

**CAROLINA
THREAD TRAIL[®]**

State Line to Fort Mill
Feasibility Study

Acknowledgments

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CAROLINA
THREAD TRAIL

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CHAPTER ONE

1

Introduction

The Carolina Thread Trail is envisioned to be a network of trails and linear parks that serve both community recreational and transportation needs across the greater Charlotte region. It will serve as a safe and inclusive facility for people of all ages and abilities while reflecting the culture and creativity of the region.

Overview & Study Goals

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The overarching goal of this project is to develop recommended greenway alignments for nine corridors between the North Carolina state line and Fort Mill, South Carolina to be adopted as part of the Carolina Thread Trail network. Trails will route along corridors in both York and Lancaster counties, connecting two fast-growing communities in the greater Charlotte region. These recommendations have been developed hand-in-hand with stakeholders and community members and will serve as a safe and inclusive mobility and recreation option for people of all ages and abilities. The recommended alignments reflect the priorities of the community and will result in more equitable outcomes for the health, safety, connectivity, and quality of life of residents. This study evaluates potential route alignments to determine a preferred route for each corridor and potential connector trails to reach nearby destinations. The foundation of this study is robust community engagement to reflect the diverse needs and aspirations of the community it serves. The study also includes cost estimates and a recommended implementation plan to construct and maintain the greenway corridors.

Nine corridors are studied in this plan, forming a network of trails between North Carolina and Fort Mill.

- » **Corridor A: SEAM Connection**
- » **Corridor B: Shared East/West Route**
- » **Corridor C: Western Route**
- » **Corridor D: BUS-21 (Old Nation Rd) Route**
- » **Corridor E: Harrisburg Rd Connection**
- » **Corridor F: Merritt Rd Connection**
- » **Corridor G: Eastern Route**
- » **Corridor H: YMCA Connection**
- » **Corridor I: Route 160 Connection**

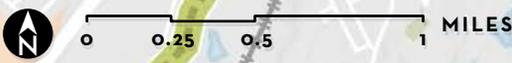
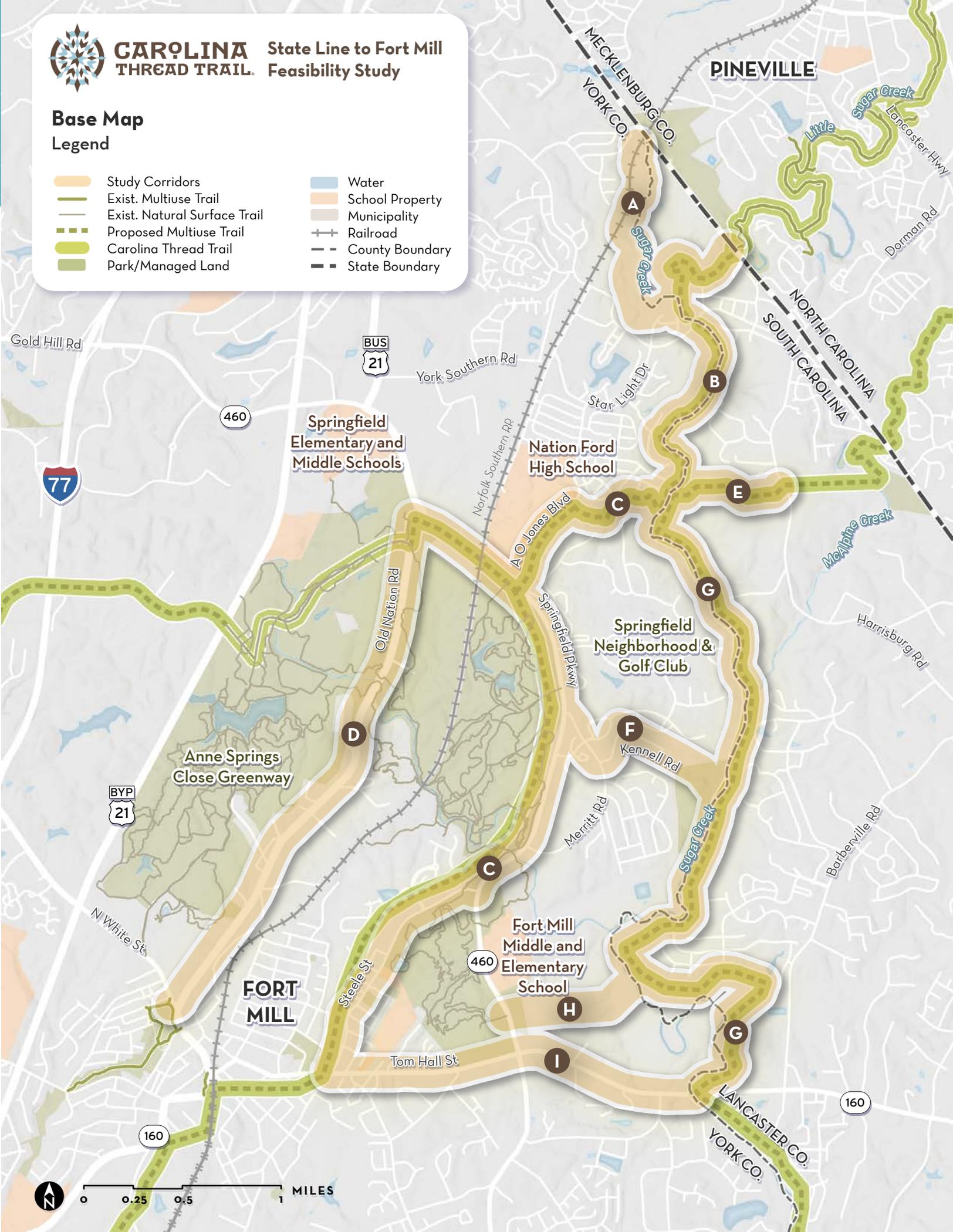


CAROLINA THREAD TRAIL State Line to Fort Mill Feasibility Study

Base Map

Legend

- | | | | |
|--|------------------------------|--|-----------------|
| | Study Corridors | | Water |
| | Exist. Multiuse Trail | | School Property |
| | Exist. Natural Surface Trail | | Municipality |
| | Proposed Multiuse Trail | | Railroad |
| | Carolina Thread Trail | | County Boundary |
| | Park/Managed Land | | State Boundary |



Background & Site History

The vision for trails connecting North Carolina to Fort Mill and beyond is rooted in previous planning efforts. The Carolina Thread Trail adopted master plans for York County in 2009 and Lancaster County in 2011, identifying opportunities to continue the success of the regional trail initiative in the greater Charlotte area by crossing the state line and connecting South Carolina communities that are rapidly growing to become an integral part of the region.

Greenways and trails are not a new concept for the study area. The Nation Ford Greenway provided a recreational route along Sugar Creek before flooding and erosion, as well as storm damage, forced its closure. Several smaller trails are found in Fort Mill, including new trails constructed as part of residential development. Among the defining features of the region is the Anne Springs Close Greenway, a privately-held network of trails and parkland maintained for conservation and recreation. In addition, planning for a signature linear trail connecting parts of the Charlotte region, called the Seam, has begun to implement greater connectivity between communities from South Carolina to Statesville, North Carolina.

The Carolina Thread Trail

The Carolina Thread Trail is a network of greenways, trails and blueways across the greater Charlotte region, connecting 15 counties, 2 states and 2.9 million people. Over 350 miles of trails and 170 miles of blueway are currently open to the public, and over 1,250 additional miles are planned to link people, places, and communities together. The Carolina Thread Trail is housed within the Catawba Lands Conservancy and serves an additional purpose of helping to preserve natural areas and provide places for recreation, transportation and conservation for all people within its reach.



The Carolina Thread Trail network covers 15 counties in the greater Charlotte region.

Process & Schedule

The Carolina Thread Trail Feasibility Study employs a comprehensive approach that considers the built, natural, social, and economic environments in four distinct phases: Study Vision + Existing Conditions, Route Analysis, Study Recommendations, and Implementation & Final Study.

Throughout the process, the project team actively engaged stakeholders through regular meetings with various groups, including a Steering Committee, property stakeholders and neighborhood associations, and the general public. This collaborative approach integrates diverse community perspectives and ensures the recommendations reflect the needs and priorities of the community.

What is a Feasibility Study?

Feasibility studies bridge the gap between conceptual planning, prioritization, and programming of projects. They build upon higher-level planning efforts and take a comprehensive look to identify opportunities and constraints, possible alignment alternatives, and implementation recommendations. The purpose of this type of study is to evaluate technical feasibility from a design, permitting, and constructability perspective. Input solicited from the local community and stakeholders helps guide the identification of a preferred route alternative. The study includes quantity-based preliminary cost estimates to inform further decision making, identify funding needs, and identify next steps for project implementation. In 2025 and beyond, the project partners will complete detailed design and eventually construction as funding becomes available; this study does not present a final design for construction. Willing property owners and available funding will help determine the final alignments for individual trail segments.



Previous Plans & Existing Policy Review

The Carolina Thread Trail Feasibility Study builds on a legacy of local, regional, and statewide plans for greenways and other transportation facilities. The following table summarizes key bicycle and pedestrian, transportation, and parks and recreation recommendations from previous plans and studies that inform the study's approach and help the project team better understand community needs, identify local design principles, and best practices, consider environmental factors, and develop effective funding and implementation strategies.

Additionally, there are several policies and ordinances that inform the feasibility study, adherence to which ensures the study's recommendations are compliant with regulations, and aligned with broader policy goals. On the following pages is an overview of existing policies and ordinances at the local, state, and federal levels that may impact the design and development of the Carolina Thread Trail.

PLAN	SUMMARY
<p>Carolina Thread Trail Master Plan for York County Communities, 2009</p>	<p>According to this plan, the Town of Fort Mill's primary trail system is the (currently closed) Nation Ford Greenway, a 30-mile loop envisioned around Fort Mill which will border Sugar Creek and the Catawba River. Existing trails that form part of the Carolina Thread Trail network in Fort Mill are the Masons Bend Trail and Founders Trail, which share a trailhead in the Masons Bend neighborhood. The Town currently operates five park and recreation facilities and contains the Anne Springs Close Greenway. A new Museum of Life and the Environment was planned to be built on the banks of the Catawba River that will have connections to the (currently closed) Nation Ford Greenway and the Carolina Thread Trail. At a public open house for the Carolina Thread Trail, community members asked for trail connections to the interstate rapid transit/Lynx system which would be useful in high-development areas like Fort Mill. Community members also said that the Hwy 21 bridge between Rock Hill and Fort Mill should be converted into a recreation node that will link outdoor enthusiasts to the Catawba River. In 2020, this plan was amended to include a route connecting to downtown Fort Mill.</p>
<p>Carolina Thread Trail Master Plan for Lancaster County Communities, 2011</p>	<p>According to this plan, Lancaster County's trail system is limited to the boundaries of county and state facilities—Andrew Jackson State Park, Forty Acre Rock Heritage Preserve, Flat Creek Park, Heath Springs Walking Track, Bailes Ridge Nature Trail, Deputy Roy Hardin Park, and University of South Carolina Lancaster walking trail. Community engagement sessions resulted and input from the Steering Committee resulted in a recommended Carolina Thread Trail Route covering 110.1 miles of trails along stream/river corridors, road rights-of-way, abandoned rail lines, undeveloped land, and dirt roads as well as 34.3 miles of blueways between downtown Lancaster and the Catawba River. The proposed Carolina Thread Trail links the municipalities within Lancaster County and connects it to Mecklenburg County. In partnership with the Carolina Thread Trail, the first phase of the Lindsay Pettus Greenway was opened in Lancaster in 2022.</p>
<p>York Forward Comprehensive Plan Update, 2023</p>	<p>The York Forward Comprehensive Plan Update (2016) is the County's planning effort to update the current comprehensive plan. The plan acknowledges progress since the 2016 update, including Centralina Regional Council's CONNECT Beyond effort and the York County Recode Project to update the County Zoning and Subdivision Codes to incorporate best practices such as limiting cul-de-sacs, requiring access agreements for commercial projects, and increasing the requirements for sidewalks in new development. The plan recognizes the progress made toward resource-based tourism, including the purchase of 1900 acres on the County's eastern side that includes almost 5 miles of frontage along the Catawba river. The plan proposed that the County create a countywide, multijurisdictional trail and greenway plan and that the County implement the Carolina Thread Trail Master Plan. It also recommends that the County should adopt design incentive provisions to allow developers to donate a fee in-lieu instead-of the required open space dedication for residential developments not located along proposed greenways and dedicated open space.</p>

PLAN	SUMMARY
<p>York County Bike Route Map</p>	<p>The comprehensive map outlines 5 routes within the County:</p> <p>Route 1: Central York County – 50-mile loop through rural and small towns between Rock Hill and York, stopping at Historic York, Bush-N-Vine, and the Peach Tree Orchard</p> <p>Route 2: Reservation – 35 miles through rural and urban areas between Rock Hill and the Catawba Indian Nation stopping at Old Town Rock Hill, Fountain Park, and Catawba Cultural Center</p> <p>Route 3: Kings Mountain – 38 miles through rural and small town areas between York and Kings Mountain State Park stopping at Downtown Clover, Historic York, Kings Mountain State and National Parks</p> <p>Route 4: Fort Mill/Tega Cay – 32 miles through suburban areas between Fort Mill and Tega Cay stopping at Anne Springs Close Greenway, The Peach Stand, and Baxter Village</p> <p>Route 5: Nimitz – 22 miles through rural and small town areas between York and Smyrna stopping at Historic York, Sharon, and Historic Hill Mercantile</p>
<p>The Exit 90 Carowinds Blvd. Master Plan, 2010</p>	<p>This plan sets forth a unified and focused plan for development and infrastructure improvements in the Exit 90 / Carowinds Boulevard area based on stakeholder consensus, staff analysis, and a common vision for the area. The recommendations included creating a wayfinding strategy for motorists and pedestrians to enhance safe navigation of streets and sidewalks, improve the curb appeal of the study area through landscaping, and enforce standards and ordinances to improve pedestrian connectivity.</p>
<p>Fort Mill Trail Master Plan, 2023</p>	<p>The Fort Mill trail Master Plan is a community-led initiative that proposes a comprehensive trail network based on input from residents, visitors, key area stakeholders, Town staff, and the Parks + Recreation Subcommittee. Building on the proposed trail facilities developed through the Carolina Thread Trail Master Plan and the 2040 Comprehensive Plan, this plan serves to guide future development and ongoing maintenance of trails and side paths. The key recommendations fill critical gaps in the existing trail network between key destinations identified by the Steering Committee and the public, such as a paved trail connection between Riverview Elementary and Harris Street Park. Some recommendations are part of the Carolina Thread Trail planned network (i.e. a natural surface trail connector between Masons Bend Trail and the Baxter Village Trail and a natural surface trail along Little Sugar Creek within the study area). The Old Nation Road sidepath recommendation is a potential Carolina Thread Trail Corridor and the recommendation included in this plan includes installing new sidepath on the west side of the road to link Nation Ford High School, Anne Springs Close Greenway, and Walter Y Elisha Park. The Tom Hall Street sidepath serves as the east-west transportation corridor in downtown Fort Mill and connects local businesses, churches, Town Hall and the YMCA. This plan also includes policy recommendations that Fort Mill establish a trails classification system, adopt a Complete Streets Ordinance, require ROW dedication for trails by developers, and establish a trail facility maintenance policy and operations plan.</p>

PLAN	SUMMARY
<p>Town of Fort Mill 2040 Comprehensive Plan, 2021</p>	<p>The Town of Fort Mill 2040 Comprehensive Plan (2021) describes the goals and strategies for guiding future land use and development within the Town of Fort Mill. This plan includes a vision, strategies, and implementation guide to address issues and pursue opportunities related to transportation, economic development, land use, housing, natural and cultural resources, community facilities, and public health.</p> <p>One of the key guiding principles in this plan is to create and support a livable built environment. The Town would like to achieve attractive and walkable neighborhoods, distinctive mixed-use centers with strong commercial corridors that are connected to each other by greenways and trails and accessed by an efficient multimodal transportation system that includes a variety of options. The plan outlines several strategies for implementation of greenways and trails which include coordinating implementation plans with regional bicycle and pedestrian partners, applying for Carolina Thread Trail Implementation Grant funding to construct greenway projects for connectivity, and developing self-guided tours of historic sites and trails for economic development and tourism.</p> <p>Imagine Fort Mill, a community survey report detailed in the plan, documented the following key findings:</p> <p>With walking and running trails being the most desired type of new recreational facility, the survey also provides support to require sidewalks in more zoning districts and to perhaps consider capital expenditures to make connections in our existing sidewalk network.</p> <p>The community wants to prioritize the development of the Cross Charlotte Trail and connect through Fort Mill to Rock Hill.</p> <p>The community wants to develop a Discovery Trail which would provide more access to users with varying ages and abilities.</p> <p>The community would like for the Town to require developers to provide/build trail; at a minimum build natural surface trail.</p> <p>The community wants to become a Trail Town that accommodates bicyclists through Town on a new segment of the Carolina Thread Trail.</p>
<p>Fort Mill Historic District Design Guidelines, 2016</p>	<p>The Town of Fort Mill was awarded a FY 2015 Federal Historic Preservation Grant by the South Carolina Department of Archives and History for the purpose of developing a Historic District Guidelines Manual. The goals of this manual are to establish objective, locally inspired and historically appropriate guidelines for construction, rehabilitation, and modifications to buildings within the Town's Historic District; preserve the integrity of the Town's historic resources; and ensure predictability and consistency in decision related to design, architecture, and materials within the Historic District.</p> <p>Chapter 6 of this document focuses on design guideline recommendations for pedestrian and site features to ensure that projects are scalable, and promote active, pedestrian-oriented street fronts. Design standards are provided for outdoor amenity spaces, site furnishings, awnings, canopies, lighting, service areas and building equipment, site features, and parking areas.</p>

PLAN	SUMMARY
<p>Lancaster 2040 Comprehensive Plan, 2024</p>	<p>This plan included extensive public input over 2.5 years, including listening sessions, a community survey, 12 Focus Groups, 9 Steering Committee Meetings, public drop-in meetings, Topic Area Forums, and virtual public engagement. The top identified Parks and Recreation needs in the panhandle region of Lancaster County was Greenways and Trails. The prioritization of the development of Carolina Thread Trail was highlighted in the Panhandle recommendations (PA 2.1), the Greater Lancaster recommendations (GL 4.1), and Southern Lancaster recommendations (SL 2.3). Lancaster County does not have a Countywide pedestrian or bicycle master plan, though RFATS Walk-Bike Plan covers the urbanized area of Lancaster County (the Panhandle). Furthermore, fewer than half of survey respondents were concerned with pedestrian facilities, transit access, and bicycle facilities.</p>
<p>Pineville Mobility Plan, 2021</p>	<p>The Pineville Mobility Plan (2021) serves as a guide for future decision making and planning efforts related to multimodal transportation in Pineville. The recommendations detailed in this Plan provide Pineville residents connections to their local community within Town and access to destinations through the region, which will enhance the community's vibrancy by improving safety, health, economy, environment, and livability. The plan proposes various pedestrian and bicyclist bicycle improvements in its recommendations including a new greenway from Miller Glen Court to Sugar Creek Greenway and a bike lane and sidewalk along Dorman Road from Lancaster Highway to the Town Boundary/state line.</p>
<p>Meck Playbook, 2021</p>	<p>The Meck Playbook (2021) updates the 2015 Comprehensive Park & Recreation Master Plan, guiding the development and enhancement of Mecklenburg's extensive system by establishing four guiding principles with clear goals, strategies and recommendations for the ten-year horizon. Recommendations in this plan included implementing standards for level of care across all parks and greenways to ensure equitable quality, reinvesting in priority communities to better connect users to facilities, and filling network gaps to improve connectivity and access. The plan also proposed a new classification system for facilities, defining facets of Local Parks, Regional Parks, Greenways, Nature Preserves, Parkland Reserves, and Special Use Facilities. Goal #17 Connections specifically guides future connectivity between parklands, greenway corridors, and trails to community facilities and services by recommending a cohesive trail system that link, stitch, and provide access to residents, wayfinding and safety measures, and investment in regional greenway corridors like the Carolina Thread Trail.</p>
<p>RFATS Regional Bicycle and Pedestrian Connectivity Plan, 2016</p>	<p>RFATS developed the Regional Bicycle and Pedestrian Connectivity Plan to identify and prioritize multi-modal network enhancements within the region that provide an expanded range of connectivity and choice beyond municipal boundaries. In analyzing areas of concern for bicyclist and pedestrian safety, this plan found that collision hotspots in Fort Mill are on Harris Street/Harris Road crossing the 21 Bypass and on SC 160 crossing I-77. It also found that the highest levels of comfort for bicyclists are in Downtown Fort Mill, as well as in neighborhoods that have low-speed roads, low-volume traffic, and an existing sidewalk network in place. Outreach from this plan identified a community desire to ride their bike to work in Downtown Fort Mill from nearby neighborhoods. The community also noted that they want to bike or walk to Main Street and to schools along Springfield Parkway.</p>
<p>RFATS 2050 Long Range Transportation Plan, 2021</p>	<p>The RFATS 2050 Long Range Transportation Plan (2021) is a multi-modal planning effort, providing recommendations for highways, public transportation, freight, bicycle, and pedestrian travel, as well as aviation. It includes a financial plan for transportation expenditures to 2050, as well as a congestion management process. According to the plan, Fort Mill's historic district is supportive of biking and walking due to its grid-like street pattern; however, it is challenged with connecting new developments to the historic district as it continues to grow. The Anne Springs Close Greenway also serves as a green belt around the Town. The plan identified linear and spot improvements to promote a safer network, including a shared-use path on Springfield Parkway between US 21 and Old Nation Road and between the Railroad and A O Jones Blvd.</p>

PLAN	SUMMARY
<p>Bike Walk RFATS, 2016</p>	<p>This plan envisions a region of healthy, vibrant, and prosperous communities that support resident residents' daily mobility and access needs effectively and efficiently. A connected, convenient, and safe network of sidewalks, shared-use paths, transit, and on-street bicycle connections link people of all ages and abilities locally and across the region. The network serves residents, commuters, students, and visitors alike. The Plan notes that walking, biking, and transit are valued transportation modes, priorities for investment, and are integral to regional strategies for congestion reduction, improved air quality, and economic opportunity.</p>
<p>CONNECT Beyond, 2021</p>	<p>CONNECT Beyond (2021) is a regional mobility plan that sets the vision for how to connect rural, suburban, and urban communities in the 12-county, bi-state Centralina Regional Council (CRC) region. The plan guides future mobility investments for the 20-year horizon and serves as a blueprint for implementing a robust, integrated public transit network. Community survey results identified that the top goal was to create a safe and connected multimodal network, including bikes, pedestrians, transit, and cars and showed that 4.3% of respondents biked to work/school and 3.2% walked. The plan recommended future studies including a Bicycle, Pedestrian, Multi-Use Trails & Greenway Connectivity to Transit Study. Additionally, the Transportation Demand Management (TDM) strategies identified in the plan include enhancing bicycle and pedestrian accommodations, especially along key roadways.</p>
<p>CRCOG Long-Range Transportation Plan, 2019</p>	<p>The Catawba Regional Council of Governments (CRCOG) plan covers the rural portion of York, Union, Chester, and Lancaster Counties. The plan identifies three priorities—maximize return on public investment, increase transportation choices, and reduce commuting costs. The plan identifies statewide routes that pass through the planning area including the Northern Crescent Route and the Central Route as well as the regional Carolina Thread Trail. Within the recommended projects for York and Lancaster County, there was only one recommendation to strike a bike lane and three recommendations to grade road shoulders for sidewalk installation, all within York County.</p>
<p>CRTPO Comprehensive Transportation Plan Report, 2020</p>	<p>The Charlotte Regional Transportation Planning Organization (CRTPO) adopted the first Comprehensive Transportation Plan (CTP) in 2017. This report provided documentation and support for the multimodal transportation network assessment identified in the adopted CTP maps and to assist in identifying corridors for Complete Streets efforts.</p>

POLICY	SUMMARY
<p>Town of Fort Mill Zoning Ordinance</p>	<p>The Fort Mill Zoning Ordinance includes local regulations that control the use and development of land in the Town of Fort Mill. There are several references to trails and greenways within the zoning ordinance. For example, it defines pedestrian pathways as a sidewalk, trail or other facility designated for use by pedestrians. Constructed alongside streets, roads, parking areas or through public or private spaces, a pedestrian pathway has a paved surface and is designed to meet ADA requirements. Such facilities may also accommodate bicycles, roller and inline skates, skateboards, and other non-motorized vehicles provided, however, that the restriction on motorized vehicles shall not apply to motorized wheelchairs. Where permitted by the Town Council or this ordinance, battery powered golf carts and self-balancing personal transport vehicles may also be allowed on pedestrian pathways. Typically separate from motor vehicle traffic, the facility may serve both transportation and recreation purposes. Recreational trails are also defined as a way designed for and used by equestrians, pedestrians, and cyclists using nonmotorized bicycles.</p> <p>The zoning ordinance also specifies that greenways (or bike paths) may qualify for a density bonus of up to five percent above the allowable base density. To qualify, the bike paths or greenways shall form an integrated system of access within the development and to principal off-site destinations. In addition, resource conservation districts may be applied in areas to retain open spaces and greenways to protect their environmentally sensitive character.</p>

POLICY	SUMMARY
<p>Town of Fort Mill Code of Ordinances</p>	<p>The Code of Ordinances for the Town of Fort Mill was originally adopted in April of 1996. The following sections focus on trails and/or greenways:</p> <p>Sec. 6. Planned Neighborhood Development District: A system of bike paths/ pedestrian greenways may qualify for a density bonus of up to five percent above the allowable base density. To qualify, the bike paths or greenways shall form an integrated system of access within the development and to principal off-site destinations.</p> <p>Sec. 13. Resource Conservation District: The resource conservation district is intended to be applied to areas along watercourses and important open spaces within the Town's planning jurisdiction to retain open spaces and greenways to protect their environmentally sensitive character. Picnic grounds, parks, hiking or horseback riding trails, open space, and other similar public and private recreational uses that do not require extensive use of fences or walls are permitted uses within a resource conservation district.</p> <p>Sec. 14. Transitional Commercial District: Parks and greenways are permitted uses within this district.</p> <p>Sec. 17. Limited Industrial District: Parks and greenways are permitted uses within this district.</p> <p>Sec. 19. Mixed Use Development District: The following may be counted towards required dedicated open space: conservation lands, natural areas, formal greens, plazas and courtyards, trails, buffers held in common ownership, and parks and recreation areas, including ball fields, golf courses (excluding vertical structures: clubhouse and maintenance facilities), tennis and basketball courts, playgrounds, and other areas used for active or passive recreation. Trails may be incorporated into required buffer areas provided adequate width (min. 15 ft) is added to the required buffer width to accommodate both the trail and the required buffer plantings. Buffers with trails may also count toward the provision of open space for the development.</p> <p>Sec. 22. Urban Development District: Trails may be incorporated into required buffer areas provided adequate width (min. 15 ft) is added to the required buffer width to accommodate both the trail and the required buffer plantings. Buffers with trails may also count toward the provision of open space for the development.</p> <p>Sec. 24. COD/COD-N Corridor Overlay District: Pedestrian paths at least 8 feet wide must be provided along all sides of lots that abut public roads, as well as to connect to building entrances. Paths must be at least 8 feet from the back of curb or edge of pavement, but within the COD-N district, pavement may be installed in lieu of a planting strip if street trees are planted.</p> <p>Div. 3. Flood Hazard Reduction: Permissible uses within floodways may include the following: general farming, pasture, outdoor plant nurseries, horticulture, forestry, wildlife sanctuary, game farm and other similar agricultural, wildlife and related uses. Also, lawns, gardens, play areas, picnic grounds and hiking and horseback riding trails are acceptable uses, if they do not employ structures or fill. Substantial development of a permissible use may require a no-rise certification. The uses listed in this subsection are permissible only if and to the extent that they do not cause any increase in base flood elevations.</p>

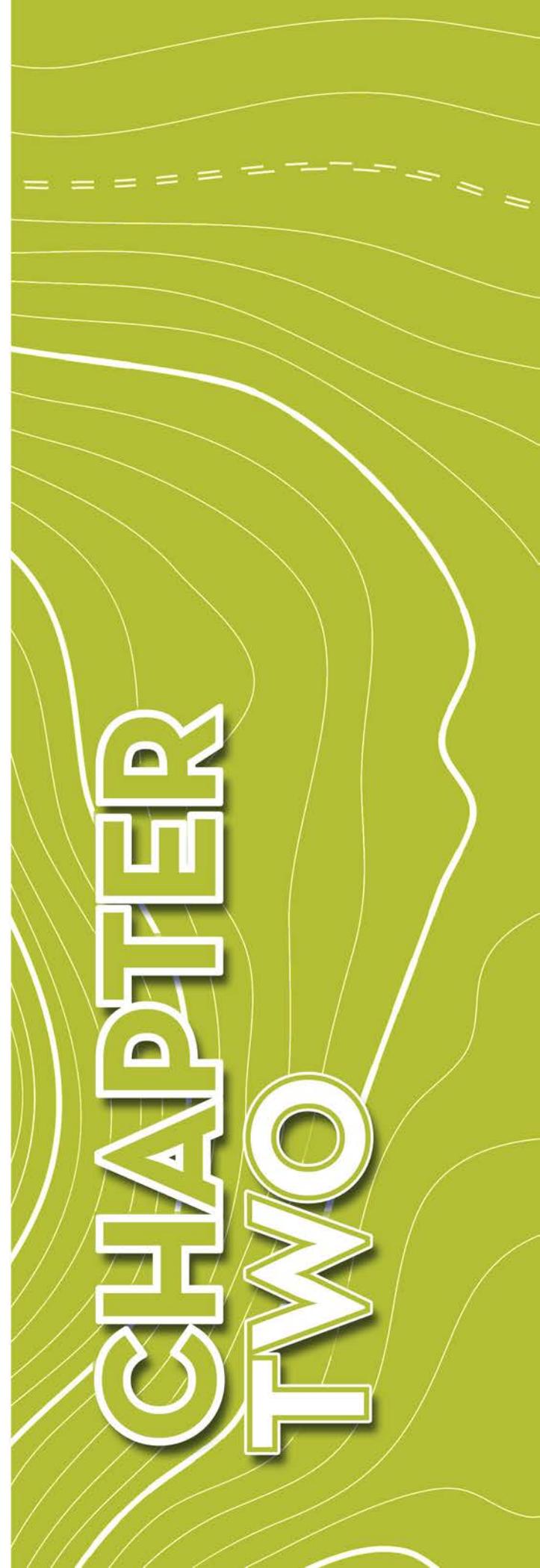
POLICY	SUMMARY
<p>York County Code of Ordinances</p>	<p>Trails and greenways are referenced several times throughout the York County Code of Ordinances:</p> <p>§ 32.61 PLAN FOR PROTECTION; LIST OF SIGNIFICANT RESOURCES: The plan for the protection or preservation of significant resources in the county may include plans and recommendations for the protection of recreation land for hunting, fishing, water access, and trails.</p> <p>§ 70.10 REGULATION OF OFF-HIGHWAY VEHICLES: Except as otherwise provided in this code, it is unlawful to operate an off-highway vehicle upon public rights-of-way, utility rights-of-way or easements, public highways, streets, sidewalks, trails, parks and roads or upon private property without the written consent of the owner.</p> <p>§ 151.36 SPECIFIC STANDARDS: Permissible uses within floodways or non-encroachment areas may include: general farming, pasture, outdoor plant nurseries, horticulture, forestry, wildlife sanctuary, game farm, and other similar agricultural, wildlife, and related uses. Also, lawns, gardens, play areas, picnic grounds, and hiking and horseback riding trails are acceptable uses, provided that they do not employ structures or fill.</p> <p>§ 154 LAND DEVELOPMENT CODE: Townhouse subdivisions - Required open space areas must have a minimum width and depth of at least 40 feet, excluding right-of-way. Areas that are at least 20 feet wide and that have hard surface trails at least five feet wide connecting at least two points in a sidewalk system may also count towards required open space area; Where a trail network runs through or adjacent to a townhome subdivision, the pedestrian walkways must connect to it; Cluster subdivisions shall include an interconnected pedestrian network comprised of sidewalks and multi-use trails; Multiuse trails may be located on one or both sides of the road and shall: (a) Be located in open space areas between cluster groups, (b) Connect to the sidewalks located in cluster groups, (c) Have a minimum width of ten feet, and (d) Be covered by a pedestrian easement; Sidewalks and multi-use trails shall provide a continuous pedestrian network throughout a cluster subdivision.</p> <p>§ 154.122 TRAILS AND MULTI-USE PATHS. Trails and multi-use paths shall be designed and constructed to the width and with the surface types established in the York County Land Development Manual for the designated type of facility. All trails and multi-use paths shall be constructed within an easement that dedicates the facility to public use in perpetuity. This shall not apply to any trail constructed within an area under a conservation easement that generally provides for public access. Prior to final plat approval, the developer shall establish a means of providing for the maintenance of all trails and appurtenant facilities. This may be through the owner, a Property Owners Association, or a third-party that agrees to assume maintenance responsibility and liability for the trail. If a third party (other than a Property Owners Association) is designated to maintain the trail(s), the legal instrument establishing such acceptance of responsibility shall be provided to the County prior to final plat approval.</p>

POLICY	SUMMARY
<p>Lancaster County UDO, 2016</p>	<p>The Neighborhood Business (NB) and Professional Business (PB) districts are lesser used districts but require safe, accessible sidewalks and multi-use paths connecting neighborhood offices and businesses to encourage travel by foot or bicycle. These districts limit certain land uses such as drive-thru/drive-in facilities and car washes.</p> <p>The Carolina Thread Trail Overlay district was established to preserve and enhance trail corridors identified in the Lancaster County Carolina Thread Trail Master Plan and applies to all lots within trail corridors and requires developers of major subdivisions to construct and dedicate pedestrian trails. The UDO Section 4.3.1 C.3. authorizes County Council to award up to a 10% density bonus when the dedicated land is designated for use by the community at large. The Carolina Thread Trail Overlay district cross-references subdivision standards and the UDO indicates that the County Engineer should evaluate final trail locations, design, and materials.</p> <p>Sidewalks are required in many districts, but only the Cluster Subdivision Overlay (CSO) and Highway Corridor Overlay (HCO) expressly require frontage sidewalks along perimeter roads.</p>
<p>SCDOT Complete Streets Policy</p>	<p>The SCDOT Complete Streets Policy was adopted in February 2021. This policy requires the consideration of accommodations for bicycling, walking, and transit in the design, construction, maintenance, and operations of the state transportation network.</p> <p>Key components of the Policy include: Funding for these accommodations is to be included in the budget for each project if warranted on the individual project and in accordance with the regional plans</p> <p>SCDOT will update and modernize its design manuals to include multimodal accommodations.</p> <p>SCDOT will establish a council to facilitate ongoing communication to seek continuous improvement opportunities and initiatives.</p>
<p>SCDOT Roadway Design Manual</p>	<p>The SCDOT Roadway Design Manual was created in 2021. This document outlines engineering design requirements for design of roadway facilities within the SCDOT ROW and relies heavily on established engineering standards, such as the American Association of State Highway and Transportation Officials (AASHTO) Green Book, guidance documents from the Federal Highway Administration (FHWA), and other engineering design references.</p> <p>Chapter 13, Multimodal Transportation, provides a detailed overview of the design requirements for bicycle and pedestrian facilities, as well as transit stops, and bus turnouts built along SCDOT roadways. Guidance includes topics such as minimum width, minimum vertical clearance, minimum railing height, roadway crossings, grade separation, and curb ramps. Together, these factors will influence future design and construction of any portion of the trail within SCDOT right-of-way.</p> <p>Additionally, SCDOT has a clear zone requirement for its roadways, as defined in the AASHTO Roadside Design Guide. The clear zone is defined as “The unobstructed traversable area provided beyond the edge of the traveled way is termed the clear zone. This area is used for the recovery of errant vehicles and includes shoulders, bike lanes, and auxiliary lanes.” The width of the clear zone requirement varies based on the traffic volume, design speed, and cross slope of shoulder for the roadway in question. This clear zone can have implications for trail development design as it may increase the distance at which street trees are offset from the travel lane.</p>





CHAPTER TWO



2

STUDY CONSIDERATIONS + ALTERNATIVES DEVELOPMENT

To develop a route recommendation, a variety of natural and human environmental factors were considered through geospatial data analysis and a site visit. A network of route segments was identified and evaluated for feasibility.

Planning Level Considerations

.....

Planning level considerations provide insight into the social and economic environments within a study area and may influence the proposed alignments for a trail. Information obtained from this analysis helped to inform the public engagement approach and to ensure proposed recommendations discussed later in the study met the diverse needs of people residing along the corridor.

Demographics

Key demographics of the study area indicate trends that support greenway development. Population density is concentrated in Census tracts close to the state line, with only one tract losing population between 2012 and 2022. Many households in the study area have children, who may enjoy the greenway as an amenity for recreation and play in proximity to nature. Few workers in the study area commute by walking or biking, with the exception of CT 58.68 where nearly a quarter of workers do, covering downtown Pineville.

Land Use

Land use planning and greenways are intertwined in the process of shaping the built environment. Effective land use planning helps to designate, protect, and integrate greenways into the fabric of communities. Greenways also contribute to enhanced quality of life, environmental sustainability, and the overall well-being of residents. Carefully considering adjacent or supportive land use may enrich the user experience along a future greenway.

Employment Density

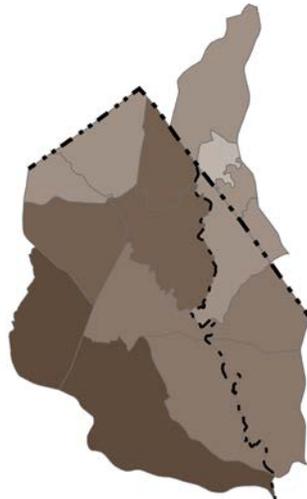
Employment density refers to the number of jobs per unit of land area, and it can exhibit significant variations depending on a locality's economic activity, industrial base, and population size. Understanding employment density is a critical factor in assessing the economic health and development of a region, and it is frequently utilized in conjunction with other demographic and economic indicators to inform policy decisions. The data displayed in the corresponding map has been sourced from the U.S. Census Bureau's OnTheMap! application.



TOTAL POPULATION

- 0 - 3,000
- 3,001 - 5,000
- 5,001 - 7,500
- 7,501 - 10,000
- 10,000 or more

US Census Bureau, American Community Survey 2022 5-year estimates

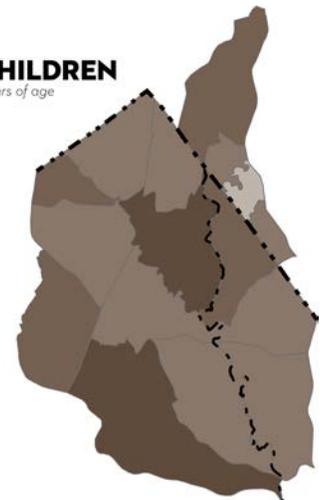


HOUSEHOLDS WITH CHILDREN

Percent of households with residents under 18 years of age

- 0 - 20%
- 20.1 - 30%
- 30.1 - 40%
- 40.1 - 50%
- 50.1% or more

US Census Bureau, American Community Survey 2022 5-year estimates

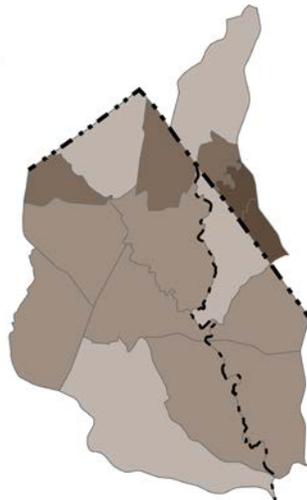


POPULATION DENSITY

Persons per square mile

- 0 - 1,000
- 1,001 - 2,000
- 2,001 - 3,000
- 3,001 or more

US Census Bureau, American Community Survey 2022 5-year estimates

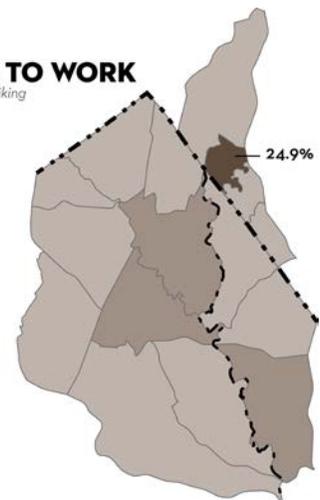


WALKING AND BIKING TO WORK

Percent of workers who commute by walking or biking

- 0 - 1%
- 1.1 - 3%
- 3.1% or more

US Census Bureau, American Community Survey 2022 5-year estimates



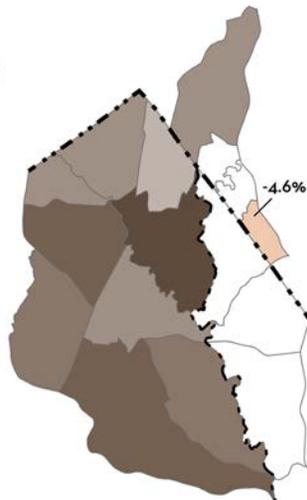
POPULATION CHANGE

Between 2012 and 2022

- No data available
- Population decline
- 0 - 25%
- 25.1 - 50%
- 50.1 - 75%
- 75.1 - 100%
- 100.1% or more

US Census Bureau, American Community Survey 2022 5-year estimates

Census Tracts in Mecklenburg and Lancaster counties split after 2019.



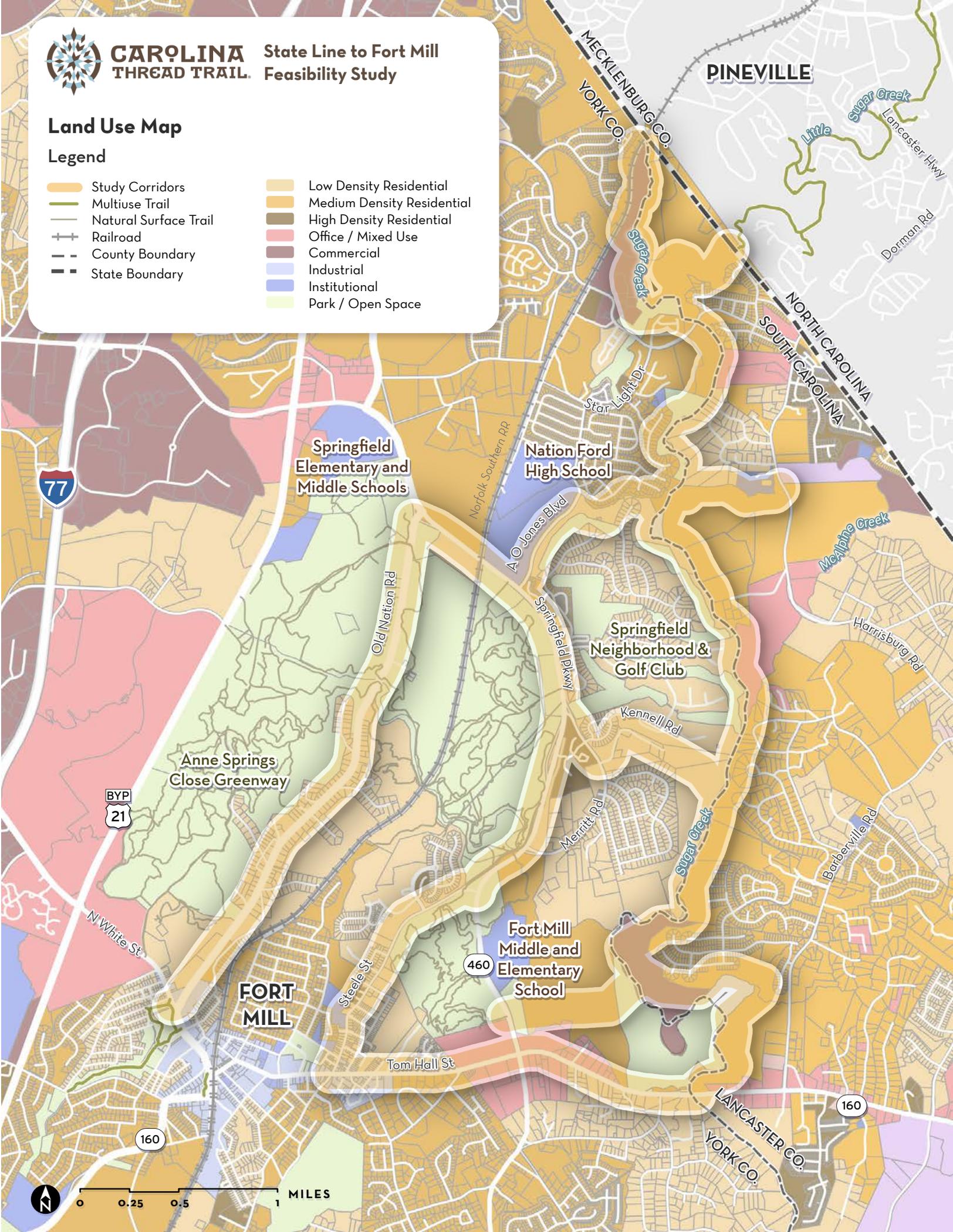


**CAROLINA
THREAD TRAIL** State Line to Fort Mill
Feasibility Study

Land Use Map

Legend

- Study Corridors
- Multiuse Trail
- Natural Surface Trail
- Railroad
- County Boundary
- State Boundary
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Office / Mixed Use
- Commercial
- Industrial
- Institutional
- Park / Open Space



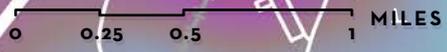
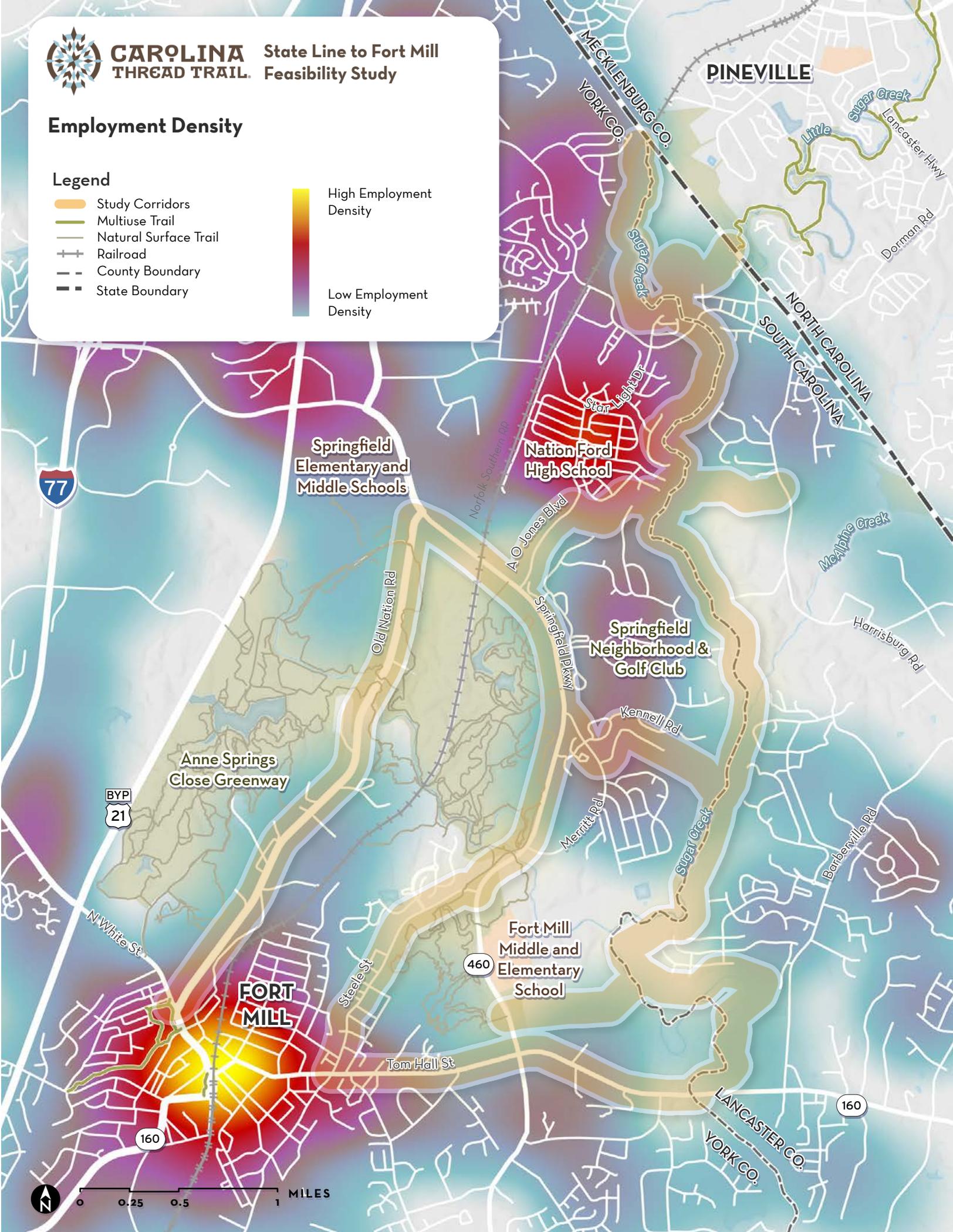
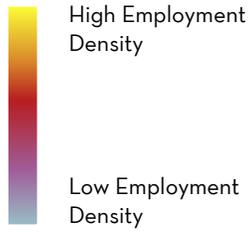


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Employment Density

Legend

-  Study Corridors
-  Multiuse Trail
-  Natural Surface Trail
-  Railroad
-  County Boundary
-  State Boundary



Natural Environment Considerations

Nature plays a significant role in shaping our connection with the environment and how we interact with it. This region's breathtaking scenery, diverse wildlife, rich history, attracts hikers and bikers from across the country who seek to immerse themselves in its beauty.

To achieve this, the study closely evaluates various aspects of the natural environment, including topography, floodplains, wetlands, tree canopies, as well as conservation and managed areas. By taking these factors into account, the study ensures that the trail alignments recommended are thoughtfully planned to protect and enhance the natural resources they traverse.

For more detailed information specific to this study, please refer to the maps provided on the following pages. These maps will offer valuable insights into how the project considers and integrates the natural environment into its design.

Wetlands & Floodway

The study corridor for this project is in the vicinity of Sugar Creek, which features a substantial floodplain that poses a potential impact on greenway development. Moreover, some of the land within this area is classified as wetlands, and both floodway and wetlands areas present permitting and cost challenges that will be considered as part of this study. The design of the alignment will carefully account for these factors and may require the incorporation of bridges and boardwalks at strategic points to ensure successful development.

Topography

The study area's topography fluctuates tremendously. The future alignment will see the greatest grade differential next to Sugar Creek, and connector trails will be challenging to implement. Alternatively, the topography will be less severe for alignments that follow existing road grade along Springfield Parkway. It is also important to note that different elevations and soil types support various ecosystems and habitats. Preserving and protecting these natural features is essential in greenway planning to maintain biodiversity and ecological balance in the study area.

Tree Canopy Cover

Tree canopy coverage may influence the overall comfortability and character for users on the future greenway alignment. Areas with a large swath of tree canopy will provide respite from the heat during the summer months, add visual interest to the trail alignment, and promote user engagement with nature.

Endangered Species & Habitats

These zones outlined in red and orange on the corresponding map serve as areas that should be protected from development which would otherwise diminish the quality of fauna and flora. Greenway development in these areas would be beneficial to connect the public to these natural elements and may serve as an opportunity for education. Significant alterations to these areas including grading and drainage should be avoided. Clear-cutting of these regions should be restricted.

It should be noted that additional permitting restrictions may apply to these zones, as species endemic to these areas may be present.

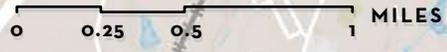
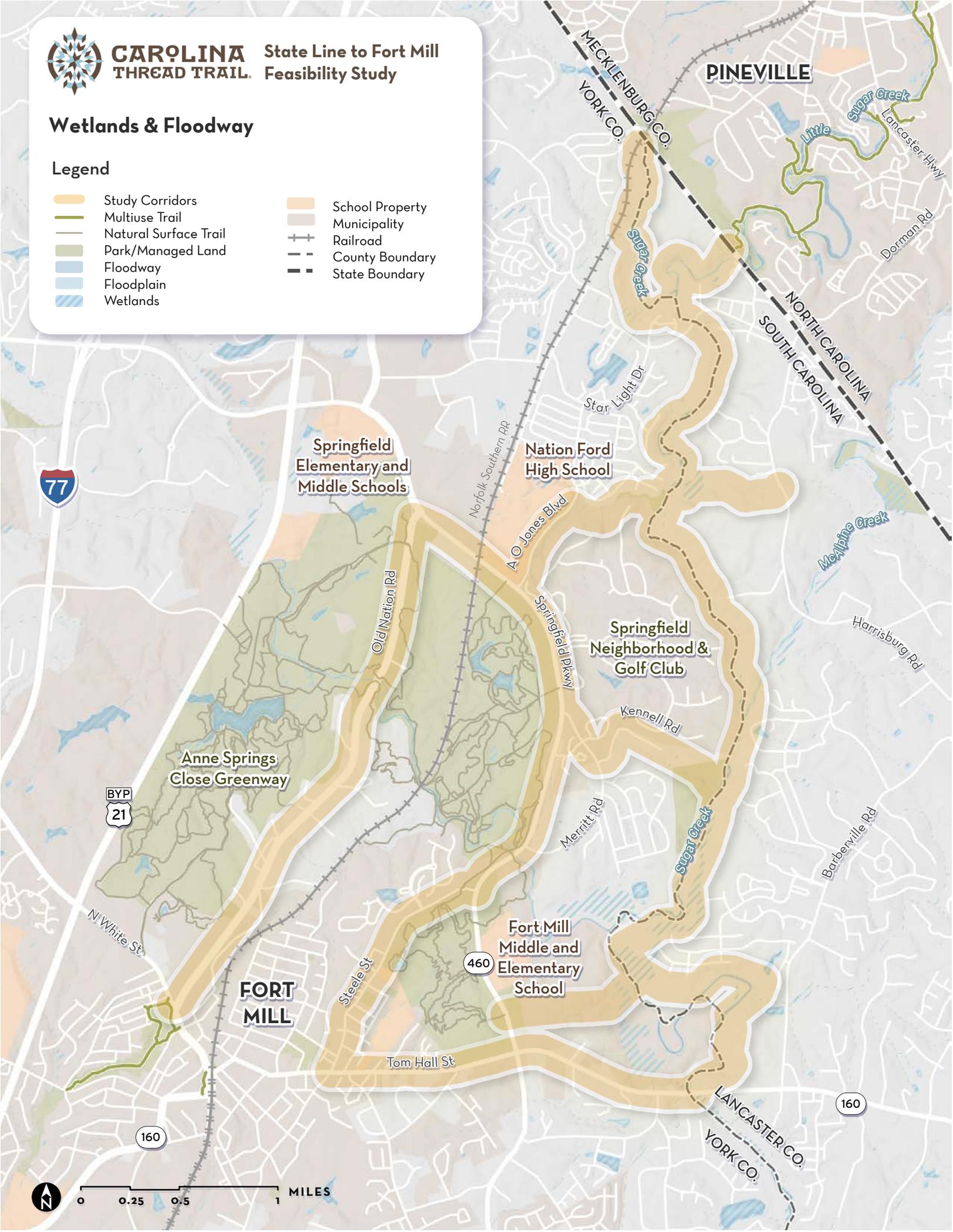


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Wetlands & Floodway

Legend

- | | | | |
|--|-----------------------|---|-----------------|
|  | Study Corridors |  | School Property |
|  | Multiuse Trail |  | Municipality |
|  | Natural Surface Trail |  | Railroad |
|  | Park/Managed Land |  | County Boundary |
|  | Floodway |  | State Boundary |
|  | Floodplain | | |
|  | Wetlands | | |





CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

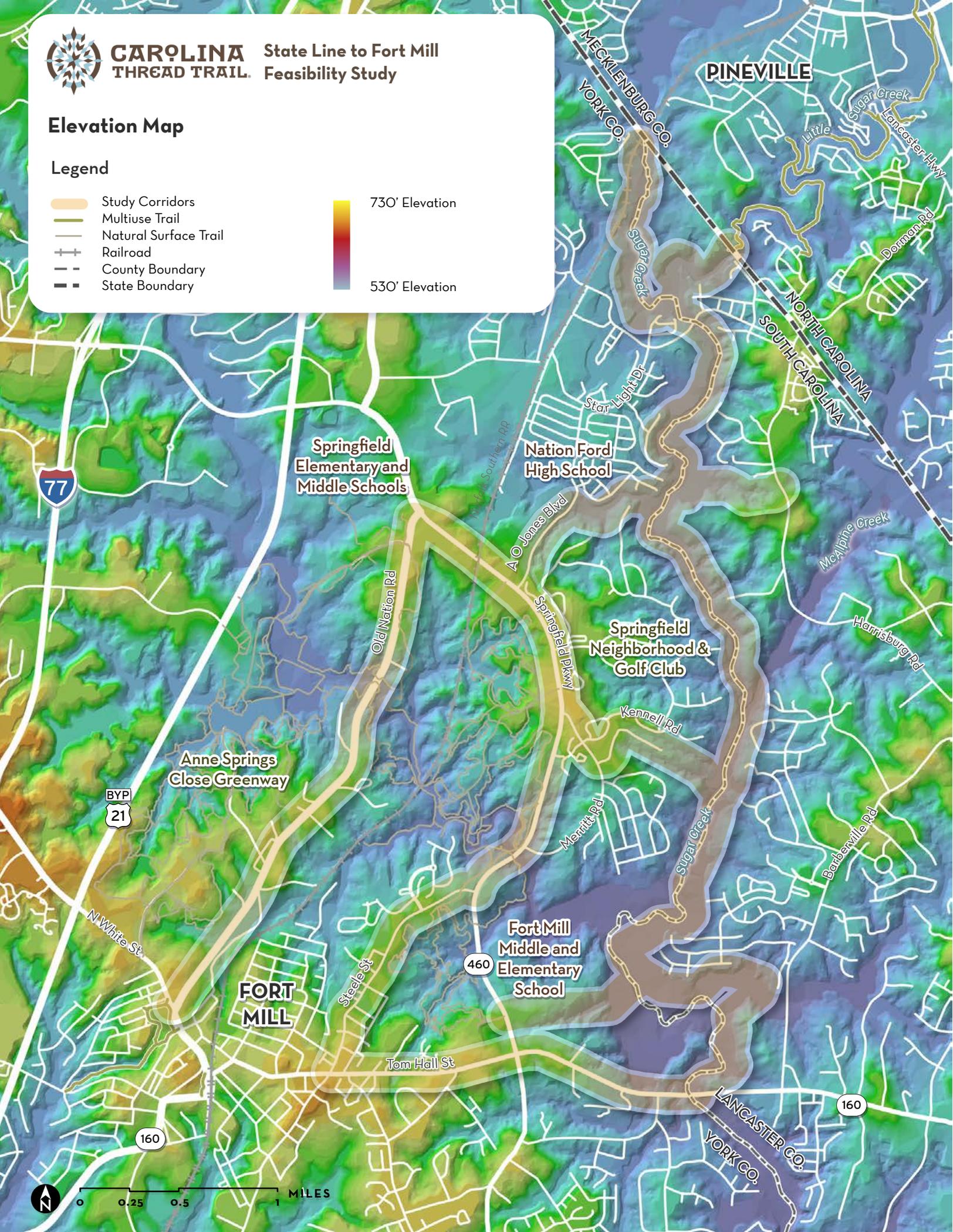
Elevation Map

Legend

-  Study Corridors
 -  Multiuse Trail
 -  Natural Surface Trail
 -  Railroad
 -  County Boundary
 -  State Boundary
- 

730' Elevation

530' Elevation





**CAROLINA
THREAD TRAIL** State Line to Fort Mill
Feasibility Study

Tree Canopy Cover

Legend

-  Study Corridors
-  Multiuse Trails
-  Natural Surface Trails
-  Park/Managed Land
-  Forest Cover
-  Water
-  School Property
-  Municipality
-  Railroad
-  County Boundary
-  State Boundary



Springfield
Elementary and
Middle Schools

Nation Ford
High School

Springfield
Neighborhood &
Golf Club

Anne Springs
Close Greenway

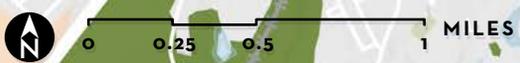
Fort Mill
Middle and
Elementary
School

**FORT
MILL**

PINEVILLE

**FORT
MILL**

LANCASTER CO.
YORK CO.

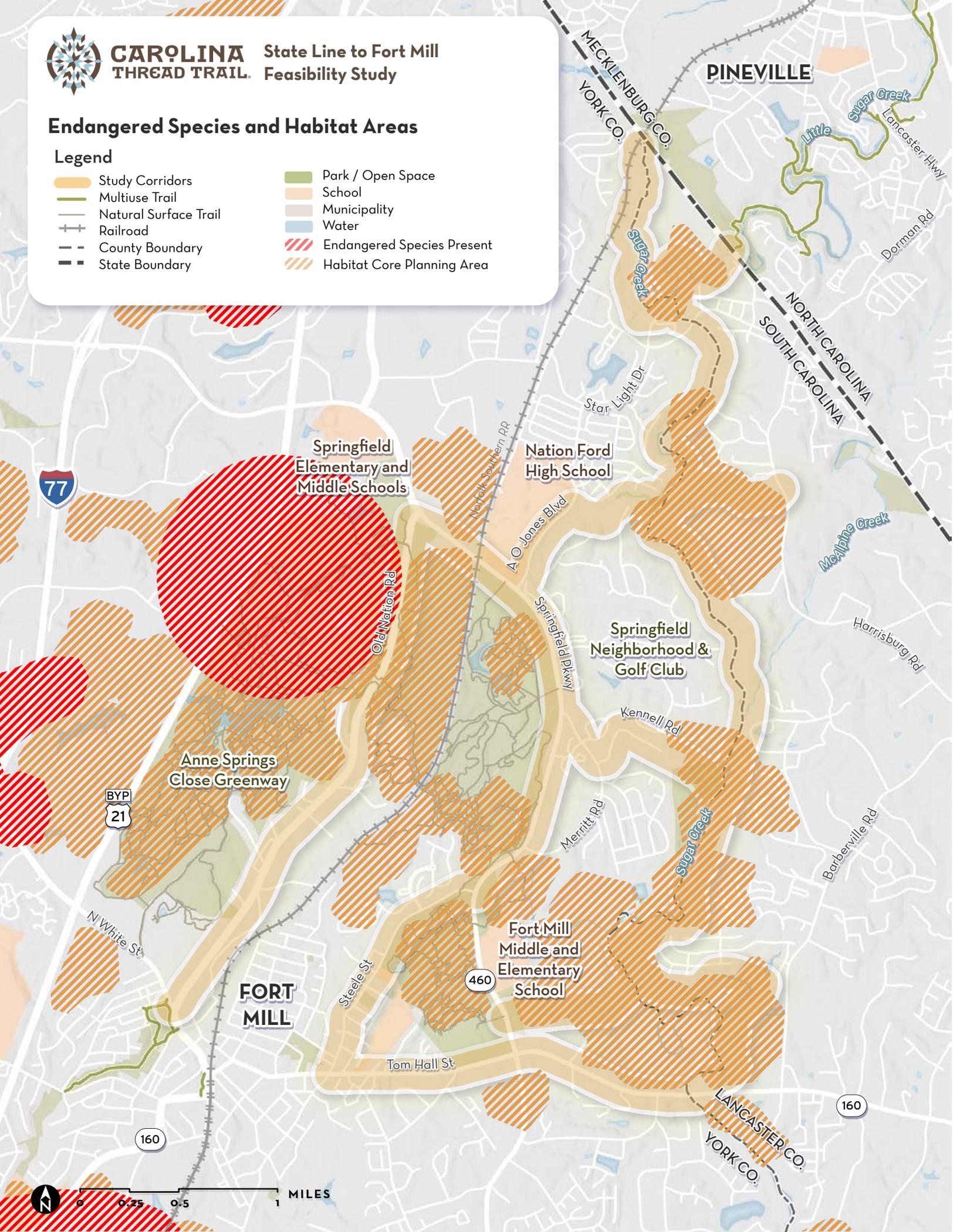




Endangered Species and Habitat Areas

Legend

- Study Corridors
- Multiuse Trail
- Natural Surface Trail
- Railroad
- County Boundary
- State Boundary
- Park / Open Space
- School
- Municipality
- Water
- Endangered Species Present
- Habitat Core Planning Area



Springfield
 Elementary and
 Middle Schools

Nation Ford
 High School

Springfield
 Neighborhood &
 Golf Club

Anne Springs
 Close Greenway

Fort Mill
 Middle and
 Elementary
 School

**FORT
 MILL**

LANCASTER CO.
 YORK CO.

PINEVILLE

160

460

160



Human Environment Considerations

For the purposes of this study, the following were considered as part of the human environment:

Existing Bike / Ped Facilities

The existing network includes multi-use trails, natural surface trails, sidewalks, and bicycle routes, shown on the corresponding map.

Although a majority of these facilities are available to the public for use, privately owned and operated trails comprise the extensive Anne Springs Close Greenway trail network. These natural surface trails are available to be used by the public for a fee, and regulated through the strategic placement of gatehouses and trailheads. The remainder of the existing network outside of the Anne Springs Close Greenway network is accessible to the public.

Bicycle routes and existing sidewalk networks may represent connections to existing destinations which to an extent may already be comfortable for walkers and bikers. These routes already have space dedicated to these user groups and this greenway study may determine the feasibility and/or appropriateness of enhancing these to become a future multi-use path.

Future Bike / Ped Facilities

Future bicycle and pedestrian networks are a significant contributor in understanding the previous planning efforts initiated for greenway study corridors. Future natural surface trails, future sidewalks, future multi-use trails, and future sidepaths are all shown on the corresponding map.

Additionally, more long range, regionally planned networks, including the Carolina Thread Trail, are shown on the corresponding map. This future long range network will serve to connect this project corridor to significant destinations, such as the City of Charlotte and town of Rock Hill.

A recommended greenway alignment for this study area may originate from some of the future mapped facilities, but it is not dependent on them. The future greenway alignment as a result of this study may utilize features or corridors not previously evaluated, and opportunities may arise to connect to existing and newly proposed destinations.

Lancaster County Trail Easements

Easements already acquired by Lancaster County are displayed on the corresponding map. These are significant in that a secured permanent greenway easement is often costly or difficult to obtain from privately held properties.

It should be noted that although there are easements already in place up and down Sugar Creek along the Lancaster and York county line, work with owners along that corridor will still need to be done to make a full greenway connection.

Bike/Ped Crashes

Crashes along the study corridors should be considered when evaluating greenway alternatives that may require facility improvements. For instance, the crashes along Tom Hall St, Steele St and SC-460 near Fort Mill Middle and Elementary Schools serve as reminders that these roadways may not be currently safe for our most vulnerable user groups. Recommendations from this study may occur at the site of these crashes.

Transit

Existing public transit networks are significant to evaluate in relation to a greenway planning study. In general, it is best practice to overlap networks, and locate future transit stops into the greenway network where feasible.

Unfortunately there is no overlap between the existing CATS bus routes and this greenway corridor. Future recommendations from this study may be used to further regional transportation planning beyond a singular mode, and serve to connect users to destinations along the recommended alignment.

Posted Highway Speed

Vehicular speeds on a roadway network is often another indicator of future greenway user comfort. Roads with high rates of speed will feel less comfortable to alternative transportation user groups (i.e. those walking, biking, and other forms of micro-mobility) in comparison to roads with low posted speeds. Future greenway recommendations may include increased separation from vehicular traffic, based on posted roadway speed, to increase comfort for vulnerable users.

It should be noted that the data for the existing roadway network is incomplete and does not exhibit a comprehensive depiction of all of the roads within the study corridor.

Average Annual Daily Traffic (AADT)

Average annual daily traffic (commonly referred to as AADT) is a measure of motor vehicle use along a street. Highly used streets often make poor corridors for future greenway networks, as they are uncomfortable for cyclists and pedestrians.

It should be noted that SC-160 and Springfield Pkwy have relatively high amounts of daily traffic, whereas Steele Street and Old Nation Rd may provide a more comfortable experience for greenway users of all ages and abilities.

Vehicular Crashes

Vehicular crash locations are of particular interest to this study as they are hazards to the vulnerable greenway user groups.

Notably, the three areas of interest shown on the corresponding heatmap are the Steele Street and Tom Hall St intersection, the SC-460 and Tom Hall St intersection, and the Springfield Parkway and A.O. Jones Blvd intersection.

Any recommended greenway alignment alternatives through these intersections may include increased design safety measures for future greenway users.

Vehicular Crashes With Injury

Vehicular crashes with recorded injuries should be studied as a part of this greenway feasibility study since the location and severity of vehicular injuries will signify areas within the roadway network that may require further improvement.

Notably, the three areas of interest shown on the corresponding heatmap are the Steele St and Tom Hall Street intersection, the SC-460 and Tom Hall St intersection, and the Springfield Parkway and A.O. Jones Blvd intersection.

Any recommended greenway alignment alternatives through these intersections may include increased design safety measures for future greenway users.

Vehicular Crashes With Fatality

It should be noted that the one fatality recorded within the study corridor occurred in July of 2018, where failure to give right-of-way was determined as the cause of the accident.

This particular section of SC-160 should be evaluated by this greenway study to determine the suitability of incorporating a safe and comfortable facility for users of all ages and abilities.

Pennies for Progress Projects

These state funded transportation projects are shown as completed, within design, or under construction. Projects currently located within the study corridor are mostly shown as completed, however, the one stretch of highway currently within design on SC-160 should be evaluated by this greenway study for the potential to piggyback improvements for a common goal.

Otherwise a future action item or recommendation from this study might pertain to including the future greenway alignment into the state's plans for improvement.

Existing Roadway Bridges

Existing bridges serve as potential barriers to a future greenway alignment corridor. More often than not the state transportation authority, in this case SCDOT, has a majority stake in what design modifications can be made to the bridge structure. Permitting difficulties aside, incorporating a safe, comfortable and enriching experience over an existing bridge (through the reallocation of roadway space from vehicular traffic) is often difficult to achieve.

The corresponding map shows where some of these bridges are located

2024 Active Developments

The active developments which are shown on the corresponding map should be considered when evaluating the future greenway corridor. These areas serve as opportunities to thread the future greenway alignment and further connect new developments to the broader community through active transportation improvements.

Many of the developments shown within Lancaster County on this map have agreed to contributing future greenway easements. One of the most difficult and costly aspects to a greenway project can be the acquisition of private property. The feasibility of these corridors through private property where easements have already been acquired will vastly aid in the decision making process for future greenway development.

National Register of Historic Places

The study area has numerous buildings, sites, and roadways which are designated as cultural resources according to the National Register of Historic Places. Where applicable, these places should be evaluated for the opportunity to enrich and enhance the future greenway alignment.

Sidewalks on Old Nation Rd once served as the main corridor for those commuting to work at the mills in Fort Mill (now Walter Y. Elisha Park). Any future greenway alignment along this corridor should consider this historical element as inspiration, and the history of this story can be told through interpretive wayfinding signage, artistic elements and or plaques.

Buildings identified as cultural resources within the town of Fort Mill are also identified as opportunities to enhance and reveal the story of Fort Mill and the future greenway network. The concentration of these within the town may enrich or add to the character of the future trail.

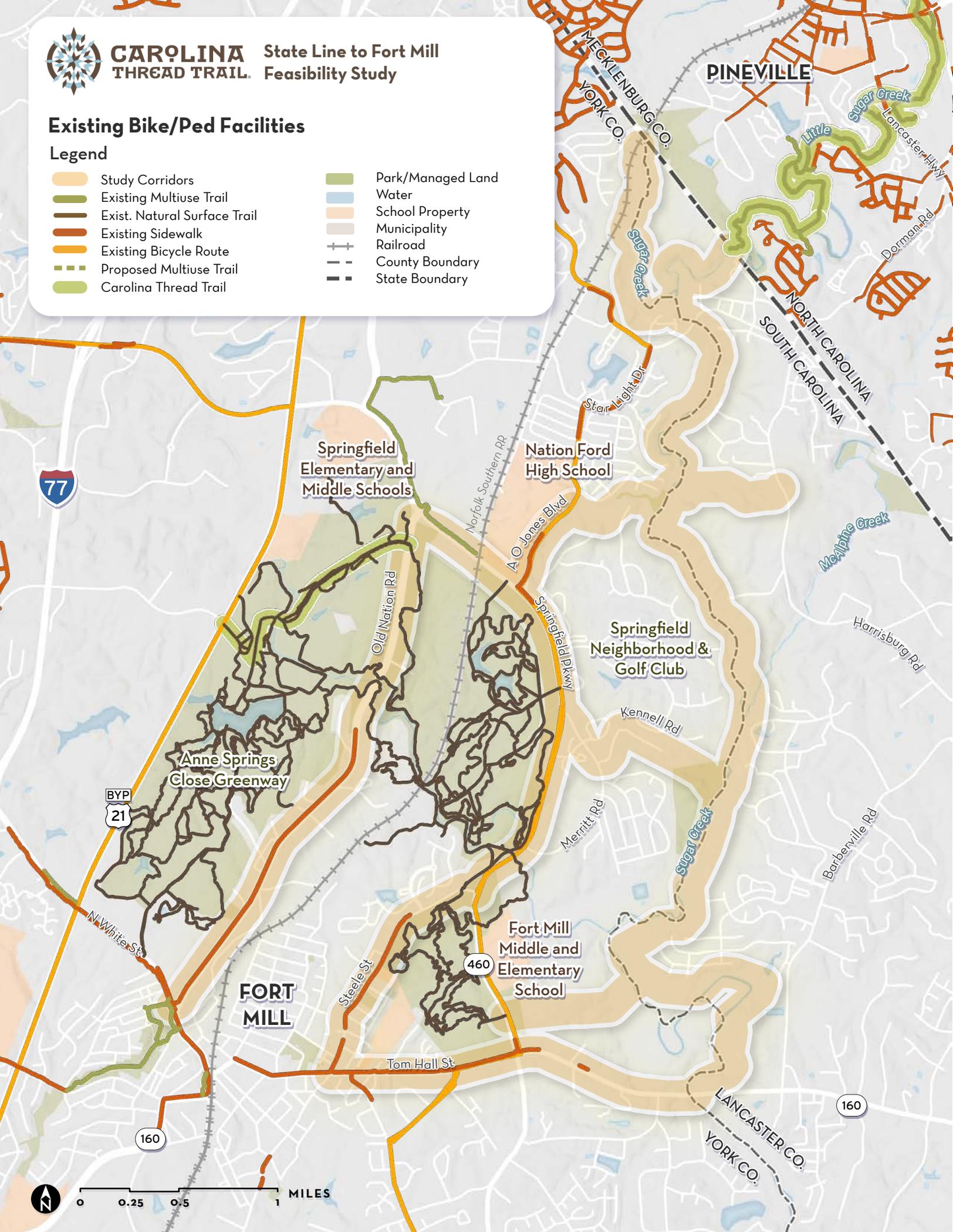


CAROLINA THREAD TRAIL State Line to Fort Mill Feasibility Study

Existing Bike/Ped Facilities

Legend

- Study Corridors
- Existing Multiuse Trail
- Exist. Natural Surface Trail
- Existing Sidewalk
- Existing Bicycle Route
- Proposed Multiuse Trail
- Carolina Thread Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



Springfield Elementary and Middle Schools

Nation Ford High School

Springfield Neighborhood & Golf Club

Anne Springs Close Greenway

Fort Mill Middle and Elementary School

FORT MILL

PINEVILLE

FORT MILL

LANCASTER CO.
YORK CO.



0 0.25 0.5 1 MILES

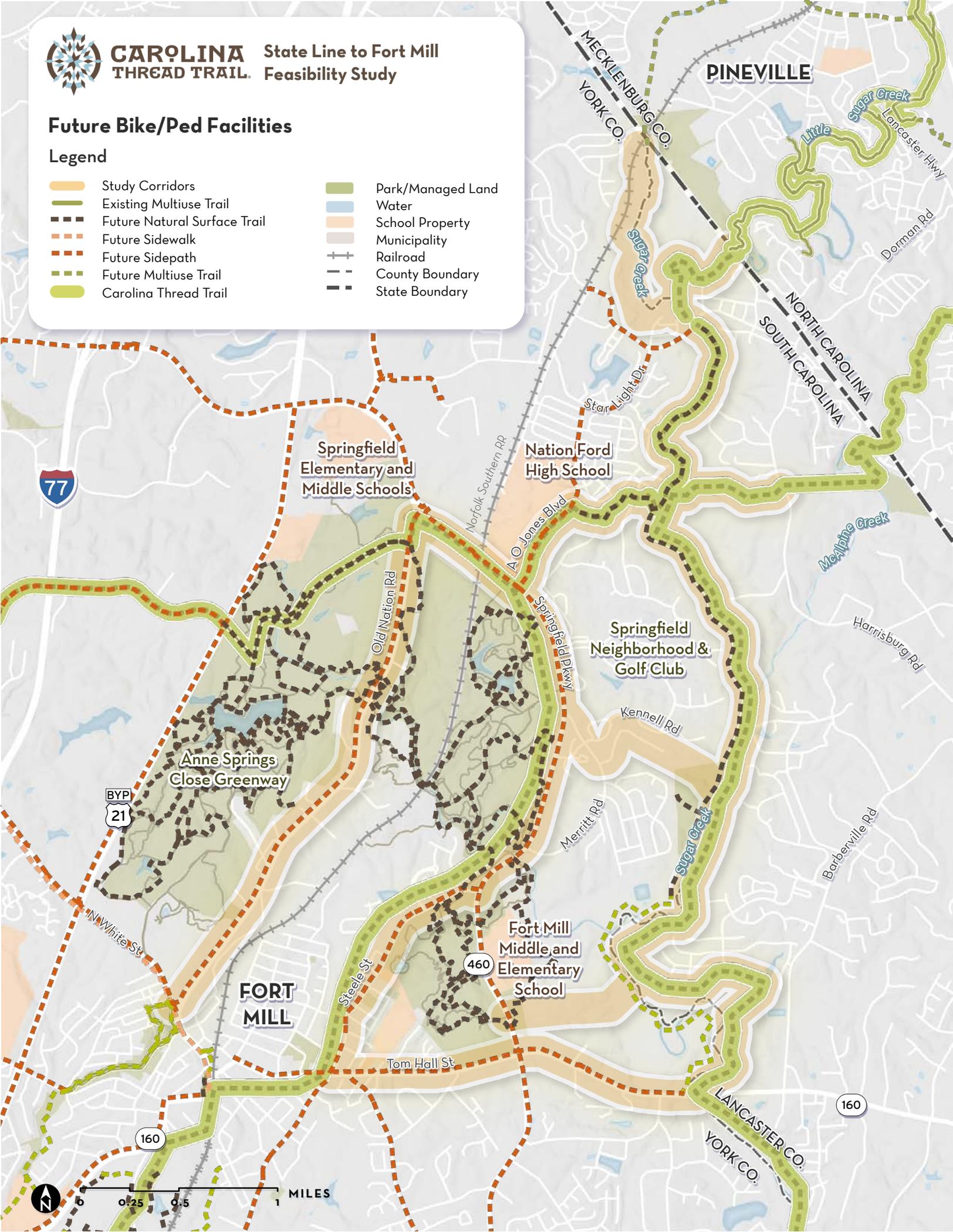


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Future Bike/Ped Facilities

Legend

- | | | | |
|--|------------------------------|--|-------------------|
| | Study Corridors | | Park/Managed Land |
| | Existing Multiuse Trail | | Water |
| | Future Natural Surface Trail | | School Property |
| | Future Sidewalk | | Municipality |
| | Future Sidepath | | Railroad |
| | Future Multiuse Trail | | County Boundary |
| | Carolina Thread Trail | | State Boundary |

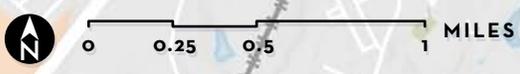
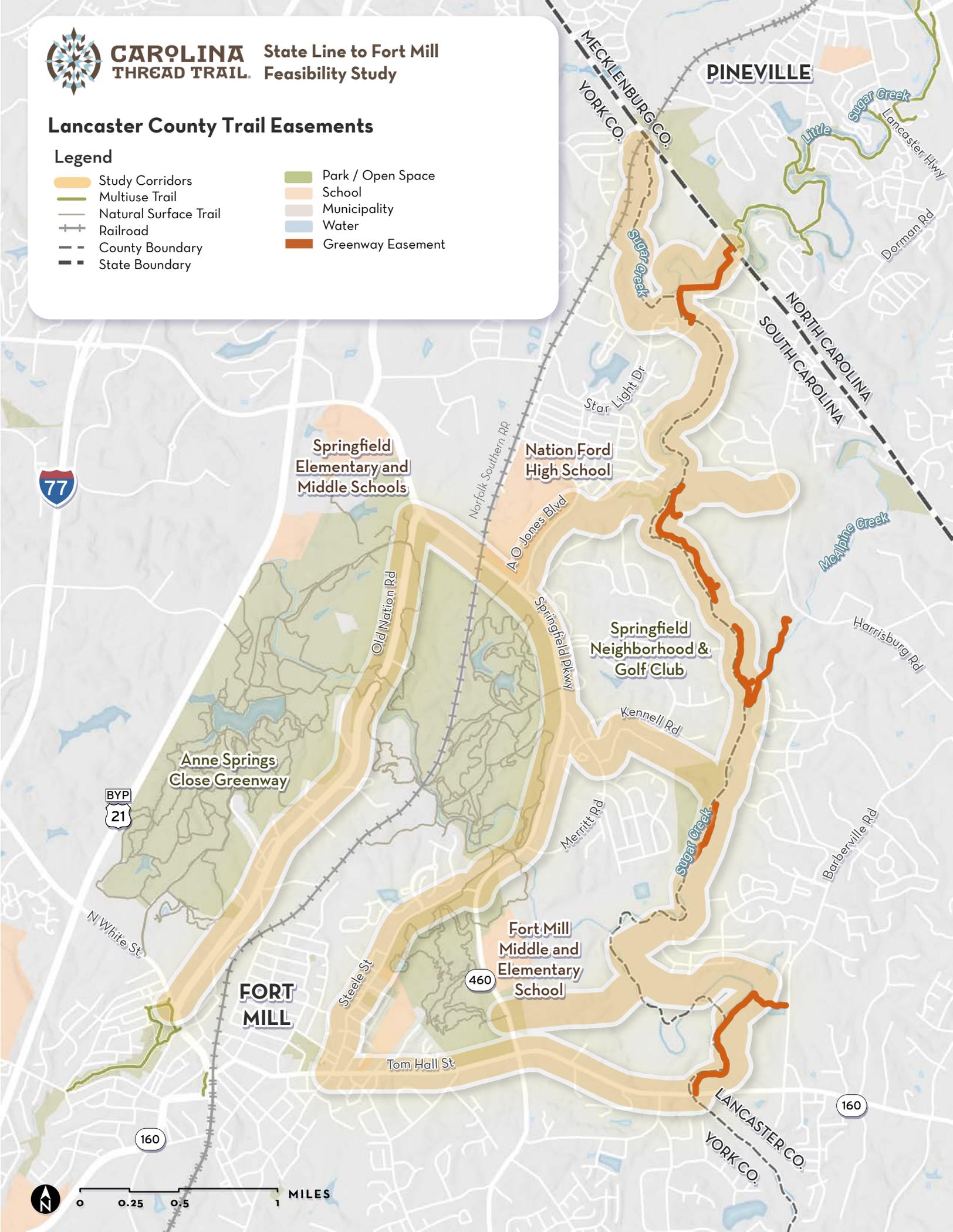




Lancaster County Trail Easements

Legend

- Study Corridors
- Multiuse Trail
- Natural Surface Trail
- Railroad
- County Boundary
- State Boundary
- Park / Open Space
- School
- Municipality
- Water
- Greenway Easement



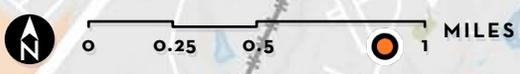
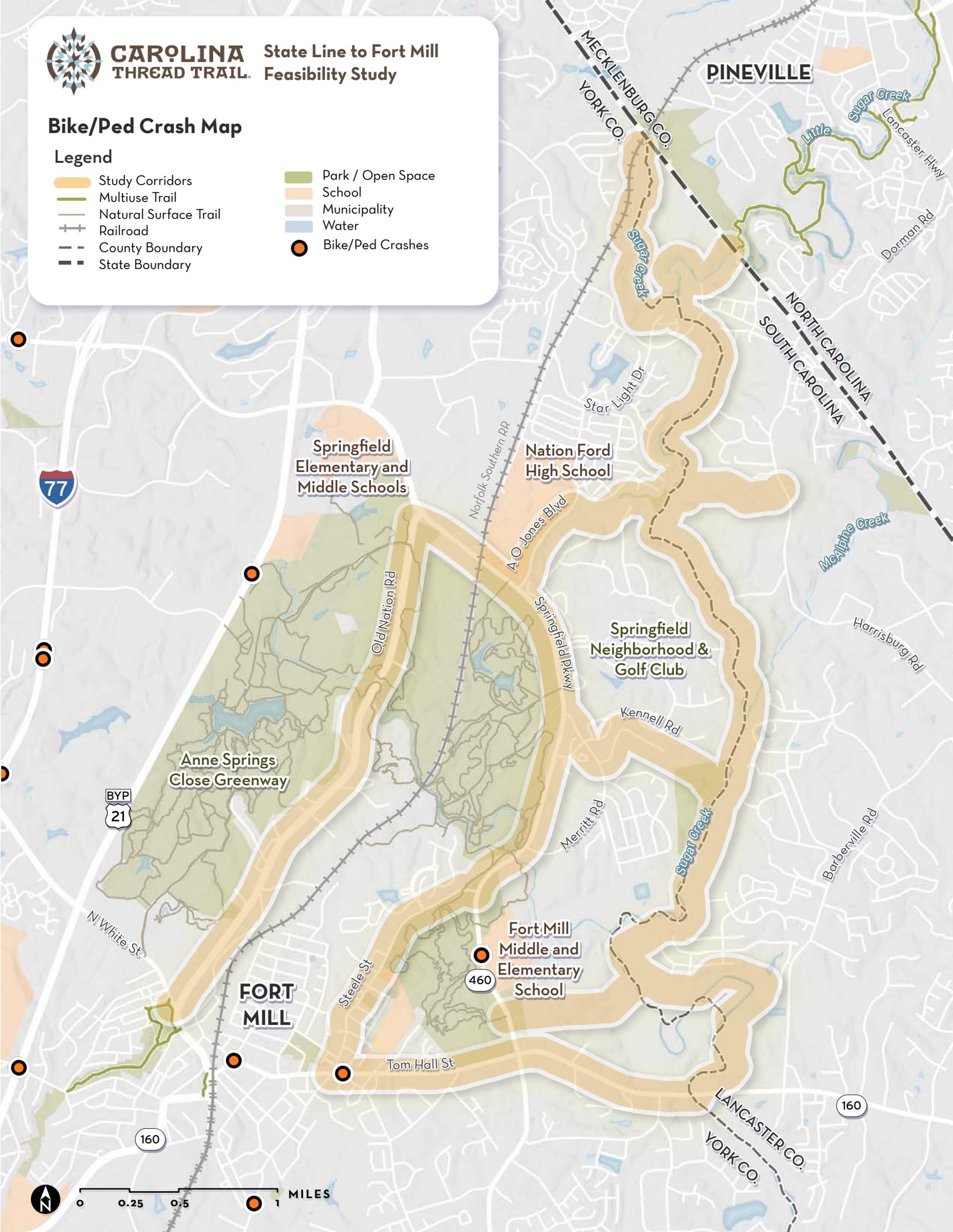


**CAROLINA
THREAD TRAIL** State Line to Fort Mill
Feasibility Study

Bike/Ped Crash Map

Legend

- Study Corridors
- Multiuse Trail
- Natural Surface Trail
- Railroad
- County Boundary
- State Boundary
- Park / Open Space
- School
- Municipality
- Water
- Bike/Ped Crashes



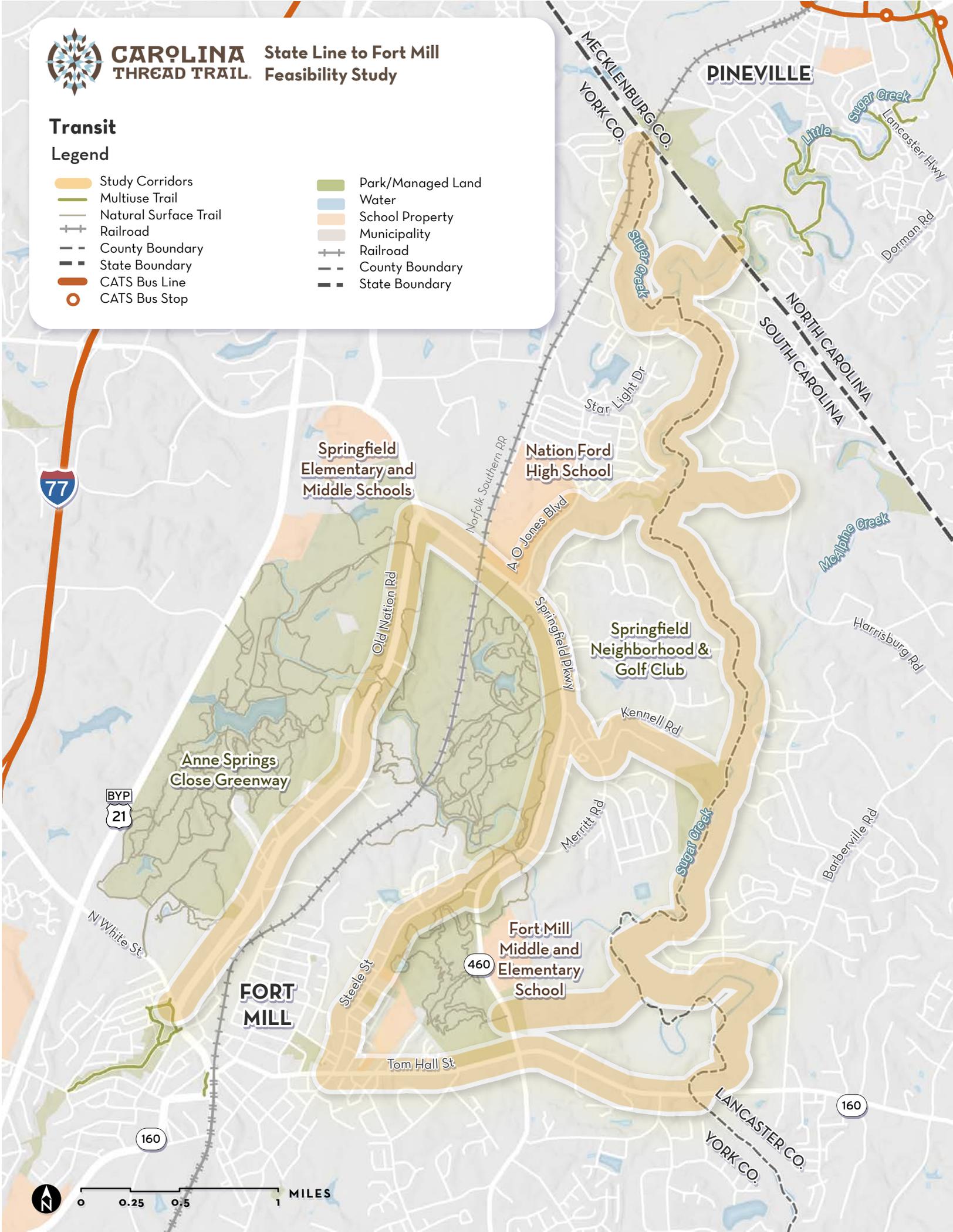


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Transit

Legend

- | | |
|--|---|
|  Study Corridors |  Park/Managed Land |
|  Multiuse Trail |  Water |
|  Natural Surface Trail |  School Property |
|  Railroad |  Municipality |
|  County Boundary |  Railroad |
|  State Boundary |  County Boundary |
|  CATS Bus Line |  State Boundary |
|  CATS Bus Stop | |



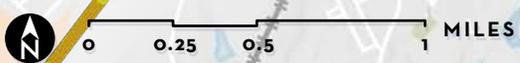


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Highway Posted Speed

Legend

- | | | | |
|--|-----------------------|--|-----------------|
| | Study Corridors | | Railroad |
| | Multiuse Trail | | County Boundary |
| | Natural Surface Trail | | State Boundary |
| | Railroad | | 10 - 24mph |
| | County Boundary | | 25 - 34mph |
| | State Boundary | | 35 - 44mph |
| | Park/Managed Land | | 45 - 54mph |
| | Water | | 55 mph+ |
| | School Property | | |
| | Municipality | | |



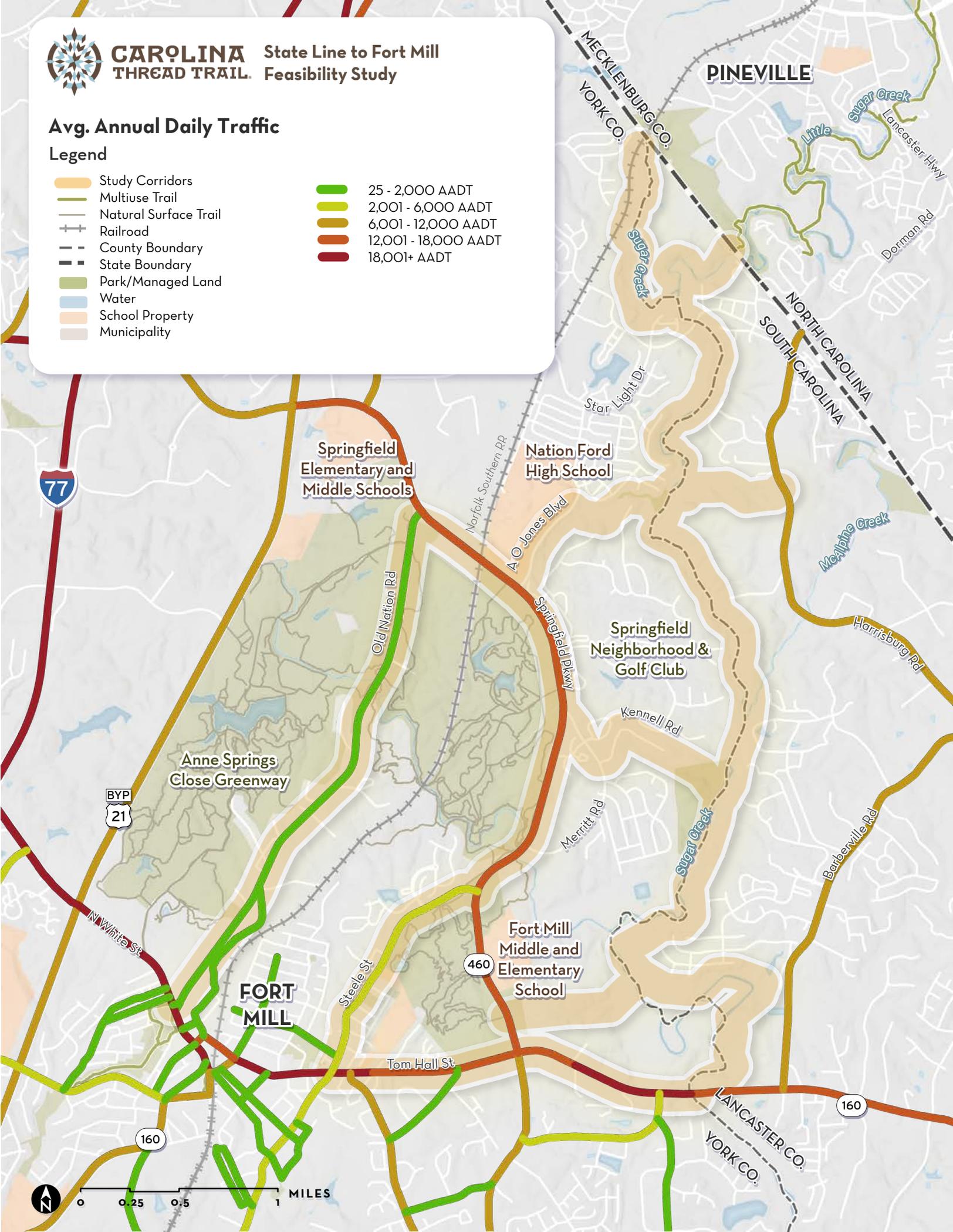


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Avg. Annual Daily Traffic

Legend

- Study Corridors
 - Multiuse Trail
 - Natural Surface Trail
 - Railroad
 - County Boundary
 - State Boundary
 - Park/Managed Land
 - Water
 - School Property
 - Municipality
- 25 - 2,000 AADT
 - 2,001 - 6,000 AADT
 - 6,001 - 12,000 AADT
 - 12,001 - 18,000 AADT
 - 18,001+ AADT



0 0.25 0.5 1 MILES



**CAROLINA
THREAD TRAIL** State Line to Fort Mill
Feasibility Study

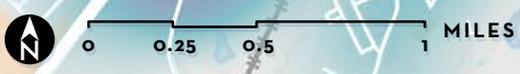
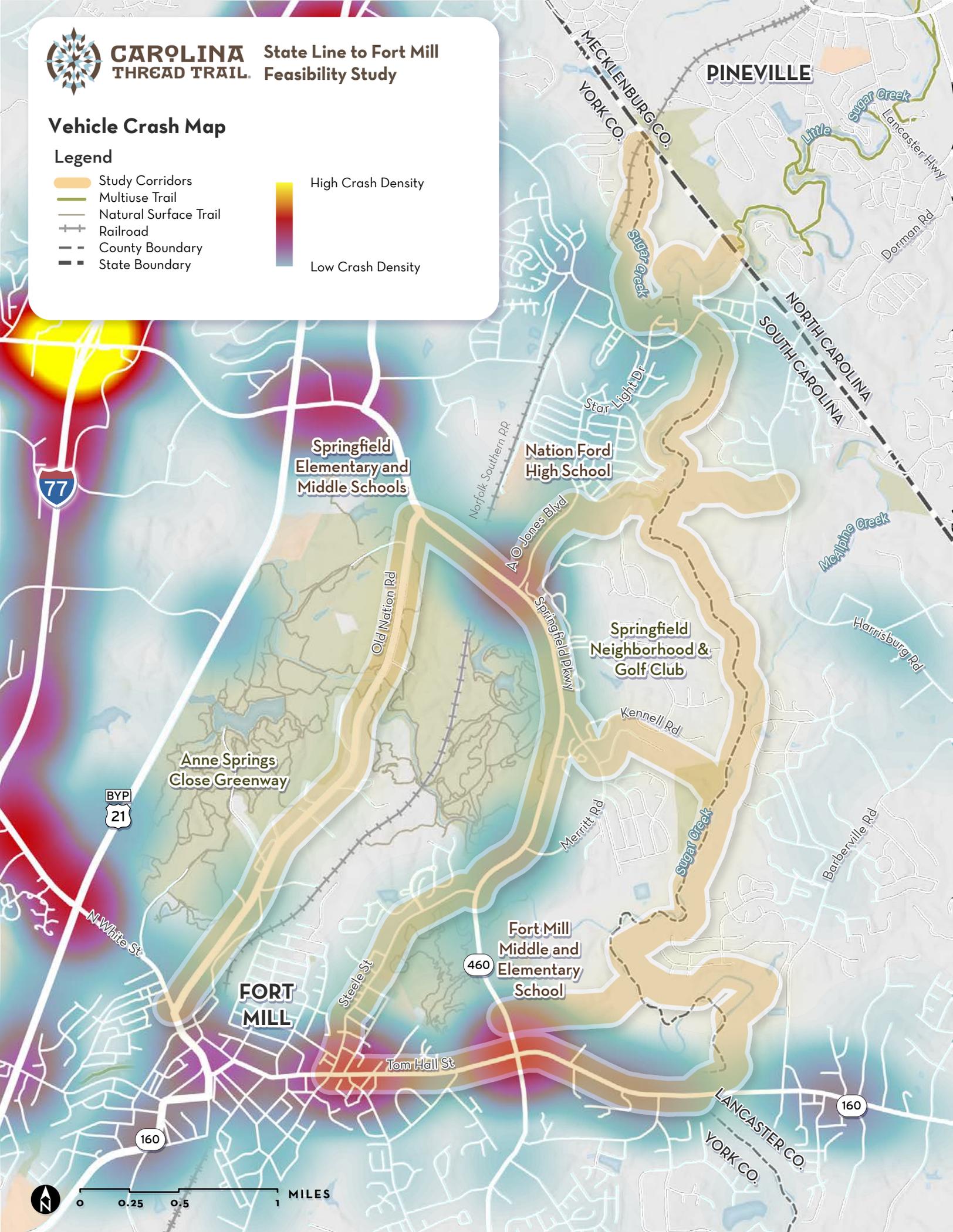
Vehicle Crash Map

Legend

-  Study Corridors
 -  Multiuse Trail
 -  Natural Surface Trail
 -  Railroad
 -  County Boundary
 -  State Boundary
- 

High Crash Density

Low Crash Density





CAROLINA THREAD TRAIL State Line to Fort Mill Feasibility Study

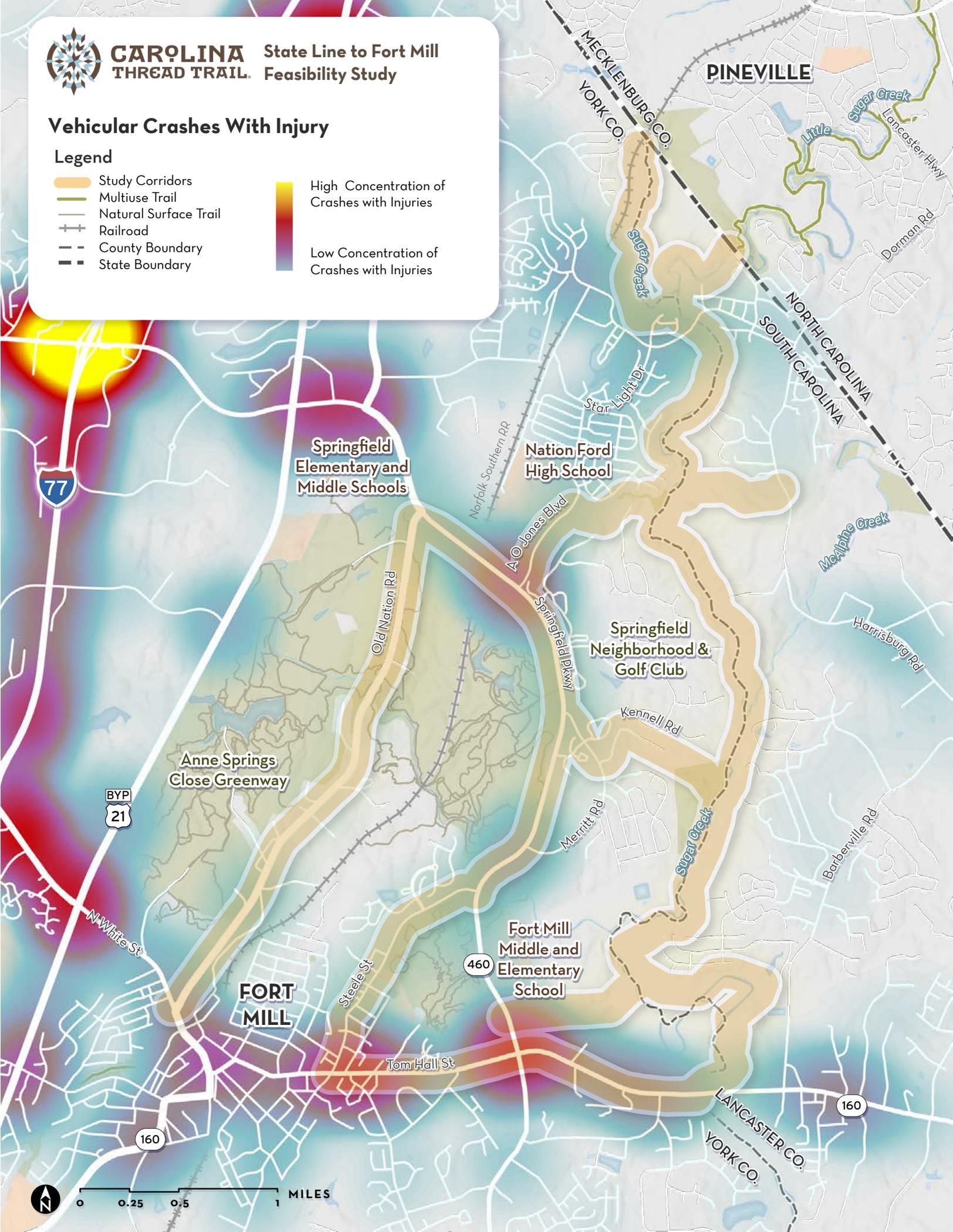
Vehicular Crashes With Injury

Legend

-  Study Corridors
 -  Multiuse Trail
 -  Natural Surface Trail
 -  Railroad
 -  County Boundary
 -  State Boundary
- 

High Concentration of Crashes with Injuries

Low Concentration of Crashes with Injuries



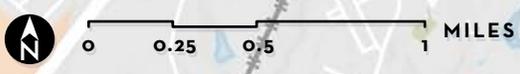
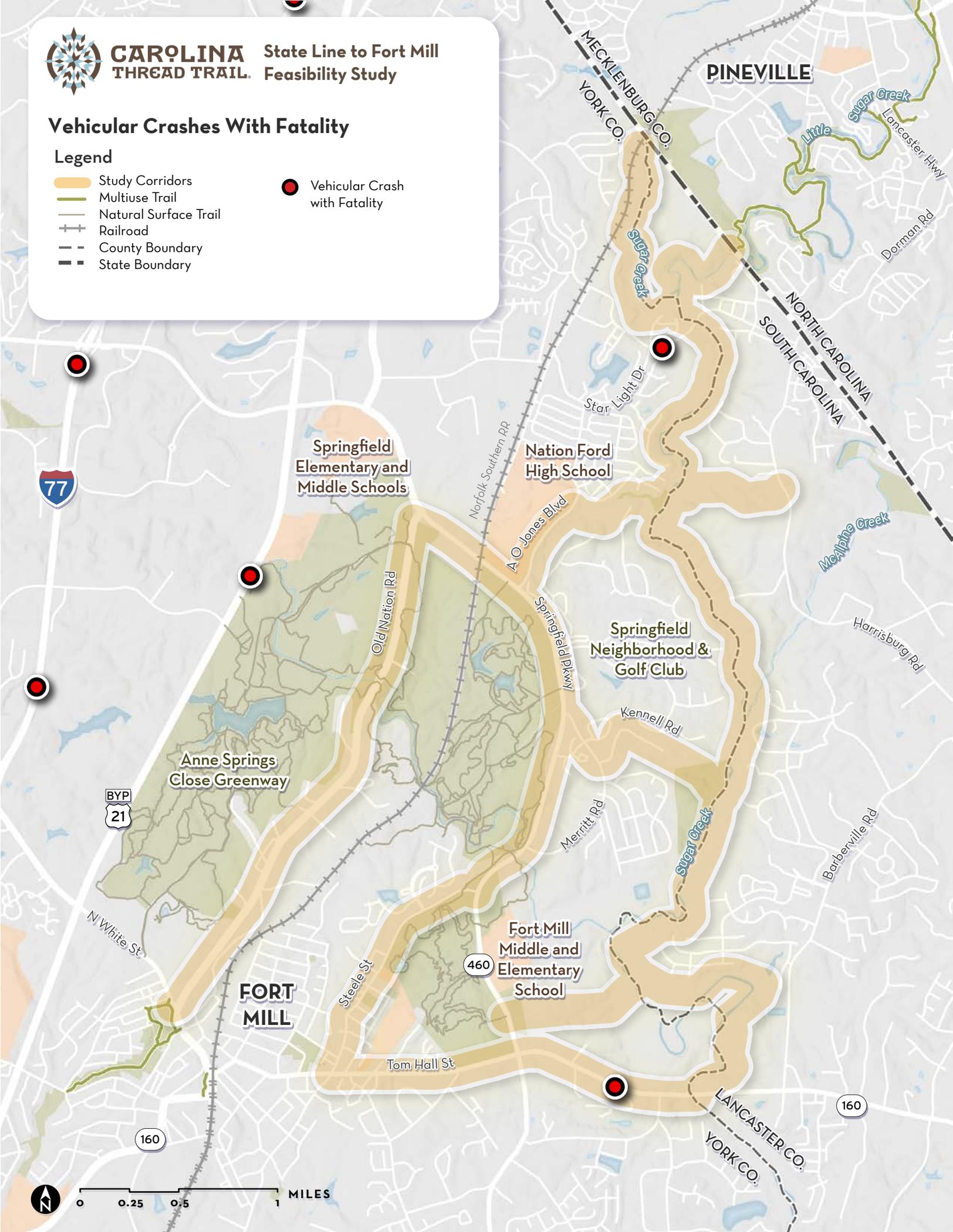


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Vehicular Crashes With Fatality

Legend

- Study Corridors
- Multiuse Trail
- Natural Surface Trail
- Railroad
- County Boundary
- State Boundary
- Vehicular Crash with Fatality



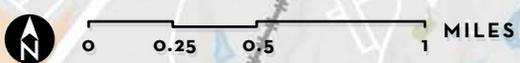
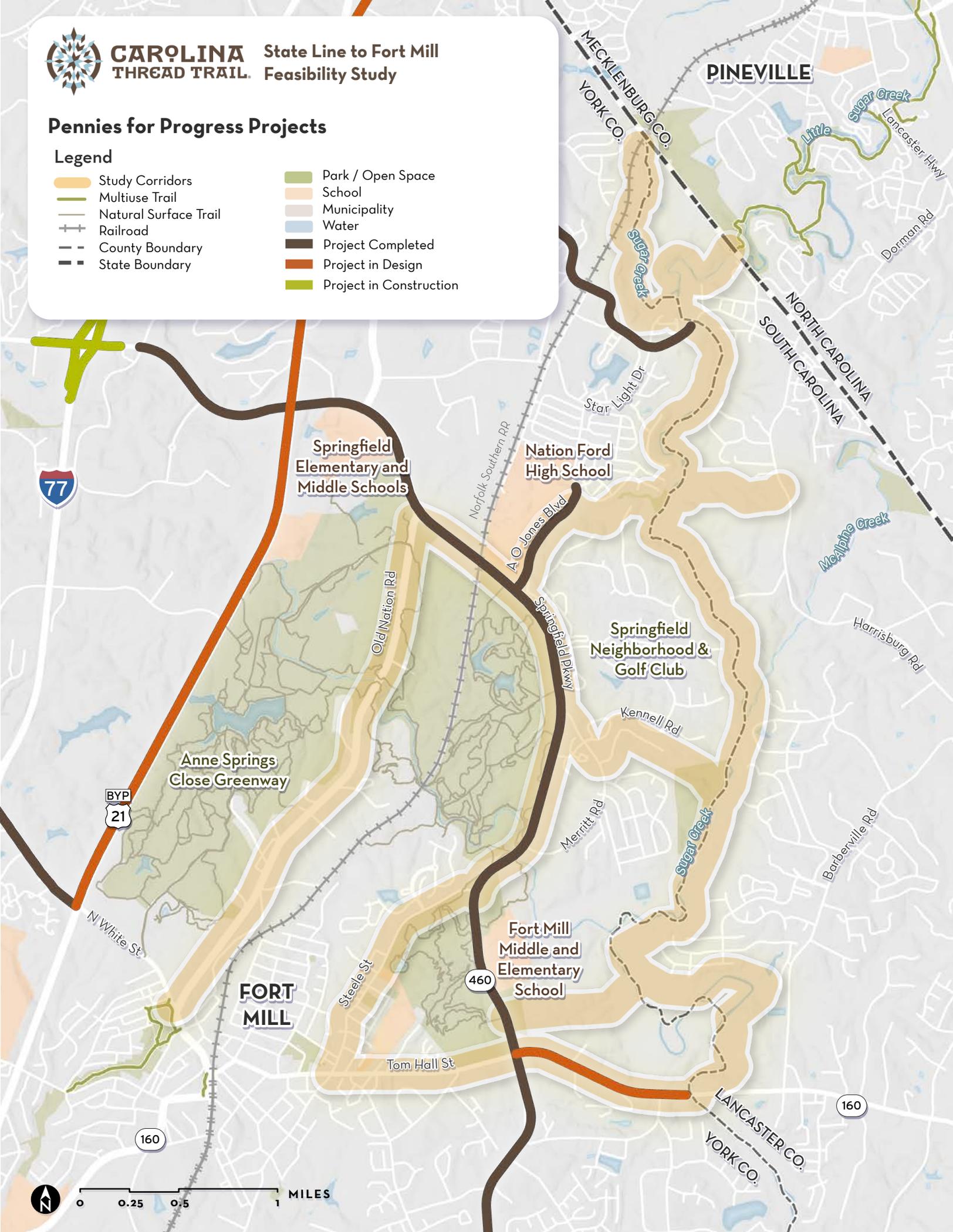


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Pennies for Progress Projects

Legend

-  Study Corridors
-  Multiuse Trail
-  Natural Surface Trail
-  Railroad
-  County Boundary
-  State Boundary
-  Park / Open Space
-  School
-  Municipality
-  Water
-  Project Completed
-  Project in Design
-  Project in Construction



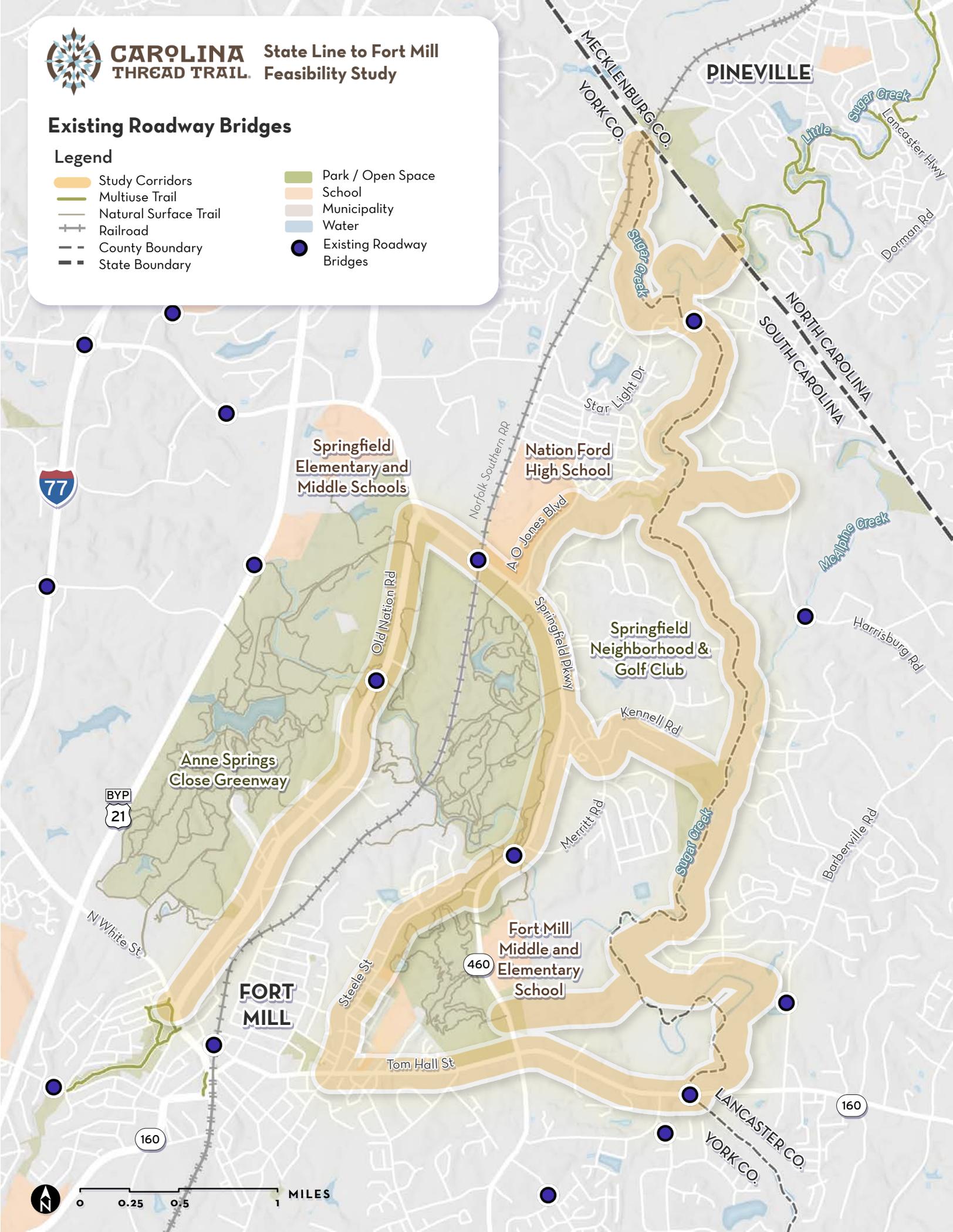


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Existing Roadway Bridges

Legend

-  Study Corridors
-  Multiuse Trail
-  Natural Surface Trail
-  Railroad
-  County Boundary
-  State Boundary
-  Park / Open Space
-  School
-  Municipality
-  Water
-  Existing Roadway Bridges



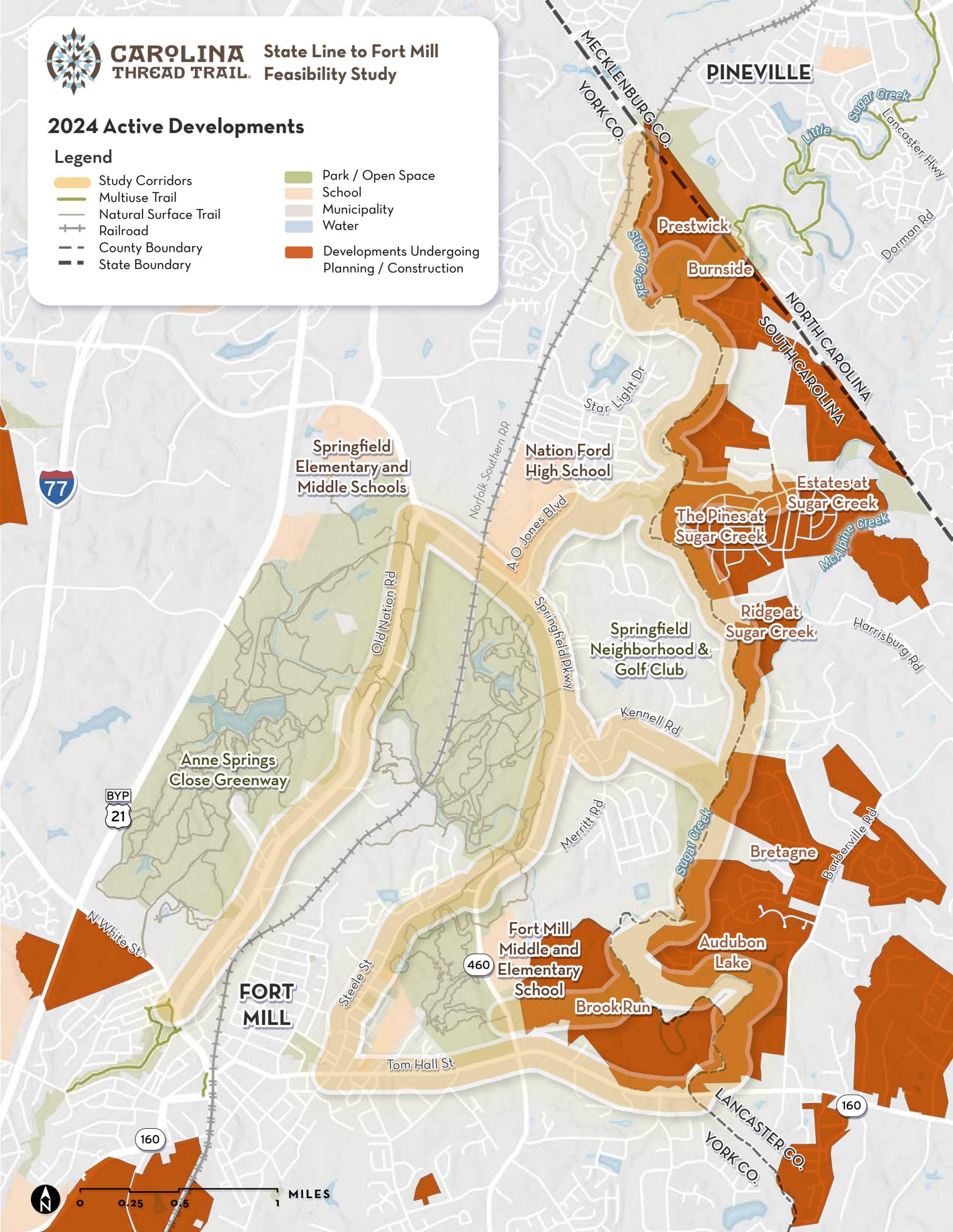


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

2024 Active Developments

Legend

-  Study Corridors
-  Multiuse Trail
-  Natural Surface Trail
-  Railroad
-  County Boundary
-  State Boundary
-  Park / Open Space
-  School
-  Municipality
-  Water
-  Developments Undergoing Planning / Construction

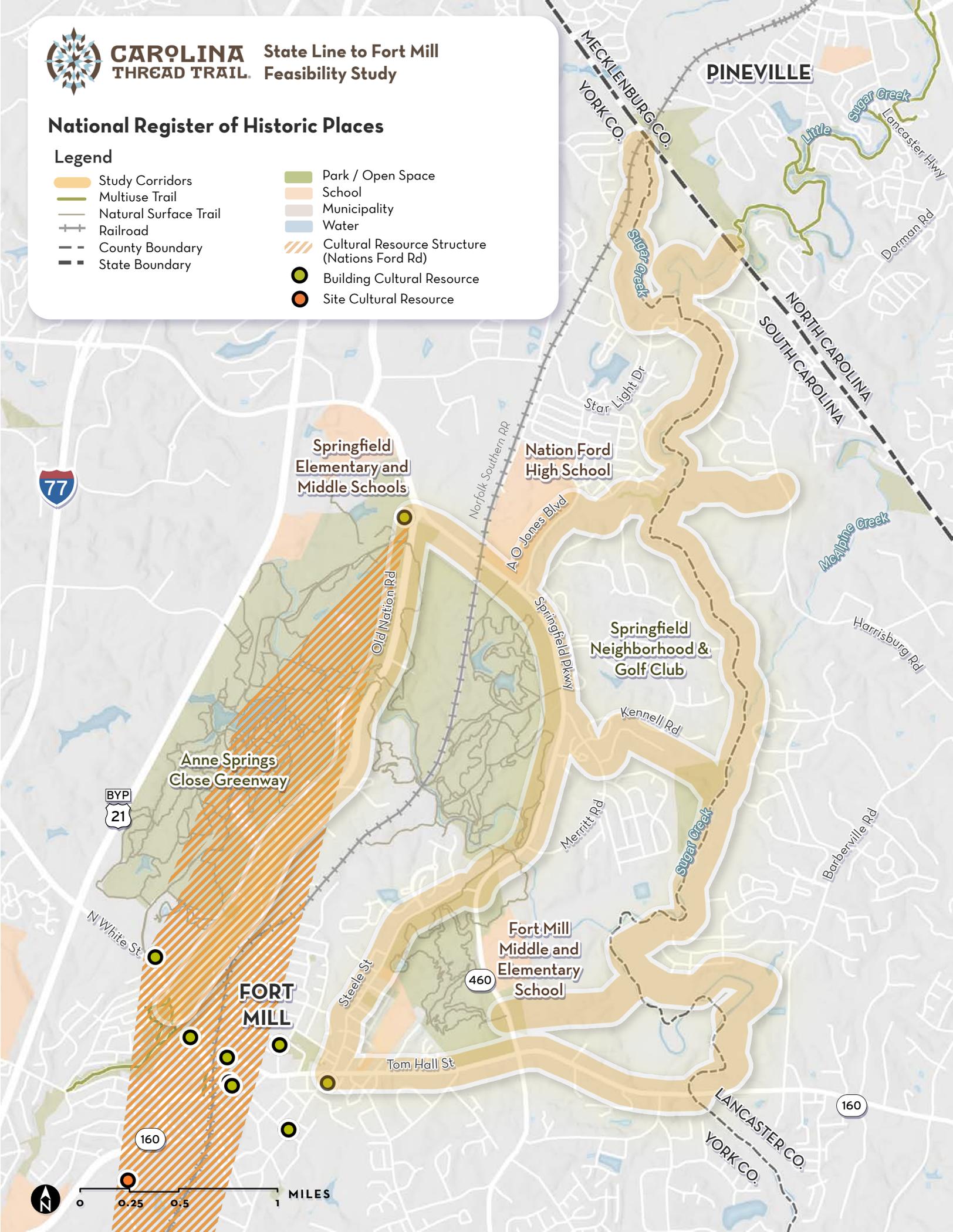




National Register of Historic Places

Legend

- Study Corridors
- Multiuse Trail
- Natural Surface Trail
- Railroad
- County Boundary
- State Boundary
- Park / Open Space
- School
- Municipality
- Water
- Cultural Resource Structure (Nations Ford Rd)
- Building Cultural Resource
- Site Cultural Resource



0 0.25 0.5 1 MILES



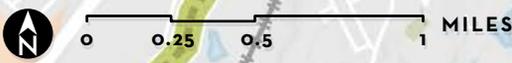
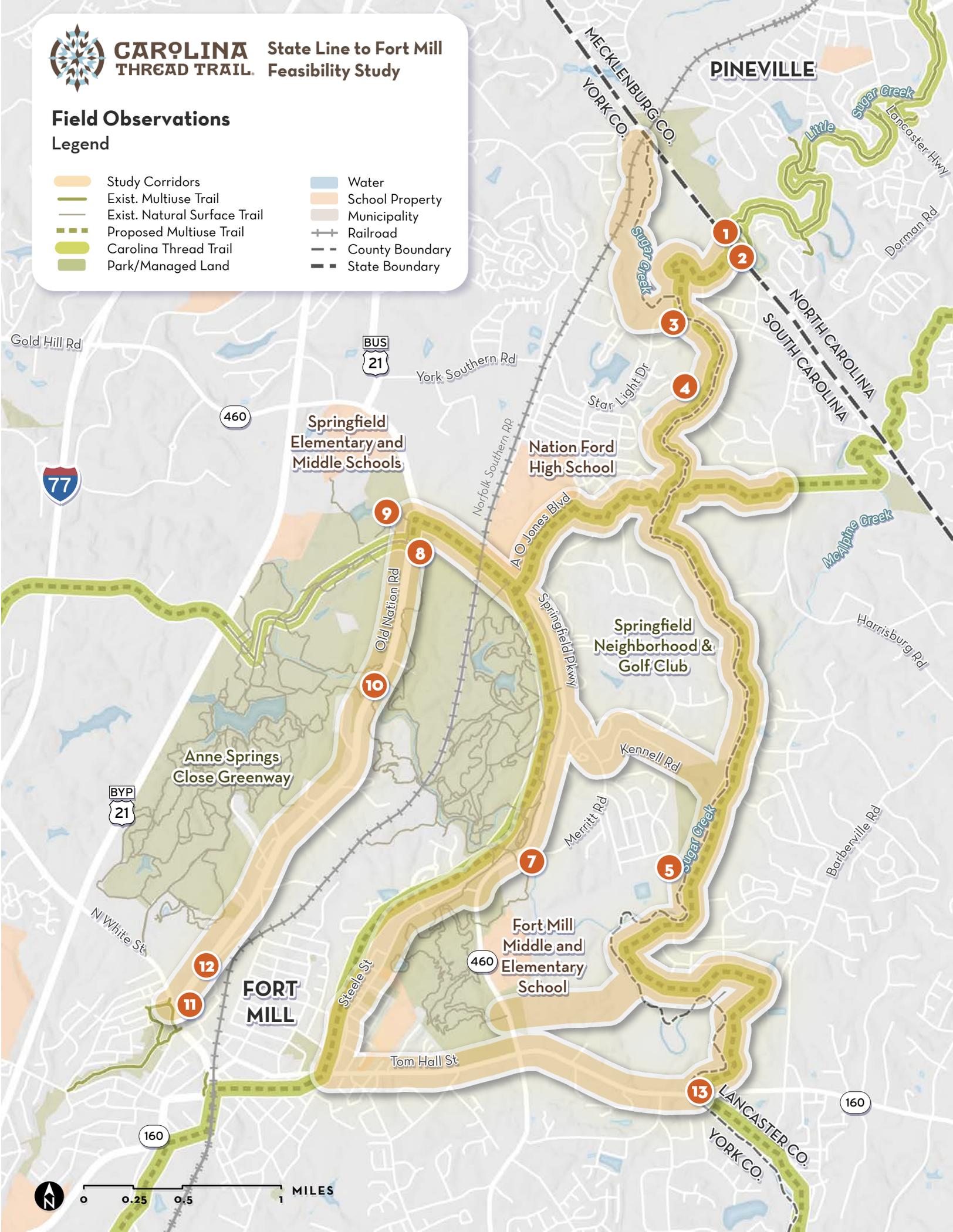
CAROLINA THREAD TRAIL

State Line to Fort Mill Feasibility Study

Field Observations

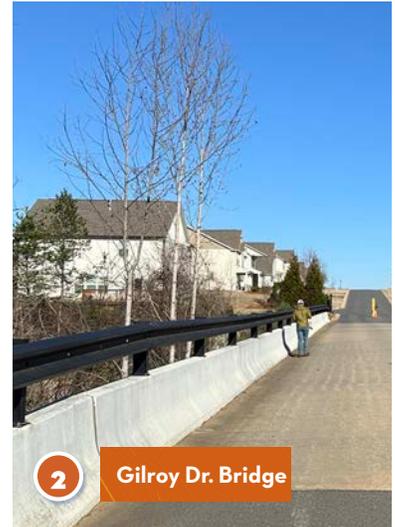
Legend

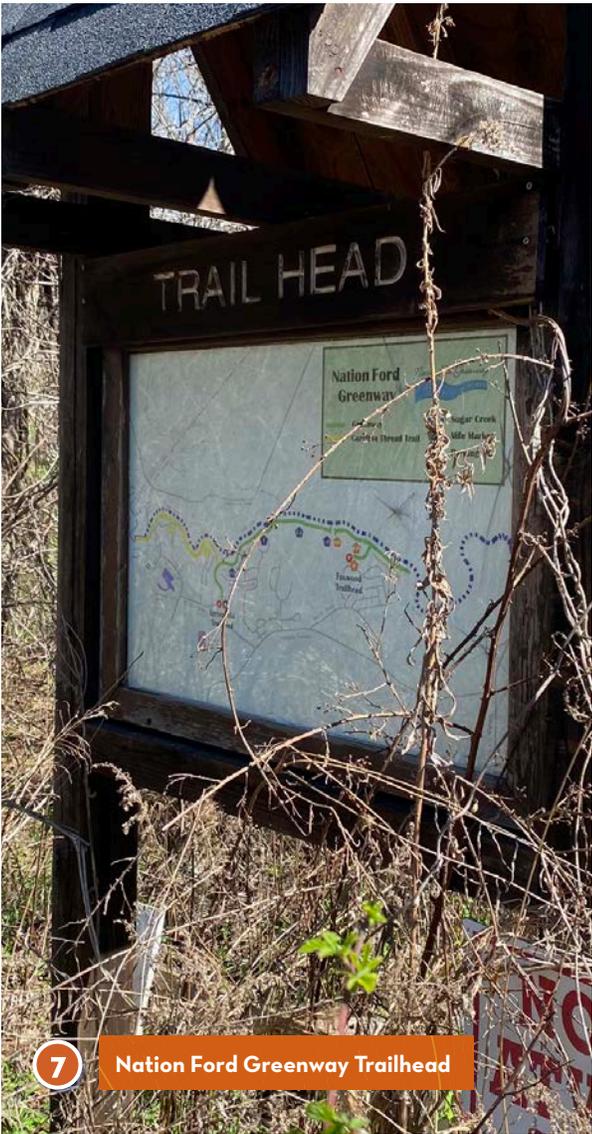
- Study Corridors
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Proposed Multiuse Trail
- Carolina Thread Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



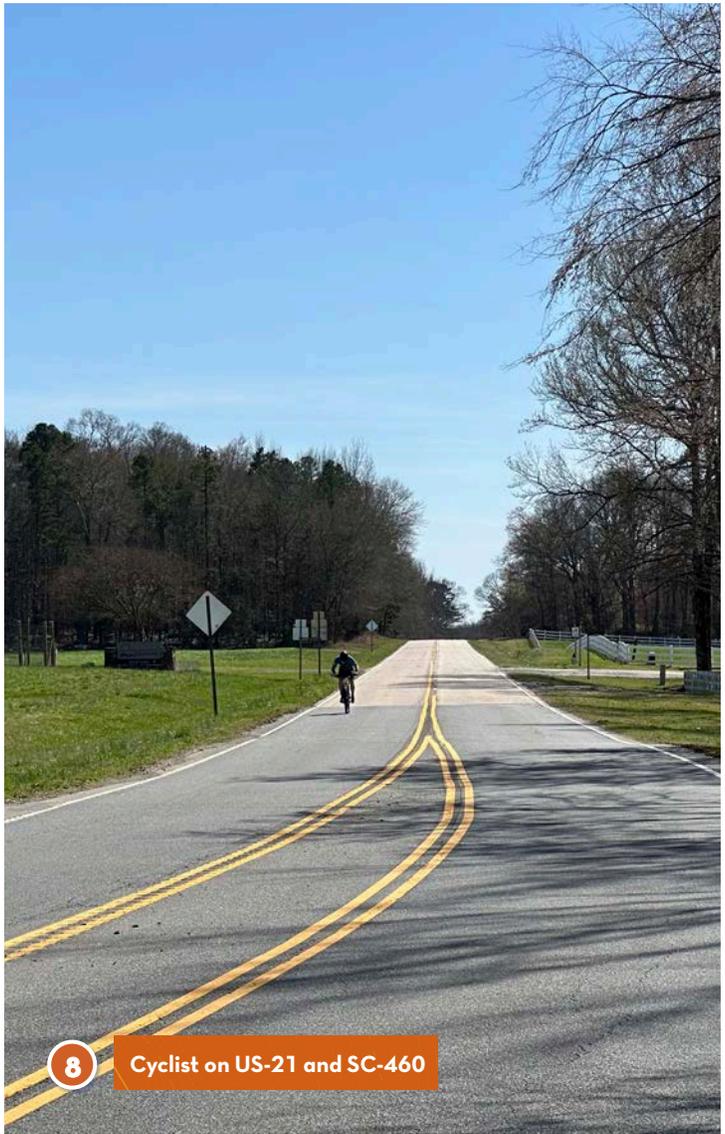
Field Observations

Existing features along the greenway corridors will ultimately influence both the recommended alignment and future character of the facility. This section within the study document maps these existing site features and serves as a reference to the many existing opportunities and constraints along the corridor. These features are shown on the adjacent map and referenced in additional detail throughout the document.





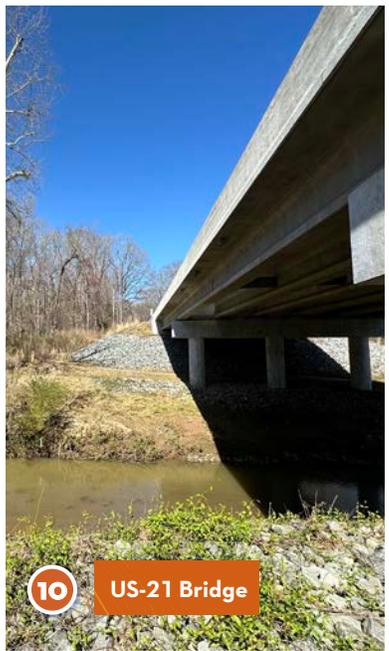
7 Nation Ford Greenway Trailhead



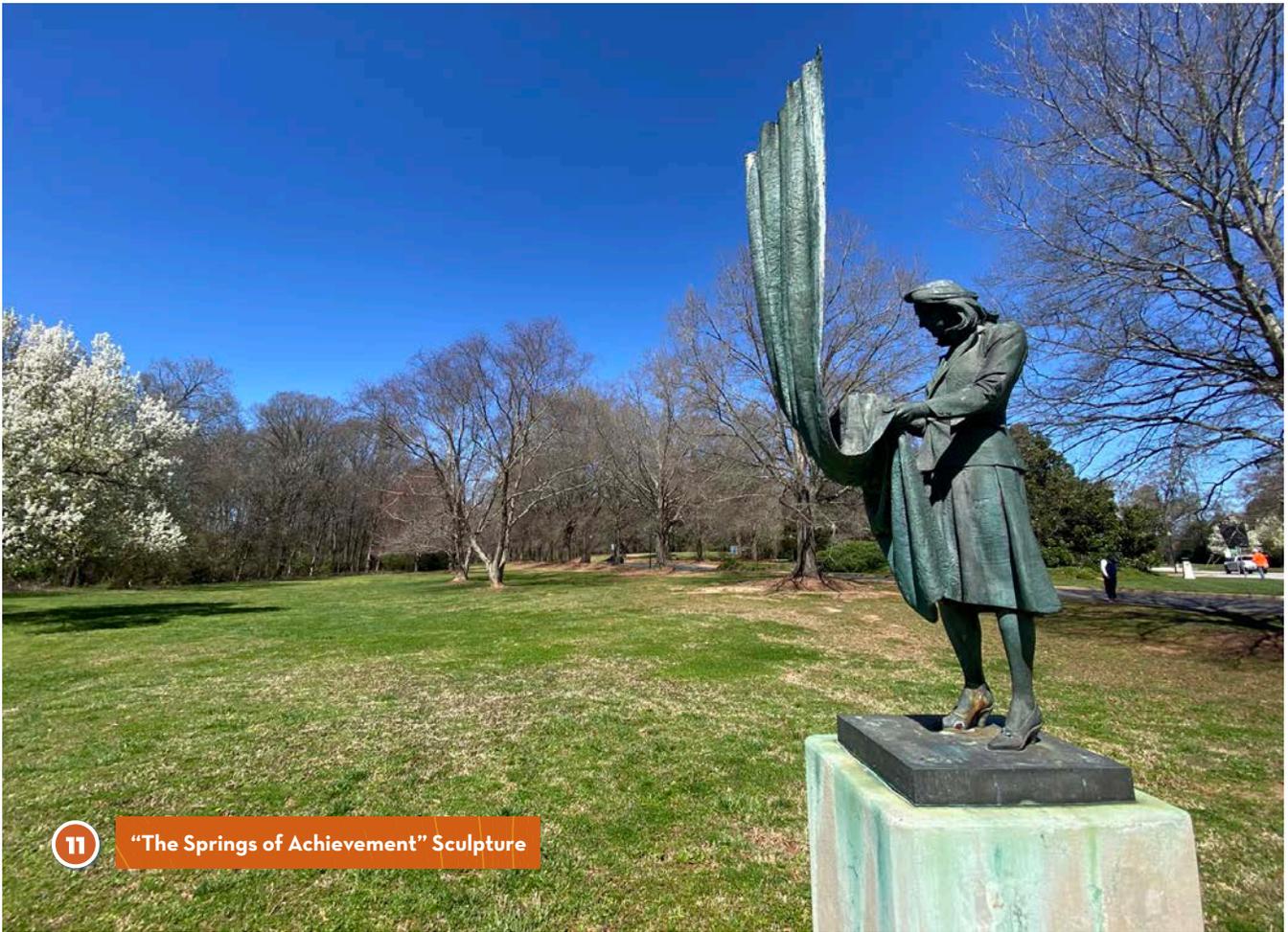
8 Cyclist on US-21 and SC-460



9 Springfield Historical Property



10 US-21 Bridge



11 "The Springs of Achievement" Sculpture



12 Old Nation Rd



13 SC-160 Bridge

Alternatives Development

The project team developed a comprehensive network of potentially feasible route segment alternatives for each of the nine corridors in the study area. These segments attempt to meet the goals of the study and provide safe, useful routes that connect to a variety of destinations while also minimizing cost, private property impacts, and environmental impacts.

Opportunities & Constraints

A detailed opportunities and constraints analysis is provided for each segment alternative, including information on the segment limits, opportunities, constraints, notes, and key stakeholders who will likely be involved if the segment is implemented in the future. This analysis, paired with Steering Committee and community input informed the segments that were removed from consideration.

The maps on the following pages show the outcome of this analysis for each segment, split up into five regions of the study area to show each segment at scale.

Map regions (see following pages):

- » Little Sugar Creek
- » Anne Springs
- » Springfield
- » Downtown Fort Mill
- » Audubon Lake

The full opportunities and constraints table accompanying this section is included following the maps.

Segment Evaluation Status

Segments are evaluated based on a variety of technical and environmental factors. The opportunities and constraints analysis yielded five distinct outcomes for segment evaluation status:

- » Under Consideration
- » Under Consideration - On-Street Neighborhood Greenway
- » Under Consideration - Construction and Maintenance Concerns
- » Connection Only
- » Removed from Consideration

UNDER CONSIDERATION

These segments are under consideration without major constructability, maintenance, or other implementation concerns.

UNDER CONSIDERATION - ON-STREET NEIGHBORHOOD GREENWAY

These segments are under consideration without major concerns, but route along neighborhood streets with shared lane markings and sidewalks.

UNDER CONSIDERATION - CONSTRUCTION AND MAINTENANCE CONCERNS

These segments are under consideration, but present some challenges to construction or maintenance.

CONNECTION ONLY

These segments are under consideration as connectors between the mainline trail and nearby destinations and neighborhoods.

REMOVED FROM CONSIDERATION

These segments have been removed from further consideration due to a variety of technical feasibility concerns.

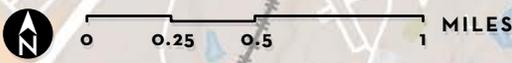
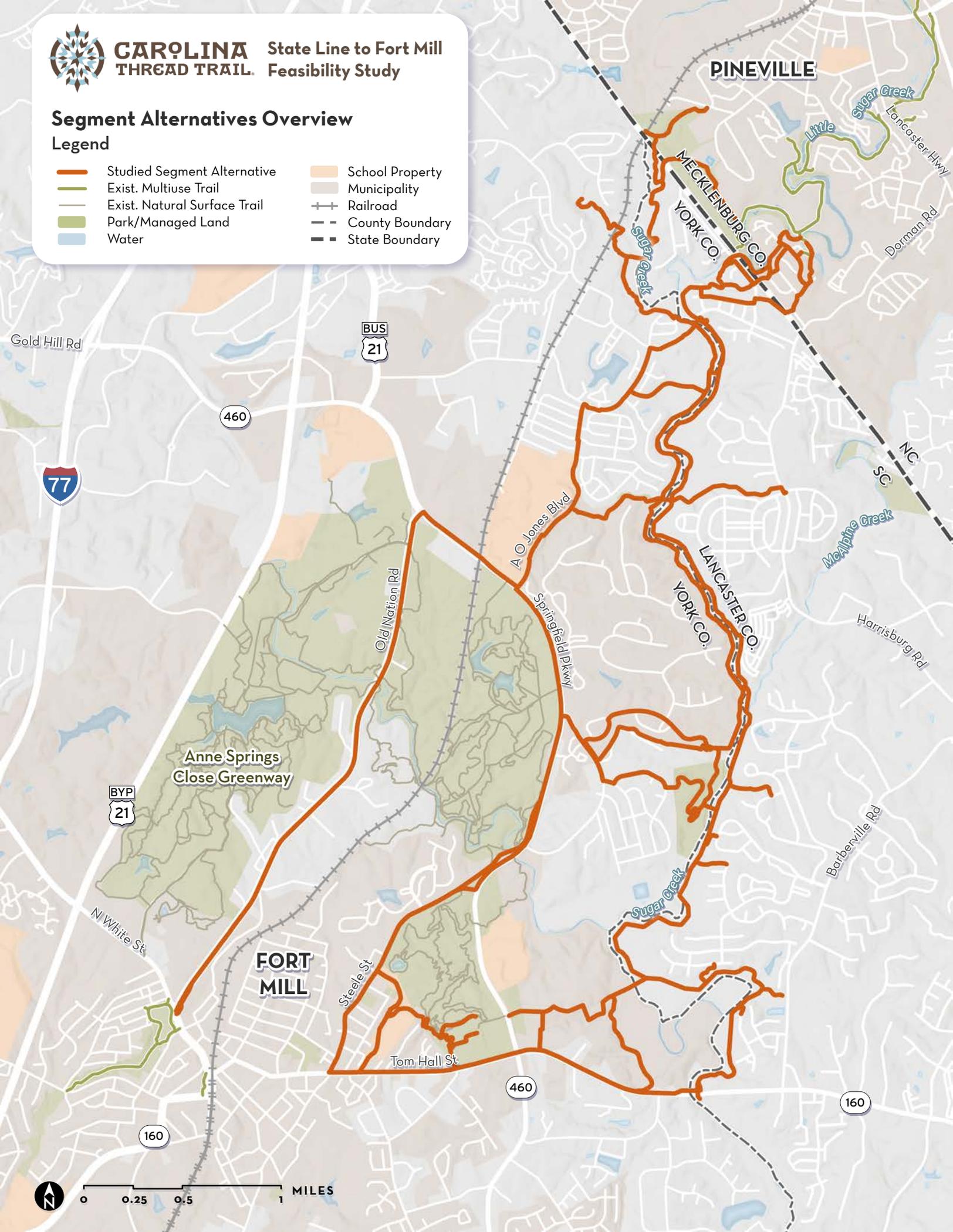


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Segment Alternatives Overview

Legend

- Studied Segment Alternative
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- +— Railroad
- - - County Boundary
- - - State Boundary



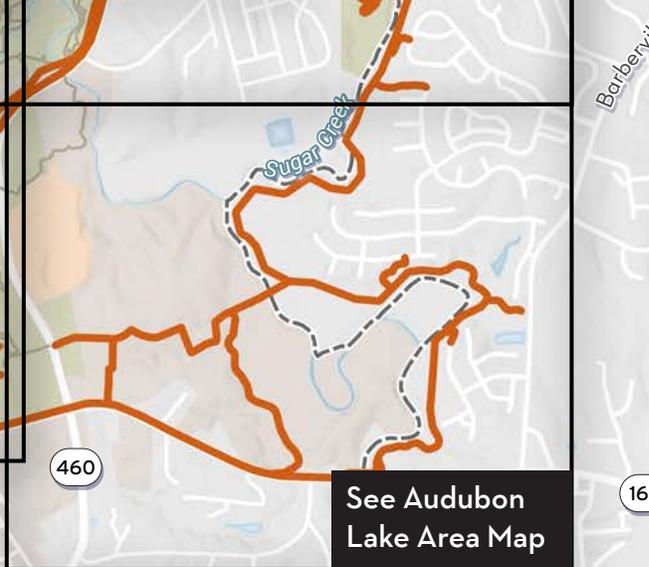
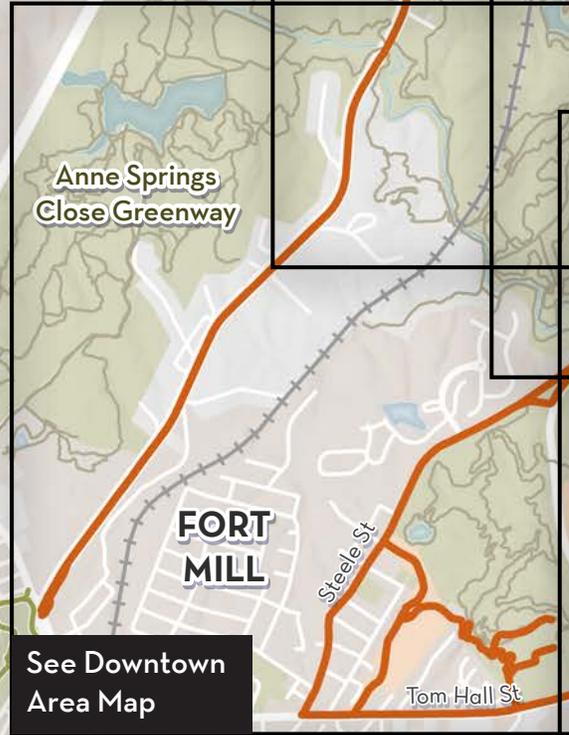
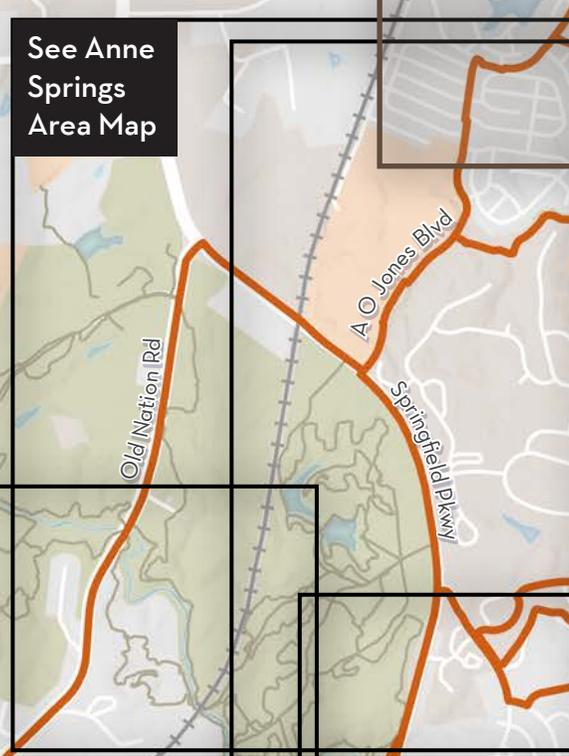
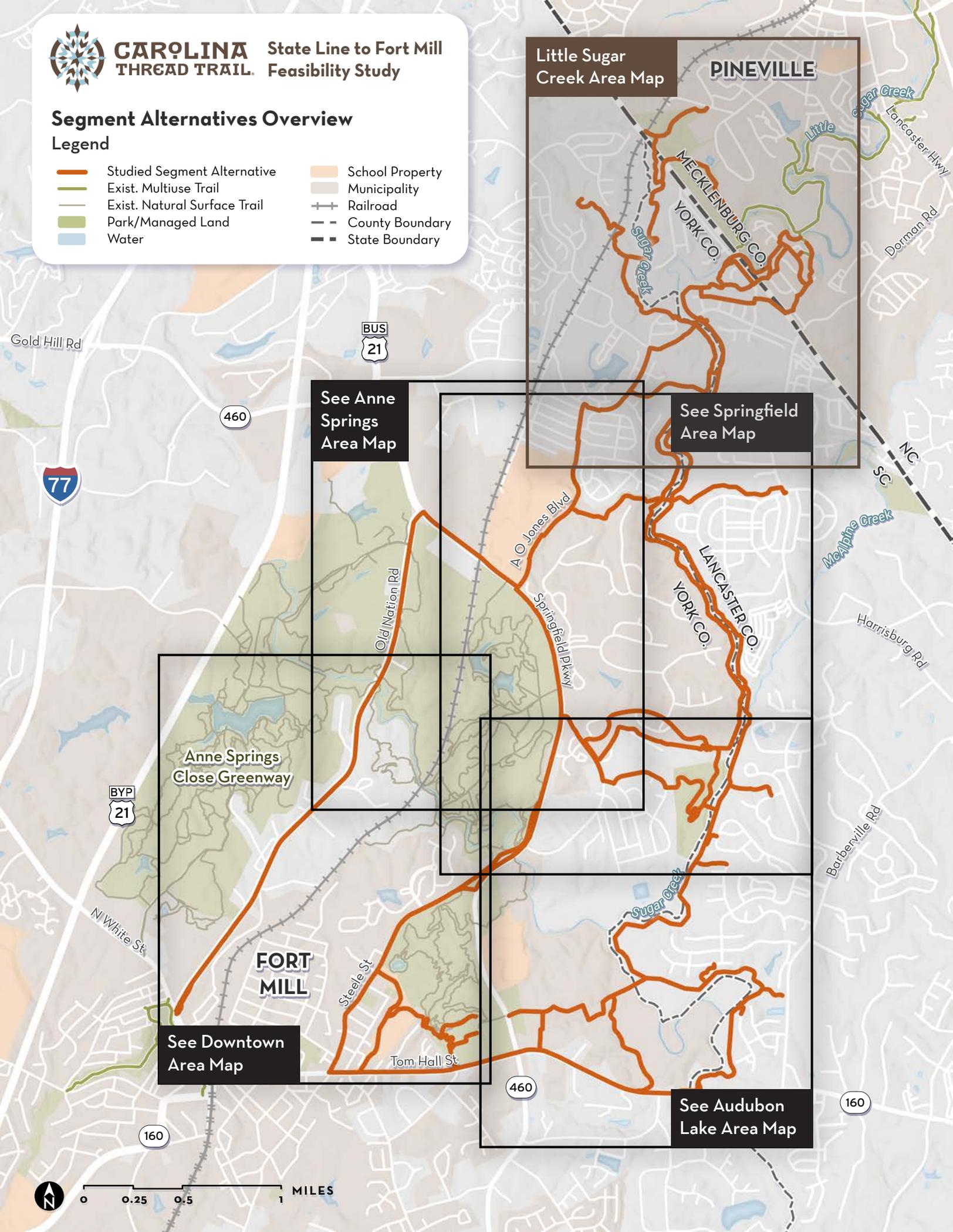


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Segment Alternatives Overview

Legend

- Studied Segment Alternative
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



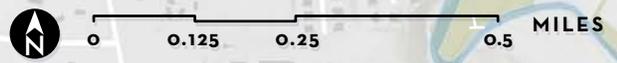
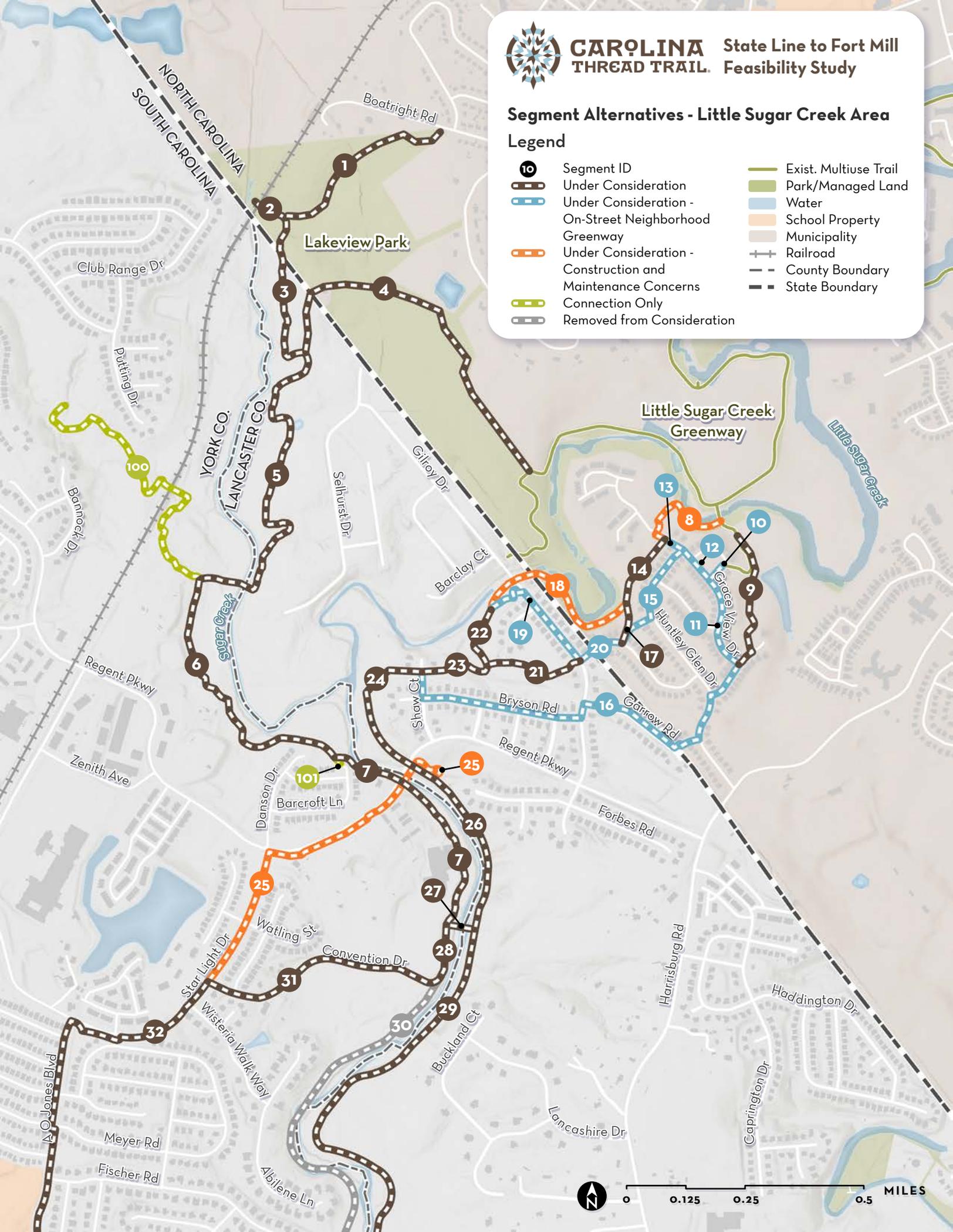


CAROLINA State Line to Fort Mill THREAD TRAIL. Feasibility Study

Segment Alternatives - Little Sugar Creek Area

Legend

- Segment ID
- Under Consideration
- Under Consideration - On-Street Neighborhood Greenway
- Under Consideration - Construction and Maintenance Concerns
- Connection Only
- Removed from Consideration
- Exist. Multiuse Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



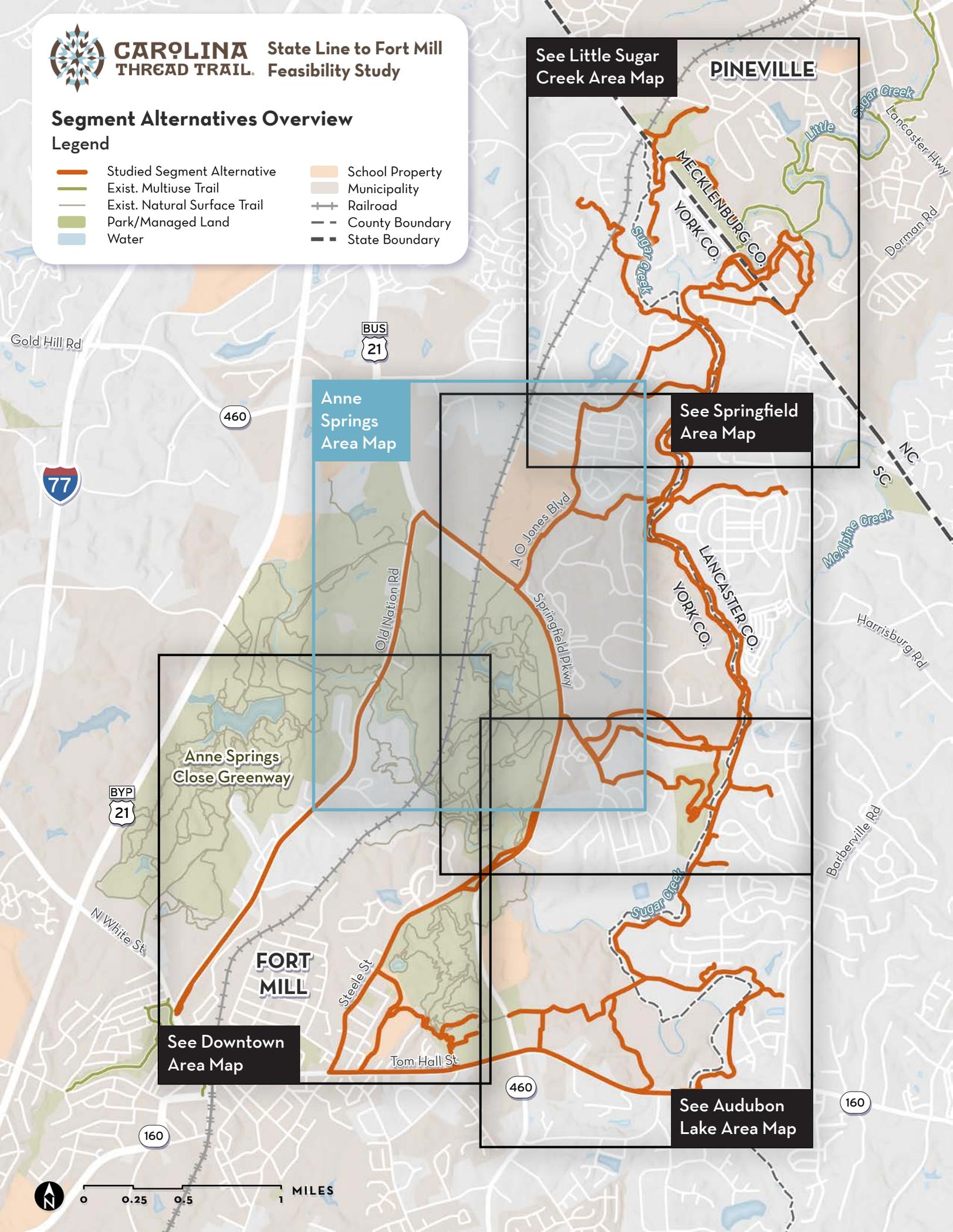


CAROLINA THREAD TRAIL State Line to Fort Mill Feasibility Study

Segment Alternatives Overview

Legend

- Studied Segment Alternative
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



See Little Sugar Creek Area Map

PINEVILLE

MECKLENBURG CO.
YORK CO.

See Springfield Area Map

Anne Springs Area Map

Old Nation Rd

A O Jones Blvd

Springfield Pkwy

LANCASTER CO.
YORK CO.

Anne Springs Close Greenway

FORT MILL

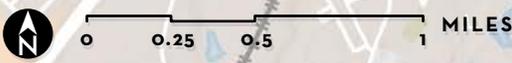
See Downtown Area Map

Steele St

Tom Hall St

See Audubon Lake Area Map

Sugar Creek

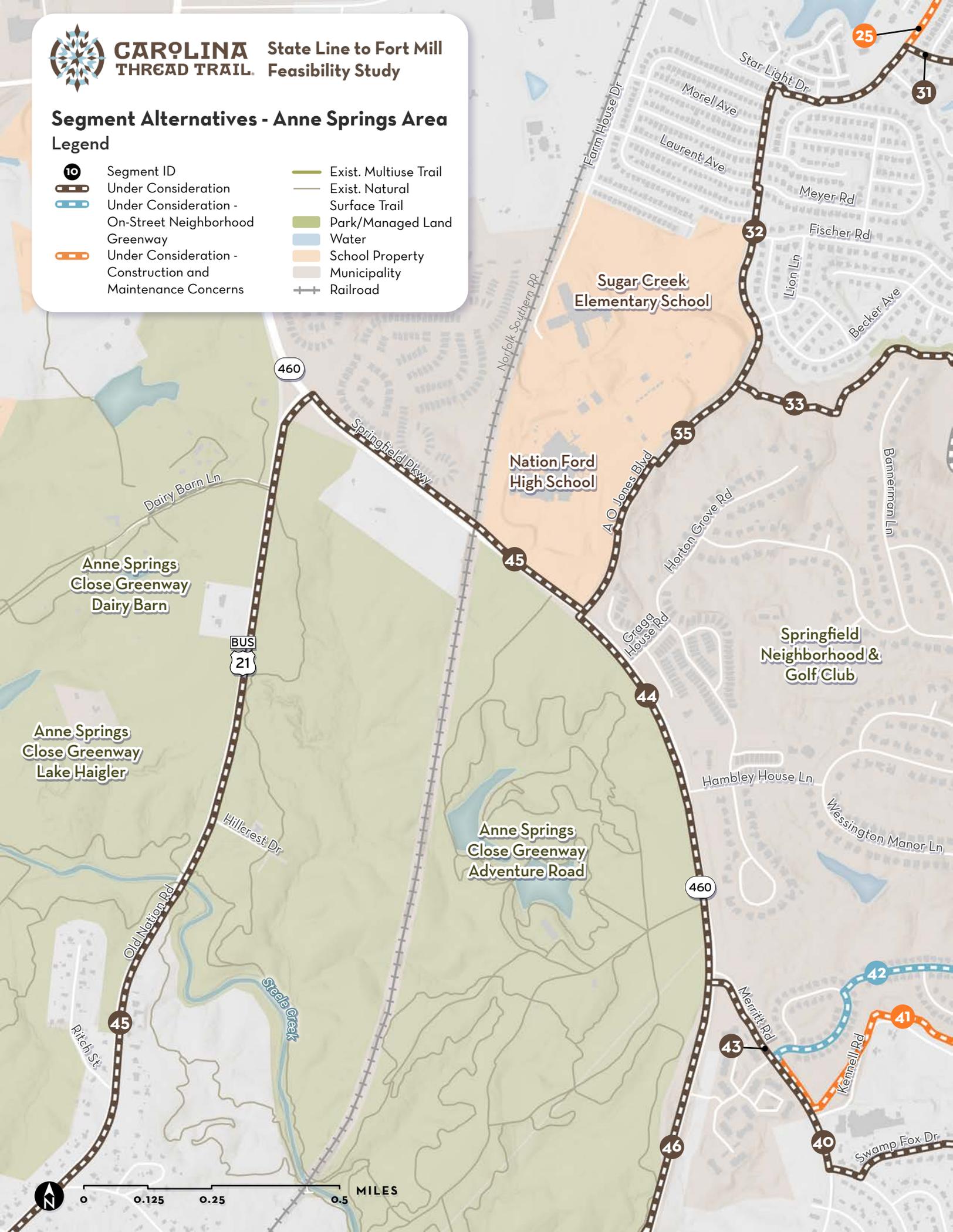




Segment Alternatives - Anne Springs Area

Legend

-  Segment ID
-  Under Consideration
-  Under Consideration - On-Street Neighborhood Greenway
-  Under Consideration - Construction and Maintenance Concerns
-  Exist. Multiuse Trail
-  Exist. Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad



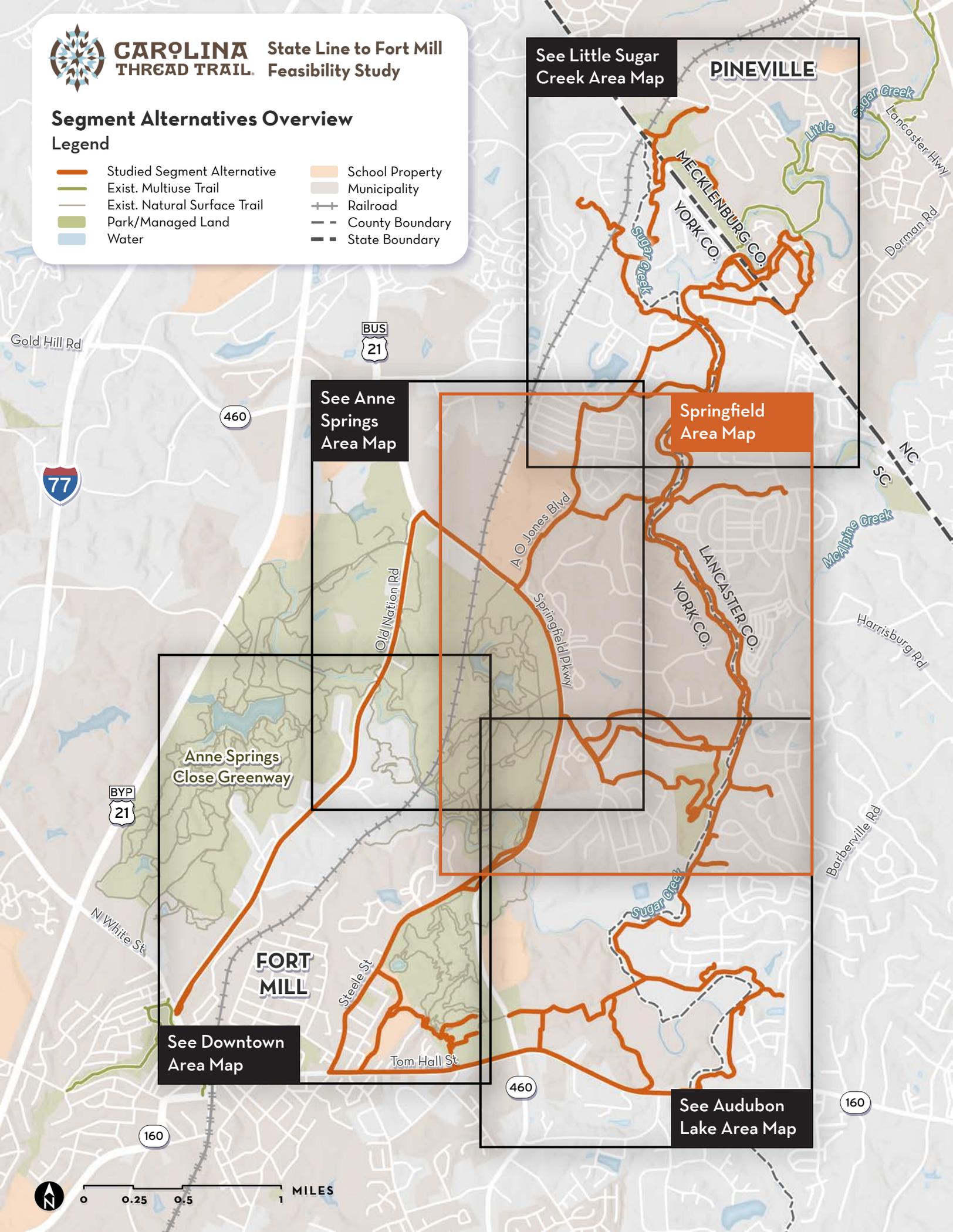


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Segment Alternatives Overview

Legend

- Studied Segment Alternative
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



See Little Sugar Creek Area Map

PINEVILLE

MECKLENBURG CO.
YORK CO.

See Anne Springs Area Map

Springfield Area Map

LANCASTER CO.
YORK CO.

Anne Springs Close Greenway

FORT MILL

See Downtown Area Map

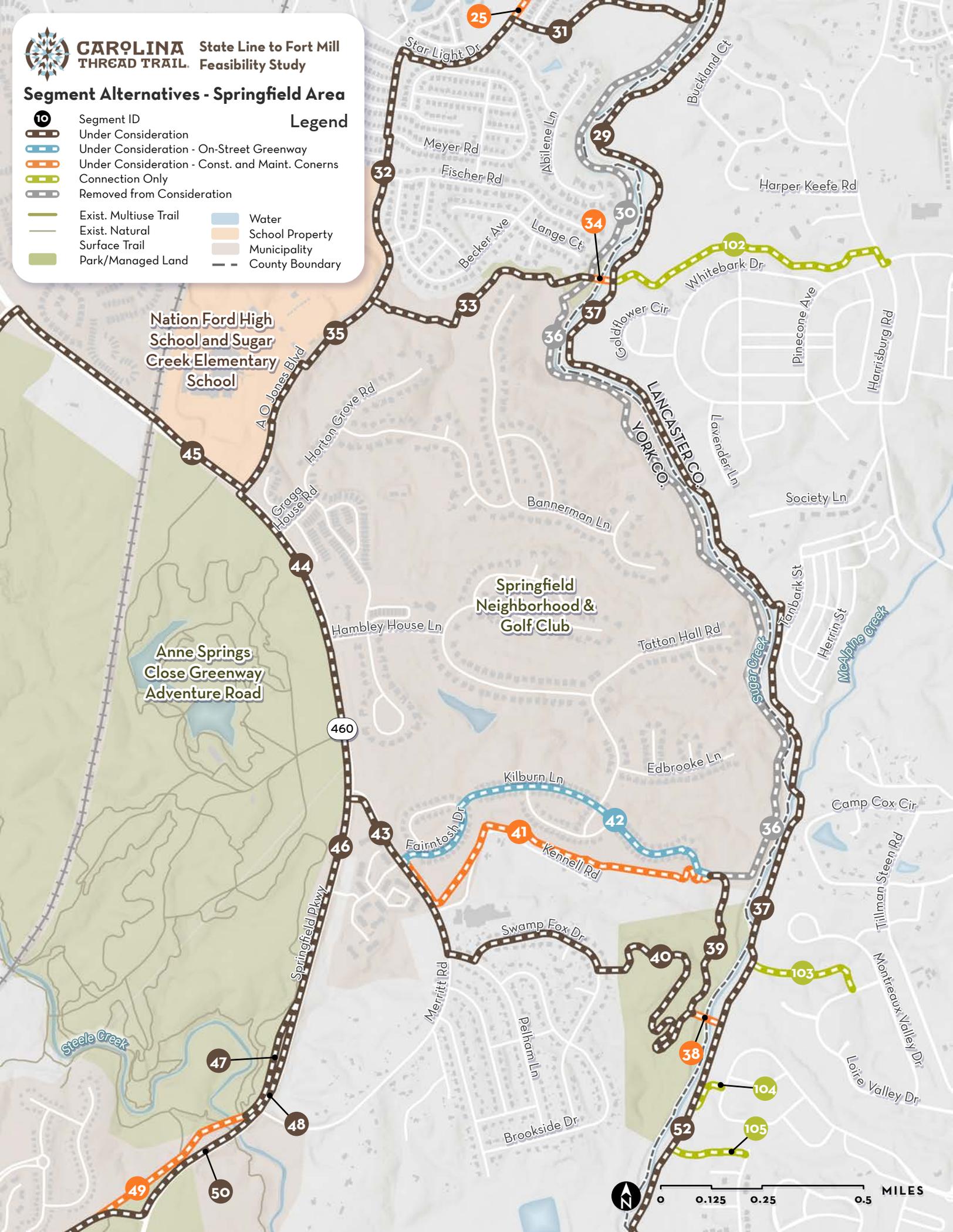
See Audubon Lake Area Map

See Audubon Lake Area Map



Segment Alternatives - Springfield Area

- | | | | |
|-----------|--|---------------|------------------------------|
| 10 | Segment ID | Legend | |
| | Under Consideration | | Water |
| | Under Consideration - On-Street Greenway | | School Property |
| | Under Consideration - Const. and Maint. Concerns | | Municipality |
| | Connection Only | | County Boundary |
| | Removed from Consideration | | Exist. Multiuse Trail |
| | Exist. Multiuse Trail | | Exist. Natural Surface Trail |
| | Exist. Natural Surface Trail | | Park/Managed Land |
| | Park/Managed Land | | |



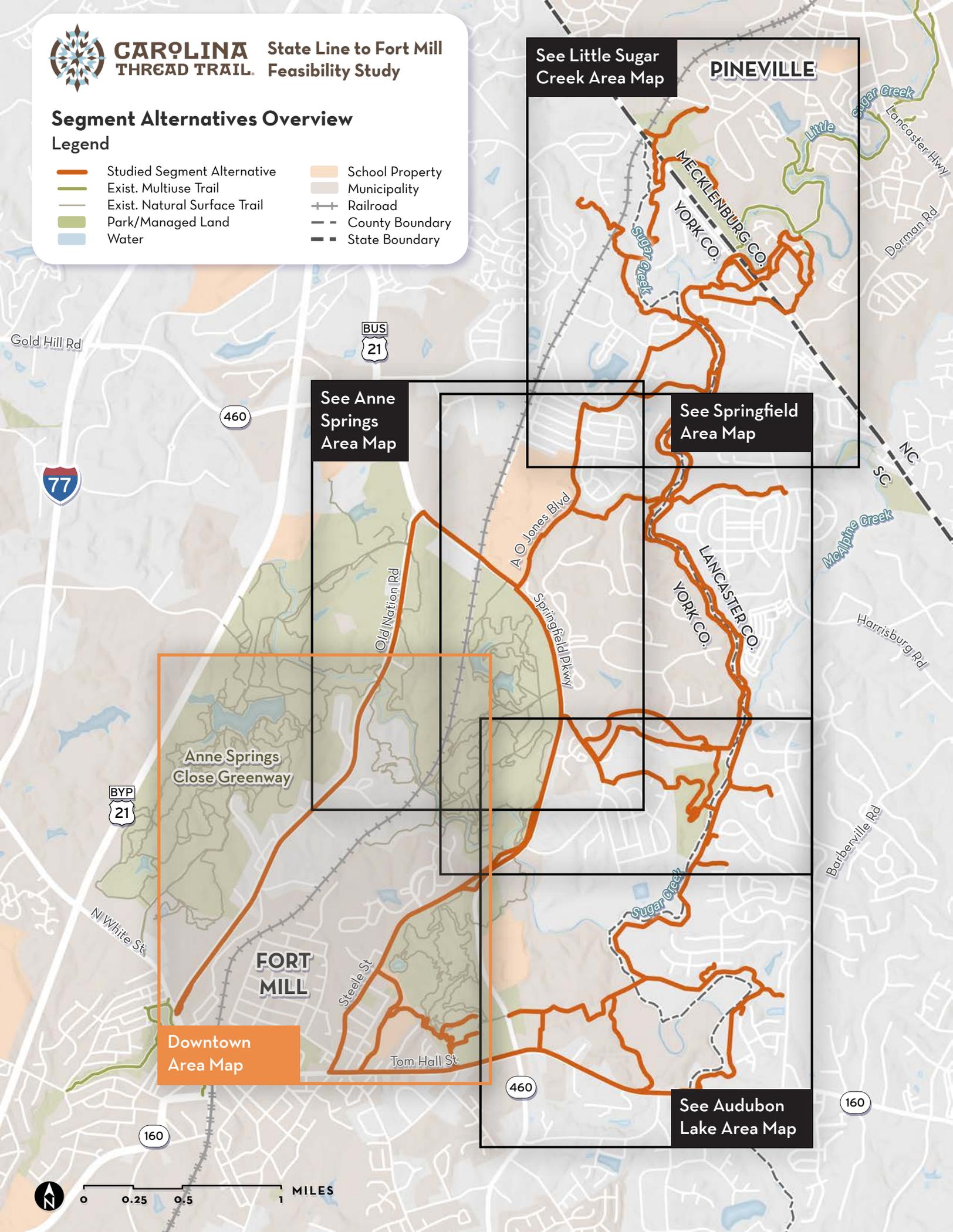


CAROLINA THREAD TRAIL State Line to Fort Mill Feasibility Study

Segment Alternatives Overview

Legend

- Studied Segment Alternative
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



See Little Sugar Creek Area Map

PINEVILLE

MECKLENBURG CO.
YORK CO.

See Anne Springs Area Map

See Springfield Area Map

See Anne Springs Area Map

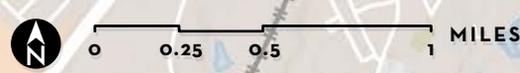
See Springfield Area Map

See Audubon Lake Area Map

Anne Springs Close Greenway

FORT MILL

Downtown Area Map



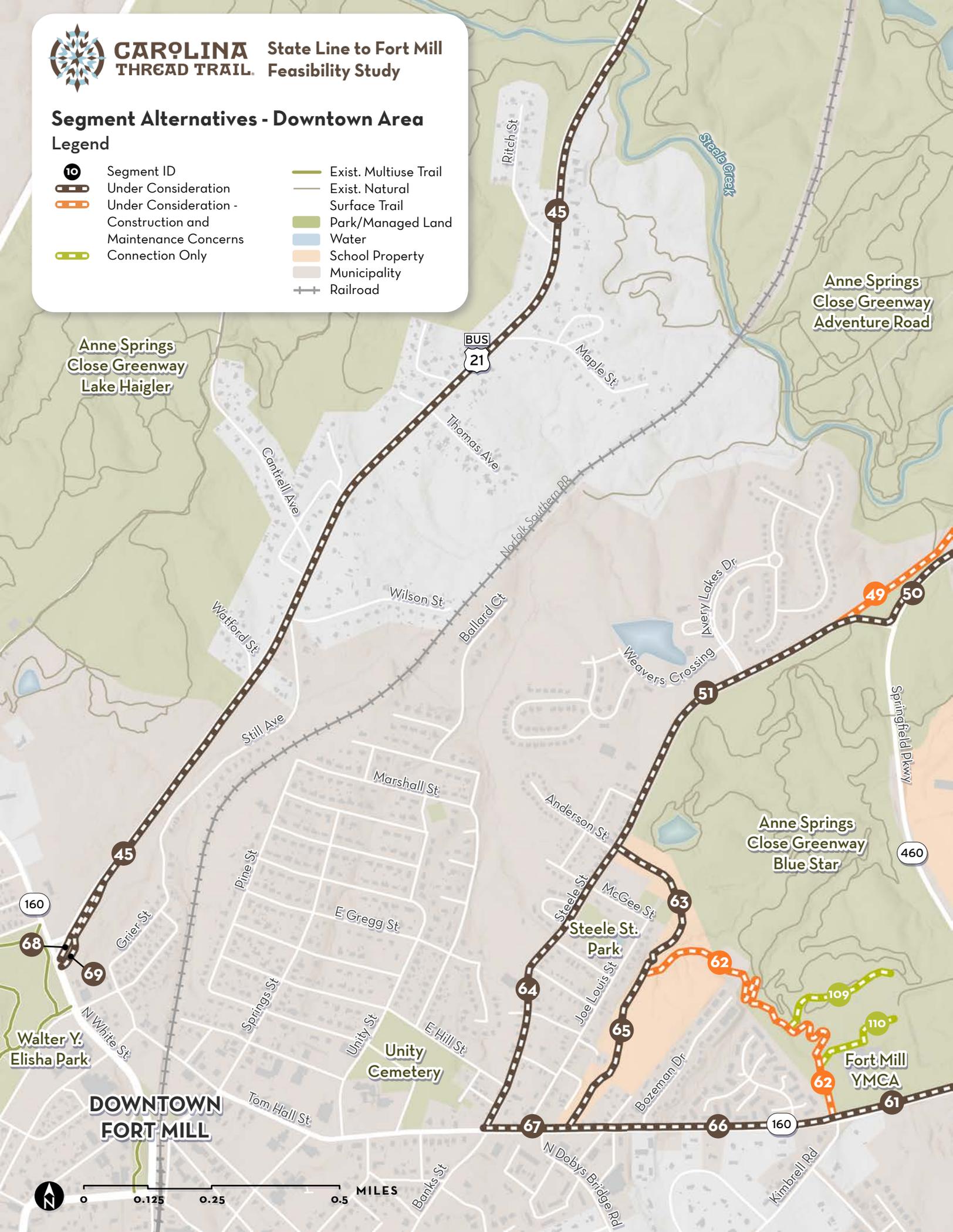


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

Segment Alternatives - Downtown Area

Legend

-  Segment ID
-  Under Consideration
-  Under Consideration - Construction and Maintenance Concerns
-  Connection Only
-  Exist. Multiuse Trail
-  Exist. Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad



Anne Springs
Close Greenway
Adventure Road

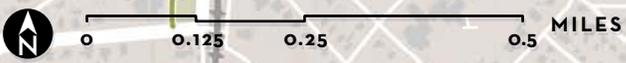
Anne Springs
Close Greenway
Lake Haigler

Anne Springs
Close Greenway
Blue Star

Walter Y.
Elisha Park

**DOWNTOWN
FORT MILL**

Fort Mill
YMCA



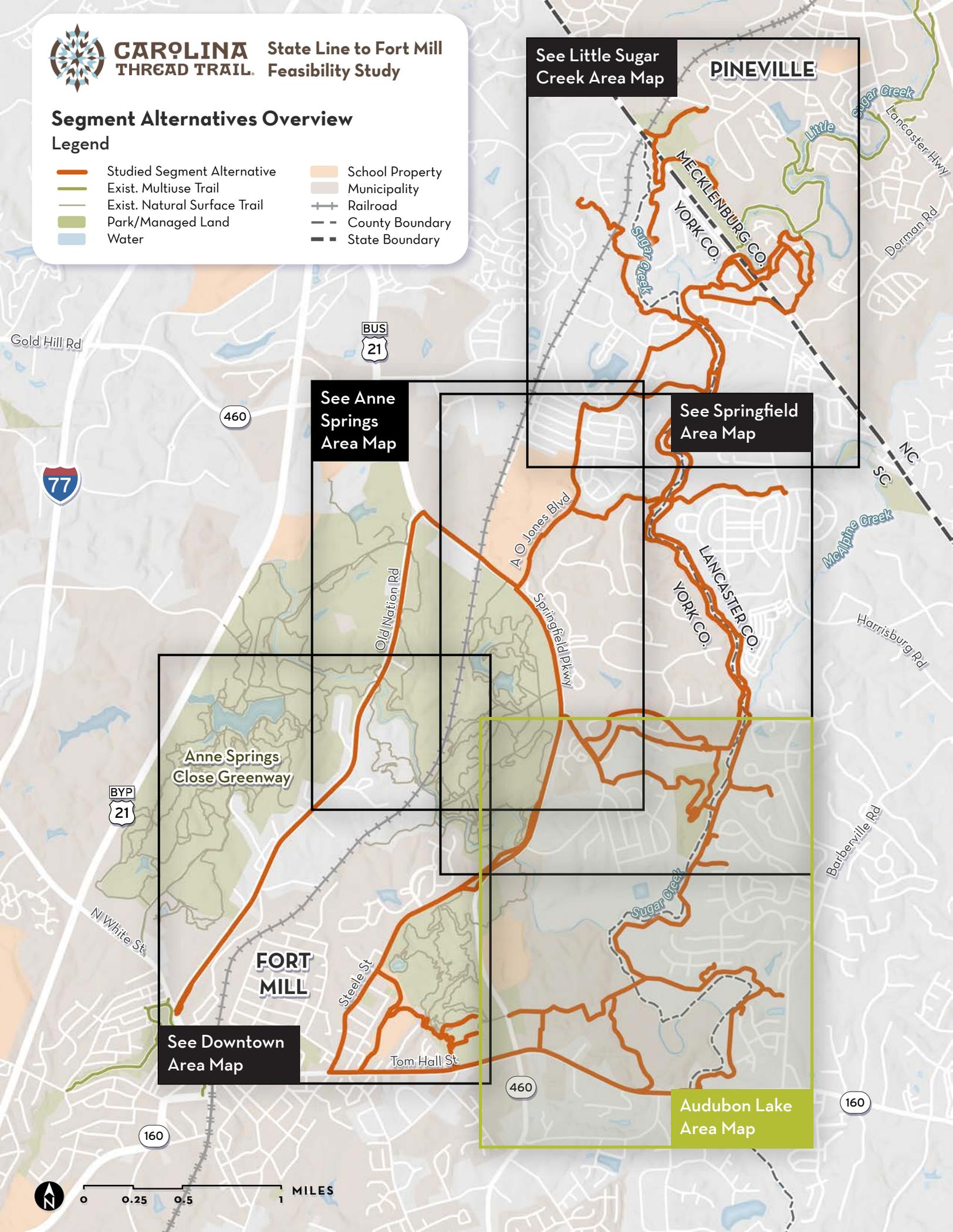


CAROLINA THREAD TRAIL State Line to Fort Mill Feasibility Study

Segment Alternatives Overview

Legend

- Studied Segment Alternative
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



See Little Sugar Creek Area Map

PINEVILLE

MECKLENBURG CO.
YORK CO.

Little Sugar Creek

Lancaster Hwy

Dorman Rd

See Anne Springs Area Map

Old Nation Rd

A O Jones Blvd

Springfield Pkwy

LANCASTER CO.
YORK CO.

MoAlpine Creek

Harrisburg Rd

See Springfield Area Map

LANCASTER CO.
YORK CO.

Barberville Rd

Anne Springs Close Greenway

FORT MILL

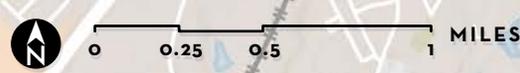
Steele St

Tom Hall St

See Downtown Area Map

Audubon Lake Area Map

Sugar Creek



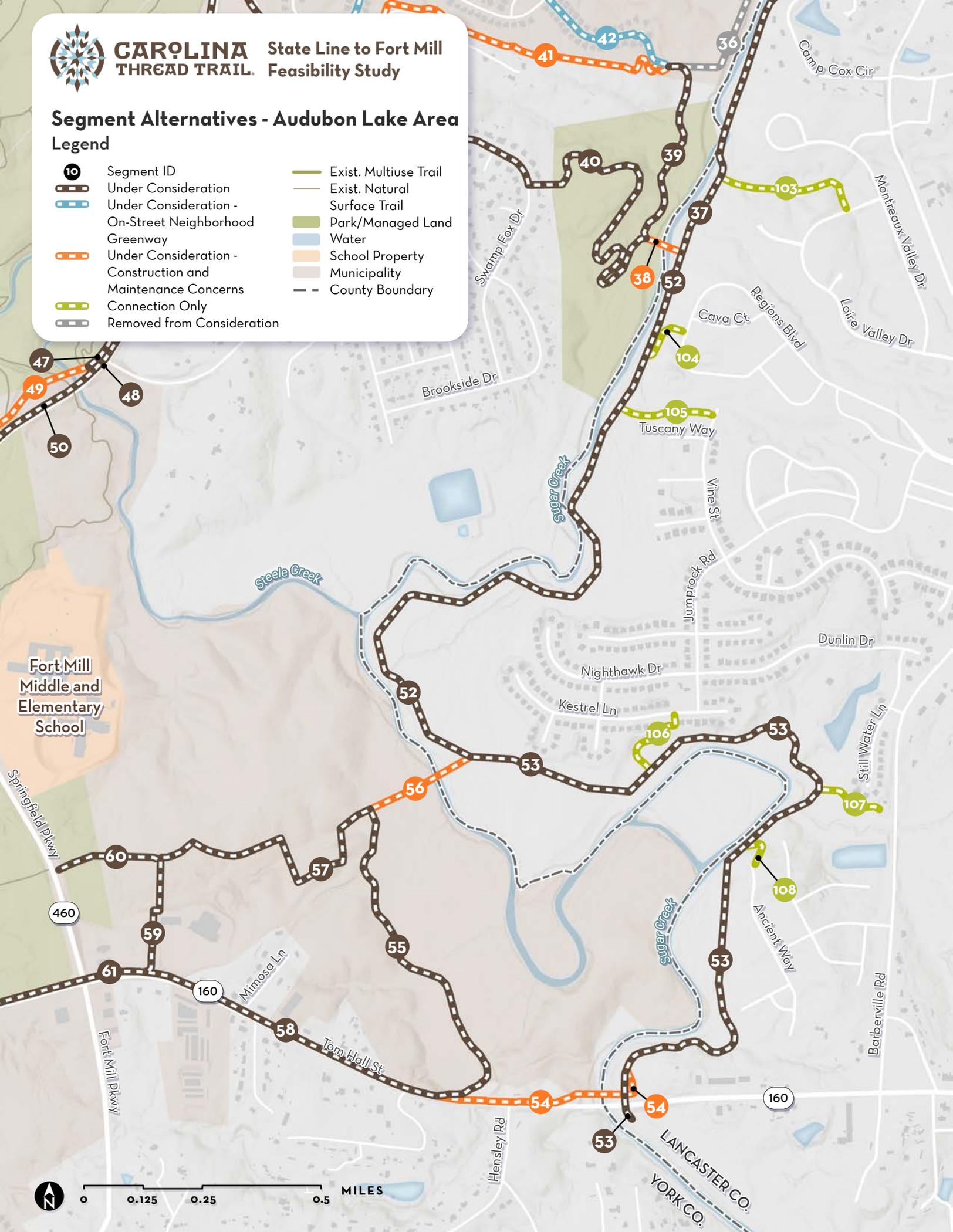


CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

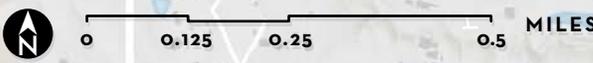
Segment Alternatives - Audubon Lake Area

Legend

- | | | | |
|--|---|--|------------------------------|
| | Segment ID | | Exist. Multiuse Trail |
| | Under Consideration | | Exist. Natural Surface Trail |
| | On-Street Neighborhood Greenway | | Park/Managed Land |
| | Under Consideration - Construction and Maintenance Concerns | | Water |
| | Connection Only | | School Property |
| | Removed from Consideration | | Municipality |
| | | | County Boundary |



Fort Mill Middle and Elementary School



Opportunities & Constraints Table

The table below corresponds to the maps on the previous pages and provides a detailed opportunities and constraints analysis for each segment alternative, including information on the segment limits, opportunities, constraints, notes,

and key stakeholders who will likely be involved if the segment is implemented in the future. This analysis, paired with Steering Committee and community input informed the segments that were removed from consideration.

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
1	Boatright Rd towards SC Border in Pineville Park	Utilize public parcel (Pineville Park), connection to neighborhood, potential future trailhead location, brings Sugar Creek as part of the corridor early on, gives momentum to the larger network	No direct connection to the Little Sugar Creek Greenway, significant topography / elevation change
2	Seam trail extension under railroad along Sugar Creek on the SC border in Pineville Park	Builds momentum to the larger network, utilizes public parcel (Pineville Park)	Permitting/coordination for trail under the Norfolk Southern rail bridge
3	Seam trail extension east side Sugar Creek on the Fresh Water Industries Property	Utilizes existing unpaved trail alignments, access for mountain bike trails, future park opportunity, educational opportunities	
4	Cross Charlotte Trail to Seam connector through Lakeview Park	Neighborhood connection, direct connection to Little Sugar Creek Greenway, utilizes public parcel (Lakeview Park & Little Sugar Creek), connection to Pineville Park, portions of trail within existing utility easements to reduce the amount of clearing	Significant topography/elevation change, not as direct for mainline connection between state line and Fort Mill as other alternatives
5	Seam trail extension east side of Sugar Creek on Fresh Water Industries Property including bridge to west side of Sugar Creek	Potential Seam trail alignment to avoid creek confluence area, gives momentum to the larger network, utilizes existing unpaved trail alignments, legacy bridge crossing location of Sugar Creek, connects to existing grade-separated railroad crossing, flat terrain	Bridge replacement is required, which also requires easement from two or more separate entities for installation
6	Seam trail extension along the west side of Sugar Creek	Utilizes existing unpaved trail alignments, utilizes existing sanitary sewer & power easement to reduce clearing, relatively flat terrain	Adjacent industrial land use

UNDER CONSIDERATION

CONNECTION ONLY

REMOVED FROM CONSIDERATION

UNDER CONSIDERATION - ON-STREET NEIGHBORHOOD GREENWAY

UNDER CONSIDERATION - CONSTRUCTION AND MAINTENANCE CONCERNS

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
1 Public Parcel	Under Consideration		Town of Pineville
1 Public Parcel	Under Consideration		Town of Pineville, Norfolk Southern
2 Private Parcels (1 owner)	Under Consideration		Fresh Water Industries, Inc.
2 Public Parcels, 1 Private Parcel (1 owner)	Under Consideration		Fresh Water Industries, Inc.
4 Private Parcels (4 owners)	Under Consideration		Fresh Water Industries, Inc., Emerald Lake Ventures LLC, Pats Properties LLC, DHG RP LLC
3 Private Parcels (3 owners)	Under Consideration		Emerald Lake Ventures LLC, Opus Regent Two LLC, Regal Manor Homeowner Association Inc

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
7	Trail along the west side of Sugar Creek	Utilize existing sanitary sewer easement along Sugar Creek, scenic overlook opportunities, grade separated crossing of Regent Parkway, flat terrain along easement south of Regent Parkway	Steep terrain from behind the church north of Regent Parkway, may require walls or boardwalk structure
8	Trail along Little Sugar Creek that connects to the Overlook Ridge Street connection to Grace View Dr	Connects directly to Little Sugar Creek Greenway, majority of trail on public parcel, off street trail option, neighborhood connection	Steep terrain along Little Sugar Creek, requires structures, proximity to back yards
9	Trail using the existing connection to Sugar Creek Greenway and connecting to Glenway Trail Ct	Connects directly to Little Sugar Creek Greenway, existing pond could be an amenity, utilizes public ROW.	Steep terrain, drainage, proximity to back yards
10	Little Sugar Creek Greenway Connection at Overlook Ridge St to Grace View Dr	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph). Neighborhood greenway segment could utilize existing sidewalks for pedestrians and road with pavement markings for cyclists	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding
11	Neighborhood Greenway along Grace View Dr from Overlook Ridge St to Glenway Trail Ct	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph). Neighborhood greenway segment could use existing sidewalks for pedestrians and road with pavement markings for cyclists	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding
12	Neighborhood Greenway along Grace View Dr from Overlook Ridge St to Huntley Glen Dr	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph). Neighborhood greenway segment could use existing sidewalks for pedestrians and road with pavement markings for cyclists	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding
13	Neighborhood Greenway ROW along Grace View Dr from Huntley Glen Dr to across from the Charlotte Water Station	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph). Neighborhood greenway segment could use existing sidewalks for pedestrians and road with pavement markings for cyclists	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
5 Private Parcels (5 owners)	Under Consideration		Regal Manor Homeowner Association Inc, Opus Regent Two LLC, Glynnwood Forest Owners' Association Inc, Christians for Messiah
2 Public Parcel, 2 Private Parcels (2 owners)	Under Consideration but Construction + Maintenance Concerns		Burnside Homeowners Association Inc, City of Charlotte
1 Private Parcel (1 owner), Public ROW	Under Consideration		Burnside Homeowners Association Inc
Public ROW	Under Consideration On-street Neighborhood Greenway		Burnside Homeowners Association Inc
Public ROW	Under Consideration On-street Neighborhood Greenway		Burnside Homeowners Association Inc
Public ROW	Under Consideration On-street Neighborhood Greenway		Burnside Homeowners Association Inc
Public ROW	Under Consideration On-street Neighborhood Greenway		Burnside Homeowners Association Inc

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
14	Trail along the backside of parcels from Grace View Dr	Trail utilizes sanitary sewer easement, down grade of homes to maintain privacy	
15	Neighborhood Greenway along Huntley Glen Dr from Grace View Dr to the bend in the road, then connects through undeveloped HOA parcels to Atwell Glen Ln	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph). Neighborhood greenway segment could use existing sidewalks for pedestrians and road with pavement markings for cyclists, creates an opportunity for place making	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding
16	Neighborhood Greenway along Glenway Trail Ct, Huntley Glen Dr, Garden Way Dr, Garrow Rd, Gilroy Dr, Bryson Rd, Shaw Ct to the existing power easement.	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph). Neighborhood greenway segment could use existing sidewalks for pedestrians and road with pavement markings for cyclists, Potential side path opportunity along Garrow Rd	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding, no sidewalks from Garrow Rd to the existing power easement
17	Trail continues from Little Sugar Creek to Atwell Glen Ln	Trail utilizes sanitary sewer easement behind homes to undeveloped parcel, opportunity for place making	Proximity to adjacent homes
18	Trail continues along Little Sugar Creek behind the community pool and under Gilroy Dr to behind homes on Bainbridge Pl	Natural environment user experience along Little Sugar Creek, potential overlook opportunities	Steep terrain, significant walls and/or boardwalk structures required, very constrained and potential impacts around community pool and under Gilroy Dr bridge
19	Neighborhood Greenway along Gilroy Dr to behind homes along Bainbridge Pl	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph), On-street facility could add sidewalk for pedestrians and road with pavement markings for cyclists	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding, no existing sidewalks
20	Neighborhood Greenway along Atwell Glen Ln to Gilroy Dr	Utilizes existing Public ROW, on-street facility on a low volume/speed road (less than 25 mph). On-street facility could use existing sidewalks for pedestrians and road with pavement markings for cyclists	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding
21	Trail from Gilroy Dr along power easement towards Shaw Ct	Utilizes power easement	Proximity to backyards

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
1 Private Parcel (1 owner)	Under Consideration		Burnside Homeowners Association Inc
1 Private Parcel (1 owner), Public ROW	Under Consideration On-street Neighborhood Greenway		Burnside Homeowners Association Inc
1 Private Parcel (1 owner), Public ROW	Under Consideration On-street Neighborhood Greenway		
1 Private Parcel (1 owner)	Under Consideration		Burnside Homeowners Association Inc
2 Private Parcels (1 owner)	Under Consideration but Construction + Maintenance Concerns		Burnside Homeowners Association Inc
1 Private Parcel (1 owner), Public ROW	Under Consideration On-street Neighborhood Greenway		Burnside Homeowners Association Inc
Public ROW	Under Consideration On-street Neighborhood Greenway		Burnside Homeowners Association Inc
1 Private Parcel (1 owner)	Under Consideration		Burnside Homeowners Association Inc

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
22	Trail along Little Sugar Creek to power easement	Natural environment user experience along Little Sugar Creek	Proximity to backyards
23	Trail alongside power easement to Shaw Ct	Utilizes power easement, direct routing, at-grade crossing on Shaw Ct is a low volume/speed road (less than 25 mph)	Proximity to backyards
24	Trail from Shaw Ct through power easement to Sugar Creek, turns south crosses under Regent Pkwy	Grade separated crossing under Regent Pkwy, Natural environment user experience along Sugar Creek	
25	Trail from Sugar Creek up to Regent Pkwy and a new bridge over Sugar Creek, sidepath along Regent Pkwy and along Starlight Dr to Convention Dr	Separation from traffic when crossing Sugar Creek, ample ROW along Regent Pkwy / Starlight Dr to accommodate sidepath	Multi-span bridge required, sanitary sewer easement on south side of Sugar Creek limits structure foundation locations
26	Trail along the north/east side of Sugar Creek	Natural environment user experience along Sugar Creek	Erosion along the bank of Sugar Creek, steep terrain
27	Bridge crossing over Sugar Creek	Connects York & Lancaster Counties, connects trail to dedicated trail easements from developers on Lancaster County side, potential trailhead on York County side.	Erosion along bank of Sugar Creek, sanitary sewer easement on east side of Sugar Creek limits structure foundation locations
28	Trail along the west side of Sugar Creek towards the existing Nation Ford Greenway	Utilizes sanitary sewer easement, flat terrain, along Sugar Creek	
29	Trail along the east side of Sugar Creek to The Pines at Sugar Creek development	Connects to new development that has greenway easements along Sugar Creek, ample separation from homes	Erosion along the bank of Sugar Creek, need for easements from private property owners
30	Trail along the west side of Sugar Creek that along alignment of the Nation Ford Greenway	Natural environment user experience along Sugar Creek, maintains homeowner privacy	Significant erosion along the bank of Sugar Creek, proximity to homes

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
1 Private Parcel (1 owner)	Under Consideration		Burnside Homeowners Association Inc
1 Private Parcel (1 owner)	Under Consideration		Burnside Homeowners Association Inc
2 Private Parcels (1 owner)	Under Consideration		Prestwick Development LLC, Burnside Homeowners Association Inc
2 Private Parcels (2 owners)	Under Consideration but Construction + Maintenance Concerns		Burnside Homeowners Association Inc, Glenwood Forest Owners' Association Inc
2 Private Parcels (2 owners)	Under Consideration		Burnside Homeowners Association Inc
2 Private Parcels (2 owners)	Under Consideration		Christians For Messiah
1 Private Parcel (1 owner)	Under Consideration		Christians For Messiah
13 Private Parcels (12 owners)	Under Consideration		Toll Southeast LP Company
3 Private Parcels (3 owners)	Removed from Consideration	Significant stream bank erosion undermined the former Nation Ford Greenway, not enough space to rebuild trail above new stream banks	S&G Financial Group LLC, Regal Manor Homeowners Association Inc, Nation Ford Land Trust

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS	
31	Trail along Convention Dr to Starlight Dr	Connects to neighborhoods along Starlight Dr following existing sidewalk, low volume/speed road (less than 25 mph), connects to potential future trailhead	Constrained roadway section to construct a sidepath, may consider sidewalk and pavement markings for cyclists along Convention Dr	
32	Sidepath along Starlight Dr from Convention Dr to A O Jones Blvd at the existing Nation Ford Greenway Trailhead	Widen existing sidewalk, utilize existing at-grade crossings of A O Jones Blvd		
33	Trail connecting the existing Nation Ford Greenway Trailhead to Sugar Creek	Utilizes existing trail alignment, along sewer easement, educational signs for the existing trail, improves existing trailhead, maintains homeowners' privacy		
34	Sugar Creek bridge crossing from the Nation Ford Greenway to Pines Sugar Creek Development in Lancaster County	Sugar Creek bank to bank allows for potential single span structure, connects Counties, connects to designated greenway easement on east side of Sugar Creek	Erosion along the bank of Sugar Creek; Construction access	
35	Sidepath along A O Jones Blvd from the existing Nation Ford Greenway Trailhead to Springfield Pkwy	Utilizes existing public ROW, existing at-grade crossings of A O Jones Blvd		
36	Trail along the west side of Sugar Creek on sanitary sewer easement from the Nation Ford Greenway to Springfield neighborhood	Utilizes existing sanitary sewer easement	Steep terrain requires boardwalk, close proximity to top of bank of Sugar Creek and golf course	
37	Trail along the east side of Sugar Creek from Pines Sugar Creek Development to the Bretagne neighborhood	Utilizes existing dedicated greenway easements within the developments along Sugar Creek, opportunity for placemaking, mobilization, maintains homeowners' privacy	Erosion along the bank of Sugar Creek and tributaries	
38	Bridge crossing over Sugar Creek at Bretagne neighborhood to Fort Mill owned parcel	Utilizes a publicly owned parcel, connects Counties, opportunity for placemaking	Erosion along the bank of Sugar Creek	
39	Trail along the west side of Sugar Creek from the Springfield neighborhood to the Fort Mill owned parcel	Utilizes a publicly owned parcel, connects to neighborhood, opportunity for placemaking		

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
2 Private Parcels (2 owners), Public ROW	Under Consideration		Christians for Messiah, S&G Financial Group LLC
Public ROW	Under Consideration		
3 Private Parcels (2 owners)	Under Consideration		Springfield Property Owners Association Inc, Nation Ford Land Trust
2 Private Parcels (2 owners)	Under Consideration but Construction + Maintenance Concerns		Pines Sugar Creek Development LLC, Nation Ford Land Trust
Public ROW	Under Consideration		Fort Mill school district
6 Private Parcels (4 owners)	Removed from Consideration	Limited space between eroding bank of Sugar Creek and golf course property; costs associated with boardwalk	Nation Ford Land Trust, Springfield Property Owners Association Inc, Leroy Springs & Company,
7 Private Parcels (7 owners)	Under Consideration		Pines Sugar Creek Development LLC, Bretagne Homeowners Association Inc
1 Private Parcel (1 owner), 1 Public Parcel (1 owner)	Under Consideration but Construction + Maintenance Concerns		Bretagne Homeowners Association, Town of Fort Mill
2 Private Parcels (2 owners), 1 Public Parcel (1 owner)	Under Consideration		Springfield Property Owners Association Inc, Town of Fort Mill

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
40	Trail starting from the Fort Mill owned parcel connecting to Merritt Rd through the Foxwood neighborhood	Utilizes a publicly owned parcel, utilizes existing ROW along Swamp Fox Dr, Pelham Ln and Merritt Rd, low traffic volume/speed (less than 25 mph except for Merritt Rd), on-street facilities could use pavement markings for neighborhood greenway section	Steep terrain; Overland connector section may not be as intuitive as off-street alternatives, utilize wayfinding
41	Trail starting on the east side of Springfield neighborhood following the south side of Kilburn Ln to Merritt Rd	Stays within HOA property	Existing drainage outfalls
42	Neighborhood greenway from the east side of the Springfield neighborhood following Kilburn Ln & Fairntosh Dr to Merritt Rd	Utilizes existing public ROW, on-street facility on a low volume/speed road (less than 25 mph). On-street facility could use existing sidewalks for pedestrians and road with pavement markings for cyclists	Overland connector may not be as intuitive as off-street alternatives, utilize wayfinding
43	Sidepath along Merritt Rd, crossing to west side of Springfield Pkwy	Sidepath to be on undeveloped parcel, crossing location of Springfield Pkwy allows for pedestrian refuge	Crossing a higher volume/higher speed road
44	Sidepath along west side of Springfield Pkwy from A O Jones Blvd to Merritt Rd	Utilize public ROW, connection to Nation Ford High School, 1 signalized crossing location at A O Jones Blvd	Crossing a higher volume/higher speed road
45	Sidepath along Springfield Pkwy and Old Nation Rd to Springland Associates Parcel at White St N	Utilizes existing public ROW for a majority of the segment, utilizes existing sidepath along Carolina Orchards frontage, grade separated crossing of railroad, connection to Anne Springs Close Greenway, road crossings at signalized locations	Along higher volume/higher speed roads
46	Sidepath along the west side of Springfield Pkwy from Merritt Rd to previous road alignment intersection along Leroy Springs Parcel	Utilizes public ROW,	Along higher volume/higher speed roads
47	Trail that follows previous road alignment ROW from Springfield Pkwy to Steele Creek	Relatively flat terrain, horizontal separation from vehicular traffic	
48	Sidepath along west side of Springfield Pkwy from previous road alignment intersection to Merritt Rd	Utilizes public ROW	Along higher volume/higher speed roads

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
1 Public Parcel (1 owner), Public ROW	Under Consideration		Foxwood Neighborhood
3 Private Parcels (1 Owner), Public ROW	Under Consideration but Construction + Maintenance Concerns		Springfield Property Owners Association Inc
1 Private Parcel (1 owner), Public ROW	Under Consideration On-street Neighborhood Greenway		Springfield Property Owners Association Inc
2 Private Parcel (2 owners), Public ROW	Under Consideration		Leroy Springs & Company Inc, Sycamore at Fort Mill Corp
Public ROW	Under Consideration		Leroy Springs & Co Inc
3 Private Parcels (1 owner), 1 Public Parcel (1 owner), Public ROW	Under Consideration		Carolina Orchards Community Association
Public ROW	Under Consideration		Leroy Springs & Co Inc
1 Private Parcel (1 owner)	Under Consideration		Leroy Springs & Co Inc
Public ROW	Under Consideration		Leroy Springs & Co Inc

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
49	Trail along previous road alignment from Merritt Rd to Steel St	Relatively flat terrain, horizontal & vertical separation from vehicular traffic	Existing bridge is washed out, new bridge required
50	Sidepath along Springfield Pkwy From Merritt Rd to Steele St	Utilizes public ROW	Requires structure modifications or separate pedestrian bridge
51	Sidepath along Steele St from Springfield Pkwy to Anderson St	Utilizes public ROW, existing sidewalk	
52	Trail along east side of Sugar Creek from Bretagne Neighborhood to Audubon Lake Neighborhood	Natural environment user experience along Sugar Creek,, connection to neighborhoods	Erosion along bank of Sugar Creek
53	Trail along west side of Sugar Creek from Audubon Neighborhood to SC 160	Natural environment user experience along Sugar Creek,, connection to neighborhoods	Erosion along bank of Sugar Creek
54	Trail to sidepath along SC 160 to Sleepy Hollow Rd. Includes new pedestrian bridge over Sugar Creek parallel to SC 160	Horizontal and vertical grade separation from vehicles at Sugar Creek	Along higher volume/higher speed road
55	Trail through future development from east side of Brook Run development to SC 160	Relatively flat terrain	Parcel to be developed, no detailed plans available at time of study
56	Sugar Creek bridge crossing from Lancaster County to York County at east side at Brook Run development	Relatively flat area, connects Counties	Parcel to be developed, no detailed plans available at time of study
57	Trail through the Brook Run Development from Sugar Creek to Avery Plaza Shopping Center	Utilizes proposed ROW for sidepath through parts of the development	Steep terrain
58	Sidepath along SC 160 from Sleepy Hollow Rd to Avery Plaza Shopping Center	Utilizes existing public ROW, connections from neighborhoods to businesses	Along higher volume/higher speed road
59	Sidepath along proposed Shumard Oak Rd from SC 160 to proposed Twin Lead Rd	Utilizes proposed ROW, connection from neighborhoods to business	Steep terrain
60	Sidepath along proposed Twin Lead Rd to Springfield Pkwy	Utilizes existing public ROW, low volume/speed road (less than 25 mph speed)	

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
1 Private Parcel (1 owner)	Under Consideration but Construction + Maintenance Concerns		Leroy Springs & Co Inc
Public ROW	Under Consideration		Leroy Springs & Co Inc
Public ROW	Under Consideration		Leroy Springs & Co Inc
3 Private Parcels (3 owners)	Under Consideration		
4 Private Parcels (4 owners)	Under Consideration		Audubon Lake Homeowners Association Inc, Overlook & Preserve at Barber Rock Homeowners Association Inc, Springland Associates LLC
2 Private Parcels (2 owners), Public ROW	Under Consideration but Construction + Maintenance Concerns		Overlook & Preserve at Barber Rock Homeowners Association Inc
1 Private Parcel (1 owners)	Under Consideration		Dan Ryan Builders South Carolina LLC
2 Private Parcel (2 owners)	Under Consideration but Construction + Maintenance Concerns		Audubon Lake Homeowners Association Inc, Dan Ryan Builders South Carolina LLC
1 Private Parcel (1 owner)	Under Consideration		Dan Ryan Builders South Carolina LLC
Public ROW	Under Consideration		SCDOT
Public ROW	Under Consideration		Dan Ryan Builders South Carolina LLC
Public ROW	Under Consideration		Dan Ryan Builders South Carolina LLC

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
61	Sidepath along SC 160 from Avery Plaza Shopping Center to Kimbrell Rd	Utilizes public ROW, connects neighborhoods to YMCA and businesses	Along higher volume/higher speed road
62	Sidepath / trail along YMCA parcel to future development parcel east of Joe Louis St	Connects neighborhood to YMCA and businesses, opportunity for placemaking	Steep terrain behind the YMCA parcel, proximity to existing trails of Anne Springs Close Greenway Blue Star
63	Trail connection from Steele St (at Anderson St) to future development parcel east of Joe Louis St	Off-street, connection to neighborhood	Parcel to be developed, no detailed plans available at time of study
64	Sidepath along Steele St from Anderson St to SC 160	Utilizes existing public ROW, connection to existing park	Steep terrain, tight setbacks
65	Trail through future development parcel east of Joe Louis St to SC 160	Off-street connection to SC 160/Tom Hall St	Parcel to be developed, no detailed plans available at time of study
66	Sidepath along SC 160 from YMCA to Bozeman Dr	Connects neighborhoods to YMCA and businesses, connects to future development	Along higher volume/higher speed road
67	Sidepath along SC 160 from Bozeman Dr to Steele St	Connects neighborhoods to businesses	Along higher volume/higher speed road
68	Sidepath along Old Nation Rd to SC 160	Connects neighborhoods to businesses, opportunity for placemaking, historical signs	Along higher volume/higher speed road
69	Trail through undeveloped parcel along Old Nation Rd to SC 160	Separation from roadway traffic, opportunity for placemaking, historical signs	
100	Trail from west side of Sugar Creek to Saxon Place neighborhood at Burnwald Ct	Existing grade separated crossing of railroad, connection to neighborhood, extends trail network west of railroad, relatively flat	Industrial area
101	Trail from south side of Sugar Creek to Barcroft Ln	Connection to neighborhood, relatively flat	
102	Trail from east side of Sugar Creek to Harrisburg Rd	Connection to neighborhood, relatively flat	Constrained areas between the development and adjacent parcels
103	Trail from east side of Sugar Creek to Loire Valley Dr	Connection to neighborhood	Proximity to backyards
104	Trail from east side of Sugar Creek to Regions Blvd	Connection to neighborhood	Proximity to backyards / existing stormwater detention basin

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
Public ROW	Under Consideration		SCDOT
2 Private Parcel (2 owners) 2 Public Parcels (2 owners)	Under Consideration but Construction + Maintenance Concerns		Leroy Springs, Clear Springs Land Company LLC
1 Private Parcel (1 owner)	Under Consideration		Clear Springs Land Company LLC, Paradise Community
Public ROW	Under Consideration		Paradise Community
1 Private Parcel (1 owner)	Under Consideration		Clear Springs Land Company LLC, Paradise Community
Public ROW	Under Consideration		SCDOT
Public ROW	Under Consideration		SCDOT
Public ROW	Under Consideration		SCDOT
1 Private Parcel (1 owner)	Under Consideration		Springland Associates LLC
3 Private Parcels (2 owners)	Connection Only		Saxon Place Owners Association Inc, Pats Properties LLC
1 Private Parcel (1 owner)	Connection Only		Regal Manor Homeowners Association Inc
1 Private Parcel (1 owner)	Connection Only		Toll Southeast LP Company
1 Private Parcel (1 owner)	Connection Only		Bretagne Homeowners Association Inc
1 Private Parcel (1 owner)	Connection Only		Bretagne West Homeowners Association Inc

ID	DESCRIPTION	OPPORTUNITIES	CONSTRAINTS
105	Trail from the east side of Sugar Creek to Vine St	Connection to neighborhood	
106	Trail from the east side of Sugar Creek to Kestrel Ln	Connection to neighborhood	
107	Trail from the east side of Sugar Creek to Barberville Rd	Connection to neighborhood, potential trailhead for parking opportunities	
108	Trail from the east side of Sugar Creek to Ancient Way	Connection to neighborhood	Proximity to adjacent homes
109	Trail along the back of the YMCA to Anne Springs Close Greenway Blue Star	Connection to Anne Springs Close Greenway Blue Star	Proximity / potential conflicts with existing trails at Anne Springs Close Greenway Blue Star
110	Trail along the back side of the YMCA building connecting to the parking lot	Connection to Anne Springs Close Greenway Blue Star, existing parking as potential trailhead	Many paths in the area may cause confusion

PARCEL IMPACTS	CURRENT STATUS	REASON FOR REMOVAL	STAKEHOLDERS
1 Private Parcel (1 owner)	Connection Only		Audubon Lake Homeowners Association
1 Private Parcel (1 owner)	Connection Only		Audubon Lake Homeowners Association
1 Private Parcel (1 owner)	Connection Only		Audubon Lake Homeowners Association
1 Private Parcel (1 owner)	Connection Only		Overlook & Preserve at Barber Rock Homeowners Association Inc
1 Private Parcel (1 owner)	Connection Only		Leroy Springs & Co Inc
1 Private Parcel (1 owner)	Connection Only		YMCA





CHAPTER THREE

3

COMMUNITY ENGAGEMENT

The recommendations in the Carolina Thread Trail Feasibility Study are rooted in an understanding of the challenges, needs, and desires faced by the community. This chapter compiles a summary of community and stakeholder engagement conducted.

Stakeholder Engagement

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Critical to the project's success is consistent, intentional coordination and collaboration with area stakeholders and residents. Key elements of stakeholder engagement throughout the project involved meetings with a steering committee, area stakeholders, the general public, and receiving comments through a public survey.

Steering Committee Meetings

A Steering Committee composed of area stakeholders, staff representatives from each jurisdiction, and interested citizens was formed to guide the planning process and provide key input and oversight for the project. The Steering Committee met four times throughout the life of the planning process.

STEERING COMMITTEE MEETING #1 - 5/31/2024

The first meeting discussed community access, funding, and maintenance for the trail, with challenges including funding, safety, and land acquisition. Opportunities for regional collaboration and economic development were also highlighted. The group reviewed potential routes and addressed stakeholder concerns.

STEERING COMMITTEE MEETING #2 - 8/27/2024

The second meeting reviewed the project's progress and public survey results, as well as ongoing stakeholder and neighborhood engagement efforts. The committee discussed the development of route alternatives, evaluation criteria, and a public meeting.

STEERING COMMITTEE MEETING #3 - 10/2/2024

The third meeting presented recommended corridor alignments, including key features such as bridges, trail types, and community connections. The committee discussed prioritization of corridors and the importance of community input.

STEERING COMMITTEE MEETING #4 - 2/12/2025

The fourth meeting covered the nine cutsheet projects recommended for implementation, along with the action plan with next steps for all stakeholders involved in the study development process.



Stakeholder Meetings

A series of meetings was held with key project stakeholders, including neighborhood and community associations, nonprofit organizations, and the Anne Springs Close Greenway. These meetings were held to gain insight on specific routing concerns and issues related to connectivity within the community.

AUDUBON LAKES HOA / INDIAN LAND GREEN - 6/26/2024

Attendees noted there is ample room behind existing homes on HOA property fronting Sugar Creek for a greenway trail. The HOA is amenable to considering a future trailhead access on Barberville Rd within HOA property.

PRESTWICK HOA / BURNSIDE HOA - 6/27/2024

At this meeting existing HOA greenway easements were discussed. There are options for moving the mainline greenway routing into South Carolina onto the Overlook Ridge St connector. Other topics of discussion included connectivity to Lakeview Park and neighborhood greenway routing options along the street network

PARADISE COMMUNITY - 7/9/2024

Attendees expressed a desire to maintain front yards on Steele St. The community is actively walking and biking, and has a history of using trails. The community enjoys connectivity through wooded trails and suggested exploring options behind Joe Louis St to provide a connection to the YMCA.

ANNE SPRINGS CLOSE GREENWAY - 7/10/2024

A bridge project for the Anne Springs Close Greenway (ASCG) trail network is underway at Springfield Pkwy. There is a desire to provide walking and biking access to the amenities at ASCG, and to be mindful of opportunities where the goals of ASCG and the study can overlap regarding trail alignment and parking areas.

CAROLINA ORCHARDS - 7/10/2024

Community members expressed support for the project and a desire to stay in communication with Springfield for connectivity.

Public Meeting

A public meeting was held on October 10, 2024 at Unity Presbyterian Church near Downtown Fort Mill to gather feedback on the proposed route alternatives and route prioritization criteria. Approximately 70 people attended the meeting and learned about the project, shared comments and feedback, and engaged with staff representing the Carolina Thread Trail, Town of Fort Mill, York County, Lancaster County, and the consultant team.

Feedback received at the meeting was generally positive and support for the expansion of trails in Fort Mill was a common theme. Other key takeaways heard include:

- » **Residents living near proposed corridors raised concerns over safety and privacy, especially related to increased traffic and parking issues.**
- » **There is a desire to avoid locating trailheads in residential neighborhoods and to maintain separation from nearby private homes.**
- » **Infrastructure improvements including safe access points with adequate parking, and sidewalk repairs, were requested.**

Key Quotes:

"I think cost will drive the approval. I think connecting to the NC state line is important. Future access to downtown Fort Mill can help with economic development. Thanks for asking for input."

"Wish we could connect to Fort Mill High School too!"

"Love the greenway and want more public access options that are safely accessible from neighborhoods it goes by without causing any congestion in that neighborhood."

"Gilroy has issues with traffic & speeding already – this increased when the current trail was put in. Cars have nowhere to park, other than the street, which causes more problems. There are no sidewalks to keep residents safe."

"Trails that keep distance from residential housing should be prioritized."

"Using Corridor A to avoid getting too close to Prestwick/Burnside houses is a good idea. The connection to the existing LSC Greenway is important for that."

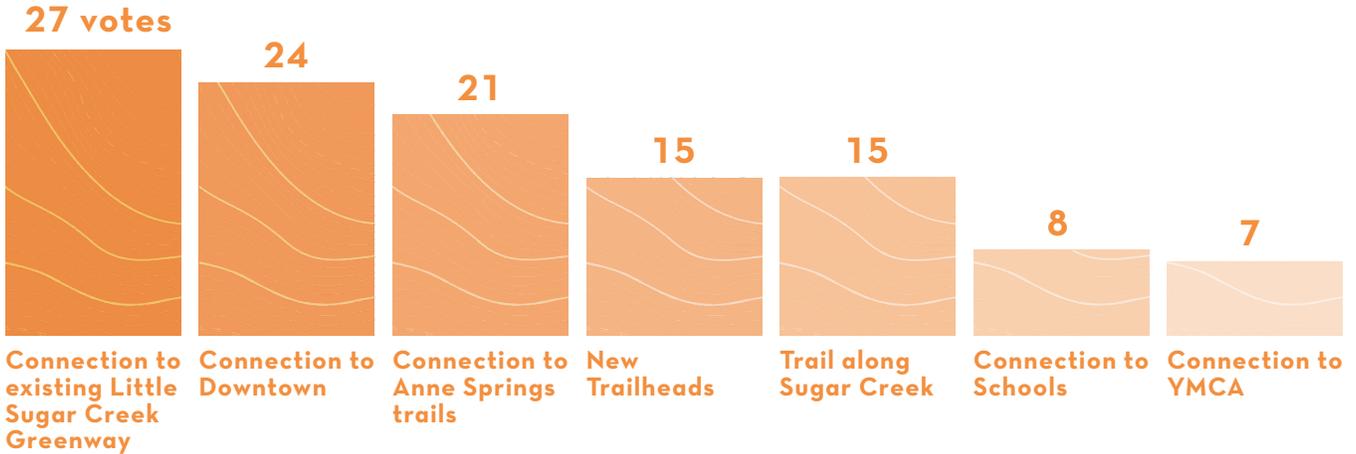


Community members sharing feedback at the public meeting

Trail Priority Exercise

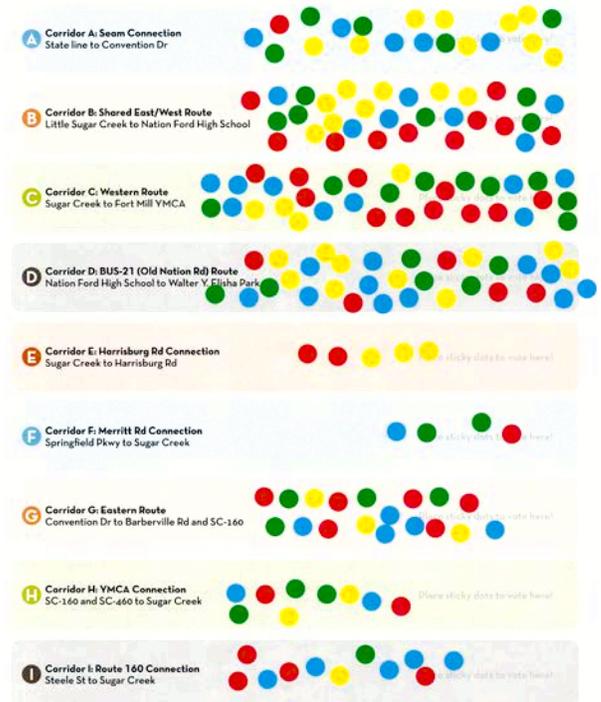
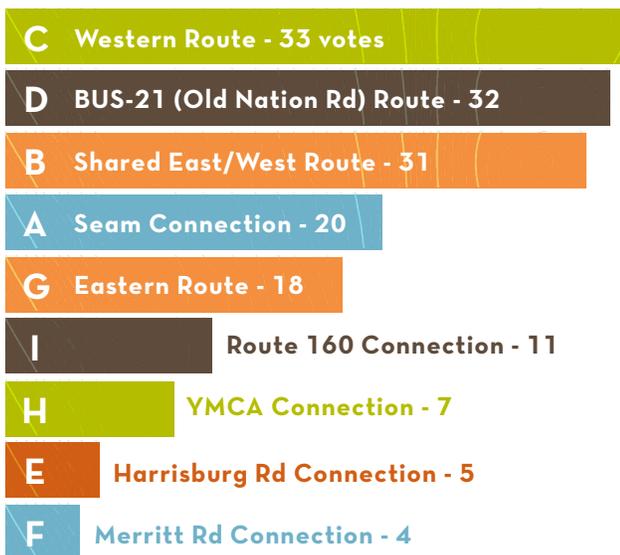
An exercise at the public meeting asked attendees to identify their top three short-term trail priorities. The results highlight a desire for connectivity between trail systems as well as to Downtown Fort Mill.

"Please prioritize streamside trails away from roads – better & safer for kids to learn to ride bikes etc. Also make sure there is parking access. Would love to see a stop downtown."



Corridor Ranking Exercise

An exercise at the public meeting allowed attendees to place sticky dots as votes for three corridors that they would like to prioritize for implementation. The results emphasize a strong desire for north-south connectivity between Fort Mill and the North Carolina border.



Voting results from the public meeting

Community Survey

A community survey for the Carolina Thread Trail Feasibility Study was conducted between May 11 and June 20, 2024. The survey was hosted on PublicInput.com and shared across multiple platforms to reach residents and community members across the study area. The survey recorded responses from 2,561 individual participants who collectively left 2,145 comments.



Survey open from
May 11 to June 20, 2024



The purpose of the community survey was to:

- » Introduce the project and gauge public support
- » Solicit and compile public comment on destinations, opportunities and challenges, user preferences, and alignment preferences
- » Fulfill requests for information

How do you currently use greenways and trails? Select all that apply.

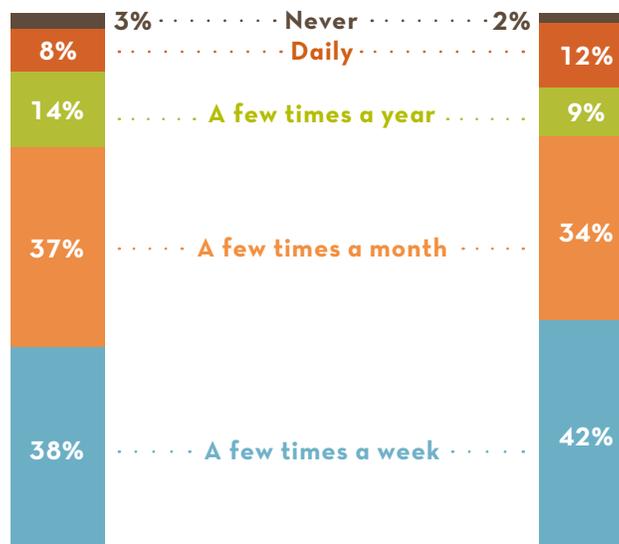
The vast majority of survey respondents use greenways and trails primarily for health and exercise (89% of respondents) or for recreation (82%). Fewer respondents use greenways and trails for running errands (9%), commuting (7%), or other reasons.

"Walk my dog," "Horseback riding," "Mental health by being outside and with nature"



How frequently do you use greenways and trails?

Survey respondents are active on greenways and trails, with 38% reporting using trails a few times a week and another 37% using trails a few times a month. Eight percent (8%) of respondents use trails daily, while 3% say they never use greenways and trails.



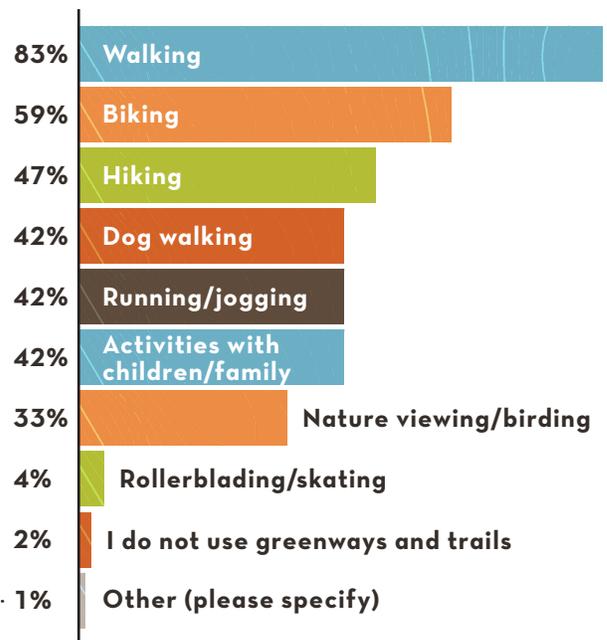
How frequently would you use the proposed segments of the Carolina Thread Trail once constructed?

42 percent (42%) of survey respondents say they would use proposed segments of the Carolina Thread Trail a few times a week. Another 34% would use the trail a few times a month, while those who would use it daily account for 12% of survey respondents.

What activities do you participate in along greenways and trails? Select all that apply.

Survey respondents participate in a variety of activities along greenways and trails, with most respondents identifying walking (83%) as a use for greenways. Additional popular activities include biking (59% of respondents), hiking (47%), and nature viewing/birding (33%). 42 percent (42%) of respondents selected dog walking, running/jogging, and activities with children/family.

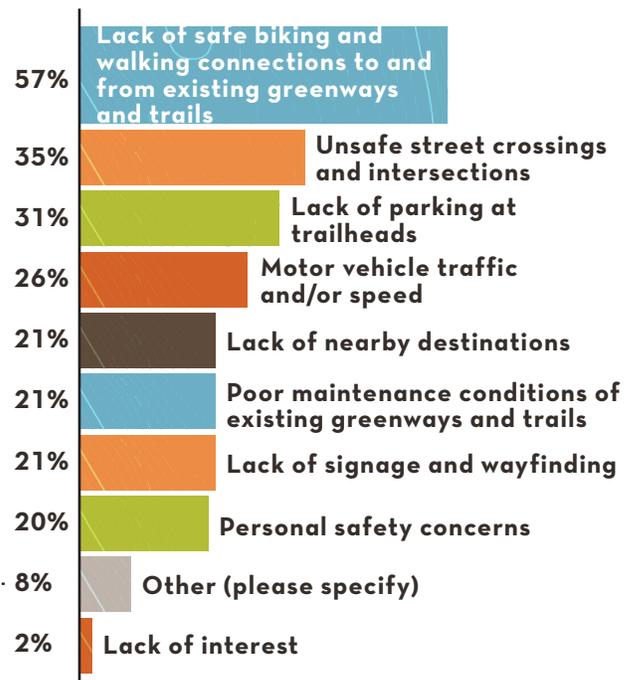
"Horseback riding," "Fishing," "Kayaking"



What factors discourage you from using greenways and trails? Select all that apply.

A lack of safe biking and walking connections to and from existing greenways and trails were identified by 57% of respondents as a barrier to greenway use. Other key factors discouraging greenway and trail use are unsafe street crossings and intersections (35% of respondents), lack of parking at trailheads (31%), and motor vehicle traffic and/or speed (26%). Personal safety concerns were cited by 20% of survey respondents, while only 2% expressed a lack of interest in using greenways and trails.

"Lack of water fountains and restrooms," "Distance to getting to trailhead and parking," "Lack of connectivity (like how Little Sugar Creek ends at a subdivision in Lancaster County)," "Unsafe bikers on multi-use trails"



What activities would you participate in along the proposed segments of the Carolina Thread Trail once constructed? Select all that apply.

Walking and biking remain the most popular greenway and trail activities among survey respondents, selected by 86% and 69%, respectively. Other activities participants plan to partake in on the proposed greenway include dog walking (45%), activities with children/family (43%), and nature viewing/birding (37%).

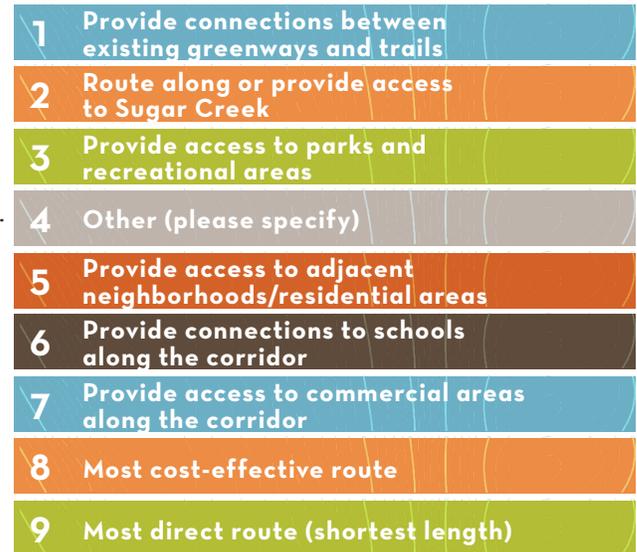
"I would use them if horses were included," "These need to be available to E-bikes," "Work commute"



What are your three (3) most important routing preferences for the proposed segments of the Carolina Thread Trail? Select up to three (3) routing preferences.

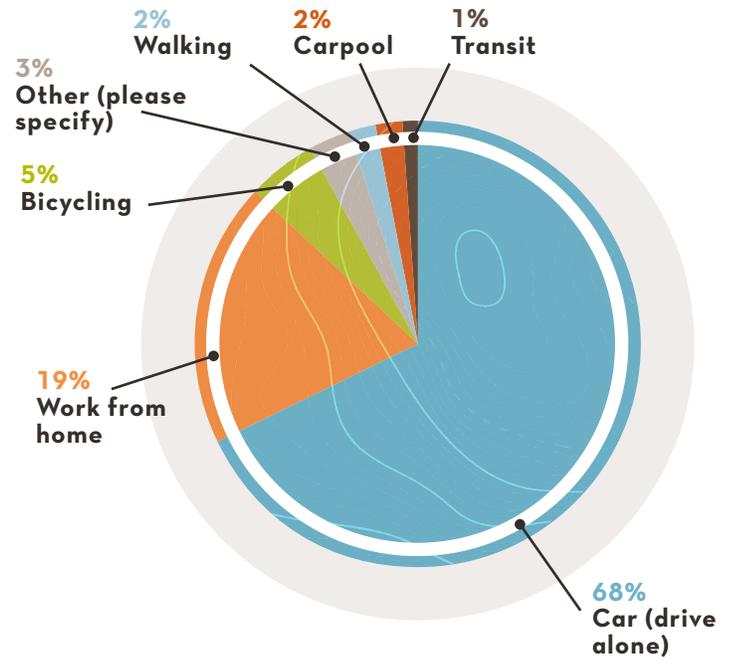
Survey respondents most desire a route that provides connections between existing greenways and trails, followed by a route that runs along or provides access to Sugar Creek and a route that provides access to parks and recreational areas. A route that is the most cost-effective was ranked second-lowest among the nine options, while the most direct route was ranked at the bottom, showing that respondents want a quality greenway that provides desired connections even at greater expense or length.

"Minimal intersections," "Route with the least environmental damage," "Connections to the most local and regional destinations and future transit," "Not near homes and neighborhoods," "Parking," "E-bike friendly"



What is your primary mode of transportation for commuting to work and/or school?

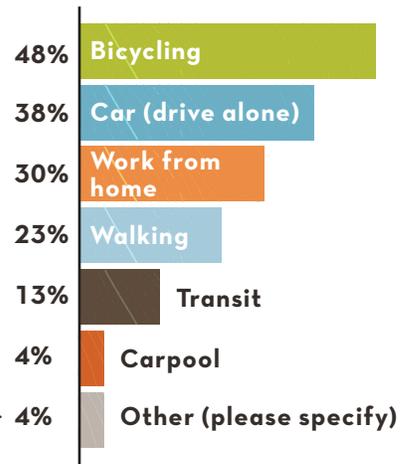
Most survey respondents (68%) report that they primarily commute by car, while an additional 19% work from home. A smaller number of respondents commute by bicycling (5% of respondents), walking (2%), carpooling (2%), or transit (1%). Those who selected "Other" indicated that they are retired or unemployed and do not commute.



Now consider your desired commute in the future. Which modes would you like to use? Select all that apply.

When asked to consider how they would like to commute in the future, many respondents selected other options, with bicycling (48% of respondents) being selected the most often. Only 38% of respondents expressed a desire to drive, which is lower than the number who currently do, and more respondents would like to commute by walking, transit, carpooling, or working from home.

"Retired," "Train/light rail," "Would love to bike but no shower at office"



Mapping Question: Use the pins to mark different types of destinations (home, work, school, shopping, recreation, etc.) that you would like to access via the proposed segments of the Carolina Thread Trail.

Survey respondents placed points on an interactive map to identify different types of destinations they would like to access using the proposed segments of the Carolina Thread Trail. Key destinations are listed below.

Employment Destinations

Springfield Town Center, Baxter Village, Kingsley, Downtown Fort Mill, MacMillan Park Dr

Residential Destinations

Springfield Golf Club, Audubon Lake, Heritage Lake, Knightsbridge

Recreational Destinations

Anne Springs Close Greenway, Sugar Creek, Fort Mill YMCA, Walter Y. Elisha Park, Forest Lake, Catawba River

School Destinations

Nation Ford HS, Sugar Creek ES, Springfield ES, Springfield MS, River Trail ES, Catawba Ridge HS, Fort Mill ES, Fort Mill MS

Shopping Destinations

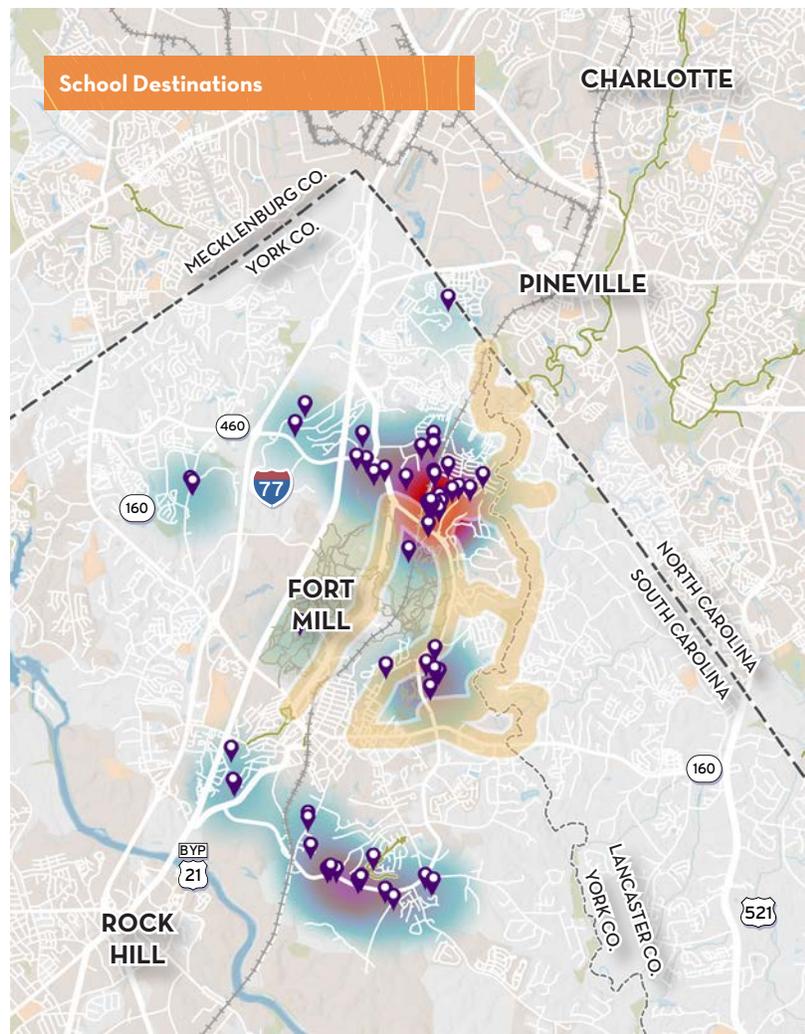
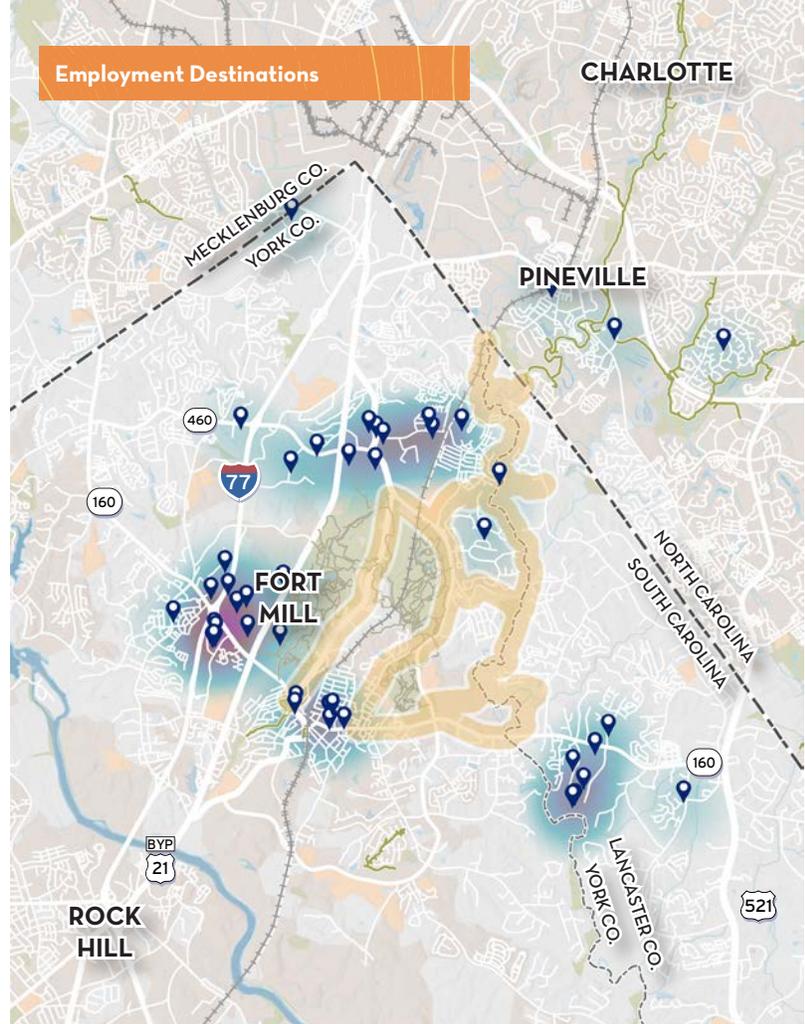
Downtown Fort Mill, Baxter Village, Springfield Town Center, Downtown Pineville, Carolina Place Mall, Carolina Pavilion Shopping Center

Other Destinations

Downtown Fort Mill, Baxter Village, Doby's Bridge Rd, Little Sugar Creek Greenway

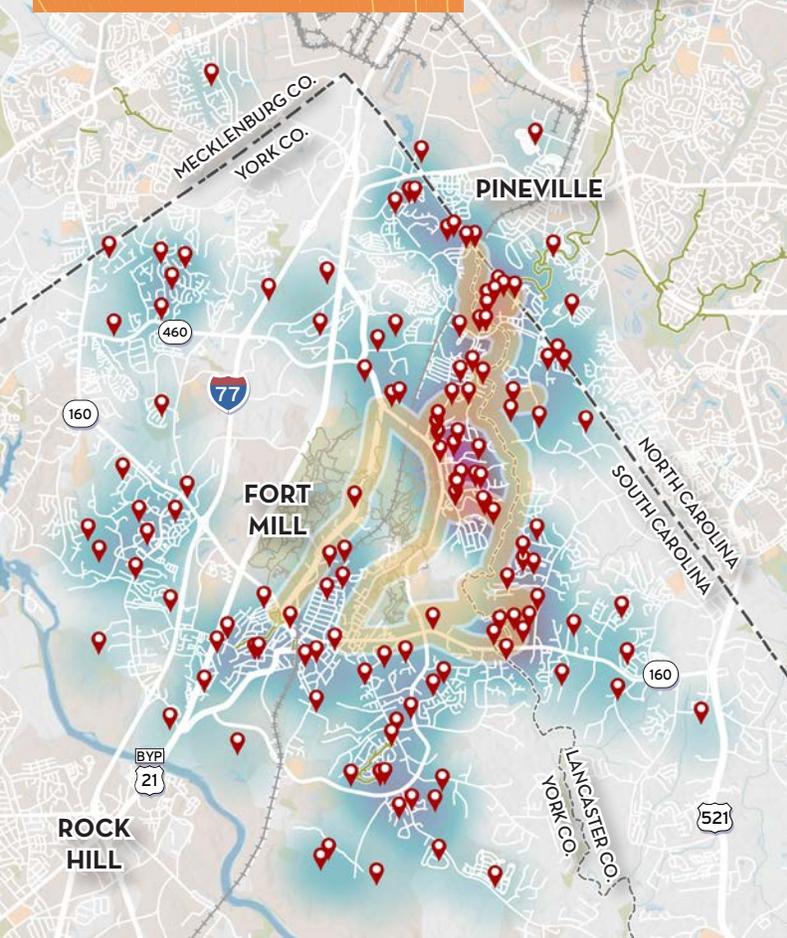
Map Legend

	Study Corridors		Destination Type Employment
	Multituse Trail		Residential
	Natural Surface Trail		Recreation
	Railroad		School
	County Boundary		Shopping
	State Boundary		Other
	Park/Open Space		Low Point Density
	School		High Point Density
	Municipality		
	Water		



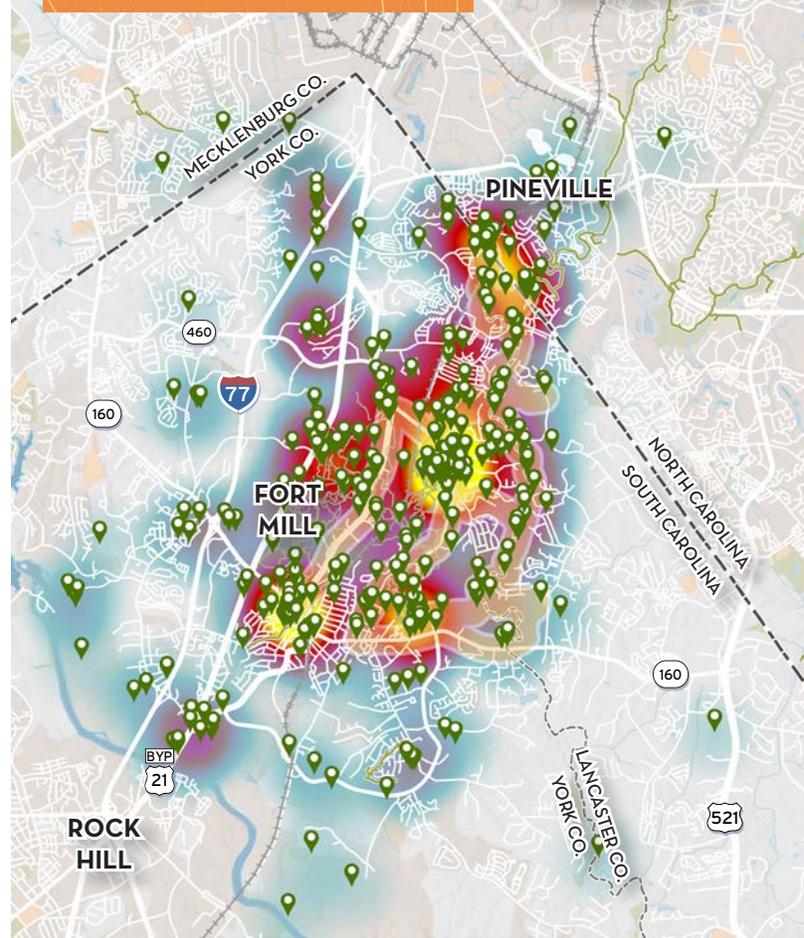
Residential Destinations

CHARLOTTE



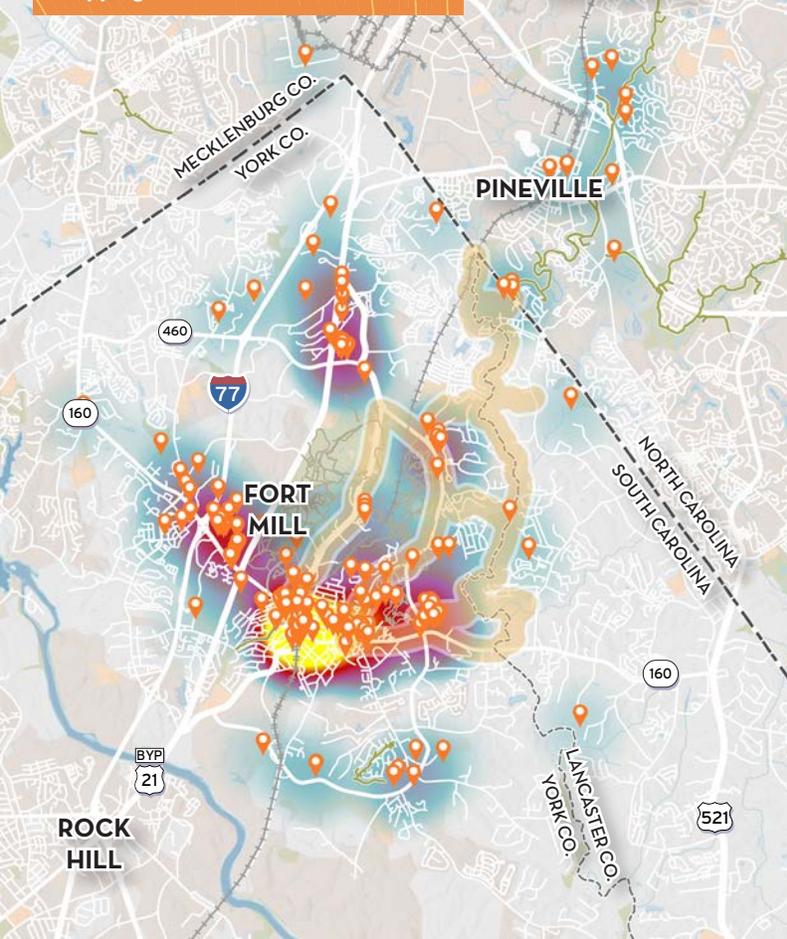
Recreation Destinations

CHARLOTTE



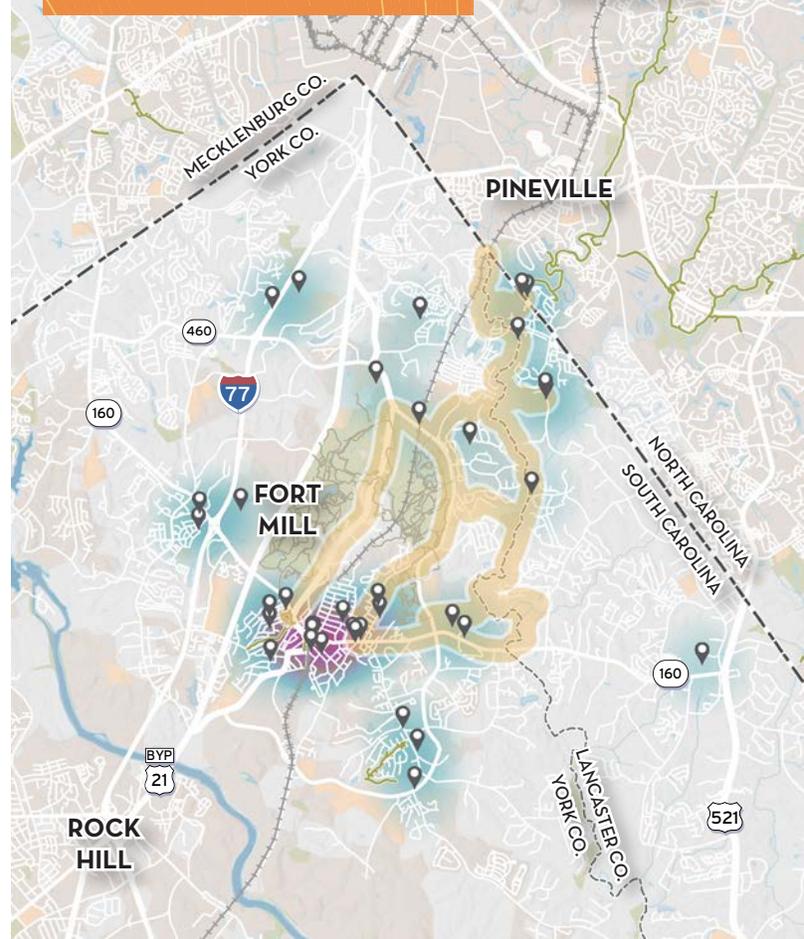
Shopping Destinations

CHARLOTTE



Other Destinations

CHARLOTTE





CAROLINA State Line to Fort Mill
THREAD TRAIL. Feasibility Study

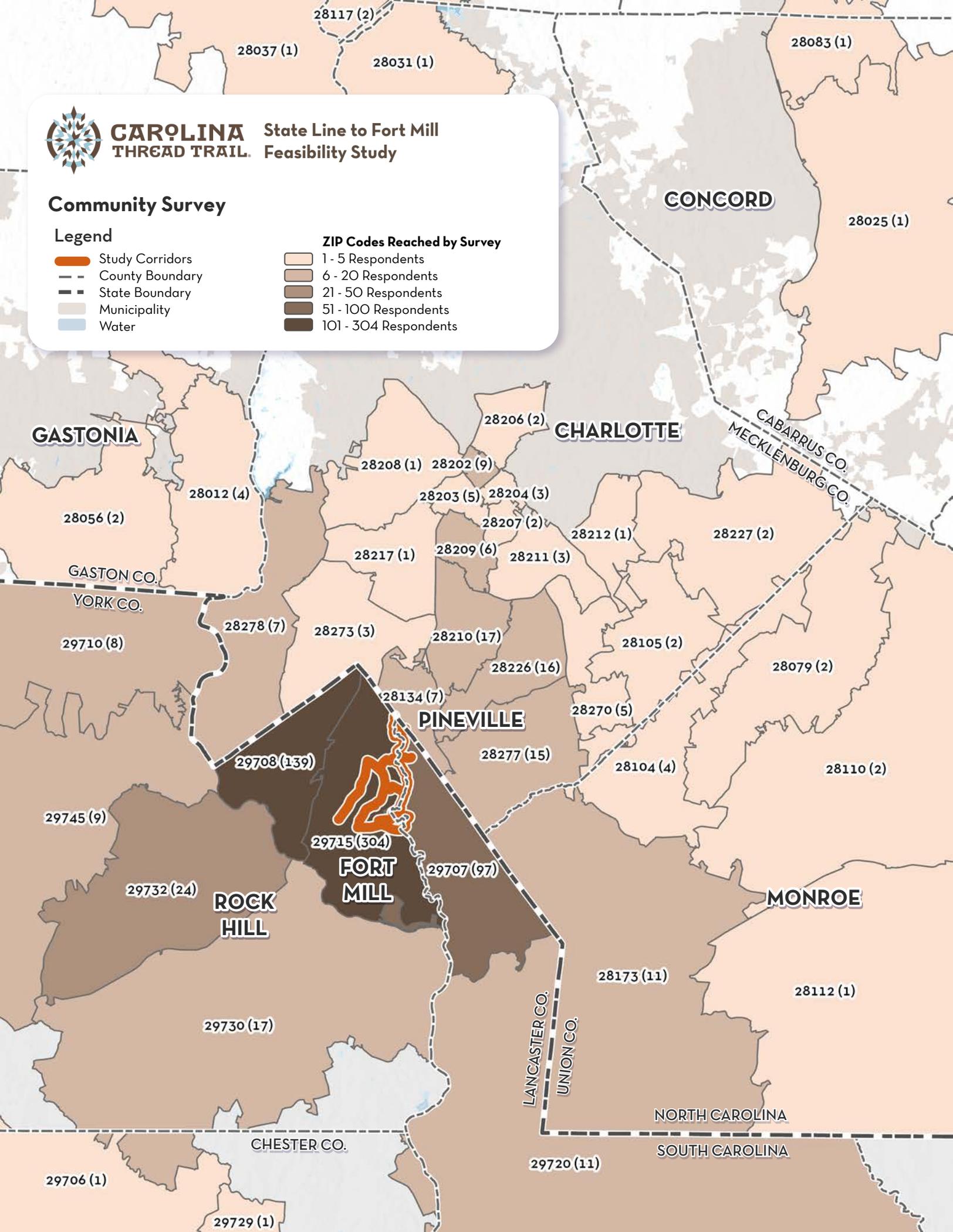
Community Survey

Legend

- Study Corridors
- County Boundary
- State Boundary
- Municipality
- Water

ZIP Codes Reached by Survey

- 1 - 5 Respondents
- 6 - 20 Respondents
- 21 - 50 Respondents
- 51 - 100 Respondents
- 101 - 304 Respondents



What do you think would increase trail usage or bring new users to the Carolina Thread Trail?

Key theme: Connectivity

"Connection to neighborhoods, other trails, and end destinations such as downtown Fort Mill, Anne Springs, schools, and Baxter Village to form a network of trails to allow easy access and transport from home to destinations separated from cars and the roads."

"Connection to the NC Sugar Creek Greenway trail."

"Convenient access to several destinations—leisure, school, commercial. Workout stations. Water refill stations"

"Access to Charlotte and more commercial stops like you could go to a concert or coffee shop and use it to walk or bike to it."

Key theme: Trail Amenities and Parking

"Vendors at the start of the trails like a food truck that sells coffee, beverages and snacks. More organized races and events on the greenway. More bike and scooter rentals in the suburban areas, informational signs near businesses, occupied structures that can be rented or used for activities like picnic tables, shelters, more bathrooms, small fishing piers, more bridges to cross for fishing and nature walks, love the art so more of that is great."

"Safe, well lit parking areas at trailheads, public Restrooms, clear signage, access in and out of neighborhoods. I really enjoy using the Little Sugar Creek Greenway from Regent Park but the lack of parking spaces and the condition of the parking area make it difficult to access."

Key theme: Safety and Roadway Crossings

"I think introducing more safety features like traffic rules (speed limits and lanes for bikers), police presence, 911 location signs, cameras, and emergency call boxes would help women feel more secure and likely to use greenways."

"More connecting points to neighborhoods to feed in and safe crossing points over major roads"

"Designated bike lanes, designated walking lanes so the two don't conflict via safety concerns."

Key theme: Branding and Marketing the Trail

"Better maps, and an app for easy access"

"Signs of the trail along busy roads, signs on the trail, and good social Media marketing. Anne Springs promotion of the trail"

Please provide any additional comments or feedback for the Carolina Thread Trail Feasibility Study.

Key theme: Support for CTT Growth

"Love the Carolina Thread Trail system and have been longing for connection further south to Lancaster. Would love to be able to bike from Indian Land to Lancaster on trail instead of country roads which are becoming so busy they are no longer safe nor fun for cyclists."

"Consider how the ASC Greenway membership system would work with a larger connection like this. Put heavy time and thought into how it would work or not work."

"Partnering with Duke energy to utilize power line cuts for new trails could help to connect other cities and neighborhoods. Would be a great way to connect Tega Cay and Fort Mill to southern Charlotte and Rock Hill."

"If the proposed Carolina Thread Trail sections in SC are as nice as the NC sections, then this will be wildly successful as a recreation option for SC residents who live near the thread trail access points, and who can access restaurants (rest or destination points) within an hour bike ride."

Key theme: Accessibility

"I think it would be helpful to include sidewalks in neighborhoods that lead to the greenways. I would love to be able to run and commute on the greenways daily but I have to drive to the Greenway and I live in Indian Trail."

"Whatever you decide make it wide enough to accommodate bikers, runners, walkers. Some greenways aren't wide enough"

"Creating enough parking at trail access points that are not restricted by HOAs."

"One thing that has always shocked me about Fort Mill is there's a big beautiful greenway in the middle, but no way to bike or walk to it without risking your life getting there...how could there be no safe crosswalks or walking trails to and along the exterior edge of the greenway - it's insane!"

Key theme: Greenway Routing Concerns

"Keep Anne Springs Greenway for members and paying public. If it is interconnected with outside trails then why be a member? Protect nature from overdevelopment."

"Please do not put trails in the back of residential property especially in gated communities"

"I live near the proposed sugar creek area and this zone of sugar creek frequently floods so that will need to be considered for trail longevity"





CHAPTER FOUR

4

Evaluation & Recommendations

To identify a recommended route alignment for each corridor in the study area, segment alternatives were evaluated according to a set of feasibility criteria. The resulting network includes a set of consistent trail design standards and considerations for safe intersection and crossing designs.

Route Alternatives

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From the Opportunities and Constraints analysis, a library of segments and connections were identified along each study corridor. For each corridor one or multiple route alternatives were created by combining feasible segments and connections into a trail for the length of the corridor.

Corridors with Multiple Alternatives

Where multiple feasible route alternatives are identified, an additional analysis is conducted to compare the alternatives against a set of route evaluation criteria identified by the project team and Steering Committee members. This process ultimately delivers a recommended alignment for each of the nine study corridors

Three of the nine corridors produced multiple feasible route alternatives—Corridors B, C, and F. The following section describes the methodology and criteria used to evaluate these alternatives and identify recommended alignments for Corridors B, C, and F.

Corridors with One Alternative

Where only one feasible route alternative is identified, no further evaluation analysis and decision matrix is included.

One feasible route alternative is identified for six of the nine study corridors—A, D, E, G, H, and I.

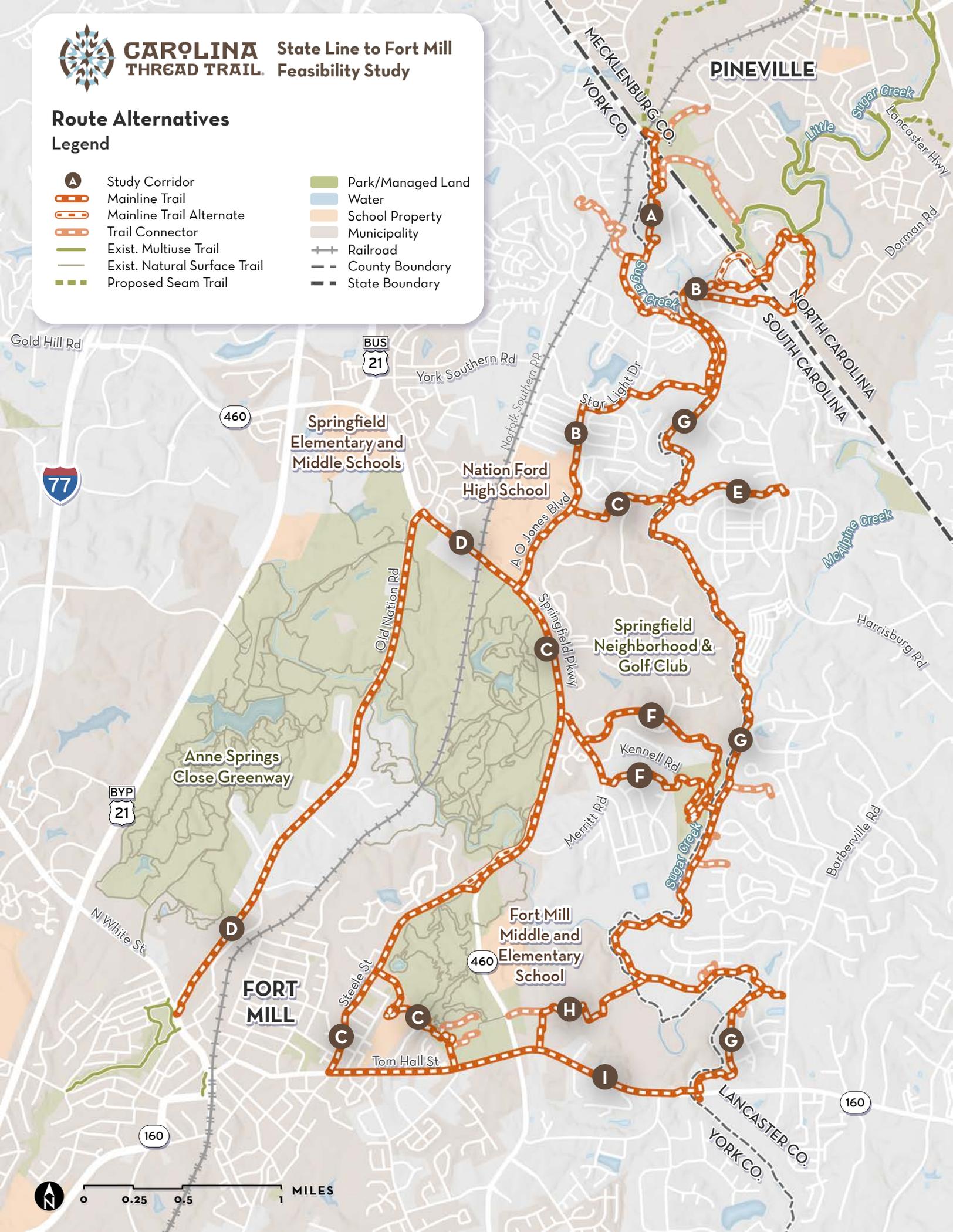


**CAROLINA
THREAD TRAIL** State Line to Fort Mill
Feasibility Study

Route Alternatives

Legend

- Study Corridor
- Mainline Trail
- Mainline Trail Alternate
- Trail Connector
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Proposed Seam Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



Evaluation Methodology

To evaluate the route alternatives for Corridors B, C, and F, a scoring exercise was developed with a tiered ranking system for twelve route evaluation criteria. The criteria were developed in collaboration with municipal, county, and Carolina Thread Trail staff and reflect a variety of considerations for the selection of a recommended route alternative. A description of each is included below.

PHYSICAL FEASIBILITY + CONSTRUCTABILITY

The ability to successfully engineer, permit, and maintain each alternative is a critical consideration for determining feasible options for the route alternatives, especially as it relates to any proposed crossings of roadways and streams.

DESIRED CONNECTIVITY

To maximize use of the facility, determine which route alternatives connect (in an efficient manner) key origins and destinations identified by the public and other stakeholders.

COMMUNITY PRIORITIES

To ensure consistency with public preferences, goals identified in previous planning efforts and feedback from public engagement/stakeholder outreach activities are utilized to evaluate the route alternative.

COST EFFECTIVENESS

The magnitude of the total life-cycle cost for each alternative (including design, construction and ongoing maintenance) is a significant factor in determining which alternative to implement.

ENVIRONMENTAL IMPACTS

The ability of each alternative to minimize impacts to streams, wetlands and other jurisdictional features (including associated buffers, floodplain elevations, and other environmental factors) during construction and operation of the proposed facility.

ACCESSIBILITY & USER EXPERIENCE

Convenience of use and accommodation for users of all ages and abilities to ensure the recommended route is a community amenity designed for universal use.

PROPERTY IMPACTS

Real estate acquisition can play a major role in project cost and schedule. The extent to which the route alternatives utilize publicly-owned properties, existing easements, and public ROW and limit impacts to/garner support from private landowners is considered.

POTENTIAL FUNDING OPPORTUNITIES

Diversity of funding options from a variety of potential sources, available funds, and project competitiveness for each route alternative is considered.

TRAILHEAD OPPORTUNITIES

The ability to incorporate trailheads and amenities into the design of the greenway, supporting access and a quality trail experience.

LEADERSHIP SUPPORT

The level of support of the trail from community and elected leaders responsible for obtaining funding and prioritizing trail segments.

TRAFFIC IMPACTS

The magnitude in which the design of each route alternative impacts vehicular traffic and associated temporary impacts during construction is considered.

IMPLEMENTATION TIMEFRAME

The estimated timeframe to prioritize, fund, design, and construct each route alternative is considered, especially in conjunction with community priorities for project completion.

Decision Matrix & Scoring

For corridors with more than one feasible route alternative, a scoring exercise was conducted using the evaluation criteria shared on the preceding page to compare the relative strengths of each alternative. The results of this analysis, in addition to community and stakeholder input, helped inform the selection of preferred route alternatives for each corridor.

Corridor B

Corridor B consists of two main alternatives between Shaw Ct (Lancaster County) and the Little Sugar Creek Greenway (Pineville, NC)

From Shaw Ct (Lancaster County) to Nation Ford High School (Fort Mill) there is only one alternative, which follows Sugar Creek, Convention Dr, Star Light Dr (York County), and A O Jones Blvd.

Based on the route alternative selection criteria in addition to an analysis of opportunities and constraints along this corridor, Alternative B1 was identified as the recommended route alignment.

ALTERNATIVE B1

Alternative B1 routes east from Shaw Ct along a transmission line easement before crossing Gilroy Dr and transitioning to an on-street trail for a short segment of Atwell Glen Ln. The trail then branches away from the roadway, crosses Grace View Dr, and terminates at the Little Sugar Creek Greenway in Mecklenburg County, NC. An alternative route takes the trail west of Bainbridge Pl to route along the east bank of Little Sugar Creek.

ALTERNATIVE B2

Alternative B2 routes primarily along existing neighborhood streets, following Shaw Ct, Bryson Rd, Gilroy Dr, and Garrow Rd to the state line. The trail then uses Garden Way Dr, Huntley Glen Dr, and Glenway Trail Ct before transitioning to an off-street trail to connect to the Little Sugar Creek Greenway.

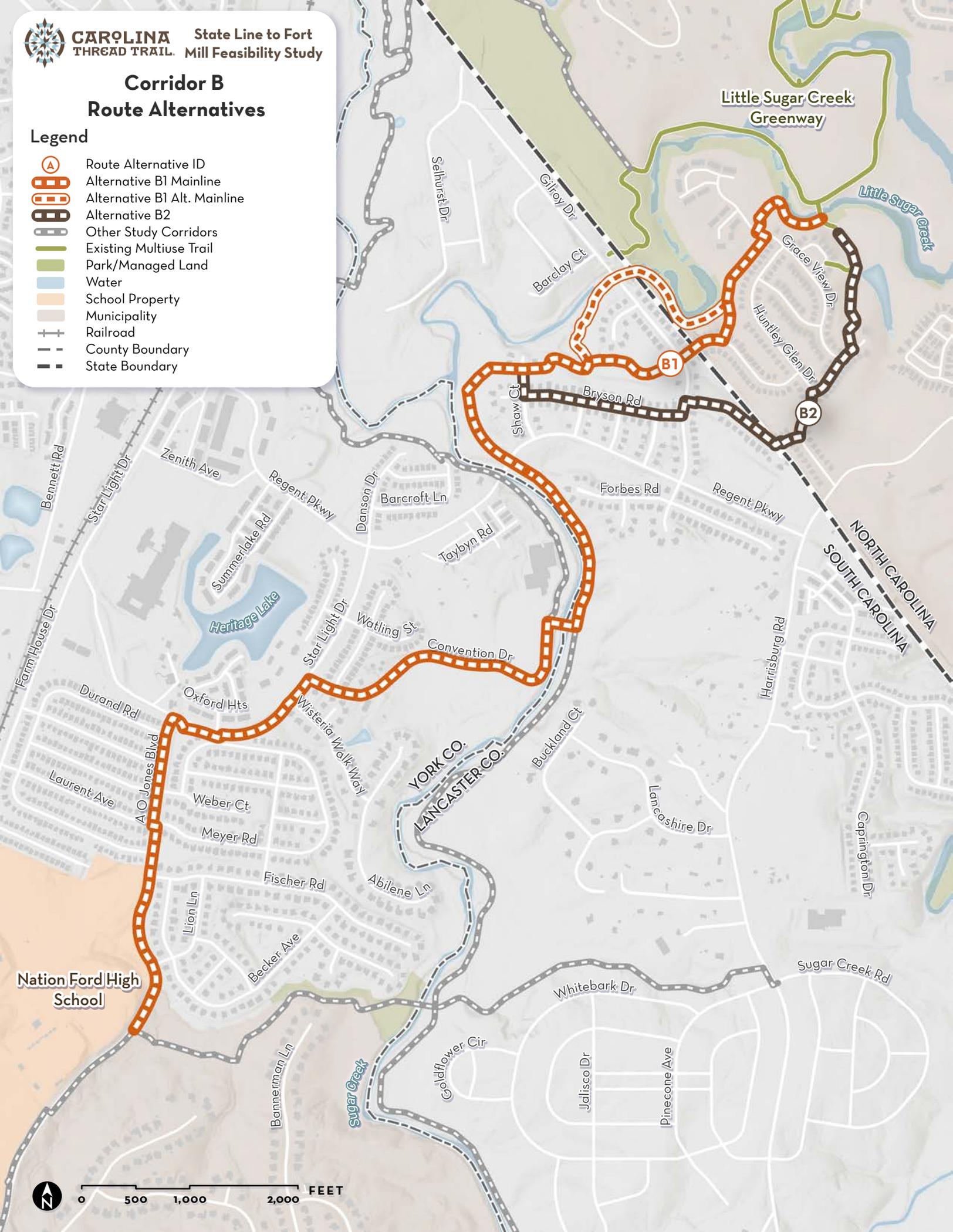
ROUTE ALTERNATIVE SELECTION CRITERIA	ALTERNATIVE B1	ALTERNATIVE B2
Physical Feasibility & Constructability	Medium	Medium
Desired Connectivity	High	High
Community Priorities	High	Medium
Cost Effectiveness	Medium	High
Environmental Impacts	Medium	High
Accessibility & User Experience	High	Low
Property Impacts	Medium	Medium
Potential Funding Opportunities	Medium	Medium
Trailhead Opportunities	Low	Low
Leadership Support	Medium	Medium
Traffic Impacts	Medium	Medium
Implementation Timeframe	High	High

Key: High = Most Desirable; Low = Least Desirable

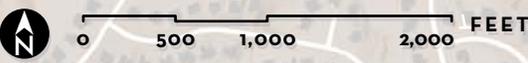
Corridor B Route Alternatives

Legend

- Route Alternative ID
- Alternative B1 Mainline
- Alternative B1 Alt. Mainline
- Alternative B2
- Other Study Corridors
- Existing Multiuse Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



Nation Ford High School



Corridor C

Corridor C connects Sugar Creek at the old Nation Ford Greenway to Tom Hall St near downtown Fort Mill, using A O Jones Blvd, Springfield Pkwy, and Steele St.

From Sugar Creek at the York/Lancaster county line to the Steele St and Anderson St intersection there is only one alternative with an option to either construct a new pedestrian bridge over Steele Creek, or utilize the one currently under construction over Steele Creek as a part of the Anne Springs Close Greenway Trail Network.

There are two alternatives between Anderson St and Tom Hall St for Corridor C, which offer a choice of facility types and endpoints.

Based on the route alternative selection criteria in addition to an analysis of opportunities and constraints along this corridor, Alternative C2 was identified as the recommended route alignment for the southern portion of Corridor C,

ALTERNATIVE C1

Alternative C1 continues along Steele St, heading south from Anderson St as a sidepath through the Paradise community. The trail will connect to Tom Hall St, following the west side of Steele St by expanding the width of the existing sidewalk.

ALTERNATIVE C2

Alternative C2 diverges from Steele St at Anderson St, following a new alignment past Green Hill Cemetery and through undeveloped land to the Fort Mill YMCA. A portion of the route falls on property where a proposed Early Childhood Development Center will be built, and will be incorporated into the site design.

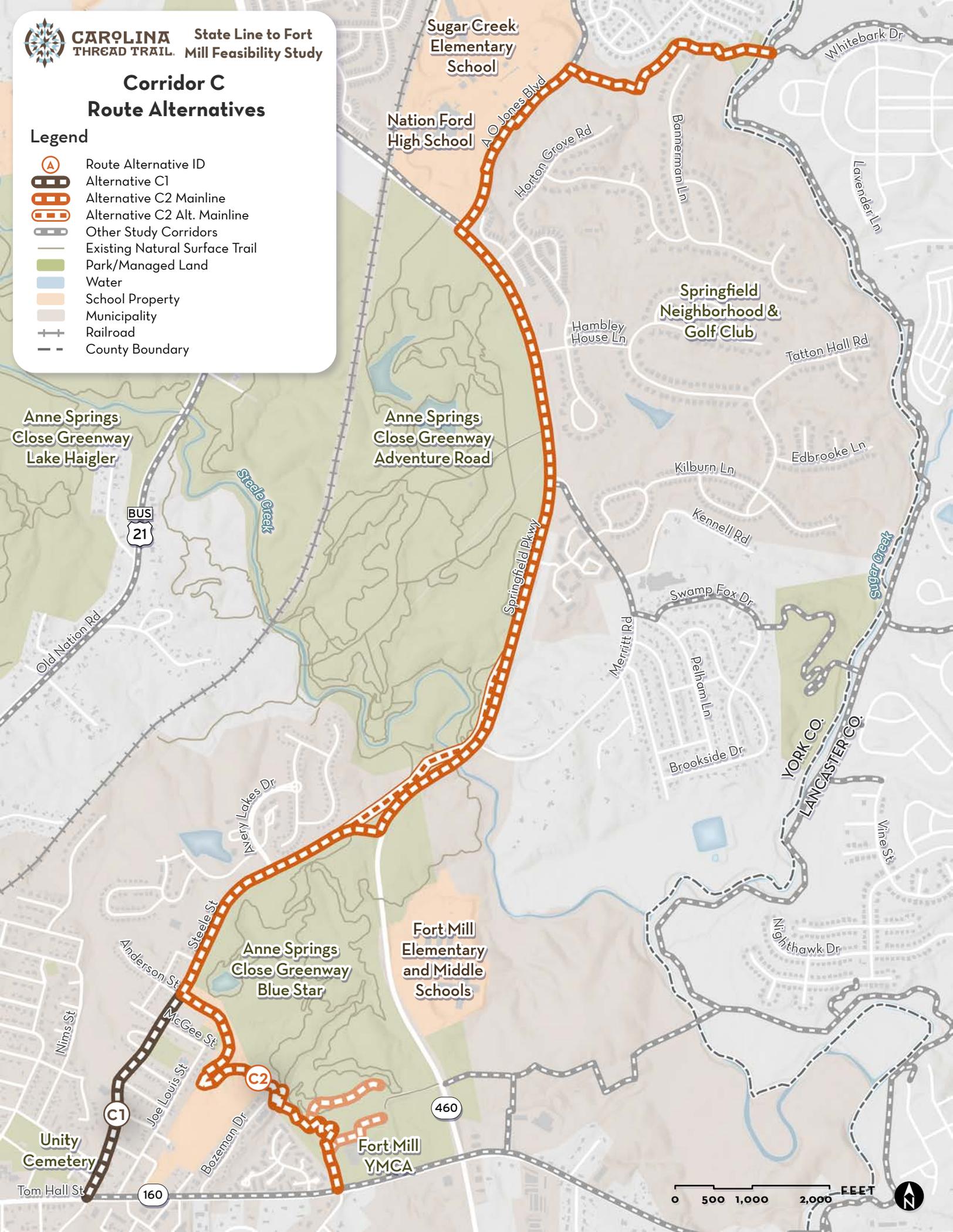
ROUTE ALTERNATIVE SELECTION CRITERIA	ALTERNATIVE C1	ALTERNATIVE C2
Physical Feasibility & Constructability	Medium	Medium
Desired Connectivity	High	High
Community Priorities	Medium	High
Cost Effectiveness	Medium	Medium
Environmental Impacts	High	Medium
Accessibility & User Experience	Medium	Medium
Property Impacts	Medium	Low
Potential Funding Opportunities	Medium	Medium
Trailhead Opportunities	Low	High
Leadership Support	Medium	Medium
Traffic Impacts	High	High
Implementation Timeframe	High	Medium

Key: High = Most Desirable; Low = Least Desirable

Corridor C Route Alternatives

Legend

-  Route Alternative ID
-  Alternative C1
-  Alternative C2 Mainline
-  Alternative C2 Alt. Mainline
-  Other Study Corridors
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad
-  County Boundary



Corridor F

Corridor F consists of two alternatives between Springfield Pkwy and Sugar Creek. Each alternative includes a section of trail through existing residential neighborhoods as well as a new alignment through undeveloped Town-owned land.

Both alternatives follow Merritt Rd between Springfield Pkwy and Paddock Club Ln/Fairntosh Dr. At the eastern end of the corridor, both alignments would include construction of a new bridge over Sugar Creek to reach the Lancaster County side.

Based on the route alternative selection criteria in addition to an analysis of opportunities and constraints along this corridor, Alternative F1 was identified as the recommended route alignment.

ALTERNATIVE F1

From Merritt Rd at Paddock Club Ln/Fairntosh Dr, Alternative F1 continues as a sidepath along the west side of the road to Pelham Ln, where it crosses. The trail uses a neighborhood greenway section through the Foxwood neighborhood, following Pelham Ln and Swamp Fox Dr before using an undeveloped street ROW to connect to a parcel owned by the Town of Fort Mill that allows the trail to descend to a crossing of Sugar Creek.

ALTERNATIVE F2

Alternative F2 diverges from Merritt Rd at Fairntosh Dr, using a neighborhood greenway design through the Garrison's Mill section of the Springfield community. The neighborhood greenway follows Fairntosh Dr and Kilburn Ln to a utility easement on Springfield HOA property, before continuing along the west bank of Sugar Creek to the Town-owned parcel and a crossing of the creek.

ROUTE ALTERNATIVE SELECTION CRITERIA	ALTERNATIVE F1	ALTERNATIVE F2
Physical Feasibility & Constructability	Medium	Medium
Desired Connectivity	Medium	Medium
Community Priorities	Medium	Medium
Cost Effectiveness	Medium	Medium
Environmental Impacts	Medium	Medium
Accessibility & User Experience	Medium	Medium
Property Impacts	High	Medium
Potential Funding Opportunities	Medium	Medium
Trailhead Opportunities	High	Low
Leadership Support	Medium	Medium
Traffic Impacts	Medium	Medium
Implementation Timeframe	Medium	Medium

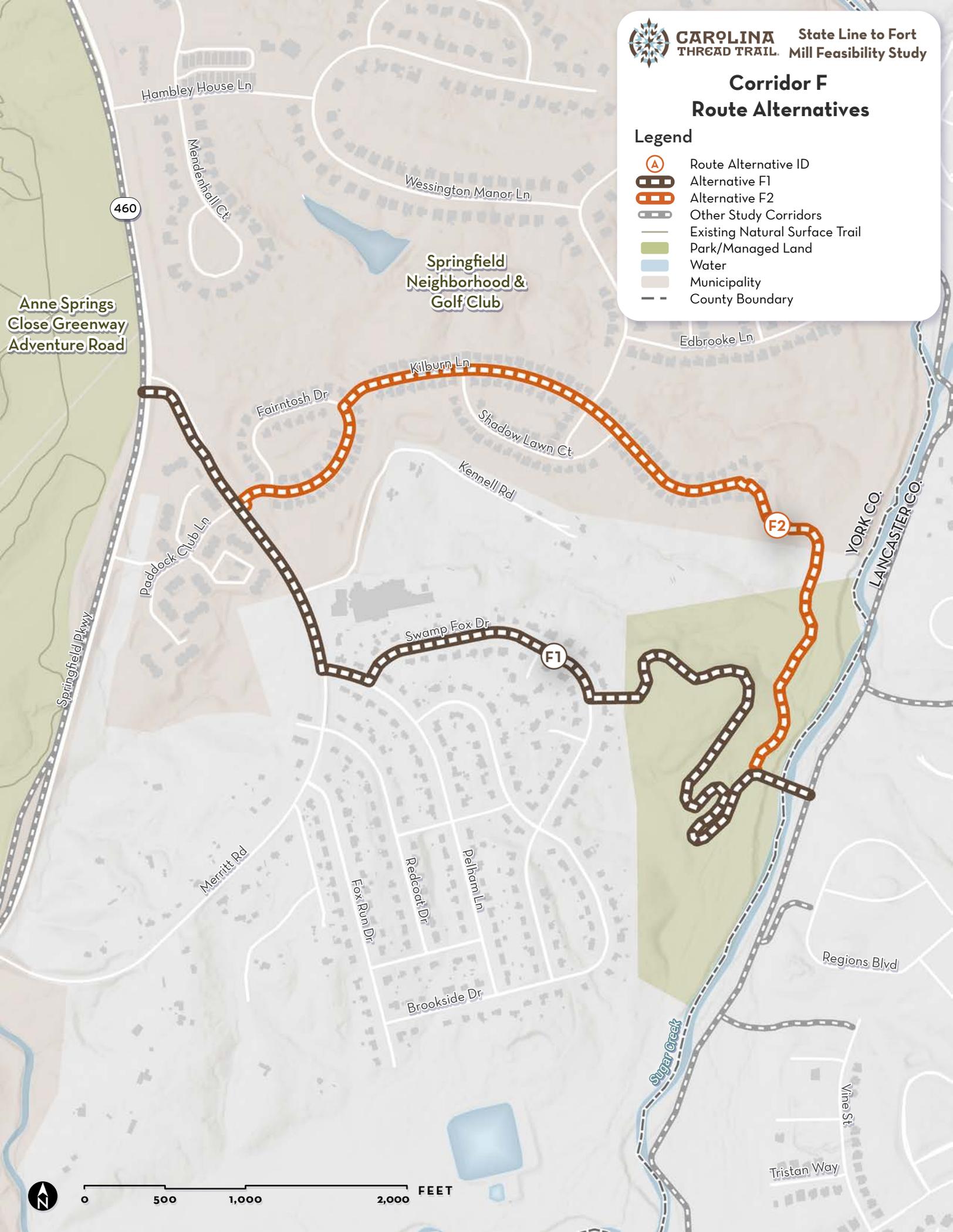
Key: High = Most Desirable; Low = Least Desirable



Corridor F Route Alternatives

Legend

- A Route Alternative ID
- Alternative F1
- Alternative F2
- Other Study Corridors
- Existing Natural Surface Trail
- Park/Managed Land
- Water
- Municipality
- County Boundary



0 500 1,000 2,000 FEET

Recommended Route Alternatives

Upon completion of the alternatives analysis a recommended route alignment is provided for each of the nine study corridors. Recommendations are based on the outcome of the alternatives evaluation decision matrix for the corridors featuring multiple route alternatives, in addition to community, stakeholder, and Steering Committee feedback.

The map on the facing page displays all recommended route alignments. A map and summary of recommendations for each corridor is included on the following pages. The cost estimates listed in the table below represent a 2024 planning level construction cost estimate. Fully developed escalated cost estimates can be found as a part of the cut sheet projects in chapter five.

CORRIDOR	MILEAGE	2024 BASELINE CONSTRUCTION COST ESTIMATE
Corridor A	3.43	\$6,642,000
Corridor B	3.19	\$12,183,000
Corridor C	5.65	\$15,860,000
Corridor D	3.54	\$8,117,000
Corridor E	0.66	\$606,000
Corridor F	1.50	\$5,742,000
Corridor G	6.42	\$12,720,000
Corridor H	1.08	\$6,269,000
Corridor I	1.99	\$7,596,000
TOTAL	27.47	\$75,735,000



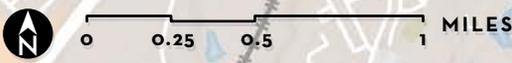
CAROLINA THREAD TRAIL

State Line to Fort Mill Feasibility Study

Recommended Alignments

Legend

- Bridge Location
- Potential Trailhead Location
- Study Corridor
- Recommended Mainline Trail
- Recommended Mainline Alt.
- Recommended Trail Connector
- Trail Alt. Not Recommended
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Proposed Seam Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



Corridor A



The recommended mainline trail alignment for Corridor A follows the east side of Sugar Creek from Lakeview Park and the future Seam Trail in Mecklenburg County, NC, to near Selhurst Dr in Lancaster County where it crosses the creek on a new bridge to the York County side. The trail remains on the west side of the creek and crosses beneath Regent Pkwy before terminating at Convention Dr.

Connector trails are recommended to extend the trail to Boatright Rd and the existing Little Sugar Creek Greenway in North Carolina, and to Burnwald Ct and Barcroft Ln in South Carolina.

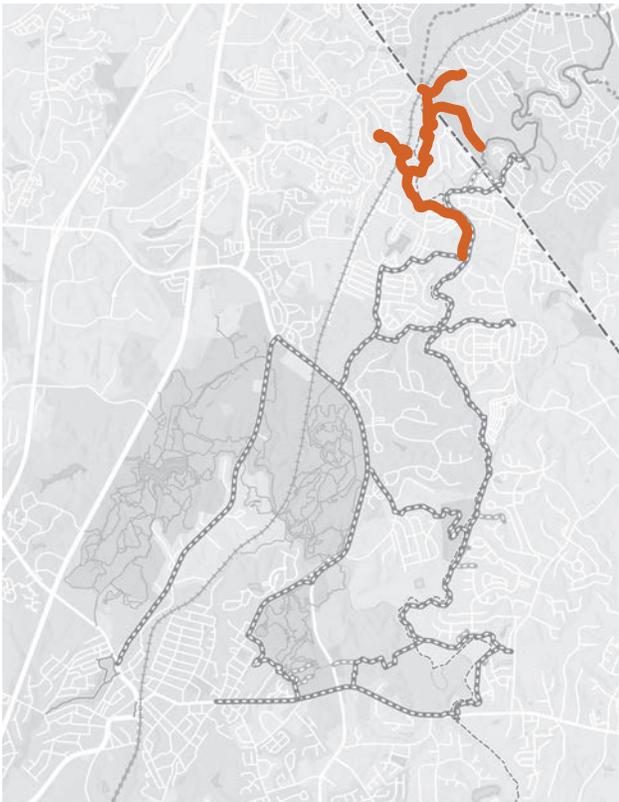
Length

1.86 miles (Mainline)
1.57 miles (Connectors)
3.43 miles (Total)

2024 Baseline Construction Cost Estimate

\$4.43 million (Mainline)
\$2.21 million (Connectors)
\$6.64 million (Total)

CORRIDOR KEY



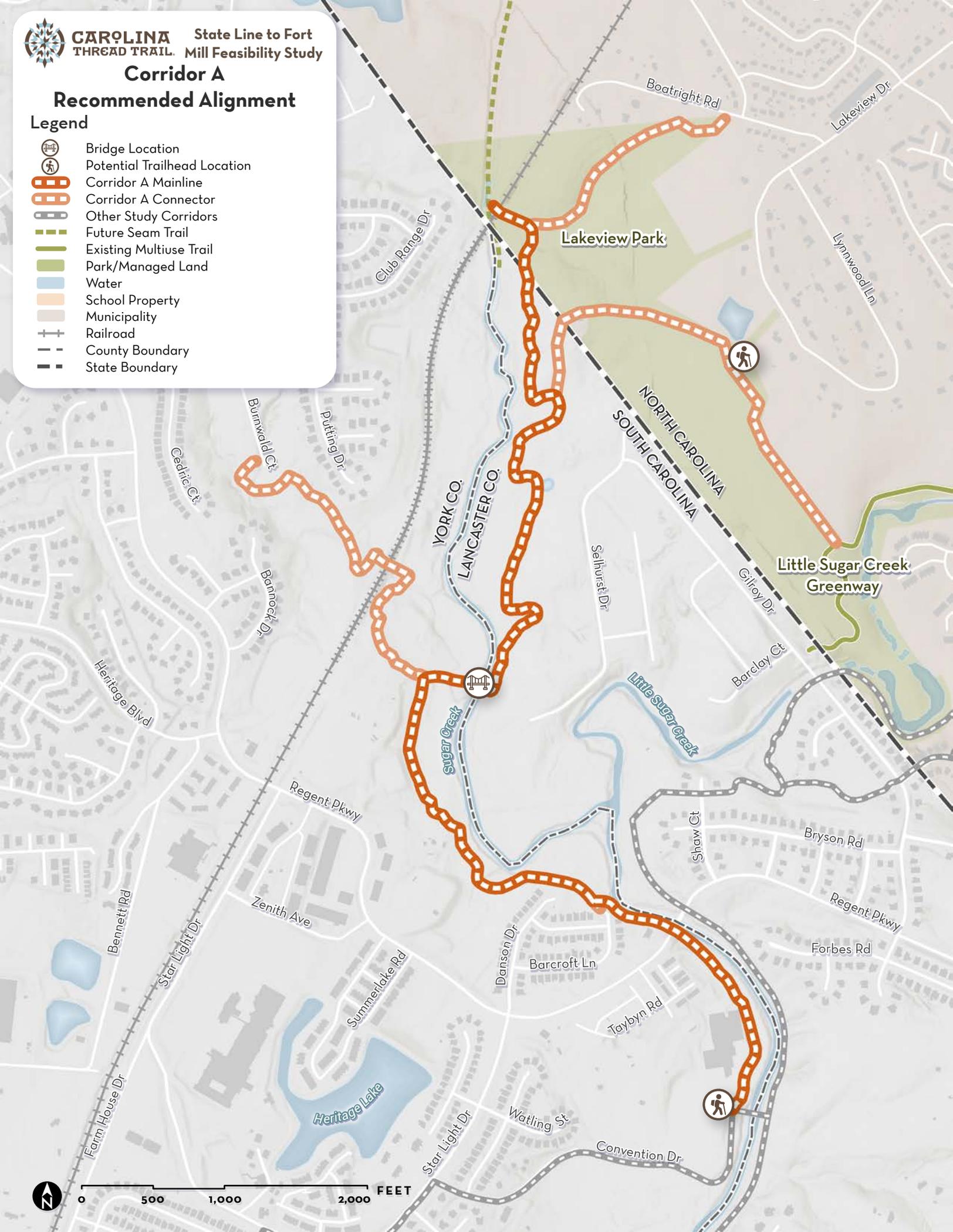


Corridor A

Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor A Mainline
-  Corridor A Connector
-  Other Study Corridors
-  Future Seam Trail
-  Existing Multiuse Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad
-  County Boundary
-  State Boundary



Corridor B

The recommended mainline trail alignment for Corridor B begins at the existing Little Sugar Creek Greenway in Mecklenburg County, NC, crossing Grace View Dr and the state line using an on-road neighborhood greenway alignment on Atwell Glen Ln to reach the east bank (Lancaster County side) of Sugar Creek, where it continues under Regent Pkwy to a new bridge crossing to the York County side near Convention Dr. From here the trail follows Convention Dr, Star Light Dr, and A O Jones Blvd to the Nation Ford Greenway trailhead.

No connector trails are proposed on this corridor, but an alternative mainline trail would route behind Bainbridge Pl and Gilroy Dr to provide access to Little Sugar Creek.

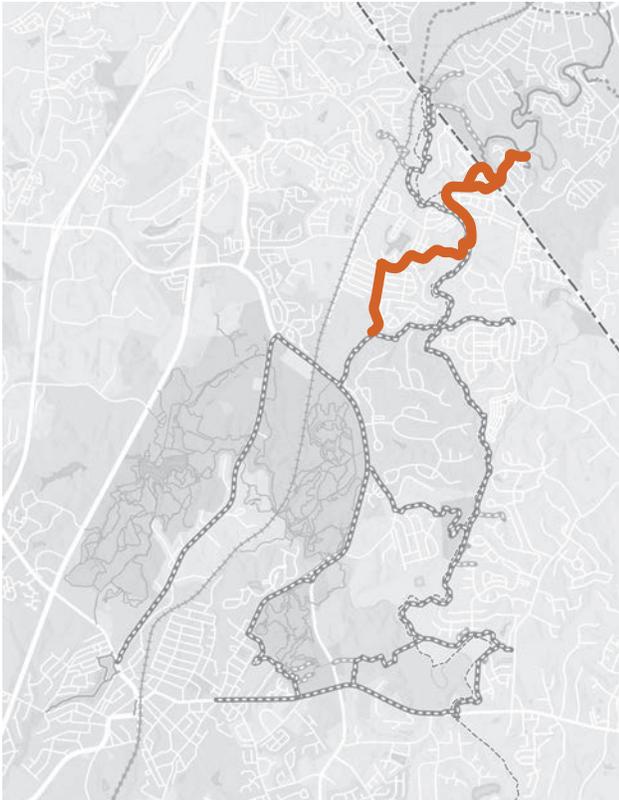
Length

2.77 miles (Mainline)
0.43 miles (Mainline Alternate)
3.19 miles (Total)

2024 Baseline Construction Cost Estimate

\$12.18 million

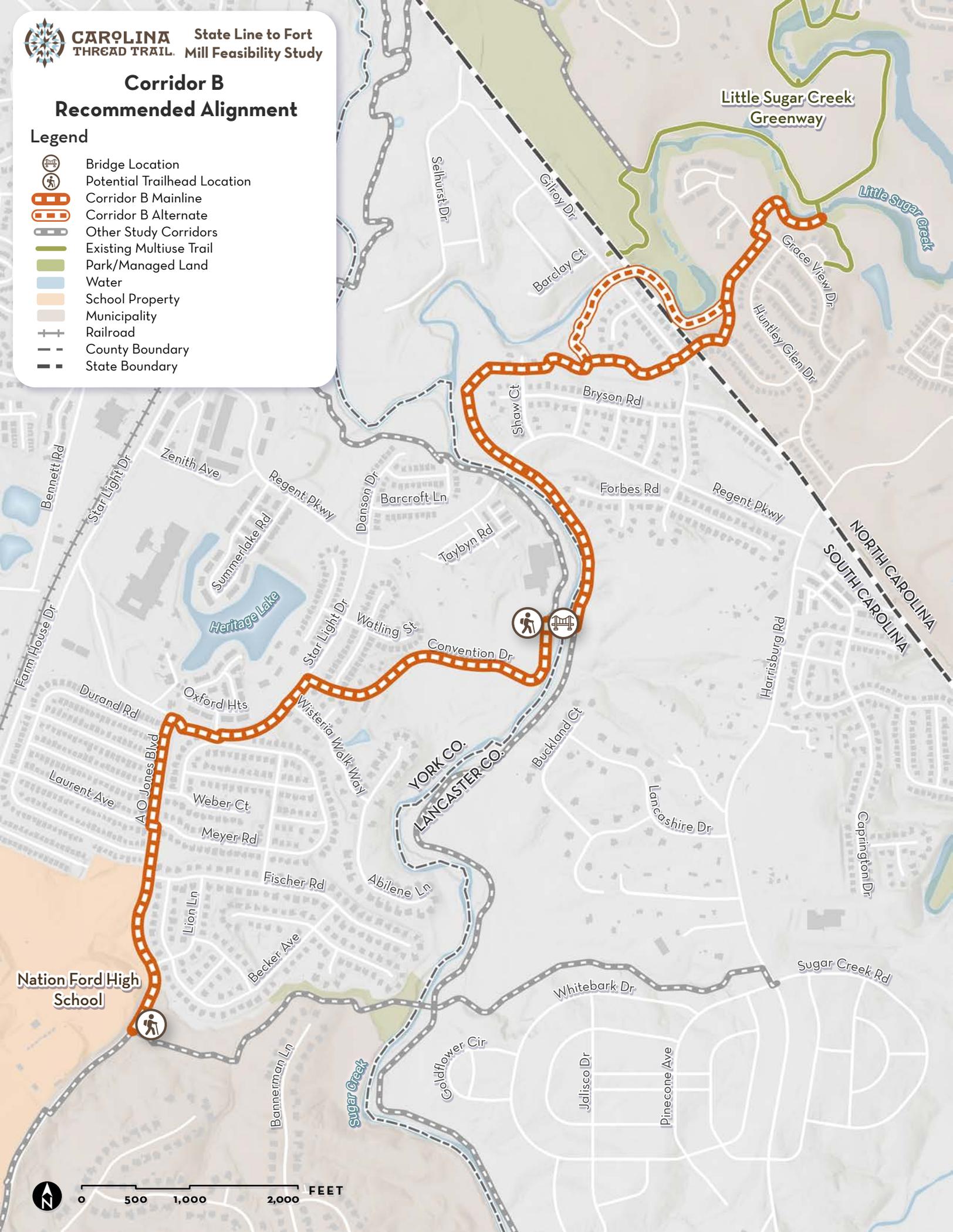
CORRIDOR KEY



Corridor B Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor B Mainline
-  Corridor B Alternate
-  Other Study Corridors
-  Existing Multiuse Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad
-  County Boundary
-  State Boundary



Nation Ford High School

Little Sugar Creek Greenway

YORK CO.
 LANCASTER CO.

NORTH CAROLINA
 SOUTH CAROLINA



Corridor C



The recommended alignment for Corridor C begins at a new bridge over Sugar Creek and the county line near Lange Ct, climbing the hill into York County west to the Nation Ford Greenway trailhead where it transitions to a side path along the east side of A O Jones Blvd. This section of the trail crosses to the west side of the road at the entrance to Sugar Creek Elementary School and to the south side of Springfield Pkwy at the intersection. The trail remains on the south/west side of Springfield Pkwy to Merritt Rd, where two options exist to cross Steele Creek. The trail remains on the west side of Steele St to Anderson St, where it crosses and follows a new off-road alignment through a planned early childhood development center and connects to the Fort Mill YMCA.

Connector trails are recommended to reach the Anne Springs Close Greenway Blue Star trailhead and Handy White Way.

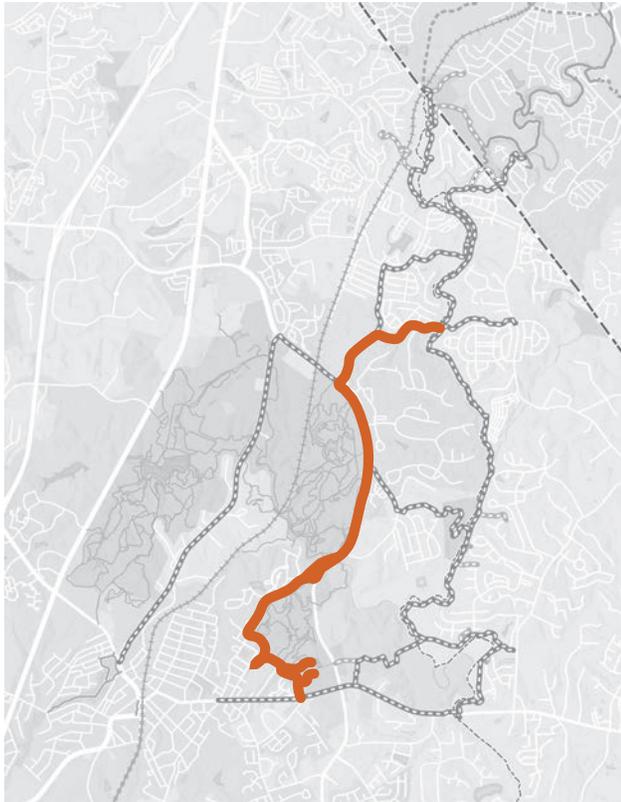
Length

- 4.56 miles (Mainline)
- 0.68 miles (Mainline Alt.)
- 0.41 miles (Connectors)
- 5.65 miles (Total)

2024 Baseline Construction Cost Estimate

- \$15.72 million (Mainline)
- \$0.14 million (Connectors)
- \$15.86 million (Total)

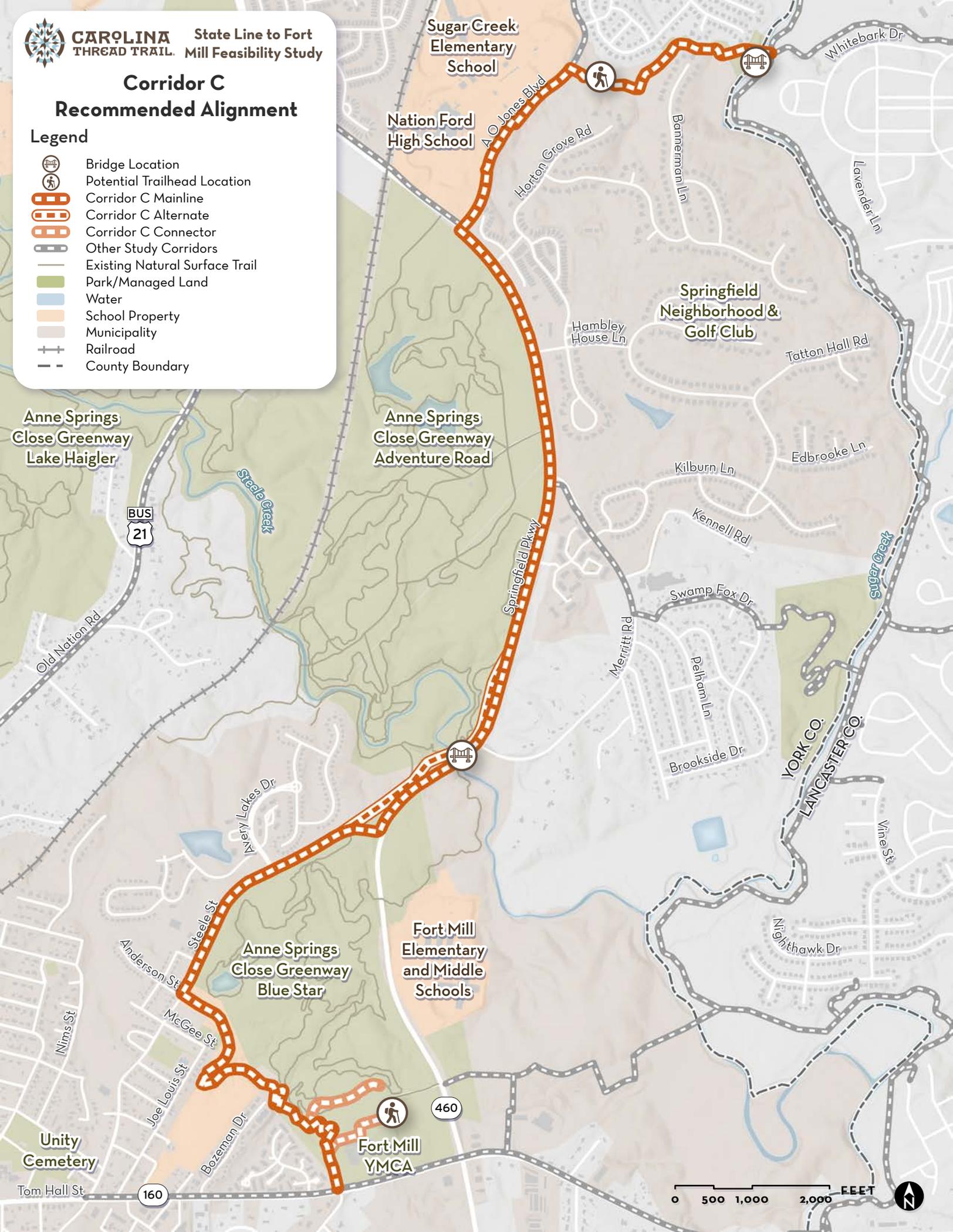
CORRIDOR KEY



Corridor C Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor C Mainline
-  Corridor C Alternate
-  Corridor C Connector
-  Other Study Corridors
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad
-  County Boundary



Anne Springs
 Close Greenway
 Lake Haigler

Anne Springs
 Close Greenway
 Adventure Road

Springfield
 Neighborhood &
 Golf Club

Anne Springs
 Close Greenway
 Blue Star

Fort Mill
 Elementary
 and Middle
 Schools

Fort Mill
 YMCA

Unity
 Cemetery



Corridor D



The recommended alignment for Corridor D begins at the intersection of A O Jones Blvd and Springfield Pkwy, following the north side of Springfield Pkwy as a sidepath to Old Nation Rd. This section uses existing sidepath along the Carolina Orchards frontage as well as a new bridge over the Norfolk Southern railroad tracks. At Old Nation Rd the trail crosses and continues as a sidepath on the east side of the roadway, crossing Steel Creek on a new bridge. Near N. White St, the trail diverges from the roadway to provide additional separation.

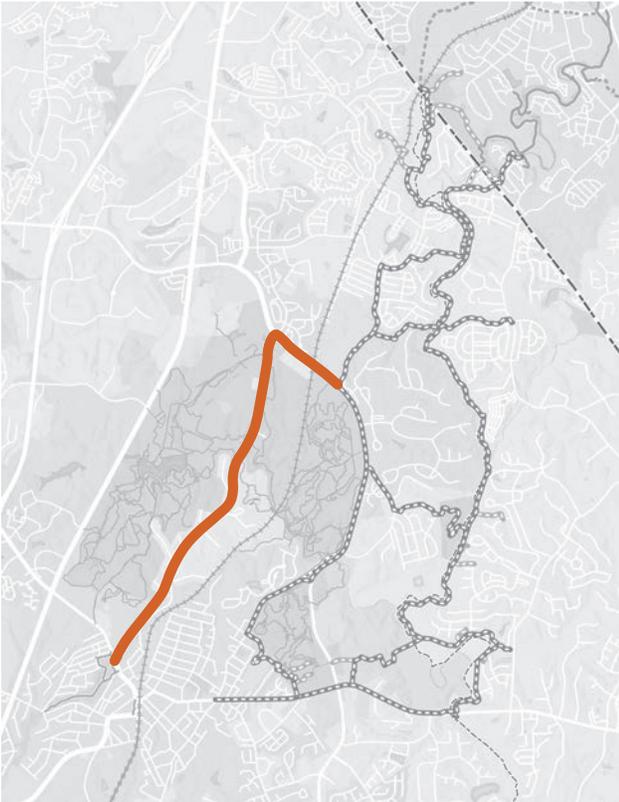
Length

3.54 miles

2024 Baseline Construction Cost Estimate

\$8.12 million

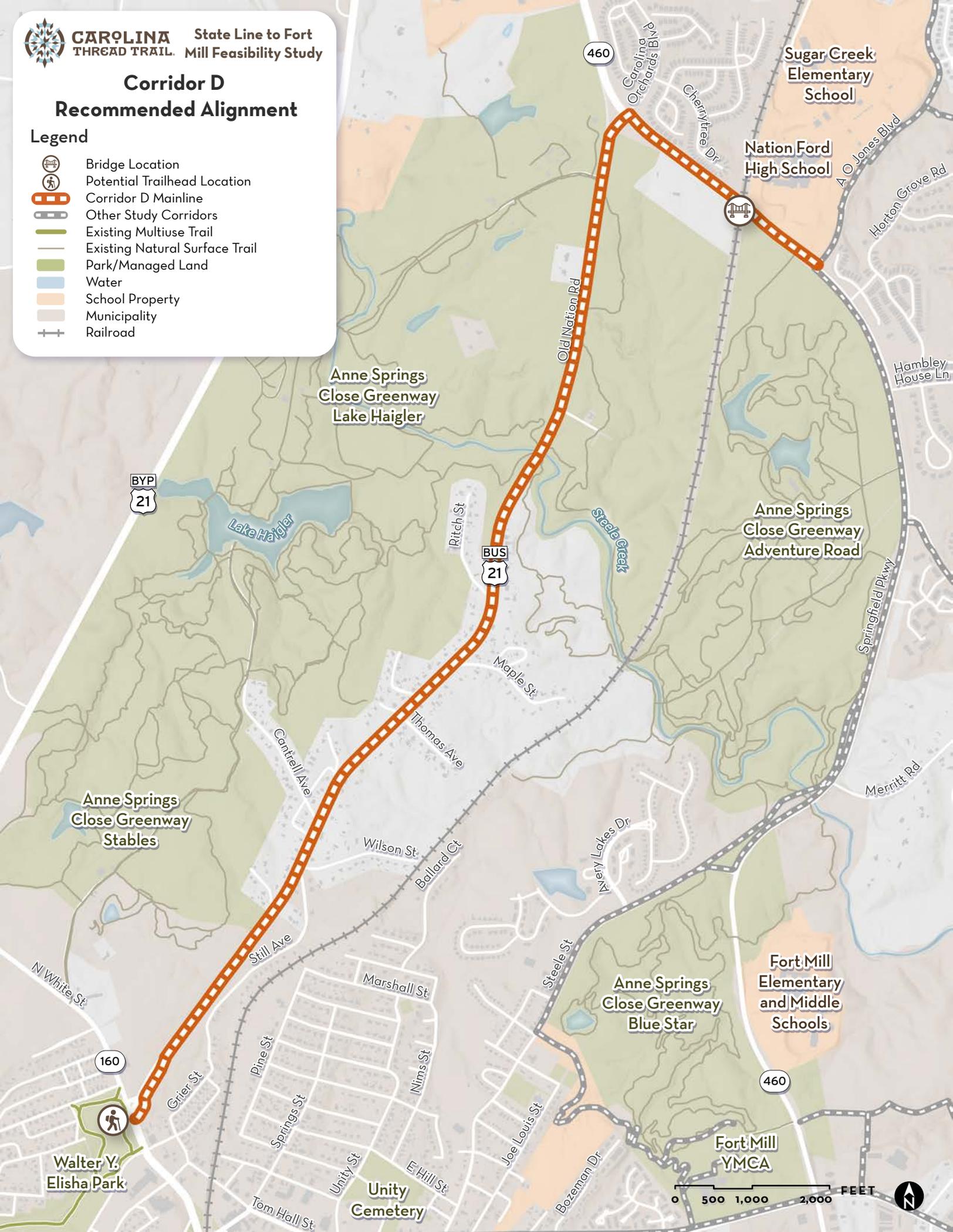
CORRIDOR KEY



Corridor D Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor D Mainline
-  Other Study Corridors
-  Existing Multiuse Trail
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad



Corridor E

The recommended alignment for Corridor E creates a new greenway trail between the east bank of Sugar Creek and Harrisburg Rd, climbing uphill parallel to the Pines at Sugar Creek development before terminating at the intersection of Harrisburg Rd and Pinecone Ave/ Sugar Creek Rd.

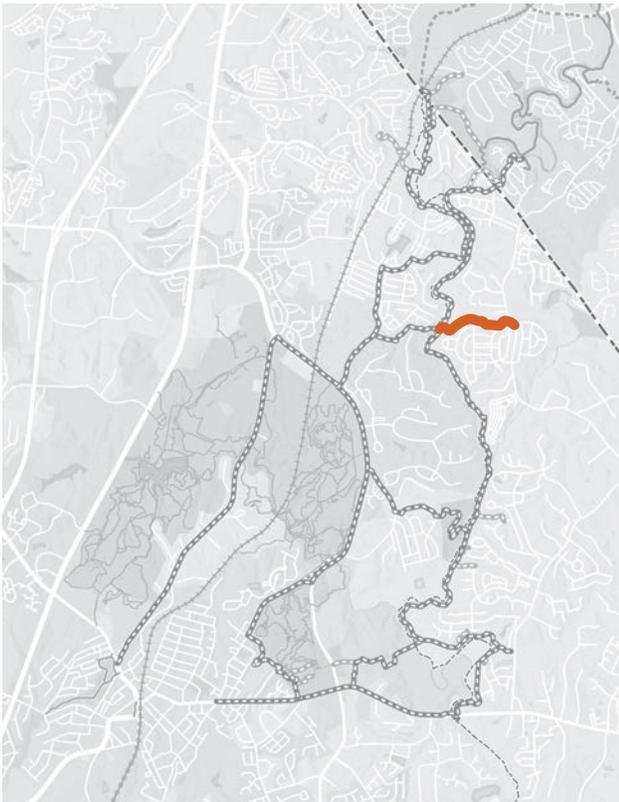
Length

0.66 miles

2024 Baseline Construction Cost Estimate

\$606,000

CORRIDOR KEY

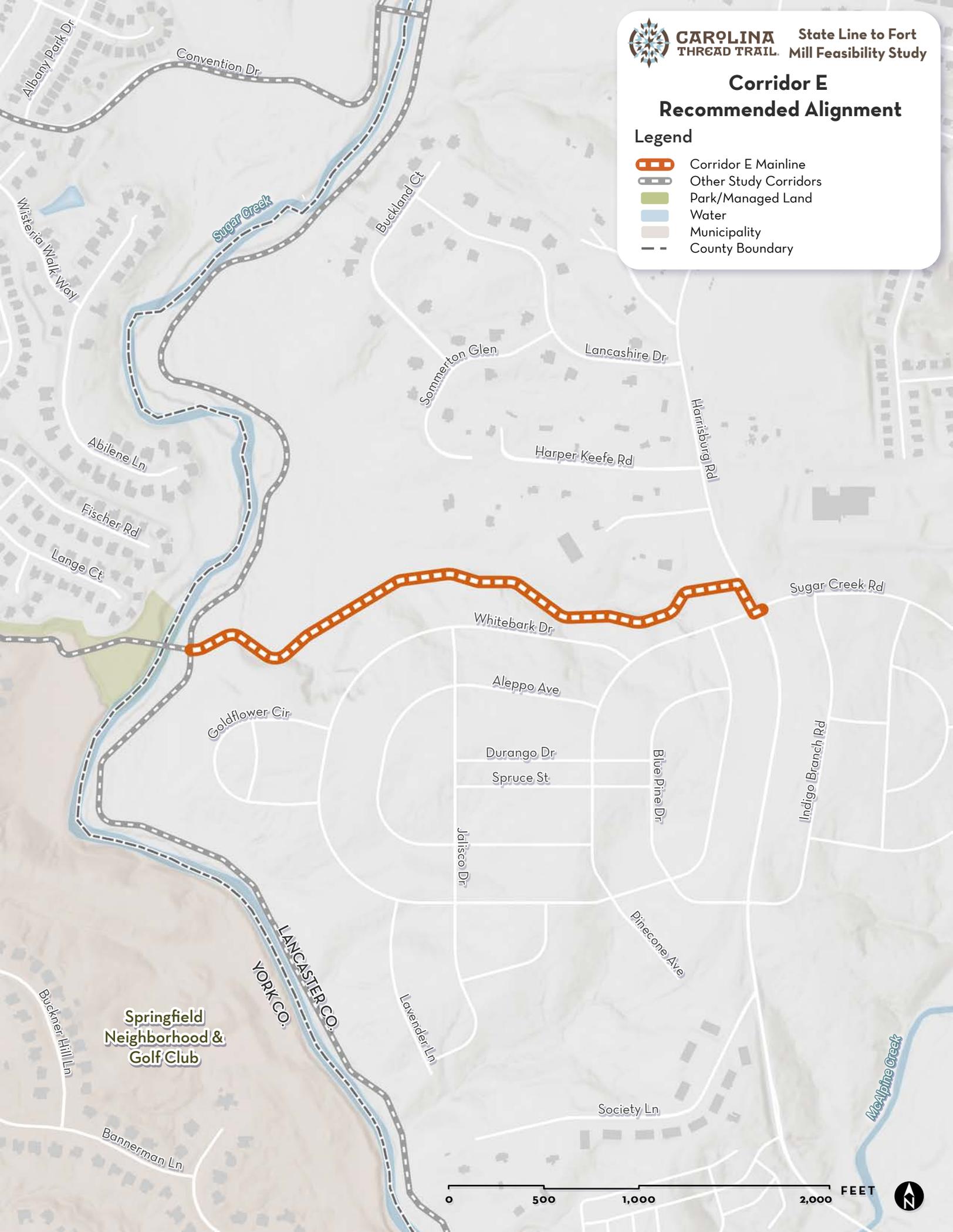




Corridor E Recommended Alignment

Legend

-  Corridor E Mainline
-  Other Study Corridors
-  Park/Managed Land
-  Water
-  Municipality
-  County Boundary



Corridor F

The recommended alignment for Corridor F provides a connection between Springfield Pkwy and Sugar Creek through the Foxwood neighborhood. The trail begins at Springfield Pkwy and Merritt Rd, crossing to the west side of Merritt Pkwy and continuing along the west side of the roadway to Pelham Ln. The trail then crosses and transitions to a neighborhood greenway section for a brief stretch of Pelham Ln before turning onto Swamp Fox Dr. The trail then uses an existing roadway easement to leave the neighborhood and descend to Sugar Creek on a parcel owned by the Town of Fort Mill. Upon reaching the creek, a new pedestrian bridge carries the trail to the east (Lancaster County) side of Sugar Creek.

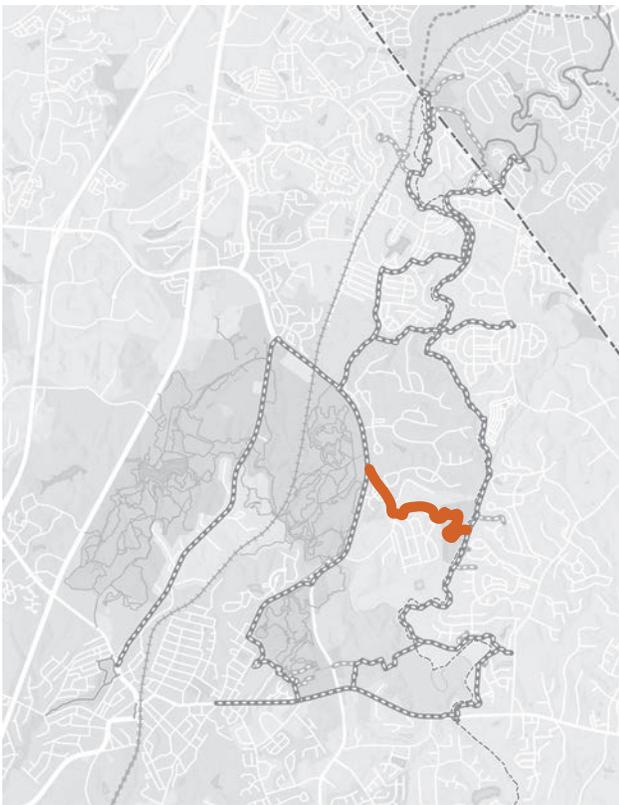
Length

1.50 miles

2024 Baseline Construction Cost Estimate

\$5.74 million

CORRIDOR KEY

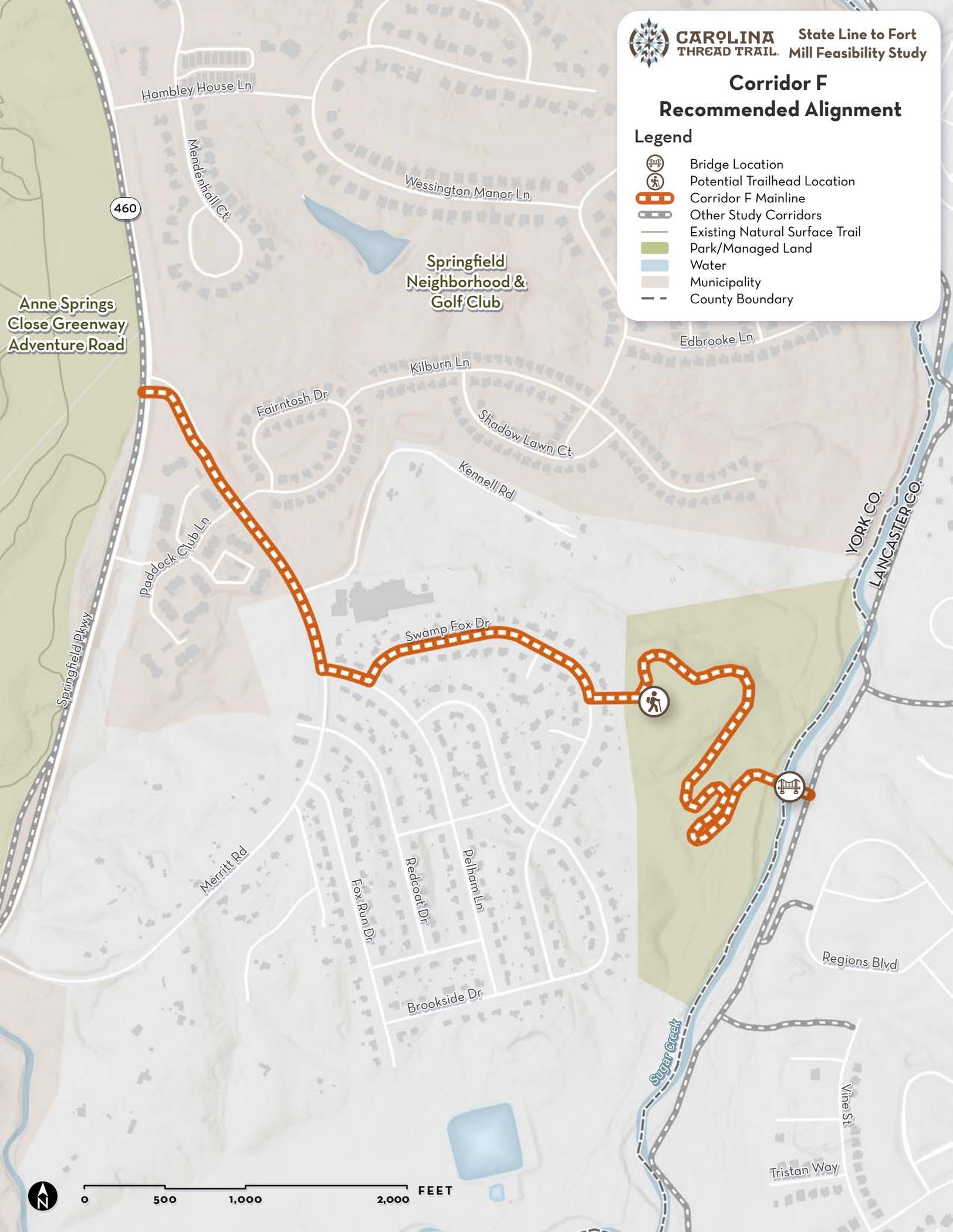




Corridor F Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor F Mainline
-  Other Study Corridors
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  Municipality
-  County Boundary



460

Hambley House Ln

Mendenhall Ct

Wessington Manor Ln

Springfield
 Neighborhood &
 Golf Club

Edbrooke Ln

Fairintosh Dr

Kilburn Ln

Shadow Lawn Ct

Kennell Rd

Paddock Club Ln

Swamp Fox Dr

YORK CO.
 LANCASTER CO.

Merritt Rd

Fox Run Dr

Redcoat Dr

Pelham Ln

Brookside Dr

Regions Blvd

Sugar Creek

Tristan Way

Vine St

0 500 1,000 2,000 FEET

Corridor G



Corridor G primarily follows Sugar Creek from near Convention Dr to Tom Hall St. The trail stays on the east (Lancaster County) bank of the creek and incorporates sections built in the northern half by adjacent residential developments along Harrisburg Rd, including Pines at Sugar Creek and Ridge at Sugar Creek. A new bridge is required to carry the trail over McAlpine Creek at its confluence with Sugar Creek just south of Ridge at Sugar Creek. At Tom Hall St, the trail continues under the roadway to facilitate future connections southward, and offers the potential for a trailhead. Another trailhead could be located along Barberville Rd.

Greenway connections are proposed at several locations along Corridor G, connecting the trail to neighborhoods at Vintage Ave, Kestrel Ln, Vine St, Regions Blvd, and Loire Valley Dr.

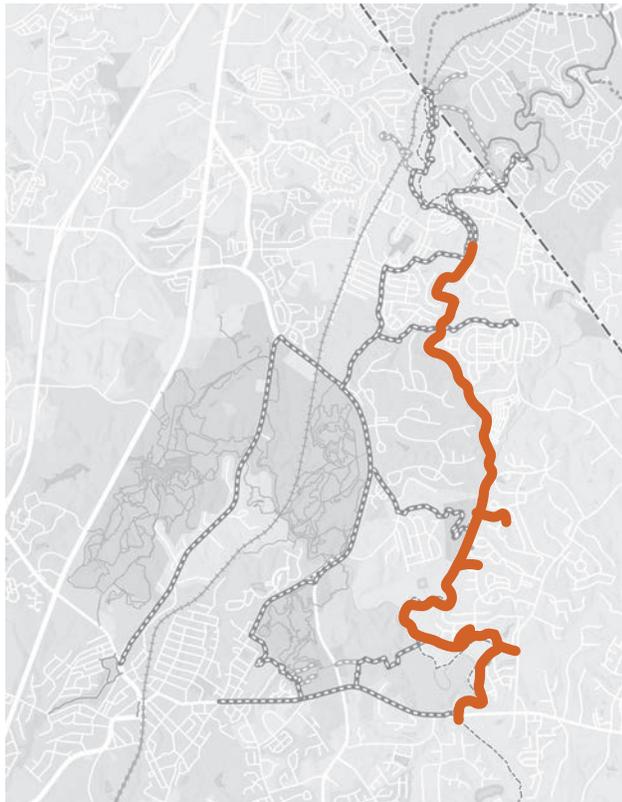
Length

5.71 miles (Mainline)
0.71 miles (Connectors)
6.42 miles (Total)

2024 Baseline Construction Cost Estimate

\$11.24 million (Mainline)
\$1.48 million (Connectors)
\$12.72 million (Total)

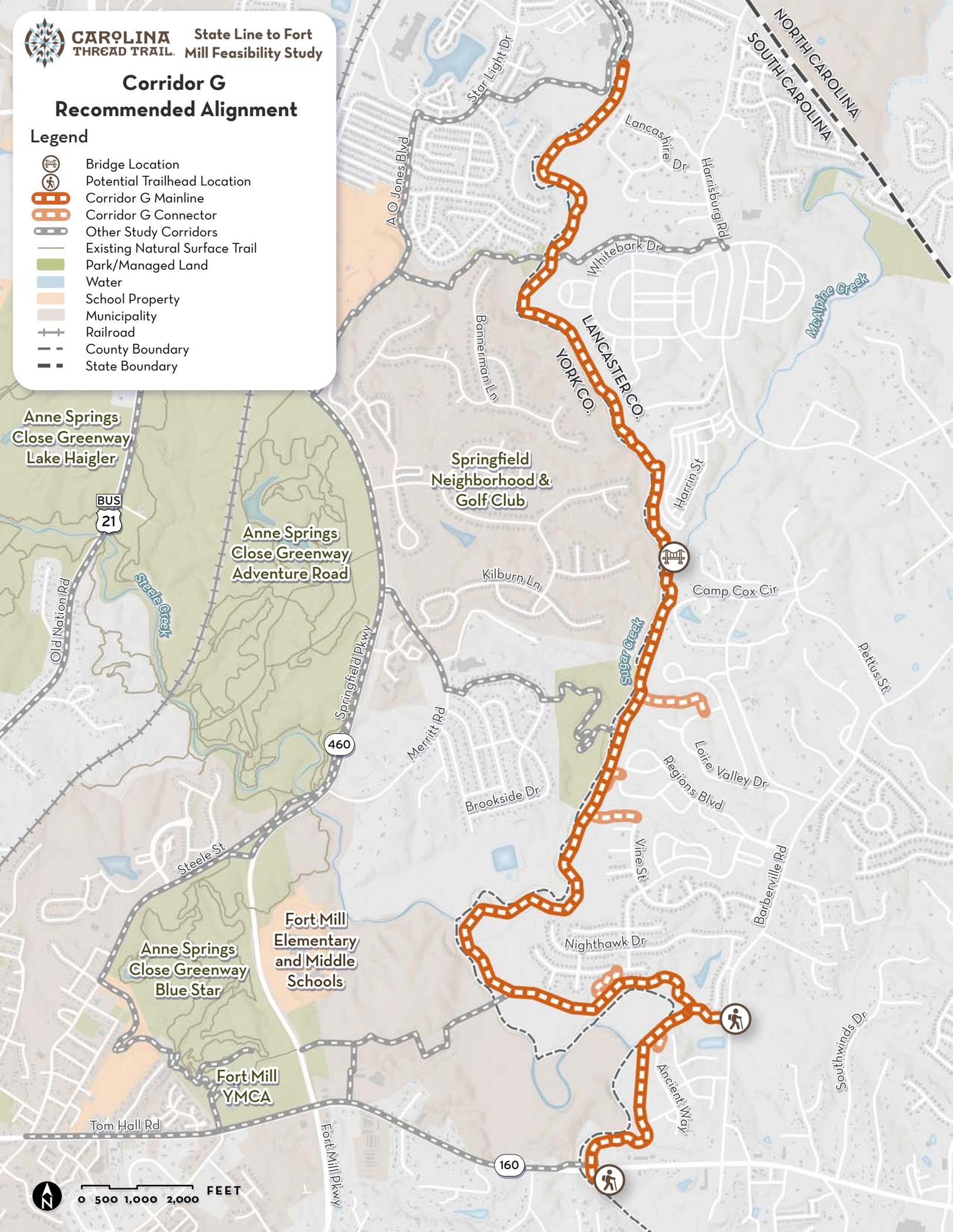
CORRIDOR KEY



Corridor G Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor G Mainline
-  Corridor G Connector
-  Other Study Corridors
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  Railroad
-  County Boundary
-  State Boundary



Anne Springs
 Close Greenway
 Lake Haigler

BUS
 21

Anne Springs
 Close Greenway
 Adventure Road

Springfield
 Neighborhood &
 Golf Club

460

Anne Springs
 Close Greenway
 Blue Star

Fort Mill
 Elementary
 and Middle
 Schools

Fort Mill
 YMCA

Tom Hall Rd

Fort Mill Pkwy

160

0 500 1,000 2,000 FEET

Corridor H



Corridor H provides a short connection between the Avery Plaza shopping center on the York County side and the trail section proposed on the east (Lancaster County) side of Sugar Creek in Corridor G. Much of the land included in this corridor is proposed to be developed, and much of the trail will be constructed along streets in the new development. Included in the development is a connection west to the intersection with Handy White Way and Springfield Pkwy.

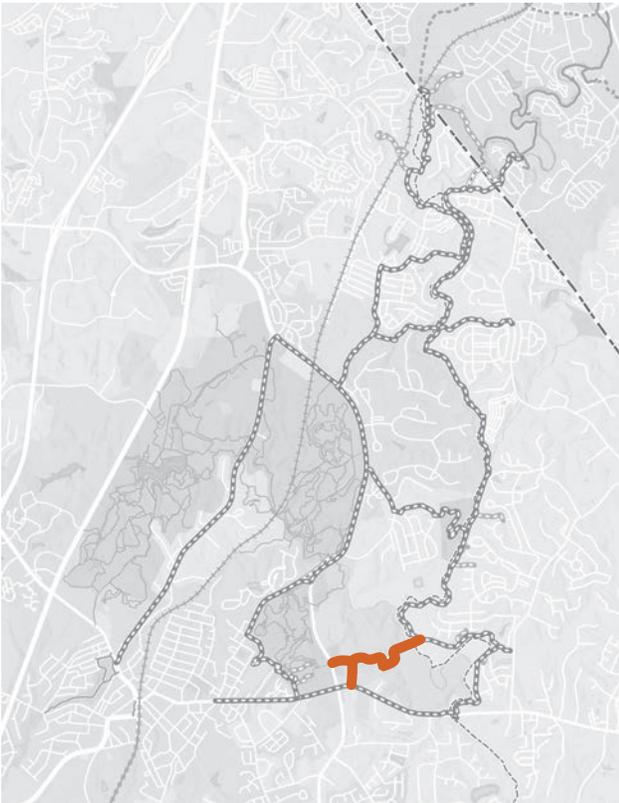
Length

0.90 miles (Mainline)
0.18 miles (Connectors)
1.08 miles (Total)

2024 Baseline Construction Cost Estimate

\$5.91 million (Mainline)
\$0.36 million (Connectors)
\$6.27 million (Total)

CORRIDOR KEY

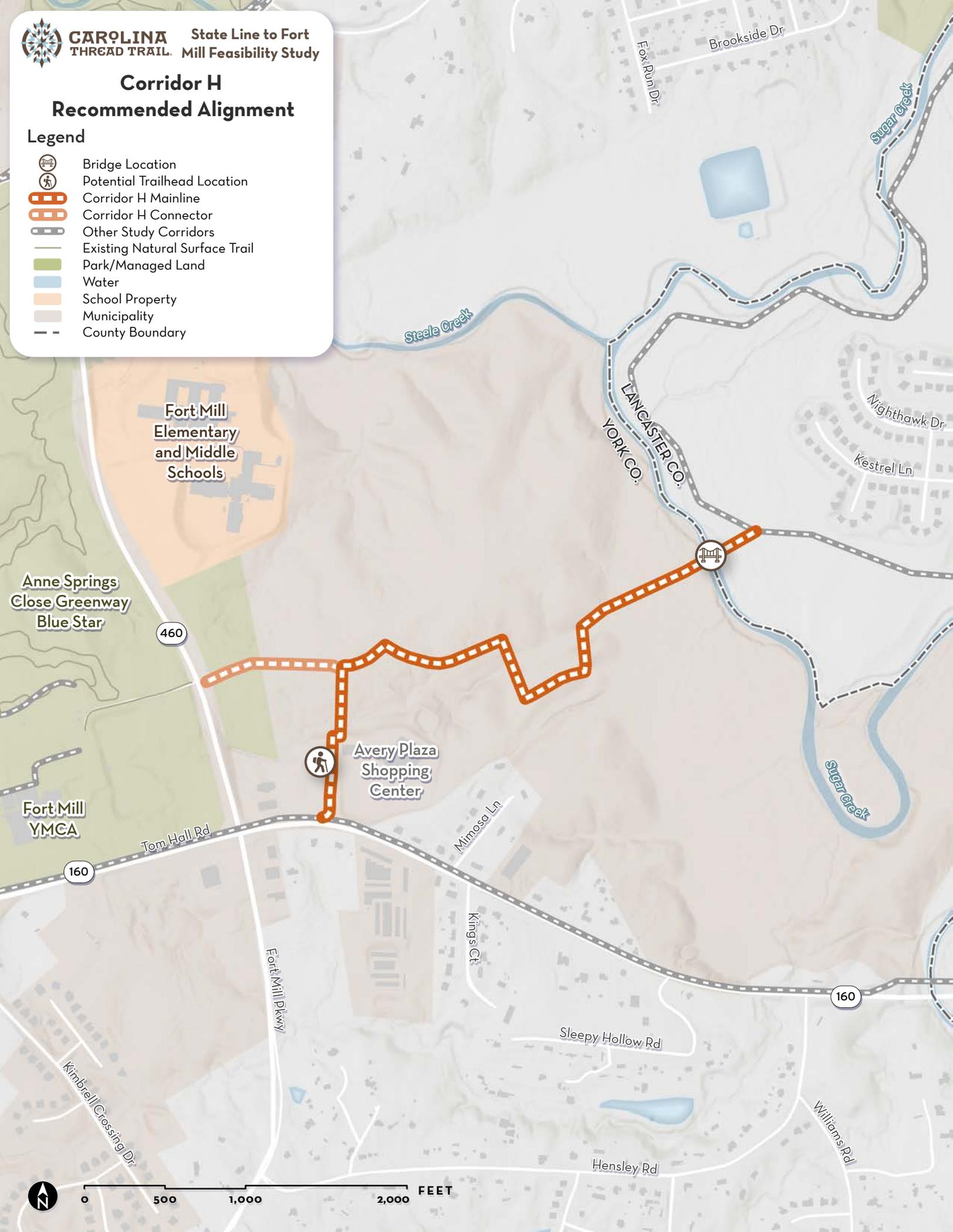




Corridor H Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor H Mainline
-  Corridor H Connector
-  Other Study Corridors
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  County Boundary



0 500 1,000 2,000 FEET

Corridor I

The recommended alignment for Corridor I is a sidepath along the north side of Tom Hall St, beginning at Steele St in York County and terminating at a proposed trail on the east (Lancaster County) side of Sugar Creek. Included in this corridor are major street crossings at Steele St and Springfield Pkwy, and a new bridge over Sugar Creek. Potential locations for trailheads are at Kimbrell Rd near the Fort Mill YMCA, and at Sugar Creek.

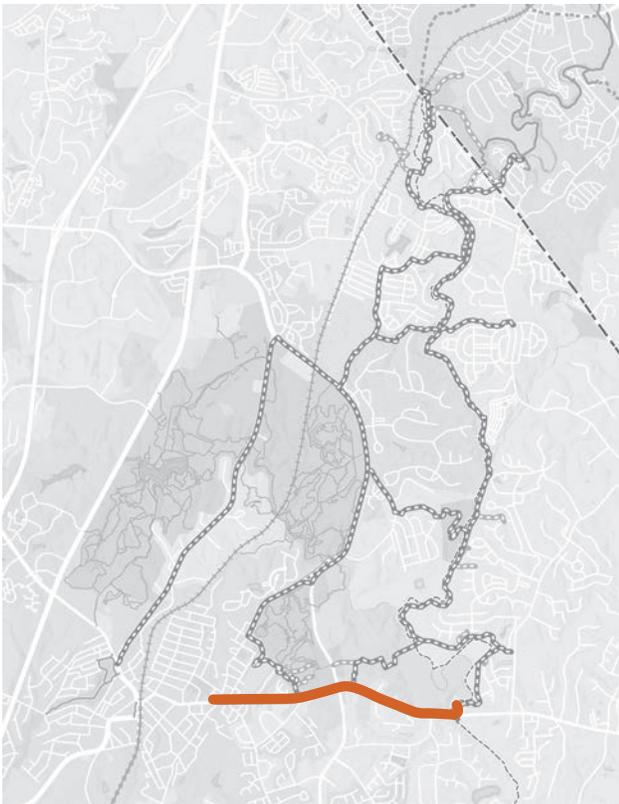
Length

1.99 miles

2024 Baseline Construction Cost Estimate

\$7.60 million

CORRIDOR KEY

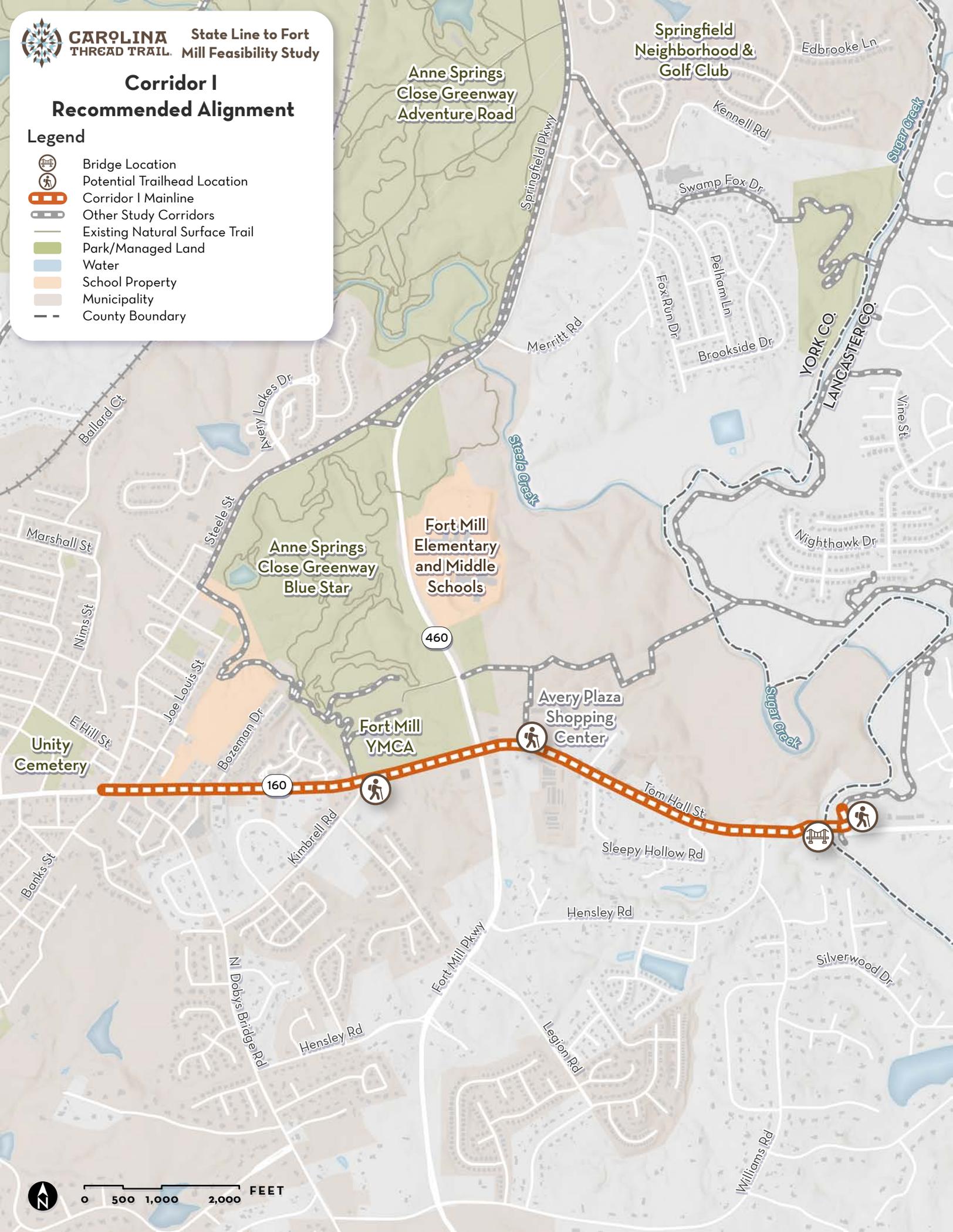




Corridor I Recommended Alignment

Legend

-  Bridge Location
-  Potential Trailhead Location
-  Corridor I Mainline
-  Other Study Corridors
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  County Boundary



Typical Sections

To ensure a safe and consistent trail user experience, and to comply with standards and best practices for facility design, the following typical sections are proposed for the Carolina Thread Trail.

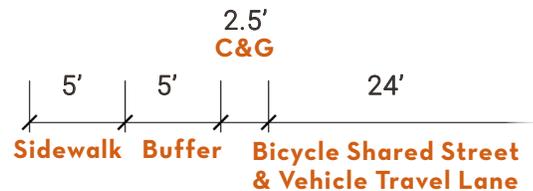
Paved Greenway Trail
Scale: 1"=10'



Greenway Boardwalk
Scale: 1"=10'

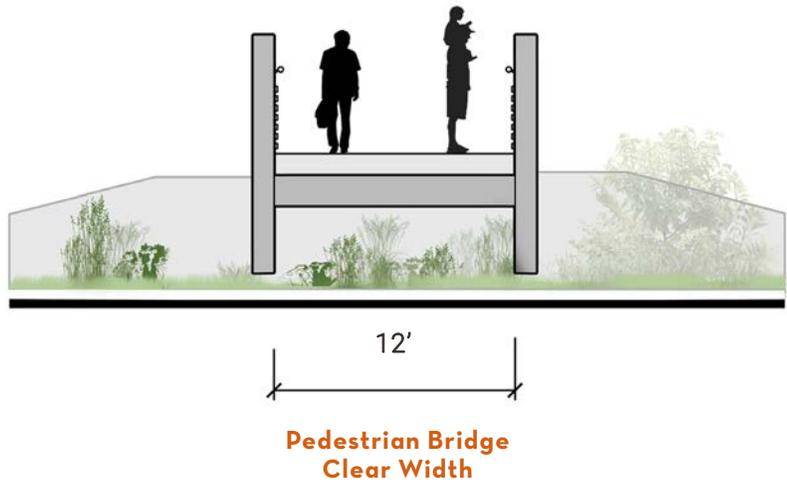


Neighborhood Greenway
Scale: 1"=10'



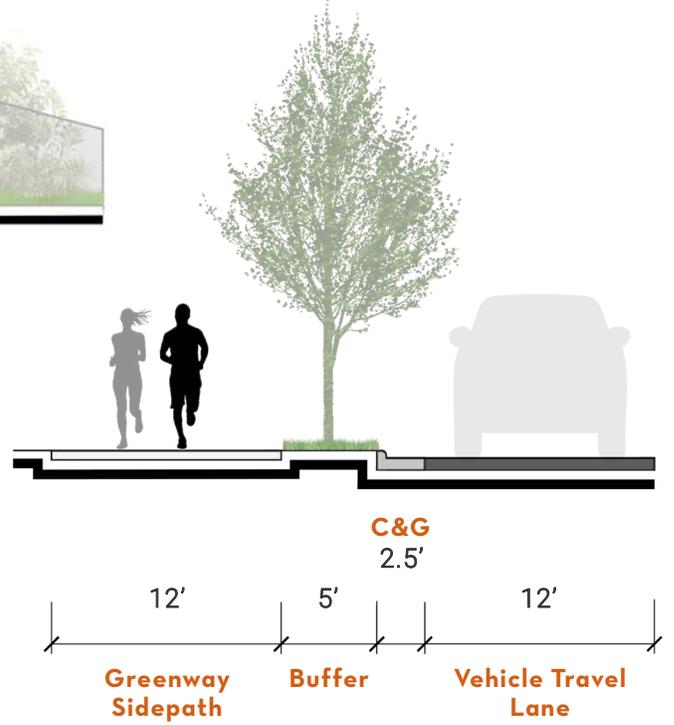
Greenway Bridge

Scale: 1"=10'



Greenway Sidepath

Scale: 1"=10'



Intersection Crossings

The Carolina Thread Trail traverses a developed area and will require crossing roadways and driveways along its route, placing users into potential conflict with vehicles. The application of crossing safety measures at these locations is critical to ensuring the success of the trail by making users feel comfortable at intersections and crossings. The type and variety of intersections and crossings, as well as existing crossing safety features, inform the need for additional measures to create a facility that is safe, accessible, and comfortable for users of all ages and abilities. Two crossing types are identified for the Carolina Thread Trail:

Intersection Crossing Type

- » Major Crossing
- » Minor Crossing

Major Crossings

Major crossings are intersections where the trail must cross a signalized intersection, or a mid-block crossing. These crossings typically have the highest vehicle traffic volumes and speeds and require the greatest amount of crossing safety treatments, including signage, pavement markings, signal modifications, and changes to the geometry of the intersection or crossing.

Minor Crossings

Minor crossings are defined as intersections where the trail parallels the major street and crosses the minor street. These crossings typically have lower traffic volumes and speeds and require less robust safety treatments, most often consisting of crosswalk improvements or signage. Additionally, where the trail crosses the railroad at-grade some improvements are necessary to install warning signage and pavement markings.

Additionally, the Carolina Thread Trail will cross many driveways. Driveway crossings should be designed so that the trail remains at grade and vehicles must ramp up to cross the trail. While requiring thoughtful analysis of design considerations for vehicles, this approach ultimately improves user visibility and slows vehicle speeds to improve the safety of pedestrians and bicyclists.

CROSSING TREATMENT	MAJOR CROSSING	MINOR CROSSING
High Visibility Crosswalk Markings	Yes	Yes
Rectangular Rapid Flashing Beacon	Yes	
Leading Pedestrian Interval	Yes	
Curb Radius Reduction	Yes	Yes
R10-15 Signage	Yes	Yes

HIGH VISIBILITY CROSSWALK MARKINGS

A crosswalk is a designated place for pedestrians and greenway users to cross a road at an intersection or midblock crossing. High-visibility crosswalk markings, such as bar pairs, continental, and ladder are recommended to alert motorists of pedestrian crossing points across roadways. Inlay or thermoplastic tape is also recommended for highly reflective crosswalk markings. Crosswalks should be accompanied by Manual on Uniform Traffic Control Devices (MUTCD) pedestrian warning and advance yield signs W11-2, W16-7P, and R1-6 to alert motorists of a crosswalk.



High Visibility Crosswalk Markings (Garner, NC)

RECTANGULAR RAPID FLASHING BEACON (RRFB)

A RRFB is a pedestrian-activated signal used in combination with pedestrian or trail crossing warning signage to improve safety at uncontrolled, marked crosswalks. The device includes two rectangular-shaped yellow indicators, each with an LED-array-based light source, that flash with high frequency when activated. RRFBs should be accompanied by MUTCD pedestrian warning and advance yield signs W11-2 and W16-7P to alert motorists of a crosswalk.

RRFBs are placed on both ends of a crosswalk. If the crosswalk contains a pedestrian refuge island or other type of median, an RRFB should be placed to the right of the crosswalk and on the median (instead of the left side of the crosswalk). RRFBs typically draw power from standalone solar panel units but may also be wired to a traditional power source.



RRFB crossing on Mecklenburg County's Caldwell Station Creek Greenway

LEADING PEDESTRIAN INTERVAL

A Leading Pedestrian Interval (LPI) allows pedestrians to begin crossing an intersection before the traffic signal changes to permit vehicular traffic moving in the same direction. LPIs are most applicable at intersections with high pedestrian volumes and turning traffic, and typically provide a three- to seven-second head start to pedestrians in the crosswalk. LPIs help increase pedestrian visibility and establish right-of-way over turning traffic, and have been shown to reduce collisions between pedestrians and vehicles by as much as 60 percent.



Credit: City of Long Beach, CA

CURB RADIUS REDUCTION

The radius of a corner is directly related to the speed at which a vehicle is capable of turning and impacts the distance a pedestrian must cross to reach the other side of the intersection. To ensure safer turning speeds, a curb radius of 15 ft or less should be applied, which expands the pedestrian area to allow for a shorter crosswalk. Turning speeds should be limited to 15 MPH or less, and prohibiting right turns on red may be considered to further enhance the safety of crosswalk users.



R10-15 SIGNAGE

MUTCD R10-15 signage (Turning Vehicles Yield to Pedestrians) should be used to provide additional emphasis to drivers turning at a signalized intersection. Signage should be placed on the near-right corner for right-turning vehicles, or on the far left corner of the intersection for vehicles turning left onto a two-way street.



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CHAPTER FIVE

5

Implementation

This chapter includes project cut sheets, which contain additional information on areas of the study area recommended for priority implementation. In addition, a description of partner roles, action steps, maintenance needs, and funding resources are provided for the recommended trail network.

Recommended Alignment Cut Sheets

.....

This chapter provides nine project cut sheets that were developed to catalyze the development of this network. In addition to the recommended project cut sheets this chapter provides:

- » **Cut sheets**
- » **Partner Roles**
- » **Action Plan**
- » **Funding Resources**
- » **Maintenance Considerations**

The entire study area evaluated in this report represents almost 25 miles of future Carolina Thread Trail and local greenway connections in Fort Mill, York County, and Lancaster County. The following cut sheet projects account for nearly 50% of the entire recommended network. With active agency partners, multiple potential funding sources, and active land development projects, implementation of this network will take shape through various avenues. Regular communication amongst the agencies who have collaborated on this study will ensure opportunities are seized to move projects forward.

Cut Sheet Development Strategy

The success of greenway development in Mecklenburg County connecting to the NC/SC State line has created a groundswell of momentum for greenway network connections into York County, Lancaster County, and Fort Mill. In order to capitalize on this momentum this study is charged with identifying segments of the recommended greenway network that should advance as projects to deliver impactful community connections and catalyze completion of the recommended network over the coming decade. To achieve this goal, the project team was not bound by the specific termini of the nine lettered corridors developed as part of the network analysis, but rather considered key elements uncovered through community input, steering committee input, and guidance from the project core team.

Cut Sheet Development Strategy

The following elements were given key consideration when developing the cut sheet section limits.

Project Cost

Projects with the potential to be implemented as a single phase based on funding source

Connections to Existing Trails

Building on the trail assets that exist, particularly major greenway trails connecting at the state line

Trailhead Opportunities

The demand for trail access is high as evidenced by access issues documented at Gilroy Dr

Connections to Downtown Fort Mill

This ranked as the 2nd highest short-term trail priority at the public meeting

Connections to Anne Springs

This ranked as the 3rd highest short-term trail priority at the public meeting

Greenway Trail Development along Sugar Creek

This ranked as the 4th highest short-term trail priority at the public meeting and opportunities exist to leverage existing trail easements in Lancaster County



Project Cost Estimate Description

In addition to understanding if a project is feasible from a technical perspective, understanding project cost is an equally important component to any feasibility study. There are several types of costs to consider when establishing a project budget including, but not limited to, the following:

- » **Baseline Construction Cost Estimate**
- » **Escalated Construction Cost Estimate**
- » **Design Services Cost Estimate**
- » **Construction Engineering + Inspection Services (CEI)**
- » **Additional Project Contingency**
- » **Total Cost Estimate**

Each cut sheet project includes a table of estimated costs similar to the example below. Using the cost estimate elements outlined to the right, the example of a project with a base construction cost in 2024 of \$5,000,000 is expected to cost over \$11,000,000 at the time of construction in the projected build year of 2030 after design services, CEI services, and additional contingency are incorporated.

COST CATEGORY	ESTIMATED COST (Example only)
2024 Baseline Total Construction Cost Estimate	\$6,750,000
Escalated Construction Cost Estimate (Build Year 2030)	\$9,050,000
Design Services Cost Estimate	\$600,000
Construction Engineering + Inspection Services	\$1,086,000
Additional Project Contingency (5%)	\$453,000
Total Cost Estimate	\$11,189,000

Baseline Construction Cost Estimate

Baseline construction costs for the design year of 2024 were generated using quantity takeoffs and calculations based on the preliminary design concepts. The baseline construction costs include a 35 percent contingency based on the preliminary nature of the design concept developed for the feasibility study.

Escalated Construction Cost Estimate

To account for inflation, the baseline costs were projected to a build year of 2030, which represents the year of probable construction.



Design Services Cost Estimate

The project team estimated survey and design costs using the baseline construction costs, design elements, anticipated permitting required, and other activities related to funding source requirements (e.g., additional community engagement).



Construction Engineering + Inspection Services (CEI)

A requirement for many state and federal funding sources. CEI services usually range from nine to twelve percent of the estimated construction cost.



Additional Project Contingency

Project contingencies help address a variety of unforeseen costs. An additional five percent contingency was assumed based on the extent of the study area, total length of the projects, potential environmental impacts, and total structures anticipated.



Total Cost Estimate

The total budget estimate was calculated by adding the aforementioned cost components and contingency. All calculated values were rounded up to the nearest \$1,000 for simplicity.

Cut Sheet Projects

Nine projects were identified from the recommended trail network based on community feedback and priorities. These selected segments help accomplish community goals, connect to key destinations, and build connectivity within the core trail network.

The nine projects are shown on the facing map and listed below:

- » **#1: Seam Trail Connection**
- » **#2: Cross Charlotte Trail Connection**
- » **#3: Convention Dr to Merritt Rd Shared Use Path**
- » **#4: A O Jones Blvd to Dairy Barn Trailhead Shared Use Path**
- » **#5: Paradise Connector**
- » **#6: YMCA to Steele St Shared Use Path**
- » **#7: Sugar Creek Greenway Trail Audubon Lake to Tom Hall St**
- » **#8: Sugar Creek Greenway Trail A O Jones Blvd to McAlpine Creek**
- » **#9: Old Nation Rd Shared Use Path**

The following pages contain cut sheets for each project, including an overview map and information about key project characteristics and estimated costs.



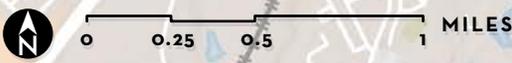
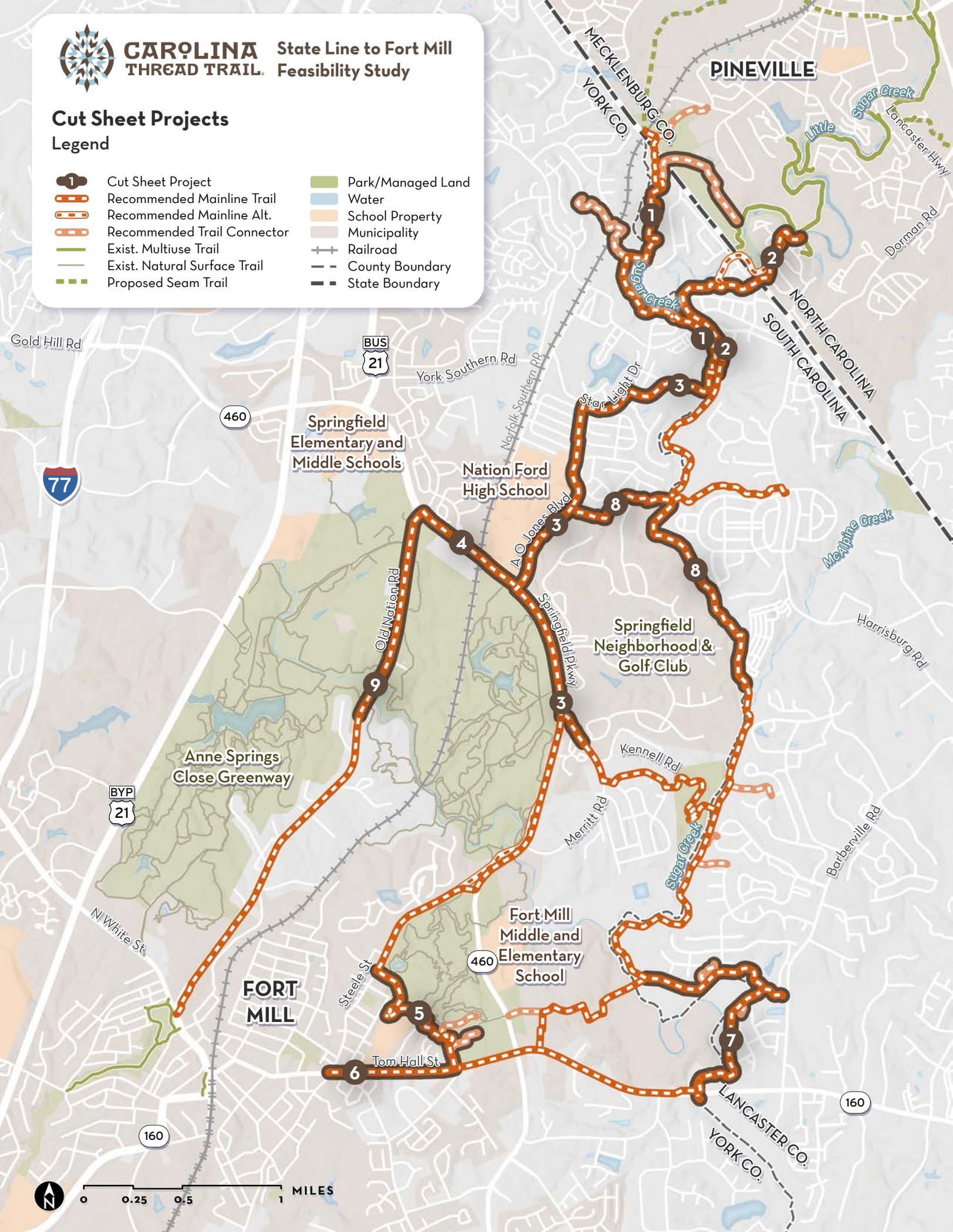
CAROLINA THREAD TRAIL

State Line to Fort Mill Feasibility Study

Cut Sheet Projects

Legend

- Cut Sheet Project
- Recommended Mainline Trail
- Recommended Mainline Alt.
- Recommended Trail Connector
- Exist. Multiuse Trail
- Exist. Natural Surface Trail
- Proposed Seam Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- Railroad
- County Boundary
- State Boundary



Cut Sheet 1 - Seam Trail Connection

Cut Sheet 1 utilizes Corridor A to connect the Little Sugar Creek Greenway in Pineville, NC, to Convention Dr in York County, SC. This would provide an extension of the existing greenway network in Mecklenburg County through the Lancaster County panhandle to the heart of York County while also filling the need for a new trailhead in South Carolina via the proposed trailhead at Convention Dr. Coordination with the Town of Pineville and Mecklenburg County will be needed to advance the connection to the Little Sugar Creek Greenway through Lakeview Park in Pineville. The connection to Burnwald Ct will utilize an existing underpass beneath the Norfolk Southern rail line and provide direct access to over 100 homes.



COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$5,646,000
Escalated Construction Cost Estimate (Build Year 2030)	\$7,570,000
Design Services Cost Estimate	\$680,000
Construction Engineering + Inspection Services	\$909,000
Additional Project Contingency (5%)	\$379,000
Total Recommended Budget	\$9,538,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

2.76 miles

Mainline Facility Type

12 ft Greenway Trail

Trail Segments

5, 6, 7 (mainline); 4, 100, 101 (connection)

Potential Trailheads

Convention Dr and Lakeview Park

Structures

Bridge, boardwalk, retaining wall

Roadway Crossings

Grade separated crossing beneath Regent Pkwy

Trail Connections

Little Sugar Creek Greenway, Burnwald Ct, Lakeview Park, Barcroft Ln

Destinations Served

Lakeview Park, The River Place

Potential Permitting Needs

401/404 Permit
FEMA Flood Model
Erosion Control Permit
Railroad Coordination

Potential Real Estate Acquisition Needs

16 private parcels (15 owners)



CAROLINA State Line to Fort
THREAD TRAIL. Mill Feasibility Study

Seam Trail Connection

Legend

-  Potential Trailhead Location
-  Bridge Location
-  Mainline Trail
-  Connection Trail
-  Other Recommended Trail
-  Existing Multiuse Trail
-  Future Seam Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  County Boundary
-  State Boundary

Cut Sheet 2 - Cross Charlotte Trail Connection

Beginning from the Little Sugar Creek Greenway's neighborhood connector trail to Grace View Dr, this alignment quickly ascends from the creek and follows common open space parcels to Atwell Glen Ln. A short section of neighborhood greenway then crosses Gilroy Dr and transitions back to greenway trail along Sugar Creek, passing under Regent Pkwy on the east side of the creek and ultimately crossing Sugar Creek with a new bridge to the proposed trailhead at Convention Dr. A significant section of boardwalk will be required along Sugar Creek just north of the new bridge which contributes to the high baseline construction cost for this section.



COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$9,228,000
Escalated Construction Cost Estimate (Build Year 2030)	\$12,370,000
Design Services Cost Estimate	\$1,100,000
Construction Engineering + Inspection Services	\$1,485,000
Additional Project Contingency (5%)	\$619,000
Total Recommended Budget	\$15,574,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

1.41 miles

Mainline Facility Type

Greenway Trail, Neighborhood Greenway

Trail Segments

8, 14, 17, 20, 21, 23, 24, 26, 27

Potential Trailheads

Convention Dr

Structures

Bridge, boardwalk

Roadway Crossings

Grade-separated crossing beneath Regent Pkwy, at-grade crossings at Shaw Ct, Gilroy Dr, and Grace View Dr

Trail Connections

Little Sugar Creek Greenway

Destinations Served

The River Place, Prestwick Neighborhood, Burnside Neighborhood

Potential Permitting Needs

401/404 Permit
FEMA Flood Model
Erosion Control Permit

Potential Real Estate Acquisition Needs

11 private parcels (10 owners)



Cross Charlotte Trail Connection

Legend

-  Potential Trailhead Location
-  Bridge Location
-  Mainline Trail
-  Other Recommended Trail
-  Existing Multiuse Trail
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  County Boundary
-  State Boundary



Cut Sheet 3 - Convention Dr to Merritt Rd Shared Use Path

Cut Sheet 3 includes segments of trail on corridors B and C, connecting from Convention Dr to Merritt Rd. The trail begins at a proposed trailhead on Convention Dr near Sugar Creek and follows Convention Dr to Star Light Dr, where it continues as a sidepath on the south side of the road to A O Jones Blvd. The sidepath continues on the west side of A O Jones Blvd to Laurent Ave/Meyer Rd, where it crosses to the east side of A O Jones Blvd. At the entrance of Nation Ford High School and Sugar Creek Elementary School, the trail crosses back to the west side of A O Jones Blvd, continuing to the intersection of Springfield Pkwy. After crossing Springfield Pkwy, the sidepath continues to the southeast on the west side of Springfield Pkwy to Merritt Rd, where it crosses. The sidepath continues on the west side of Merritt Rd to the intersection of Paddock Club Ln/Fairntosh Dr. Opportunities to phase the construction of this project exist by utilizing the existing sidewalks along the northern portion (from Springfield Pkwy to Convention Dr) and constructing the sidepath from the intersection of A O Jones Blvd and Springfield Pkwy to Merritt Rd, achieving a connection to Anne Springs Close Greenway.



COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$5,865,000
Escalated Construction Cost Estimate (Build Year 2030)	\$7,860,000
Design Services Cost Estimate	\$675,000
Construction Engineering + Inspection Services	\$944,000
Additional Project Contingency (5%)	\$393,000
Total Recommended Budget	\$9,872,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

2.78 miles

Mainline Facility Type

Greenway Trail, Sidepath

Trail Segments

28, 31, 32, 35, 44, 43

Potential Trailheads

Convention Dr, Old Nation Ford Greenway, Anne Springs Close Greenway (Adventure Road entrance)

Structures

Boardwalk

Major Roadway Crossings

At-grade crossings of A O Jones Blvd and Springfield Pkwy

Trail Connections

Anne Springs Close Greenway, Nation Ford High School

Destinations Served

Anne Springs Close Greenway (Adventure Road entrance), Nation Ford High School, Sugar Creek Elementary School, The River Place, Springfield Neighborhood, Sycamore Fort Mill Neighborhood, neighborhoods along A O Jones Blvd

Potential Permitting Needs

401/404 Permit
FEMA Flood Model
Erosion Control Permit

Potential Real Estate Acquisition Needs

3 private parcels (3 owners)



Boardwalk

Convention Dr

Sugar Creek Elementary School

Nation Ford High School

At-grade crossing of A O Jones Blvd at entrance to Sugar Creek Elementary School

Springfield Neighborhood & Golf Club

Anne Springs Close Greenway Adventure Road

CAROLINA State Line to Fort
THREAD TRAIL. Mill Feasibility Study

Convention Dr to Merritt Rd Shared Use Path

Legend

- Proposed Trailhead Location
- Mainline Trail
- Other Recommended Trail
- Existing Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality
- County Boundary



Cut Sheet 4 - A O Jones Blvd to Dairy Barn Trailhead Shared Use Path

Cut Sheet 4 encompasses a short but critical section of Corridor D between the Dairy Barn entrance of the Anne Springs Close Greenway and the intersection of Springfield Pkwy and A O Jones Blvd at Nation Ford High School. Beginning at the Dairy Barn Entrance to Anne Springs Close Greenway, the trail follows the east side of Old Nation Rd to Springfield Pkwy. It crosses and continues east along the north side of Springfield Pkwy, incorporating an existing sidepath along the frontage of the Carolina Orchards community. A major element of this corridor is the construction of a new multi-use trail bridge across the Norfolk Southern railroad corridor just east of Carolina Orchards. This new bridge will unlock multimodal connectivity between Nation Ford High School and the west side of Fort Mill. A trailhead could be located at the Anne Springs Close Greenway Dairy Barn entrance, a key destination served by the trail. Old Nation Rd was identified as a high-priority corridor in public engagement.



Existing shared use path along Springfield Pkwy

COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$2,577,000
Escalated Construction Cost Estimate (Build Year 2030)	\$3,460,000
Design Services Cost Estimate	\$315,000
Construction Engineering + Inspection Services	\$416,000
Additional Project Contingency (5%)	\$173,000
Total Recommended Budget	\$4,364,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

0.80 miles

Mainline Facility Type

Sidepath

Trail Segments

45

Potential Trailheads

Anne Springs Close Greenway (Dairy Barn entrance)

Structures

Bridge

Roadway Crossings

At-grade crossing of Springfield Pkwy

Trail Connections

Anne Springs Close Greenway

Destinations Served

Anne Springs Close Greenway (Dairy Barn entrance), Nation Ford High School, Sugar Creek Elementary School, Springfield Town Center (via existing Springfield Pkwy sidewalk)

Potential Permitting Needs

401/404 Permit
 SCDOT Encroachment
 Railroad Coordination
 Erosion Control Permit

Potential Real Estate Acquisition Needs

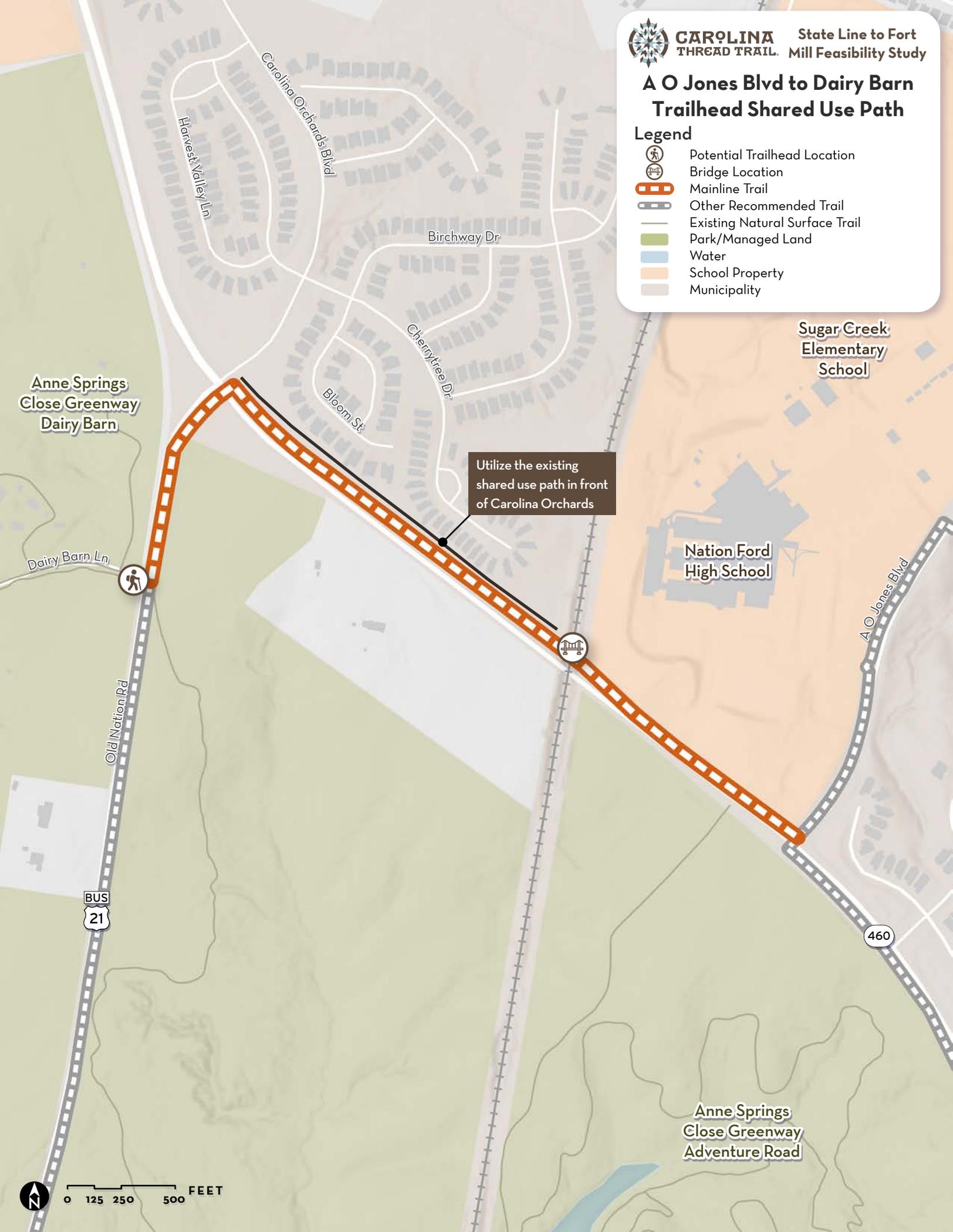
3 private parcels (1 owner)



A O Jones Blvd to Dairy Barn Trailhead Shared Use Path

Legend

- Potential Trailhead Location
- Bridge Location
- Mainline Trail
- Other Recommended Trail
- Existing Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality



Anne Springs
Close Greenway
Dairy Barn

Sugar Creek
Elementary
School

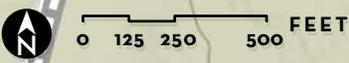
Nation Ford
High School

Anne Springs
Close Greenway
Adventure Road

Utilize the existing
shared use path in front
of Carolina Orchards

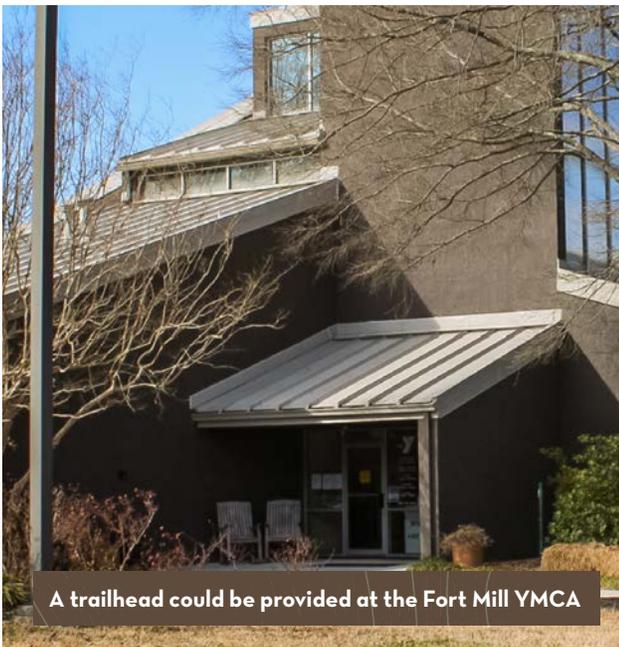
BUS
21

460



Cut Sheet 5 - Paradise Connector

Cut Sheet 5 is the far southern end of Corridor C from Steele St to Tom Hall St, providing a connector to a proposed trailhead site at the Fort Mill YMCA. Beginning at the YMCA, the trail uses existing Anne Springs Close Greenway property east of Bozeman Dr, and routes on the site of a future early childhood education center from Bozeman Dr to Steele St, passing by the edge of Green Hill Cemetery. This section provides a trail serving the Paradise community, which has expressed a desire for more direct access to trails. The Early Childhood Development Center project is actively under development review and presents an opportunity to complete this connection to the YMCA in the near term.



Length

0.95 miles

Mainline Facility Type

Greenway Trail, Sidepath

Trail Segments

62, 63 (mainline); 110 (connection)

Potential Trailheads

Fort Mill YMCA

Structures

Potential bridge, culverts, and boardwalk

Roadway Crossings

At-grade crossing of Steele St

Trail Connections

Anne Springs Close Greenway

Destinations Served

Fort Mill YMCA, Fort Mill Aquatics Center, Anne Springs Close Greenway (Blue Star entrance), Green Hill Cemetery

Potential Permitting Needs

401/404 Permit
Erosion Control Permit

Potential Real Estate Acquisition Needs

3 private parcels (3 owners)

COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$3,226,000
Escalated Construction Cost Estimate (Build Year 2030)	\$4,330,000
Design Services Cost Estimate	\$325,000
Construction Engineering + Inspection Services	\$520,000
Additional Project Contingency (5%)	\$217,000
Total Recommended Budget	\$5,392,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.



Paradise Connector

Legend

- Potential Trailhead Location
- Corridor C Mainline
- Corridor C Connection
- Other Recommended Trail
- Existing Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality



Early Childhood Development Center in development review

460

Fort Mill Elementary and Middle Schools

Anne Springs Close Greenway Blue Star

Green Hill Cemetery

Steele Street Park

Fort Mill YMCA

Cut Sheet 6 - YMCA to Steele St Shared Use Path

Cut Sheet 6 includes part of Corridor I along Tom Hall St from Steele St to Kimbrell Rd at the Fort Mill YMCA and Fort Mill Aquatics Center. The alignment follows the north side of the street as a sidepath, crossing five side streets and additional driveways.

This section of the recommended alignment provides a high-quality multimodal connection to Downtown Fort Mill from the Fort Mill YMCA, Fort Mill Aquatics Center, and Anne Springs Close Greenway Blue Star entrance.



COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$1,416,000
Escalated Construction Cost Estimate (Build Year 2030)	\$1,900,000
Design Services Cost Estimate	\$235,000
Construction Engineering + Inspection Services	\$228,000
Additional Project Contingency (5%)	\$95,000
Total Recommended Budget	\$2,458,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

0.64 miles

Mainline Facility Type

Sidepath

Trail Segments

66, 67

Potential Trailheads

None

Structures

None

Roadway Crossings

At-grade crossings of Steele St, Joe Louis St, Sanders St, Bozeman Dr, Ashebrooke Dr

Trail Connections

None

Destinations Served

Fort Mill YMCA, Fort Mill Aquatics Center, Nature Trail Crossing (Fort Mill Housing Authority), Downtown Fort Mill

Potential Permitting Needs

401/404 Permit
Erosion Control Permit
SCDOT Encroachment

Potential Real Estate Acquisition Needs

None



YMCA to Steele St Shared Use Path

Legend

- Mainline Trail
- Other Recommended Trail
- Existing Natural Surface Trail
- Park/Managed Land
- Water
- School Property
- Municipality



At-grade signaled crossing of Steele St



0 125 250 500 FEET

Cut Sheet 7 - Sugar Creek Greenway Trail Audubon Lake to Tom Hall St

Cut Sheet 7 is the southernmost section of Corridor G and follows the east bank of Sugar Creek from Corridor H near Rippling Brook Ct to Corridor I at Hwy 160. The section of trail includes a proposed connection to Barberville Rd that could serve as a trailhead location. At its southern end, the trail passes under the Hwy 160 bridge to provide a grade-separated crossing adjacent to the creek. A trailhead could be provided at this location and serve a future extension to the south along Sugar Creek.



This section consists entirely of streamside greenway trail

COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$2,755,000
Escalated Construction Cost Estimate (Build Year 2030)	\$3,700,000
Design Services Cost Estimate	\$475,000
Construction Engineering + Inspection Services	\$444,000
Additional Project Contingency (5%)	\$185,000
Total Recommended Budget	\$4,804,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

1.89 miles

Mainline Facility Type

Greenway Trail

Trail Segments

53 (mainline); 106, 107, 108 (connection)

Potential Trailheads

Barberville Rd, Tom Hall St

Structures

Boardwalk

Roadway Crossings

Grade-separated crossing of Tom Hall St

Trail Connections

None

Destinations Served

Sugar Creek, Preserve at Barber Rock

Potential Permitting Needs

401/404 Permit
 FEMA Flood Model
 Erosion Control Permit
 SCDOT Encroachment

Potential Real Estate Acquisition Needs

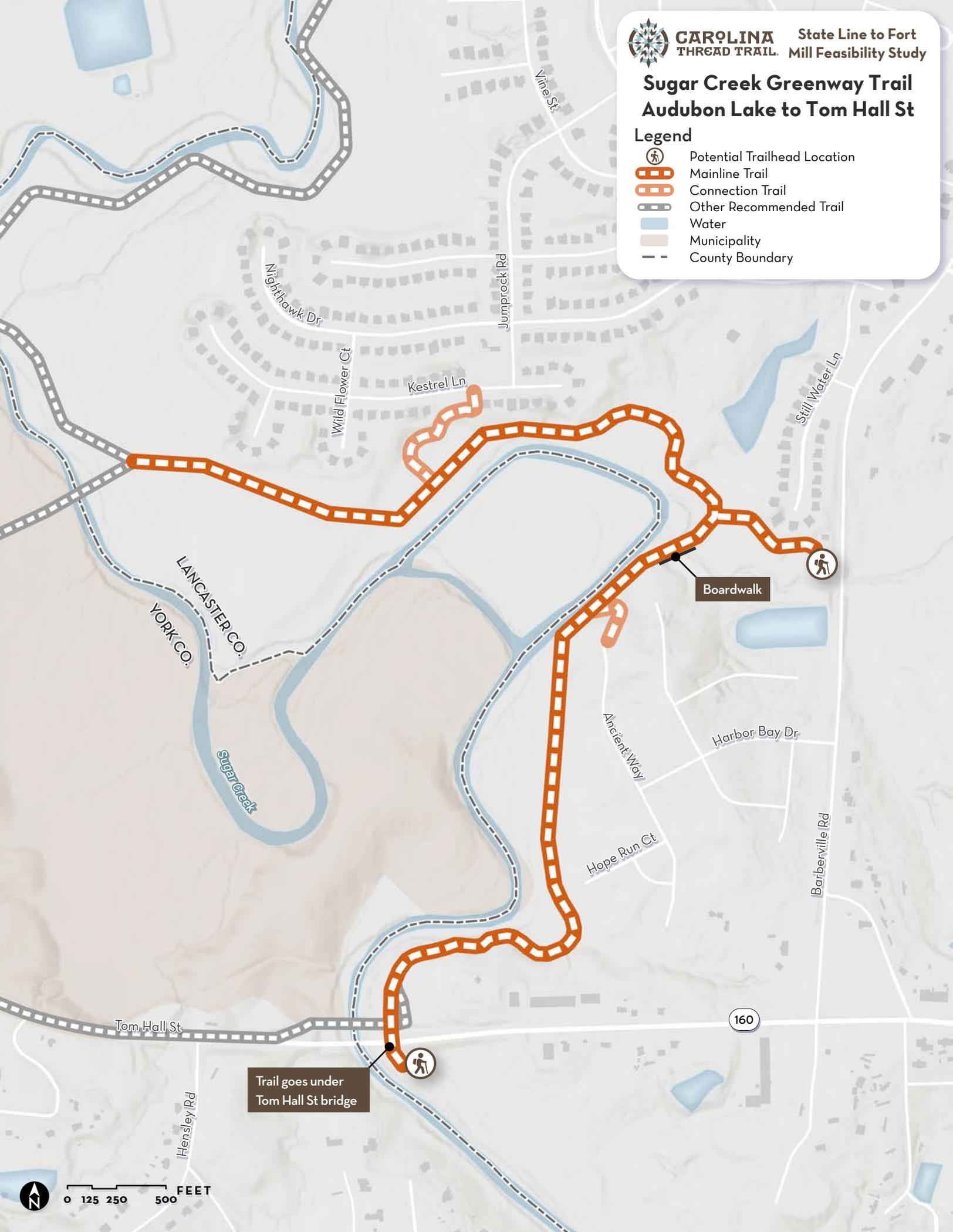
7 private parcels (7 owners)



Sugar Creek Greenway Trail Audubon Lake to Tom Hall St

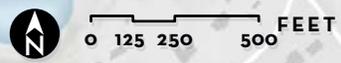
Legend

- Potential Trailhead Location
- Mainline Trail
- Connection Trail
- Other Recommended Trail
- Water
- Municipality
- County Boundary



Boardwalk

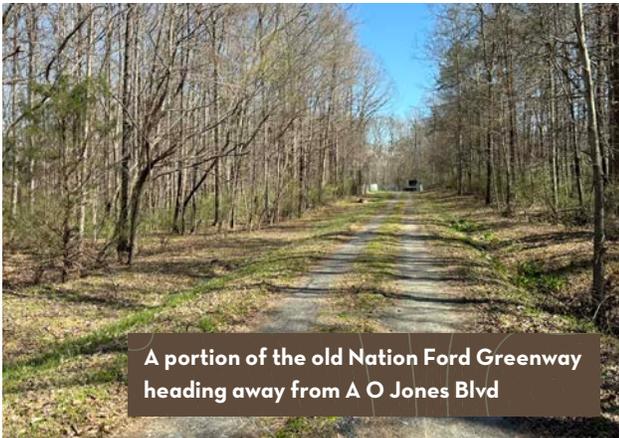
Trail goes under
 Tom Hall St bridge



Cut Sheet 8 - Sugar Creek Greenway Trail A O Jones Blvd to McAlpine Creek

Cut Sheet 8 links A O Jones Blvd near Nation Ford High School to the confluence of Sugar Creek and McAlpine Creek. The trail would repurpose the trailhead at A O Jones Blvd formerly used to provide access to the Nation Ford Greenway and implement part of Corridor C to Sugar Creek, where a new bridge would cross the creek onto the Lancaster County side.

After crossing Sugar Creek, Cut Sheet 8 includes a section of Corridor G from Corridors C and E to McAlpine Creek. The Pines at Sugar Creek development will be constructing three-fourths of a mile of greenway trail along Sugar Creek. At the southern end of this segment, the existing Ridge at Sugar Creek development constructed just under a half mile of paved greenway trail along its frontage of Sugar Creek which is incorporated into this corridor. Cut Sheet 8 does not include the bridge across McAlpine Creek that will extend the trail further south.



A portion of the old Nation Ford Greenway heading away from A O Jones Blvd

COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$6,570,000
Escalated Construction Cost Estimate (Build Year 2030)	\$8,810,000
Design Services Cost Estimate	\$800,000
Construction Engineering + Inspection Services	\$1,058,000
Additional Project Contingency (5%)	\$441,000
Total Recommended Budget	\$11,109,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

1.84 miles

Mainline Facility Type

Greenway Trail

Trail Segments

33, 34, 37

Potential Trailheads

Old Nation Ford Greenway

Structures

Bridge, boardwalk

Roadway Crossings

None

Trail Connections

None

Destinations Served

Nation Ford High School, Sugar Creek Elementary School, Sugar Creek, Pines Sugar Creek Neighborhood, Bretagne Neighborhood

Potential Permitting Needs

401/404 Permit
FEMA Flood Model
Erosion Control Permit

Potential Real Estate Acquisition Needs

10 private parcels (9 owners)

Sugar Creek Elementary School

Nation Ford High School

Springfield Neighborhood & Golf Club

460

CAROLINA State Line to Fort
THREAD TRAIL. Mill Feasibility Study

Sugar Creek Greenway Trail A O Jones Blvd to McAlpine Creek

Legend

-  Proposed Trailhead Location
-  Bridge Location
-  Mainline Trail
-  Other Recommended Trail
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality
-  County Boundary

Boardwalk and bridge

Boardwalk

Boardwalk

Paved trail to be constructed by Pines at Sugar Creek

Utilize trail segment constructed by Ridge at Sugar Creek

0 125 250 500 FEET



Cut Sheet 9 - Old Nation Rd Shared Use Path

Cut Sheet 9 encompasses a segment of Corridor D along the east side of US-21 BUS/Old Nation Rd. The southern limits begin at the northern terminus of the existing sidewalk on Old Nation Ford Rd and the project ends at Dairy Barn Ln. This section of trail provides access to the Dairy Barn entrance of the Anne Springs Close Greenway, and connectivity to Downtown Fort Mill via the existing sidewalk on Old Nation Rd.

This section of trail is proposed to be constructed as a sidepath with one major creek crossing at Steel St via a proposed new pedestrian bridge. Opportunities exist for further coordination with SCDOT to add a sidepath to the existing Steele Creek bridge on Old Nation Rd which would greatly reduce the cost of this project and eliminate the need for a new bridge over Steele Creek for the greenway trail.



COST CATEGORY	ESTIMATED COST
2024 Baseline Total Construction Cost Estimate	\$3,433,000
Escalated Construction Cost Estimate (Build Year 2030)	\$4,610,000
Design Services Cost Estimate	\$410,000
Construction Engineering + Inspection Services	\$554,000
Additional Project Contingency (5%)	\$231,000
Total Recommended Budget	\$5,805,000

* Costs associated with real estate acquisition to be determined during design process and are not included in this estimate.

Length

0.95 miles

Mainline Facility Type

Sidepath

Trail Segments

45

Potential Trailheads

Anne Springs Close Greenway (Dairy Barn entrance)

Structures

Bridge

Roadway Crossings

None

Trail Connections

Anne Springs Close Greenway

Destinations Served

Anne Springs Close Greenway (Dairy Barn entrance)

Potential Permitting Needs

401/404 Permit
FEMA Flood Model
Erosion Control Permit
SCDOT Encroachment

Potential Real Estate Acquisition Needs

None



Old Nation Rd Shared Use Path

Legend

-  Proposed Trailhead Location
-  Proposed Bridge
-  Mainline Trail
-  Other Recommended Trail
-  Existing Natural Surface Trail
-  Park/Managed Land
-  Water
-  School Property
-  Municipality



Anne Springs
 Close Greenway
 Dairy Barn

Dairy Barn Ln

Old Nation Rd

Hillcrest Dr

Steele Creek

New bridge over
 Steele Creek parallel
 to SCDOT bridge

Connect to
 existing sidewalk

BUS
 21

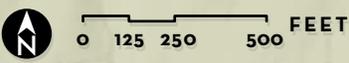
Rich St

Anne Springs
 Close Greenway
 Adventure Road

Bloom St

Cherrytree Dr

Springfield Pkwy



Partner Roles

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The proposed sections of the Carolina Thread Trail present a significant expansion of greenways and trails in the Fort Mill area and will require collaboration with multiple local, regional, and state agencies, as well as community and nonprofit organizations to implement.

Key partners in the implementation of the Carolina Thread Trail plan include:

- » **Carolina Thread Trail**
- » **Town of Fort Mill**
- » **York County**
- » **Lancaster County**
- » **RFATS**
- » **SCDOT**
- » **Anne Springs Close Greenway**
- » **Nation Ford Land Trust**
- » **Local Residents/Community Groups**

Carolina Thread Trail

The Carolina Thread Trail (CTT) maintains a master plan network for greenway trails serving as the framework for regional greenway connectivity not only in this study area, but within the 15-county CTT region. This organization generates support for greenway and trail projects by providing funding, raising awareness, advocating to elected officials and fostering collaboration among jurisdiction partners. This study was made possible by a grant from the Carolina Thread Trail and the CTT will play a significant role in coordinating with regional agencies, county staff, and municipal staff to advance design and construction these projects. The CTT has a well-developed signage and wayfinding program that will be incorporated into future greenway trail projects from this study.

Town of Fort Mill

Municipal governments typically lead the development of recreation and transportation projects within their respective jurisdictions. When constructed, the greenway trails shown in this study that fall within the Town of Fort Mill's boundaries will be maintained by the Town or in partnership with SCDOT for alignments that fall within an SCDOT right-of-way. As a project lead the Town of Fort Mill will be responsible for managing the design, bidding, and construction for greenway segments. The town also plays a lead role in community engagement and policy development relative to greenway trails. The Town's Trail Master Plan serves as the official planning document for greenway trails in Fort Mill.

York County

York County leads development and provides services for municipalities and unincorporated areas within the county. Key departments involved in the development of the Carolina Thread Trail network include the Parks and Planning + Development Services Departments. The York County Parks Department plans and develops parks and trails and conserves natural areas to provide recreational access to all residents within the county. The York County Planning Department oversees all aspects of land development in the unincorporated areas of York County, including long-range planning, zoning, permitting, and environmental compliance. The County will be responsible for coordinating with partners on funding opportunities and leading the development of county trail connectors through land acquisition, design, construction, and maintenance.

Lancaster County

Lancaster County has been an active partner in advancing the Carolina Thread Trail through coordination with land development projects and county managed park projects. Sugar Creek is the border between Lancaster and York Counties, and the alignment recommended through this study has the greenway trail along Sugar Creek running along the Lancaster County side of the creek. Continued coordination with development projects to both reserve right-of-way and construct sections of the CTT along Sugar Creek is a major role for Lancaster County. This study identifies segments of the network for capital project development and Lancaster County will be expected to play a lead role (along with partners) to advance projects in its jurisdiction, as well as a support role for projects that span the county line.

RFATS

RFATS is the Rock Hill-Fort Mill Area Transportation Study which is the Metropolitan Planning Organization (MPO) for eastern York County as well as the panhandle of Lancaster County, South Carolina. RFATS coordinates comprehensive transportation planning activities within the urbanized area, in cooperation with SCDOT, the Federal Highway Administration (FHA), and the Federal Transit Administration (FTA). RFATS maintains a regional Bike/Ped Plan with priority routes that provide a framework for identifying projects for regional funding. RFATS receives Transportation Alternatives Program (TAP) Funding as a direct allocation from FHWA for discretionary spending on bicycle and pedestrian projects in its planning area.

SCDOT

SCDOT allocates federal and state funding and establishes policies for transportation improvements in communities across South Carolina. SCDOT develops the State Transportation Improvement Program (STIP), which identifies projects that will receive funding during a 7-year period (current STIP is 2021-2027) and receives a reprioritization every 3 years. SCDOT policies, such as Complete Streets and Control of Access, provide guidance and oversight for permitting and implementing projects on SCDOT streets. SCDOT plays a role in funding projects along this network through the STIP, and implementing this network through future programmed complete streets projects.

Anne Springs Close Greenway

The Anne Springs Close Greenway (ASCG) is a nature preserve of 2,100 acres that serves as a natural buffer from urban development and provides bountiful outdoor recreation opportunities. The natural surface trail network spans the entire property and provides 40 miles of trails for hiking, mountain biking, and equestrian uses. The trail system is accessible via an ASCG membership or a day pass purchased at one of the trailheads. ASCG is the primary recreation destination served by the network of greenway trails in this feasibility study. In addition to being a recreation destination the ASCG organization is a key partner for developing future trailheads for access to the growing Carolina Thread Trail greenway network.

Nation Ford Land Trust

Nation Ford Land Trust is a 501 (c)(3) organization dedicated to the preservation of open spaces, natural beauty, and the scenic heritage of the York County, South Carolina area. This conservation organization currently owns or holds conservation easements on a total of 15,512 acres in the region. Nation Ford Land Trust is responsible for The Founders Trail, Old Nation Ford Greenway (closed), Springfield Trail (temporarily closed) located in the Town of Fort Mill. While the pieces of the Old Nation Ford Greenway and Springfield Trail are irreparably damaged from flooding events, Nation Ford Land Trust still retains easements in those areas that can be repurposed for the development of greenway trails shown in this feasibility study network.

Local Residents/Community Groups

Residents and community groups that promote greenway and trail system expansion serve a key role in advocating for infrastructure investment. Community members and groups generate support for projects by raising awareness within the public, advocating to elected officials to prioritize funding for greenways and trail amenities, and fostering collaboration amongst jurisdictional partners. Two major groups within this study area include the Bike/Ped Coalition of York County and Indian Land Green.

Action Plan

The following table provides a summary of action steps to implement the Carolina Thread Trail over the coming years. Partners may act as the responsible parties for various actions associated with the greenway development.

Action steps are grouped into three categories:

- » **Policy and Planning**
- » **Project Development and Funding**
- » **Community Engagement and Maintenance**

TASK	CATEGORY	ACTION
1	Policy and Planning	Asses the need for any master plan amendments within the study area for master plans that may impact the ability to have land dedicated for greenway trails through new land development projects, such as the CTT Master Plan, Fort Mill Trails Master Plan or other applicable master plans.
2	Policy and Planning	Coordinate with RFATS to ensure the Regional Bike/Plan Plan's Priority Routes Network reflects the feasibility study recommendations. Determine if any other MPO plans should be amended to ensure the studies recommendations are eligible for federal funding.
3	Policy and Planning	Create a standing ad-hoc committee with representation from this project's core team to communicate updates and coordinate future planning and project development activities within the study area. This committee should meet quarterly and bring in other groups as needed to cover funding opportunities, regional connections and land development updates.
4	Project Development and Funding	Use the ad-hoc committee to prioritize cut sheet sections within each jurisdiction to advance toward design. Identify opportunities for jurisdictions to collaborate on projects that crosses jurisdictional boundaries.
5	Project Development and Funding	Identify funding to advance a project within each jurisdiction (or a cross-jurisdictional project) to the design phase.
6	Project Development and Funding	Coordinate with RFATS to add cut sheet projects into the MTP to aid in advancing sections of this network into the TIP.
7	Project Development and Funding	Remain engaged with SCDOT, RFATS, and regional partners for funding opportunities and submit applications for funding through federal, state, and other grant programs as appropriate for design and construction.
8	Project Development and Funding	Complete 100% design and construction documents for a priority section within this study area. Design plans should be guided by the recommendations developed through this study
9	Project Development and Funding	Construct a priority section from this feasibility study.
10	Community Engagement and Maintenance	Develop a community engagement plan to continue educating the public and developing support for the CTT network in this study area.
11	Community Engagement and Maintenance	Develop landowner outreach information to aid in coordination with developers and landowners as opportunities arise within the study area to acquire easements or greenway dedication.
12	Community Engagement and Maintenance	Share knowledge and best practices amongst the study partners for greenway trail maintenance as segments are constructed.
13	Community Engagement and Maintenance	Implement the Carolina Thread Trail wayfinding standards as segments are constructed.

	LEAD	PARTNERS	TIMEFRAME
	Carolina Thread Trail, Fort Mill, Lancaster County, York County		Short-Term
	Fort Mill, Lancaster County, York County	RFATS, Carolina Thread Trail	Short-Term
	Fort Mill, Lancaster County, York County, Carolina Thread Trail	RFATS, Mecklenburg County Parks and Recreation, Nation Ford Land Trust, others as needed	Short-Term
	Fort Mill, Lancaster County, York County, Carolina Thread Trail		Short-Term
	Fort Mill, Lancaster County, York County, Carolina Thread Trail	RFATS	Short-Term
	RFATS, Fort Mill, Lancaster County, York County, Carolina Thread Trail		Medium-Term
	Fort Mill, Lancaster County, York County, Carolina Thread Trail	RFATS, SCDOT	Perpetual
	Fort Mill, Lancaster County, York County, Carolina Thread Trail	SCDOT	Medium-Term
	Fort Mill, Lancaster County, York County, Carolina Thread Trail	SCDOT	Medium/Long - Term
	Fort Mill, Lancaster County, York County, Carolina Thread Trail	Anne Springs Close Greenway, Bike/Ped York County, Indian Land Green	Short-Term
	Carolina Thread Trail, Fort Mill, Lancaster County, York County		Short/Medium-Term
	Fort Mill, Lancaster County, York County	Carolina Thread Trail	Medium-Term
	Carolina Thread Trail	Fort Mill, Lancaster County, York County	Medium/Long-Term

Maintenance Considerations

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Maintenance of active transportation facilities such as the proposed segments of the Carolina Thread Trail is essential to the long-term viability of the network. Facilities that are consistently maintained have lower costs over time and provide a safer and more positive user experience than facilities that require major rehabilitation work from a lack of consistent maintenance. Good maintenance practices also prolong the useful life of these facilities, promote positive relationships with adjacent landowners, and create a sense of stewardship in the community. This feasibility study recommends a comprehensive approach to maintenance with the development of a maintenance plan to prioritize funding and responsibilities amongst project stakeholders. The maintenance plan should be reviewed and updated annually, responding to lessons learned and changes in tasks, operational policies, standards, and maintenance goals.

Key considerations for the Carolina Thread Trail maintenance plan include:

- » **Understanding the anticipated needs of the greenway system and assessing the capacity of staff to meet those maintenance needs.**
- » **Creating a facility inventory to understand the routine and major maintenance needs of greenway signs, amenities, bridges, culverts, and pavement conditions.**
- » **Estimate of baseline maintenance costs for routine maintenance activities such as mowing, edging, landscaping, trash removal, debris clearing, lighting, drainage, seasonal maintenance needs, sealcoating, repaving, patching, and bridge repair.**
- » **Understanding of labor costs to identify which maintenance tasks can be completed in-house versus contracted out.**
- » **Using available technologies to collect data on facility conditions and support maintenance functions.**
- » **Developing a methodology to prioritize maintenance needs based on facility conditions and available funding.**
- » **Consideration of emergency services including designated ingress/egress locations, mile-marker signage along the facility for location identification, and emergency notification systems.**

Maintenance Responsibilities + Funding

Given the multi-jurisdictional nature of the study area, not all trails proposed in this study may be maintained by the same agency. Each local government involved is expected to coordinate with other project partners to establish maintenance responsibilities as sections of the proposed network are completed. It is not expected that the Carolina Thread Trail will take on maintenance for any trail sections within this study.

Understanding the limited funding and resources available at the municipal and county-wide level for greenway maintenance, proposed design elements and materials of the Carolina Thread Trail have been selected to lower life cycle costs and reduce future maintenance burdens. This study also recommends that policies and standards developed during the maintenance planning process are consistent with municipal maintenance programs.

As a regionally significant project, intergovernmental and inter-agency coordination is strongly encouraged to collectively address maintenance needs, policies, standards, and funding. Regional and state government agencies should consider providing financial assistance to supplement municipal and county maintenance programs for activities conducted along the Carolina Thread Trail network. Additionally, regional partners should explore public-private partnerships as a potential funding mechanism for maintenance.

In addition, community members and volunteer groups may be utilized as partners in the maintenance of greenway segments. These agencies may help perform regular beautification and minor maintenance tasks on existing greenways as well as advocate for new trail development and funding throughout the community. While external partners are invaluable to the success and management of a greenway, dedicated staff capacity is critical to performing larger repair work and maintenance activities.

Budgeting for Routine Maintenance of Trails

Some of the factors that trail managers should consider in budgeting for future trail maintenance could include:

- » **Trail environment and costs of labor and materials**
- » **Trail surface material**
- » **Number of visitors**
- » **Number and type of amenities such as bathrooms, trash cans, lawns, or special plantings**
- » **Number and length of structures such as bridges or boardwalks**
- » **Frequency of flooding events**
- » **Capacity of community members and volunteer groups to help perform maintenance tasks**

Annual Per-Mile Cost of Trail Maintenance

* The vast range of maintenance for trails in various contexts per a 2022 Rails to Trails Conservancy study



Suburban/rural area
Basic paved trail
No amenities
Volunteer maintenance

High volume trail
Restrooms/amenities
Dedicated, paid
maintenance staff



Trail maintenance in Cary, NC

MAINTENANCE TASK	TASK TYPE	RECOMMENDED FREQUENCY
<i>Routine maintenance:</i> Tree/brush trimming Mowing Trail sweeping Signage/Map updates/Replacement Trash removal/litter clean-up Planting, pruning, landscaping Flooding repairs Repainting/restriping Minor patching Minor bridge repairs Lighting replacement	Routine	Ongoing / Annually
Shared-use path sealcoating	Minor Repairs	Every 5 years
<i>Shared-use path resurfacing:</i> Asphalt Concrete Boardwalk	Major Reconstruction	Every 10-15 years Every 20 years Every 10 years
Complete replacement, regrading, resurfacing	Major Reconstruction	Every 20 years

Source: *Best Practices in Trail Maintenance: A Manual* by the Ohio River Greenway, Purdue University

Funding Resources

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The project team identified potential funding sources, compiled criteria and requirements, and related the anticipated schedule of funding to the target projects. Costs of the projects will be compared with funding needs, so that long-term programming for local matching funds can be accomplished. The team explored various funding options from public and private sources to determine the availability and requirements for grants that could potentially fund trail projects throughout the Town of Fort Mill, York County, and Lancaster County in the future.

Federal Funding

Communities in South Carolina have partnered with Federal agencies to improve crossings and build multi-use paths, greenways, and trails. Federal funding is primarily distributed to municipalities through state agencies and Metropolitan Planning Organizations (MPO), as well as through discretionary grant programs.

The Fixing America's Surface Transportation (FAST) Act authorizes transportation funding for highway, transit, rail, bicycle, pedestrian projects, safety programs, and infrastructure. FAST Act funding is administered by the Federal Highway Administration (FHWA). FHWA distributes funding to SCDOT and directly to MPOs through the Locally Administered Projects Program (LAPP). To obtain Federal funding, communities must submit their candidate projects to their respective MPO or RPO to then be entered into the SCDOT's transportation investment strategies. This formula ranks projects and identifies those to be funded in the State Transportation Improvement Program (STIP). These funds require a 20% match from the municipality. Federal transportation funds for bicycle and pedestrian projects are primarily distributed through five programs: Transportation Alternatives (TA), Congestion Mitigation & Air Quality (CMAQ), the Recreational Trails Program, (RTP), the Highway Safety Improvement Program (HSIP), and the Carbon Reduction Program (CRP).

Please reference the following link for information related to potential eligibility for bicycle and pedestrian activities and projects under the USDOT's surface transportation funding programs:
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.pdf?u=092922

Additional federal funding sources for bicycle and pedestrian planning, infrastructure, and programs are administered through the Department of Housing and Urban Development (HUD) with the Community Development Block Grant (CDBG) Program. Several discretionary grant programs are administered by the US Department of Transportation, National Park Service, and the National Endowment for the Arts. Several federal programs were added under the Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) that can be used to help fund active transportation projects.

STATE & MPO ADMINISTERED FUNDING

Transportation Alternatives

Transportation Alternatives (TA) provides federal funds for community-based projects that expand travel choices and enhance the transportation experience by integrating modes and improving the cultural, historic, and environmental aspects of our transportation infrastructure. In South Carolina, TA funds are administered by SCDOT, and eligible projects include pedestrian facilities, bicycle facilities, and streetscaping projects. Funds are available only on a reimbursement basis. Only after a project has been approved by the State Department of Transportation or Metropolitan Planning Organization (MPO) and the FHWA division office, can costs become eligible for reimbursement. Costs must be incurred after FHWA division office project approval, or they are not eligible for reimbursement.

The divisions for the population-based suballocation are:

- » **\$2,999,400 - In urbanized areas of the State with an urbanized area population of over 200,000, also known as a Transportation Management Area;**
- » **\$1,834,589 - In areas of the State other than urban areas with a population greater than 5,000; and**
- » **\$2,600,164 - In areas of the state with a population less than 5,000.**

The target federal allocation for the Rock Hill-Fort Mill Area Transportation Study (RFATS) MPO is \$110,833. The Federal government will pay for up to 80% of eligible project costs for a TAP project. A local match is required to pay for 20% or more of the remaining project costs. TA funds can be used to fund trail maintenance efforts.
<https://www.scdot.org/projects/community-transportationalternatives.aspx>

SCDOT created a document guiding local governments interested in pursuing TA funding. The Transportation Alternatives Program Guide provides an overview of the program, its requirements, and the steps needed to compete for funding. The document is available below: https://www.scdot.org/projects/pdf/TAP_Guidance.pdf

Congestion Mitigation & Air Quality

Funding is available for projects that demonstrate reductions in ozone and particulate matter pollutants. Funding is used for projects within EPA designated non-attainment or maintenance areas, as well as incident response services. In South Carolina, the State Highway Emergency Program (SHEP) provides incident response services in Beaufort, Charleston, Columbia, Florence, Grand Strand/Myrtle Beach, Rock Hill, and Greenville/Spartanburg urban areas. Incident responders make minor repairs to disabled vehicles, assist with traffic control and incident management, and provide first aid until emergency medical services arrives. CMAQ funds typically require a 20% match.

Each project funded under the CMAQ program must meet three basic criteria:

- » **It must be a transportation project.**
- » **It must generate an emissions reduction.**
- » **It must be in (or benefit) a nonattainment or maintenance area.**

The following pedestrian and bicycle projects are eligible to receive funding:

- » **Building shared-use paths, bicycle racks, and other facilities intended to reduce automobile trips, and that are not exclusively for recreational use;**
- » **Outreach activities that promote safe bicycle use; and**
- » **Establishing and funding state-level pedestrian/bicycle coordinator positions.**

The FAST Act establishes a formula that is used to determine how much money each state receives through the CMAQ program. States may transfer up to 50% of these funds to other programs. Each state allocates these funds to MPOs within its jurisdiction, who are responsible for suballocating these funds to different projects.

https://www.fhwa.dot.gov/environment/air_quality/cmaq/

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a core Federal aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. Projects are evaluated using crash data and the cost-effectiveness of proposed improvements. South Carolina's HSIP 2020 Annual Report states that funding for non-motorized users was \$5 million. Additional information can be reviewed at <https://safety.fhwa.dot.gov/hsip/reports/pdf/2020/sc.pdf>

<https://highways.dot.gov/safety/hsip>

Recreational Trails Program

The Recreational Trails Program (RTP) provides funds to state agencies to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. RTP is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). Municipalities must provide project funds upfront and are reimbursed upon completion of deliverables.

The South Carolina Department of Parks, Recreation and Tourism (SCPRT) administers the Recreational Trails Program (RTP) under the approval of the Federal Highway Administration (FHWA). RTP, a federally funded program, receives its funding from a portion of federal gas taxes paid on fuel used in nonhighway recreational vehicles. The grant program requires recipients to pay 100 percent of the total cost before being reimbursed for 80 percent of the eligible costs. Additional facts related to the program are listed below.

- » **Funds can be spent on both Motorized and Nonmotorized recreational trail projects – to construct new recreational trails, improve/maintain existing trails, develop/enhance trailhead or trailside facilities and acquire trail corridors.**
- » **Eligible applicants include local, state, and federal governmental agencies, qualified private organizations, and registered nonprofits.**
- » **Individual trail grants can range from a minimum of \$10,000 (\$12,500 would be the total project cost) to \$100,000 maximum (\$125,000—total project cost), except for Motorized projects.**
- » **Motorized trail projects are not limited to \$100,000 – these projects are eligible for the maximum amount of Motorized funding available.**

https://www.fhwa.dot.gov/environment/recreational_trails/

<https://www.scpvt.com/recreation/recreation-grant-programs/recreational-trails-program>

Community Development Block Grant

The Community Development Block Grant (CDBG) Program provides annual grants on a formula basis to states, cities, and counties to develop viable urban communities by providing decent housing, suitable living environments, and expanding economic opportunities for low- and moderate-income persons. The program is authorized under Title 1 of the Housing and Community Development Act of 1974. CDBG funds are allocated at the federal level by HUD and at the state level by the South Carolina Department of Commerce, Division of Grants Administration. All municipalities are eligible to receive State CDBG funds except for entitlement communities, which receive funds directly from HUD.

The following 11 municipalities are entitlement communities in South Carolina:

- » **City of Aiken**
- » **City of Anderson**
- » **City of Charleston**
- » **City of Columbia**
- » **City of Florence**
- » **City of Greenville**
- » **City of Rock Hill**
- » **City of Spartanburg**
- » **City of Sumter**
- » **Town of Hilton Head Island**
- » **Town of Summerville**

In addition, the following six counties in South Carolina are eligible to receive State CDBG funds:

- » **Charleston County**
- » **Greenville County**
- » **Lexington County**
- » **Richland County**
- » **Spartanburg County**
- » **Horry County**

CDBG funds may be used for activities which include, but are not limited to:

- » **Acquisition of real property**
- » **Relocation and demolition**
- » **Rehabilitation of residential and non-residential structures**
- » **Construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes**
- » **Public services, within certain limits**
- » **Activities relating to energy**

conservation and renewable energy resources

- » **Provision of assistance to profit-motivated businesses to carry out economic development and job creation/retention activities**

https://www.hud.gov/program_offices/comm_planning/communitydevelopment

https://www.hud.gov/states/south_carolina/community/cdbg

State & Community Highway Safety Grant Program

The State and Community Highway Safety Grant Program (also referred to as Section 402) is a federal grant program that provides funding for education, enforcement, and research programs which are aimed at reducing traffic crashes, injuries, deaths, and property damage. Bicycle and pedestrian safety projects qualify for Section 402 funding; however, qualifying uses are restricted. Funding is contingent on the establishment of a state Highway Safety Plan that considers crash data as it relates to national traffic safety goals. Forty percent (40%) or more of funds allocated to a state must be used to address safety issues on a local rather than state level. Also, federal funds can cover as much as 80% of a project's total budget. Each year, South Carolina receives approximately \$4 million in Section 402 funding. The grant funding cycle is typically from October 1 - September 30.

<https://safety.fhwa.dot.gov/legislationandpolicy/policy/section402/>

<https://scdps.sc.gov/ohsjp/hs-grants>

Carbon Reduction Program

The Carbon Reduction Program (CRP) was established in 2021 with the passage of the Infrastructure Investment and Jobs Act (IIJA) to fund projects designed to reduce transportation emissions. Project types eligible for funding include on- and off-road facilities for pedestrians and bicyclists, as well as public transportation, congestion pricing, and electrification projects. The CRP also requires each state to consult with its MPOs on the development of a carbon reduction strategy which must be updated at least every four years and identify projects and strategies to support the reduction of transportation emissions. South Carolina has been allocated \$21.6 million in the 2022 Fiscal Year to reduce carbon emissions.

https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm

Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

The 2021 Consolidated Appropriations Act appropriated \$1 billion to be awarded by the Department of Transportation (DOT) for National Infrastructure Investments, formerly known as Transportation Investment Generating Economic Recovery (TIGER) and Better Utilizing Investments to Leverage Development (BUILD) Grants and now as Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants.

Congress has dedicated nearly \$9.9 billion for thirteen rounds of National Infrastructure Investments to fund projects that have a significant local or regional impact.

The eligibility requirements of RAISE allow project sponsors at the State and local levels to obtain funding for multi-modal, multi-jurisdictional projects that are more difficult to support through traditional DOT programs. RAISE can fund port and freight rail projects, for example, which play a critical role in our ability to move freight but have limited sources of Federal funds. RAISE can provide capital funding directly to any public entity, including municipalities, counties, port authorities, tribal governments, MPOs, or others in contrast to traditional Federal programs which provide funding to very specific groups of applicants (mostly State DOTs and transit agencies). This flexibility allows RAISE and our traditional partners at the State and local levels to work directly with a host of entities that own, operate, and maintain much of our transportation infrastructure, but otherwise cannot turn to the Federal government for support.

The projects must be awarded based solely on the selection criteria. The primary selection criteria are safety, environmental sustainability, quality of life, economic competitiveness, and state of good repair. The secondary selection criteria include partnership and innovation. The Federal share of project costs may not exceed 80 percent for a project located in an urban area. The Secretary may increase the Federal share of costs above 80% for projects located in rural areas and for planning projects located in areas of persistent poverty.

Project Awards:

- » **Total Funding: \$1 billion.**
- » **Minimum Project Awards:**
 - » **Urban Projects: \$5 million.**

- » **Rural Projects: \$1 million.**
- » **Planning Grants: No project minimum required**
- » **Maximum Awards:**
 - » **Urban/Rural Projects: \$25 million.**
 - » **Per State: \$100 million**
 - » **Geographic Distribution: 50% of total funds (\$500 million) awarded to both urban and rural projects.**
- » **RAISE 2022 Awards for South Carolina: \$12,845,300**

<https://www.transportation.gov/RAISEgrants>

Safe Streets and Roads for All

The Safe Streets and Roads for All Grant Program (SS4A) was established in 2021 under the Infrastructure Investment and Jobs Act (IIJA) as a discretionary grant. \$5 billion was appropriated for the 5-year period starting with fiscal year 2022. Regional, local, and tribal agencies are eligible to apply for funding to develop or update a comprehensive safety action plan and carry out planning and development of projects and strategies within the action plan. Two types of grants are available: Action Plan Grants and Implementation Grants.

Action Plan Grants may be used for activities such as:

- » **Leadership commitment and goal setting**
- » **Safety analysis**
- » **Engagement and collaboration**
- » **Policy and process changes**
- » **Strategy and project selections**

Implementation Grants may be used for activities such as:

- » **Improving pedestrian crossings and closing sidewalk gaps**
- » **Complete Street improvements**
- » **Developing bicycle networks**
- » **Creating safe routes to school**

Reconnecting Communities Pilot Program

The BIL established the new Reconnecting Communities Pilot (RCP) discretionary grant program which is funded with \$1 billion over the next 5 years. It is the first-ever Federal program dedicated to reconnecting communities that were previously cut off from economic opportunities by transportation infrastructure. Funding supports planning grants and capital construction grants, as well as technical assistance, to restore community connectivity through the removal, retrofit, mitigation, or replacement of eligible transportation

infrastructure facilities.

<https://www.transportation.gov/grants/reconnecting-communities>

Neighborhood Access and Equity Grants

Neighborhood Access and Equity Grants is a new program included in the Inflation Reduction Act. Approximately one-third of the funding can be used towards lower-income areas. This bill establishes discretionary grants for removing, replacing, or retrofitting highways and freeways to improve connectivity in communities and for planning and capacity building to increase community involvement in transportation planning and related activities. The bill prioritizes grants that fund projects in economically disadvantaged communities or that meet other criteria. Funding can be used for several different types of projects, including covering a highway, turning a highway into a boulevard, adding trails and bike lanes, installing sound barriers, providing better connections to transit, using green infrastructure to mitigate storm runoff, reducing urban heat island hot spots, installing safety features, and curbing air pollution. The FHA must award the grants to state, tribal, territorial, and local governments and metropolitan planning organizations.

<https://www.congress.gov/bill/117th-congress/house-bill/5267>

Active Transportation Infrastructure Investment Program (ATIIP)

This new program includes \$200 million annually and is subject to appropriations. The program establishes competitive connectivity grants that strategically invest in projects that connect active transportation networks and trail networks, accelerating local and regional plans to create safe and convenient routes to everyday destinations.

<https://www.transportation.gov/rural/grant-toolkit/active-transportation-infrastructure-investment-program-atiip>

Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program

Funding is available to states over a period of five years to make transportation infrastructure more resilient to future weather events and other natural disasters by focusing on resilience planning, making resilience improvements to existing transportation assets and evacuation

routes, and addressing at-risk highway infrastructure. Eligible projects include highway and transit projects, bicycle and pedestrian facilities, and port facilities including those that help improve evacuations or disaster relief. States are encouraged to work with regional and local partner organizations to prioritize transportation and emergency response improvements, as well as address vulnerabilities.

<https://highways.dot.gov/newsroom/biden-administrationannounces-new-protect-formula-program-73-billion-bipartisan>

Federal Lands Access Program

The Federal Lands Access Program (FLAP) provides funds for projects to improve Federal Lands Access Transportation Facilities that provide access to, are adjacent to, or are located within federal lands. This can include public roads, bridges, paved trails, or transit systems that are owned and/or maintained by the state, county, town, township, tribal, municipal, or local government. Funds may be used for the costs of transportation planning, research, engineering, preventive maintenance, rehabilitation, restoration, construction, and reconstruction of transportation facilities located on or adjacent to, or that provide access to, federal lands. Applicable activities include parking areas; acquisition of scenic easements or historic sites; bicycle and pedestrian provisions; environmental mitigation; public safety; and roadside rest areas. Other eligible activities include the operation and maintenance of transit facilities, and any transportation project that is within, adjacent to, or provides access to federal land.

<https://highways.dot.gov/federal-lands/programs-access>
<https://highways.dot.gov/federal-lands/programs-access/sc>

Federal Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) was established by Congress in 1964 to fulfill a bipartisan commitment to safeguard natural areas, water resources and cultural heritage, and to provide recreation opportunities to all Americans. The LWCF program is divided into the "State Side" which provides grants to State and local governments for the acquisition and development of public outdoor recreation areas and facilities, and the "Federal Side" which is used to acquire lands, waters, and interests therein necessary to achieve the natural, cultural, wildlife, and recreation management objectives of federal land management agencies. State Side funds are distributed by the State and Local

Assistance Programs Division of the National Parks Service (NPS). Funding is available as 50/50 matching grants to states and territories to plan, acquire, and develop public lands for outdoor recreation. Projects are selected by states and submitted to NPS for approval. To be eligible for LWCF assistance, every state must prepare and regularly update a Statewide Comprehensive Outdoor Recreation Plan (SCORP). Applicants can request a maximum grant of \$500,000. An applicant must match the grant with a minimum of 50%. Due to a federal share cap of \$500,000, a greater match is required for projects that exceed total costs of \$1 million. South Carolina has invested more than \$60 million of Land & Water Conservation Funds in approximately 1,171 land acquisition and recreation facilities projects since the program began in 1965.

<https://www.nps.gov/subjects/lwcf/stateside.htm>
<https://www.scpvt.com/recreation/recreation-grant-programs/landand-water-conservation-fund#:~:text=The%20Land%20and%20Water%20Conservation,outdoor%20recreation%20areas%20and%20facilities>

Rivers, Trails, and Conservation Assistance Program

The National Parks Service (NPS) Rivers, Trails, and Conservation Assistance Program (RTCA) supports community-led natural resource conservation and outdoor recreation projects across the nation. Although RTCA is not a traditional funding program, NPS staff provide planning, design, and technical expertise for trails and outdoor recreation projects. Depending on the scale of the project, RTCA can invest up to four years of planning and project development assistance. Eligible entities include community groups, non-profit organizations, tribes, and government agencies.

Technical Assistance Services:

- » **Define project vision and goals**
- » **Set priorities and build consensus**
- » **Inventory and map community resources**
- » **Identify funding strategies**
- » **Identify and analyze key issues and opportunities**
- » **Design community outreach, participation, and partnerships plans**
- » **Create project management and strategic action plans**
- » **Develop concept plans for trails, parks, and natural areas**

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

National Endowment for the Arts Our Town Program

Our Town is the National Endowment for the Arts' (NEA) creative placemaking grants program. Through project-based funding, the NEA supports projects that integrate arts, culture, and design activities into efforts that strengthen communities by advancing local economic, physical, and/or social outcomes. These projects require a partnership between a local government entity and non-profit organization, one of which must be a cultural organization; and should engage in partnership with other sectors (such as agriculture and food, economic development, education and youth, environment and energy, health, housing, public safety, transportation, and workforce development). Cost share and matching grants range from \$25,000 to \$150,000, with a minimum cost share or match equal to the grant amount.

<https://www.arts.gov/grants/our-town>

Community Facilities Direct Loan and Grant Program

The Community Facilities Direct Loan and Grant Program is administered in South Carolina by the US Department of Agriculture (USDA) Rural Development. This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial, or business undertakings. Rural communities with fewer than 20,000 residents are eligible to apply for loan or grant funding to purchase, construct, or maintain essential community facilities. Street improvements are eligible as public facilities. Projects must serve a rural area, and communities with a population under 5,500 or a median household below 80% of the state nonmetropolitan median household income are prioritized.

<https://www.rd.usda.gov/programs-services/community-facilities/community-facilities-direct-loan-grant-program/sc>

State Funding

Public sector funding is often obtained from state agencies. These funds are generally made available to local governments through grant-in-aid formulas. Generally, the easiest way to obtain state grant funding is to include projects in locally adopted plans before submitting a grant application. Several state funding opportunities are described below.

State Transportation Improvement Program

South Carolina's Statewide Transportation Improvement Program (STIP) is a six-year list of all projects or program areas receiving federal funding (including bridge replacements, safety, road resurfacing, interstate maintenance and upgrades, primary and secondary road system upgrades, transportation alternatives, congestion mitigation and air quality, and public transportation) through the funding period. The document is updated every three years and is revised on a continuous basis to reflect new information. SCDOT, the Federal Highway Administration and Federal Transportation Administration approve the STIP.

<https://www.scdot.org/inside/planning-stip.aspx>

South Carolina Conservation Bank Act

The South Carolina Conservation Bank's mission is to improve the quality of life in South Carolina through the conservation of significant natural resource lands, wetlands, historical properties, archaeological sites, and urban parks. Through June 30, 2020, the Conservation Bank has conserved 96,711 acres of isolated wetlands, 1,982 acres of Carolina Bays, and 405 miles of river/creek frontage.

The Act is funded by placing twenty-five cents out of each one dollar and thirty-five cents of the Documentary Deed Stamp recording fee into a trust for the Conservation Bank to carry out the Act. Funding began in July 2004, and participating landowners may sell property outright or sell conservation easements and retain traditional use of the land. Funding of proposals is based on the amount of funding available, and the priority of the proposals as set by the Conservation Bank Board in accordance with the statutory criteria.

Funding from the South Carolina Conservation Bank can be used to accomplish the following:

- » **Protect significant natural resource areas and wildlife habitats**
- » **Protect water quality**
- » **Maintain the State's forest lands**

- » **Protect farmlands, especially family farms**
- » **Protect and enhance the State's natural beauty**
- » **Protect and enhance significant historical and archaeological sites enhance public access for outdoor recreation and preserve traditional uses such as hunting, fishing, and other types of outdoor recreation**

<http://sccbanc.sc.gov>

South Carolina Department of Transportation (SAFETEA)

SCDOT manages the implementation of all transportation programs and improvements throughout the state through the Transportation Improvement Program (STIP). The STIP is the six-year transportation improvement program for all projects or program areas receiving federal funding. The STIP covers all federally funded improvements with approved funding. SCDOT expects to begin these projects in the next six-year period. The report details the funding of each project and the work phase for each project in the appropriate year. The present STIP includes the fiscal years 2021 - 2027. It is produced and printed every two years as part of the SAFETEA federal requirement. The following funding has been defined within Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) for the SCDOT.

Safe Routes to School Program

SCDOT is responsible for disbursing funds to local programs in accordance with state policies and applicable federal laws and guidance. Most states have a coordinator responsible for administering the Safe Routes to School program or have shifted to having a coordinator of the Transportation Alternatives Program. South Carolina's Safe Routes to School contacts are provided below with a link containing additional information on the program.

Amy Blison
blinsonal@scdot.org

Ashley Johnson
johnsonha@scdot.org

<https://saferoutespartnership.org/safe-routes-school/srts-program/state-contacts>

South Carolina DOT Pedestrian & Bicycle Program

SCDOT published the state's first Pedestrian and Bicycle Safety Action Plan (PBSAP) in 2022. The PBSAP is a result of extensive data analysis and review of best practices to develop a plan to reverse the increasing number of pedestrian and bicyclist deaths and serious injuries in the state. According to this plan, SCDOT allocates a portion of its annual Highway Safety Improvement Program (HSIP) federal funds to perform road safety audits (RSA) at locations identified to have a high density of pedestrian- and bicycle-involved crashes. Each year, ten to twenty locations are identified and studied by a multi-disciplinary team to identify highway safety issues and to develop an implementation plan to improve the safety of these locations.

<https://www.scdot.org/projects/bikeped.aspx>

<https://www.scdot.org/projects/pdf/SC%20Pedestrian%20and%20Bicycle%20Safety%20Action%20Plan.pdf>

C-Fund Program

SCDOT partners with its 46 counties in the C-Fund Program to fund local transportation projects and improvements to state and county roads and city streets. Funds come from 2.66 cents per gallon of the state gasoline tax distributed to each of the 46 counties based on population, land area, and rural road mileage. Due to increases, the new cost totals 3.99 cents per gallon. This increase must be used exclusively for repairs, maintenance, and improvements to the state highway system. Counties must spend at least 25 percent of their "C" funds on the state highway system for construction, improvements, and maintenance. Proceeds from the increase in cents per gallon must be used exclusively for repairs, maintenance, and improvements to the State Highway System. In fiscal year 2021-2022, the minimum state requirement was approximately 33%. The County Transportation Committee (CTC) is responsible for selecting and approving projects to be funded. A Donor Bonus allocation goes to counties which contribute more to the "C" Fund than they receive. SCDOT transfers the additional monies among the donor counties in this process.

Funding is apportioned to York County based on these criteria:

- » **1/3 based on the ratio of land area in York County compared to the land area in the state**
- » **1/3 based on the ratio of York County**

population (as determined by the latest 10-year federal census) compared to the state's population

- » **1/3 based on the ratio of rural road mileage in York County compared to total rural mileage in the state**

<https://www.scdot.org/projects/c-program.aspx>

<https://www.yorkcountygov.com/256/C-Fund-Critical-Needs-Programs>

South Carolina Parks and Recreation Development Fund

The Park and Recreation Development (PARD) Fund is a state funded, noncompetitive, reimbursable grant program for eligible local governments or special purpose district entities which provide recreational opportunities within each county. PARD assists in the development of new public recreation facilities or with the enhancement/renovation of existing facilities. It is an 80-20 match program. Projects need the endorsement of a majority weighted vote factor of County Legislative Delegation members. The grant cycle is monthly, and grants are due on the 10th of each month. Eligible entities are notified of new allocation amounts each July.

Alesha Cushman, PARD Grants Coordinator
acushman@scprt.com

<https://www.scprt.com/recreation/recreation-grant-programs/parkand-recreation-development-fund>

South Carolina National Heritage Corridor Grant Program

The South Carolina National Heritage Corridor (SCNHC) is a congressionally designated National Heritage Area of the National Park Service. The SCNHC preserves and promotes the natural, historic, and cultural assets of a 17-county area of South Carolina. Since 1996, the SCNHC has awarded over \$15 million in grant funds to various tourism projects across South Carolina ranging from new museum displays to hiking trails. One example of a project that received funding is the Stumphouse Mountain Multi-use Trail System located in Oconee County, South Carolina. In partnership with the Palmetto Conservation Foundation, the SCNHC provided partnership funds for trail construction and technical assistance for trail marketing, promotion, and visitor services. This phase of the project will create 12.9 miles of trail.

Local Funding

Local governments can create independent, local funding sources to be used to match federal and state grants for the development of trails and multi-use paths within their respective jurisdictions. Several local funding sources available to Fort Mill are detailed below.

York County Critical Needs Program

The Critical Needs Program was established by the York County Council to address the improvement and preservation of county-maintained, paved roads. This program is funded through the General Fund.

<https://www.yorkcountygov.com/256/C-Fund-Critical-Needs-Programs>

Bonds

Multi-use paths and trails are also frequently included in municipal transportation bond packages. Successful bond campaigns require a well-defined plan with specific projects supported by the community. Bond campaigns should be well organized with a community's public affairs department and thoroughly coordinated across all internal departments. Public outreach during the campaign is essential to educate residents about the benefits of infrastructure investment and to understand which projects garner the highest community support.

While the Town of Fort Mill has not used a bond to fund trails, there are examples of communities that are trying to use bonds as a tool to fund recreation amenities within their communities. For example, the City of Mount Holly in North Carolina recently initiated a bond referendum for parks and greenways on their November 2021 ballot. Funds raised from the bond would help the community build seven additional miles of trail and expand a park in downtown Mount Holly.

Developer Built Trails/In-Lieu Fees

One convenient method of funding trails is to pass on the cost to developers. The York Forward Comprehensive Plan (2016), recommends that the County should adopt design incentive provisions to allow developers to donate a fee in-lieu instead-of the required open space dedication for residential developments not located along proposed greenways and dedicated open space. In addition, the Town of Fort Mill 2040

Comprehensive Plan states that the community would like for the Town to require developers to provide/build trails, and at a minimum build natural surface trails.

Also, several approved development agreements in the Town of Fort Mill require developers of residential subdivisions to provide public access to existing greenways and trails, donate land for buffers to support greenway networks, and require them to work with appropriate environmental organizations.

Impact Fees

Impact fees represent financial payments made to a local government by a developer to fund certain off-site capital improvements needed to accommodate future growth. Many communities impose impact fees for transportation, parks and recreation, and open space facility needs. In the state of South Carolina, municipal and county governments may adopt impact fees pursuant to the South Carolina Development Impact Fee Act (S.C. Code of Laws, Sec. 6-1-910 et seq).

In the Town of Fort Mill funds from development impact fee trust accounts can only be expended for the public facilities and system improvements identified as eligible for impact fee funding in the Town of Fort Mill Capital Improvements Plan. No funds can be used for administrative or operating costs associated with imposing any of the development impact fees. Eligible components of a public facility may include, but are not limited to, the following: design and construction; land acquisition; right-of-way acquisition; construction of new facilities; the purchase of new equipment with an individual purchase price of \$100,000 or more; principal payments, interest, and other financing charges. Other municipalities may charge open space and parks and recreation development fees to be used for the acquisition of park land and the provision of facilities, including athletic fields, parks, playgrounds, courts, recreation centers, shelters, stadiums, arenas, swimming pools, lighting, trail construction, and bike paths.

York County's Pennies for Progress Program

York County's Capital Projects Sales and Use Tax Program is called Pennies for Progress. The programs were initiated by York County to provide residents with a safer and more efficient roadway system. The projects were chosen by a Sales Tax Commission that represent the residents of York County, and then were approved by York County voters. York County was the first county in South Carolina to pass

and use this type of sales tax to improve the road system. The tax will expire in 7 years or less and non-residents who use York County roads help fund the improvements. Project improvements help ensure faster response times by emergency personnel. It is important to note that funding may only be used to improve roadways in the County.

<https://www.penniesforprogress.net/27/About-Us>

Capital Improvement Program

A Capital Improvement Program (CIP) is one element in a municipality's long-term planning process. It is a bridge between the municipality's Comprehensive Plan and short-term planning for infrastructure and operations. A CIP analyzes major facility and equipment needs, establishes priorities, estimates fiscal resources, and schedules the development of funded projects.

Several projects identified in the Town of Fort Mill Capital Improvements Plan include project justifications that state trails and open space will need to be acquired and/or constructed to maintain the current level of recreational service. To maintain current level of recreational service, additional parks and park facilities, amenities, and trails and open space will need to be acquired and/or constructed. Impact fees for park and recreation were originally based on consumption (i.e., per capita replacement value), so impact fee funds may now be used toward the purchase of any eligible facility, land, or equipment. The projects listed in the plan include the Banks Athletic Park, the gymnasium on Tom Hall Street, a future park (location to be determined), and the amphitheater at Walter Y. Elisha Park.

<https://www.fortmillsc.gov/DocumentCenter/View/176/Town-of-Fort-Mill-Capital-Improvements-Plan-PDF>

Municipal Service Districts

Municipal Service Districts (MSD), also called Municipal Management Districts or Municipal Improvement Districts (MID), provide an equitable method for funding special improvements to public right-of-way areas because property owners share in the cost through an assessment or tax.

According to Fort Mill's zoning ordinance, "a MID allows for the financing of publicly-owned infrastructure serving persons and property located therein, with the cost thereof borne

solely by the owners of property located within the boundaries of the MID. Thus, a MID will encourage an increase in the value of taxable property within the town without the cost of public improvements being charged against properties located within the town but outside of the boundaries of a MID. The Town is authorized by the Act to finance publicly-owned improvements within a MID through the issuance of bonds secured by assessments imposed on properties within a MID, and, further, because the interest on such bonds may, in many circumstances, be exempt from both state and federal income taxation, the use of a MID can also lower the cost of development to the developer of properties located within a MID."

https://library.municode.com/sc/fort_mill/codes/zoning?nodeId=Z00R_ARTIREDI_S20MIMUIMDI

Public/Private Partnerships

Leveraging strong public-private partnerships is an innovative way to achieve funding strategies for multi-use paths and trail projects. Partnerships with the private sector can help bring needed investment to public infrastructure. The Prisma Health Swamp Rabbit Trail is an example of a successful public-private partnership between Greenville County and the Prisma Health Hospital System. The hospital helped fund segments of the trail which opened in 2009. The trail is currently 22 miles long and connects schools, parks, and local businesses in Greenville County. The trail's partners hope the facility will encourage people to become more physically active in the community.

<https://greenvillerec.com/swamprabbit/>

Local Trail Sponsors / Adopt-a-Trail

Individuals and businesses can contribute donations toward trail sponsorship opportunities. Smaller trail amenities such as signs, benches, lighting can be customized for recognition with names or business logos to show local support. Clean up efforts, labor, equipment, services, or supply donations can supplement monetary donations. Donor recognition through plaques and/or small ceremonies may help highlight new amenities and bring more attention to the trail.

Volunteer Work

Volunteer work is a free and community-building activity that can help support maintenance efforts for a trail. For example, the Carolina Thread Trail was created by volunteers who support activities such as community engagement efforts, trail construction and maintenance, habitat restoration, special events, Trail Master Workshops, and serve as Thread Trail Ambassadors for outdoor programs. Other examples of volunteer opportunities for trails include invasive plant removal, litter cleanups, and moving rocks along trails.

<https://www.carolinathreadtrail.org/how-you-can-help/volunteer/volunteer-event-registration/>

American Hiking Society's National Trails Fund Grants

The American Hiking Society's National Trails Fund is the only privately funded, national grants program dedicated to building and protecting hiking trails. This Fund has supported grassroots organizations acquire funding and resources to build and maintain trails across the country. So far, the American Hiking Society has funded 226 trail projects through 170 organizations by awarding over \$718,000 in National Trails Fund grants.

<https://americanhiking.org/National-Trails-Fund/>

Duke Energy Foundation

The Duke Energy Foundation provides philanthropy-focused funding and support for communities interested in vibrant economies; climate resiliency; and justice, equity, and inclusion. The Foundation supports over \$30 million in charitable grants each year. In 2021, employees and retirees from Duke Energy volunteered more than 70,000 hours within nonprofit organizations. The following project topic areas may be considered for grants:

- » **Vibrant Economies:**
 - » **Workforce development training for jobs vital to the energy economy, with a focus on underrepresented populations**
 - » **Community revitalization and local economic development efforts**
 - » **Economic recovery for customers and communities facing unprecedented challenges**
 - » **Energy and engineering education for K-12 students and teachers**
- » **Climate Resiliency:**

- » **Environmental projects supporting land conservation; clean water; and biodiversity of plant and animal species**
- » **Environmental resiliency projects that prepare communities for and mitigate against the effects of climate change**
- » **Natural disaster preparedness and response**
- » **Justice, Equity, and Inclusion:**
 - » **Thriving natural environments, including access to green space, in historically underserved and environmental justice communities**
 - » **Programs supporting the "just transition" for communities transitioning to cleaner energy generation**
 - » **Diversity, equity, and inclusion initiatives supporting upward mobility**

South Carolina issues a request for proposals (RFP) for grant programs annually that focus on timely issues and areas impacting the state. Local Impact Grants receive up to \$20,000 in funding and focus on programs aligned with vibrant economies, climate resiliency and justice, equity, and inclusion. This grant category is open year-round for applicants to apply. Qualifications and restrictions are included in the second link below.

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

<https://www.duke-energy.com/community/duke-energy-foundation/south-carolina>

Local Funding

South Carolina Land Trusts & Conservation Organizations

Land trusts in South Carolina partner with landowners and local communities to permanently protect natural resources with agricultural, cultural, recreational, ecological, and scenic value across the state. There are several organizations in Fort Mill and throughout South Carolina that contribute to conservation efforts in the state. Descriptions are provided with some of the key organizations in York County. See below for a list of the organizations.

- » **The Nation Ford Land Trust is dedicated to the preservation of open spaces, natural beauty, and the scenic heritage of York County, South**

Carolina. This land trust owns or holds conservation easements on a total of 15,092 acres in the region.

- » **Anne Springs Close Greenway is a nature preserve that is located in the center of Fort Mill. The preserve's 2,100 acres serve as a natural buffer from urban development and provide a space for countless activities, including camping, fishing, and 40 miles of trails for hiking, horseback riding, and mountain biking.**
- » **In 1998, the York County Council created the York County Forever Commission to serve as the county's land trust organization. York County Forever aims to promote and protect significant natural, cultural, historic, and environmental resources.**
- » **The Carolina Thread Trail is a regional network of trails, blueways, and conservation corridors that will ultimately link more than 2.3 million citizens in North and South Carolina. The Thread Trail currently runs through the following 15 counties: Anson, Cabarrus, Catawba, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly and Union counties within North Carolina and Cherokee, Chester, Lancaster, and York counties in South Carolina.**
- » **Katawba Valley Land Trust**
- » **Palmetto Conservation Foundation**
- » **Lindsay Pettus Greenway**
- » **South Carolina Land Trust Network**
- » **National Register of Historic Places**
- » **South Carolina Department of Archives & History**
- » **South Carolina Department of Natural Resources**
- » **South Carolina Conservation Bank**
- » **The Trust for Public Land**
- » **Upstate Forever**
- » **York County Soil & Water Conservation District**
- » **The Conservation Fund**
- » **The Conservation Alliance**

In addition to the groups listed above, the South Carolina Land Trust Network represents land trusts throughout the state by:

- » **Presenting a united front in support of land conservation,**
- » **Organizing opportunities to network and collaborate,**
- » **Providing access to resources and information; and**
- » **Promoting land conservation through statewide marketing initiatives.**

Foundation for the Carolinas

The Foundation for the Carolinas (FTFC) was established in 1958 and it supports personal and corporate philanthropy through a range of innovative fund and giving options to improve the quality of life for its surrounding communities. This organization also supports nonprofit sustainability through endowment management, customized solutions, and grantmaking. The geographic focus areas for this group include Cabarrus, Cleveland, Davidson, Iredell, Lincoln, Mecklenburg, Richmond, Rowan, Stanly and Union Counties, in North Carolina; Cherokee, Lancaster, and York Counties in South Carolina. FTFC manages grant programs in the region where nonprofits can apply for grants. The grant programs vary in size, application process, and funding priorities. Through FTFC's website, webpage visitors can make donations to support the Carolina Thread Trail and the York County Community Foundation Endowment Fund.

<https://www.ftfc.org/>

Blue Cross Blue Shield of South Carolina Foundation

The Blue Cross Blue Shield of South Carolina Foundation funds a range of programs from targeted, mini grants to multi-year partnerships. Their grantmaking supports initiatives that focus on early childhood, healthy communities, healthy food, and oral health. The Foundation does not operate regular grant cycles. Instead, the Foundation invites applications based on specific strategic objectives or announces broader opportunities to apply for funding on a periodic basis.

<https://www.bcbsscfoundation.org/health-priority-grants/apply>

PeopleForBikes Community Grants

The PeopleForBikes Community Grant Program supports bicycle infrastructure projects and targeted advocacy initiatives that make it easier and safer for people of all ages and abilities to ride. PeopleForBikes accepts grant applications from non-profit organizations with a focus on bicycling, active transportation, or community development; city or county agencies or departments, and state or federal agencies working locally. PeopleForBikes focuses most grant funds on bicycle infrastructure projects, such as bike paths, lanes, trails and bridges, mountain bike facilities, bike parks and pump tracks, BMX facilities, and end-of-trip facilities

such as bike racks, bike parking, bike repair stations and bike storage. Advocacy projects funded through the program include open street events and campaigns to increase investment in bicycle infrastructure. PeopleForBikes accepts requests for funding up to \$10,000. PeopleForBikes does not require a specific percentage match, but they will not consider requests in which the grant funding would amount to 50% or more of the project budget.

<https://www.peopleforbikes.org/grant-guidelines>

National Association of Realtors - Smart Growth & Placemaking Grants

The National Association of Realtors (NAR) funds placemaking and smart growth grants to make communities better places to live by transforming unused or underutilized sites into welcoming destinations accessible to everyone in a community.

Smart Growth Grants: Smart Growth Grants fund efforts to engage in local land-use, growth, and transportation policy issues with other stakeholders and elected officials. Eligible projects include Better Block events, placemaking visioning processes, charrettes, pop-up workshops, project mock-ups, developer open houses, public open houses, utility roundtables, Main Street analysis, walkable community workshops/audits, assistance with updating land use ordinances and codes and community plans, and hosting conferences and webinars. Applications can only be submitted by a state or local REALTOR® association, and grants provide up to \$5,000 per award.

Placemaking Grants: Placemaking Grants fund the creation of new, outdoor public spaces and destinations in a community. Funds can be used for amenities such as street furniture, paint, signage, materials, landscaping, murals, site preparation, and artist fees. Applications can only be submitted by a state or local REALTOR® association, and grants provide up to \$5,000 per award.

<https://www.nar.realtor/about-nar/awards-and-grants>

AARP Community Challenge Grant

The AARP Community Challenge provides small grants to fund quick-action projects that can help communities become more livable for people of all ages. Applications are accepted for projects to improve public spaces, housing, transportation, civic engagement, coronavirus recovery, diversity, and inclusion, and more. Project types include those that provide permanent physical improvements in the community, temporary demonstrations that lead to long-term change, and innovative programming or services. The program is open to 501(C)(3), 501(C)(4) and 501(c)(6) nonprofits and government entities. Grants can range from several hundred dollars for smaller, short-term activities to several thousand or tens of thousands of dollars for larger projects.

<https://www.aarp.org/livable-communities/community-challenge/>

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