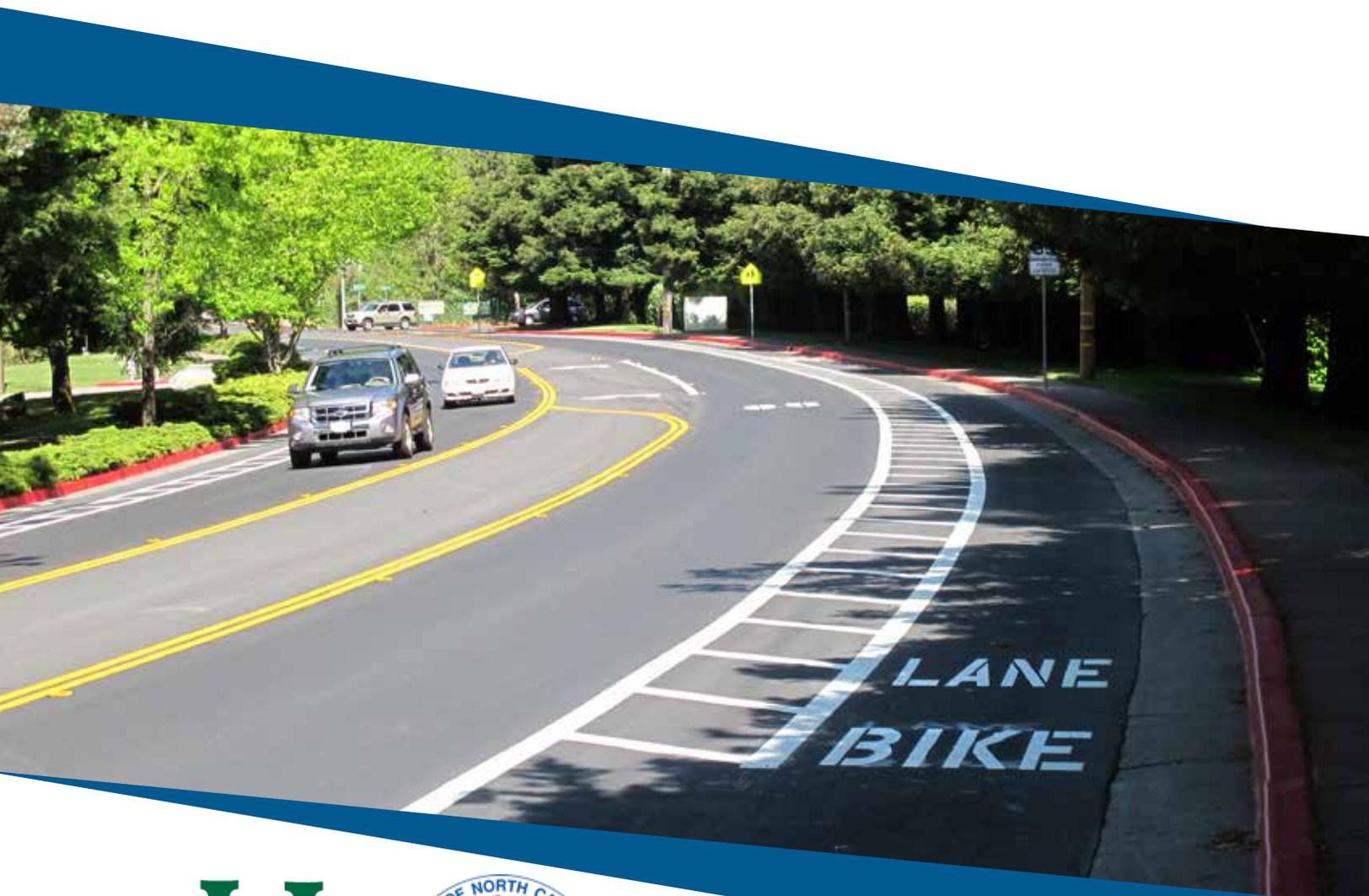


HUNTERSVILLE BIKE PLAN UPDATE

A Plan for Huntersville's Bikeways + Greenways



Adopted December 2020



Acknowledgments

The Huntersville Bike Plan: A Plan for Huntersville's Bikeways + Greenways was prepared for the Town of Huntersville by Alta Planning + Design. The Town acknowledges the Project Steering Committee and Stakeholders and agency staff who provided valuable input throughout the study:

Project Steering Committee

- Bret Baronack, Carolina Thread Trail*
- Michelle Bennett, resident*
- Christopher Boyd, GTBC member*
- Bill Coxe, Friend of the Committee*
- Roger Diedrich, GTBC member*
- Dan Fesperman, resident*
- Dave Hill, Town Staff- Senior Planner- Transportation*
- Kasper Holm, youth resident*
- Melissa Horton, resident*
- Tracy Houk, Town Staff- Parks and Recreation Assistant Director*
- Cathy Mathews, resident + Spirited Cyclist Employee*
- Diane McLaine, Chair of the Greenways, Trails, and Bikeways Committee (GTBC)*
- David Peete, Town Staff- Principal Planner*
- Maria Reese, GTBC member*
- Tammy Rojas, resident*
- Lori Russell, GTBC member*
- Tim Sandborn, GTBC member*
- Ravishankar Sivasubramaniam, resident*
- Geoff Steele, GTBC member*
- Stephen Trott, Town Staff- Engineering Director*
- Robin Underwood, GTBC member*
- Kim Van Sickler, GTBC member*
- Nick Walsh, Town Commissioner*
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Town staff would like to thank all interested stakeholders and members of the public who provided valuable input, comments, and suggestions to this plan. We would also like to thank NCDOT for the funding to support this project.

PREPARED FOR:



PREPARED BY:



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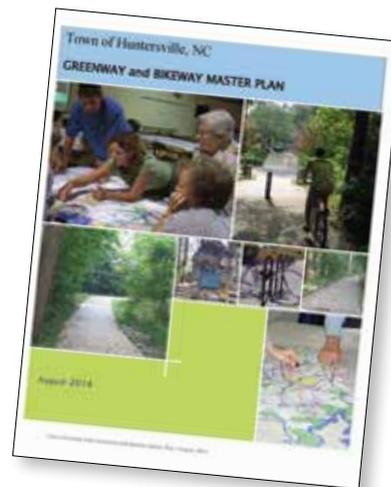


Introduction

Purpose

The Town of Huntersville developed the Huntersville Bike Plan: A Plan for Huntersville's Bikeways + Greenways to guide the implementation of a safe, enjoyable, and connected bikeway network.

*The plan provides **a framework for increased accessibility and safety for residents of all ages and abilities who want to bicycle in Huntersville.***



This plan was developed as an update to the Town of Huntersville's Greenway and bikeway Plan of 2014.



TORRANCE CREEK GREENWAY NEAR BRADFOD HILL LANE



Huntersville: By the Numbers

PEOPLE

57,098

Huntersville's population¹

37.0

Town of Huntersville median age²

HEALTH

19%

% of adults over the age of 20 in Mecklenburg County who report no leisure-time physical activity, compared to 24% for NC⁴

8%

% of Mecklenburg County residents without adequate access to locations for physical activity, compared to 26% for NC⁴



SAFETY

32

Total bicyclist crashes³

0

Total bicyclist fatalities³

3

average annual bicyclist crashes³

0.56

average bicyclist crashes per 1,000 residents³

81%

% of bicyclist crashes occurred along arterial roads³



MOBILITY

2014

Year last bike plan was adopted

3.25

Miles of existing greenways

12.4

Miles of existing bike lane

4.6%

Bicycle network as a percentage of overall road network

0.0%

Average % of commutes to work by bike, compared to 0.1% and 0.2% for Mecklenburg County and NC, respectively²

1.1%

% of households without access to a vehicle, compared to 2.2% in Mecklenburg County and NC²

1.4

Huntersville's Index of Bicycle Friendliness on a scale of 3.0, compared to 1.5 for Mecklenburg County⁵



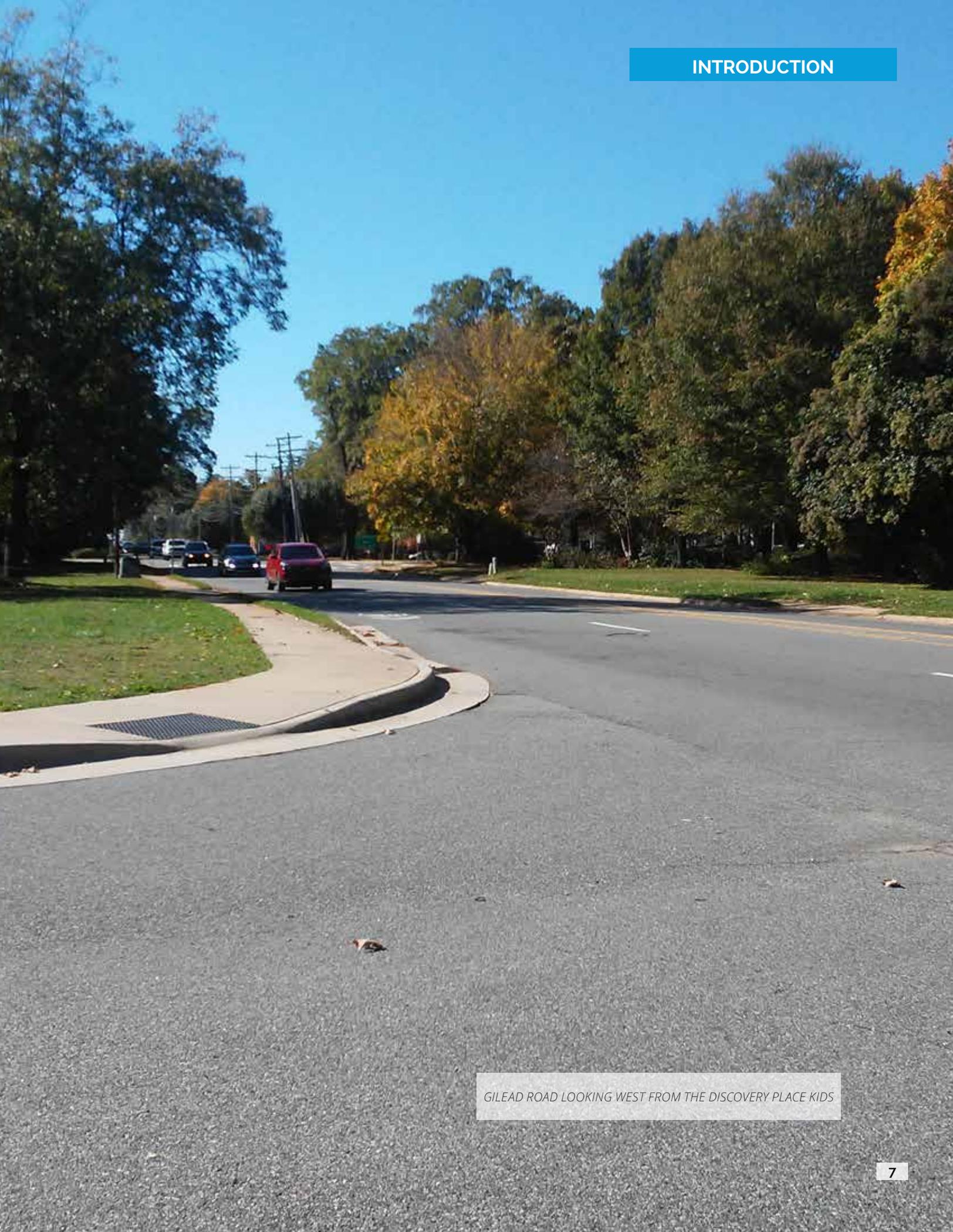
1 QuickFacts Huntersville, North Carolina. April 1, 2010 to July 1, 2019. U.S. Census Bureau, Population Division

2 U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

3 North Carolina Department of Transportation Pedestrian and Bicycle Crash Data,, 2007-2018, available at http://www.pedbikeinfo.org/pbcat_nc/index.cfm

4 CDC 2020 County Health Rankings: <https://www.countyhealthrankings.org/app/north-carolina/2020/rankings/mecklenburg/county/outcomes/overall/snapshot>

5 Charlotte/Mecklenburg Quality of Life Explorer: <https://mcmmap.org/qol/#34/>

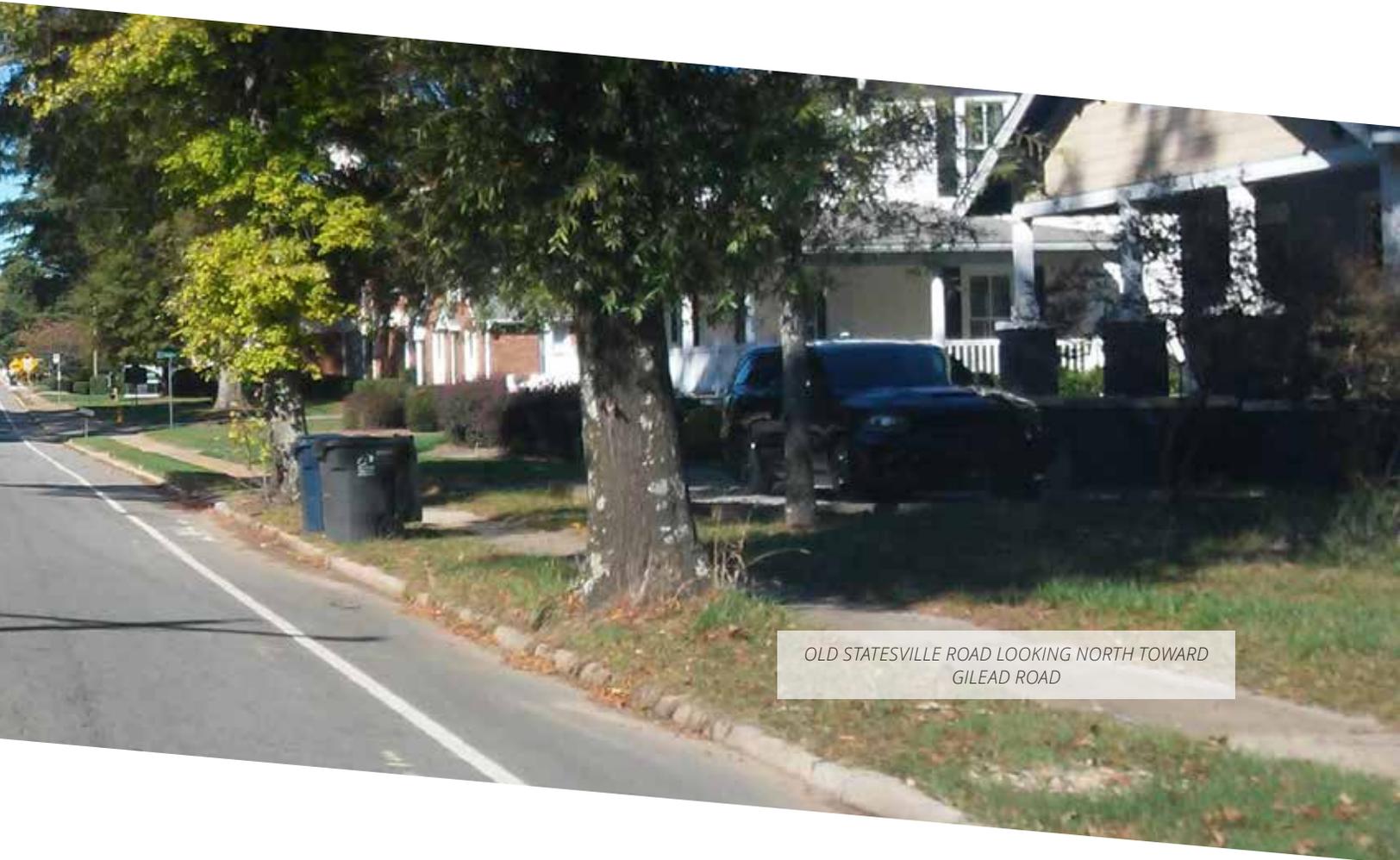


GILEAD ROAD LOOKING WEST FROM THE DISCOVERY PLACE KIDS

A photograph of a residential street scene. In the foreground, a blue car is driving towards the camera. The street has a double yellow line. In the background, there are trees, a utility pole, and other cars further down the road. A semi-transparent white box with a house icon is overlaid on the left side of the image, containing the text "Existing Conditions".

Existing Conditions

Huntersville has a solid foundation to build a more bicycle-friendly town. The Town of Huntersville has a significant bicycling community, a growing greenway system, and a Greenways, Trails and Bikeways Commission working to make Huntersville even better for people on bike. There is strong demand for greenways and biking infrastructure throughout the town; however, there are limited existing facilities that meet the needs of cyclists of all ages and abilities.



OLD STATESVILLE ROAD LOOKING NORTH TOWARD
GILEAD ROAD

The Torrence Creek Greenway forms the foundation of the greenway system in Huntersville, and there are some relatively limited stretches of bike lanes that afford users with dedicated space for biking along key corridors such as Highway 115, Wynfield Creek Parkway, Hugh Torrence Parkway, Reese Boulevard, Stratton Farm Road, Verhoeff Drive, and Hambright Road. However, **gaps in the bikeway network create significant challenges**

for current and potential future users—especially users that have concerns about safety. Additionally, some of the existing facilities do not meet the needs of cyclists of all ages and abilities. The existing conditions analyses presented in this chapter represent the foundation for the recommendations and implementation strategy.



Existing Bike Network

Huntersville's existing network of bikeways is characterized by a greenway, a section of another greenway, and short sections of bike lanes that lack of connectivity. The map shows roughly 12 miles of bike lanes and three miles of greenway. There are bike lanes on several streets, including:

- Birkdale Commons Parkway
- Gilead Road
- Beatties Ford Road
- Bud Henderson Road
- Stratton Farm Road
- McCoy Road
- Reese Boulevard
- Lindley Drive
- Verhoeff Drive
- Hambright Road
- NC 115 (Old Statesville Road)
- Alexandriana Road
- Stumptown Road
- Hugh Torance Parkway
- Wynfield Creek Parkway

The existing greenway segments include long sections of the Torrence Creek Greenway and the southern section of the McDowell Creek Greenway.

Huntersville also has a couple of natural surface mountain bike trails at the North Mecklenburg Park and at the Huntersville Athletic Park that provide access to exercise and natural areas.

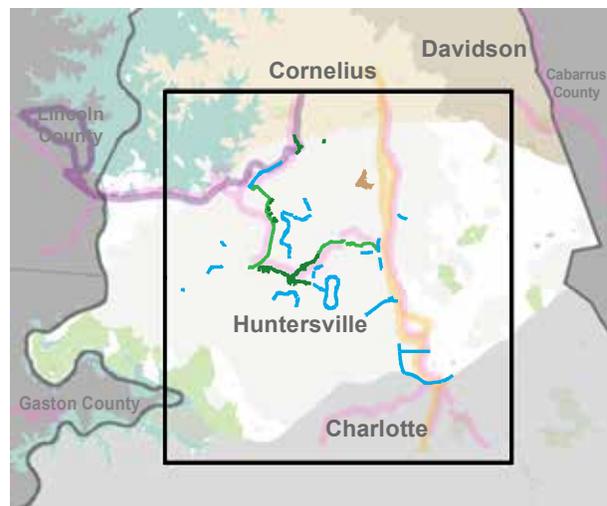
The route for the Lake Norman Regional Bike Route is also indicated on the map with a purple line.

There are two greenway alignments shown on the map indicating previously approved alignments for the Carolina Thread Trail (CTT)



and the Mooresville to Charlotte Trail (MCT). The MCT alignment mostly follows the Norfolk Southern Railroad corridor from Charlotte to Mooresville, but deviates from that corridor in various places (see light orange and pink lines on map). This railroad corridor has the potential to serve as a major north-south connection for bicyclists and pedestrians; however, at the time of this report, this corridor is privately owned by Norfolk Southern Railway, and currently does not allow the use of this right-of-way for a greenway. A number of studies conducted by the Charlotte Regional Transportation Planning Organization (CRTPO) and Charlotte Area Transit System (CATS) have explored the possible use of this corridor for commuter rail service and/or bus rapid transit (BRT) service. All such uses of this corridor would require the purchase of, or contractual use rights for, the corridor from Norfolk Southern.

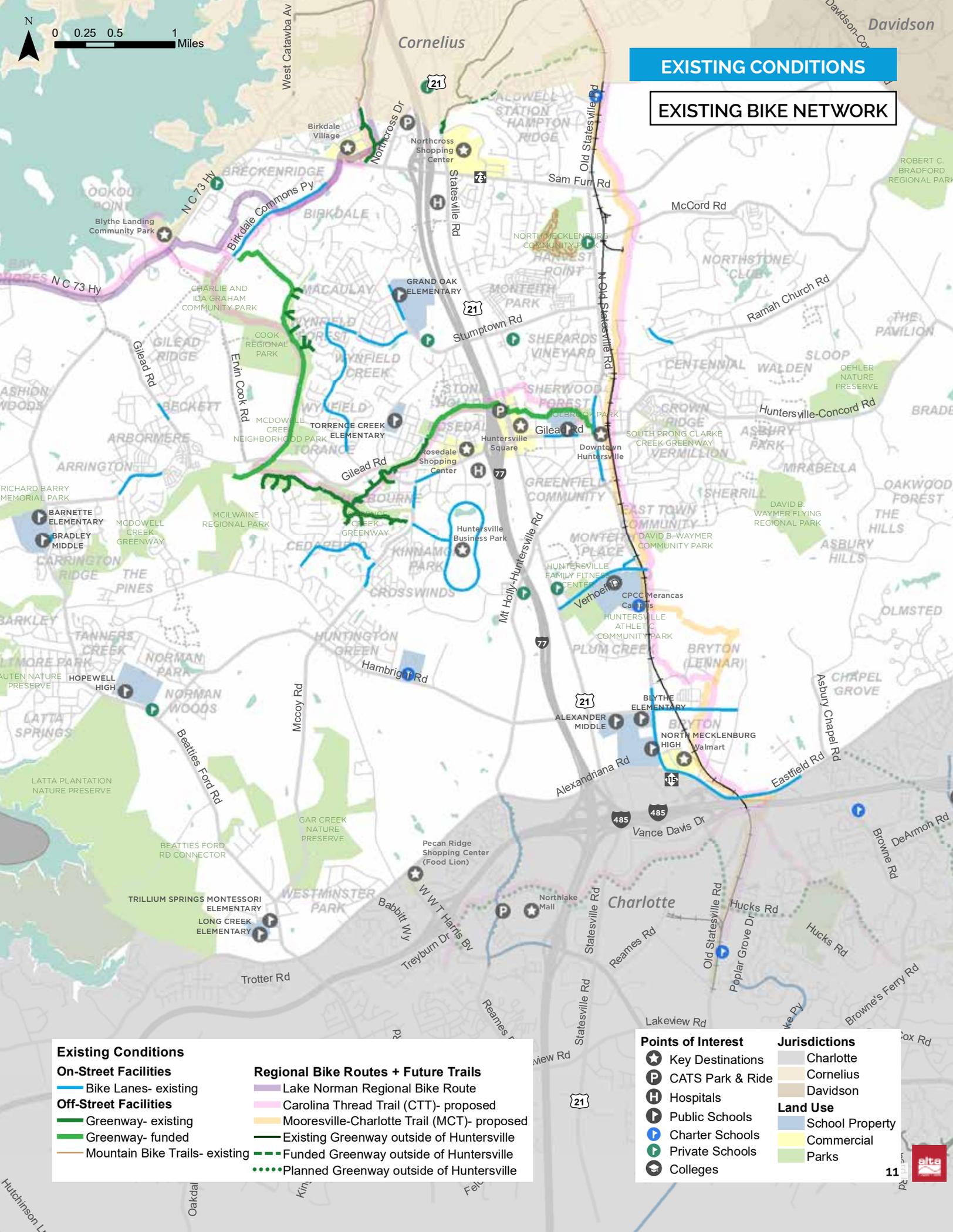
Extent of Existing Conditions Map shown with BLACK square





EXISTING CONDITIONS

EXISTING BIKE NETWORK



Existing Conditions

- On-Street Facilities**
- Bike Lanes- existing
- Off-Street Facilities**
- Greenway- existing
- Greenway- funded
- Mountain Bike Trails- existing

Regional Bike Routes + Future Trails

- Lake Norman Regional Bike Route
- Carolina Thread Trail (CTT)- proposed
- Mooresville-Charlotte Trail (MCT)- proposed
- Existing Greenway outside of Huntersville
- Funded Greenway outside of Huntersville
- Planned Greenway outside of Huntersville

Points of Interest

- ★ Key Destinations
- P CATS Park & Ride
- H Hospitals
- P Public Schools
- P Charter Schools
- P Private Schools
- P Colleges

Jurisdictions

- Charlotte
- Cornelius
- Davidson

Land Use

- School Property
- Commercial
- Parks



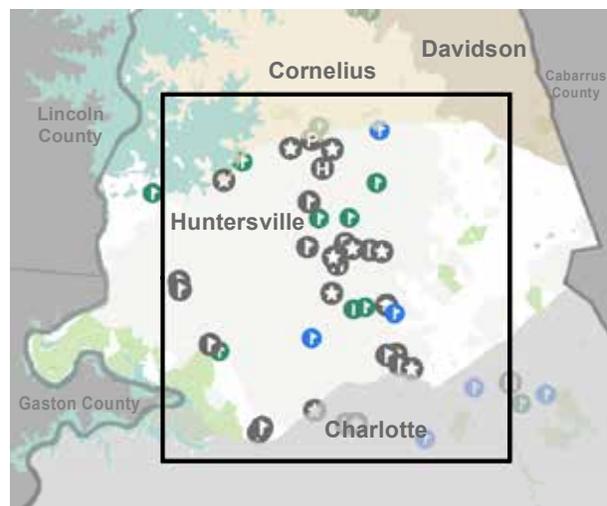


Points of Interest

The map highlights Huntersville destinations that attract bicycling trips, including parks, schools, commercial and retail centers, and cultural destinations. Huntersville is home to Latta Plantation, Historic Rural Hill, Central Piedmont Community College- Merancas Campus, 11 public schools, 9 private schools, 3 charter schools, plus many daycares and early education providers. Huntersville has four primary retail and commercial centers: Birkdale Village, Northcross Shopping Center, Rosedale Shopping Center, Huntersville Square, and the Walmart Shopping Center. The Park-Huntersville business park is home to eight buildings and over 750,000 square feet of office space.

Huntersville is home to more than 6,550 acres of parkland. Its largest park, Latta Plantation Nature Preserve, is 1,460 acres and includes the Historic Latta Plantation, a Nature Center, the Carolina Raptor Center, as well as hiking and horseback riding trails, picnic areas, shelters, butterfly gardens, and paddling launch sites into Mountain Island Lake.

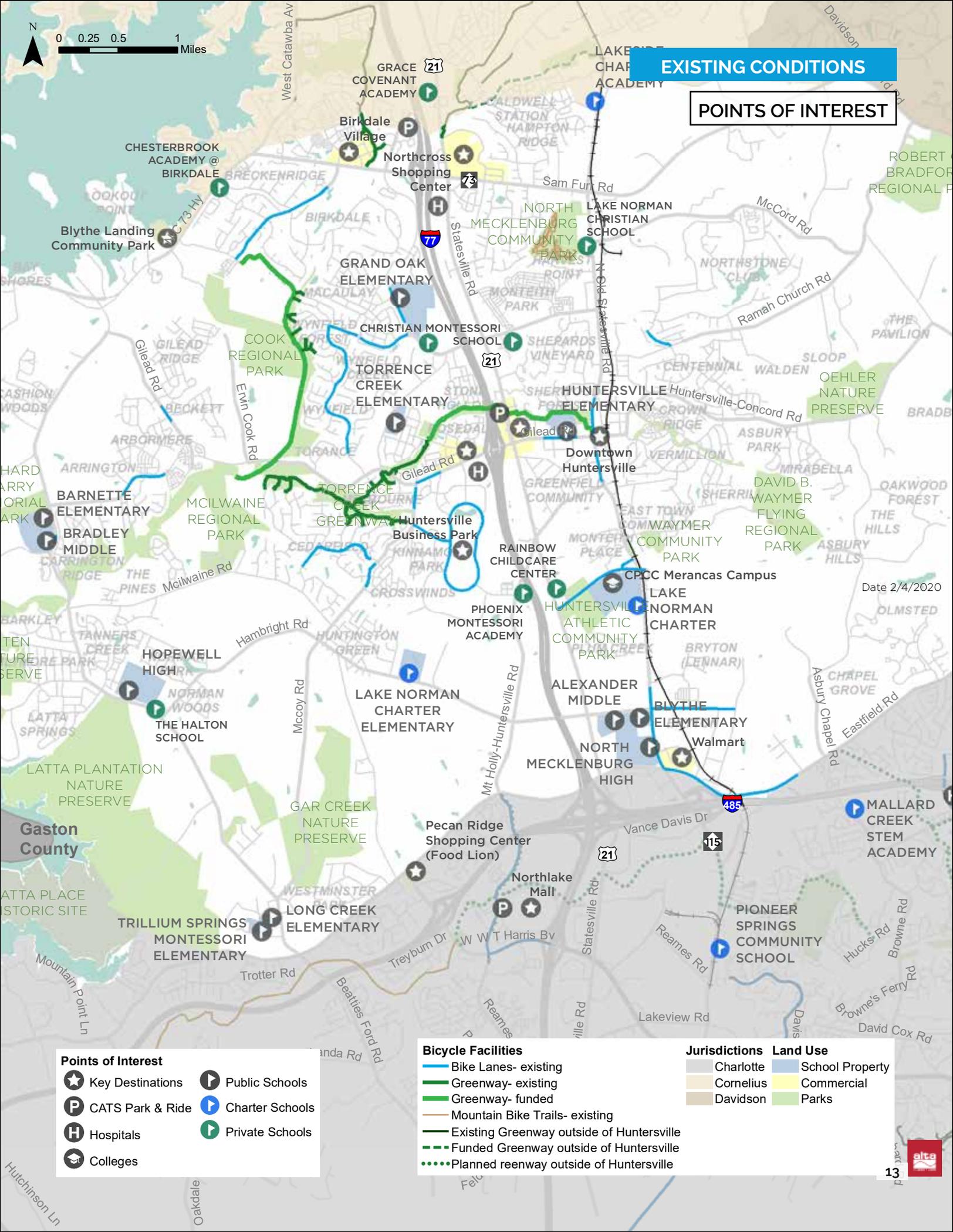
Extent of Points of Interest Map shown with BLACK square





EXISTING CONDITIONS

POINTS OF INTEREST



- Points of Interest**
- ★ Key Destinations
 - Ⓟ Public Schools
 - Ⓟ CATS Park & Ride
 - Ⓟ Charter Schools
 - Ⓟ Hospitals
 - Ⓟ Private Schools
 - Ⓟ Colleges

- Bicycle Facilities**
- Bike Lanes- existing
 - Greenway- existing
 - Greenway- funded
 - Mountain Bike Trails- existing
 - Existing Greenway outside of Huntersville
 - - - Funded Greenway outside of Huntersville
 -Planned reenway outside of Huntersville

- Jurisdictions Land Use**
- Charlotte
 - Cornelius
 - Davidson
 - School Property
 - Commercial
 - Parks

Date 2/4/2020





Equity Analysis

For many people, walking, biking or taking transit for some trips is a choice. For others, walking, bicycling, and taking transit are a necessity for transportation. Those who use these modes out of necessity may be disadvantaged populations that rely on walking, bicycling and transit to meet their daily needs. Other populations—such as children, many older adults, and people with disabilities—are also dependent on these modes and are more vulnerable to traffic-related injuries or deaths. Approximately 30% of the population do not drive due to age, income, or physical disability.

PROCESS

The equity analysis considers demographic factors that indicate locations in Huntersville where there are concentrations of vulnerable populations that are more reliant on walking and biking for transportation. These areas were considered in project development and project prioritization in order to identify projects that connect areas of need to the town's key destinations and resources.

Active transportation investments in these areas are likely to improve safe mobility choices that and will improve access to jobs, education, healthcare, and other important destinations.

The equity analysis conducted for the Huntersville Bike Plan used a combination of six socioeconomic characteristics as indicators to identify populations that are vulnerable to unsafe, disconnected, or incomplete active transportation facilities. The map on the facing page displays a composite map that combines all of these factors for an overall Equity score.

The indicators include:

- **Age:** Individuals under the age of 18 and over the age of 65 comprise this indicator.
- **Race:** This indicator measures the percentage of the population that identifies as non-white.
- **Public Assistance:** This indicator measures the percentage of households receiving public assistance in the past 12 months.

- **Educational Attainment:** This indicator represents the percentage of the population over 25 years of age that does not have a high school diploma or equivalent.
- **Limited English Proficiency (LEP):** This indicator measures the percentage of the population that identifies as not speaking English well or at all.
- **Disability:** This indicator measures the percentage of the population that is disabled.

KEY FINDINGS

The equity analysis indicates that vulnerable populations tend to be concentrated in the southern half of Huntersville, especially the southwest corner. The southeastern corner, as well as the corridor along Highway 115 also have relatively higher concentrations of these populations.

The development of the bike network should consider that the people who live in these areas may be more likely to bike out of necessity, rather than by choice, and have practical needs for safe and comfortable bicycling facilities.

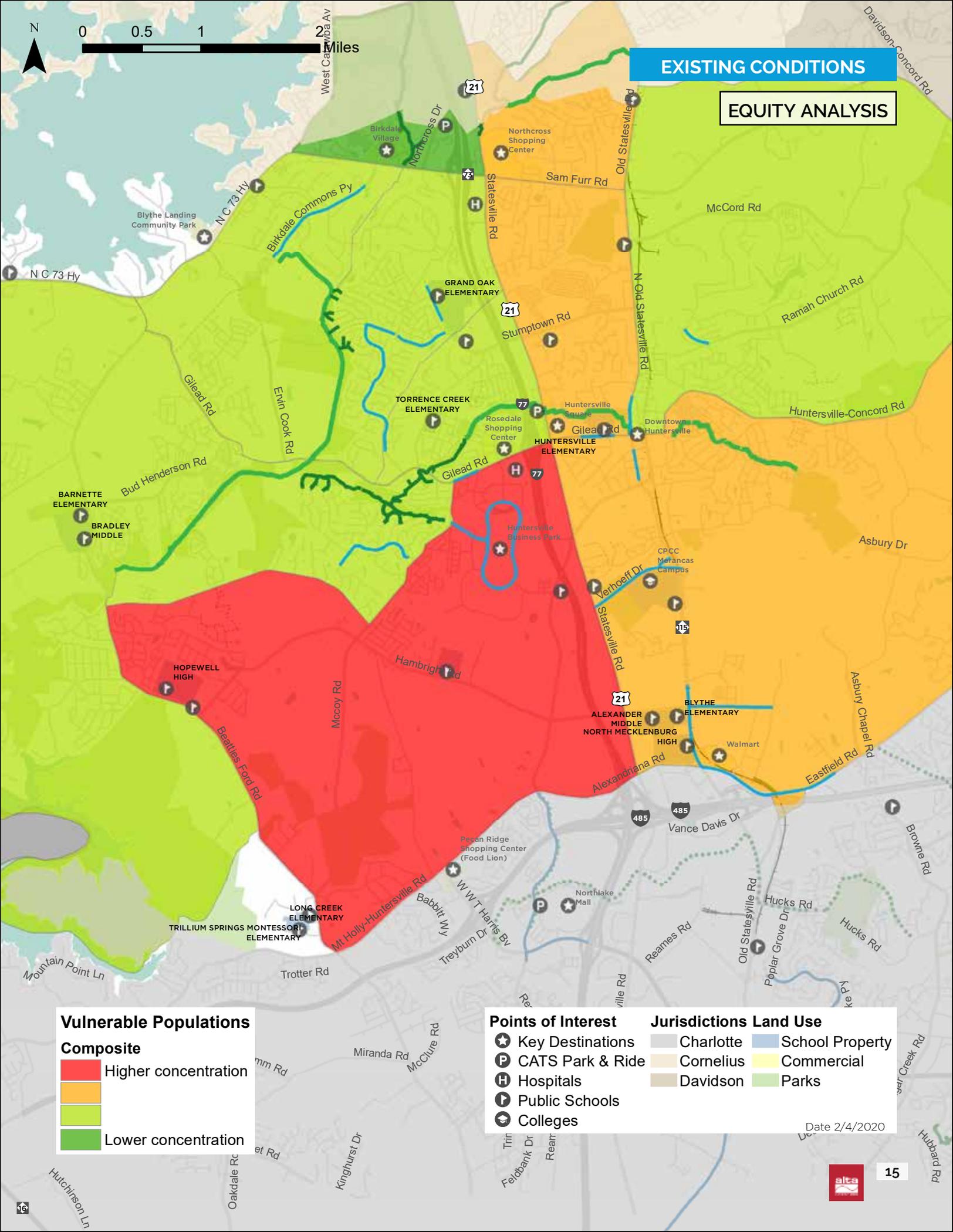
Extent of Vulnerable Populations Map shown with BLACK square





EXISTING CONDITIONS

EQUITY ANALYSIS



Vulnerable Populations Composite

- Higher concentration
-
-
- Lower concentration

Points of Interest	Jurisdictions	Land Use
★ Key Destinations	Charlotte	School Property
P CATS Park & Ride	Cornelius	Commercial
H Hospitals	Davidson	Parks
T Public Schools		
C Colleges		

Date 2/4/2020





Safety Analysis

PROCESS

This section summarizes the findings of the bicycle safety analysis. The following bullets provide a summary of the findings associated with reported crashes involving people bicycling between 2007 and 2018 in Huntersville. There were 32 reported crashes involving bicyclists during this study period.

KEY FINDINGS

The good news:

- **There were no fatal crashes involving people bicycling during the study period.**

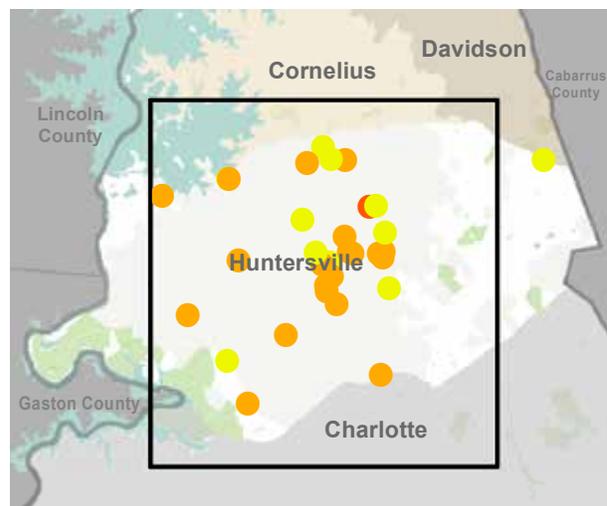
The bad news:

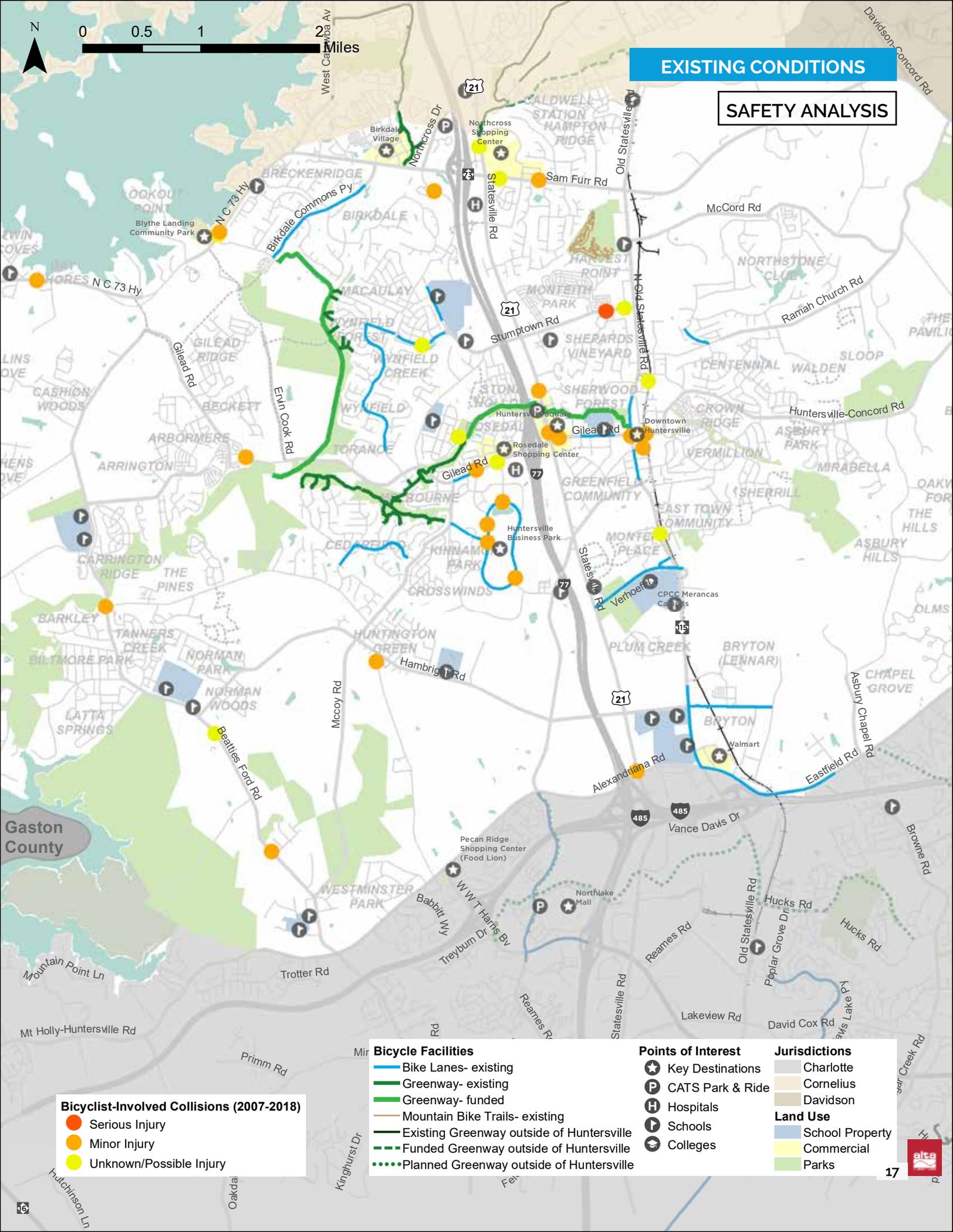
- A majority of crashes are attributed to motorists failing to yield to bicyclists within the roadway.
- More than half of crashes involving people bicycling resulted in injury.

Other relevant findings:

- Crashes involving people bicycling, and in particular involving reported injuries are occurring primarily on roadways classified as arterials.
- **The greatest concentration of bicyclist crashes occurred in close proximity to Gilead Road. Some of these crashes resulted in minor injury.**
- Another concentration of crashes is found along the business park loop- Reese Boulevard. All four of these crashes resulted in a serious injury

Extent of Bicyclist-Involved Collisions Map shown with BLACK square





EXISTING CONDITIONS

SAFETY ANALYSIS

Bicyclist-Involved Collisions (2007-2018)

- Serious Injury
- Minor Injury
- Unknown/Possible Injury

Bicycle Facilities

- Bike Lanes- existing
- Greenway- existing
- Greenway- funded
- Mountain Bike Trails- existing
- Existing Greenway outside of Huntersville
- Funded Greenway outside of Huntersville
- Planned Greenway outside of Huntersville

Points of Interest

- ★ Key Destinations
- P CATS Park & Ride
- H Hospitals
- S Schools
- C Colleges

Jurisdictions

- Charlotte
- Cornelius
- Davidson

Land Use

- School Property
- Commercial
- Parks





Bicycle Level of Traffic Stress (BLTS) Analysis

PROCESS

This analysis reveals the relative level of traffic stress bicyclists experience across Huntersville's roadway network. The approach used for assessing bicycle level of traffic stress (BLTS) is based on the Mineta Transportation Institute's (MTI) 2012 report 11-19: *Low-Stress Bicycling and Network Connectivity*. The MTI approach uses **posted speed limit, the number of travel lanes, and the presence and character of bicycle lanes as a proxy for bicyclist comfort level**. The BLTS analysis presented here builds on the MTI approach by **incorporating the impact of traffic volumes on risk exposure**.

Roadways with the lowest level of bicycle stress are shown in green on the Bicycle Level of Traffic Stress map on the facing page. Only one major roadway in Huntersville falls in this low-stress category: Gilead Road/Huntersville-Concord Road between US 21 and 2nd Street. This rating reflects that this section of roadway 1) is low-speed 2) has partial bike lanes, and 3) has traffic volumes of under 20,000 cars per day. Despite the low-stress rating, this particular corridor would not be tolerable for most potential bicyclists, including school-age children. It is important to note that **almost all local streets that are shown in gray due to lack of data to score on the BLTS scale are low-speed, low traffic-volume streets that are comfortable for biking**.

Moderate stress segments for bicyclists are shown in yellow, and highlight corridors that could be comfortably ridden by the mainstream adult population. The higher levels of traffic stress, identified as orange and red streets, correspond to types of bicyclists characterized by Portland's bicycle coordinator Roger Geller in his Four Types of Cyclists report¹. Roads shown in orange would likely be acceptable to current "enthusiastic and

confident" bicyclists, while roads shown in red are only acceptable to "strong and fearless" bicyclists, who will tolerate riding on roadways with higher motorized traffic volumes and/or speeds. It is estimated the "strong and fearless" group makes up only 1-2 percent of the population.

KEY FINDINGS

Key findings from the BLTS analysis include:

- **The local streets that make up the majority of the roadway network are generally comfortable places to ride a bike, but major roadways are barriers between pockets of low-stress neighborhood streets.**
- Bicyclist traffic stress is relatively high on all collector and arterial roadways. These areas are uncomfortable for biking either because they lack bicycle facilities, or because conventional bike lanes don't provide comfortable separation from high-speed, high-volume vehicle traffic.

Extent of Bicycle Level of Stress Map shown with BLACK square

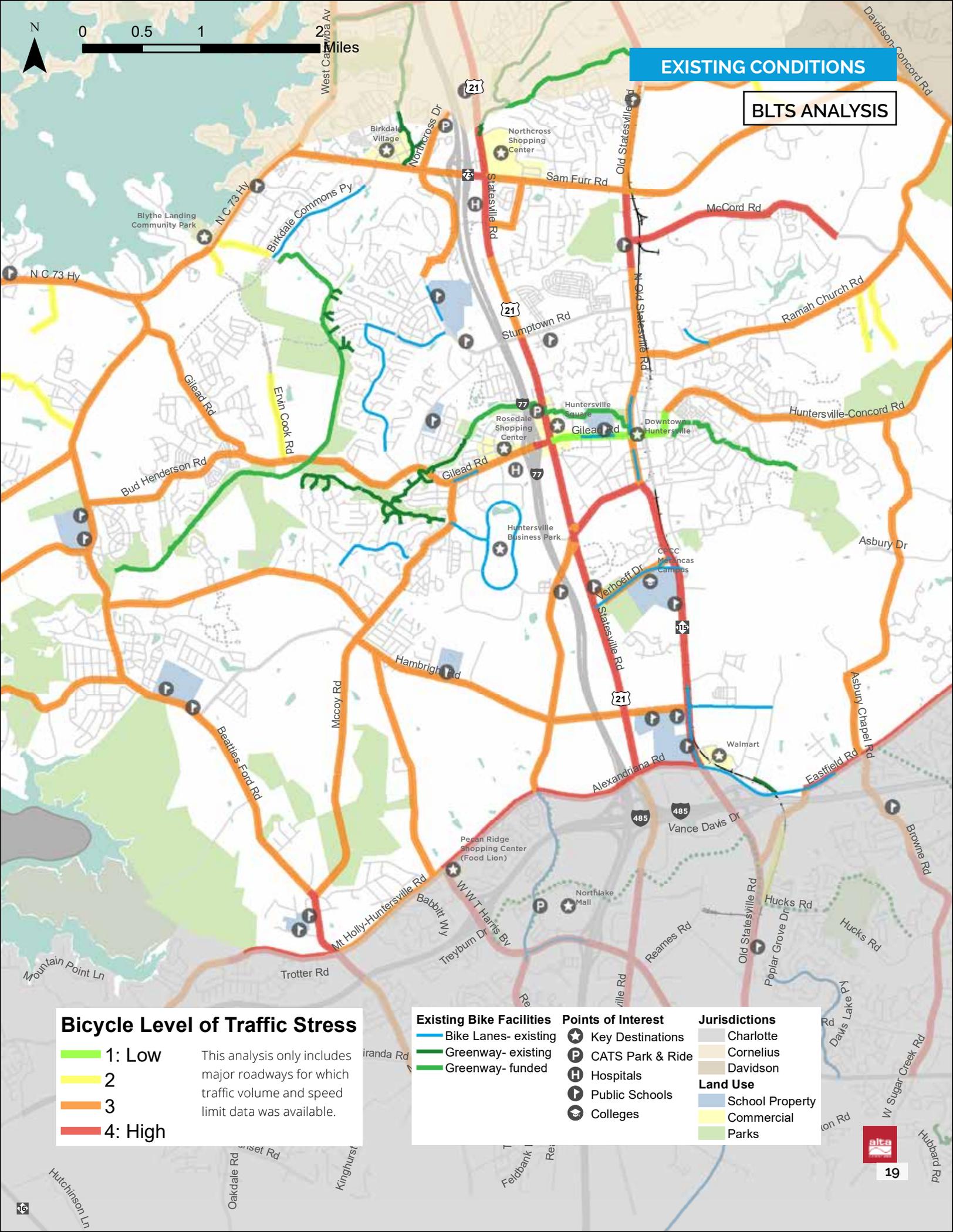


1 Source: Roger Geller. Four Types of Cyclists. <http://www.portlandoregon.gov/transportation/article/237507>



EXISTING CONDITIONS

BLTS ANALYSIS



Bicycle Level of Traffic Stress

- █ 1: Low
 - █ 2
 - █ 3
 - █ 4: High
- This analysis only includes major roadways for which traffic volume and speed limit data was available.

Existing Bike Facilities

- █ Bike Lanes- existing
- █ Greenway- existing
- █ Greenway- funded

Points of Interest

- ★ Key Destinations
- P CATS Park & Ride
- H Hospitals
- 🏫 Public Schools
- 🎓 Colleges

Jurisdictions

- ☐ Charlotte
- ☐ Cornelius
- ☐ Davidson

Land Use

- ☐ School Property
- ☐ Commercial
- ☐ Parks





Previous Plan Review

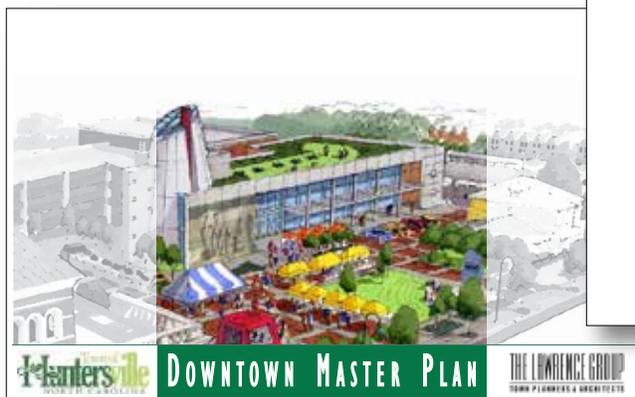
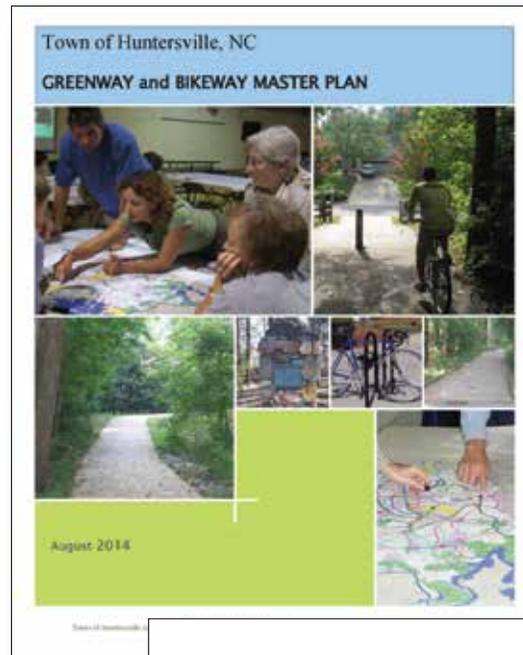
The following section summarizes the recommendations in previously adopted plans.

TOWN OF HUNTERSVILLE DOWNTOWN MASTER PLAN (2005)

The *Huntersville Downtown Master Plan* contains the Town's first formal detailing of bicycle facilities within the downtown area. Recommendations in this plan include the "Green Trail," or a system of off-road paths and wide sidewalks connecting the downtown core/ Vermillion neighborhood with Rosedale by way of Holbrook Park. The main objective is to enhance Holbrook Park's connection to Huntersville's existing greenway system in order to enhance downtown connectivity as well as recreation and park space within the Town of Huntersville.

Relevance to this plan:

- Portions of the proposed greenway have since been incorporated in the Mecklenburg County Greenway Master Plan, and will serve as extensions to the existing Torrence Creek Greenway and planned Clarke Creek Greenway
- Recommendations include on-road connections along Church Street and Huntersville-Concord Road to provide a link between the two greenways (the current plan will develop these recommendations in further detail)



Sampling of coverpages from previous planning reports

TOWN OF HUNTERSVILLE GREENWAY + BIKEWAY MASTER PLAN (2014)

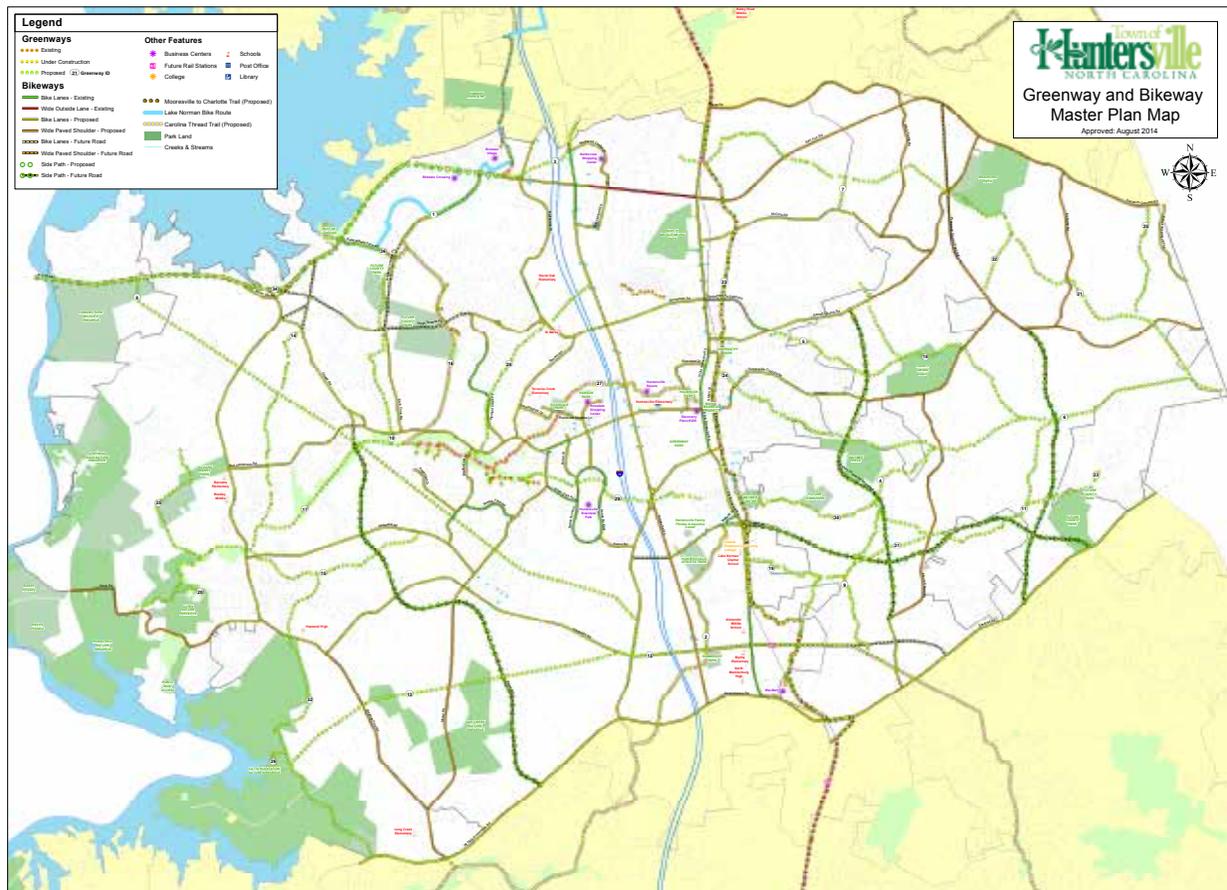
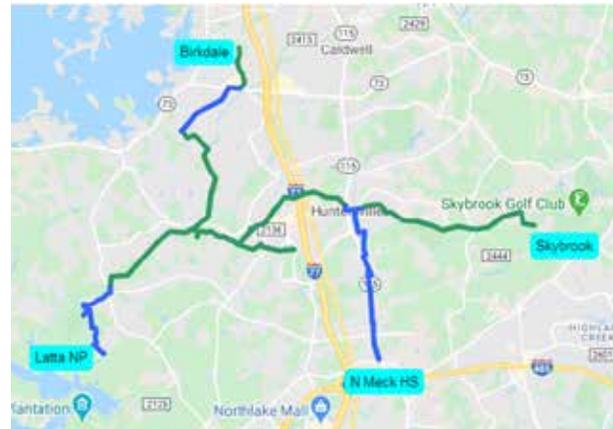
The *Huntersville Greenway and Bikeway Master Plan* identifies a core set of goals, strategies, and actions to work toward connecting the community through greenway and bikeway corridors. The plan is accompanied by a map that identifies existing and proposed greenways and bikeways by facility type. The plan incorporates the existing and proposed greenways as identified by other area plans including the Mecklenburg County Greenway Plan.

Relevance to this plan:

- Outlines facility types contextually appropriate for the Town, including design guidance and standards
- Includes set of ranking criteria for both greenways and bikeways in order to identify project priorities

GREENWAYS 30X30 VISION PLAN

The Huntersville Greenway, Trail, and Bikeway Commission has developed a 30x30 Vision Plan to connect 30,000 residents via greenway and sidewalks by 2030. The map below shows the "Spine of the Vine," a prioritized spine of 14 miles of greenways to maximize active connectivity throughout Huntersville.





MECKLENBURG COUNTY COMPREHENSIVE PARKS + RECREATION MASTER PLAN: 2015 GREENWAY MASTER PLAN UPDATE

The first Greenway Master Plan was published in 1980. The most recent plan update, published in April 2015, outlines the importance of greenways to quality of life in Mecklenburg County. The plan compares Mecklenburg County to its peer communities, identifies project priorities, management policies and recommendations, as well as detailed ranking criteria.

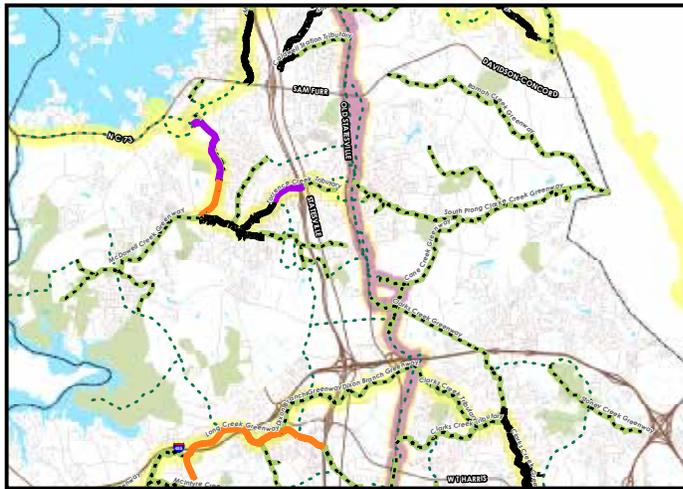
- Connections between existing and planned greenways to existing roads and neighborhoods are prioritized within this plan in order to increase access and functionality of the bikeway network

Relevance to this plan:

- The McDowell and Torrence Creek Greenways are products of the Mecklenburg County Greenway Master Plan, and will continue to be extended as funding becomes available. These greenways are part of the Carolina Thread Trail network, a regional trail system across North and South Carolina

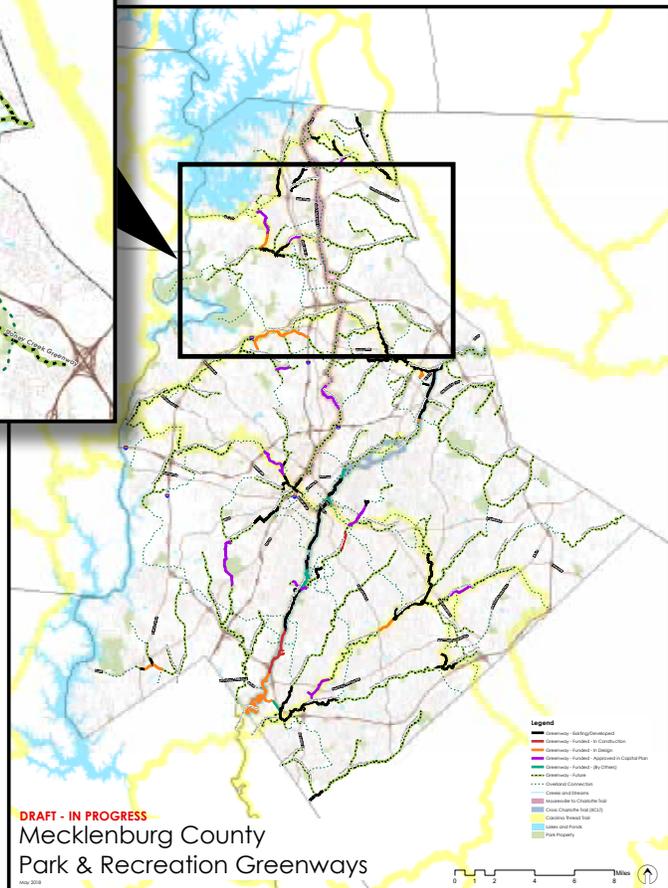
2019 GREENWAY MASTER PLAN UPDATE

In June 2019, Mecklenburg County Park and Recreation updated its Greenways map to reflect the greenways existing, funded, in design, and future at the time of its publishing.



(Above) The most recent version of the Mecklenburg County Greenways Master Plan. The inset map covers the town limits of Huntersville.

Legend	
	Greenway - Existing/Developed
	Greenway - Funded - In Construction
	Greenway - Funded - In Design
	Greenway - Funded - Approved in Capital Plan
	Greenway - Funded - (By Others)
	Greenway - Future
	Overland Connectors
	Creeks and Streams
	Mooresville to Charlotte Trail
	Cross Charlotte Trail (XCLT)
	Carolina Thread Trail
	Lakes and Ponds
	Park Property



SMALL AREA PLANS

The Town of Huntersville has a series of Small Area Plans (SAPs) throughout its jurisdiction, which detail the existing and future land and transportation development for each area. These plans contain a higher level of detail than the Town of Huntersville 2030, highlighting each area’s assets and future development. The greenway and bikeway recommendations outlined in the SAPs originate from other plans detailed in this plan review.

Beatties Ford Road Corridor Small Area Plan

A multi-use path is proposed along the corridor, making use of the 100-foot buffer along both sides of Beatties Ford Rd. This plan emphasizes the McDowell Creek Greenway as an important connection in this study area, as well as other connections to the Carolina Thread Trail system. This plan endorses the Huntersville Bikeway Plan, which designates Beatties Ford Road as a Tier One priority for bikeway improvements. Finally, this plan supports a “Bikeway Loop,” a signed and enhanced clockwise loop incorporating the triangle created by Beatties Ford, Hambright, and McCoy Roads. Please refer to <https://www.huntersville.org/570/Beatties-Ford-Road-Corridor-Small-Area-P> for more details.

Clarke Creek Small Area Plan

The Clarke Creek Small Area Plan was adopted in March 2018 and is intended to be a long-range land use and transportation plan that will guide future land use, transportation, and infrastructure investment decisions by the Town, developers, and property owners. The plan contains the planned Clark Creek and North Prong Creek greenways

Please see <https://www.huntersville.org/582/Clarke-Creek-Small-Area-Plan> for more details.

East Huntersville Area Development Plan

The East Huntersville Area Development Plan, published in April 2007, makes recommendations for the development of East Huntersville as it grows and changes. Recommendations

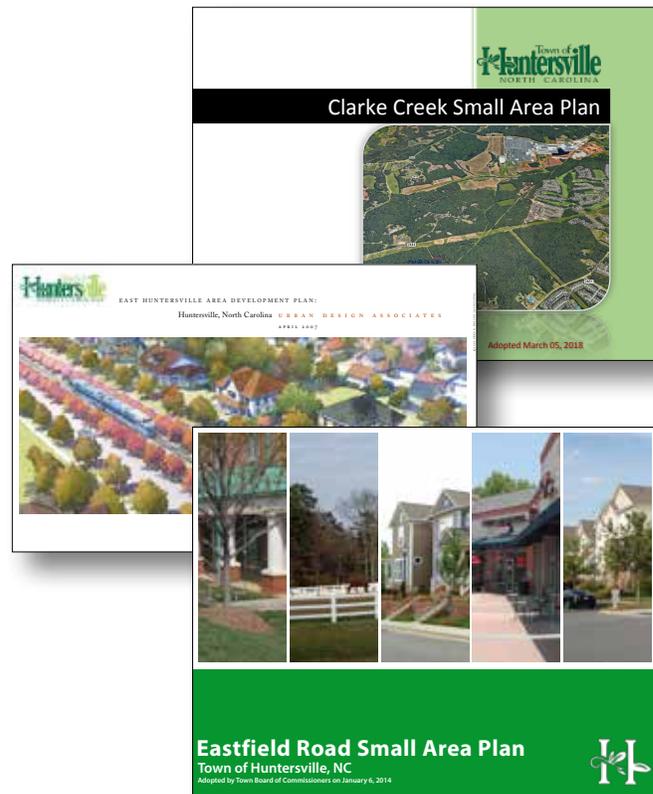
promote transit-oriented development, bike and pedestrian connectivity to open space and adjacent neighborhoods, and a more connected street network within residential neighborhoods.

Please see <https://www.huntersville.org/DocumentCenter/View/1004/East-Huntersville-Area-Development-Plan-Details-PDF?bidId=> for more details.

Eastfield Road Small Area Plan

Adopted in January 2014, the Eastfield Road Small Area Plan details existing conditions and recommendations for land use and major roads within the study area. Bike facilities are recommended for major corridors, including Eastfield Road, Asbury Chapel Road, Hambright Road, Verhoeff Drive, and Prosperity Church Road.

Please refer to <https://www.huntersville.org/DocumentCenter/View/1006/Eastfield-Road-Small-Area-Final-Plan-PDF?bidId=> for more information.



Sampling of coverpages from previous Small Area Plans.



TOWN OF HUNTERSVILLE 2030 COMMUNITY PLAN (2011)

The 2030 Community Plan was adopted by the Town Board of Commissioners on June 20, 2011. The plan details the Town's priorities as it develops in the subsequent decades. One of its top priorities is to establish a multi-modal interconnected transportation system, which will be enhanced by encouraging higher density development. The bikeway- and greenway-specific portions of the document are derived from the 2007 version of the Town's Greenway and Bikeway Master Plan.

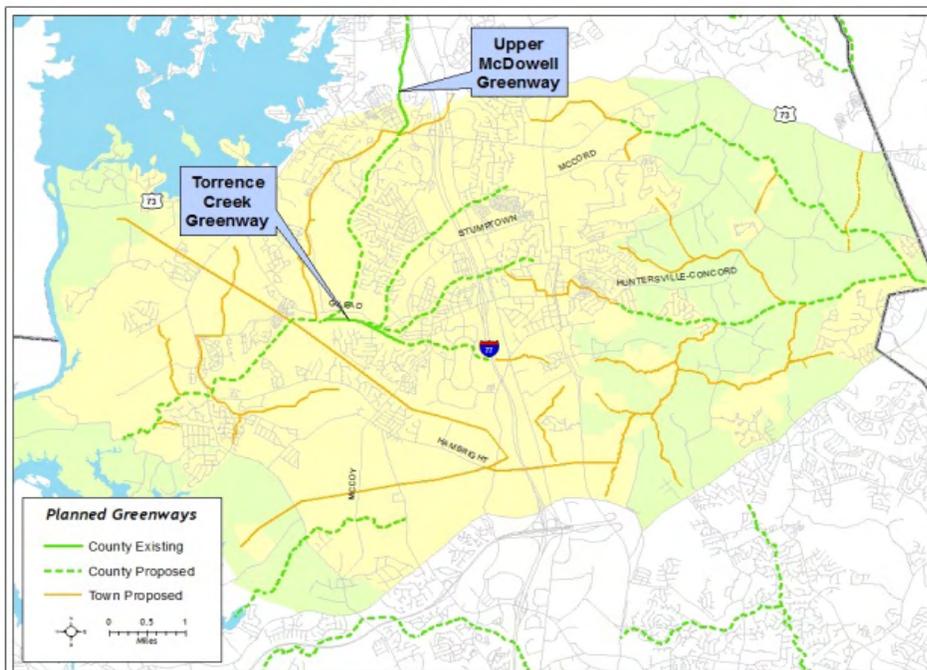
Relevance to this plan:

- Identifies Action T-6.2: Greenways and Bikeways "Implement 'Greenway and Bikeway Master Plan,' including the prioritization and funding of greenway trails and bikeways through a combination of public and private funding"
- Recommends Town-wide wayfinding signage, and other policy changes that support increased connectivity
- Action items related to bikeway and greenway development will inform the priorities and objectives of the current plan

TOWN OF HUNTERSVILLE 2040 COMMUNITY PLAN (underway)

The update to the 2030 plan, the 2040 Community Plan, is currently underway during the writing of this report (summer 2020). Its preliminary findings from the study's public survey include:

- 32% of respondents to the survey consider creating safe, attractive walking, biking, and transit options a top issue
- **80% would like the Town to focus on bicycle, pedestrian, and greenway/trail facilities**
- While only 6% of respondents walk to work, and 1% bike; 19% would like to walk and 14% would like to bike. Similarly larger proportions of people would like to walk and bike to shop and access services and parks than currently do.
- 76% would like to walk or bike more if it was safer and more enjoyable. 83% would like it to be safer for kids to walk and bike to schools and parks.



(Below) The Planned Greenways Map developed as part of the Huntersville 2030 Community Plan.

CRTPO COMPREHENSIVE TRANSPORTATION PLAN (2017)

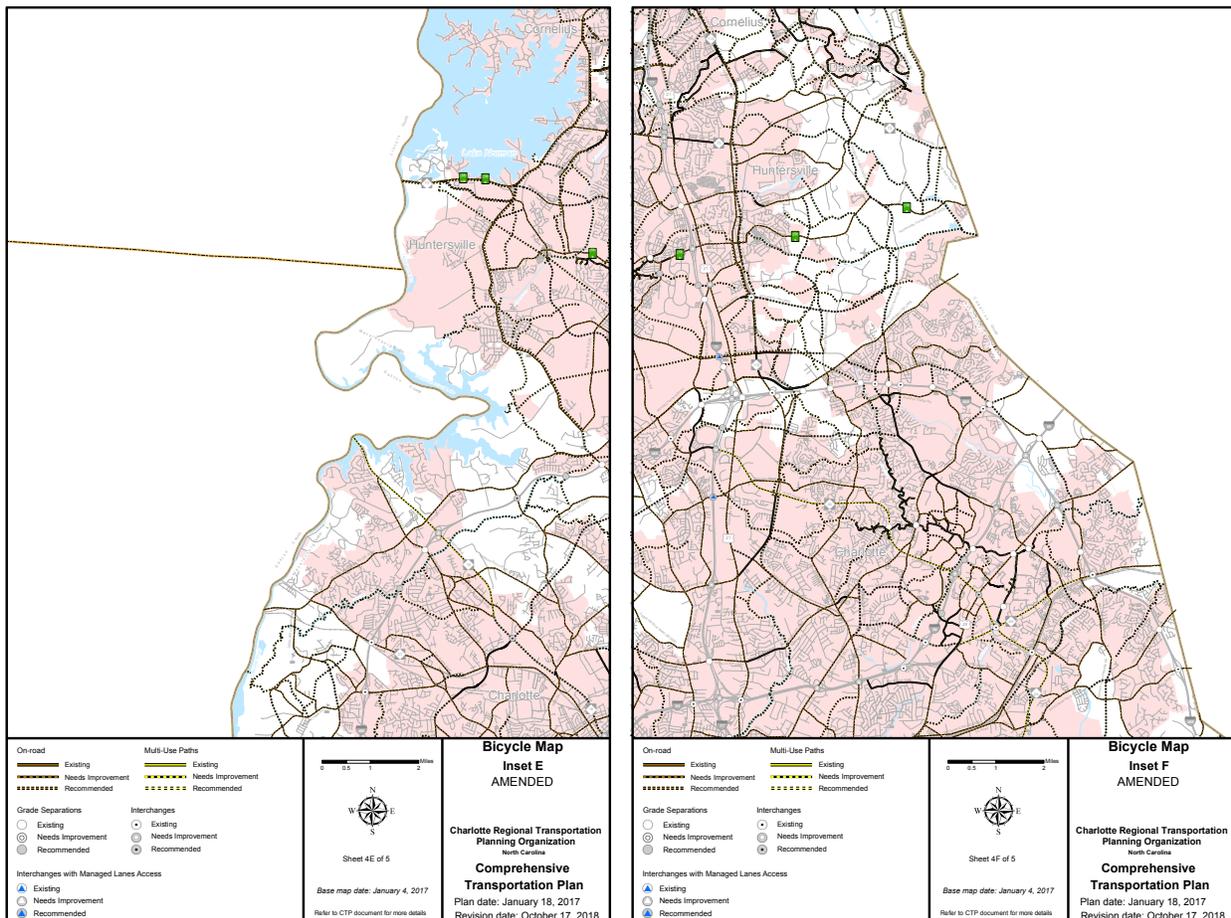
The Charlotte Regional Transportation Planning Organization (CRTPO) developed a Comprehensive Transportation Plan (CTP) that details multi-modal transportation system improvements across Iredell, Mecklenburg, and Union Counties. An update was approved in October 2018 and again in January 2020. A large portion of this plan discusses improvements to bicycle facilities throughout the study area.

Relevance to this plan:

- Includes a map of existing, needs improvement, and recommended bicycle facilities. (Recommended facility types differentiate between on-road and multi-use paths, but do not provide any further detail or recommendations)

- Identifies interchanges, grade separations, and interchanges with managed lanes access as existing, needs improvement, or recommended. The classifications and recommendations offered by the CTP will help inform the current plan's survey of existing conditions, needed facilities, and facilities needing improvement.

(Below) The Bicycle Map developed as part of the CRTPO Comprehensive Transportation Plan.

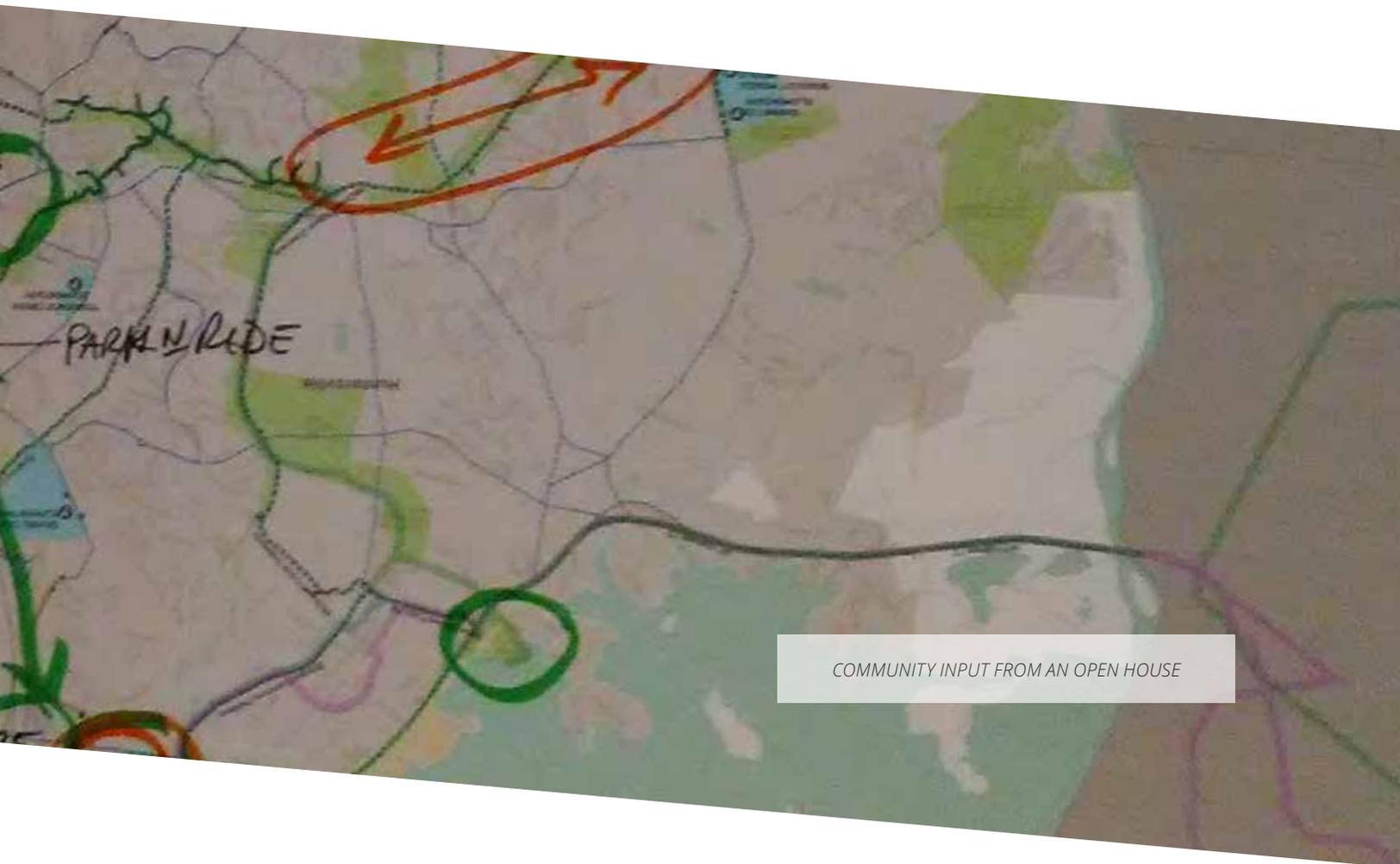




Community Engagement

Extensive public and stakeholder engagement was conducted by the project team to help identify bicycling-related needs and priorities of Huntersville residents. This was achieved through a mix of in-person meetings, online data collection, and written feedback. The primary methods for gathering public input for the Huntersville Bike Plan included the following, which are summarized in this section:

- *Project Steering Committee + Stakeholder Team Meetings*
- *Open Houses*
- *Online Interactive Map*
- *Online and hard-copy surveys*



COMMUNITY INPUT FROM AN OPEN HOUSE

The Project Steering Committee and Stakeholder Team and open house provided an opportunity for stakeholders and community members to ask questions and provide direct feedback to the project team. By holding the open houses at different venues in town, the project team was able to capture a variety of feedback and a diverse set of opinions. At all events, **Huntersville residents expressed a strong desire for more bikeways that directly connect to major destinations**, particularly the Huntersville area parks and between neighborhoods.

The in-person feedback was supplemented by online interactive maps and an online survey, which were available through the town's website and also promoted through social media outlets and through project business cards placed at local shops and community centers. Hundreds of comments were collected over several months, which were analyzed to inform the overall project list and project prioritization.



Engagement Process

PROJECT STEERING COMMITTEE + STAKEHOLDER TEAM

The Project Steering Committee and Stakeholder Team was comprised of key stakeholders from multiple town departments and local institutions, including the Town’s Greenway, Trail, and Bikeway Commission. It also included a group of resident volunteers who were approved by the Town Board to serve on the committee.

The Committee met three times during the project—a kickoff meeting in September 2019, a meeting in December 2019 to present the initial analysis findings, and a meeting in January 2020 to present the draft recommendations. The Committee was instrumental in assisting with outreach efforts and reviewing materials at each step of the process.

OPEN HOUSES

The project team held an open house in Huntersville on November 6, 2019, at the Town Hall. Approximately 25 people attended the open house, and Town staff engaged with residents and presented boards showing planned greenway routes, bikeway recommendations from previous plans, program and policy recommendations, and an overview of the analysis process and proposed facility types.

The second Open House was held on February 4, 2020, at the Huntersville Recreation Center. Approximately 20 people attended. Feedback on all the draft recommendations was collected to inform the final recommendations.



Business cards were used to promote the project website, public meetings, and the online map and survey.

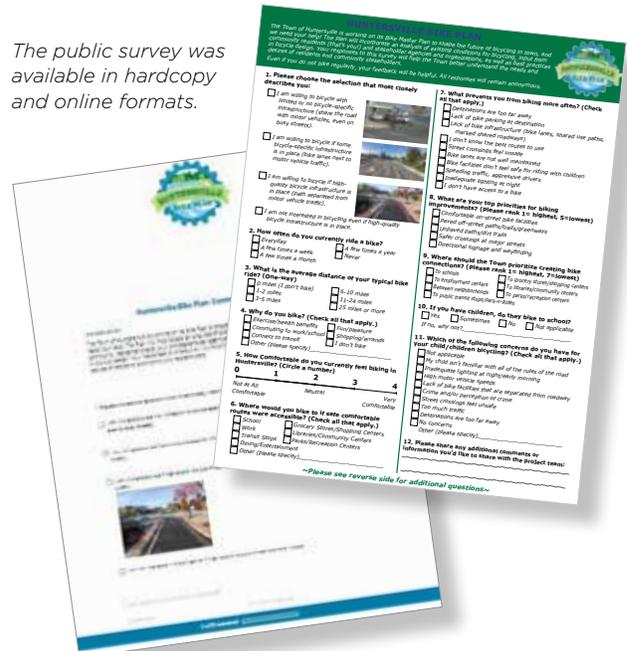
ONLINE INTERACTIVE MAP

An online interactive mapping tool was shared through the Town’s website to gather feedback from residents who were unable to attend the open house. The online map allowed residents to add points or lines to the map showing where they would like to see bikeways or greenways, with the ability to zoom in on specific streets. **Over 200 individual comments were placed on the interactive map.**

PUBLIC SURVEY

To complement the online interactive maps, a public survey was developed and distributed online through the town’s website and in hard-copy form at Town Hall. The survey sought feedback on residents’ bicycling habits and their preferences for improving bicycling infrastructure. **More than 400 surveys were completed.** The results of the survey findings are summarized on pages 30-31.

The public survey was available in hardcopy and online formats.



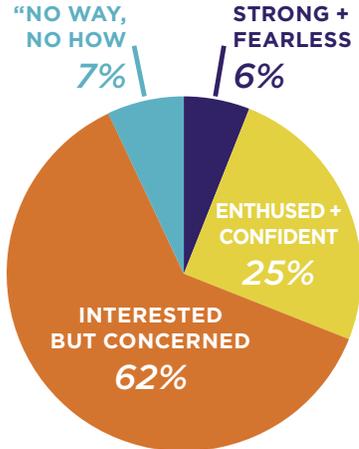


THE OPEN HOUSE AT HUNTERSVILLE'S TOWN HALL

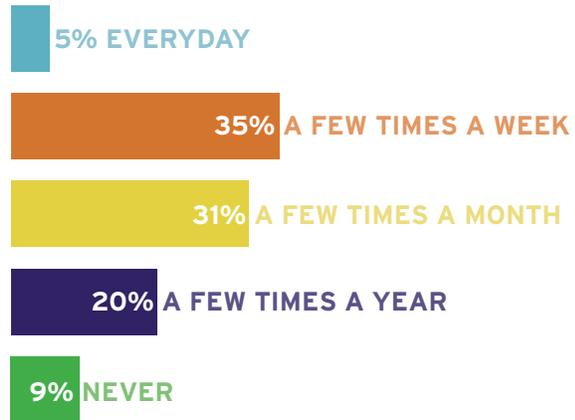


Public Input Summary

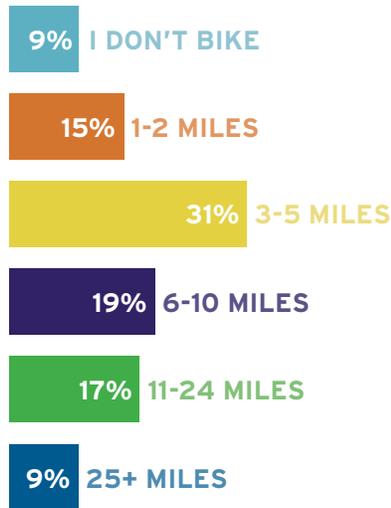
WHICH TYPE OF BICYCLIST ARE YOU?



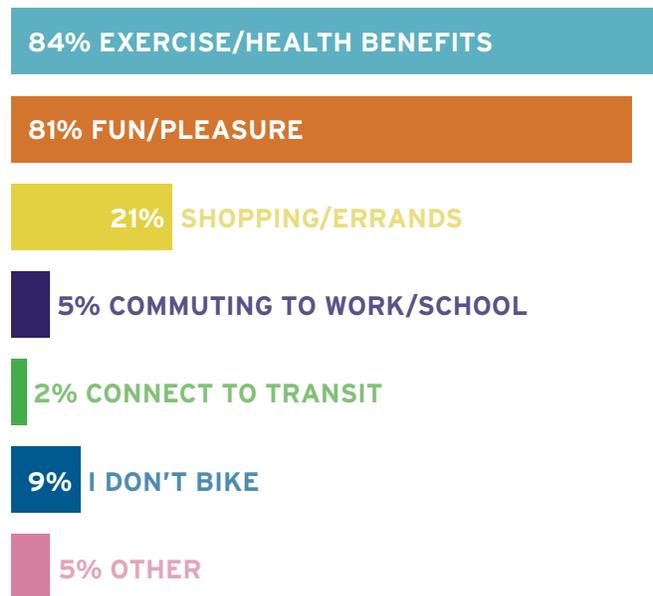
HOW OFTEN DO YOU BIKE?



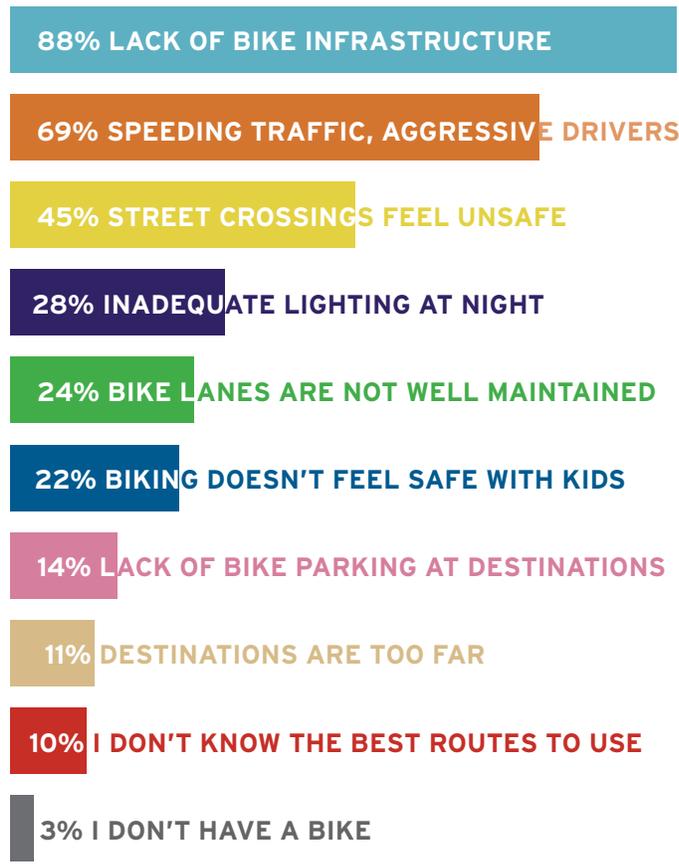
HOW FAR DO YOU TYPICALLY BIKE?



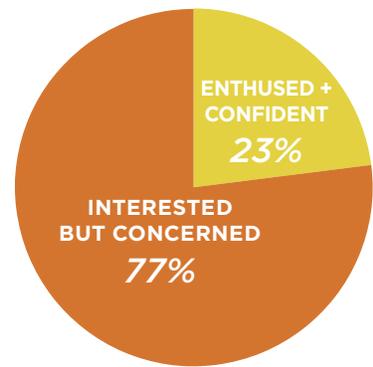
WHY DO YOU BIKE?



WHAT PREVENTS YOU FROM BIKING MORE OFTEN?



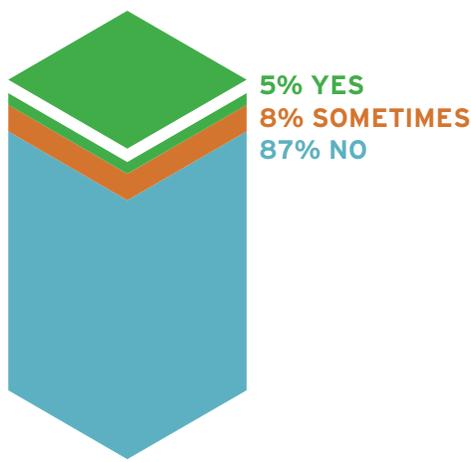
WHICH TYPE OF BICYCLIST SHOULD THE TOWN PLAN FOR?



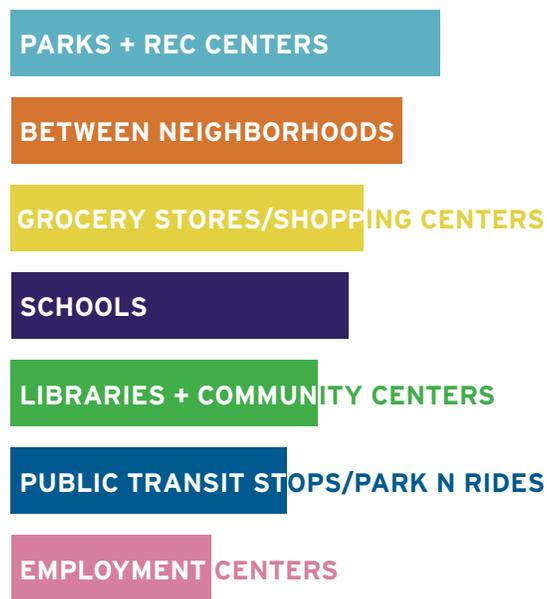
Enthusied + Confident: People willing to bicycle if some bicycle-specific infrastructure is in place

Interested but Concerned: People willing to bicycle if high-quality bicycle infrastructure is in place

DO YOUR CHILDREN BIKE TO SCHOOL?



WHERE SHOULD THE TOWN PRIORITIZE BIKE CONNECTIONS?





Needs + Opportunities

A multi-tiered analysis was conducted in order to identify needs and opportunities for bicycle facility connections that meet the needs of cyclists of All Ages + Abilities (AAA). AAA bike facilities are those that are safe, comfortable, and equitable for a broad set of potential bicyclists, including children, seniors, and low-income riders.¹

The analyses included those described in the previous chapter (Bicycle Level of Traffic Stress, Points of Interest, Safety, Equity, Previous

¹ National Association of City Transportation Officials. (2017) Designing for All Ages & Abilities: Contextual Guidance for High-Comfort Bicycle Facilities.

NEEDS + OPPORTUNITIES MAPPED:

- 📍 Wayfinding needed
- ① Need safe bike crossing between Hampton Ridge and Hamptons
- ② Need safe bike/greenway crossing at Lindholm
- ③ Potential opportunity for Bike/Ped connector(s)?
- ④ Birkdale Commons Parkway: 36' wide, partial bike lanes, overland connector
- ⑤ McCord Rd: Narrow, recently repaved, 10' lanes
- ⑥ Ramah Church Rd: Narrow, recently repaved, 10' lanes
- ⑦ Need safe crossing at Bramborough and connection to Fred Brown
- ⑧ Planned roadway connection - opportunity for improved bike facility?
- ⑨ Potential for greenway connection through Graham and Cook Parks?
- ⑩ Hugh Torrance Pkwy: 35', needs AAA facility
- ⑪ Wynfield Creek Pkwy: 35', needs upgrade to AAA facility
- ⑫ Unlikely 77 crossing
- ⑬ New 77 crossing (tunnel)
- ⑭ Potential greenway connection
- ⑮ Need safe crossing and connection from Glendale Drive to Crown Ridge Rd
- ⑯ Need safe crossing at Centennial Forest/Eastgate Dr

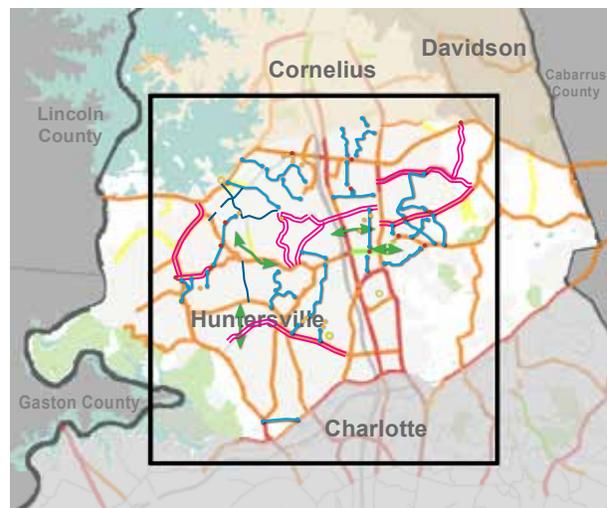
Plans + Recommendations). The team then also incorporated the following information:

- School Attendance Zones
- Major Employment + Commercial centers
- Strava (C) Global Heatmaps of current bicycling activity
- Huntersville's 30x30 Greenway Priorities
- Public input from the online mapping activity and public engagement process

The map at right highlights the needs and opportunities identified through this analysis.

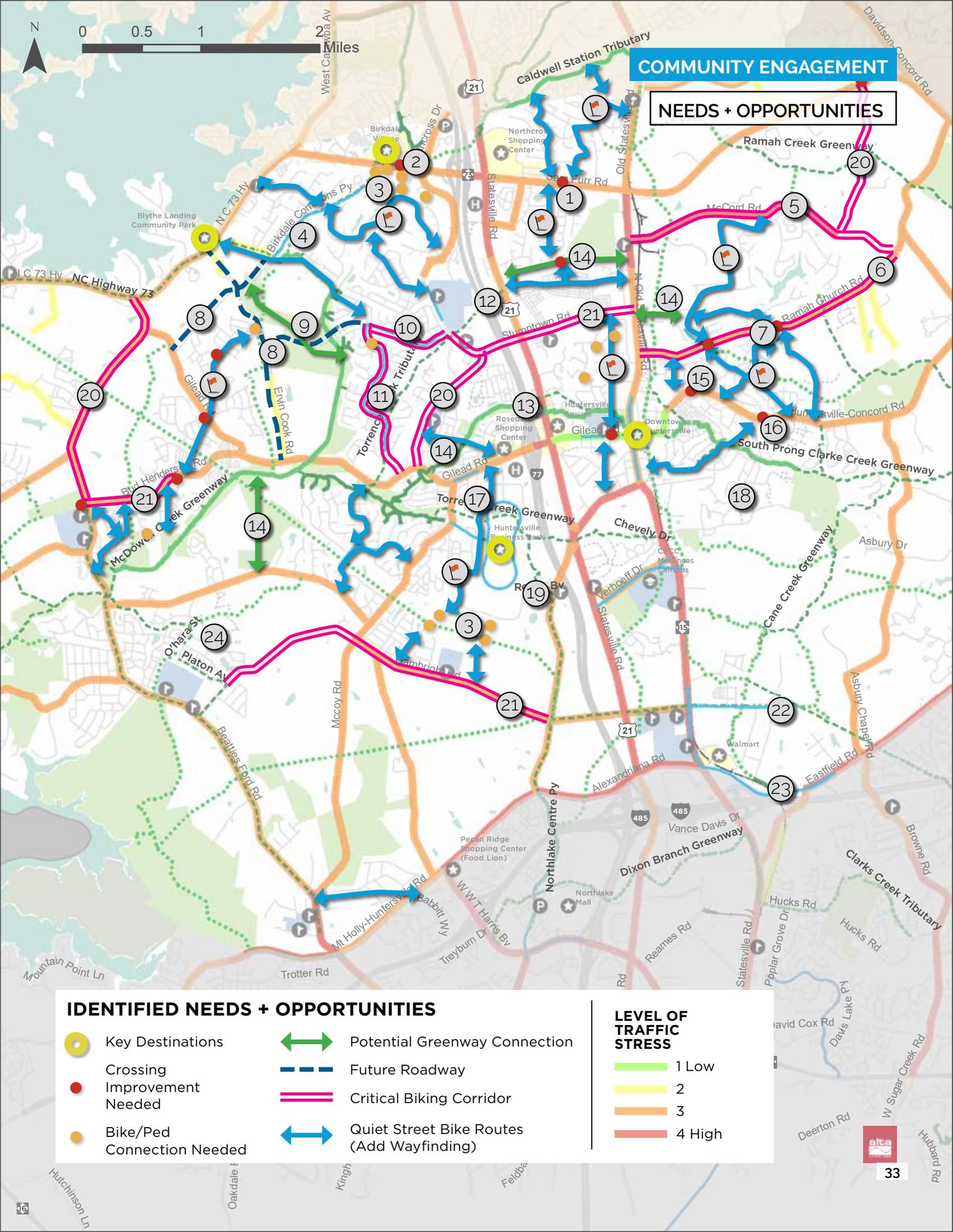
- ⑰ Need bike facility on either Boren Street or Reese
- ⑱ Berkley Avenue: Is this going to connect 3-ways eventually?
- ⑲ Need east/west bike facility on Reese
- ⑳ Critical N/S connection
- ㉑ Critical E/W connection
- ㉒ Bike lanes exist on new section of Hambright Road
- ㉓ Lots of debris in bike lanes and wide shoulders

Extent of Needs + Opportunities Map shown in BLACK square



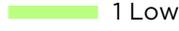
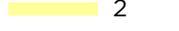


COMMUNITY ENGAGEMENT
NEEDS + OPPORTUNITIES

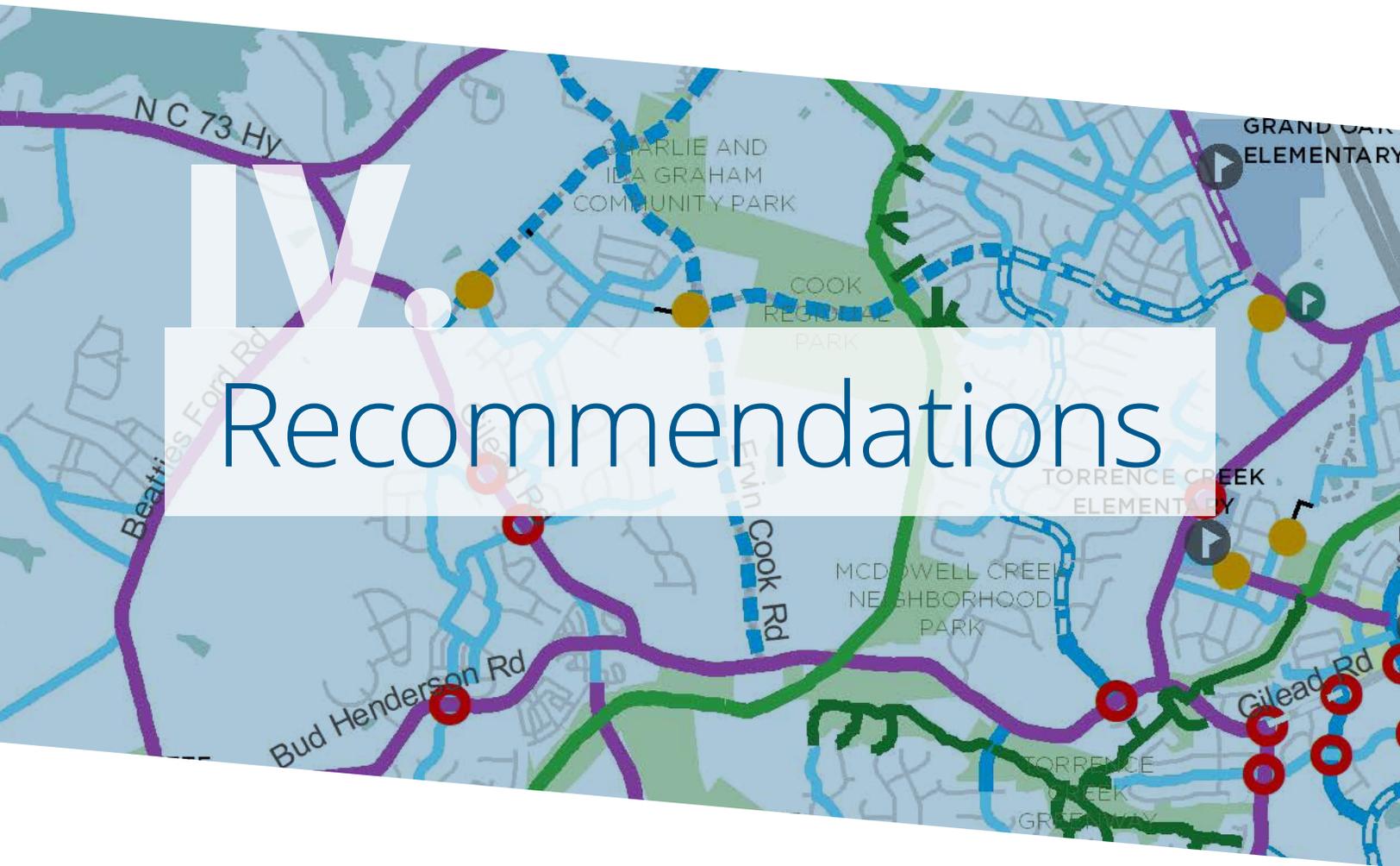


IDENTIFIED NEEDS + OPPORTUNITIES

-  Key Destinations
-  Crossing Improvement Needed
-  Bike/Ped Connection Needed
-  Potential Greenway Connection
-  Future Roadway
-  Critical Biking Corridor
-  Quiet Street Bike Routes (Add Wayfinding)

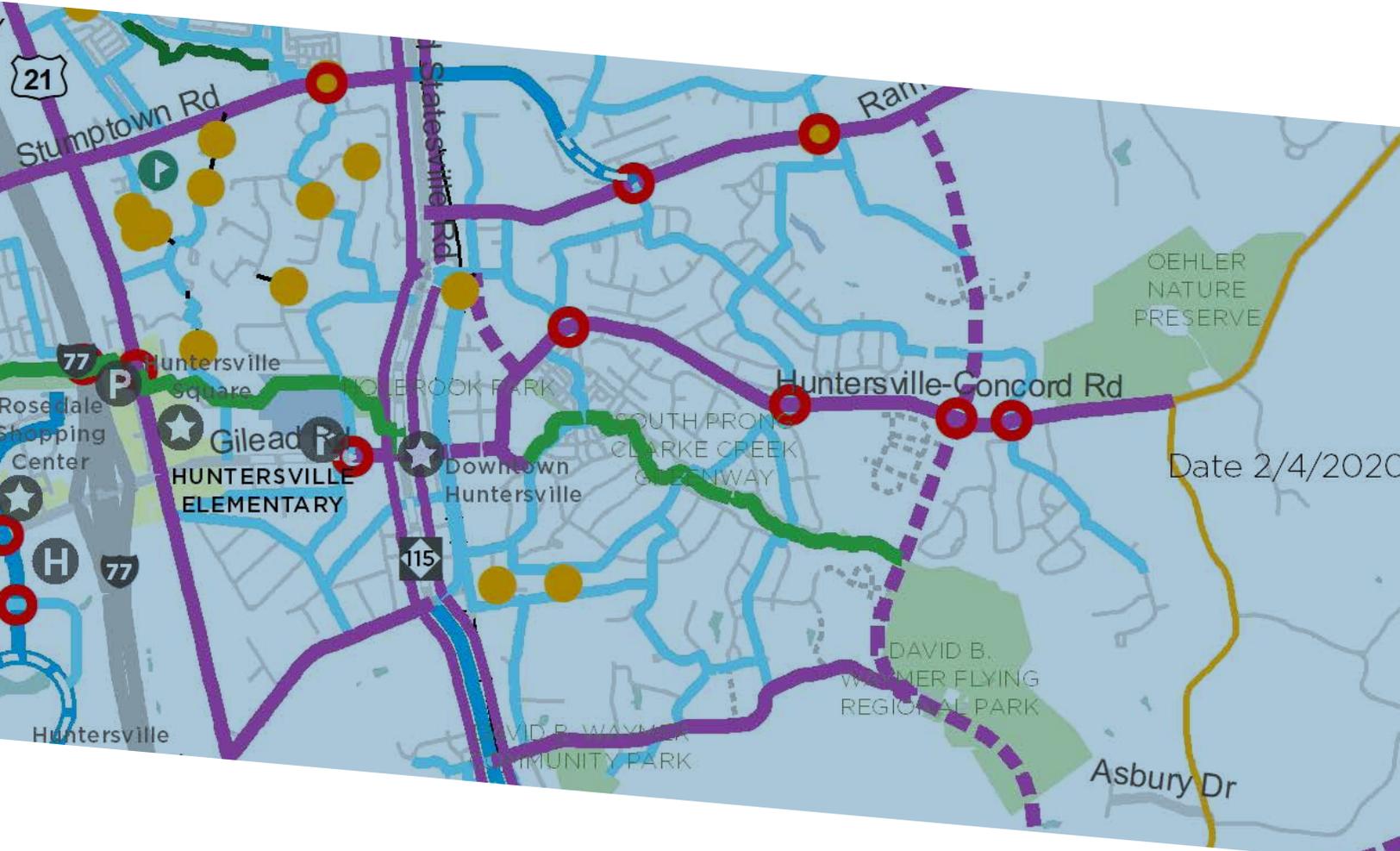
- LEVEL OF TRAFFIC STRESS**
-  1 Low
 -  2
 -  3
 -  4 High





Recommendations

This chapter presents a comprehensive set of bikeway recommendations which Huntersville will use to guide the development of its bike network.



Date 2/4/2020

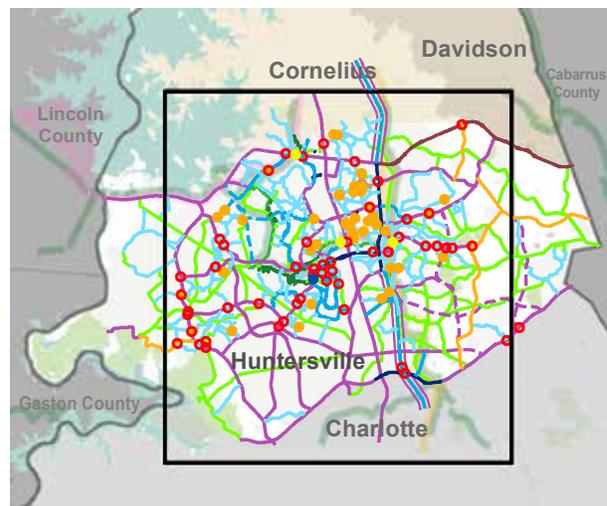


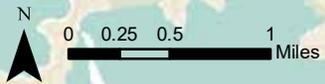
Proposed Bikeways: Long Term Vision

The Bike Network map shown at right represents the long-term vision for townwide bicycle access. It aims to provide a connected network of high quality bikeways that provide a comfortable experience for a wide array of users. The recommendations build on the existing network, and broadens the spectrum of bicycle facility types.

FACILITY TYPE	EXISTING (MI)	PROPOSED (MI)
Bike-Ped Connector	0	2.7
Bike Boulevard	0	90.8
Paved Shoulder	0	10.5
Bike Lanes	12.4	0
Buffered Bike Lanes	0	19.2
Separated Bike Lanes	0	6.6
Sidepath	0	88.8
Greenways	3.25	79.6
Total	15.65	298.2

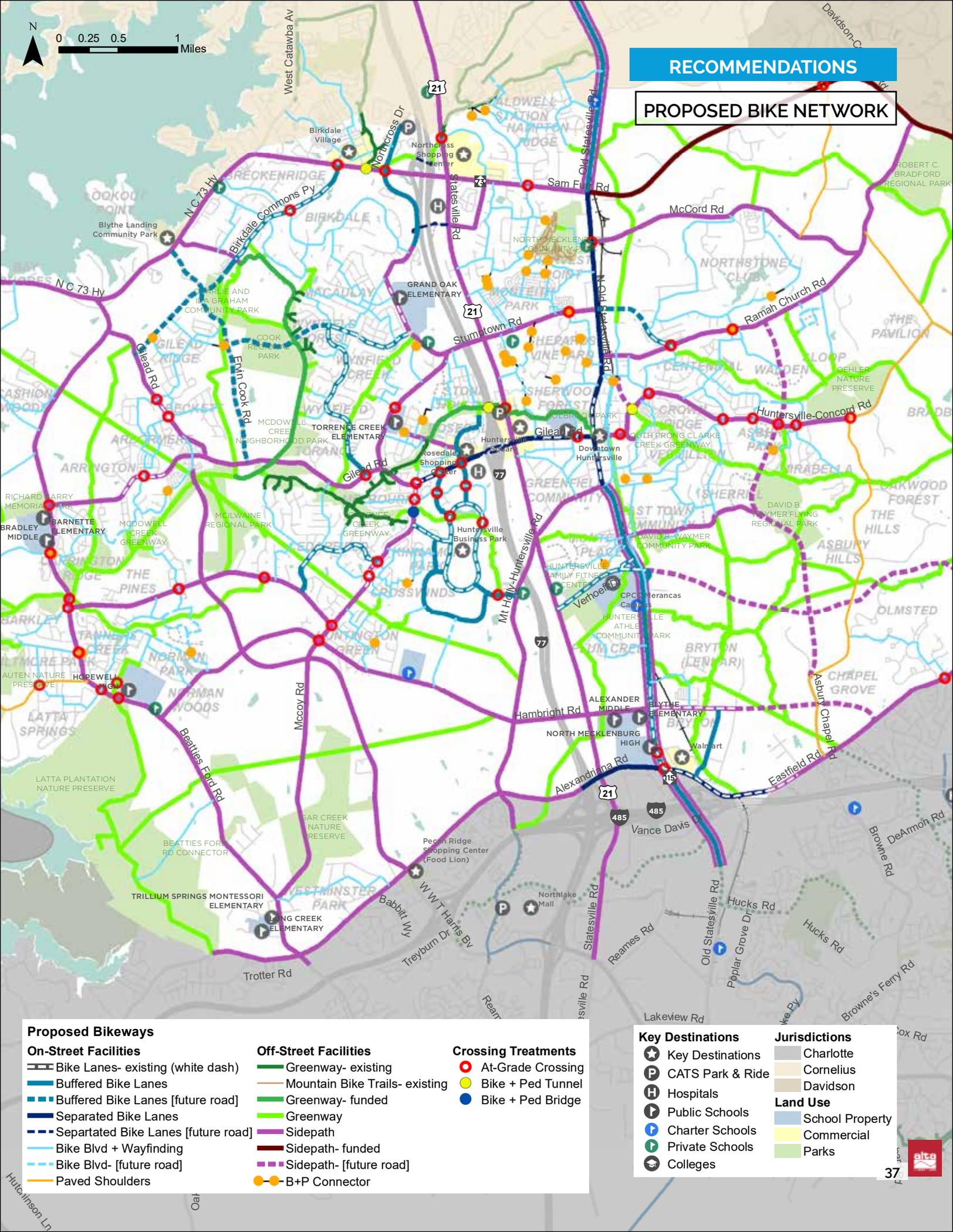
Extent of Proposed Bikeways Map shown in BLACK square





RECOMMENDATIONS

PROPOSED BIKE NETWORK



Proposed Bikeways

On-Street Facilities

- Bike Lanes- existing (white dash)
- Buffered Bike Lanes
- Buffered Bike Lanes [future road]
- Separated Bike Lanes
- Separated Bike Lanes [future road]
- Bike Blvd + Wayfinding
- Bike Blvd- [future road]
- Paved Shoulders

Off-Street Facilities

- Greenway- existing
- Mountain Bike Trails- existing
- Greenway- funded
- Greenway
- Sidepath
- Sidepath- funded
- Sidepath- [future road]
- B+P Connector

Crossing Treatments

- At-Grade Crossing
- Bike + Ped Tunnel
- Bike + Ped Bridge

Key Destinations

- Key Destinations
- CATS Park & Ride
- Hospitals
- Public Schools
- Charter Schools
- Private Schools
- Colleges

Jurisdictions

- Charlotte
 - Cornelius
 - Davidson
- ### Land Use
- School Property
 - Commercial
 - Parks





Bike Facility Types



BIKE BOULEVARD

A bicycle boulevard is a low-stress shared roadway that is designed to offer priority for bicyclists operating within a roadway shared with motor vehicle traffic. Bicycle boulevards may include traffic calming elements such as speed humps, chicanes, and traffic circles as well as lower speed limits, wayfinding signage, and shared lane markings.



BIKE + PED CONNECTOR

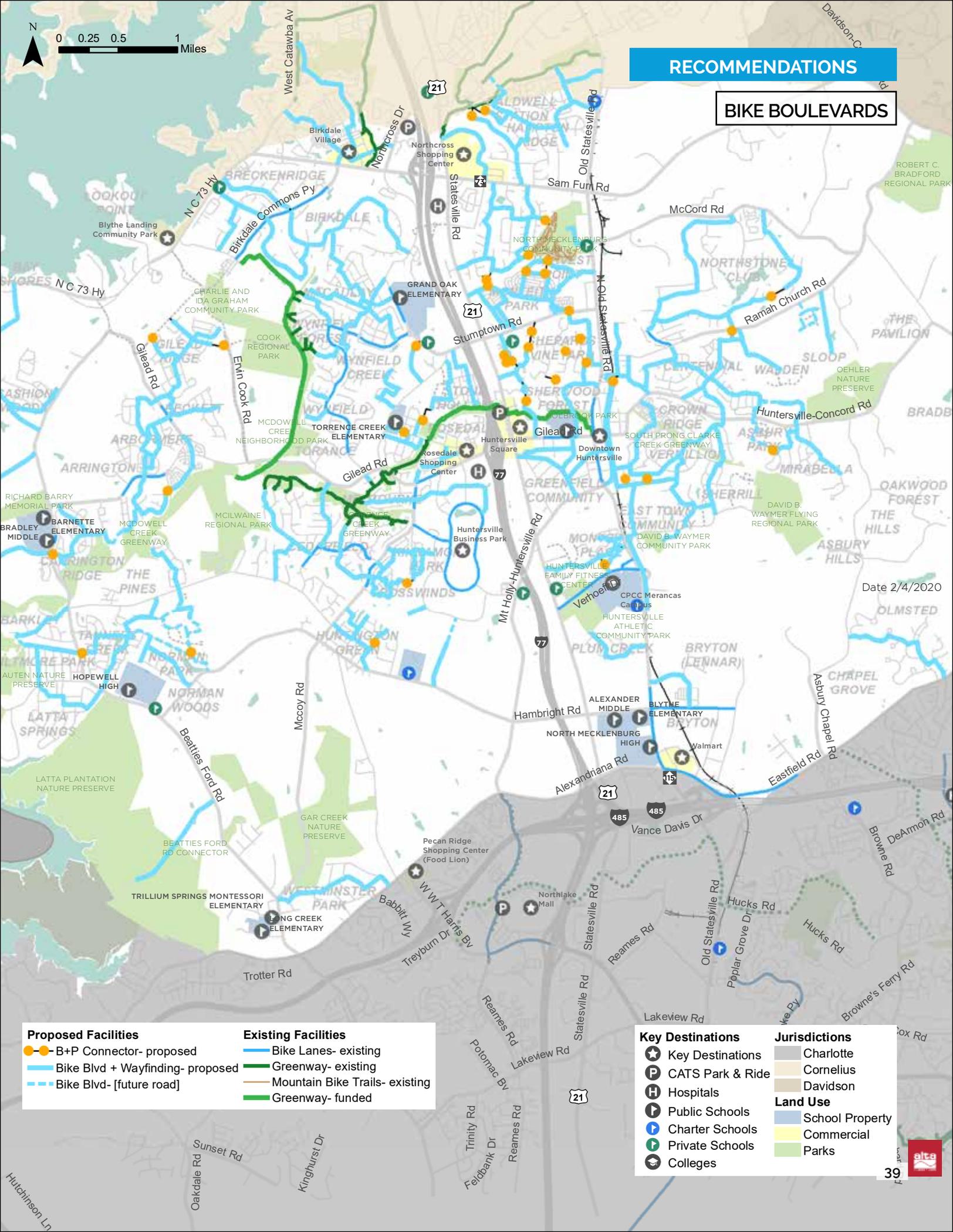
A bicycle + pedestrian connector (bike + ped connector) is a multi-use path that connects bicycle and/or pedestrian facilities across short distances.

Bike/ped connectors provide residential areas with direct pedestrian and bicycle access to parks, trails, greenspaces, and other recreational areas, connecting to and from the larger bicycle/pedestrian network. Additionally, these smaller paths can be used to provide bicycle and pedestrian connections between dead-end streets, cul-de-sacs, and access to nearby destinations not provided by the street network.



RECOMMENDATIONS

BIKE BOULEVARDS



Proposed Facilities	Existing Facilities
●-● B+P Connector- proposed	Blue line Bike Lanes- existing
Light blue line Bike Blvd + Wayfinding- proposed	Green line Greenway- existing
Dashed light blue line Bike Blvd- [future road]	Brown line Mountain Bike Trails- existing
	Green line Greenway- funded

Key Destinations	Jurisdictions
★ Key Destinations	Grey Charlotte
P CATS Park & Ride	Light yellow Cornelius
H Hospitals	Light brown Davidson
Ⓜ Public Schools	Light blue Land Use
Ⓜ Charter Schools	Light yellow School Property
Ⓜ Private Schools	Light green Commercial
Ⓜ Colleges	Light green Parks

Date 2/4/2020





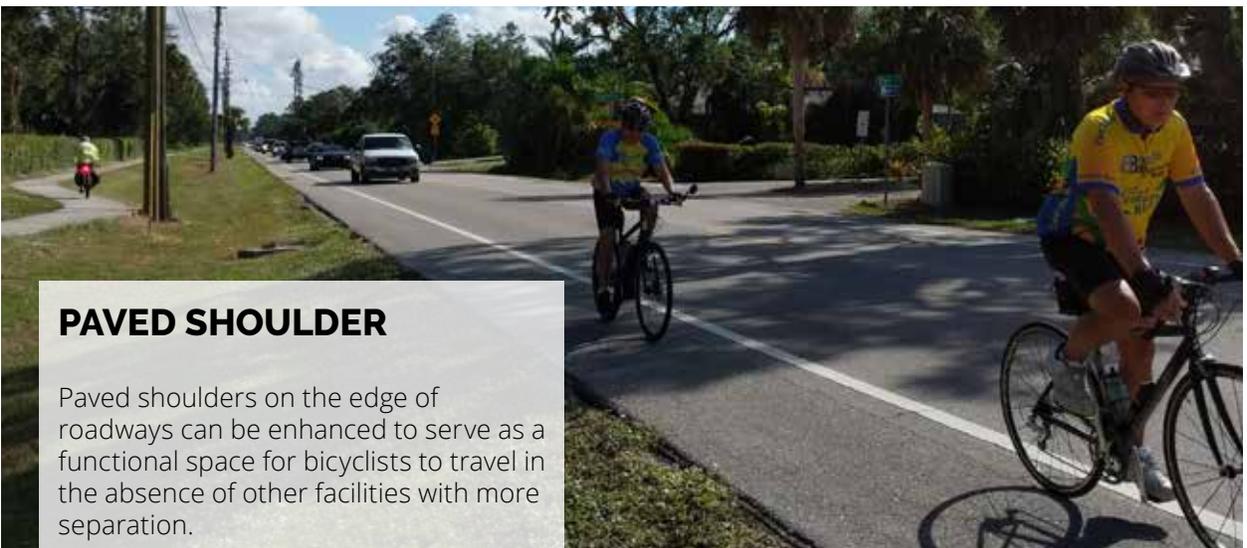
BIKE LANES

Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and signage. Bike lanes make bicycling a more visible and comfortable option for people who usually would drive or walk.



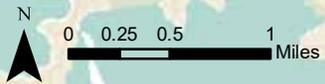
BUFFERED BIKE LANES

Buffered bike lanes are conventional bike lanes (see “Bike Lanes” definition above) with a painted buffer between the bike lane and the travel lane. Buffered bike lanes provide added safety and comfort by further separating bicyclists from motorists.



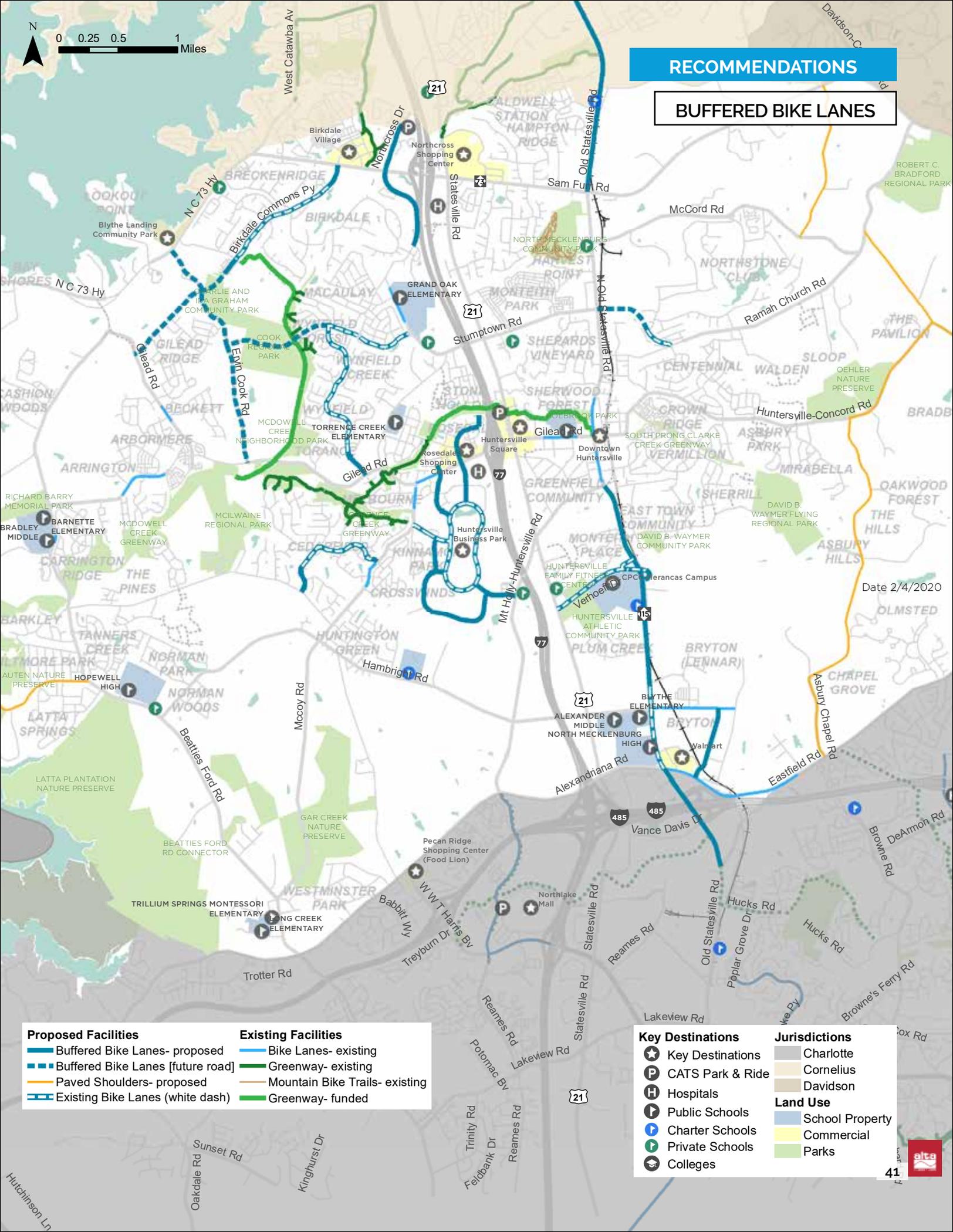
PAVED SHOULDER

Paved shoulders on the edge of roadways can be enhanced to serve as a functional space for bicyclists to travel in the absence of other facilities with more separation.



RECOMMENDATIONS

BUFFERED BIKE LANES



Proposed Facilities	Existing Facilities
Buffered Bike Lanes- proposed	Bike Lanes- existing
Buffered Bike Lanes [future road]	Greenway- existing
Paved Shoulders- proposed	Mountain Bike Trails- existing
Existing Bike Lanes (white dash)	Greenway- funded

Key Destinations	Jurisdictions
Key Destinations	Charlotte
CATS Park & Ride	Cornelius
Hospitals	Davidson
Public Schools	Land Use
Charter Schools	School Property
Private Schools	Commercial
Colleges	Parks

Date 2/4/2020



SEPARATED BIKE LANES

Separated Bike Lanes, sometimes called “Cycle Tracks,” or “Protected Bike Lanes” are dedicated bikeways that use a vertical element to provide separation from motor vehicle traffic. The vertical separation discourages drivers from parking or idling in the bikeway.

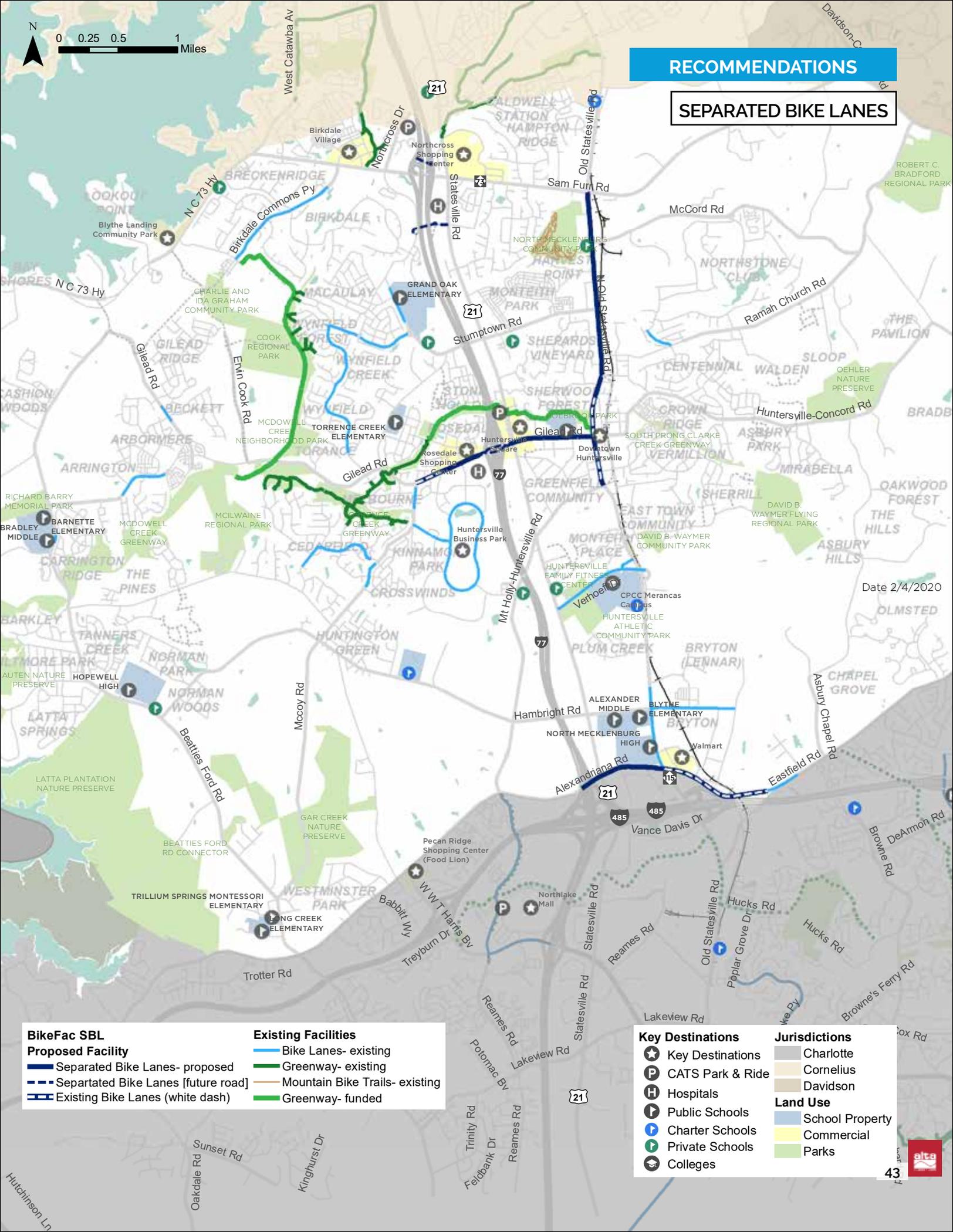


Provo, Utah Separated Bike Lanes,



RECOMMENDATIONS

SEPARATED BIKE LANES



Date 2/4/2020

BikeFac SBL		Existing Facilities	
Proposed Facility		Bike Lanes- existing	Greenway- existing
Separated Bike Lanes- proposed		Mountain Bike Trails- existing	Greenway- funded
Separated Bike Lanes [future road]			
Existing Bike Lanes (white dash)			

Key Destinations		Jurisdictions	
Key Destinations	Charlotte	Cornelius	Davidson
CATS Park & Ride	School Property	Commercial	Parks
Hospitals			
Public Schools			
Charter Schools			
Private Schools			
Colleges			





SIDEPATH

A sidepath is a multi-use path along a roadway that provides a travel area separate from motorized traffic. Sidepaths are desirable for bicyclists of all skill levels preferring separation from traffic. Multi-use paths may be implemented immediately adjacent and parallel to a roadway, or in their own independent right-of-way.

On some roadways where different user types are anticipated, sidepaths are recommended along with an on-street bike facility. For example, bike lanes and a sidepath are recommended for Highway 115 because of two very different expected user types: parents and their young children accessing the schools, and recreational cyclists who are more comfortable on-street.

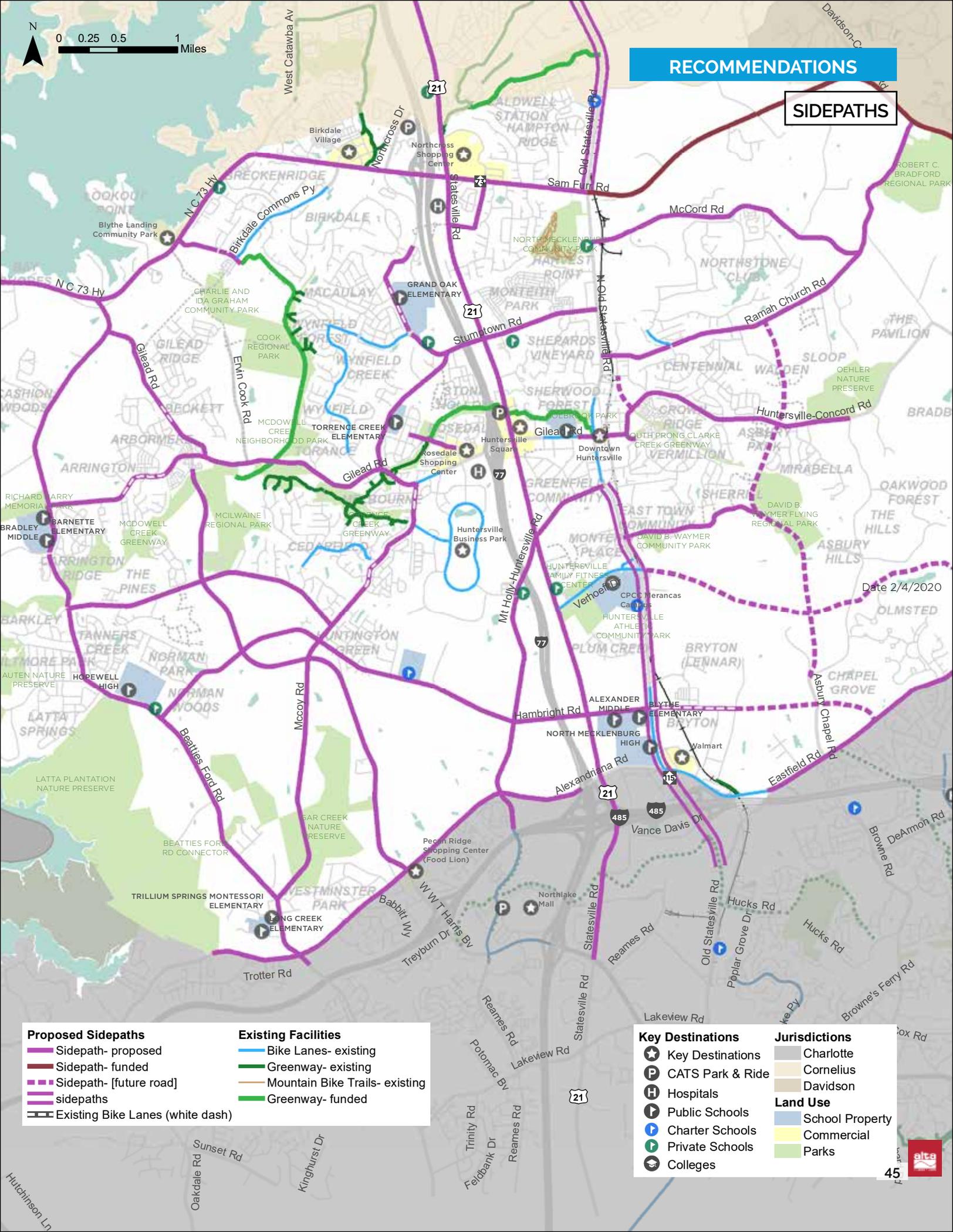


Sidepath on W. Catawba Avenue, Cornelius, NC



RECOMMENDATIONS

SIDEPATHS



- | | |
|----------------------------------|--------------------------------|
| Proposed Sidepaths | Existing Facilities |
| Sidepath- proposed | Bike Lanes- existing |
| Sidepath- funded | Greenway- existing |
| Sidepath- [future road] | Mountain Bike Trails- existing |
| Sidepaths | Greenway- funded |
| Existing Bike Lanes (white dash) | |

- | | |
|-------------------------|----------------------|
| Key Destinations | Jurisdictions |
| Key Destinations | Charlotte |
| CATS Park & Ride | Cornelius |
| Hospitals | Davidson |
| Public Schools | Land Use |
| Charter Schools | School Property |
| Private Schools | Commercial |
| Colleges | Parks |

Date 2/4/2020

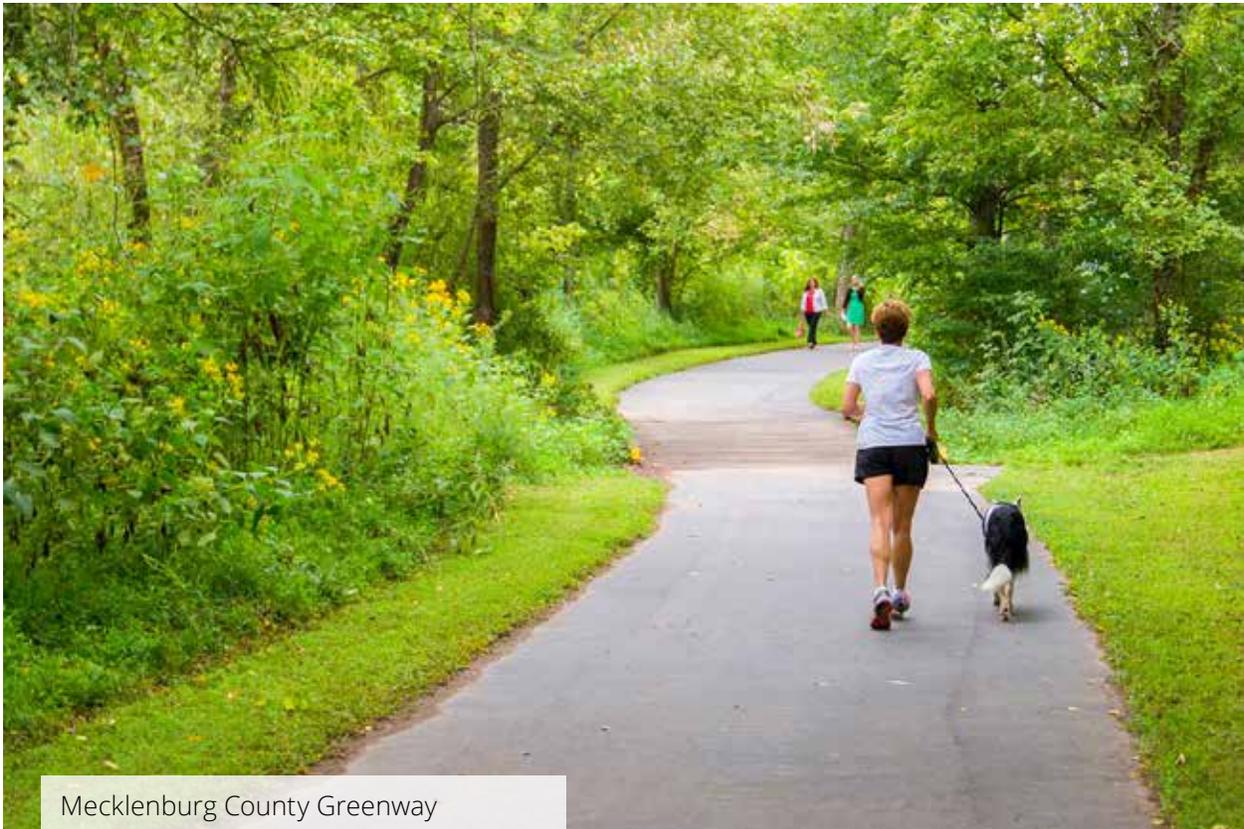




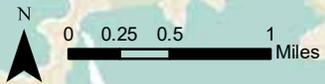
GREENWAYS

A greenway is a multi-use that is not along a roadway, but instead along utility corridors, railroad alignments, and greenway/stream corridors. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts where there are few conflicts with motorized vehicles. Greenways allow for low-stress transportation or recreational bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. Path facilities can include amenities such as lighting, signage, and fencing (where appropriate).

Torrence Creek Greenway, Huntersville

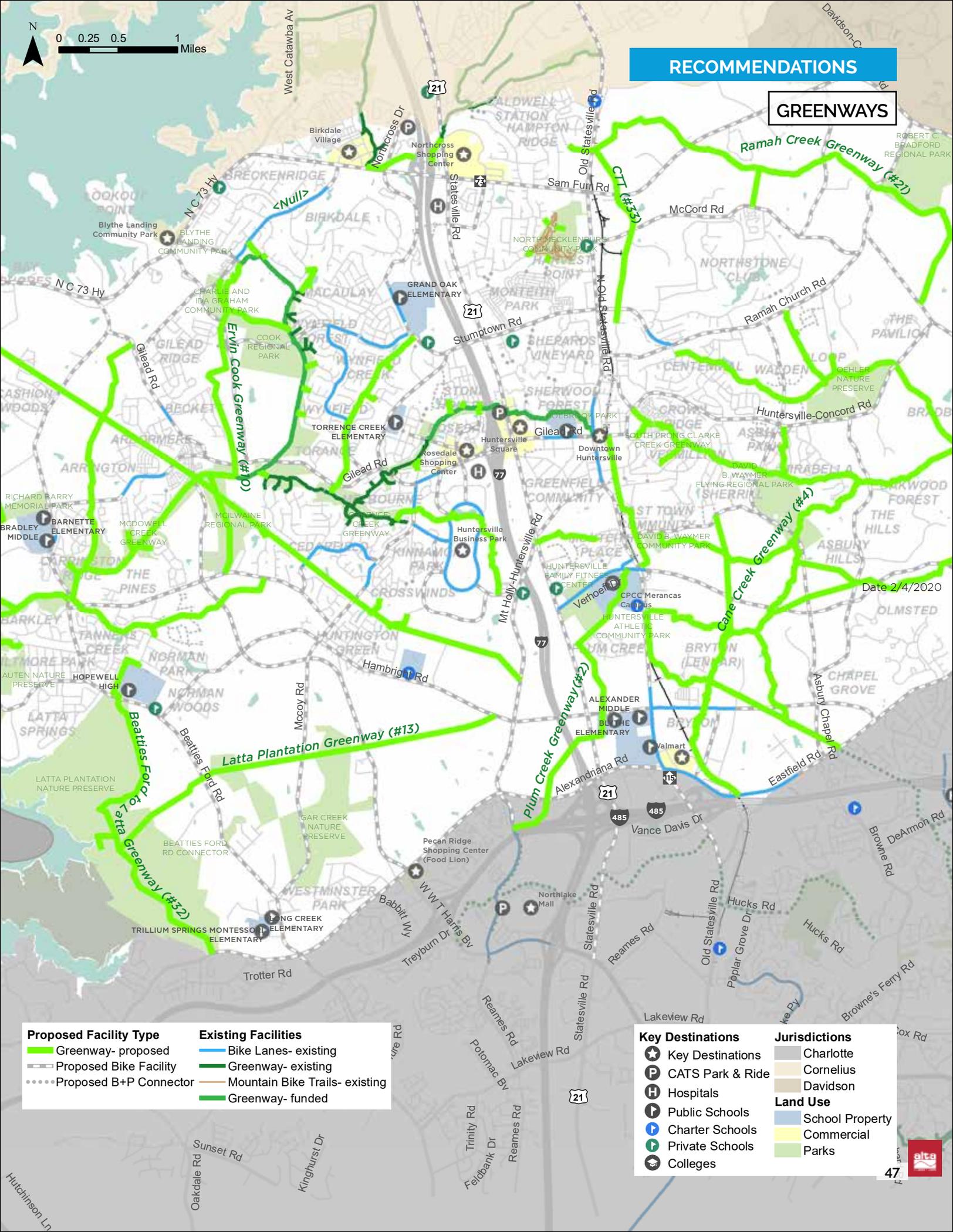


Mecklenburg County Greenway



RECOMMENDATIONS

GREENWAYS



Proposed Facility Type	Existing Facilities
Greenway- proposed	Bike Lanes- existing
Proposed Bike Facility	Greenway- existing
Proposed B+P Connector	Mountain Bike Trails- existing
	Greenway- funded

Key Destinations	Jurisdictions
Key Destinations	Charlotte
CATS Park & Ride	Cornelius
Hospitals	Davidson
Public Schools	Land Use
Charter Schools	School Property
Private Schools	Commercial
Colleges	Parks

Date 2/4/2020



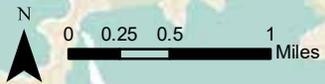


CROSSING IMPROVEMENTS

Roadway crossings represent a key safety challenge for bicyclists, especially at non-signalized intersections, greenway crossings, or across streets lacking bicycle and pedestrian infrastructure. **A combination of actuated signals and traffic controls can increase driver awareness of bike crossings.**

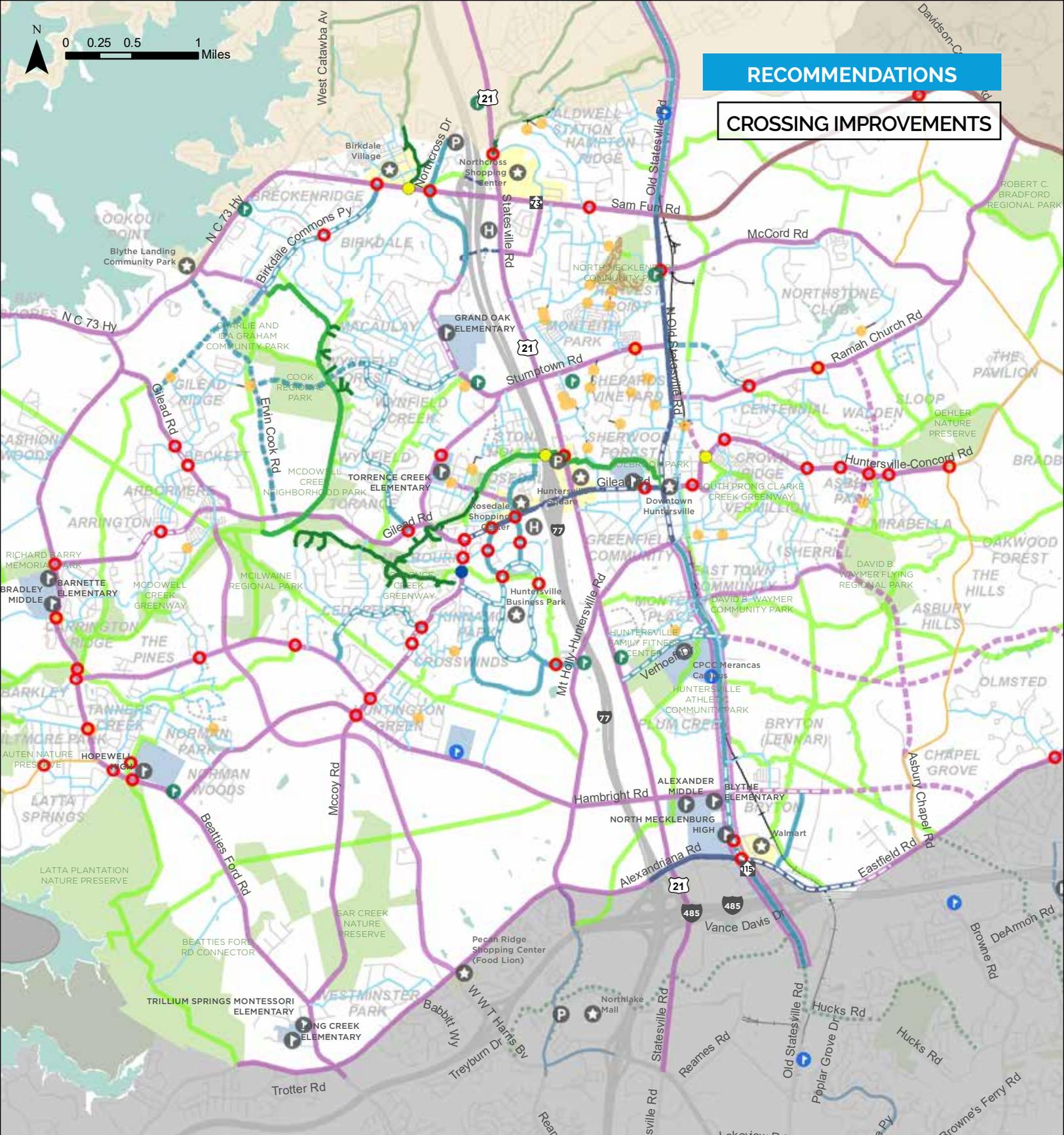
Crossing treatments are based on trail and roadway characteristics. Key roadway factors influencing the selected treatment include the posted speed limit, traffic volume, line of sight, street width, roadway and greenway geometry, and intersection configuration.





RECOMMENDATIONS

CROSSING IMPROVEMENTS



Proposed Bikeways

On-Street Facilities

- Bike Lanes- existing (white dash)
- Buffered Bike Lanes
- Buffered Bike Lanes [future road]
- Separated Bike Lanes
- Separated Bike Lanes [future road]
- Bike Blvd + Wayfinding
- Bike Blvd- [future road]
- Paved Shoulders

Off-Street Facilities

- Greenway- existing
- Mountain Bike Trails- existing
- Greenway- funded
- Greenway
- Sidepath
- Sidepath- funded
- Sidepath- [future road]
- B+P Connector

Crossing Treatments

- At-Grade Crossing
- Bike + Ped Tunnel
- Bike + Ped Bridge

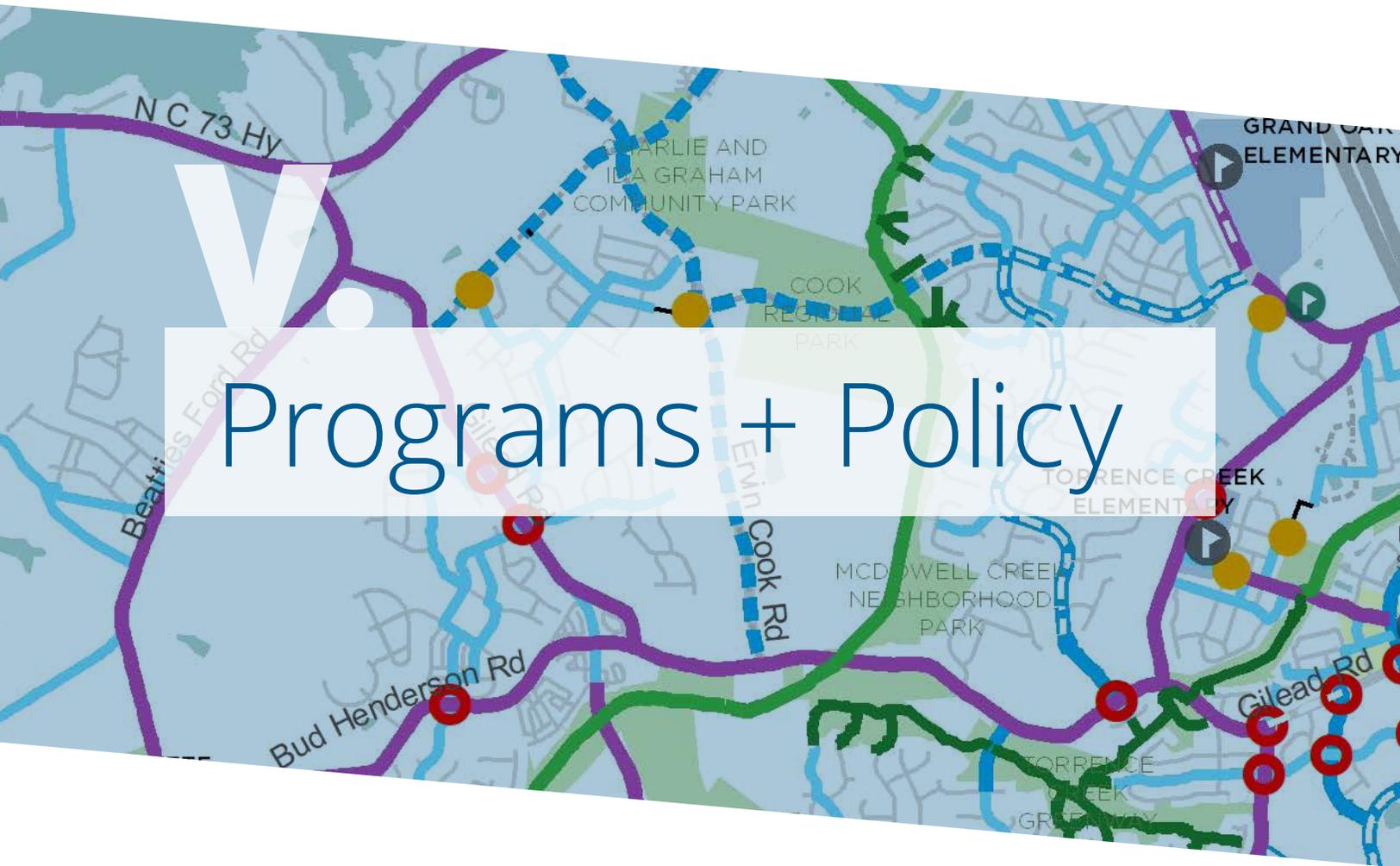
Key Destinations

- Key Destinations
- CATS Park & Ride
- Hospitals
- Public Schools
- Charter Schools
- Private Schools
- Colleges

Jurisdictions

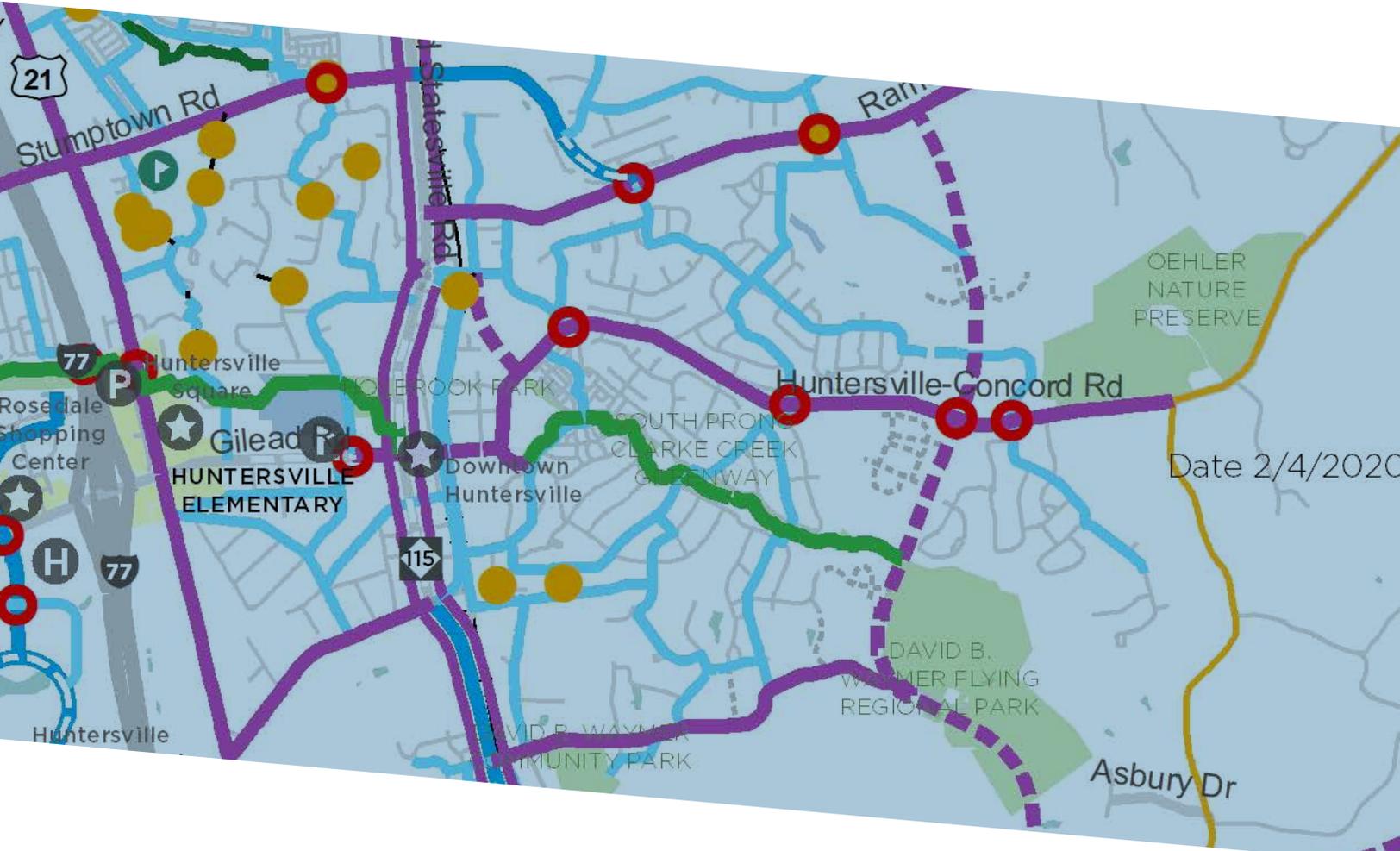
- Charlotte
 - Cornelius
 - Davidson
- ### Land Use
- School Property
 - Commercial
 - Parks





Programs + Policy

This chapter presents recommendations for programs and policies to support the development of Huntersville’s bike network and to promote safe bicycling in town.





Bicycle Programs

To bolster Huntersville's odds of becoming a more bicycle-friendly community, a set of program recommendations are outlined here that directly address many of the town's shortcomings and needs identified through the public input process. Recommendations are sorted by the 5 Es.

ENGINEERING

1. IMPLEMENT RECENTLY UPDATED PLAN

This plan builds off of recommendations from the Greenway and Bikeway Master Plan of 2014 and contains an action-oriented set of infrastructure recommendations that can be moved into design and implementation. This includes on-street projects on major arterials as well as greenway trail improvements throughout the town.

Strategy

- **Fast track low-hanging fruit** such as bicycle boulevards and low-impact road diet and traffic-calming projects that can be implemented quickly, at low costs. Examples include the network of recommended bike boulevards inside the Shepard's Vineyard and Sherwood Forest neighborhoods, connecting these neighborhoods with short bike-ped connectors, and re-striping Reese Boulevard with buffered bike lanes. The Implementation Plan described on pages 82-83 was crafted with this strategy in mind.
- **Deliver 3-5 high impact Complete Streets projects** from this plan. Examples of such projects include sidepaths on Stumptown Road, Mt. Holly-Huntersville Road, McCoy Road, and Huntersville-Concord Road.
- Make progress on the **implementation of Huntersville's Vision 30x30 Greenway network**, including the Park-Huntersville Greenway.

- **Identify bike routes** that create direct connections to schools and partner with efforts to kickstart Safe Routes to School infrastructure improvements in Huntersville.
- Consider using temporary, low cost materials to quickly implement planned projects. Info on low cost materials can be found at: <http://tacticalurbanismguide.com/materials/>

2. INSTALL A DEMONSTRATION PROJECT OF A HIGH-QUALITY BIKE FACILITY

Temporary pop-up or "demonstration projects" represent opportunities for residents to experience innovative, high-quality bicycling infrastructure without a long-term commitment or big budget. Pop-up projects can include temporary separated bike lanes, protected intersection demonstrations, green pavement marking treatments, and traffic calming techniques.

Demonstration projects should respond to community needs and should be easy to implement. Ideas for transforming spaces and projects may emerge from community conversations or neighborhood association



A demonstration project can build excitement for a proposed bikeway using low-cost, temporary materials

meetings. Typically, the most effective demonstration projects are grassroots efforts by passionate citizens that know what problems exist but don't have the resources for permanent solutions. However, these projects can also be used to demonstrate the viability of a planned infrastructure improvements, particularly those that may be controversial. By gathering before/after data and observing behaviors, demonstration projects can assist with identifying modifications to the final design before a permanent installation.

Strategy

- Start with a small-scale project, such as separated bike lanes around the Huntersville Business Park loop or another project that is recommended in this plan. Partner with local festivals or implement as part of a potential Open Street event (see Encouragement ideas) to set up the project while streets are closed to vehicle traffic. Choose a visible area with heavy foot and bike traffic such as downtown Huntersville. Gather feedback from people using the facility. Organize an implementation group that is charged with finding materials and volunteers to setup and take down the pop-up project.

3. DEVELOP BICYCLE WAYFINDING

Bike-oriented wayfinding elements, such as signage and mile markers, can enhance resident and visitor orientation, and will give users a unique experience while improving comfort and predictability by alerting both bicyclists and motorists of the presence of bicycle routes. The proposed bikeway network includes **over 80 miles of projects where wayfinding signage is one of the only needed improvements**. The bicycle wayfinding program could be focused on implementing these projects in addition to adding signage to existing bikeways.

Wayfinding systems integrate bicycle route signage and trail maps with local street signage to create a comprehensive navigation system. Bike-oriented wayfinding elements will:

- Help users to identify the best routes, and enhance their ability to connect to major destinations
- Contribute to economic development by pointing visitors to key destinations within a community

Strategy

- Begin by implementing a basic wayfinding system to help people bicycling navigate existing bike-friendly streets and planned signed bike routes. Develop signage that conveys distance and time and direction to major destinations.





4. UPDATE BIKE PARKING DESIGN STANDARDS

Bicycle parking is an essential element of a bicycle friendly community and must be provided in adequate supply – and in the right locations – in order to make bicycling a safe, accessible, and convenient choice. Currently, Huntersville does not specify under what conditions or how much bicycle parking is required in its zoning code.

A broader set of parking design standards should be created to include specific requirements for the type of bike parking allowed for given development types and zoning districts. It should include requirements and design standards for long term secure/covered parking for workers, students, and residents as well as short term parking for visitors. For specific recommendations related to updating the Town's Zoning Code, see the Bicycle Policy + Regulatory Review in Appendix A.3.

Strategy

- The Town of Huntersville should update its development regulations with bicycle parking design standards. Bike parking requirements should be explicitly required for all commercial, multi-family, and civic developments. The Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines should be used as a resource for best practices related to site design, construction, and number of bike parking spaces to require.

EDUCATION

5. DEVELOP A SAFE STREETS EDUCATION PROGRAM

Safety education campaigns target motorists and those walking, biking, and taking transit to create a shared sense of responsibility among all roadway users, rather than singling out one user group. In Huntersville, safety campaigns can be coordinated with the Police Department, NCDOT, local advocacy groups, and the Charlotte Regional Transportation Planning Organization (CRTPO). Examples may include education campaigns on the 3-foot law for passing bicyclists, or the requirement to yield to pedestrians in crosswalks, whether marked or unmarked.

Strategy

Implement a comprehensive safety campaign that includes education, encouragement, and enforcement components. Implement safety campaign in conjunction with statewide safety efforts and include Safe Routes to School programming.



Bicycle staple racks at a school

ENCOURAGEMENT

6. ORGANIZE AN OPEN STREETS EVENT

Open Street initiatives temporarily close the streets to automobiles so people may use them for fun, healthy activities like walking, jogging, bicycling, skating, dancing, and other social activities. Local businesses open doors and set up tables along sidewalks to support the event and generate foot and bike traffic for their businesses. The events can be centered in Huntersville's historic downtown or across neighborhoods. They should be located on roadways that feature key destinations but also reach into a variety of neighborhoods, including under-served communities.

Strategy

- Huntersville should work with partner organizations to build off of national open street best practices. There are many potential models. The event may take place on roads that are successful and vibrant thoroughfares or roads with significant safety issues but that provide vital connections. A street with planned bikeway improvements can provide an opportunity to demonstrate proposed improvements during the event. The Town of Huntersville may host the event or other stakeholders may also sponsor and organize the events with support from the town. Consider starting with one event a year, and eventually expanding to multiple events during the spring, summer, and fall. Examples of small towns with successful events include [Salisbury, NC](#) and [Carrboro, NC](#).

7. SUPPORT A BIKE TRAIN FOR SAFE ROUTES TO SCHOOL

Safe Routes to School (SRTS) is a national effort to encourage students and families to walk and bicycle to school, improving transportation safety through targeted infrastructure improvements and enforcement, walking and biking safety education, and encouragement programs.

Support for SRTS in Huntersville may be initiated by organizing a Bike Train on Bike to School Day. This may take the form of a single ride led by parent-advocates to an area elementary or middle school, or a competition between schools. A bike train may also be led by city staff to showcase bikeways and other improvements near schools.

Strategy

- Establish a Safe Routes to School Task Force to coordinate efforts with and across local schools. Identify a few dedicated parents or district staff to assist with organizing a Bike Train on Bike to School Day and regularly thereafter. Use participation by interested parents and students to kickstart the dialogue on improving bicycle infrastructure around schools and expanding programming.



A bike train can encourage biking by students and parents



9. ADD A BIKE CHALLENGE DURING BIKE MONTH

Organizing an online, team-based bike challenge can create opportunity for cyclists to ride the streets of Huntersville. Cyclists can participate and compete for prizes on a team, with a group, club, school, or organization, or as an individual.

Strategy

- Use an existing model such as Atlanta's Bike Challenge "Biketober", which separates teams and employers by size. Offer points to encourage new riders and for biking to work or school, with fewer points given for leisure biking. Consider focusing initially on the Huntersville Business Park before broadening the bike challenge. Offer fun awards to encourage more people to ride.

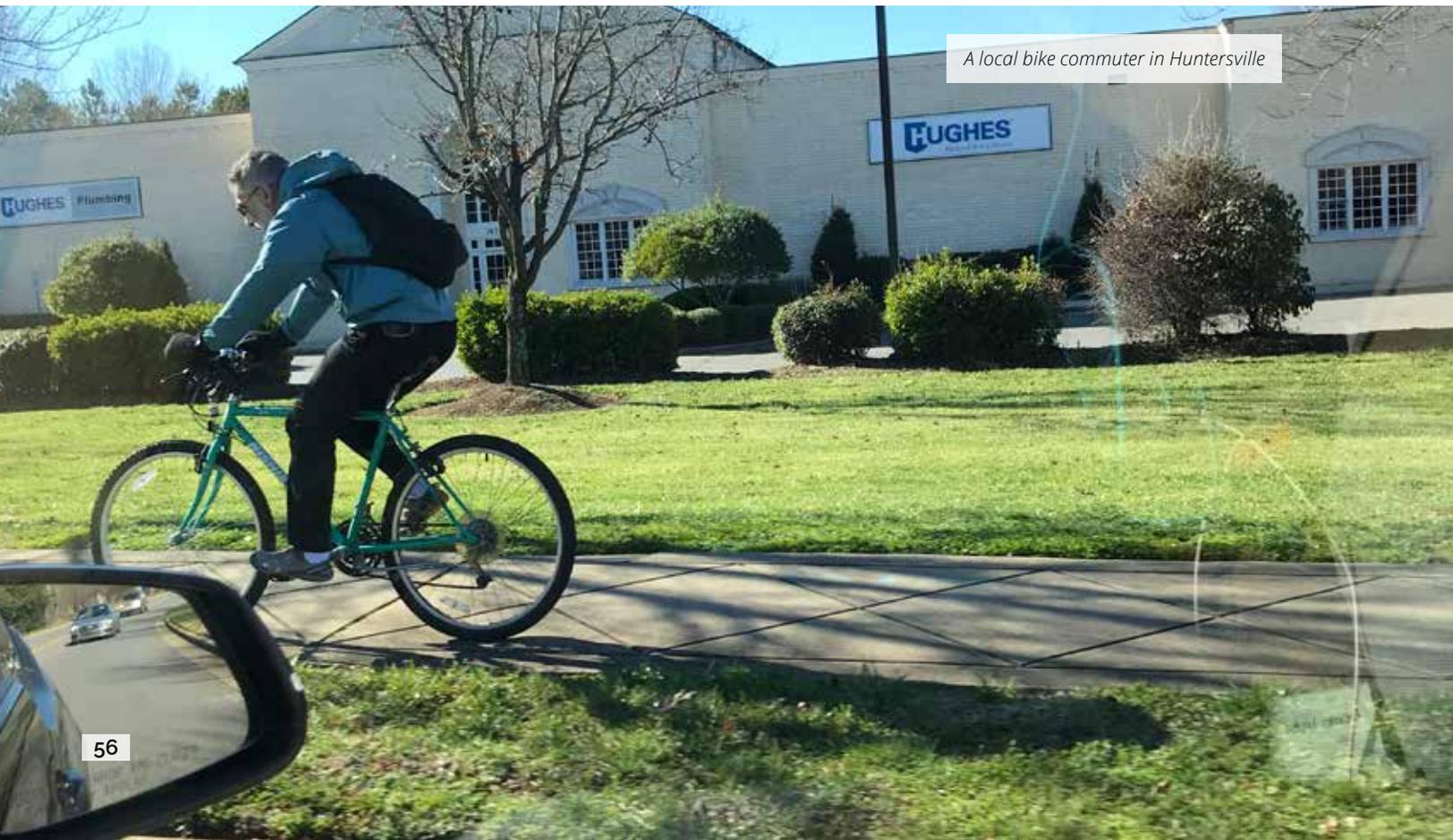
ENGAGEMENT

10. INITIATE POLICE TRAININGS ON CURRENT BIKE LAWS

As Huntersville develops new laws to improve the safety of vulnerable roadway users, partner with the Huntersville Police Department and to improve the PD curriculum on bicyclist safety laws. A curriculum on existing laws around sharing the road can be oriented towards enforcement of bicyclists and drivers. This may include updating course material to include laws around new forms of micromobility, such as e-bikes.

Strategy

- Work with the Huntersville Police Department and local bike advocates to review any existing training materials and to develop new course material. Create a brief presentation that can be incorporated in a training, with a presentation that lasts no more than 20 minutes. Create pamphlets on applicable laws (with the enforcement codes listed) that police officers can quickly reference and pass out when enforcing bicycle safety laws. Consider including additional information on reporting bicycle crashes that is based on best practices.



A local bike commuter in Huntersville



A police training focused on bicycle safety laws

11. DEVELOP A DIVERSION PROGRAM

Enforcement of bicycle safety laws is critical to demonstrating basic respect for all users of the road, as well as a serious commitment to cycling as a safe and enjoyable means of transportation. Effective and equitable enforcement of laws to protect cyclists can be difficult due to local politics, limited police resources, bias in enforcement efforts, differing priorities, or poor communication between agencies.

A townwide Diversion Program has the potential to increase adherence to Huntersville bicycle traffic laws for bicyclists and drivers, as well as decrease cumulative violations. For lower income populations, a violation often brings with them

the burden of a costly ticket. A Diversion Program offers an alternative and less expensive bicyclist safety class for bicyclists or drivers in-lieu of the full violation fine, as well as an opportunity to educate residents about applicable rules and responsibilities.

Strategy

- Open the program to residents of all ages who violate a bicycle law. Funding is required for HPD staffing and preparation of course materials. However, costs might be offset in part by enrolling participants at a reduced fee schedule.



EVALUATION AND PLANNING

12. DEVELOP A DEDICATED BIKEWAYS FUNDING STREAM

Communities that are successful in expanding their bicycling network leverage funds from a variety of sources and consistently make investments in capital and maintenance projects. A dedicated funding source is one mechanism to ensure sustainability and consistent expansion of bikeways.

Local governments can create a dedicated funding source by setting aside portions of general transportation revenue, public school bonds, county health department funding, parking fees, and traffic violation revenue for upgrades to biking facilities.

Strategy

- Partner with other area governmental agencies, such as the CRTPO and Mecklenburg County to identify potential funding mechanisms. As an example, the City of Columbia, SC implements bikeways through Richland County, which created a 1% sales tax for transportation, one-third of which goes to funding greenways and trails.

13. DEVELOP A ROBUST BIKE COUNTING PROGRAM

Bicycle count programs provide data on bicyclist behavior that can enable analysis trends, such as increase/decrease in facility usage, peak travel periods, and high activity locations. Counts can be conducted manually or with automatic sensors. Manual counts are low-cost, easy to implement, and can provide additional data such as gender and percentage of people who bike that wear helmets or have bike lights at night. However, manual counts require significant volunteer time and do not provide a continual, 24-hour picture of usage.

Automatic bike counting technology has advanced rapidly in recent years. In-pavement sensors, computer vision, infrared beams, radar, and tube counters can all detect people who walk and bike. However, devices vary considerably in terms of cost, accuracy, data collection, and ease of deployment. It is important to choose counting

A bike count program can evaluate the impact of new facilities on ridership



devices that are best suited for the type of data needed (short term or long term) and the site characteristics where counts will take place.

Strategy

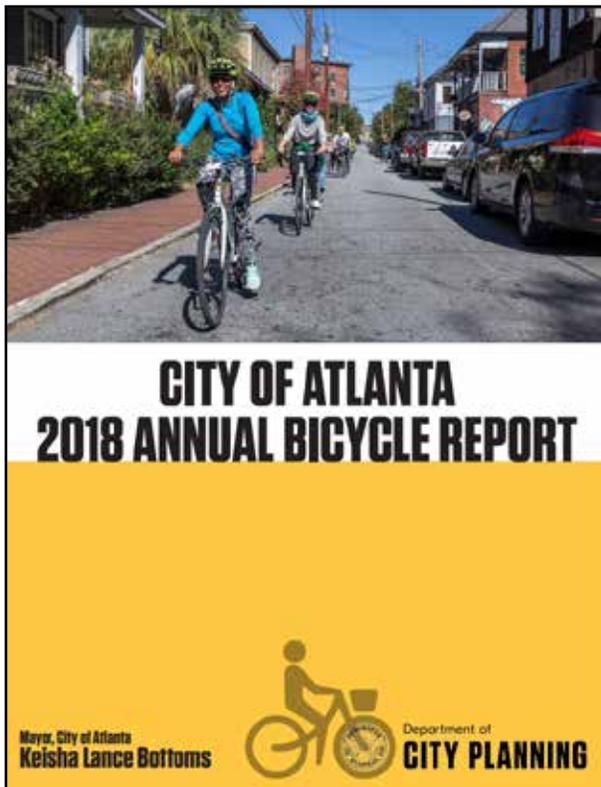
- Seek funding for a bicycle count pilot program that focuses on before and after counts of one or two priority projects (balance a recreational project with a transportation project), and assign staff to manage counts program. Determine key locations for manual and/or automatic bicycle counts and identify the appropriate count technology. Regularly review count data to evaluate trends.

14. START A HUNTERSVILLE BIKE + GREENWAY REPORT

A Huntersville Bike Report can provide a public-facing document that highlights the Town's efforts and progress towards becoming a bicycle friendly community. This may include transparent data on funding and bike share ridership, as well as growth in infrastructure and events.

Strategy

- Focus on key infrastructure goals and progress, with before/after pictures and data showing major successes. Include a section on efforts to expand biking as a viable transportation option in under-served communities. Showcase events and give out awards for bike friendly businesses, schools, and local advocates. Update the report every 2 – 5 years.



The City of Atlanta releases an annual bike report summarizing the year's bike events, programs, and new developments in the network.



Bicycle Policy + Regulatory Review

One of the most cost-effective bicycle plan implementation strategies for the Town of Huntersville is to establish land development regulations and street design policies that promote bikeable new development and capital projects. As part of a comprehensive approach to developing recommendations for a more bikeable community, the Town of Huntersville ordinances, development standards

and policies were reviewed to identify general issues and opportunities impacting the bicycling environment. The recommendations in this section generally fall under the six E's category of "Evaluation and Planning." Regulatory standards and policies were analyzed through the lens of the project visions and goals, and to be consistent with the Town's vision for the street network:

*"Streets in Huntersville are to be inviting public space and integral components of community design. A hierarchical street network should have a rich variety of types, including bicycle, pedestrian, and transit routes. **All streets should connect to help create a comprehensive network of public areas to allow free movement of automobiles, bicyclists and pedestrians.** In order for this street network to be safe for motorists and pedestrians, all design elements must consistently be applied to calm automobile traffic." (Town Zoning Ordinance)*

Model regulatory and policy language from around North Carolina and the U.S. was identified for elements including land use/transportation integration, connectivity, Complete Streets, and bicycle parking, enabling the Town to maximize on-road bicycle and multi-use trail improvements in conjunction with new development, redevelopment, and corridor improvement projects.

The recommendations are organized into three major categories of "Complete Streets and Greenways", "Bicycle-oriented Urban Design Elements", and "Connectivity." All of the major categories are interrelated, but based on the existing conditions analysis, and the goals of this plan, the following key recommendations from the table below should be implemented first.

Priority Policy and Regulatory Recommendations:

1. Update Subdivision and Engineering Standards to reflect Complete Streets policy in the Zoning Ordinance (Strategies 1.1 – 1.3)
2. Require dedication or reservation of greenway corridors (Strategy 1.5.)
3. Adopt Bicycle Parking requirements and Standards (Strategies 2.1)
4. Revise and update Connectivity requirements (Strategies 3.1 and 3.2)

These approaches will complement other specific capital projects, and education, enforcement, and evaluation recommendations provided elsewhere in this planning document. The full policy and regulatory review is in the Appendix.



THE OPEN HOUSE AT THE HUNTERSVILLE REC CENTER



VI.

Implementation

*The implementation strategy presents a work plan for the first steps in a long commitment to building the townwide bicycle network. **This chapter presents a ten-year vision for building out the highest priority projects** that is achievable given the funding and political support needed to make these projects a reality.*



MCCOY ROAD LOOKING NORTH TOWARDS GILEAD ROAD



Near-Term Bicycle Project Prioritization

PRIORITY CRITERIA

PROVIDES EAST-WEST CONNECTION, ESPECIALLY ACROSS I-77



PROVIDES NORTH-SOUTH CONNECTION ON EAST SIDE OF I-77



FILLS GREENWAY GAPS



OPPORTUNITY FOR PARTNERSHIP
(e.g., COUNTY-OWNED LAND FOR GREENWAY CONNECTIONS)



FILLS BIKE NETWORK GAPS ON-STREET



SERVES THE TOWN CORE



CONNECTS TO MAJOR DESTINATIONS
(e.g., BIRKDALE, DOWNTOWN, HUNTERSVILLE BUSINESS PARK)



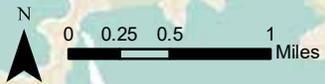
The Steering Committee and project team developed a set of criteria for identifying priority projects based on analysis, public input, and goals for biking in Huntersville. The list of seven (7) criteria were then used to identify priority corridors for bikeway/greenway improvements.

Taking into consideration the 30x30 priority greenways network, a summary list of 16 proposed priority projects was developed and submitted to the project Steering Committee (which includes the Greenway, Trail & Bikeway Commission) in order to help identify the top priority projects for the development of project cutsheets to move the projects towards near-term implementation.

Through this review, six projects rose to the top of the list. These top ranked priority projects emphasize the priority criteria of providing East-West connections, filling on-street network gaps, serving the town core, and connecting points of interest, while also providing an equitable provision of facilities throughout the town and connecting a diverse number of neighborhoods to downtown and job centers.

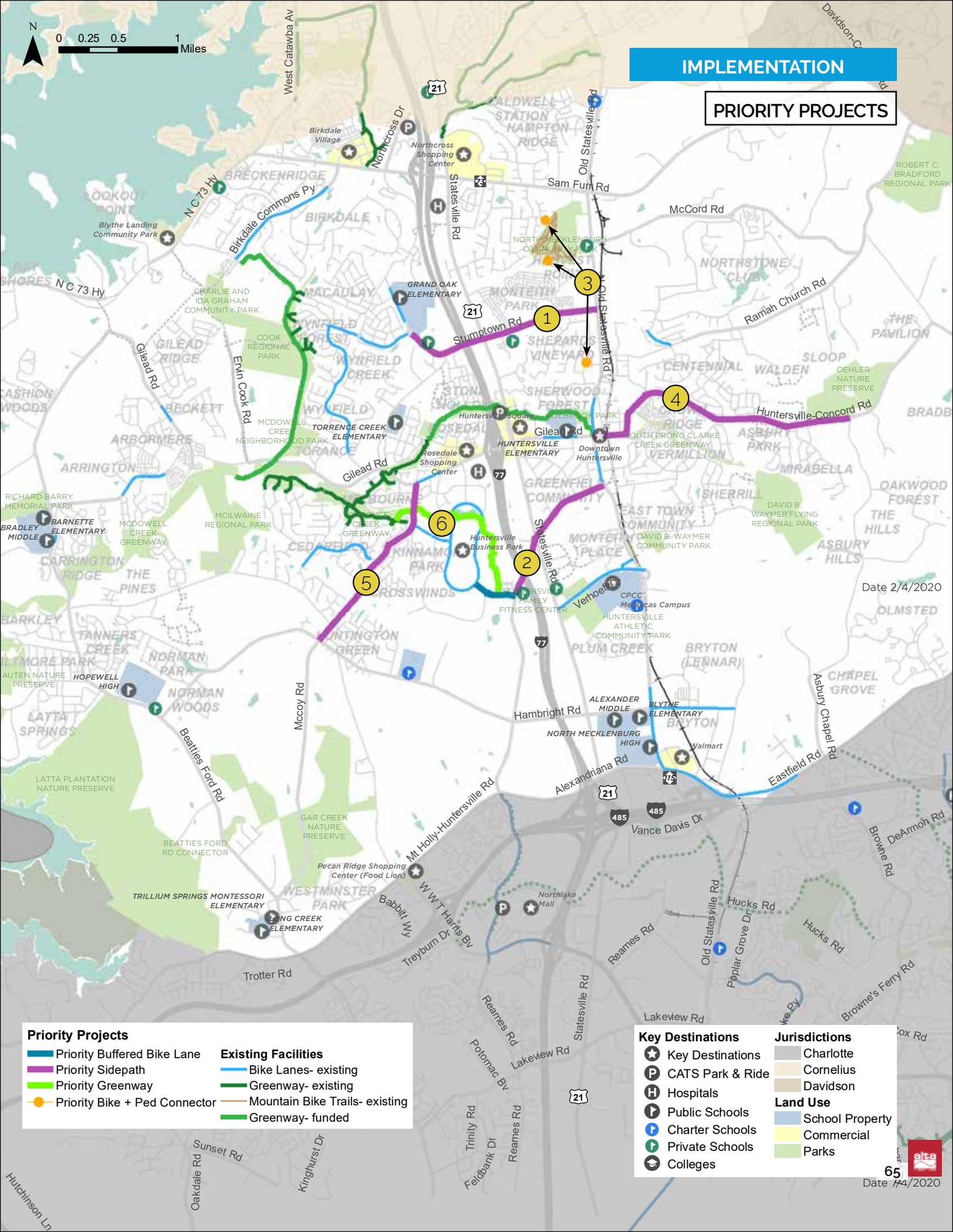
The top 6 priority projects are as follows (numbers correspond to labels on the map and do not reflect ranking):

1. Stumptown Road: sidepath between Hugh Torance Parkway and NC 115
2. Mt Holly-Huntersville Road/Reese Boulevard: sidepath between the business park loop and NC 115
3. Bike + Ped Connections: short multi-use paths between and within Monteith Park, Shepards Vineyard, Ashton Acres, North Mecklenburg Park, Northcross Downs, Hamptons
4. Huntersville-Concord Road: sidepath between Downtown Huntersville and Asbury Chapel Road
5. McCoy Road: sidepath between Gilead Road and Hambright Road
6. The Park-Huntersville Greenway: between McCoy Road and Mt. Holly Huntersville Road



IMPLEMENTATION

PRIORITY PROJECTS



Priority Projects

- Priority Buffered Bike Lane
- Priority Sidewalk
- Priority Greenway
- Priority Bike + Ped Connector

Existing Facilities

- Bike Lanes- existing
- Greenway- existing
- Mountain Bike Trails- existing
- Greenway- funded

Key Destinations

- Key Destinations
- CATS Park & Ride
- Hospitals
- Public Schools
- Charter Schools
- Private Schools
- Colleges

Jurisdictions

- Charlotte
- Cornelius
- Davidson

Land Use

- School Property
- Commercial
- Parks

Date 2/4/2020



UPCOMING ROADWAY PROJECTS

The bike facility projects outlined on the previous pages are those that are prioritized for near-term funding and implementation by the Town of Huntersville. Not included in those priorities are bike facility projects that fall along state-maintained roadways, such as NC Highway 115, NC Highway 73, and US Highway 21. These projects were not included as Town priorities because the funding and timing of maintenance and upgrades to these roadways are under the control of the North Carolina Department of Transportation (NCDOT). The Town will continue to advocate for the implementation of bike facilities along NCDOT roadways such as NC 115, NC 73, and US 21.

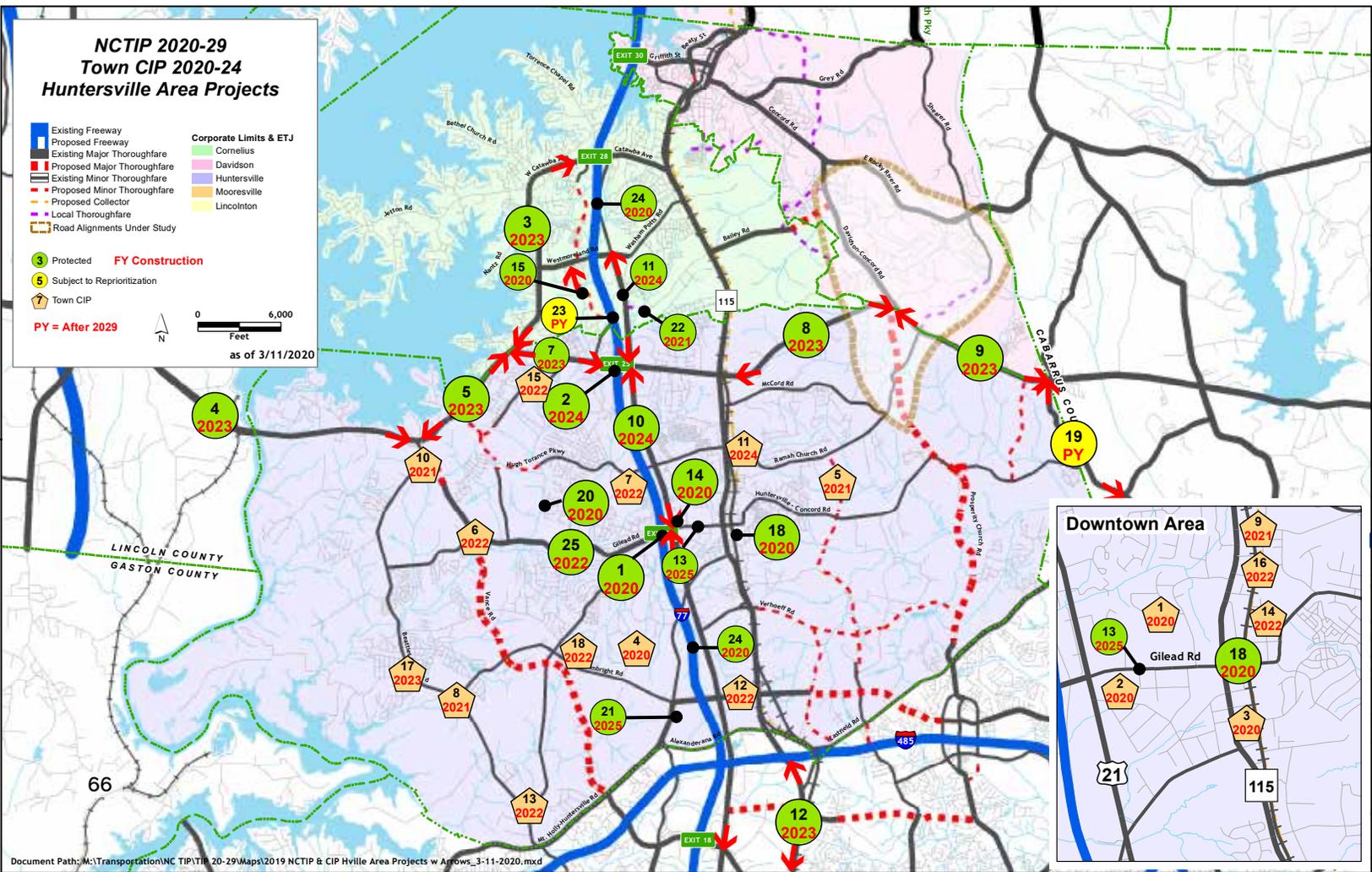
Based on recent updates to NCDOT's Complete Streets Policy, the bicycle facilities recommended in this plan along state-maintained roadways may be funded and built by NCDOT. NCDOT's Complete Streets Policy was updated in August 2019, and

its Implementation Guide, which can be accessed here: <https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>, states that,

Bicycle, pedestrian and public transportation facilities that appear in an adopted Plan directly or by references as described in Section 1.1. will be included as part of the proposed roadway project...NCDOT will fully fund the cost of designing, acquiring right of way, and constructing facilities, not including elements identified as betterments as defined in Section 6.3.

The project map below show projects in the North Carolina Transportation Improvement Plan (NCTIP, also known as the Statewide Transportation Improvement Plan or STIP), as well as those in the Huntersville Capital Improvement Program (CIP) for 2018-2022, and the details of these projects are provided in the tables on the facing page. For more on the NCTIP or on Huntersville's CIP, visit: <https://www.huntersville.org/672/Capital-Improvement-Program-CIP>.

The map below show projects in the North Carolina Transportation Improvement Plan (NCTIP, also known as the Statewide Transportation Improvement Plan or STIP), as well as those in the Huntersville Capital Improvement Program (CIP) for 2018-2022. The numbers correspond to the tables on the facing page. For a larger version of this map and these tables, visit: https://www.huntersville.org/DocumentCenter/View/5458/handout-final-NCTIP-Town-CIP-3_11_2020?bid=1



Approved NCTIP/STIP, 2020-29, Huntersville Area Projects						
Map ID #	Project Name*	Project Limits	Project Description (and Huntersville Bike Plan recommended bike facility)	STIP #	Right-of-way Fiscal Year	Construction Fiscal Year
1	I-77/Gilead Rd interchange	interchange	upgrade interchange to double diverging diamond (separated bike lanes)	I-5714	done	2020
2	I-77/Sam Furr Rd interchange	interchange	"upgrade interchange to split diamond" (sidepaths)	I-5715	2020	2024
3	W. Catawba Ave*	NC 73 to Jetton Rd	widen to 4 lane divided	R-2555 B	done	2023
4	NC 73	Business NC 16 (Lincoln Co.) to Vance Rd Ext	widen to multi-lanes (sidepaths)	R-5721 A	2021	2023
5	NC 73	Vance Rd Ext to Catawba Ave	widen to multi-lanes (sidepaths)	R-5721 B	2021	2023
6	I-77/Hambright Rd interchange*	new interchange	provide direct connections to managed lanes	I-5405B	done	under construction
7	NC 73	W Catawba Ave to Northcross Dr	widen existing roadway (sidepaths)	U-5765	2020	2023
8	NC 73	NC 115 to Davidson- Concord Rd	widen to multi-lanes (sidepaths)	R-2632 AB	2020	2023
9	NC 73	Davidson-Concord Rd to Poplar Tent Rd	widen to multi-lanes (sidepaths)	R-5706A	2020	2023
10	US 21 (Statesville Rd)	Gilead Rd to Holly Point Dr	widen to multi-lanes (sidepaths)	U-5771	2019	2024
11	US 21 (Statesville Rd)*	Northcross Center Ct to Westmoreland Rd	widen to multi-lanes	U-5767	2019	2024
12	NC 115 (Old Statesville Rd)*	Harris Bv to I-485	widen to multi-lanes	U-5772	2021	2023
13	Gilead Rd	Statesville Rd to Old Statesville Rd	widen to multi-lanes (separated bike lanes)	U-5807	2022	2025
14	US 21/Gilead Rd	intersection	intersection improvements	U-5114	done	2020
15	Northcross Dr Ext*	current end to Westmoreland Rd	road on new location	U-5108	2019	2020
18	Main Street	Mt. Holly-Huntersville Rd to south of Ramah Church Rd.	widen Main St. and connect to NC 115 (bike boulevard)	U-5908	done	2020
19	Poplar Tent Rd	Derita Rd. to NC 73	widen to four lanes (sidepaths)	U-6029	2029	post 2029
20	McDowell Creek Greenway	NC 73 to Chilgrove Ln.	construct multi use trail (greenway)	EB-5785	n/a	2020
21	Hambright Rd Park & Ride	southwest corner I-77 & Hambright Rd	construct regional park and ride lot & transfer facility	TA-6724	n/a	2025
22	Bailey Rd Ext*	Poole Place Dr to US 21	road on new location	U-6105	2020	2021
23	Bailey Rd Ext*	US 21 to Northcross Dr including I-77 bridge	road on new location	U-6171	2029	post 2029
24	I-77 North	I-485 to NC 150	construct peak period shoulder lanes	I-6065	2020	2020
25	Gilead Rd West	McCoy Rd to Wynfield Creek Pkwy	widen to multi-lanes (sidepaths)	U-6106	2020	2022

*Indicates that the project is not in Huntersville

Projected Huntersville Capital Improvement Program Major Projects, Fiscal Year 2018-2022		
Map ID #	Project	Construction Fiscal Year
1	Downtown greenway	2020
2	Holbrook Street extension	2020
3	Gibson Park Drive improvements	2020
4	Patterson Road extension	2021
5	Ferrelltown Parkway partnership	2021
6	Vance Road/Gilead Road (connection)	2022
7	Ranson Road widening	2022
8	Beatties Ford Rd/Hambright Rd intersection	2021

Map ID #	Project	Construction Fiscal Year
9	Seagle Street improvements	2021
10	Beatties Ford Rd/Gilead Rd intersection	2022
11	Stumptown Rd extension	2024
12	Hambright Road widening	2022
13	Beatties Ford Road/McCoy Road	2022
14	Walters Street improvements	2022
15	David Kenney Farm Rd connection	2022
16	4th Street improvements	2022
17	Beatties Ford Rd/Neck Rd intersection	2023
18	Huntington Green Sidewalk	2022



A GROUP OF BICYCLISTS RIDING ON HUNTERSVILLE-CONCORD ROAD

Priority Project Cutsheets

For each of the priority projects outlined at right (and on pages 64 and 65), preliminary engineering feasibility assessments and cost estimates were developed. These are summarized on the detailed project cutsheets, which include photo simulations and/or plan/design concepts for the top six priority projects.

The cost estimates were developed based on a set of assumptions that are detailed on the pages that follow, as well as in the full cost-estimate figures in Appendix 4 on page 118. It is important to note that the priority projects where a sidepath is the recommended bike facility, the cost estimates are based on the construction of a sidepath on one side of the street. The side of the roadway that was selected for each sidepath project was based on the preliminary engineering feasibility assessments, which took into account right-of-way availability, the presence of utility poles, and connectivity and access to nearby destinations. However, this determination of which side of the roadway to construct the sidepaths is not prescriptive and is subject to the findings of more detailed feasibility studies.

Should further study result in the construction of a sidepath project on the opposite side of the roadway from where it is stated in these cutsheets, the costs may differ slightly but should be on the same order of magnitude as the estimates provided herein.

Top 6 Priority Projects:

- **Stumptown Road: sidepath between Hugh Torance Parkway and NC 115**
- **Mt Holly-Huntersville Road/Reese Boulevard: sidepath between the business park loop and NC 115**
- **Bike + Ped Connections: short multi-use paths between and within Monteith Park, Shepards Vineyard, Ashton Acres, North Mecklenburg Park, Northcross Downs, Hamptons**
- **Huntersville-Concord Road: sidepath between Downtown Huntersville and Asbury Chapel Road**
- **McCoy Road: sidepath between Gilead Road and Hambright Road**
- **The Park-Huntersville Greenway: between McCoy Road and Mt. Holly Huntersville Road**



BIKE + PEDESTRIAN CONNECTORS

HARVEST POINT + NORTHCROSS DOWNS/HAMPTONS TO NORTH MECKLENBURG PARK; SHERASHTON ACRES TO ASHTON ACRES



These three bike + ped connectors have been prioritized in order to:

- Leverage the existing pockets of quiet streets to be a broader, connected network of low-stress, bikeable streets
- Create a continuous North-South corridor of bikeable streets from Gilead Road and Huntersville Elementary School to North Mecklenburg Park and Sam Furr Road
- Provide more direct access for bicyclists and pedestrians to key destinations, including the future North Mecklenburg Park

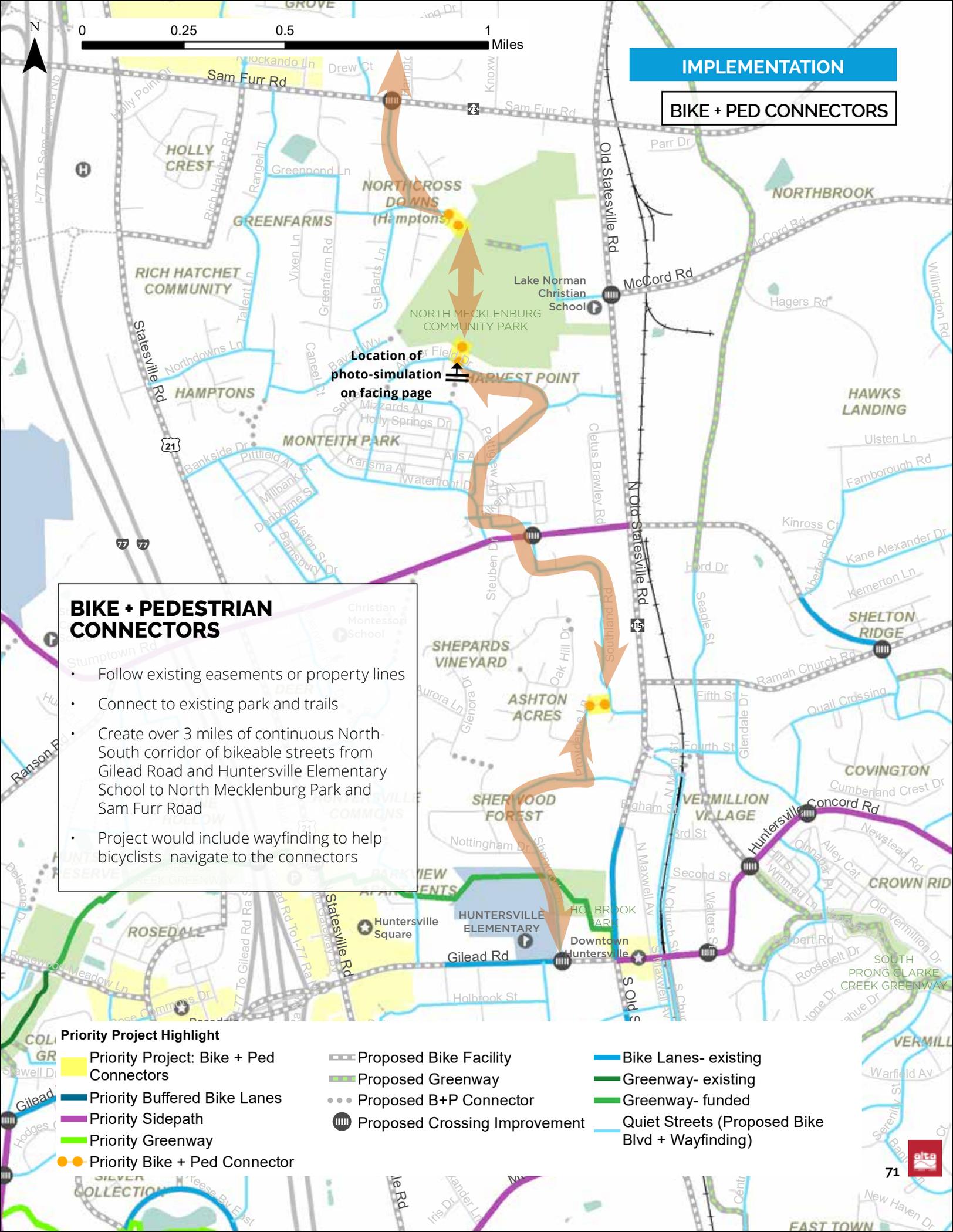
Details

- Estimated cost for construction: \$617,000*
- Formalize the 225-foot path between Amber Field Drive and the trails within North Mecklenburg Park
- Formalize the 130-foot path between the Hamptons neighborhood pool parking lot and North Mecklenburg Park
- Create a 275-foot path between Providence Lane and Southland Road



A view of the current dirt trail access to the North Mecklenburg Park

*Detailed cost estimates are provided in the Appendix, reflecting 2022 prices, assuming a 5% annual inflation. Costs do not include right-of-way acquisition, if necessary.



IMPLEMENTATION

BIKE + PED CONNECTORS

Location of photo-simulation on facing page

BIKE + PEDESTRIAN CONNECTORS

- Follow existing easements or property lines
- Connect to existing park and trails
- Create over 3 miles of continuous North-South corridor of bikeable streets from Gilead Road and Huntersville Elementary School to North Mecklenburg Park and Sam Furr Road
- Project would include wayfinding to help bicyclists navigate to the connectors

Priority Project Highlight

- Priority Project: Bike + Ped Connectors
- Priority Buffered Bike Lanes
- Priority Sidepath
- Priority Greenway
- Priority Bike + Ped Connector

- Proposed Bike Facility
- Proposed Greenway
- Proposed B+P Connector
- Proposed Crossing Improvement

- Bike Lanes- existing
- Greenway- existing
- Greenway- funded
- Quiet Streets (Proposed Bike Blvd + Wayfinding)





STUMPTOWN ROAD SIDEPATH

BETWEEN HUGH TORANCE PARKWAY AND NC 115

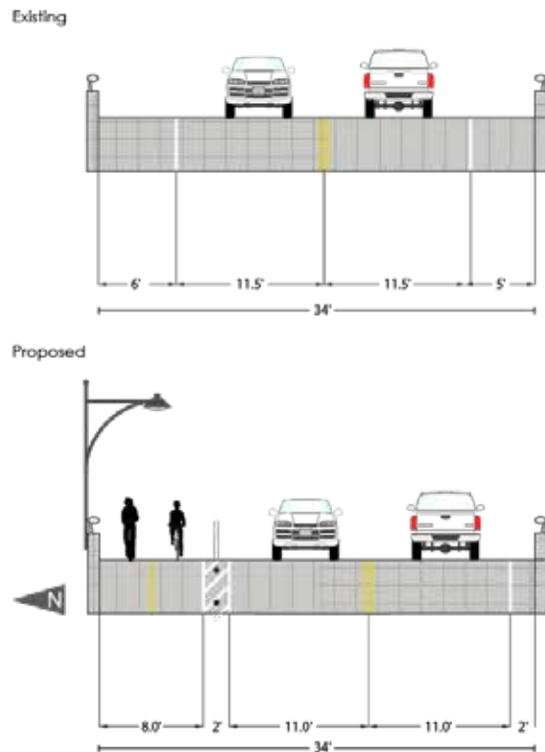


This sidepath will:

- Create East-West corridor, connecting the MacAulay neighborhood to NC Highway 115, providing access across Interstate 77 and US Highway 21.
- Provide access to the numerous existing and planned schools along Stumptown Road.
- Fill gap in pedestrian facilities as well.
- Connect to the quiet streets on either side of the highways to leverage a wider network of streets that are bikeable for all ages and abilities.

Details

- Estimated cost for construction: \$3,917,000.*
- Approximately 8,500 feet of a 10-foot wide concrete sidepath on north side of Stumptown Road, with a planted buffer.
- 380-foot bridge crossing- re-striping and shifting of lanes to create 8-foot** multi-use path with 2-foot buffer on north shoulder of bridge (see bridge cross-section at right).
- Extend school zone speed limit (30 mph) to NC 115.



Existing and Proposed Cross-Section

*Detailed cost estimates are provided in the Appendix, reflecting 2022 prices, assuming a 5% annual inflation. Costs do not include right-of-way acquisition, if necessary, and assume sidepath is built on north side. Sidepath could be built on opposite side; costs would change if sidepath is constructed on opposite side of the roadway.

** 8-ft is an AASHTO-approved facility width in constrained conditions. Bridge cross-section is subject to NCDOT approval.



IMPLEMENTATION

STUMPTOWN RD

Bicyclists can use the planned connection through North Meck Community Park (see page 71) and the Stumptown extension (see page 67) to connect to McCord Road and Ramah Church Road, respectively.

Location of photo-simulation on facing page

STUMPTOWN ROAD

- Traffic Counts: 2016 AADT = 12,000 west of Statesville Rd; 7,900 east of Statesville Rd
- Previous Greenways + Bikeways Plan (2014) recommended bike lanes, but high traffic volumes and speeds, and connections to schools warrant a more separated facility
- Currently has no bicycle facilities, some segments of sidewalk exist

Priority Project Highlight

- Priority Project: Stumptown Road
- Priority Buffered Bike Lanes
- Priority Sidepath
- Priority Greenway
- Priority Bike + Ped Connector

- Proposed Bike Facility
- Proposed Greenway
- Proposed B+P Connector
- Proposed Crossing Improvement

- Bike Lanes- existing
- Greenway- existing
- Greenway- funded
- Natural Surface Trail
- Quiet Streets (Proposed Bike Blvd + Wayfinding)





MT. HOLLY-HUNTERSVILLE ROAD SIDEPATH + REESE BOULEVARD BUFFERED BIKE LANES

BETWEEN THE BUSINESS PARK LOOP AND NC 115



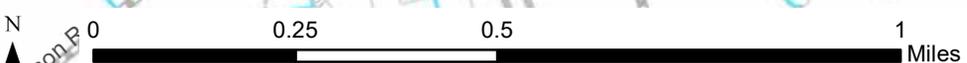
This project will:

- Include a sidepath along Mt. Holly-Huntersville Road, connecting to buffered bike lanes along Reese Boulevard.
- Provide a critical East-West link across US Highway 21 and Interstate 77,
- Improve access between neighborhoods on the east side to the business park loop
- Connect to future sections of the Torrence Creek Greenway, also providing a missing facility for pedestrians along Mt. Holly-Huntersville Road
- Constitute a near-term solution with an on-road sidepath under US 21. Long-term recommendation is to coordinate with US-21 widening project to accommodate a separated, off-street facility.

Details

- Estimated cost for construction: \$4,120,000*
- Approximately 1.25 miles of a 10-foot wide concrete sidepath on south/east side of Mt. Holly-Huntersville Road, with a planted buffer.
- 415-foot bridge crossing of I-77 and 70-foot underpass of US 21: re-striping and shifting of lanes to create 8-foot multi-use path with 3-foot buffer on south shoulder (similar to cross-section for Stumptown Rd, shown on previous pages)
- Conversion of outside lane on Reese Boulevard to separated bike lane

*Detailed cost estimates are provided in the Appendix, reflecting 2022 prices, assuming a 5% annual inflation. This project's cost estimate includes the cost of vertical separators (bollards) that would create separated bike lanes on Reese Blvd. A buffered bike lane does not include vertical separators so the cost would be lower. Costs do not include right-of-way acquisition, if necessary, and assume sidepath is built on south/east side. Sidepath could be built on opposite side; costs would change if sidepath is constructed on opposite side of the roadway.



IMPLEMENTATION
MT. HOLLY-HUNTERSVILLE RD + REESE BOULEVARD

MT. HOLLY-HUNTERSVILLE ROAD (MHH RD) + REESE BOULEVARD

- Traffic Counts: 2018 AADT = 9,700 south of US 21; 5,400 north of US 21
- Currently, MHH Rd has no bicycle facilities (or sidewalk)
- Previous Greenways + Bikeways Plan (2014) recommended bike lanes, but the high traffic volumes and speeds on MHH Rd warrant a more separated facility. Reese Blvd's width can accommodate separated facilities to meet the high demand for bike access to the business loop
- Reese Blvd, between MHH Rd and the Reese Boulevard loop has no bike facilities; limited segments of sidewalk exist

Location of photo-simulation on facing page

Priority Project Highlight

- Priority Project: Mt Holly-Huntersville Rd/Reese Blvd
- Priority Buffered Bike Lanes
- Priority Sidepath
- Priority Greenway
- Priority Bike + Ped Connector

- Proposed Bike Facility
- Proposed Greenway
- Proposed B+P Connector
- Proposed Crossing Improvement

- Bike Lanes- existing
- Greenway- existing
- Greenway- funded
- Quiet Streets (Proposed Bike Blvd + Wayfinding)



HUNTERSVILLE-CONCORD ROAD SIDEPATH

BETWEEN DOWNTOWN HUNTERSVILLE AND ASBURY CHAPEL ROAD



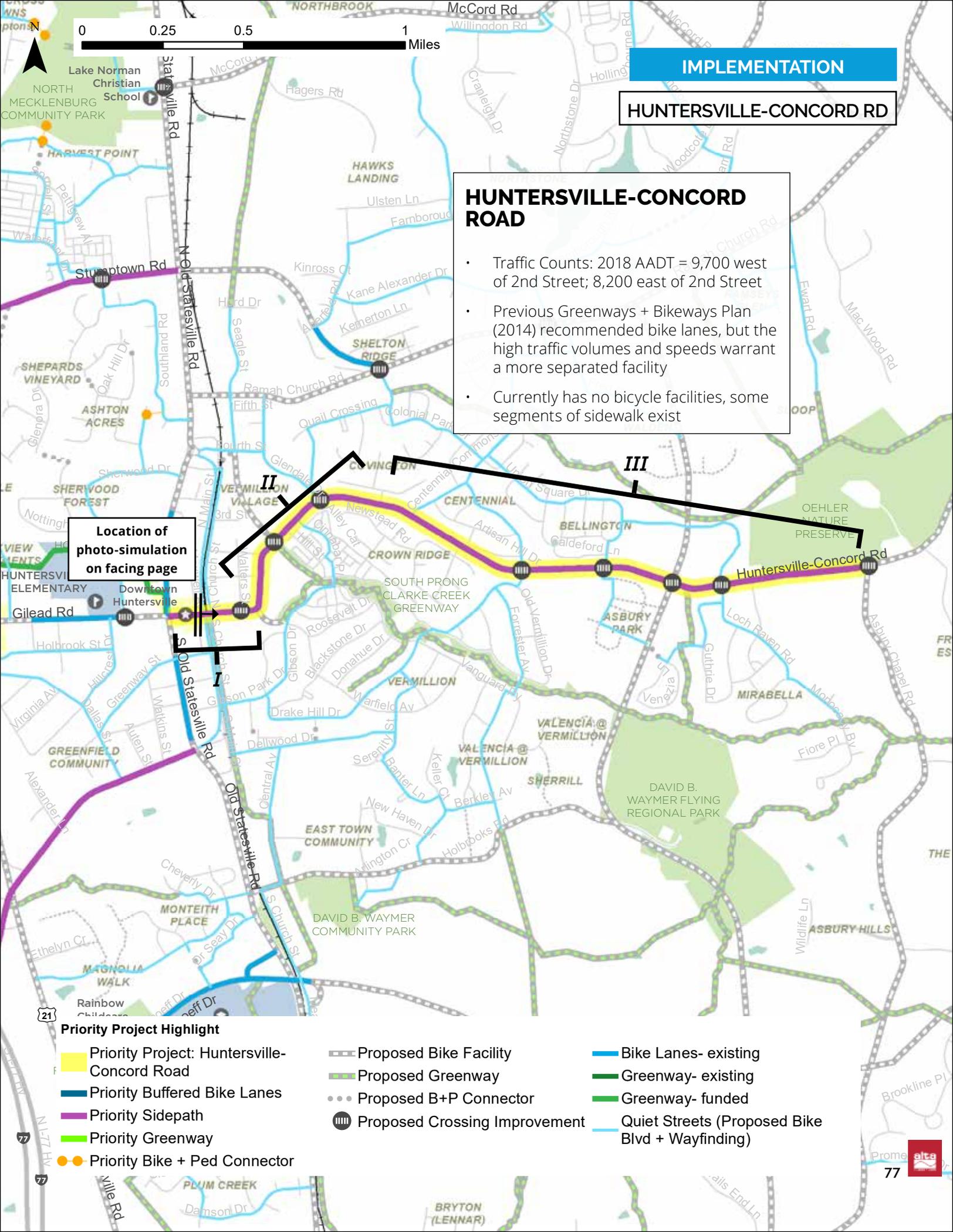
This sidepath will:

- Create an East-West corridor, connecting historic downtown Huntersville with Vermillion, Crown Ridge, Centennial, Asbury Park, and other East Huntersville neighborhoods
- Provide access to Veterans Park, Oehler Nature preserve, Huntersville Elementary School
- Fill gap in pedestrian facilities
- Can be implemented in stages, depending on funding availability: Downtown to Vermillion (I), Vermillion to Covington Crest (II), and Covington Crest to Asbury Church Road (III)

Details

- Estimated cost for construction: \$8,140,000*
- Approximately 2.5 miles of sidepath on south sides of Huntersville-Concord Road from the railroad tracks to Asbury Chapel Road.
- Approximately 0.5 miles of sidepath on the north side between Second Street and Covington Crest Drive
- High-visibility crosswalk at Veteran's Park,

*Detailed cost estimates are provided in the Appendix, reflecting 2022 prices, assuming a 5% annual inflation. Costs do not include right-of-way acquisition, if necessary, and assume sidepath is built on south side, with a partial section on the north side. Sidepath could be built on opposite side; costs would change if sidepath is constructed on opposite side of the roadway.



0 0.25 0.5 1 Miles

IMPLEMENTATION
HUNTERSVILLE-CONCORD RD

HUNTERSVILLE-CONCORD ROAD

- Traffic Counts: 2018 AADT = 9,700 west of 2nd Street; 8,200 east of 2nd Street
- Previous Greenways + Bikeways Plan (2014) recommended bike lanes, but the high traffic volumes and speeds warrant a more separated facility
- Currently has no bicycle facilities, some segments of sidewalk exist

Location of photo-simulation on facing page

- Priority Project Highlight**
- Priority Project: Huntersville-Concord Road
 - Priority Buffered Bike Lanes
 - Priority Sidepath
 - Priority Greenway
 - Priority Bike + Ped Connector

- Proposed Bike Facility
- Proposed Greenway
- Proposed B+P Connector
- Proposed Crossing Improvement

- Bike Lanes- existing
- Greenway- existing
- Greenway- funded
- Quiet Streets (Proposed Bike Blvd + Wayfinding)



MCCOY ROAD SIDEPATH

BETWEEN GILEAD ROAD AND HAMBRIGHT ROAD

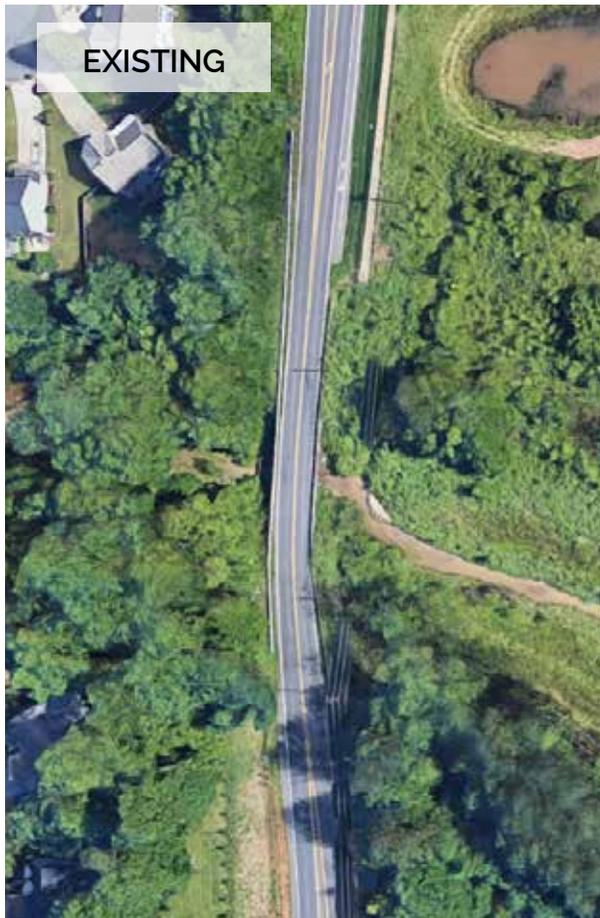
This sidepath will:

- Create a North-South corridor, connecting Cedarfield, Huntington Green, Melbourne, and Hambricht Woods neighborhoods to the Huntersville Business Park and Rosedale Shopping Center
- Provide access to the Torrence Creek Greenway
- Fill gap in pedestrian facilities

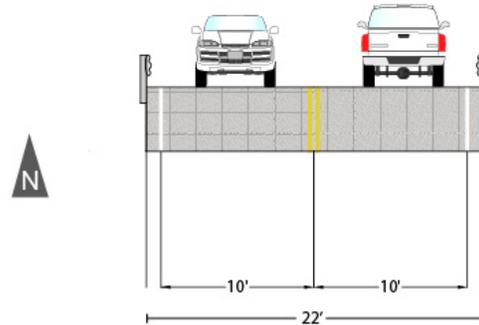
Details

- Estimated cost for construction: \$4,752,000*
- Approximately 8,600 feet of a 10-foot wide concrete sidepath with a planted buffer, on west side of McCoy Road.
- Includes approximately 215 feet of an on-street bike facility on the bridge over Torrence Creek, to be completed when the bridge is replaced and widened as planned. (The bridge reconstruction is not included in the cost estimate.)

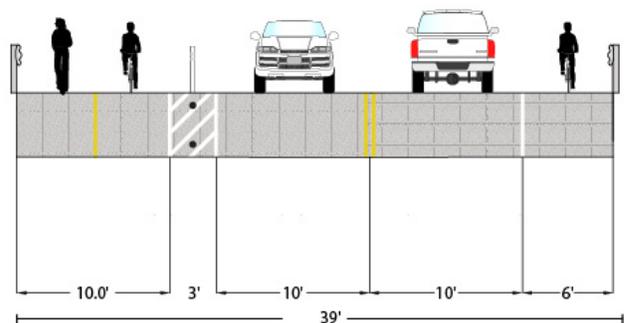
*Detailed cost estimates are provided in the Appendix, reflecting 2022 prices, assuming a 5% annual inflation. Costs do not include right-of-way acquisition, if necessary, and assume sidepath is built on west side. Sidepath could be built on opposite side; costs would change if sidepath is constructed on opposite side of the roadway. NCDOT has not reviewed these, and they are subject to their approval.



Existing



Proposed

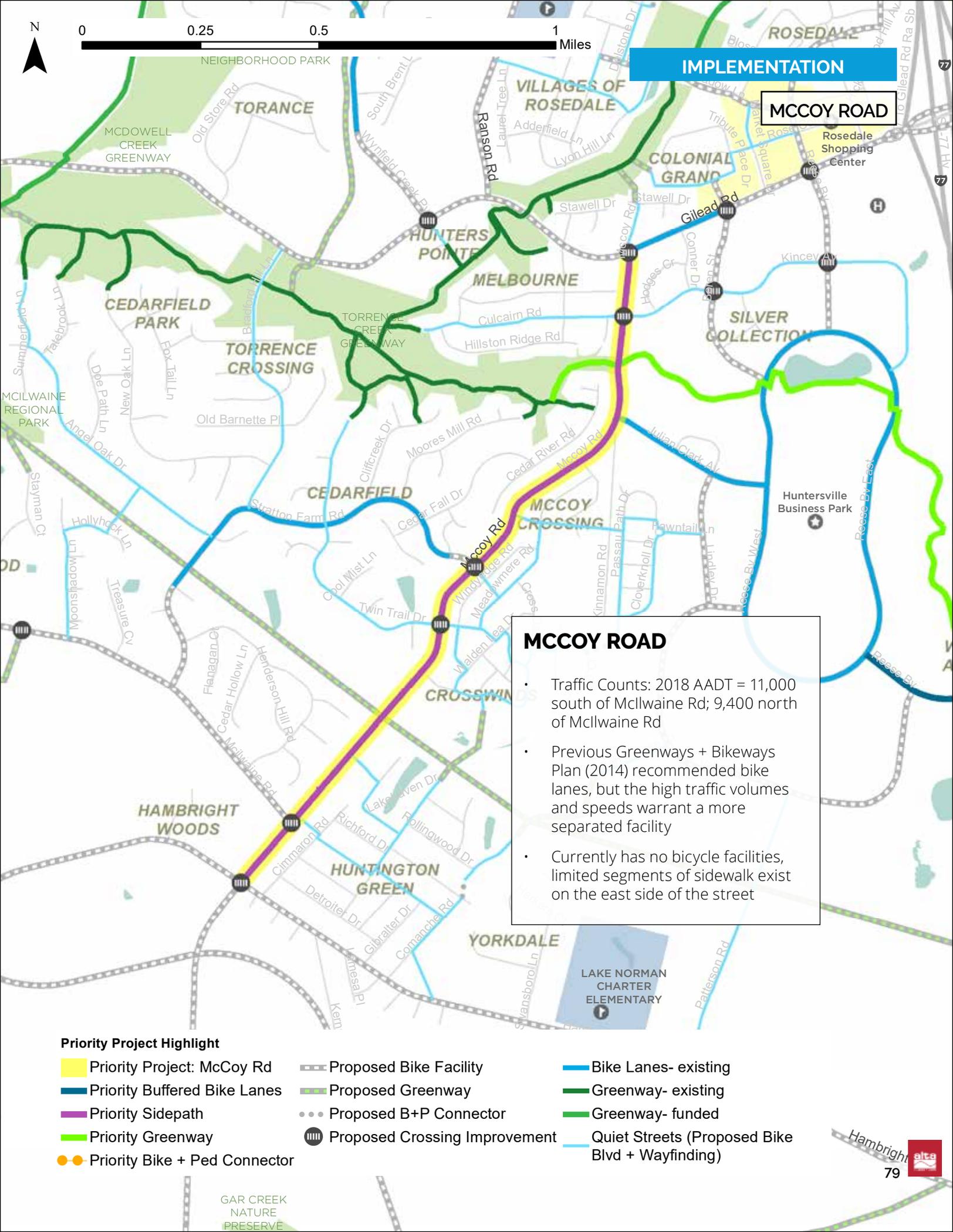


Existing and Proposed Cross-Section



IMPLEMENTATION

MCCOY ROAD



MCCOY ROAD

- Traffic Counts: 2018 AADT = 11,000 south of Mcllwaine Rd; 9,400 north of Mcllwaine Rd
- Previous Greenways + Bikeways Plan (2014) recommended bike lanes, but the high traffic volumes and speeds warrant a more separated facility
- Currently has no bicycle facilities, limited segments of sidewalk exist on the east side of the street

Priority Project Highlight

- Priority Project: McCoy Rd
- Priority Buffered Bike Lanes
- Priority Sidepath
- Priority Greenway
- Priority Bike + Ped Connector

- Proposed Bike Facility
- Proposed Greenway
- Proposed B+P Connector
- Proposed Crossing Improvement

- Bike Lanes- existing
- Greenway- existing
- Greenway- funded
- Quiet Streets (Proposed Bike Blvd + Wayfinding)

GAR CREEK NATURE PRESERVE





THE PARK – HUNTERSVILLE GREENWAY

BETWEEN MCCOY ROAD AND MT. HOLLY HUNTERSVILLE ROAD



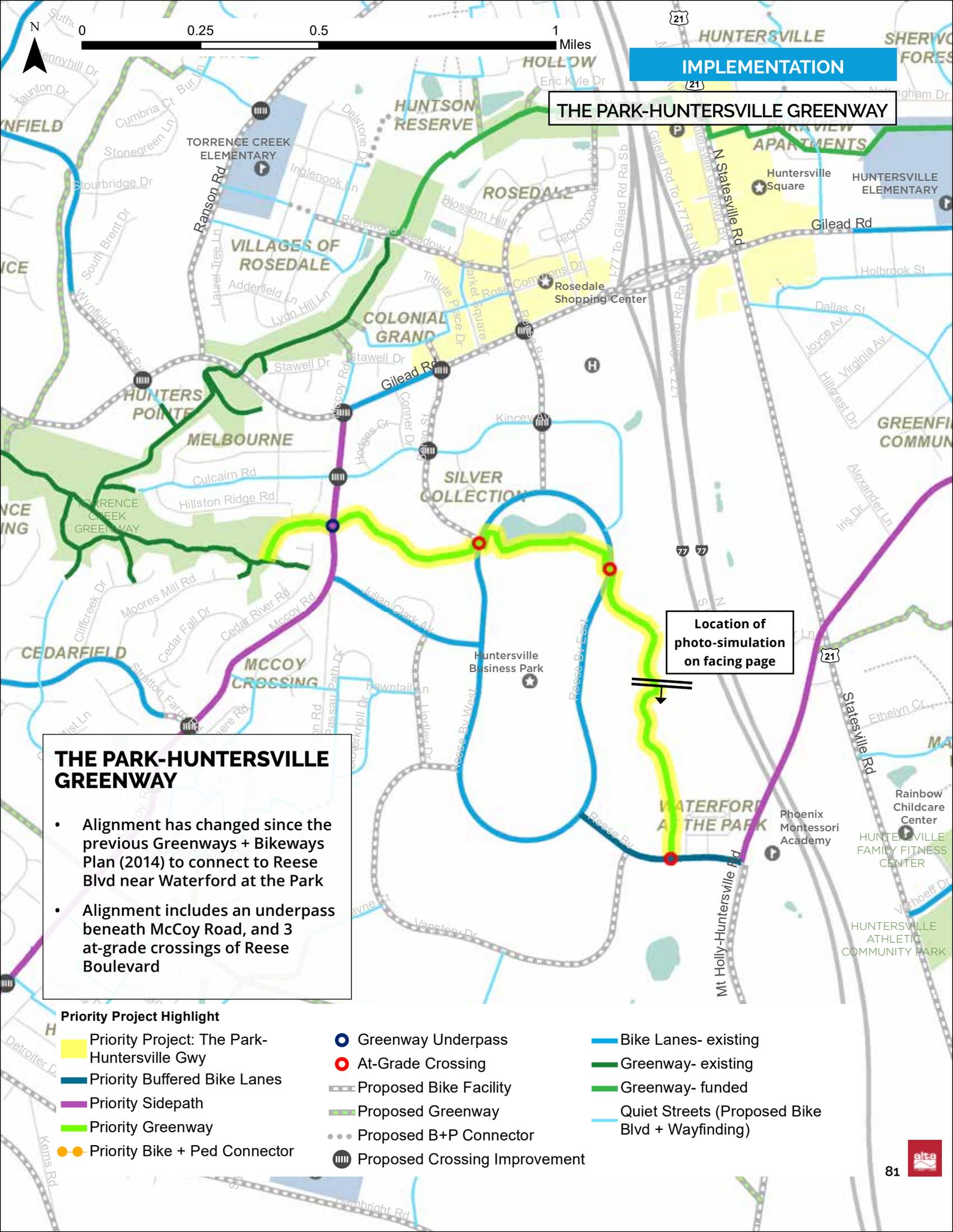
This greenway will:

- Create an off-road connection between the existing Torrence Creek Greenway and the Huntersville Business Park and Reese Boulevard
- Connect the Cedarfield and Melbourne neighborhoods to the Huntersville Business Park and to the McCoy Road and Reese Boulevard + Mt. Holly-Huntersville priority projects (see previous pages)
- Complete a Vision 30x30 Priority I section of greenway

Details

- Estimated cost for construction: \$3,173,000*
- Approximately 1.6 miles of greenway
- One underpass beneath McCoy Road
- Three at-grade crossings of Reese Boulevard

*Detailed cost estimates are provided in the Appendix, reflecting 2022 prices, assuming a 5% annual inflation. Costs do not include right-of-way acquisition, if necessary.



IMPLEMENTATION

THE PARK-HUNTERSVILLE GREENWAY

THE PARK-HUNTERSVILLE GREENWAY

- Alignment has changed since the previous Greenways + Bikeways Plan (2014) to connect to Reese Blvd near Waterford at the Park
- Alignment includes an underpass beneath McCoy Road, and 3 at-grade crossings of Reese Boulevard

Location of photo-simulation on facing page

Priority Project Highlight

- Priority Project: The Park-Huntersville Gwy
- Priority Buffered Bike Lanes
- Priority Sidepath
- Priority Greenway
- Priority Bike + Ped Connector

- Greenway Underpass
- At-Grade Crossing
- Proposed Bike Facility
- Proposed Greenway
- Proposed B+P Connector
- Proposed Crossing Improvement

- Bike Lanes- existing
- Greenway- existing
- Greenway- funded
- Quiet Streets (Proposed Bike Blvd + Wayfinding)





10-Year Phasing Plan for High-Priority Projects

The map at right depicts the phased implementation strategy for Huntersville's greenway and bikeway network. The phased implementation is **designed to build the network over time to connect more and more neighborhoods with facilities for bicyclists of all ages and abilities.**

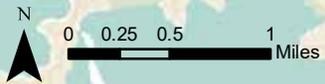
- The projects shown in RED are greenways that are already funded for construction between 2020 and 2023.
- Those shown in ORANGE are funded and scheduled for construction between 2023 and 2026.
- The priority projects that are highlighted on the preceding pages are shown in YELLOW, indicating that these should be the next projects that should be funded and scheduled for implementation over the next five years.
- Next the Priority I and Priority II greenways from the 30x30 Vision Plan, which envisions 30 miles of greenways built by 2030, are shown in GREEN and BLUE, respectively. (Note that the Park-Huntersville Greenway is a Priority Project for this Bike Plan AND a 30x30 Vision Plan Priority I Greenway)

The map also shows streets that are recommended for bike boulevard and wayfinding in **LIGHT GREEN as mid-term priorities for implementation in the next 10 years**, as these type of projects are generally easier to implement because they do not include a dedicated bikeway, but rather they re-prioritize the shared space to

make it more comfortable for biking. Upgrading quiet streets to bike boulevards with wayfinding, traffic calming, and pavement markings can be done on an ongoing basis as funding and roadway maintenance schedules allow.

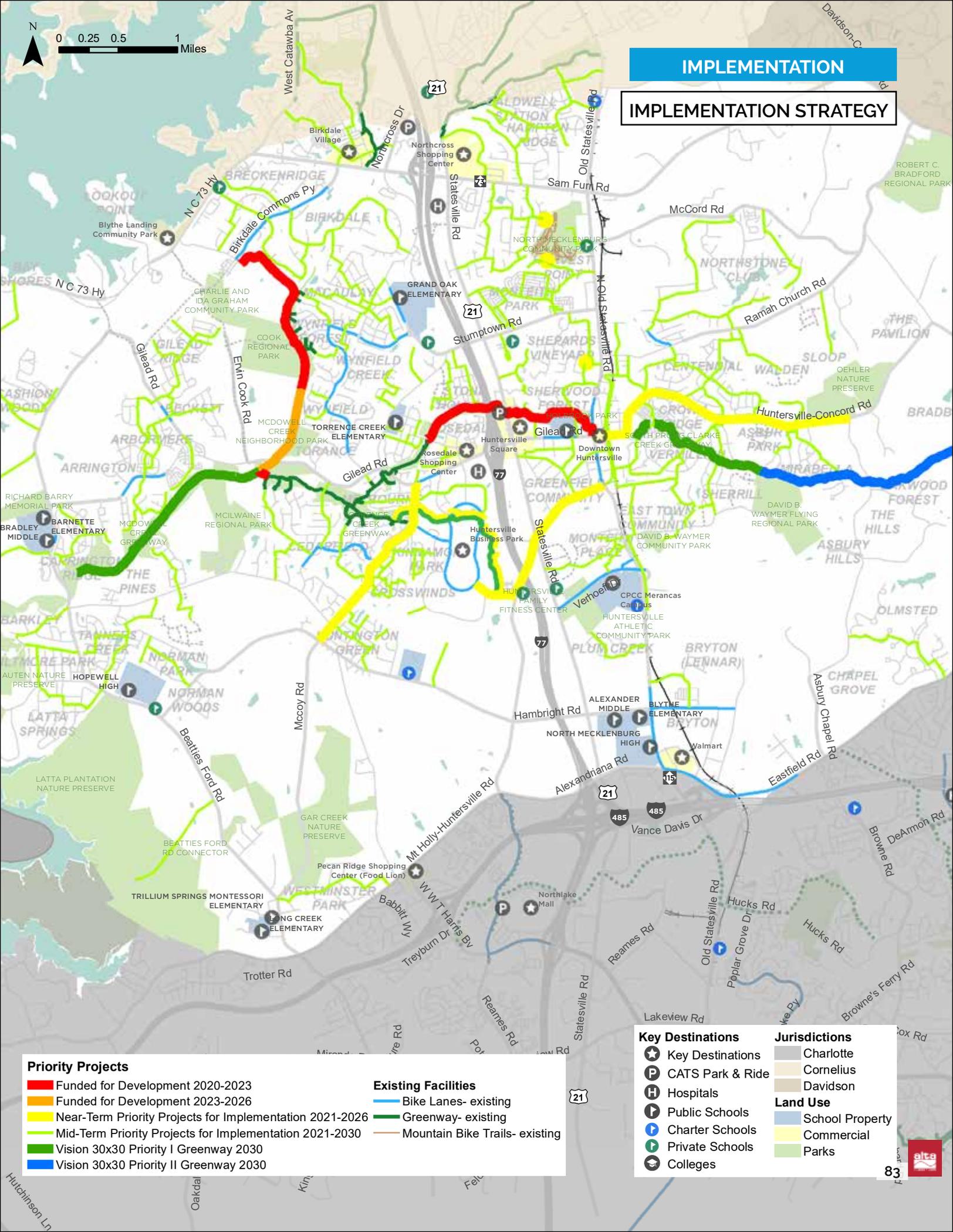
In addition to these projects that are prioritized for funding by the Town of Huntersville and Mecklenburg County (some sections of the greenways), other bike facility projects along State-maintained roadways will be funded through NCDOT roadway projects scheduled for improvements in the next 10 years, as outlined in the map and tables provided on pages 66 and 67. These include projects along Sam Furr Road (NC 73), Statesville Road (US 21), Old Statesville Road (NC 115), and others.

The Town of Huntersville should coordinate with the Charlotte Regional Transportation Planning Organization (CRTPO) on project implementation. **Huntersville should work with CRTPO to amend its Comprehensive Transportation Plan (CTP) to include the recommendations from this Huntersville Bike Plan.** While this local plan, the Huntersville Bike Plan, will be referenced, NCDOT's Integrated Mobility Division strongly encourages municipalities to incorporate recommendations from recently adopted plans into the regional CTPs to ensure that NCDOT covers the full cost of these bike/pedestrian projects. As stated in the North Carolina Department of Transportation (NCDOT) Complete Streets Policy, CTPs will be the defining planning document when determining NCDOT/local cost share for projects.



IMPLEMENTATION

IMPLEMENTATION STRATEGY



Priority Projects

- Funded for Development 2020-2023
- Funded for Development 2023-2026
- Near-Term Priority Projects for Implementation 2021-2026
- Mid-Term Priority Projects for Implementation 2021-2030
- Vision 30x30 Priority I Greenway 2030
- Vision 30x30 Priority II Greenway 2030

Existing Facilities

- Bike Lanes- existing
- Greenway- existing
- Mountain Bike Trails- existing

Key Destinations

- Key Destinations
- CATS Park & Ride
- Hospitals
- Public Schools
- Charter Schools
- Private Schools
- Colleges

Jurisdictions

- Charlotte
- Cornelius
- Davidson

Land Use

- School Property
- Commercial
- Parks





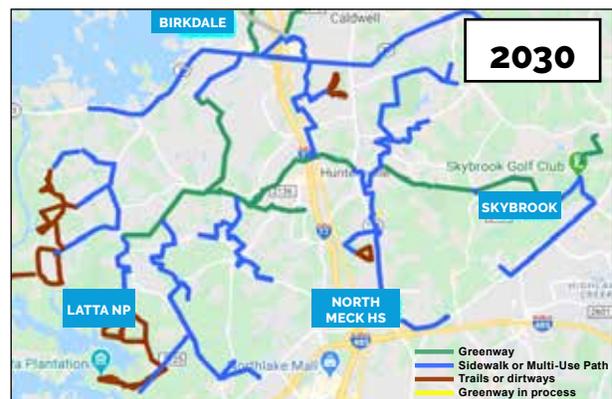
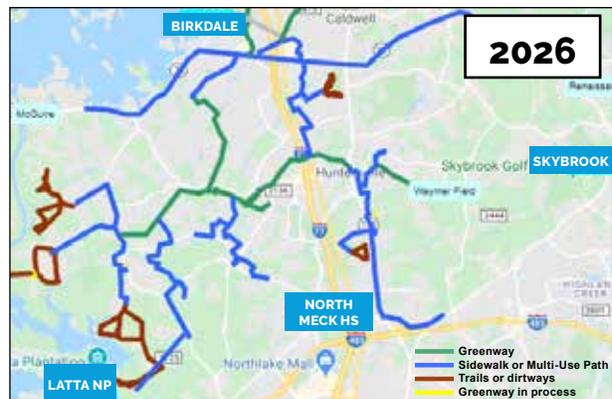
30x30 Vision Plan: "Spine of the Vine"

The Huntersville Greenways, Trail, and Bikeway Commission (GTBC) has a vision to connect 30,000 residents via greenways and sidewalks by 2030. A total of 14 miles of greenways are planned to create the "Spine of the Vine" of Huntersville's greenway network. To that end, the committee has prioritized the proposed network of greenways and identified the following sections for near-term implementation. These priorities are reflected in the 10-year phased plan outlined on the previous page. The GTBC will be a critical leader in carrying out the vision of this plan and the Vision 30x30 plan.

By 2030, with the implementation of these Vision 30x30 priority greenways, and with the existing network of sidewalks and bike facilities, virtually all the neighborhoods and residences in the Town of Huntersville will be connected and bikeable. The maps at right, and the table below depict an analysis completed by the GTBC showing how many miles of greenway and sidewalks are projected to be built over the next 10 years to connect all the homes in Huntersville via greenways and sidewalks.

Year	Greenway (mi.)	Sidewalk (mi.)	% Homes Connected
2020	3.25		31%
2020-2023	+2.9 funded	+1.6	70%
2023-2026	+4.0	+2.6	91%
2026-2030	+3.8	+4.0	100%
Totals	13.95	+8.2	100%

Note: The small 2030 map at right includes sidewalks (in blue), in addition to the "Spine of the Vine" greenways as shown in the larger 2030 Vision map on the facing page. Sidewalks are not considered bike facilities.





IMPLEMENTATION

VISION 30X30

BIRKDALE

SKYBROOK

LATTA NP

NORTH MECK HS

- 30x30 Vision Plan**
- 30x30 Vision Plan Priority I Greenway
 - 30x30 Vision Plan Priority II Greenway
 - Greenway- existing
 - Greenway- funded
 - Bike Lanes- existing
 - Mountain Bike Trails- existing

Key Destinations		Jurisdictions	
	Key Destinations		Charlotte
	CATS Park & Ride		Cornelius
	Hospitals		Davidson
	Public Schools		School Property
	Charter Schools		Commercial
	Private Schools		Parks
	Colleges		

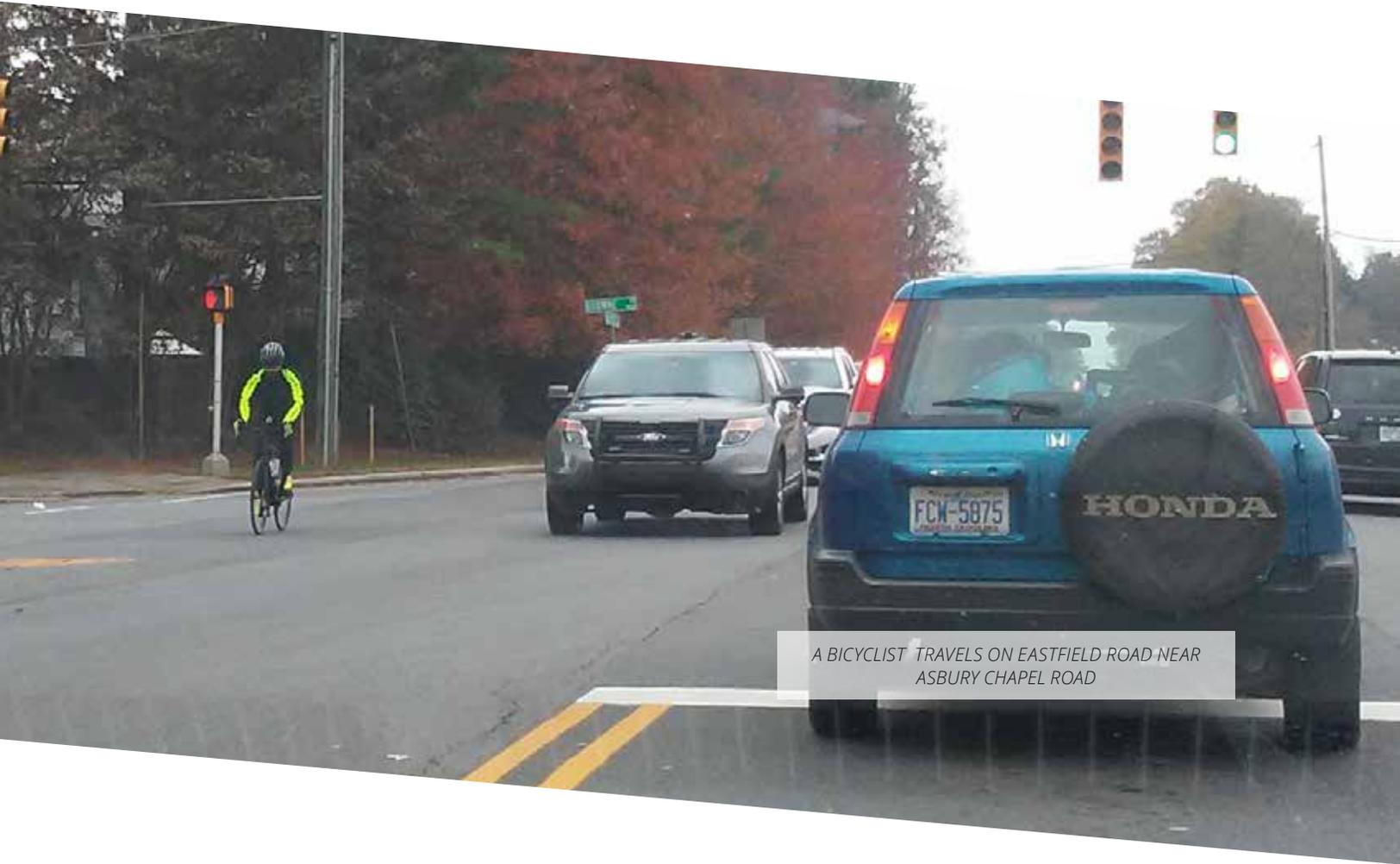




VII.

Appendices

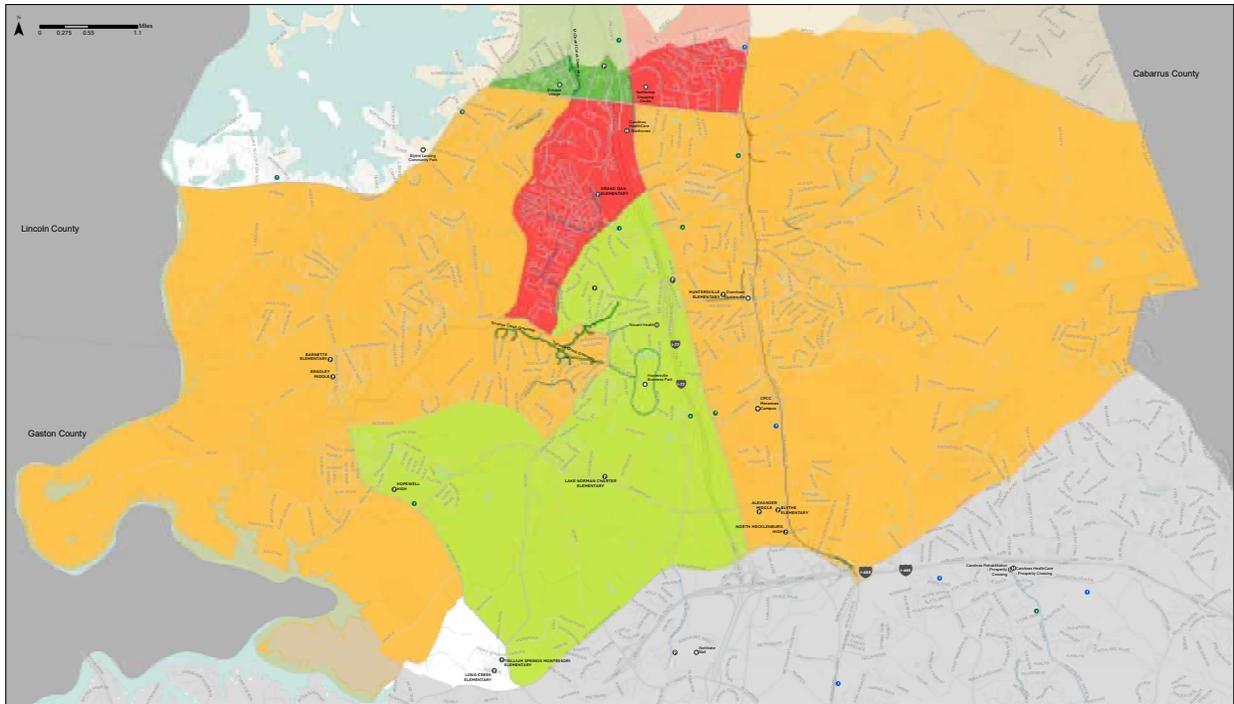
- A.1. *Needs + Opportunities Maps*
- A.2. *Detailed Public Input Survey Results*
- A.3. *Bicycle Policy + Regulatory Review*
- A.4. *Detailed Cost Estimates for Priority Projects*
- A.5. *Funding Sources*



A BICYCLIST TRAVELS ON EASTFIELD ROAD NEAR ASBURY CHAPEL ROAD



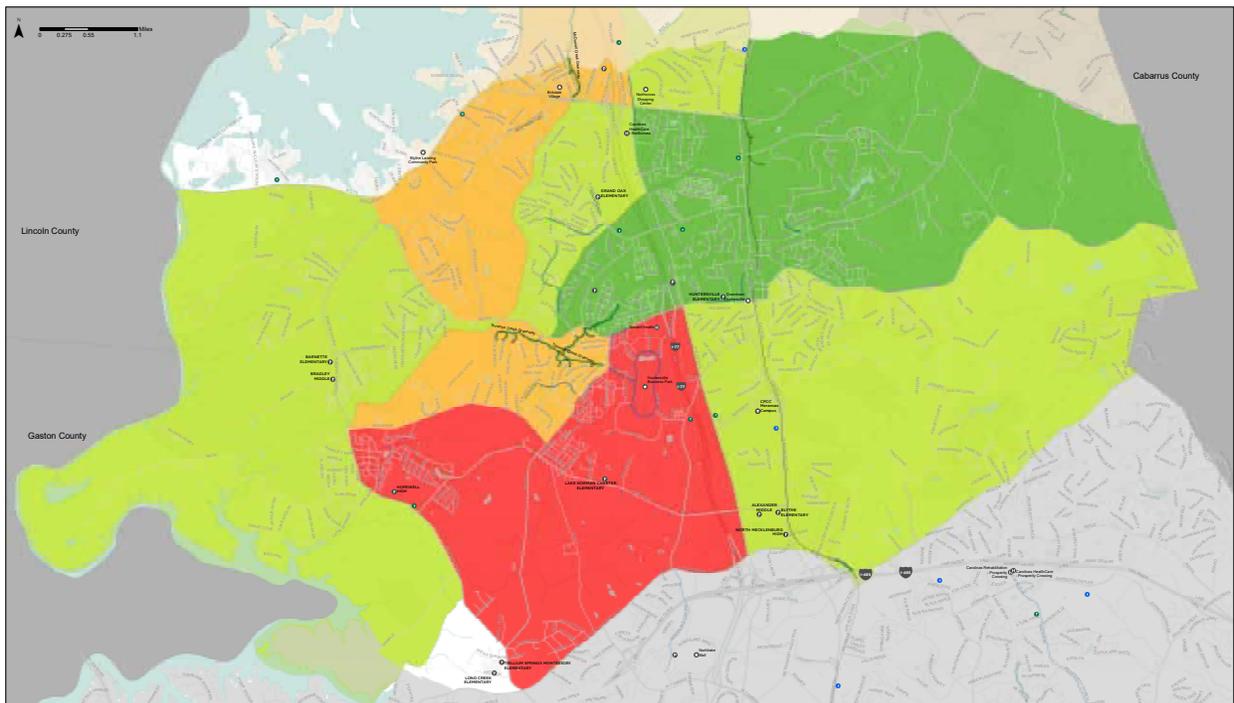
A.1 Needs + Opportunities Maps



**Huntersville Bicycle Plan:
Children Under 18 years**

- | | | | | | |
|------------------------------|---------------------------------|--------------------|-------------------|----------------------|----------------------------|
| Children under 18 yrs | Existing Bike Facilities | ○ Key Destinations | ○ Public Schools | — Railroads | ▭ Huntersville Town Limits |
| ■ Higher concentration | — Bike Lane - One Side | ○ CATS Park & Ride | ○ Charter Schools | — Creeks and Streams | ▭ Charlotte |
| ■ Lower concentration | — Bike Lanes | ○ Hospitals | ○ Private Schools | — Water | ▭ Cornelius |
| | ⋯ Sharrows | | ○ Colleges | | ▭ Davidson |
| | — Greenway/Multi-use Path | | | | |

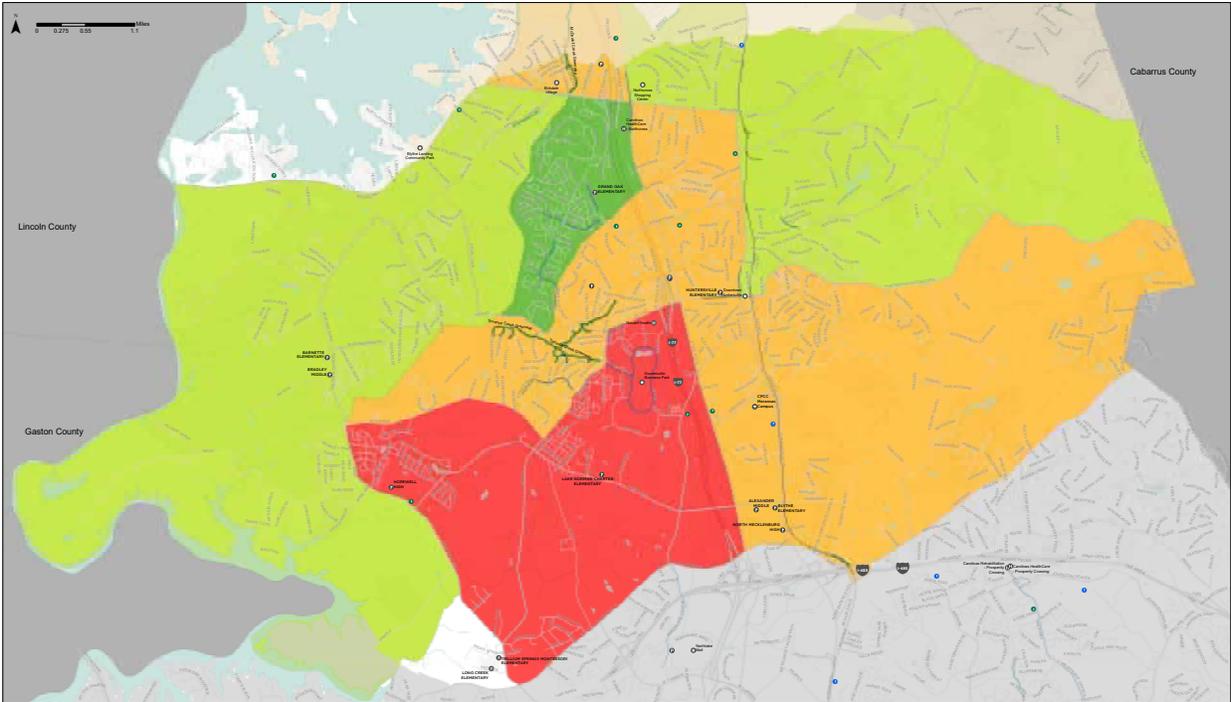
Draft date: 8/23/2018



**Huntersville Bicycle Plan:
Percentage of Households Without a Vehicle**

- | | | | | | |
|---|---------------------------------|--------------------|-------------------|----------------------|----------------------------|
| Percentage of Households without a Vehicle | Existing Bike Facilities | ○ Key Destinations | ○ Public Schools | — Railroads | ▭ Huntersville Town Limits |
| ■ 2.9% - 5.4% | — Bike Lane - One Side | ○ CATS Park & Ride | ○ Charter Schools | — Creeks and Streams | ▭ Charlotte |
| ■ 1.7% - 2.9% | — Bike Lanes | ○ Hospitals | ○ Private Schools | — Water | ▭ Cornelius |
| ■ 0.7% - 1.7% | ⋯ Sharrows | | ○ Colleges | | ▭ Davidson |
| ■ < 0.7% | — Greenway/Multi-use Path | | | | |

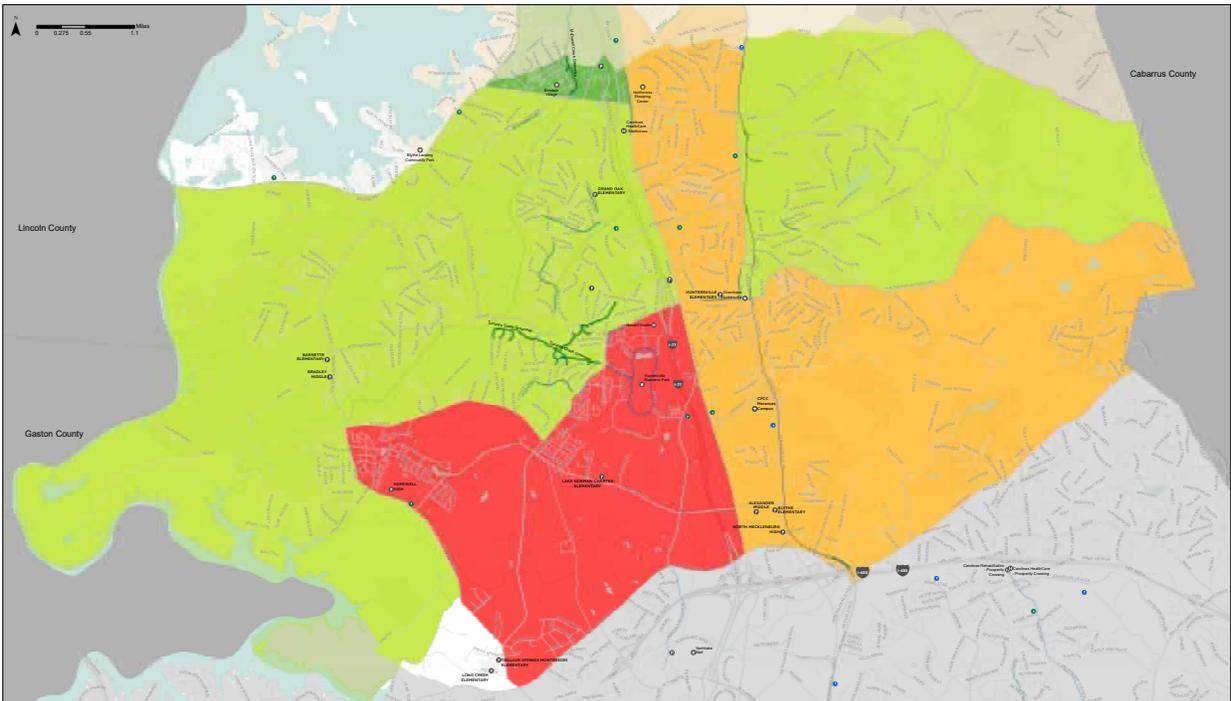
Draft date: 8/23/2018



**Huntersville Bicycle Plan:
Percentage of Households
Below 200% Poverty Level**

Percentage of Households Below 200% Poverty	Existing Bike Facilities	○ Key Destinations	○ Public Schools	— Railroads	▭ Huntersville Town Limits
6.15% and higher	— Bike Lane - One Side	○ CATS Park & Ride	○ Charter Schools	— Creeks and Streams	▭ Charlotte
3.10% - 6.15%	— Bike Lanes	○ Hospitals	○ Private Schools	— Water	▭ Cornelius
2.11% - 3.09%	⋯ Sharrows	○ Colleges			▭ Davidson
< 2.1%	— Greenway/Multi-use Path				

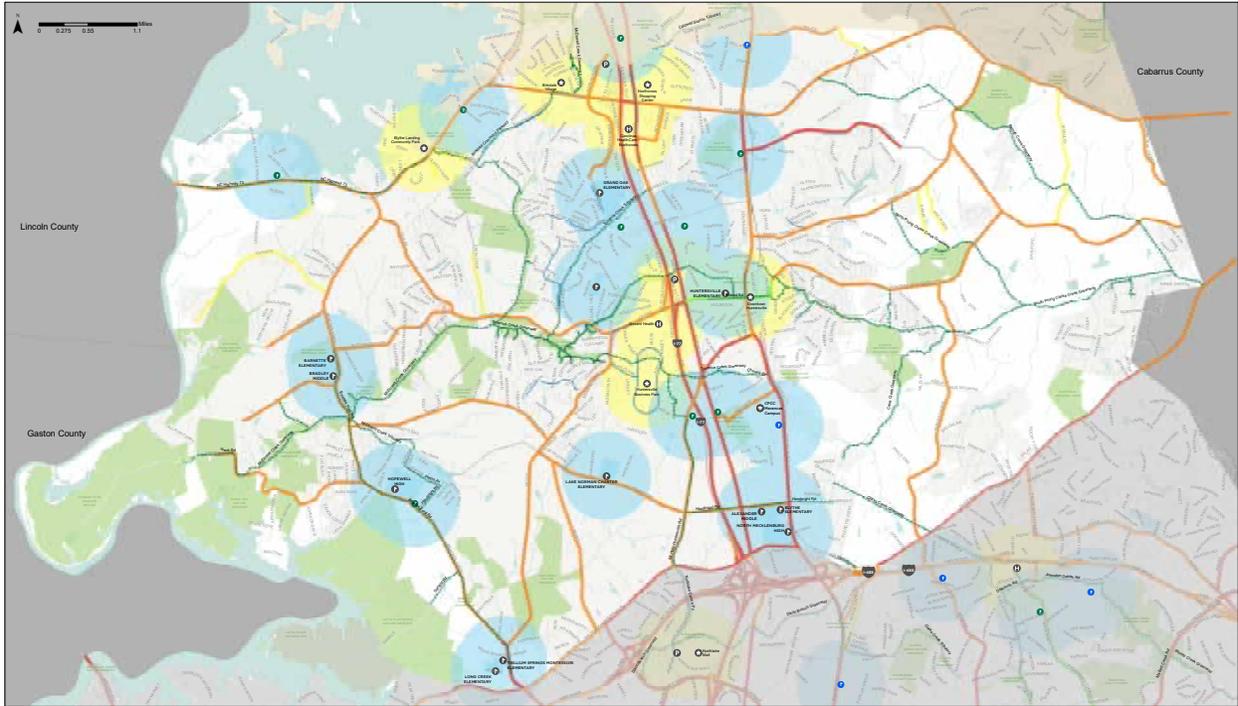
Draft date: 4/23/2018



**Huntersville Bicycle Plan:
Concentration of
Populations that are More
Reliant on Biking + Walking**

Composite	Existing Bike Facilities	○ Key Destinations	○ Public Schools	— Railroads	▭ Huntersville Town Limits
Higher concentration	— Bike Lane - One Side	○ CATS Park & Ride	○ Charter Schools	— Creeks and Streams	▭ Charlotte
Medium concentration	— Bike Lanes	○ Hospitals	○ Private Schools	— Water	▭ Cornelius
Lower concentration	⋯ Sharrows	○ Colleges			▭ Davidson
	— Greenway/Multi-use Path				

Draft date: 4/23/2018

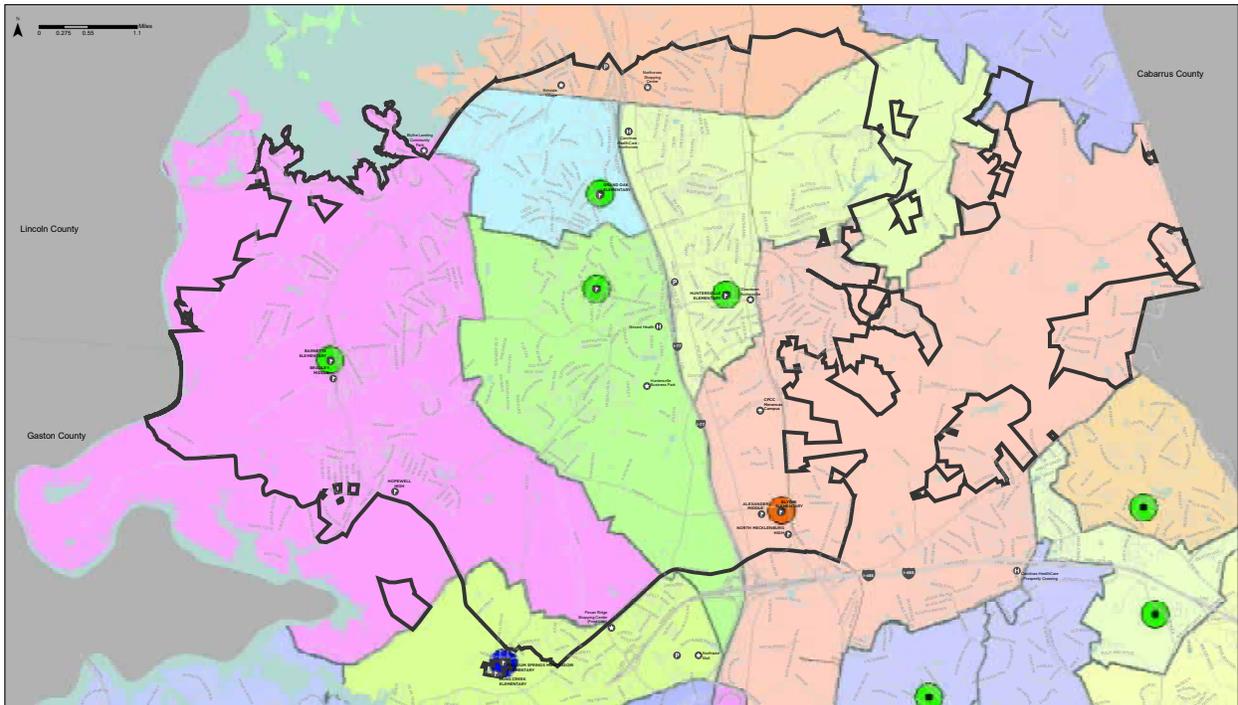


**Huntersville Bicycle Plan:
Level of Traffic Stress Map
(Travel Barriers)**

- | | | | | | |
|--------------------------------|---------------------------------|--------------------------------|--------------------|-------------------|------------------------|
| Level of Traffic Stress | Existing Bike Facilities | Greenway/Multi-use Path | ○ Key Destinations | ○ Public Schools | ■ Schools |
| 1: Low | — Bike Lane - One Side | — Existing | ○ CATS Park & Ride | ○ Charter Schools | ■ Huntersville Town LI |
| 2 | — Bike Lanes | — Planned | ○ Hospitals | ○ Private Schools | ■ Charlotte |
| 3 | — Sharrows | | | ○ Colleges | ■ Cornelius |
| 4: High | | | | | ■ Davidson |



Date: 11/1/2019

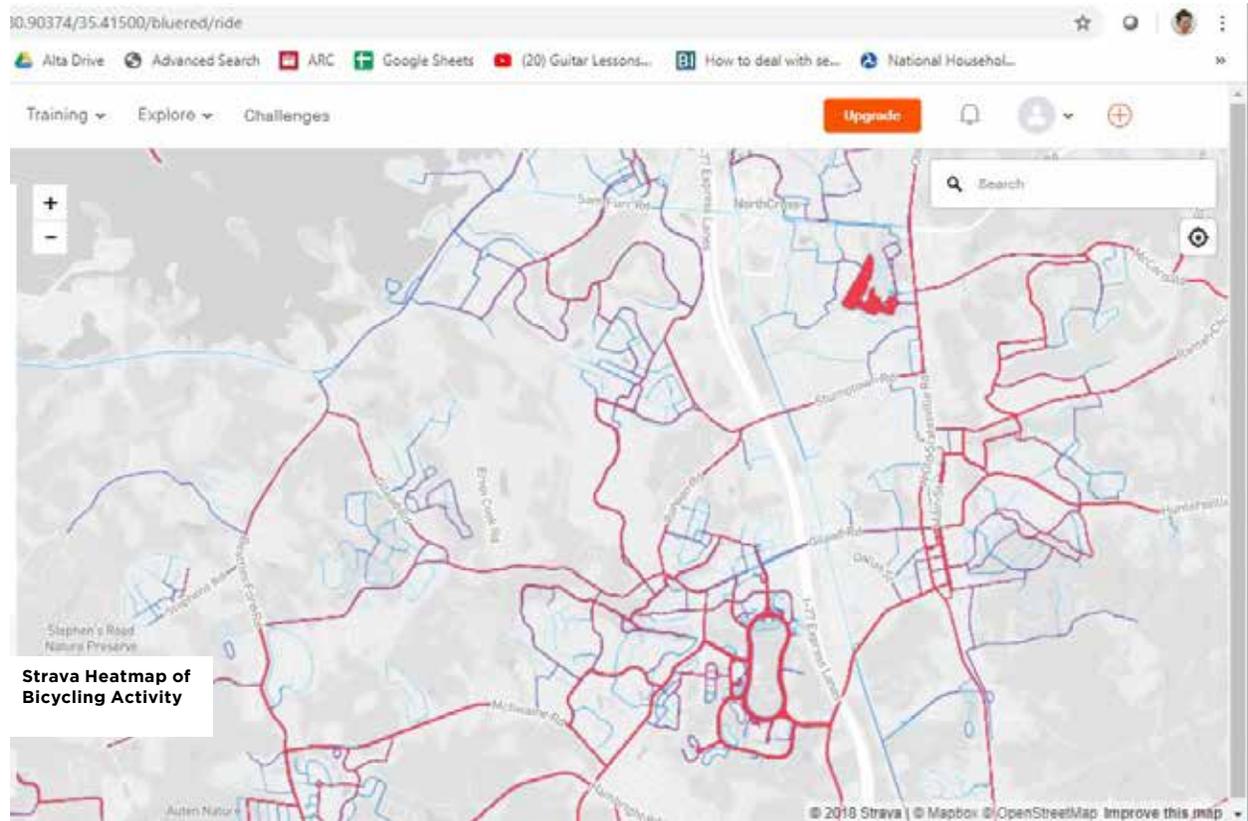


**School Enrollment
Boundary Map**

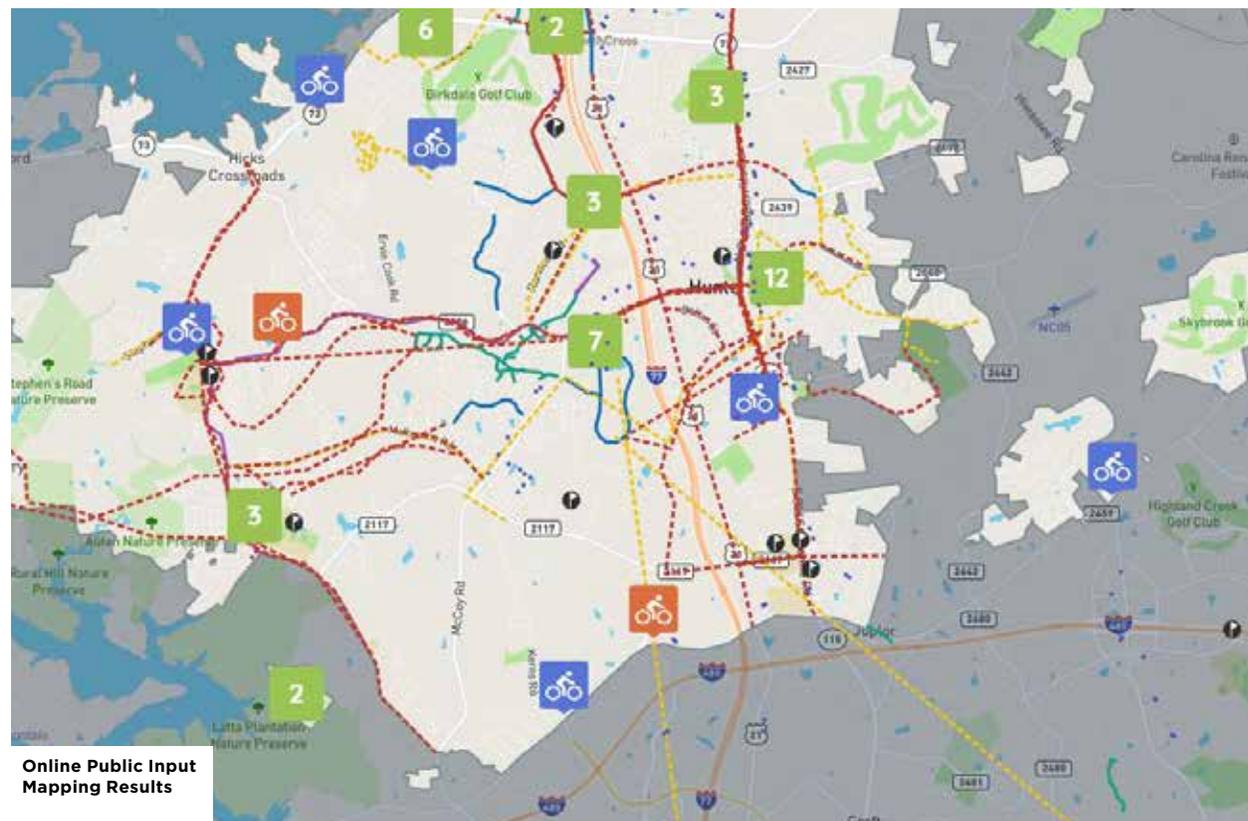
- | | |
|--------------------|------------------|
| ○ Key Destinations | ○ Public Schools |
| ○ CATS Park & Ride | ○ Colleges |
| ○ Hospitals | |



Date: 11/1/2019



Strava Heatmap of
Bicycling Activity



Online Public Input
Mapping Results

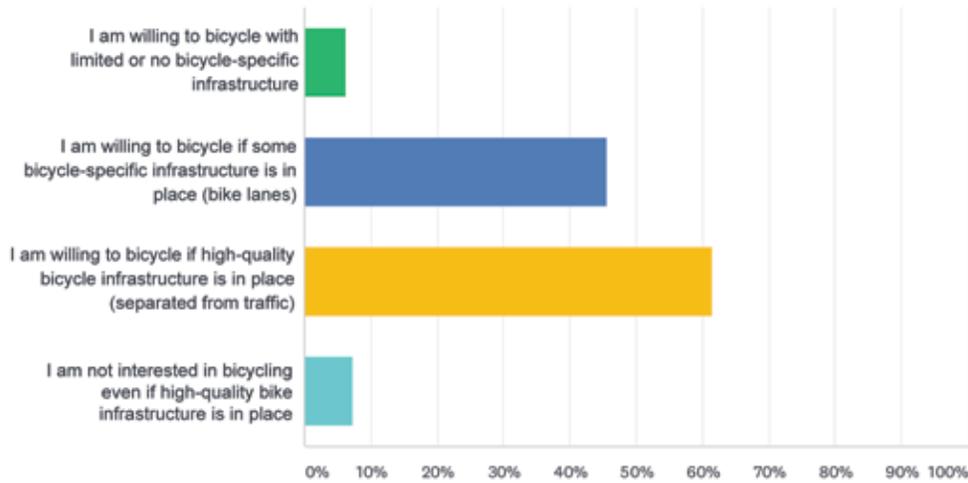


A.2. Detailed Public Input Survey Results

Huntersville Bike Plan- Community Survey

Q1 Please choose the selection that most closely describes you:

Answered: 427 Skipped: 1

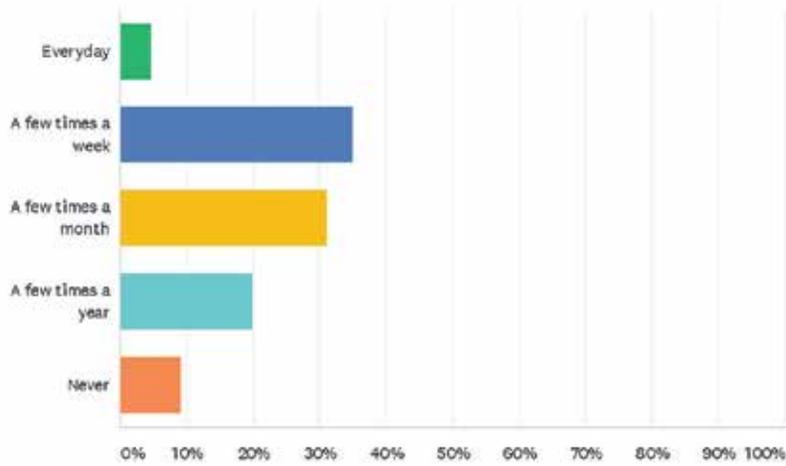


ANSWER CHOICES	RESPONSES	
	6.32%	27
	45.67%	195
	61.59%	263
I am not interested in bicycling even if high-quality bicycle infrastructure is in place.	7.26%	31
Total Respondents: 427		

Huntersville Bike Plan- Community Survey

Q2 How often do you currently ride a bike?

Answered: 426 Skipped: 2



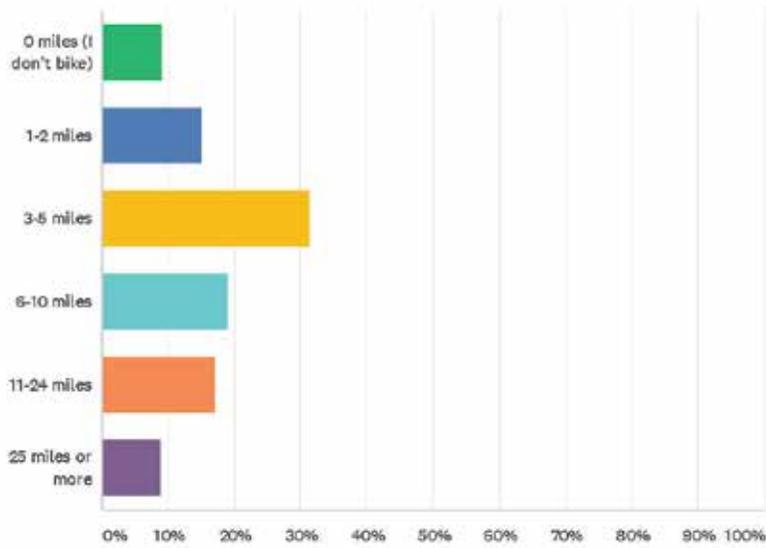
ANSWER CHOICES	RESPONSES	
Everyday	4.69%	20
A few times a week	34.98%	149
A few times a month	31.22%	133
A few times a year	19.95%	85
Never	9.15%	39
TOTAL		426



Huntersville Bike Plan- Community Survey

Q3 What is the average distance of your typical bike ride? (One-way)

Answered: 425 Skipped: 3

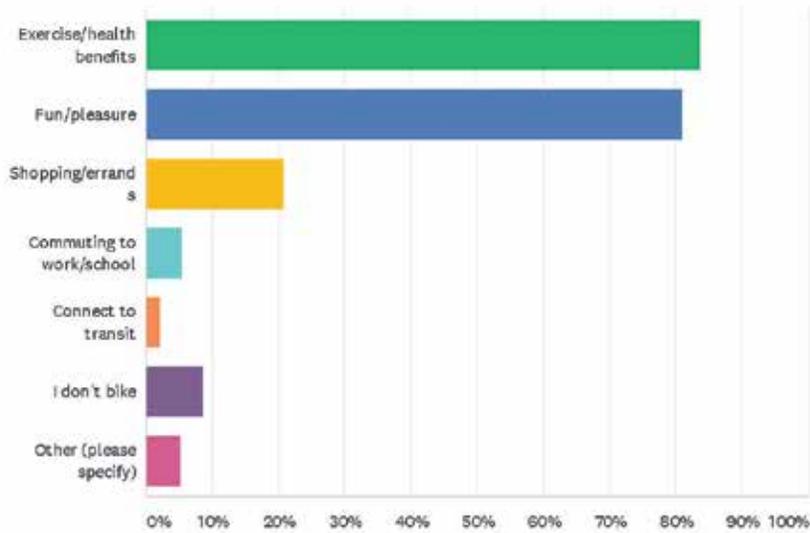


ANSWER CHOICES	RESPONSES	
0 miles (I don't bike)	8.94%	38
1-2 miles	15.06%	64
3-5 miles	31.29%	133
6-10 miles	19.08%	81
11-24 miles	16.94%	72
25 miles or more	8.71%	37
TOTAL		425

Huntersville Bike Plan- Community Survey

Q4 Why do you bike? (Check all that apply)

Answered: 427 Skipped: 1



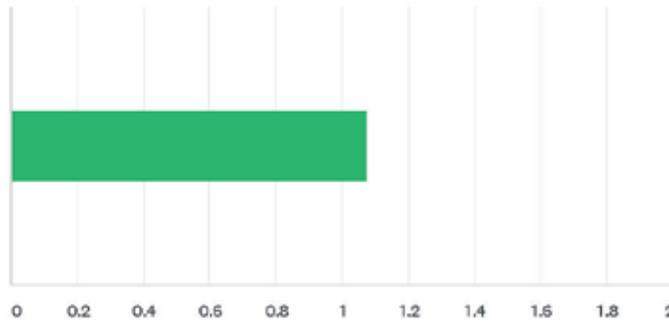
ANSWER CHOICES	RESPONSES	
Exercise/health benefits	83.61%	357
Fun/pleasure	81.03%	346
Shopping/errands	20.61%	88
Commuting to work/school	5.39%	23
Connect to transit	2.11%	9
I don't bike	8.67%	37
Other (please specify)	5.15%	22
Total Respondents: 427		



Huntersville Bike Plan- Community Survey

Q5 How comfortable do you currently feel biking in Huntersville?

Answered: 419 Skipped: 9

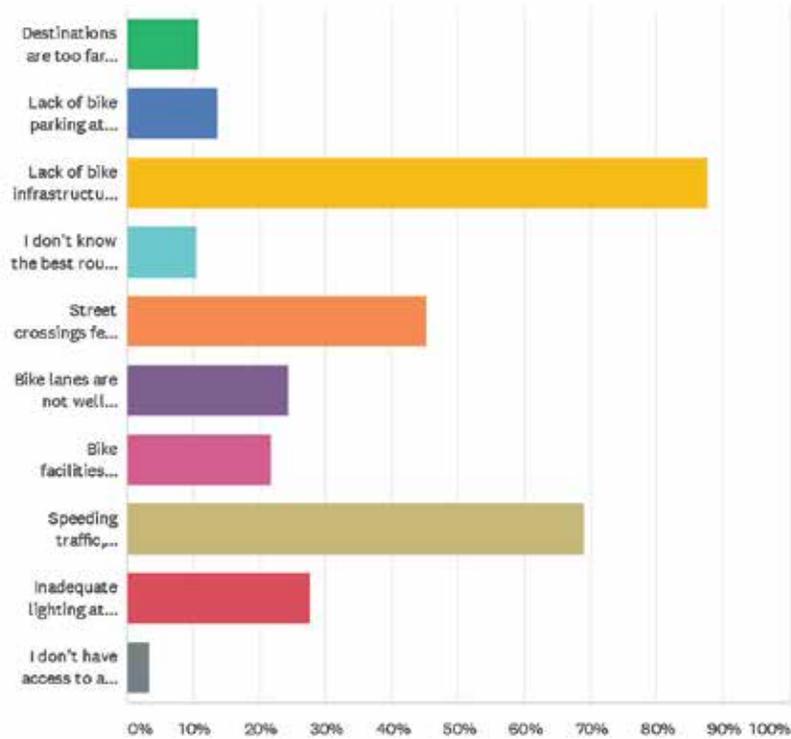


ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	1	450	419
Total Respondents: 419			

Huntersville Bike Plan- Community Survey

Q6 What prevents you from biking more often? (Check all that apply)

Answered: 421 Skipped: 7



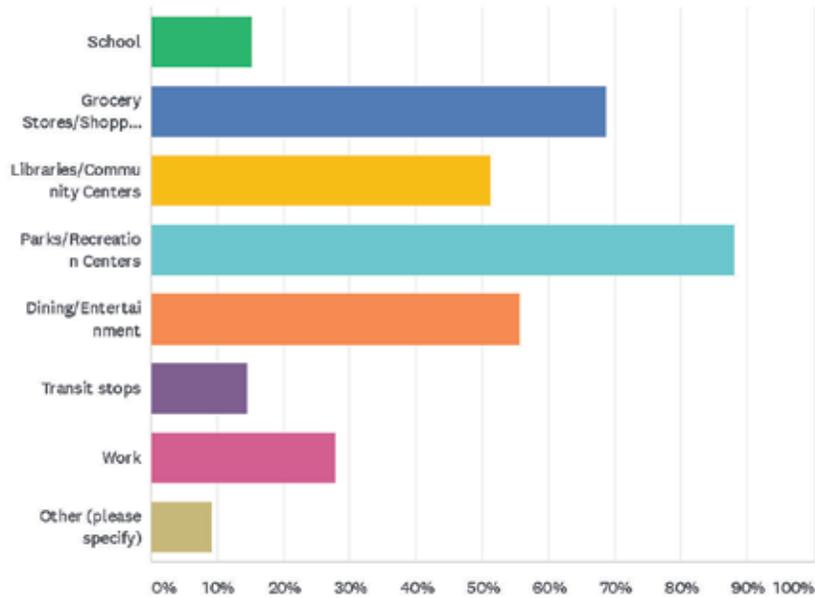
ANSWER CHOICES	RESPONSES	
Destinations are too far away	10.69%	45
Lack of bike parking at destination	13.54%	57
Lack of bike infrastructure (bike lanes, shared use paths, marked shared roadways)	87.65%	369
I don't know the best routes to use	10.45%	44
Street crossings feel unsafe	45.13%	190
Bike lanes are not well maintained	24.23%	102
Bike facilities don't feel safe for riding with children	21.85%	92
Speeding traffic, aggressive drivers	69.12%	291
Inadequate lighting at night	27.55%	116
I don't have access to a bike	3.33%	14
Total Respondents: 421		



Huntersville Bike Plan- Community Survey

Q7 Where would you bike to if safe, comfortable routes were accessible?
(Check all that apply)

Answered: 420 Skipped: 8

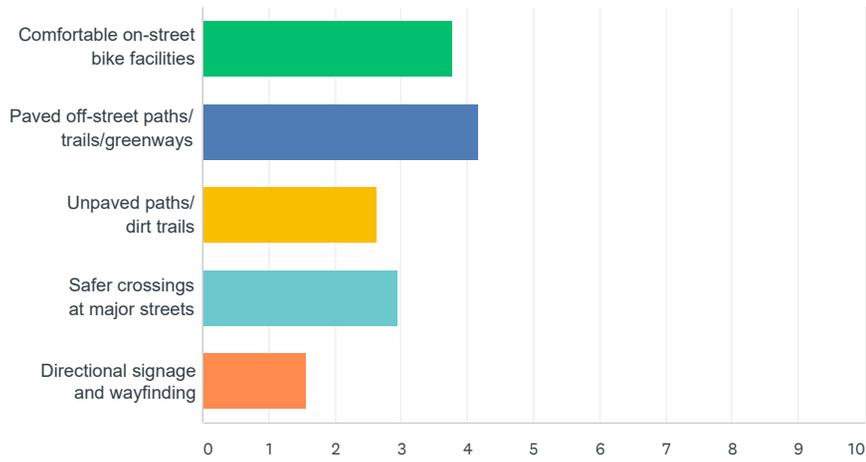


ANSWER CHOICES	RESPONSES	
School	15.24%	64
Grocery Stores/Shopping Centers	68.57%	288
Libraries/Community Centers	51.19%	215
Parks/Recreation Centers	88.10%	370
Dining/Entertainment	55.71%	234
Transit stops	14.52%	61
Work	27.86%	117
Other (please specify)	9.29%	39
Total Respondents: 420		

Huntersville Bike Plan- Community Survey

Q8 What are your top priorities for biking improvements? (Please rank in order of preference.)

Answered: 424 Skipped: 4



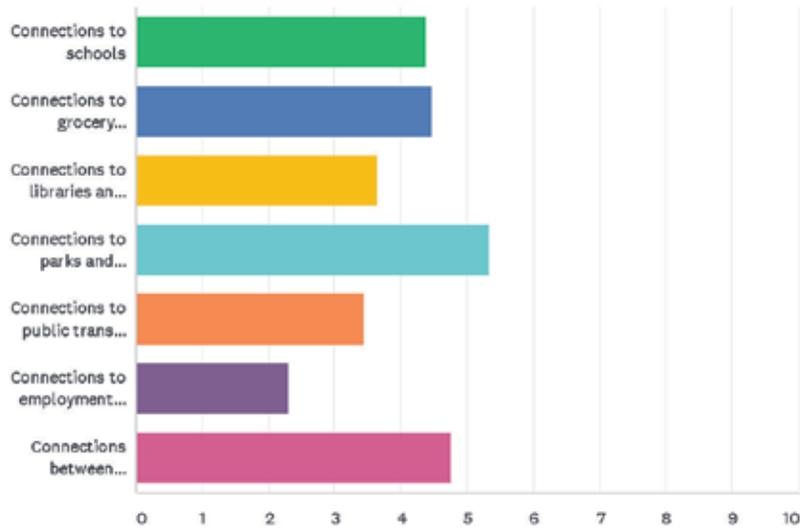
	1	2	3	4	5	TOTAL	SCORE
	38.31% 154	26.12% 105	16.42% 66	12.94% 52	6.22% 25	402	3.77
	47.55% 194	30.88% 126	13.97% 57	6.13% 25	1.47% 6	408	4.17
	6.00% 24	17.75% 71	31.25% 125	24.00% 96	21.00% 84	400	2.64
	8.29% 34	23.90% 98	28.78% 118	32.93% 135	6.10% 25	410	2.95
	1.75% 7	2.49% 10	10.72% 43	20.70% 83	64.34% 258	401	1.57



Huntersville Bike Plan- Community Survey

Q9 Where should the Town prioritize creating bike connections? (Please rank in order of preference.)

Answered: 420 Skipped: 8

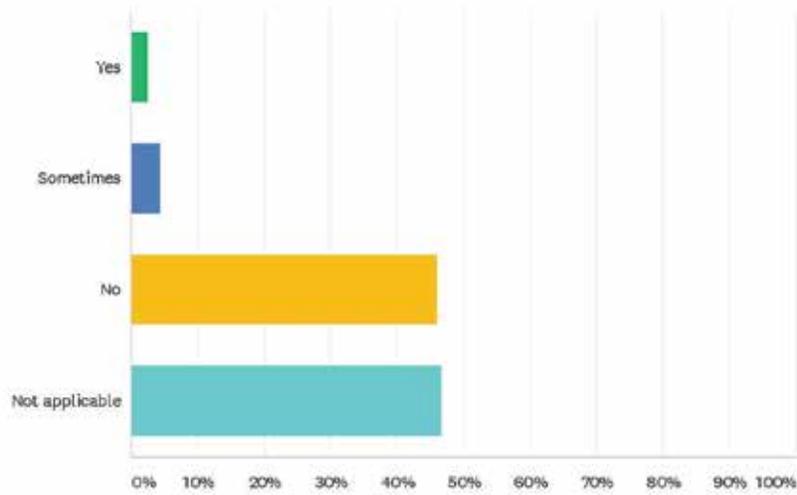


	1	2	3	4	5	6	7	TOTAL	SCORE
Connections to schools	20.21% 78	13.99% 54	14.77% 57	14.51% 56	18.13% 70	8.29% 32	10.10% 39	386	4.38
Connections to grocery stores/shopping centers	16.28% 64	18.32% 72	17.56% 69	17.05% 67	12.47% 49	9.92% 39	8.40% 33	393	4.46
Connections to libraries and community centers	3.60% 14	7.46% 29	19.79% 77	20.82% 81	22.62% 88	19.02% 74	6.68% 26	389	3.65
Connections to parks and recreation centers	31.78% 130	23.96% 98	14.91% 61	15.16% 62	6.85% 28	4.65% 19	2.89% 11	409	5.34
Connections to public transit stops/Park-n-Rides	4.57% 18	10.66% 42	14.47% 57	13.71% 54	19.04% 75	25.89% 102	11.68% 46	394	3.44
Connections to employment centers	3.07% 12	4.86% 19	3.84% 15	9.21% 36	10.74% 42	24.04% 94	44.25% 173	391	2.31
Connections between neighborhoods	24.50% 99	22.28% 90	16.58% 67	9.16% 37	8.17% 33	5.94% 24	13.37% 54	404	4.75

Huntersville Bike Plan- Community Survey

Q10 If you have children, do they bike to school?

Answered: 423 Skipped: 5



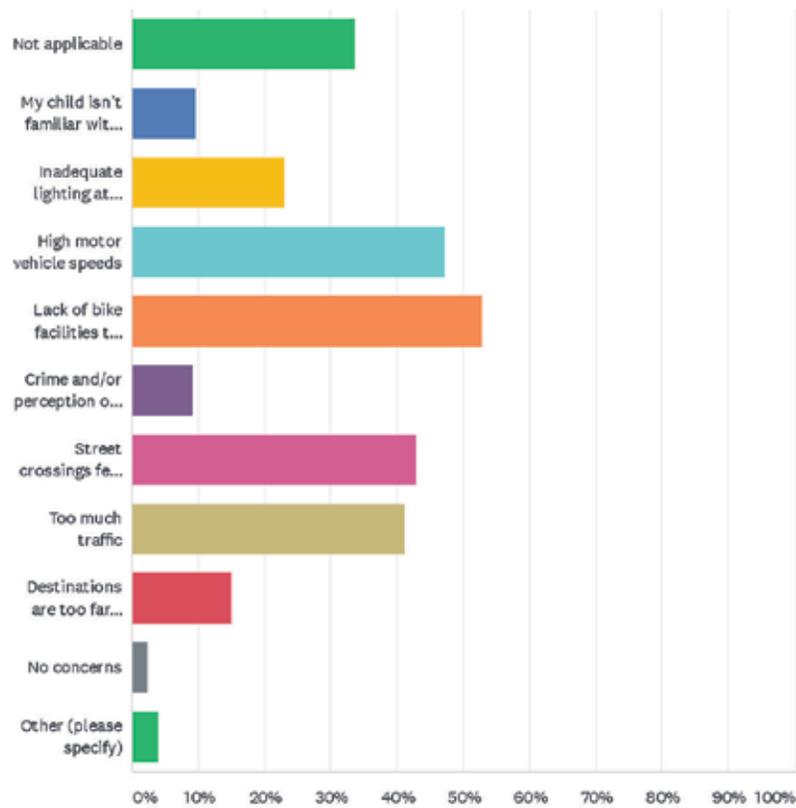
ANSWER CHOICES	RESPONSES	
Yes	2.60%	11
Sometimes	4.49%	19
No	46.10%	195
Not applicable	46.57%	197
TOTAL		423



Huntersville Bike Plan- Community Survey

Q11 Which of the following concerns do you have for your child/children bicycling? (Check all that apply)

Answered: 419 Skipped: 9



A.3. Bicycle Policy + Regulatory Review

Huntersville's regulatory standards and policies were analyzed and compared to model regulatory and policy language from around North Carolina and the U.S. in order to identify areas to improve the regulatory language and enable the Town to maximize on-road bicycle and multi-use trail improvements in conjunction with new development, redevelopment, and corridor improvement projects.

The recommendations are organized into three major categories of "Complete Streets and Greenways", "Bicycle-oriented Urban Design Elements", and "Connectivity." All of the major categories are interrelated, but based on the existing conditions analysis, and the goals of this plan, the following key recommendations from the table below should be implemented first.

Priority Policy and Regulatory Recommendations:

1. Update Subdivision and Engineering Standards to reflect Complete Streets policy in the Zoning Ordinance (Strategies 1.1 – 1.3)
2. Require dedication or reservation of greenway corridors (Strategy 1.5.)
3. Adopt Bicycle Parking requirements and Standards (Strategies 2.1)
4. Revise and update Connectivity requirements (Strategies 3.1 and 3.2)

These approaches will complement other specific capital projects, and education, enforcement, and evaluation recommendations provided elsewhere in this planning document. The full policy and regulatory review continues on the following pages.



Topics/Strategies	Comments/Recommendations	
	Zoning Ordinance	Subdivision Ordinance
Complete Streets and Greenways		
<p>1.1. Implement Complete Streets Policy</p> <p>A complete streets policy allows cities and towns to work towards creating a street network that encourages pedestrian and bicycle travel and provides safe and comfortable roadways for all users.</p> <p>Huntersville has one of the best complete street policy statements of any community in NC. The opportunity for Huntersville is to effectively integrate and coordinate the implementation details, guidance, and standards of such policy in the Subdivision ordinance and the Engineering and Design Standards.</p>	<p>EXCELLENT Complete Streets Statement.</p> <p><i>Streets in Huntersville are to be inviting public space and integral components of community design. A hierarchical street network should have a rich variety of types, including bicycle, pedestrian, and transit routes. All streets should connect to help create a comprehensive network of public areas to allow free movement of automobiles, bicyclists and pedestrians. In order for this street network to be safe for motorists and pedestrians, all design elements must consistently be applied to calm automobile traffic.</i></p> <p>From the Street Design Specifications subsection (page 5-6): <i>Designs should permit comfortable use of the street by motorists, pedestrians, and bicyclists. Pavement widths, design speeds, and the number of motor travel lanes should be minimized to enhance safety for motorists and non-motorists alike.</i></p>	<p>Not addressed directly.</p>
<p>1.2 Develop Complete Street Design Guidelines for a variety of contexts and all street/roadway user groups</p> <p>The subsections below include recommendations for bicycle-related elements of Complete Streets. Designated bikeways and trails and end-of trip facilities such as bicycle parking are some most fundamental elements of Complete Streets for bicycle users. Access management, multi-modal level of service assessments, and traffic calming are also critical for developing complete street networks through the development review and capital project implementation process.</p> <p>The NCDOT <i>Complete Street Guidelines</i> and the design guidelines that accompany this plan also include detailed recommendations on complete street design elements.</p>	<p>Good. However, could be improved to provide more types of bikeways as specified in the Bike Plan Update recommendations. Currently, Article 5, Street Design Specifications, only shows wide outside lanes and bike lanes on some sections.</p>	<p>Not addressed. (Only right of way widths are addressed in the Subdivision Ordinance.)</p>

Comments/Recommendations	
Engineering + Design Standards	General Recommendations
<p>Consider adding as acceptable references for street design:</p> <ul style="list-style-type: none"> - <i>NCDOT Complete Street Implementation Guide</i> - <i>NCDOT Complete Streets Policy Guidance memo</i> - <i>NCDOT Roadway Design Manual</i> - <i>NCDOT Complete Streets Planning and Design Guidelines</i> - <i>NCDOT Traditional Neighborhood Street Design Guidelines</i> - FHWA Bikeway Selection Guide - FHWA Separated Bike Lane Guide - <i>AASHTO Guide for the Design of Bicycle Facilities (latest edition; in the process of being updated at time of plan adoption.)</i> - <i>NACTO Urban Street Design Guide</i> - NACTO Urban Bikeway Design Guide - <i>Other State and national guidance, as relevant</i> 	<p>In addition to the very thorough NCDOT’s Complete Streets Policy documents and Complete Streets Planning and Design Guidelines*, Smart Growth America provides great resources for designing streets that cater to all users, including a best practices guide co-authored with APA.</p> <p>(*NCDOT’s Planning & Design Guidelines were developed to provide planners, designers and decision makers with a framework for evaluating and incorporating various design elements into transportation projects and processes.</p> <p>For NCDOT’s policy on implementation and funding of Complete Streets, see NCDOT’s 2019 Complete Streets Policy Guidance memo and the NCDOT Complete Street Implementation Guide and NCDOT Roadway Design Manual.)</p>
<p>Good. However, could be improved to provide more types of bikeways. Currently, bike lanes are the only type of bikeway included.</p>	<p>Huntersville could adopt and endorse the NCDOT guidelines and other national guidelines, including the NACTO Urban Bikeway Design Guide.</p> <p>The design guidelines would then need to be integrated into subdivision and zoning standards for new development, as was done with the Raleigh Street Design Manual and the Charlotte Urban Street Design Guidelines.</p>



Topics/Strategies	Comments/Recommendations	
	Zoning Ordinance	Subdivision Ordinance
<p>1.3. Require bike accommodations by road-way type</p>	<p>Needs improvement.</p> <p>Bike lanes or wide outside lanes are shown on some street typologies.</p> <p>The range of bikeway types should be expanded and specified based on the types of bikeways recommended in this plan and the plan’s design guidance.</p> <p>Also, the street typology – from nomenclature to design guidance – is not consistent with the Engineering and Design Standards in terms of lane widths, bikeway typologies, or dimensions.</p> <p>The street sections show a number of inappropriate elements for bikeway design:</p> <ol style="list-style-type: none"> 1. The Boulevard section shows wide outside lanes for bicycling, which is no longer considered an appropriate treatment for this type of street. 2. The Commercial Town street shows a wide outside lane on one side of the street, which appears to indicate that bikeway provisions are optional. 3. The Residential Town Street shows a 4 ft bike lane next to parked cars, which is counter to best practice and national guidance. Typically, a bike lane of 5-6 ft should be provided next to parked cars and the wider dimension is preferred. 	<p>Not addressed.</p>
<p>1.4. Require designated bikeways (bike lanes, shoulders, greenways, etc) during new development or redevelopment or capital projects.</p>	<p>Needs Improvement.</p> <p>Bike lanes are shown on some street sections, but it is not clear if it is optional or required in all cases.</p>	<p>Not addressed.</p>

Comments/Recommendations	
Engineering + Design Standards	General Recommendations
<p>Good, but could be improved.</p> <p>Bike lanes are required on collector streets (only). Requirements for arterial streets are not addressed.</p> <p>The range of bikeway types should be expanded and specified based on the types of bikeways consistent with the Zoning Ordinance and as recommended in this plan and the plan’s design guidance.</p> <p>The Engineering Standard sections and the sections in the Zoning Ordinance need to be consistent.</p>	<p>The design guidelines recommended as part of the Huntersville Bicycle Plan Update could be incorporated or included by reference in the City’s Engineering and Design Standards and Subdivision Ordinance.</p> <p>NACTO <i>Urban Bikeway Design Guide</i> provides additional design details for various on-street bikeway treatments and could be adopted by reference in the ordinance and/or the Engineering Standards. Many cities have taken this approach: http://nacto.org/cities-for-cycling/design-guide/</p> <p>See also the 2019 FHWA <i>Bikeway Selection Guide</i> and other current bikeway design guidance by AASHTO and NCDOT.</p>
<p>Needs Improvement.</p> <p>Collector street standards include bike lanes. However, the standards only require 4 ft bike lanes, when required. State of the practice and national guidance recommends bike lanes of at least 5 ft and as wide as 6.5 ft to provide additional horizontal separation and comfort for cyclists.</p> <p>Per NCDOT Complete Street guidance, travel lane widths can be as little as 10 ft. (currently specified as 11 ft per Town standards). The Town’s Zoning Ordinance also show’s 10 ft lanes on most street types.</p>	<p>Generally, as traffic volumes exceed 3,000 vehicles per day and traffic speeds exceed 25mph, facilities to separate bicycle and motor vehicle traffic are recommended.</p> <p>See Chapter 4 of the NCDOT <i>Complete Streets Planning and Design Guidelines</i> for examples of facility types by roadway context.</p> <p>Also, see: Chapter 6 of Wake Forest, NC UDO for recommendations for bikeways and greenways, esp. sections 6.8.2, 6.9, 6.10. Chapter 7 of the Wilson, NC UDO regarding greenways.</p>



Topics/Strategies	Comments/Recommendations	
	Zoning Ordinance	Subdivision Ordinance
1.5. Require dedication, reservation or development of greenways	<p>Good, but could be improved. Greenways are not addressed in detail, but are included in types of Open Space in Article 7.</p> <p>An incentive for greenway dedication is included in Article 7: <i>“Greenways dedicated to the Town/County as identified on the adopted greenway plan will be counted toward tree save area, if relevant.”</i></p>	<p>Could be improved. Greenways are not addressed in detail.</p> <p>Section 6.2.1, Consistency with Adopted Plans and Policies, does require consistency “with the most recently adopted public plans. . .”.</p> <p>Section 6.2.11, Public School and Public Park Sites, does require a subdivider to “reserve”, but not dedicate or construct publicly adopted greenway corridors. The section presumes that reserved areas will typically be purchased by implementing agencies.</p>
1.6. Require new bike lanes, greenways, etc., to connect to existing facilities	<p>Good.</p> <p>From Article 7 Subsection 13.1(m):</p> <p><i>All roadside footpaths should connect with off-road trails, which in turn should link with potential open space on adjoining undeveloped parcels (or with existing open space on adjoining developed parcels, where applicable).</i></p>	<p>Not addressed.</p> <p>Needs improvement</p>

Comments/Recommendations	
Engineering + Design Standards	General Recommendations
<p>Needs Improvement. No greenway design specifications are included.</p> <p>At a minimum, greenway design should be consistent with Mecklenburg County standards for consistency and future maintenance.</p>	<p>Consider expanding requirements for greenway reservation, dedication, or provision in new developments where a greenway or trail is shown on an adopted plan or where a property connects to an existing or proposed greenway.</p> <p>See requirements in Wake Forest, NC UDO Chapter 6, Section 6.8.2 Greenways: <i>“When required by Wake Forest Open Space & Greenways Plan or the Wake Forest Transportation Plan, greenways and multi-use paths shall be provided according to the provisions [that follow in the section cited above].”</i></p> <p>Where greenway construction cannot politically or legally be required, consider offering additional incentives in the form of reduced fees, cost sharing, density bonuses, or reduction in other open space requirements when adopted greenways are constructed through private development.</p> <p>For additional examples of incentives, see also: https://www.law.ufl.edu/_pdf/academics/centers-clinics/clinics/conservation/resources/incentive_strategies.pdf</p>
<p>Not addressed.</p> <p>Needs improvement</p>	<p>Connectivity of facilities is critical for walking and biking conditions. New development should be required to connect to or extend existing facilities bicycle and pedestrian facilities.</p> <p>See:</p> <ul style="list-style-type: none"> • Chapter 6 of Wake Forest, NC UDO for recommendations for bikeways and greenways, esp. sections 6.5.3, 6.8.2, 6.9, 6.10. • Chapter 7 of the Wilson, NC UDO regarding greenways.



Topics/Strategies	Comments/Recommendations	
	Zoning Ordinance	Subdivision Ordinance
<p>1.7. Consider bicycle concerns and Level of Service (LOS) in Traffic Impact Analyses and other engineering studies</p>	<p>Needs improvement No specific guidelines for bicycle or pedestrian LOS analysis or mitigation are included in the detailed TIA requirements and procedures included in Article 14 or the manual below.</p> <p>TIA Process and Procedures Manual.</p>	<p>Not addressed</p>
<p>1.8. Adopt traffic calming programs, policies, and standards</p> <p>Traffic calming on local streets increases safety and comfort for all roadway users, including cyclists. It also increases neighborhood livability.</p>	<p>Good.</p> <p>From the Streets chapter:</p> <p><i>“Design speeds should not exceed 30 miles per hour on any neighborhood street. Only arterials and town boulevards may exceed this design speed.”</i></p> <p>This chapter should also reference the Town’s excellent Neighborhood Traffic Calming Policy.</p>	<p>Good. But more specific details are needed, including references to the Town’s traffic calming policy.</p> <p><i>6.2.7. Discourage through traffic. Methods to discourage high volume, high speed through traffic should consider street geometry, intersection design, and other traffic calming measures.</i></p>

Comments/Recommendations	
Engineering + Design Standards	General Recommendations
<p>Not addressed.</p>	<p>Huntersville should consider adopting multi-modal of service standards where active transportation and transit use are expected to be high. Consideration of bicycle and pedestrian levels of service assure adequate facilities for bicyclists and pedestrians in new development and capital improvements. This also helps promote walking and bicycling as a legitimate means of transportation.</p> <p>The NCDOT Complete Streets Planning and Design Guidelines provides factors of “Quality of Service “ and LOS for bicycle, pedestrian, and transit modes (See Chapter 3, page 39 and Chapter 5).</p> <p>The City of Raleigh’s Street Design Manual uses multimodal level of service approach in determining road improvements and traffic mitigation.</p> <p>Charlotte, NC uses Pedestrian LOS and Bicycle LOS Methodologies for intersection improvements in their Urban Street Design Guidelines.</p>
<p>Very Good.</p> <p>Huntersville has an excellent neighborhood traffic calming policy that is a great model for other communities. The traffic calming measures can be used to enhance bike boulevard treatments in the community.</p> <p>The designs in this policy should be referenced and specifications for various traffic calming measures can be included in the Engineering Manual.</p>	<p>FHWA has developed a comprehensive Traffic Calming ePrimer.</p> <p>See also the NACTO <i>Urban Bikeway Design Guide</i> section on Bicycle Boulevards, which includes traffic calming measures.</p>



Topics/Strategies	Comments/Recommendations	
	Zoning Ordinance	Subdivision Ordinance
Bicycle-oriented Urban Design Elements		
2.1. Adopt bicycle parking requirements	<p>Needs Improvement</p> <p>From Article 6:</p> <p><i>Bicycle Parking</i> <i>All non-residential buildings should include an area for parking bicycles. This area may be a designated parking space within the parking lot near the building or an area outside the parking lot adjacent to the building. The bike parking area must include a bike rack with locking area.</i></p> <p>The current standards do not include enough detail on the amount, location, or types of bicycle parking to be provided. The Engineering Manual includes specifications for long term (lockers) and short term (racks) bike parking. The Zoning Ordinance should specify under what conditions each should be used and how much bicycle parking should be provided.</p>	Not addressed.

Comments/Recommendations	
Engineering + Design Standards	General Recommendations
<p>Good, but some changes necessary.</p> <p>The Engineering Standards includes specifications for inverted-U racks, wave racks, and bike lockers.</p> <p>This plan suggests that wave racks not be allowed as they do not provide adequate security, capacity, or balance for bicycles.</p> <p>Consider performance standards for bike parking.</p>	<p>Bicycles should receive equal consideration when calculating parking needs with specific calculations provided for determining the amount of bicycle parking provided by district type. Design and location standards for bicycle parking should be clearly stated to provide for safe and convenient access to destinations. Different standards of bicycle parking are needed for short-term visitors and customers and for longer term users like employees, residents, and students.</p> <p>See City of Wilson UDO, Chapter 9: Parking & Driveways, Section 9.4 and 9.6.</p> <p>The City of Charlotte has excellent standards for long-term and short-term bicycle parking in its Zoning Ordinance.</p> <p>Bicycle Parking Model Ordinance, Change Lab Solutions.</p>



Topics/Strategies	Comments/Recommendations	
	Zoning Ordinance	Subdivision Ordinance
Connectivity Requirements		
<p>3.1. Revise block size requirements</p> <p><i>"[A] Good [street] network provides more direct (shorter) routes for bicyclists and pedestrians to gain access to the thoroughfares and to the land uses along them (or allows them to avoid the thoroughfare altogether). Likewise, good connections can also allow short-range, local [motor] vehicular traffic more direct routes and access, resulting in less traffic and congestion on the thoroughfares. This can, in turn, help make the thoroughfare itself function as a better, more complete street. For all of these reasons, a complete local street network should generally provide for multiple points of access, short block lengths, and as many connections as possible."</i> (NCDOT Complete Streets Planning and Design Guidelines, p 59)</p>	<p>Good.</p> <p><i>From Streets chapter Summary: "Blocks Street blocks defined by public streets are the fundamental design elements of traditional neighborhoods. In urban conditions, any dimension of a block may range from 250 to 500 linear feet between cross streets."</i></p> <p><i>Permitted block sizes range from 250 to 1500 feet, depending on development type.</i></p>	<p>Good.</p> <p><i>7.180 BLOCK LENGTHS AND WIDTHS Block lengths may generally not exceed 500 feet, except as hereinafter provided. Where a longer block will reduce the number of railroad grade crossings, major stream crossings, or where longer blocks will result in an arrangement of lots and public space more consistent with Articles 5 and 7 of the Huntersville Zoning Ordinance, the Town Board may authorize greater block lengths.</i></p>
<p>3.2. Limit dead end streets or cul-de-sacs</p> <p>Dead end streets or Cul-de-sacs, while good at limiting motor vehicular traffic in an area, are a severe hindrance pedestrian and bicycle connectivity and over all neighborhood accessibility, including for emergency access and other services.</p>	<p>Not addressed.</p>	<p>Good.</p> <p><i>7.150 CUL-DE-SAC Cul-de-sacs (streets designed to be permanently closed at one end), may not be longer than 350 feet and must be terminated by a vehicular turnaround design as accepted by the Town Engineering Department; provided, however, that this requirement may be waived where topographical or other unusual conditions exist.</i></p>

Comments/Recommendations	
Engineering + Design Standards	General Recommendations
<p>Good.</p> <p><i>Minimum distance between intersections is 350 ft unless otherwise stated by Zoning Ordinance. Could be as little as 200 feet in more walkable districts to promote connectivity, which is beneficial for bicycling and other modes.</i></p>	<p>Huntersville has good minimum dimensions for block size, however, the various design/regulatory manuals are not wholly consistent.</p> <p>Development density should determine the length of a block, with shorter blocks being more appropriate in areas of higher density. Maximum block length in any situation should rarely exceed 800-1000 feet for good connectivity. In areas with highest development density (urbanized, mixed use centers and high density neighborhoods) block lengths can be as little as 200 feet. In areas with blocks as long as 800 feet or greater, a pedestrian and/or bicycle path of 6-8 feet in width should be required, with an easement of 15-20 feet wide.</p> <p>See the example table on page 59 of the NCDOT <i>Complete Streets Planning and Design Guidelines</i> for a context-based approach to block size.</p> <p>Requiring connectivity or cross-access between adjacent developments is a great tool for reducing the amount of traffic on major roads while increasing connectivity for pedestrians, bicycles, service vehicles, and neighborhood access.</p> <p>For good model language, see City of Wilson, NC UDO, Section 6.4: Connectivity.</p> <p>Or City of Wake Forest, NC UDO, Section 6.5, Connectivity.</p> <p>Both codes above also provide requirements for when bicycle/pedestrian connections between parcels, public open space, and between cul-de-sacs is required.</p>
<p>Not addressed.</p>	<p>Provide quantifiable connectivity standards (see above) based on land use context and other guidelines for when cul-de-sacs would be allowed.</p> <p>For good model language, see City of Wilson, NC UDO, Section 6.4: Connectivity.</p> <p>Or City of Wake Forest, NC UDO, Section 6.5, Connectivity.</p>



Topics/Strategies	Comments/Recommendations		
	Zoning Ordinance	Subdivision Ordinance	
Resources			
<p>The documents noted in the columns to the right were referenced for this policy and regulatory review.</p> <p>Other references for best practices are listed in the column on the far right.</p>	<p>Town of Huntersville Zoning Ordinance:</p>	<p>Town of Huntersville Subdivision Ordinance.</p>	

Comments/Recommendations	
Engineering + Design Standards	General Recommendations
<p>Engineering Standards and Procedures Manual, Town of Huntersville</p> <p>Neighborhood Traffic Calming Policy.</p>	<p>REFERENCED DOCUMENTS AND OTHER RESOURCES:</p> <ol style="list-style-type: none"> 1. NCDOT Complete Streets Policy Memo and Implementation Guide (2019) and NCDOT Roadway Design Manual. 2. NCDOT Complete Streets Planning and Design Guidelines (July 2012 ; reference for planning and process only. This document is superseded by subsequent NCDOT Complete Streets policy guidance where noted): 3. NCDOT Traditional Neighborhood Development (TND) Guidelines. 4. City of Wilson, NC UDO. 5. Town of Wendell, NC UDO. 6. City of Wake Forest, NC UDO. 7. See Town of Davidson, NC Planning Ordinance. 8. Association of Pedestrian and Bicycle Professionals' Bicycle Parking Guidelines. (www.apbp.org) 9. Making Neighborhoods More Walkable and Bikeable, ChangeLab Solutions. 10. Getting the Wheels Rolling: A Guide to Using Policy to Create Bicycle Friendly Communities, ChangeLab Solutions <p>And other documents noted in this column in the rows above.</p>



A.4. Detailed Cost Estimates for Priority Projects

ITEM NO.			ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
LINE NO.	DESC. NO.	SECT. NO.					
ROADWAY ITEMS							
0001	0000100000-N	800	MOBILIZATION	1	LS	\$35,900.00	\$35,900.00
	0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$10,000.00	\$10,000.00
	0043000000-N	226	GRADING	1	LS	\$193,850.00	\$193,850.00
	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	60	LF	\$120.00	\$7,200.00
	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	60	TON	\$225.00	\$13,500.00
	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	5	TON	\$1,000.00	\$5,000.00
	2220000000-E	838	REINFORCED ENDWALLS	5	CY	\$2,000.00	\$10,000.00
	2605000000-N	848	CONCRETE CURB RAMP	6	EA	\$3,000.00	\$18,000.00
	3360000000-E	863	REMOVE EXISTING GUARDRAIL	45	LF	\$15.00	\$675.00
	3420000000-E	SP	GENERIC GUARDRAIL ITEM (METAL SAFETY RAIL)	180	LF	\$75.00	\$13,500.00
	4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$40,000.00	\$40,000.00
	6000000000-E	1605	TEMPORARY SILT FENCE	840	LF	\$4.00	\$3,360.00
	6012000000-E	1610	GENERIC PAVING ITEM GRAVEL SURFACE	90	TON	\$45.00	\$4,050.00
WALL ITEMS							
	8801000000-E	SP	MSE RETAINING WALL NO ****	200	SF	\$150.00	\$30,000.00

	SUBTOTAL	\$385,035.00
MINOR ITEMS	10%	\$38,503.50
CONSTRUCTION SUBTOTAL		\$423,538.50
INFLATION FACTOR 2 Years	5%	\$43,412.70
CONSTRUCTION COST (2022)		\$466,951.20
CONTINGENCIES	20%	\$93,390.24
UTILITIES		\$0.00
ESTIMATED CONTRACT COST (2022)		\$560,341.44
E. & C.	10%	\$56,034.14
CONSTRUCTION COST (2022)		\$616,375.58
SAY		\$617,000.00

NOTE: E&C IS AN NCDOT ITEM AND WILL BE REQUIRED ONLY IF THE PROJECT IS FUNDED BY NCDOT
 OFF-STREET TRAIL TYPICAL SECTION CONSIST OF 10 TO 12-FEET WIDE PATH WITH 2-FEET SHOULDERS.
 REAL ESTATE COST IS NOT INCLUDED.

COMPUTED BY JM
 DATE 7/23/2020

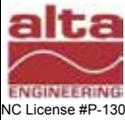
	PLANNING COST ESTIMATE
NC License #P-1301	
DESCRIPTION AND LOCATION: 10-FOOT WIDE SIDEPATH ON THE LEFT SIDE OF STUMPTOWN RD. FROM HUGH TORANCE PKWY. TO OLD STATESVILLE RD.	
HUNTERSVILLE	
TIP: N/A	COUNTY: MECKLENBURG
WBS NUMBER: N/A	DIVISION: N/A

ITEM NO.			ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
LINE NO.	DESC. NO.	SECT. NO.					
ROADWAY ITEMS							
0001	0000100000-N	800	MOBILIZATION	1	LS	\$132,900.00	\$132,900.00
	0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$40,000.00	\$40,000.00
	0043000000-N	226	GRADING	1	LS	\$290,250.00	\$290,250.00
	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	6312	LF	\$100.00	\$631,200.00
	1489000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0B	1020	TON	\$120.00	\$122,400.00
	1498000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	450	TON	\$180.00	\$81,000.00
	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	15	EA	\$3,500.00	\$52,500.00
	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE **	15	EA	\$750.00	\$11,250.00
	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	7550	LF	\$35.00	\$264,250.00
	2591000000-E	848	4" CONCRETE SIDEWALK	8730	SY	\$60.00	\$523,800.00
	2605000000-N	848	CONCRETE CURB RAMP	24	EA	\$3,000.00	\$72,000.00
	3420000000-E	SP	GENERIC GUARDRAIL ITEM (METAL SAFETY RAIL)	480	LF	\$75.00	\$36,000.00
	4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$88,600.00	\$88,600.00
	4520000000-N	1266	TUBULAR MARKERS (FIXED)	13	EA	\$75.00	\$975.00
	4686000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	1245	LF	\$1.65	\$2,054.25
	4690000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (6", 120 MILS)	780	LF	\$2.15	\$1,677.00
	4702000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 120 MILS)	65	LF	\$6.00	\$390.00
	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	2	EA	\$300.00	\$600.00
	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	1520	LF	\$2.00	\$3,040.00
	5672000000-N	1515	RELOCATE FIRE HYDRANT	2	EA	\$4,000.00	\$8,000.00
	6000000000-E	1605	TEMPORARY SILT FENCE	7860	LF	\$4.00	\$31,440.00
		SP	GENERIC SIGNAL ITEM (MODIFY EXISTING SIGNAL)	1	LS	\$30,000.00	\$30,000.00
STRUCTURE ITEMS							
	8482000000-E	460	THREE BAR METAL RAIL	345	LF	\$150.00	\$51,750.00

	SUBTOTAL	\$2,343,176.25
MINOR ITEMS	10%	\$234,317.63
CONSTRUCTION SUBTOTAL		\$2,577,493.88
INFLATION FACTOR 2 Years	5%	\$264,193.12
CONSTRUCTION COST (2022)		\$2,841,687.00
CONTINGENCIES	20%	\$568,337.40
UTILITIES		\$150,000.00
ESTIMATED CONTRACT COST (2022)		\$3,560,024.40
E. & C.	10%	\$356,002.44
CONSTRUCTION COST (2022)		\$3,916,026.84
	SAY	\$3,917,000.00

NOTE: E&C IS AN NCDOT ITEM AND WILL BE REQUIRED ONLY IF THE PROJECT IS FUNDED BY NCDOT
 SIDEPATH TYPICAL SECTION CONSIST OF 5 TO 8-FOOT PLANTING STRIP AND 10-FOOT WIDE PATH WITH 2-FOOT SHOULDERS.
 REAL ESTATE COST IS NOT INCLUDED.

COMPUTED BY JM
 DATE 7/23/2020



PLANNING COST ESTIMATE

NC License #P-1301

DESCRIPTION AND LOCATION: PROTECTED BIKE LANES ON BOTH SIDES OF REESE BLVD. FROM THE REESE BLVD LOOP TO MT. HOLLY-HUNTERSVILLE RD AND 10-FOOT WIDE SIDEPATH ALONG THE RIGHT SIDE OF MT. HOLLY-HUNTERSVILLE RD FROM REESE BLVD. TO OLD STATESVILLE RD.

HUNTERSVILLE

TIP: N/A COUNTY: MECKLENBURG DIVISION: N/A

WBS NUMBER: N/A

ITEM NO.			ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
LINE NO.	DESC. NO.	SECT. NO.					
ROADWAY ITEMS							
0001	0000100000-N	800	MOBILIZATION	1	LS	\$134,800.00	\$134,800.00
	0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$30,000.00	\$30,000.00
	0043000000-N	226	GRADING	1	LS	\$398,400.00	\$398,400.00
	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	4500	LF	\$100.00	\$450,000.00
	1489000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0B	810	TON	\$120.00	\$97,200.00
	1498000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	360	TON	\$180.00	\$64,800.00
	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	15	EA	\$3,500.00	\$52,500.00
	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE **	15	EA	\$750.00	\$11,250.00
	2542000000-E	846	1'-6" CONCRETE CURB & GUTTER	240	LF	\$30.00	\$7,200.00
	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	5970	LF	\$35.00	\$208,950.00
	2591000000-E	848	4" CONCRETE SIDEWALK	6640	SY	\$60.00	\$398,400.00
	2605000000-N	848	CONCRETE CURB RAMP	13	EA	\$3,000.00	\$39,000.00
	2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	30	SY	\$80.00	\$2,400.00
	3420000000-E	SP	GENERIC GUARDRAIL ITEM (METAL SAFETY RAIL)	1000	LF	\$75.00	\$75,000.00
	4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$89,900.00	\$89,900.00
	4520000000-N	1266	TUBULAR MARKERS (FIXED)	161	EA	\$75.00	\$12,075.00
	4686000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	4660	LF	\$1.65	\$7,689.00
	4690000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (6", 120 MILS)	9640	LF	\$2.15	\$20,726.00
	4702000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 120 MILS)	775	LF	\$6.00	\$4,650.00
	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	16	EA	\$300.00	\$4,800.00
	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	7240	LF	\$2.00	\$14,480.00
	5672000000-N	1515	RELOCATE FIRE HYDRANT	2	EA	\$4,000.00	\$8,000.00
	6000000000-E	1605	TEMPORARY SILT FENCE	5970	LF	\$4.00	\$23,880.00
WALL ITEMS							
	8801000000-E	SP	MSE RETAINING WALL NO ****	2400	SF	\$120.00	\$288,000.00
STRUCTURE ITEMS							
	8482000000-E	460	THREE BAR METAL RAIL	380	LF	\$150.00	\$57,000.00

	SUBTOTAL	\$2,501,100.00
MINOR ITEMS	10%	\$250,110.00
CONSTRUCTION SUBTOTAL		\$2,751,210.00
INFLATION FACTOR 2 Years	5%	\$281,999.03
CONSTRUCTION SUBTOTAL COST (2022)		\$3,033,209.03
CONTINGENCIES	20%	\$606,641.81
UTILITIES		\$105,000.00
ESTIMATED CONTRACT COST (2022)		\$3,744,850.83
E. & C.	10%	\$374,485.08
CONSTRUCTION COST (2022)		\$4,119,335.91
SAY		\$4,120,000.00

NOTE: E&C IS AN NCDOT ITEM AND WILL BE REQUIRED ONLY IF THE PROJECT IS FUNDED BY NCDOT

SIDEPATH TYPICAL SECTION CONSIST OF 8-FOOT PLANTING STRIP AND 10-FOOT WIDE PATH WITH 2-FOOT SHOULDERS.

REAL ESTATE COST IS NOT INCLUDED.

COMPUTED BY JM

DATE 7/27/2020

	PLANNING COST ESTIMATE
NC License #P-1301	
DESCRIPTION AND LOCATION: <u>10-FEET WIDE SIDEPATH ALONG HUNTERSVILLE-CONCORD ROAD FROM THE HUNTERSVILLE TOWN OFFICE TO ASBURY CHAPEL ROAD HUNTERSVILLE</u>	
TIP: <u>N/A</u>	COUNTY: <u>MECKLENBURG</u> DIVISION: <u>N/A</u>
WBS NUMBER: <u>N/A</u>	

ITEM NO.			ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
LINE NO.	DESC. NO.	SECT. NO.					
ROADWAY ITEMS							
0001	0000100000-N	800	MOBILIZATION	1	LS	\$274,400.00	\$274,400.00
	0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$70,000.00	\$70,000.00
	0043000000-N	226	GRADING	1	LS	\$542,200.00	\$542,200.00
	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	7144	LF	\$100.00	\$714,400.00
	0402000000-E	310	48" RC PIPE CULVERTS, CLASS III	20	LF	\$200.00	\$4,000.00
	1489000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0B	1450	TON	\$120.00	\$174,000.00
	1498000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	640	TON	\$180.00	\$115,200.00
	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	15	TON	\$600.00	\$9,000.00
	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	25	EA	\$3,500.00	\$87,500.00
	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE **	25	EA	\$750.00	\$18,750.00
	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	10470	LF	\$35.00	\$366,450.00
	2591000000-E	848	4" CONCRETE SIDEWALK	15500	SY	\$60.00	\$930,000.00
	2605000000-N	848	CONCRETE CURB RAMP	31	EA	\$3,500.00	\$108,500.00
	2738100000-E	SP	GENERIC PAVING ITEM APPLIED SYNTHETIC SURFACE TREATMENT	2538	SF	\$30.00	\$76,140.00
	3420000000-E	SP	GENERIC GUARDRAIL ITEM (METAL SAFETY RAIL)	1410	LF	\$75.00	\$105,750.00
		SP	RAILROAD CROSSING	1	LS	\$250,000.00	\$250,000.00
	4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$183,000.00	\$183,000.00
	5672000000-N	1515	RELOCATE FIRE HYDRANT	7	EA	\$4,000.00	\$28,000.00
	6000000000-E	1605	TEMPORARY SILT FENCE	14655	LF	\$4.00	\$58,620.00
WALL ITEMS							
	8801000000-E	SP	MSE RETAINING WALL NO ****	8200	SF	\$120.00	\$984,000.00

	SUBTOTAL	\$5,099,910.00
MINOR ITEMS	5%	\$254,995.50
CONSTRUCTION SUBTOTAL		\$5,354,905.50
INFLATION FACTOR 2 Years	5%	\$548,877.81
CONSTRUCTION COST (2022)		\$5,903,783.31
CONTINGENCIES	20%	\$1,180,756.66
UTILITIES		\$315,000.00
ESTIMATED CONTRACT COST (2022)		\$7,399,539.98
E. & C.	10%	\$739,954.00
CONSTRUCTION COST (2022)		\$8,139,493.97
	SAY	\$8,140,000.00

NOTES: E&C IS AN NCDOT ITEM AND WILL BE REQUIRED ONLY IF THE PROJECT IS FUNDED BY NCDOT

SIDEPATH TYPICAL SECTION CONSIST OF 5-FEET PLANTING STRIP AND 10-FEET WIDE PATH WITH 2-FEET SHOULDERS.

REAL ESTATE COST IS NOT INCLUDED.

COMPUTED BY JM
DATE 7/23/2020



		<h2>PLANNING COST ESTIMATE</h2>	
NC License #P-1301		DESCRIPTION AND LOCATION: <u>10-FOOT WIDE SIDEPATH ALONG THE LEFT SIDE OF MCCOY ROAD FROM HAMBRIGHT RD. TO GILEAD RD</u>	
TIP: <u>HUNTERSVILLE</u>		COUNTY: <u>MECKLENBURG</u>	DIVISION: <u>N/A</u>
WBS NUMBER: <u>N/A</u>			

ITEM NO.			ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
LINE NO.	DESC. NO.	SECT. NO.					
ROADWAY ITEMS							
0001	0000100000-N	800	MOBILIZATION	1	LS	\$150,800.00	\$150,800.00
	0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$40,000.00	\$40,000.00
	0043000000-N	226	GRADING	1	LS	\$390,150.00	\$390,150.00
	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	8386	LF	\$100.00	\$838,600.00
	1489000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0B	1120	TON	\$120.00	\$134,400.00
	1498000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	490	TON	\$180.00	\$88,200.00
	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	20	EA	\$3,500.00	\$70,000.00
	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE **	20	EA	\$750.00	\$15,000.00
	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	8270	LF	\$35.00	\$289,450.00
	2591000000-E	848	4" CONCRETE SIDEWALK	9190	SY	\$60.00	\$551,400.00
	2605000000-N	848	CONCRETE CURB RAMP	14	EA	\$3,000.00	\$42,000.00
	3420000000-E	SP	GENERIC GUARDRAIL ITEM (METAL SAFETY RAIL)	690	LF	\$75.00	\$51,750.00
	4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$100,500.00	\$100,500.00
	5672000000-N	1515	RELOCATE FIRE HYDRANT	2	EA	\$4,000.00	\$8,000.00
	6000000000-E	1605	TEMPORARY SILT FENCE	8270	LF	\$4.00	\$33,080.00

	SUBTOTAL	\$2,803,330.00
MINOR ITEMS	10%	\$280,333.00
CONSTRUCTION SUBTOTAL		\$3,083,663.00
INFLATION FACTOR 2 Years	5%	\$316,075.46
CONSTRUCTION COST (2022)		\$3,399,738.46
CONTINGENCIES	20%	\$679,947.69
UTILITIES		\$240,000.00
ESTIMATED CONTRACT COST (2022)		\$4,319,686.15
E. & C.	10%	\$431,968.61
CONSTRUCTION COST (2022)		\$4,751,654.76
	SAY	\$4,752,000.00

NOTE: E&C IS AN NCDOT ITEM AND WILL BE REQUIRED ONLY IF THE PROJECT IS FUNDED BY NCDOT

SIDEPATH TYPICAL SECTION CONSIST OF 8-FOOT PLANTING STRIP AND 10-FOOT WIDE PATH WITH 2-FOOT SHOULDERS.

REAL ESTATE COST IS NOT INCLUDED.

COMPUTED BY _____ JM
 DATE _____ 7/27/2020

	PLANNING COST ESTIMATE
NC License #P-1301	
DESCRIPTION AND LOCATION: <u>10-FEET WIDE SIDEPATH AND A 12-FEET OFF-STREET TRAIL FROM REESE BLVD. TO TORRENCE CREEK GREENWAY</u>	
<u>HUNTERSVILLE</u>	
TIP: <u>N/A</u>	COUNTY: <u>MECKLENBURG</u> DIVISION: <u>N/A</u>
WBS NUMBER: <u>N/A</u>	

ITEM NO.			ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
LINE NO.	DESC. NO.	SECT. NO.					
ROADWAY ITEMS							
0001	0000100000-N	800	MOBILIZATION	1	LS	\$137,900.00	\$137,900.00
	0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$40,000.00	\$40,000.00
	0043000000-N	226	GRADING	1	LS	\$731,750.00	\$731,750.00
	1121000000-E	520	AGGREGATE BASE COURSE	3850	TON	\$35.00	\$134,750.00
	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	1070	TON	\$125.00	\$133,750.00
	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	70	TON	\$600.00	\$42,000.00
	2591000000-E	848	4" CONCRETE SIDEWALK	1390	SY	\$60.00	\$83,400.00
	2605000000-N	848	CONCRETE CURB RAMP	10	EA	\$3,000.00	\$30,000.00
	4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	\$30,000.00	\$30,000.00
	5672000000-N	1515	RELOCATE FIRE HYDRANT	2	EA	\$4,000.00	\$8,000.00
	6000000000-E	1605	TEMPORARY SILT FENCE	8560	LF	\$4.00	\$34,240.00
WALL ITEMS							
	8801000000-E	SP	MSE RETAINING WALL NO ****	1010	SF	\$120.00	\$121,200.00
STRUCTURE ITEMS							
	8897000000-N	SP	BOARDWALK	240	LF	\$1,250.00	\$300,000.00

	SUBTOTAL	\$1,930,490.00
MINOR ITEMS	10%	\$193,049.00
CONSTRUCTION SUBTOTAL		\$2,123,539.00
INFLATION FACTOR 2 Years	5%	\$217,662.75
CONSTRUCTION SUBTOTAL COST (2022)		\$2,341,201.75
CONTINGENCIES	20%	\$468,240.35
UTILITIES		\$75,000.00
ESTIMATED CONTRACT COST (2022)		\$2,884,442.10
E. & C.	10%	\$288,444.21
CONSTRUCTION COST (2022)		\$3,172,886.31
	SAY	\$3,173,000.00

NOTE: E&C IS AN NCDOT ITEM AND WILL BE REQUIRED ONLY IF THE PROJECT IS FUNDED BY NCDOT

SIDEPATH TYPICAL SECTION CONSIST OF 5 TO 7- FEET PLANTING STRIP AND 10- FEET WIDE PATH WITH 2- FEET SHOULDERS.

OFF-STREET TRAIL TYPICAL SECTION CONSIST OF 12- FEET WIDE PATH WITH 2- FEET SHOULDERS

COMPUTED BY JM

DATE 7/23/2020



A.5. Funding Sources

OVERVIEW

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

FEDERAL FUNDING SOURCES

Federal funding is typically directed through state agencies to local governments either in the form of grants or direct appropriations. Federal funding typically requires a local match of five percent to 50 percent, but there are sometimes exceptions. The following is a list of possible Federal funding sources that could be used to support construction of pedestrian and bicycle improvements.

FIXING AMERICA'S SURFACE TRANSPORTATION (FAST ACT)

In December 2015, President Obama signed the FAST Act into law, which replaces the previous Moving Ahead for Progress in the Twenty-First Century (MAP-21). The Act provides a long-term funding source of \$305 billion for surface transportation and planning for FY 2016-2020. Overall, the FAST Act retains eligibility for big programs - Transportation Investments Generating Economic Recovery (TIGER), Surface Transportation Program (STP), Congestion Mitigation and Air Quality (CMAQ),

and Highway Safety Improvement Program (HSIP) - and funding levels between highways and transit.

In North Carolina, federal monies are administered through the North Carolina Department of Transportation (NCDOT) and Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system. For more information, visit: <https://www.transportation.gov/fastact>.

TRANSPORTATION ALTERNATIVES

Transportation Alternatives (TA) is a funding source under the FAST Act that consolidates three formerly separate programs under SAFETEA-LU: Transportation Enhancements (TE), Safe Routes to School (SRTS), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, side paths, and rail-trails. TA funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TA does not provide a guaranteed set-aside for this activity as SAFETEA-LU did.

Funding for the Surface Transportation Block Grant Program (STPBG) will grow from the current level of \$819 million per year to \$835 million in 2016 and 2017 and to \$850 million in 2018 through 2020.

The FAST Act provides \$84 million for the Recreational Trails Program. Funding is prorated among the 50 states and Washington D.C. in proportion to the relative amount of off-highway

recreational fuel tax that its residents paid. To administer the funding, states hold a statewide competitive process. The legislation stipulates that funds must conform to the distribution formula of 30% for motorized projects, 30% for non-motorized projects, and 40% for mixed used projects. Each state governor is given the opportunity to “opt out” of the RTP.

For the complete list of eligible activities, visit:

<http://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm>.

For funding levels, visit: <http://trade.railstotrains.org/index>.

SURFACE TRANSPORTATION PROGRAM

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of pedestrian improvements are eligible, including trails, sidewalks, crosswalks, pedestrian signals, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. 50 percent of each state’s STP funds are allocated by population to the MPOs; the remaining 50 percent may be spent in any area of the state. For more information, visit <http://www.fhwa.dot.gov/specialfunding/stp/>.

HIGHWAY SAFETY IMPROVEMENT PROGRAM

HSIP provides \$2.4 billion for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds. For more information: <http://www.fhwa.dot.gov/fastact/factsheets/hsipfs.cfm>.

CONGESTION MITIGATION/AIR QUALITY PROGRAM

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. States with no non-attainment areas may use their CMAQ funds for any CMAQ or STP eligible project. These federal dollars can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. Communities located in attainment areas who do not receive CMAQ funding apportionments may apply for CMAQ funding to implement projects that will reduce travel by automobile. For more information: <http://www.fhwa.dot.gov/fastact/factsheets/cmaqfs.cfm>.

FEDERAL TRANSIT ADMINISTRATION ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. For more information: <https://www.transit.dot.gov/funding/grants/enhanced-mobility-seniors-individuals-disabilities-section-5310>.

SAFE ROUTES TO SCHOOL (SRTS) PROGRAM

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



wide paved shoulders, etc.) or off-street shared-use paths are also eligible for SRTS funds.

For more information: <http://saferoutespartnership.org/healthy-communities/policy-change/federal/FAST-act-background-resources>

OTHER FEDERAL FUNDING SOURCES

FEDERAL LAND AND WATER CONSERVATION FUND

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

RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation funds available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development in North Carolina locales indirectly through technical assistance, particularly for community organizations, but is not a capital funding source. Annual application deadline is August 1st. For more information: <http://>

www.nps.gov/ncrc/programs/rtca/ or contact the Southeast Region RTCA Program Manager Deirdre “Dee” Hewitt at (404) 507- 5691

FEDERAL LANDS TRANSPORTATION PROGRAM (FLTP)

The FLTP funds projects that improve access within federal lands (including national forests, national parks, national wildlife refuges, national recreation areas, and other Federal public lands) on federally owned and maintained transportation facilities. More than \$300 million per fiscal year has been allocated to the program for 2017 and 2018. For more information: <https://flh.fhwa.dot.gov/programs/fltp/>

ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANTS

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

TIGER DISCRETIONARY GRANTS

The U.S. Department of Transportation’s (DOT) Transportation Investment Generating Economic Recovery (TIGER) discretionary grants are intended to fund capital investments in surface transportation infrastructure. The grant program focuses on “capital projects that generate economic development and improve access to reliable, safe, and affordable transportation for disconnected both urban and rural, while emphasizing improved connection to employment, education, services and other opportunities, workforce development, or community revitalization.” Infrastructure improvement projects such as recreational trails and greenways with

an emphasis on multi-modal transit qualify for this grant. Pre-Application deadlines are typically in May, with final application deadlines in June. For more information: <https://www.transportation.gov/BUILDgrants>

ECONOMIC DEVELOPMENT ADMINISTRATION

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

ENVIRONMENTAL SOLUTIONS FOR COMMUNITIES GRANT PROGRAM

The National Fish and Wildlife Foundation (NFWF) and Wells Fargo seek to promote sustainable communities through Environmental Solutions for Communities by supporting highly-visible projects that link economic development and community well-being to the stewardship and health of the environment. Priority for grants to projects that successfully address one or more of the following:

- » Support innovative, cost-effective programs that enhance stewardship on private agricultural lands to enhance water quality and quantity and/or improve wildlife habitat for species of concern, while maintaining or increasing agricultural productivity.
- » Support community-based conservation projects that protect and restore local habitats and natural areas, enhance water quality, promote urban forestry, educate and train community leaders on sustainable practices, promote related job creation and training, and engage diverse partners and volunteers.

- » Support visible and accessible demonstration projects that showcase innovative, cost-effective and environmentally-friendly approaches to improve environmental conditions within urban communities by 'greening' traditional infrastructure and public projects such as storm water management and flood control, public park enhancements, and renovations to public facilities.
- » Support projects that increase the resiliency of the Nation's coastal communities and ecosystems by restoring coastal habitats, living resources, and water quality to enhance livelihoods and quality of life in these communities.
- » In North Carolina, strong preference will be given to projects located in the regions of Charlotte, Raleigh, or Winston Salem.

For more information: <https://www.nfwf.org/environmentalsolutions/Pages/home.aspx>

STATE FUNDING SOURCES

There are multiple sources for state funding of bicycle and pedestrian transportation projects. However, beginning July 1, 2015, state transportation funds cannot be used to match federally-funded transportation projects, according to a law passed by the North Carolina Legislature.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STRATEGIC TRANSPORTATION INVESTMENTS (STI)

Passed in 2013, the Strategic Transportation Investments law (STI) allows NCDOT to use its funding more efficiently and effectively to enhance the state's infrastructure, while supporting economic growth, job creation and a higher quality of life. This process encourages thinking from a statewide and regional perspective while also providing flexibility to address local needs.

STI also establishes the Strategic Mobility Formula, a new way of allocating available revenues based on data-driven scoring and local input. It was used for the first time to develop NCDOT's



current construction schedule, the 2016-2025 State Transportation Improvement Program (STIP).

The STIP, which identifies the transportation projects that will receive funding during a 10-year period, is a state and federal requirement. Federal law requires it to be updated at least every four years. NCDOT, however, updates it every two years. Work is currently underway to update the STIP for 2018-2027.

The new Strategic Mobility Formula funds projects in three categories: Division Needs, Regional Impact, and Statewide Mobility. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are currently ranked based on 50% data (safety, access, demand, connectivity, and cost effectiveness) and 50% local input, with a breakdown as follows:

SAFETY 15%

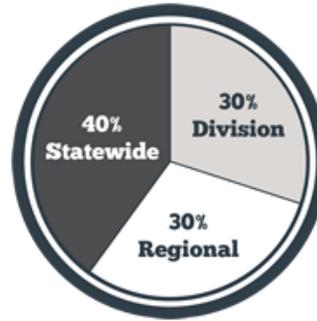
- » Definition: Projects or improvements where bicycle or pedestrian accommodations are non-existent or inadequate for safety of users
- » How it's measured: Crash history, posted speed limits, and estimated safety benefit
- » Calculation:
 - » Bicycle/pedestrian crashes along the corridor within last five years: 40% weight
 - » Posted speed limits, with higher points for higher limits: 40% weight
 - » Project safety benefit, measured by each specific improvement: 20% weight

ACCESS 10%

- » Definition: Destinations that draw or generate high volumes of bikes/pedestrians
- » How it's measured: Type of and distance to destination

DEMAND 10%

- » Definition: Projects serving large resident or employee user groups
- » How its measured: # of households and employees per square mile within 1 ½ mile bicycle or ½ mile pedestrian facility + factor for unoccupied housing units (second homes)



*STI Revenue Distribution
(Source: www.ncdot.gov/
strategictransportationin-
vestments)*

CONNECTIVITY 10%

- » Definition: Measure impact of project on reliability and quality of network
- » How it's measured: Creates score per each Strategic Transportation Investments based on degree of bike/ped separation from roadway and connectivity to similar or better project type

COST EFFECTIVENESS 5%

- » Definition: Ratio of calculated user benefit divided by NCDOT project cost
- » How it's measured: Safety + Demand + Access + Connectivity)/Estimated Project Cost to NCDOT

LOCAL INPUT 50%

- » Definition: Input from MPO/RPOs and NCDOT Divisions, which comes in the form points assigned to projects.
- » How it is measured: Base points + points for population size. A given project is more likely to get funded if it is assigned base points from both the MPO/RPO and the Division, making the need for communicating the importance of projects to these groups critical. Further, projects that have a local match will score higher.

ADDITIONAL BICYCLE AND PEDESTRIAN PROJECT REQUIREMENTS:

- » Federal funding typically requires a 20% non-federal match
- » **State law prohibits state match for bicycle and pedestrian projects (except for Powell Bill). Since state law prohibits state monies from**

being the match for bicycle and pedestrian projects, the Town will need to supply the 20% match from other sources, such as the Town's own funds, matching grants, etc.

- » Limited number of project submittals per MPO/RPO/Division
- » Minimum project cost requirement is \$100,000
- » Bike/Ped projects typically include: bicycle lanes, side path/greenway, paved shoulders, sidewalks, pedestrian signals, SRTS infrastructure projects, and other streetscape/multi-site improvements (such as median refuge, signage, etc.)

These rankings largely determine which projects will be included in NCDOT's State Transportation Improvement Program (STIP). The STIP is a federally mandated transportation planning document that details transportation planning improvements prioritized by the stakeholders for inclusion in NCDOT's Work Program over the next 10 years. "More than 900 non-highway construction projects were prioritized for years 2015-2020, totaling an estimated \$9 billion. NCDOT will only have an estimated \$1.5 billion to spend during this time period." The STIP is updated every 2 years. The STIP contains funding information for various transportation divisions of NCDOT, including, highways, rail, bicycle and pedestrian, public transportation and aviation.

For more information on STIP: <https://www.ncdot.gov/initiatives-policies/Transportation/stip/Pages/default.aspx>

To access the STIP: <https://connect.ncdot.gov/projects/planning/Pages/State-Transportation-Improvement-Program.aspx>

For more about the STI process: <https://www.ncdot.gov/initiatives-policies/Transportation/stip/Pages/strategic-transportation-investments.aspx>

INCIDENTAL PROJECTS

Bicycle and Pedestrian accommodations such as; bike lanes, wide paved shoulders, sidewalks, intersection improvements, bicycle and pedestrian safe bridge design, etc., are frequently included as "incidental" features of larger highway/roadway projects. This is increasingly common with the adoption of NCDOT's "Complete Streets" Policy.

In addition, bicycle safe drainage grates and hand-capped accessible sidewalk ramps are now a standard feature of all NCDOT highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds, and usually with a local match. On-road bicycle accommodations, if warranted, typically do not require a local match.

"Incidental Projects" are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multi-modal transportation system. Having a local bicycle or pedestrian plan is important, because it allows NCDOT to identify where bike and pedestrian improvements are needed, and can be included as part of highway or street improvement project. It also helps local government identify what their priorities are and how they might be able to pay for these projects. Under "Complete Streets" local governments may be responsible for a portion of the costs for bicycle and pedestrian projects.

DUKE ENERGY WATER RESOURCES FUND

Duke Energy is investing \$10 million in a fund for projects that benefit waterways in the Carolinas. The fund supports science-based, research-supported projects and programs that provide direct benefit to at least one of the following focus areas:

- » Improve water quality, quantity and conservation;
- » Enhance fish and wildlife habitats;



- » Expand public use and access to waterways; and
- » Increase citizens' awareness about their roles in protecting these resources.

Apex could consider this resource for its proposed creekside greenways. For more information: <http://www.duke-energy.com/community/foundation/water-resources-fund.asp>

CLEAN WATER MANAGEMENT TRUST FUND

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

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

The application deadline is typically in February. For more information: <https://nclwf.nc.gov/#appmain.htm>

SPOT SAFETY PROGRAM

The Spot Safety Program is a state funded public safety investment and improvement program that provides highly effective low cost safety improvements for intersections, and sections of North Carolina's 79,000 miles of state maintained roads in all 100 counties of North Carolina. The Spot Safety Program is used to develop smaller improvement projects to address safety, potential safety, and operational issues. The program is funded with state

funds and currently receives approximately \$9 million per state fiscal year. Other monetary sources (such as Small Construction or Contingency funds) can assist in funding Spot Safety projects, however, the maximum allowable contribution of Spot Safety funds per project is \$250,000.

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

A Safety Oversight Committee (SOC) reviews and recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SOC to select projects for recommendation to the BOT include, but are not limited to, the frequency of correctable crashes, severity of crashes, delay, congestion, number of signal warrants met, effect on pedestrians and schools, division and region priorities, and public interest. For more information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>

POWELL BILL FUNDS

Annually, State street-aid allocations (Powell Bill Funds) are made to incorporated municipalities which establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.4. Powell Bill funds shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways. Beginning July 1, 2015 under the Strategic Transportation Investments initiative, Powell Bill funds may no longer be used to provide a match for federal transportation funds such as Transportation Alternatives. Certified

Statement, street listing, add/delete sheet and certified map from all municipalities are due between July 1st and July 21st of each year. Additional documentation is due shortly after. More information: <https://connect.ncdot.gov/municipalities/State-Street-Aid/Pages/default.aspx>

HIGHWAY HAZARD ELIMINATION PROGRAM

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

GOVERNOR'S HIGHWAY SAFETY PROGRAM

The Governor's Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries, and fatalities is required as a condition of continued funding. This funding source is considered to be "seed money" to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. State Highway Applicants must use the web-based grant system to submit applications. For more information: <http://www.ncdot.org/programs/ghsp/>

EAT SMART, MOVE MORE NORTH CAROLINA COMMUNITY GRANTS

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

THE NORTH CAROLINA DIVISION OF PARKS AND RECREATION - RECREATIONAL TRAILS AND ADOPT-A-TRAIL GRANTS

The North Carolina Division of Parks and Recreation and the State Trails Program offer funds to help citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking, and horseback riding to river trails and off-highway vehicle trails. "The Adopt-a-Trail Grant Program (AAT) awards \$108,000 annually to government agencies, non-profit organizations and private trail groups for trail projects. The Recreational Trails Program (RTP) is a \$1.3 million grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. Grant applicants must be able to contribute 20% of the project cost or in-kind contributions. Both grant applications are typically due in January or February. For more information: <https://www.ncparks.gov/more-about-us/grants/trail-grants>

NC PARKS AND RECREATION TRUST FUND (PARTF)

The Parks and Recreation Trust Fund (PARTF) provide dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities, and public authorities, as defined by G.S. 159-7, are eligible applicants. A local government can request a maximum of \$500,000 with each application. An applicant must match



the grant dollar-for-dollar, 50 percent of the total cost of the project, and may contribute more than 50 percent. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match. Grant applications are typically due in February. For more information: <https://www.ncparks.gov/more-about-us/parks-recreation-trust-fund/parks-and-recreation-trust-fund>

COMMUNITY DEVELOPMENT BLOCK GRANT FUNDS

Community Development Block Grant (CDBG) funds are available to local municipal or county governments that qualify for projects to enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low and moderate income. State CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) to the state of North Carolina. All North Carolina small cities are eligible to apply for funds except for 23 entitlement cities that receive funds directly from the U.S. Department of Housing and Urban Development (HUD) (Apex does not receive direct funds, so it is eligible to apply). Each year, CDBG provides funding to local governments for hundreds of critically-needed community improvement projects throughout the state. More information: <https://www.nccommerce.com/ruraldevelopment/state-cdbg/grant-categories>

CLEAN WATER MANAGEMENT TRUST FUND (CWMTF)

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection, eligible for application by a state agency, local government, or non-profit. At the end of each year, a minimum of \$30 million is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies, and conservation non-profits to help finance projects that specifically address water pollution problems. Funds may be used for planning and land acquisition to establish a network

of riparian buffers and greenways for environmental, educational, and recreational benefits. Deadlines are typically in February. For more information: <https://nclwf.nc.gov/#appmain.htm>

SAFE ROUTES TO SCHOOL (SRTS)

SRTS is managed by NCDOT, but is federally funded; See Federal Funding Sources above for more information.

URBAN AND COMMUNITY FORESTRY GRANT

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to a more effective and efficient management of urban and community forests. Grant requests should range between \$1,000 and \$15,000 and must be matched equally with non-federal funds. Grant funds may be awarded to any unit of local or state government, public educational institutions, approved non-profit 501(c)(3) organizations, and other tax-exempt organizations. First time municipal applicant and municipalities seeking Tree City USA status are given priority for funding. Grant applications are due by March 31 at 5:00 pm and recipients are notified by mid-July each year.

For more about Tree City USA status, including application instructions, visit: https://www.ncforest-service.gov/Urban/urban_grant_program.htm

LOCAL GOVERNMENT FUNDING SOURCES

Municipalities often plan for the funding of pedestrian and bicycle facilities or improvements through development of Capital Improvement Program (CIP) or occasionally, through their annual Operating Budgets. In Raleigh, for example, the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from \$100,000 to \$500,000, administered through the Recreation and Parks Department. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each category is described below. A variety of possible funding options available to North Carolina jurisdictions for implementing pedestrian and bicycle projects are also described below. However, many will require specific local action as a means of establishing a program, if not already in place.

CAPITAL RESERVE FUND

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

CAPITAL PROJECT ORDINANCES

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

LOCAL IMPROVEMENT DISTRICT (LID)

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

MUNICIPAL SERVICE DISTRICT

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

TAX INCREMENT FINANCING

Project Development Financing bonds, also known as Tax Increment Financing (TIF) is a relatively new tool in North Carolina, allowing localities to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Streets, street-scapes, and sidewalk improvements are specifically authorized for TIF funding in North Carolina. Tax Increment Financing typically occurs within designated development financing districts that meet certain economic criteria that are approved by a local governing body. TIF funds are generally spent inside the boundaries of the TIF district, but they can also be spent outside the district if necessary to encourage development within it. Although larger cities use this type of financing more often, Woodfin, NC is an example of another small town that has used this type of financing.



OTHER LOCAL FUNDING OPTIONS

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

PRIVATE AND NON-PROFIT FUNDING SOURCES

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

UNION BANK

Union Bank is a community bank serving the north central North Carolina region with a location in Apex. Union Bank strives to make the communities it serves better by providing strong financial and customer service. With its strong commitment to the communities it serves, Union Bank is involved in a variety of different local projects.

LAND FOR TOMORROW CAMPAIGN

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. The campaign was successful in 2013 in asking the North Carolina General Assembly to continue to support conservation efforts in the state. The state budget bill includes about \$50 million in funds for key conservation efforts in North Carolina. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come. For more information: <http://www.land4tomorrow.org/>

THE ROBERT WOOD JOHNSON FOUNDATION

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

Grant making is concentrated in four areas:

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

Projects considered for funding typically are innovative and aim to create meaningful, transformative change. Project examples include: service demonstrations; gathering and monitoring of health-related statistics; public education; training and fellowship programs; policy analysis; health services research; technical assistance; communications activities; and evaluations. For more specific information about what types of projects are funded and how to apply, visit <http://www.rwjf.org/en/how-we-work/grants/what-we-fund.html>

NORTH CAROLINA COMMUNITY FOUNDATION

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

RITE AID FOUNDATION GRANTS

The Rite Aid Foundation is a foundation that supports projects that promote health and wellness in the communities that Rite Aid serves. Award amounts vary and grants are awarded on a one year basis to communities in which Rite Aid operates. The Rite Aid Foundation focuses on three core areas for charitable giving: children's health and well-being; special community health and wellness needs; and Rite Aid's own community of associates during times of special need. Online resource: <https://www.riteaid.com/about-us/rite-aid-foundation>

Z. SMITH REYNOLDS FOUNDATION

This Winston-Salem-based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. The Foundation focuses its grant making on five focus areas: Community Economic Development; Environment; Public Education; Social Justice and Equity; and Strengthening Democracy. Deadline to apply is typically in August. For more information: www.zsr.org

BANK OF AMERICA CHARITABLE FOUNDATION, INC.

The Bank of America Charitable Foundation is one of the largest in the nation. There are numerous different initiatives and grant programs, yet the ones most relevant to increased recreational opportunities and trails are the Revitalizing Neighborhoods and Environment Programs. Starting in 2013, a new 10-year, \$50 billion goal to be a catalyst for climate change was launched. This initiative aims to spark the "innovation economy and advance a transition to a low-carbon future." For more information: www.bankofamerica.com/foundation

DUKE ENERGY FOUNDATION

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

- » An internal Duke Energy business "sponsor"
- » A clear business reason for making the contribution

The grant program has several investment priorities: Education; Environment; Economic and Workforce Development; and Community Impact and Cultural Enrichment. Related to this project, the Foundation would support programs that support conservation, training, and research around environmental and energy efficiency initiatives. For more information: <http://www.duke-energy.com/community/foundation.asp>

AMERICAN GREENWAYS EASTMAN KODAK AWARDS

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

NATIONAL TRAILS FUND

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a \$200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than \$588,000 to 192 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from \$500 to \$10,000 per project.



Projects the American Hiking Society will consider include:

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

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

THE CONSERVATION ALLIANCE

The Conservation Alliance is a non-profit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about \$35,000 each. Since its inception in 1989, The Conservation Alliance has contributed \$4,775,059 to environmental groups across the nation, saving over 34 million acres of wild lands.

The Conservation Alliance Funding Criteria:

- » The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation.
- » The Alliance does not look for mainstream education or scientific research projects, but rather for active campaigns.
- » All projects should be quantifiable, with specific goals, objectives, and action plans and should include a measure for evaluating success.
- » The project should have a good chance for closure or significant measurable results over a fairly short term (within four years).

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

THE JOHN REX ENDOWMENT

The John Rex Endowment sees environmental, policy, and systems approaches as necessary to achieve long-term, sustainable changes that support healthy weight in children. Learn about their goal to improve policies and implement changes to the built environment that increase children's access to healthy foods and active living opportunities in Wake County municipalities:

<http://www.rexendowment.org/what-we-fund/funding-areas/healthy-weight>

NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, tax exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes. The Foundation provides grants through more than 70 diverse conservation grant programs. A few of the most relevant programs for bicycle and pedestrian projects include Acres for America, Conservation Partners Program, and Environmental Solutions for Communities. Funding priorities include bird, fish, marine/coastal, and wildlife and habitat conservation. Other projects that are considered include controlling invasive species, enhancing delivery of ecosystem services in agricultural systems, minimizing the impact on wildlife of emerging energy sources, and developing future conservation leaders and professionals.

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

THE TRUST FOR PUBLIC LAND

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the TPL is the only national non-profit working exclusively to protect land for human enjoyment and well-being. TPL helps acquire land and transfer it

to public agencies, land trusts, or other groups that have intentions to conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

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

BLUE CROSS BLUE SHIELD OF NORTH CAROLINA FOUNDATION (BCBS)

Blue Cross Blue Shield (BCBS) focuses on programs that use an outcome approach to improve the health and well-being of residents. Healthy Places grant concentrates on increased physical activity and active play through support of improved build environment such as sidewalks, and safe places to bike. Eligible grant applicants must be located in North Carolina, be able to provide recent tax forms and, depending on the size of the non-profit, provide an audit. For more information: <http://www.bcbsncfoundation.org/>

ALLIANCE FOR BIKING & WALKING: ADVOCACY ADVANCE GRANTS

Bicycle and pedestrian advocacy organizations play the most important role in improving and increasing biking and walking in local communities. Rapid Response Grants enable state and local bicycle and pedestrian advocacy organizations to develop, transform, and provide innovative strategies in their communities. Since 2011, Rapid Response grant recipients have won \$100 million in public funding for biking and walking. The Advocacy Advance Partnership with the League of American Bicyclists also provides necessary technical assistance, coaching, and training to supplement the grants. For more information, visit www.peoplepoweredmovement.org

LOCAL TRAIL SPONSORS

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque,

the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

CORPORATE DONATIONS

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

PRIVATE INDIVIDUAL DONATIONS

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

FUNDRAISING/CAMPAIGN DRIVES

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

VOLUNTEER WORK

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers form church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.

INNOVATIVE FUNDING OPTIONS

Crowdsourcing "is the process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from



an online community, rather than from traditional employees or suppliers.” An example crowdsourcing tool used locally with some success is “ioby”, which offers the ability to organize different forms of capital—cash, social networks, in-kind donations, volunteers, advocacy: <https://www.ioby.org/about>

BICYCLE/TRAIL PARTNERSHIP CASE STUDIES IN THE CAROLINAS

Apex may be able to partner with the private sector for funding or sponsorship for some aspects of this plan. Some examples of trail partnerships in the Carolinas are provided below.

WILMINGTON/NEW HANOVER COUNTY & BLUE CROSS BLUE SHIELD (BCBS)

BCBSNC and their GO NC! program donated funds to complete the final phase of the 15-mile Gary Shell CrossCity Trail from Wade Park to the drawbridge at Wrightsville Beach. In addition to completing the trail, other enhancements include mile markers along the 15-mile trail and five bicycle fix-it stations along the trail. This partnership came about during development of the WMPO’s Wilmington/New Hanover County Comprehensive Greenway Plan in 2012. <http://www.bcbsnc.com/content/campaigns/gonc/index.htm>

SPARTANBURG, SC & THE MARY BLACK FOUNDATION

The Mary Black Foundation Rail Trail was a collaboration between the Mary Black Foundation, Palmetto Conservation Foundation, City of Spartanburg, Partners for Active Living, SPATS, and local citizens. It extends from downtown Spartanburg at Henry Street, between Union and Pine Streets, and continues 2 miles to Country Club Road. Since its inception there has been buzz about redeveloping the Rail Trail corridor. The commuter and recreational trail brings together all walks of life, and connects neighborhoods, businesses, restaurants, a school, a bike shop, the YMCA, a grocery store, and a skate park. As the Hub City Connector segment of the Palmetto Trail through Spartanburg

County, the Rail Trail is an outdoor transportation spine for Spartanburg from which other projects are expected to spin off. One great example is the first phase of B-cycle bicycle-sharing program located at the Henry Street trailhead. Project contact: Lisa Bollinger, Spartanburg Area Transportation Study, Spartanburg, SC.

SWAMP RABBIT TRAIL AND GREENVILLE HEALTH SYSTEM, GREENVILLE, SC

The Greenville Health System Swamp Rabbit Trail is a shared-use-path that runs along the Reedy River through Greenville County, connecting parks, schools, and local businesses. The GHS Swamp Rabbit has become very popular among residents and visitors for recreational and transportation purposes. The Greenville Health System has become a private sponsor because of the health benefits offered by the trail as well as the branding opportunity achieved by having its name and logo on the trail’s signs. The GHS Swamp Rabbit Trail continues to increase in size and popularity, with communities in neighboring counties making plans to extend the trail into their towns. Project contact: Ty Houck, Greenville County Parks, Recreation and Tourism, Taylors, SC.

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