control Devices: National standards guidebook on signage and pavement marking for roadways.

Non-motorized: Active transportation which includes walking and bicycling and variants such as small-wheeled transport (skates, skateboards, push scooters and hand carts) and transport by wheelchair. Also known as Human Powered Transport.

NCDOT: North Carolina Department of Transportation

Pedestrian: a person on foot or a person on roller skates, roller blades, child's tricycle, non- motorized wheelchair, skateboard, or other non-powered vehicles (excluding bicycles).

Rectangular Rapid Flashing Beacon (RRFB): A warning beacon activated by a pedestrian at an uncontrolled crossing location which uses an irregular flash pattern to signal drivers of a pedestrian's presence and desire to cross.

Right-of-Way: the right of one vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian.

Roadway: the portion of the highway, including shoulders, intended for vehicular use.

Safe Routes to School (SRTS): a federal program that provides funding to encourage and facilitate the planning and implementation of bicycle and pedestrian projects near schools.

Shoulder: the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of sub-base, base and surface courses.

Sidewalk: the portion of a street or highway right-of-way designed for preferential or exclusive use by pedestrians.
with paved shoulders.

Shared Use Path (or Pathway): A bicycle and pedestrian path separated from motorized vehicular traffic by an open space, barrier or curb. Shared-Use Paths may be within the highway right-of-way (often termed "sidepath") or within an independent right-of-way, such as on an abandoned railroad bed or along a stream valley park. Shared use paths typically accommodate two-way travel and are open to pedestrians, in-line skaters, wheelchair users, joggers and other non-motorized path users.

Traffic Calming: a range of measures that reduce the impact of vehicular traffic on residents, pedestrians and cyclists.

Trail: The word "trail" has come to mean a wide variety of facilities types, including everything from a "marked or beaten path, as through woods or wilderness" to a paved "multi-use trail".

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