DAVIDSON MOBILITY PLAN

June 2019 | Final Report



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ACKNOWLEDGMENTS

THANK YOU **DAVIDSON.**

PUBLIC PARTICIPANTS

Thank you to the residents of Davidson for their participation in this planning process and their passion for improving the place they call home.

STAKEHOLDER COMMITTEE

Thank you to the engaged leaders of the Davidson community for their participation throughout the planning process and for their commitment to furthering the efforts of this plan.

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Also, a special thanks to the former Town Board of Commissioners who were responsible for approving this study: John Woods, Stacey Anderson, Beth Cashion, Rodney Graham, and Brian Jenest.





College Town. Lake Town. Your Town.

EXECUTIVE SUMMARY

WHAT IS THE MOBILITY PLAN?

The Davidson Mobility Plan is a local comprehensive transportation plan that provides a town-wide vision and coordinated recommendations for multi-modal travel and access within and through town. It is a continuation of Davidson's long history of multi-modal transportation planning that has allowed the town to develop as a place that citizens want travel choices where people can drive, walk, access transit, and bicycle easily and comfortably – and where quality of life is one of the highest in the Charlotte metro area. Residents of Davidson feel strongly about maintaining the character and history of the community, and protecting the vision of what Davidson is and what it should become.

This plan addresses the challenge before Davidson of maintaining its quality of life while dealing with the growth pressures of the region. Town leaders and staff understand that are safe, convenient, and efficient, and that offer a choice of modes for any given trip. The Davidson Mobility Plan provides the framework that will help Davidson realize this vision.

VISION + GUIDING PRINCIPLES

Davidson will provide a **balanced and connected** network of comfortable facilities for pedestrians, cyclists, transit riders, and drivers; where mobility options are efficient, safe, and **convenient**; and where Complete Street design is prioritized in all roadway and development projects. The vision's guiding principles are based on community input and noted below.



ACTION STEPS



PEDESTRIAN MOBILITY

- 1.1. Include pedestrian and greenway improvement projects in the local Capital Improvement Program (CIP), increasing consistent year-toyear funding levels.
- 1.2. Evaluate a cost-share program for sidewalk maintenance to ensure sidewalk repair is implemented equitably.
- 1.3. Increase minimum sidewalk width on major roads (e.g., Main Street/NC-115, Griffith Street, Concord Road, etc; and future roadway types "Parkway" and "Urban Avenue/Boulevard" in the Planning Ordinance) and other arterial or collector type streets with at least 3,000 cars/ day (e.g., Potts, Jetton, Beaty) to 6 feet minimum.
- 1.4. Develop/implement a sidewalk infill prioritization methodology.
- 1.5. Install more consistent crosswalk treatments throughout town, especially at priority crossings.
- 1.6. To increase readiness for grant funding, develop preliminary plans (30% construction drawings) for priority sidewalk projects. This action will also help leverage the recently approved bond monies to be used as an effective match for larger grants.
- 1.7. Update Planning Ordinance to reflect recommendations for advisory shoulder and sidepath design standards.



BICYCLE MOBILITY

- 2.1. Include bicycle projects in the local Capital Improvement Program (CIP), increasing consistent year-to-year funding levels.
- 2.2. Conduct corridor studies along Griffith Street, Concord Road, and Main Street/NC-115 in order to assess feasibility of enhanced bicycle facilities along these key corridors.
- 2.3. Fund bicycle facility maintenance and consider funding additional maintenance equipment needed to adequately maintain a lowstress bikeway system.
- 2.4. To increase readiness for grant funding, develop preliminary plans (30% construction drawings) for priority bicycle projects.
- 2.5. Increase bicycle parking facilities (both short- and longterm, as defined by Planning Ordinance) at destinations.



VEHICULAR MOBILITY

- 3.1. The Town can use the concepts and policies presented in this Plan to implement proposed improvements through regularly scheduled capital projects, such as streetscape projects, street resurfacing, or new public or private development projects.
- 3.2. Departments like Public Works can use their maintenance resources and staff to support programs, planning efforts, and infrastructure maintenance.
- 3.3. The Town will need to actively manage the list of projects in this plan and assign appropriate funding and staff time to implement them. It should also be flexible and opportunistic with funding and prioritization of projects to deliver projects as quickly as possible.
- 3.4 The Town should update its Planning Ordinance to include design standards for shared streets/festival streets/woonerfs, as a street classification that better accommodates all travel modes on low-speed, low-trafficvolume streets, such as Spring Street.
- 3.5. The Town should continue to work with regional partners to develop final alignments for the North-South Parkway that is anticipated to provide an alternative route to I-77 and NC-115 as well as for the Grey Road and Davidson-Concord Road extensions.



PARKING ACCESSIBILITY

- 4.1. Adopt and implement a performance-based parking program.
- 4.2. Conduct a pilot application of pricing, using pay station meters, for on-street parking in the downtown retail district.
- 4.3. Establish for staff the administrative authority to set parking prices based on observed demand
- 4.4. Establish a regular monitoring and reporting schedule for parking utilization and enforcement in order manage its performance-based parking program
- 4.5. Create a shared parking program that will maximize the use of existing public and private parking spaces in and around the downtown retail district.
- 4.6. Invest in a parking wayfinding system to direct drivers to available parking spaces.



TRANSIT MOBILITY

- 5.1. Continue to work with CATS and major employers in and around Davidson to expand transit services to all-day and weekends for local and express bus service.
- 5.2. Work with CATS and neighboring municipalities to implement fixed guideway regional transit station(s) in Davidson and complementary mobility hub services.
- 5.3. Work with CATS to improve bus stop amenities to make access and waiting for the bus more comfortable and attractive.
- 5.4. Work with CATS and local employers and schools to implement a local transit service that will provide connections within Davidson.

NEW MOBILITY OPTIONS

- 5.1. Require the installation of Electric Vehicle (EV) charging capacity and/or infrastructure for all new construction.
- 6.2. Promote and encourage the installation of additional super-charging stations at key locations (e.g., Davidson Commons, MSC, Downtown).
- 6.3. Convert Town vehicle fleets to electric when practical.
- 6.4. Update the Town's Code of Ordinances to align with North Carolina General Statutes so as to clarify difference between recreational and transportation low-speed vehicles and how they may be used on Town roads.
- 6.5. Promote, encourage, and manage (through regulation) the continued expansion of dockless bike, scooter, and similar mobility solutions throughout the community, with particular attention to parking regulation. For guidance on how to develop policies to regulate shared-mobility services, refer to the NACTO Guidelines for the Regulation and Management of Shared Active Transportation.
- 6.6. Investigate a partnership with ride-share services for trips that have their original or destination in the downtown.
- 6.7. Work with CATS to investigate ride-share service subsidies for town residents.
- 6.8. Conduct a feasibility study for the deployment of a driverless shuttle system in the Griffith Street, Concord Road, and Main Street corridors.



NEW MOBILITY, CONTINUED

- 6.9. Work with CATS to develop Mobility Hub concepts for downtown and exit 30 that may combine transit access and shared/new mobility service options.
- 6.10. Pilot ride-share pick up/drop off and local delivery zones in the downtown. Consider dedicated on-street spaces near Summit and Kindred. Require new curb access zones with new development.
- 6.11. Investigate the potential for a geofenced area—consider the Jackson Street and Concord Road corridors as the highest priorities for 3D mapping and surveying.
- 6.12. Maintain a high level of awareness and education for autonomous technologies amongst the Town staff.
- 6.13. Ensure that all new street infrastructure projects have accommodations for fiberoptic through the placement of additional conduit for future expansion or the installation of cabling.
- 6.14. Install parking sensor technology and provide a mobile app or provide an Application Programming Interface (API) to facilitate third party usage (e.g., Google Maps) to broadcast parking availability.
- 6.15. Evaluate the installation of DSRC equipment in a connected corridor (e.g., Jackson Street, Concord Road, Main Street).

PRIORITY PROJECTS

The Mobility Plan Stakeholder Committee identified top priority projects based a prioritization scoring and on input gathered during the course of the Mobility Plan study. The following Priority Project List highlights 13 projects that the Stakeholder Committee has put forward for consideration by the Town Board of Commissioners for near-term funding and implementation. These projects are mapped on pages 8 and 9.

RANK	PROJECT DESCRIPTION	SAFETY	REDUCED TRAVEL TIME	HEALTH/ENVIRON- MENTAL QUALITY	CONNECTIVITY	COST	IMPLEMENTATION & USEFUL LIFE	PUBLIC SIGNIFICANCE	VALUE	REGIONAL SIGNIFICANCE	TOTAL SCORE
1	SIDEPATH along BEATY STREET from NORTH MAIN STREET to GRIFFITH STREET (see page 93 for details) ¹	3	0	2	3	0	2	2	2	1	15
2	WEST BRANCH ROCKY RIVER GREENWAY connecting the existing WEST BRANCH RR GREENWAY at FISHER FARM PARK to the funded GREENWAY west of NARROW PASSAGE	2	0	2	1	0	1	1	2	0	9
_	SIDEPATH along GREY ROAD from WOLFE STREET to SHEARERS ROAD (see page 94 for details) ²	3	0	2	2	0	2	2	2	2	15
3	GREENWAY from MCCONNELL NEIGHBORHOOD to FISHER FARM PARK (see page 95 for details) ²	1	0	2	1	0	1	2	2	0	9
4	INTERSECTION IMPROVEMENT at N MAIN STREET, BEATY STREET, and RIDGE ROAD (see page 107 for details)	2	0	0	2	0	1	1	2	2	10
	WALNUT STREET-to-VERNON DRIVE BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12
5	EASTWAY STREET-to-SOUTH STREET BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12
	DOGWOOD LANE-to-CONROY AVENUE BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12
	HILLSIDE DRIVE-to-CATHEY STREET BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12

NOTES:

¹ Where denoted, detailed project cutsheets have been developed and can be found on referenced page.

² These two projects are ranked as one because they are two options that are interchangeable in terms of the what they provide and therefore only one would probably be built.

³ These projects are ranked as one, as they similar projects that could be implemented individually or together as opportunity allows.

RANK	PROJECT DESCRIPTION	SAFETY	REDUCED TRAVEL TIME	HEALTH/ENVIRON- MENTAL QUALITY	CONNECTIVITY	COST	IMPLEMENTATION & USEFUL LIFE	PUBLIC SIGNIFICANCE	VALUE	REGIONAL SIGNIFICANCE	TOTAL SCORE
6	SIDEWALK INFILL PROJECTS (various locations)	-	-	-	-	-	-	-	-	-	-
7	INTERSECTION IMPROVEMENT at SAM FURR ROAD/NC 73 and DAVIDSON-CONCORD ROAD (see page 108 for details)	2	1	0	0	0	1	1	1	3	9
8	INTERSECTION IMPROVEMENT at CONCORD ROAD, GREY ROAD, and PINE ROAD (see page 109 for details)	3	1	0	1	0	2	1	2	2	12
9	SIDEPATH along DAVIDSON-CONCORD ROAD from the existing sidepath to SAM FURR ROAD/NC 73 (see page 97 for details)	2	0	2	1	0	2	1	2	2	12
10	WEST BRANCH NATURE PRESERVE GREENWAY from the existing WEST BRANCH ROCKY RIVER GREENWAY to HELEN BENSON BOULEVARD	2	0	2	2	0	1	0	2	0	9
11	DAVIDSON EAST GREENWAY from JULEES WALK to BRADFORD REGIONAL PARK	2	0	2	2	0	1	1	2	2	12
12	DAVIDSON-CONCORD ROAD EXTENSION from CONCORD ROAD/ROCKY RIVER ROAD to PRESBYTERIAN ROAD (see page 110 for details)	2	1	2	2	0	1	1	2	2	13
13	BIKE LANES (various locations)	-	-	-	-	-	-	-	-	-	-

NOTES:

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³ These projects are ranked as one, as they similar projects that could be implemented individually or together as opportunity allows.



PRIORITY PROJECTS

Proposed Facilities

- Intersection Improvement
- Multi-Use Path
- Bike-Ped Connector
- New Roadway Connection

Existing Facilities
Greenway

- • • Greenway (Funded)
- Bike-Ped Connector
- Dike-Fed Connector
- Shared Lane Marking
- Bike Lane
 Unpaved Trail
- Davidson College
 Grocery Store
 School
 Community Center

Railroad





PRIORITY PROJECTS

- Proposed Facilities
 O Intersection Improvement
- Multi-Use Path
- Bike-Ped Connector
- New Roadway Connection
- Existing Facilities
 - • • Greenway (Funded)
 - Bike-Ped Connector
 - Shared Lane Marking

Bike Lane

Unpaved Trail

Grocery Store

0

SchoolCommunity Ce

Davidson College

- Community Center
 Railroad
- Water Body
 Davidson Town Limits
 Davidson SOI
 Study Area

Parks & Open Space



WHAT IS THE MOBILITY PLAN?

The Davidson Mobility Plan is a local **comprehensive** transportation plan that

provides a town-wide vision and coordinated recommendations for multimodal travel and access within and through town. As a town, Davidson has done a commendable job of providing an environment where people can easily and comfortably drive, walk, access transit, and bicycle by taking a multimodal approach to mobility planning over the past in the Charlotte metro area. decades. As Davidson and the Lake Norman region have continued to grow, however, certain kinds of trips have become more challenging: commuting on I-77 or sitting in what it should become.

traffic on Main Street if there is a back-up on I-77; walking across busy intersections or trying to cross Concord Road; riding a bike to Fisher Farm or Downtown from one of the neighborhoods, just to name a few.

Throughout its planning history Davidson has linked land use and transportation, and as a result has developed into a place where quality of life is one of the highest Residents of Davidson feel strongly about maintaining the character and history of the community, and protecting the vision of what Davidson is and

The challenge before Davidson now is how to maintain that quality of life while dealing with not only its own growth pressures. but growth pressures of the entire region. From a mobility standpoint, the Town leaders and staff understand that citizens want travel choices that are safe, convenient, and efficient, and that offer a choice of modes for any aiven trip. The Davidson Mobility Plan provides the framework that will help Davidson realize this vision of mobility choices.

MOBILITY IS...



VISION + GUIDING PRINCIPLES

The project's vision and guiding principles are outlined here and are based on public input, feedback from the Stakeholder Committee, and the three-day charrette, held May 22-24, 2018. The vision helps to ground the plan with an overarching purpose and intention. The guiding principles represent overarching strategies to help achieve the vision.

VISION

Davidson will provide a **balanced and connected** network of comfortable facilities for pedestrians, cyclists, transit riders, and drivers; where mobility options are **efficient**, **safe**, **and convenient**; and where Complete Street design is prioritized in all roadway and development projects.

GUIDING PRINCIPLES

The following principles are presented in the order of importance to Davidson residents and stakeholders based on the number of mentions specific topics received throughout the planning process. The idea of maintaining and enhancing Davidson as a pedestrian-oriented community was by far the most mentioned topic by the public.



THE PROCESS

The Mobility Plan is intended to build on the thoughtful work of the past planning efforts; provide new thinking and best practices with regard to guidelines, technologies, and modes that were not available in the past; and outline a mobility system that maintains and enhances the high quality of life that Davidson enjoys. **This Mobility Plan is intended to serve as the Comprehensive Transportation Plan for the Town of Davidson.** The project prioritization will serve to guide the Town in allocating resources to advance transportation initiatives and projects. By adhering to this Plan, Davidson residents and visitors will have choices for moving around the community safely, efficiently, and conveniently while maintaining the quality of life for which they come to live, work, and play in Davidson.



PLANNING PROCESS TIMELINE

PUBLIC INPUT

Davidson engaged its citizens as stakeholders and partners throughout the planning process. The Mobility Plan for Davidson was developed through a partnership with community residents and stakeholders, and utilized the various plans that the Town has completed since 2002 as its baseline. Throughout the process, **hundreds of citizens participated directly in the process** through stakeholder meetings, 4 walking tours, 1 biking tour, table sessions at Town Day and at Davidson College, 2 mobility topic education sessions, intercept surveys, and a three-day public planning and design workshop known as a "charrette."



ONLINE ENGAGEMENT

A project website and online Wiki map allowed the public to engage with the project at their convenience. The project website served as a clearinghouse of information about the progress of the project and upcoming public engagement events. The website also included a link to the Wiki map, where the community provided input on their mobility issues and needs.

STAKEHOLDER COMMITTEE

Key tasks of the Stakeholder Committee included guiding the overall vision of the plan, identifying existing opportunities and constraints for mobility, leveraging resources for an expanded public outreach effort, and providing feedback on plan recommendations. Members included representatives of the following groups:

- Town Boards &
 Committee Members
- NCDOT
- Davidson College
- Parks & Recreation
 Department
- Public Works
 Department

COMMUNITY ENGAGEMENT

This Plan directly reflects what the Town and planning team heard from Davidsonians who move around the community daily.

This Mobility Plan and its recommendations are a culmination of an extensive community engagement process. Not all of the projects and initiatives contained in subsequent chapters are new: some having been developed at some point in previous planning work. However, this process allowed for community vetting of projects to see if changing conditions influenced their validity or relevance, or if they needed to be modified to fit current needs. In many cases, citizens and stakeholders proposed new projects that had not been considered previously.

Additional information about the public engagement process is included in Chapter 3.

COMMUNITY VOICES

During the various citizen engagements, a number of common concerns and desires emerged for how to improve mobility throughout town. These themes were echoed throughout the various community engagement efforts with a consistency that helped clearly define preferences and priorities. These themes are displayed here and reflect the priority topics voiced by the public.

More GREENWAYS + SIDEPATHS!

A greenway connection to Fisher Farm Park.

Bike Facilities along Grey Road!

Make bicycling safer for ALL

Traffic at Main + Concord Road needs to be fixed. We walk EVERYWHERE: we want to be able to do it SAFELY!

Need to prioritize filling sidewalk gaps + improve crossings Beaty St, Concord Rd, and Grey Rd needs pedestrian facilities





MOBILITY TODAY

The Mobility Plan team used many inputs to develop an assessment of the transportation system in Davidson. The assessment focused on previous planning efforts, current conditions, community interests, and an assessment of challenges and opportunities. The findings for each mode, summarized in this chapter, were used to inform and develop the recommendations for this plan.

The core questions reviewed for the assessment consider the completeness and conditions of the network for each mode, especially through the lens of the Mobility Plan's Guiding Principles.



Are ALL Streets Pedestrian Friendly, with ADA Access?



Do Greenways Connect to Popular Destinations in Town?



Are Cycling Options Comfortable for ALL?



Are Roadways Safe for ALL Users?



What Local and Regional Transit Services are Available?



Is Parking Efficient + Well-Managed?



What New Technologies and Shared Mobility Options are Being Used?

MODE SHARE

How do Davidson's mobility choices compare to surrounding communities? The charts below show commute mode share from the 2016 American Community Survey (ACS).



PREVIOUS PLANNING



Davidson has a rich history of transportation planning that aligns land use planning with transportation strategies. As part of the assessment for the Mobility Plan, the planning team reviewed and summarized the previous plans to understand what transportation facilities have been planned and recommended previously; which of those recommendations have been implemented; and which recommendations may no longer be valid. The team summarized previous plan initiatives in both written narrative and tabular form, and mapped their recommendations. The team noted if an initiative has been completed or is in the process of being implemented.

The purpose of this assessment is to give an overview of the myriad of planning efforts conducted over the past 15+ years and to inform the development of the current Mobility Plan. The planning team reviewed the plans listed in the table below.

Plan Name	Adoption Date
Downtown Davidson Pedestrian and Bicycle Safety Plan	February 2002
Davidson Circulation Plan	April 2003
Town of Davidson Connectivity and Traffic Calming Plan	2003*
Davidson Transit Station Small Area Plan	September 2005
Potts-Sloan-Beaty Street Corridor Land Use Plan	May 2007
Bicycle Transportation Plan	October 2008
Davidson Comprehensive Plan	August 2010
Comprehensive Parking Study	2011*
Town of Davidson 2012 Station Area Update	2012*
Davidson Walks and Rolls: Active Transportation Master Plan	November 2013
Town of Davidson Circles @ 30 Small Area Plan	2013*
Town of Davidson Parks and Recreation Master Plan	November 2014
Rural Area Plan	September 2016

*These plans have not been formally adopted by the Davidson Board of Commissioners, but they have been reviewed and summarized here to make sure that the Mobility Plan reflects a comprehensive understanding of previous planning efforts.

Davidson's earliest effort in mobility planning was the *Downtown Pedestrian Safety Enhancement Plan* of 2002, which called for pedestrian crossing improvements and bicycle facilities in order to protect the pedestrian- and bicycle-oriented character of central Davidson. The **crossing improvements, including curb bulb-outs at Main Street and Concord Road, and the bike lanes and multi-use path** along Concord Road were all implemented according to this plan's recommendations.

The Circulation Plan and the Connectivity and Traffic Calming Report were a pair of plans in 2003 that aimed to improve circulation and mobility within town for vehicles, pedestrians, and bicycles. These efforts resulted in a comprehensive study of new roadway, sidewalk, and bicycle facilities that was prioritized with significant steering committee and public input. The recommendations that resulted from these efforts (see map below) have formed the basis of mobility recommendations that have been carried forward in many subsequent plans and studies conducted by the Town of Davidson.



This map shows the network recommendations from the 2003 Connectivity and Traffic Calming Report, which have formed the basis of Davidson's mobility recommendations in subsequent plans.

The comprehensive review of previous plans served as a way to consolidate and update the numerous recommendations, and to verify which projects had been completed, and of those that had not, which were still valid. In some cases, there were duplicate and/or competing recommendations in different plans, and this review provided the opportunity to get all the projects on one map in order to assess which ones were still appropriate to today's context. Public input, in addition to a thorough assessment of current mobility conditions (see Appendix B), was used to vet which projects were still valid.

The comprehensive review of all previous plans and their recommendations is summarized in detail in Appendix C.





As an example from the comprehensive review of previous plans and their recommended projects, these two maps of projects from the Walks and Rolls Plan (2013) and the Rural Area Plan (2016) show different alignments for greenways, which were pared down based on feedback from the public input and charrette process.

REGIONAL PLANS

In addition to the local plans, the following regional plans were reviewed in order to understand the broader context of transportation planning projects in the surrounding areas:

- Charlotte Regional Transportation Planning Organization (CRTPO) *Comprehensive Transportation Plan* (CTP) (2017)
- Mecklenburg-Union Metropolitan Planning Organization Thoroughfare Plan (2004, updated 2012)
- Lake Norman Transportation and Land Use Study (2010) and North Davidson Parkway Alignment Study (2010)



This map shows the regional roadway connections proposed in the Thoroughfare Plan.



This map shows the regional roadway connections proposed in the North Davidson Parkway Alignment Study, which refined the alignment of a north-south connection that was recommended in the Urban Land Institute's 2010 Lake Norman Transportation and Land Use Study



WALKING IN DAVIDSON

Town residents have a strong interest in walking for transportation and recreation. This is reflected in the fact that Davidson is a designated **Bronze Walk Friendly Community** through the Pedestrian and Bicycle Information Center (PBIC) <u>Walk Friendly Community</u> program. Most of the town's streets have sidewalks on either one or both sides. Davidson has **47 miles of existing sidewalks** and **12 miles of existing and funded multi-use paths—both greenways and sidepaths** (see maps on pages 26-27). However, there are some notable gaps in pedestrian connectivity. Some of the opportunities and challenges for walking in Davidson are highlighted below.



OPPORTUNITIES

- 85% of households responding to the 2017 Davidson National Citizen Survey support Town funds being used for pedestrian and bicycle facilities.
- Crossing improvements, such as high visibility crosswalks, mid-block crossings, and bulbouts, could help facilitate pedestrian crossings.
- The Davidson Walks and Rolls Active Transportation Plan identified more than
 8.5 miles of sidewalk needed to increase connectivity and improve pedestrian safety.



CHALLENGES

- While sidewalks are present in much of the town, there are some **critical sidewalk gaps**:
 - Grey Road
 - Beaty Street, north of Armour Street
 - Concord Road, north side
 - Potts Street, south end
- Some sidewalks **do not meet accessibility standards** due to narrow widths or lack of curb ramps.
 - Concord Road
 - Potts Street
 - S Main Street
 - Potts Street, south of Catawba Avenue



- More high quality pedestrian crossings with better signage are needed to allow people to safely reach destinations.
 - Spinnaker Cove Drive and Griffith St
 - Beaty Street and Delburg Street
 - Beaty Street and NC 115
 - Catawba Avenue and S
 Main Street
 - Grey Road and Concord Road
 - Depot Street and Jackson Street
 - Griffith Street and Jackson Street
- Traffic speeds and distracted driving add to pedestrian safety and comfort challenges.

The combination of sidewalk network gaps, poor quality/accessibility issues, crossing difficulties, and unsafe driver behavior create an inconsistent and sometimes uncomfortable pedestrian environment. Previous analysis of the pedestrian environment, completed for the Walks & Rolls Plan (2013), highlighted hotspots where conditions are not comfortable for walking. Public input received for the Mobility Plan corroborates many of these troublesome areas identified through quantitative analysis. These areas, which should form the basis for prioritized pedestrian projects, are highlighted in the following maps:



WALKING BY THE NUMBERS

In May 2017, the Institute for Transportation Research and Education (ITRE) installed permanent bicycle and pedestrian count stations at three locations in Davidson: Griffith Street, Main Street, and Concord Road. Additionally, counts were available for the following locations along Griffith Street: Davidson Gateway Drive (west)/Harbour Place Drive, Jetton Street, Davidson Gateway Drive (east), and Beaty Street/Sloan Street. Data from these sources is shown on the map on the following page. The **heaviest pedestrian movement was observed along Griffith Street,** especially at the intersections with Jetton Street, Lakeside Avenue, and Beaty Street/Sloan Street. Counts were lower at the eastern and western intersections with Davidson Gateway Drive.

Main Street counts were somewhat lower than expected; however, some counts were taken in the summer months when many of the students at Davidson College are gone for summer break.



EXISTING CONDITIONS: PEDESTRIAN MOBILITY

Existing Facilities

- Sidewalk
 Multi-Use Path
- •••• Multi-Use Path (Funded)
- ------ Unpaved Trail
 - Bike Ped Connector

Missing Sidewalk

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- Unsafe Sidewalk
- × Pedestrian Count
- Counts reflect 8 hours on a single day in November 2016
 Counts are a daily average calculated over the period between May and August 2017





EXISTING CONDITIONS: PEDESTRIAN MOBILITY

Missing Sidewalk

Unsafe Sidewalk

Existing Facilities

- Sidewalk
- Multi-Use Path
- Multi-Use Path (Funded) •
- Unpaved Trail
 - Bike Ped Connector

- Davidson College
 - Grocery Store C
 - School 0
 - **Community Center**
 - Railroad







EXISTING CONDITIONS: PEDESTRIAN MOBILITY

- Sidewalk (One Side)
 Sidewalk (Both Sides)
 Bike Ped Connector
- Multi-Use Path
- •••• Multi-Use Path (Funded)
 - Unpaved Trail
- Davidson CollegeGrocery Store
- SchoolCommunity Center
- Railroad





BIKING IN DAVIDSON

Davidson currently has nearly 7 miles of existing bike lanes and shared-lane markings, and an additional 7 miles of multi-use paths. The network can be expanded with higher quality bikeways to connect residents and visitors with more destinations, as shown on the maps on pages 30 through 31.



OPPORTUNITIES

- Davidson has 7 miles of existing bike lanes and shared-lane markings and 12 miles of existing and funded greenways and sidepaths.
- Town residents have a strong interest in bicycling for transportation and recreation.
- Davidson is a designated Bronze Bicycle Friendly Community through the League of American Bicyclists' (LAB) designation program.
- Rural roadways and corridors provide opportunities for sidepaths and greenways to provide access to the areas surrounding the town, such as Fisher Farm.

CHALLENGES

- Existing bike lanes and shared-use lanes are not comfortable for cyclists of all ages and abilities
- Comfortable biking connections for all ages and abilities are lacking between downtown and neighborhoods and destinations. Uncomfortable biking corridors include:
 - Potts-Sloan-Beaty Corridor
 - Jetton Street
 - Griffith Street, especially west of Harris Teeter
 - Grey Road
 - N Main Street
 - Concord Road
 - Davidson-Concord Road
 - Rocky River Road



CHALLENGES, continued

- Bikeways need to connect residents with more destinations such as schools, workplaces, shopping, and entertainment.
- Excessive motor vehicle speeds and distracted driving make biking uncomfortable and unsafe in many areas, especially for less confident riders and families with children.
- In the downtown area, there is competition for pavement space between high quality bicycle facilities and parking needs.
- The Town of Davidson does not currently have a contract with any bikeshare company, nor does it have any policies to manage bike-share programs (or other similar shared-mobility vehicles, such as electric scooters)

BY THE NUMBERS

The maps on the following pages show bicycle counts collected by ITRE and the Davidson Mobility Plan project team. These counts highlight the importance of Main Street and Davidson-Concord Road as bicycle travel corridors.





the period between May and August 2017



EXISTING CONDITIONS: BICYCLE MOBILITY

- Bike Lane Shared Lane Marking Bike Ped Connector
- Multi-Use Path
- Multi-Use Path (Funded)
- Unpaved Trail
 - Mountain Bike Trails



0

C

Railroad



DRIVING IN DAVIDSON

Driving is the most common travel mode in Davidson. As Davidson and the surrounding communities in the Charlotte metro area have continued to develop and grow, congestion and traffic safety are becoming even more important issues in the community.



OPPORTUNITIES

- While new development can strain the existing network, it also provides opportunities to create new streets and improve connectivity.
- Currently, roads further from downtown, such as Grey Road, Rocky River Road, and Shearer Road are experiencing low levels of congestion.
- New roundabouts on Griffith Street have calmed traffic speeds in the busy corridor.
- There are currently several significant ongoing projects focused on improving vehicular mobility in the regions. These include:
 - Managed lanes on I-77 under construction
 - Potts/Sloan/Beaty Connector under design
 - NC 73 widening study underway
- North-South Parkway
 Study (underway)



- CHALLENGES Only 44% of respondents to the 2017 Davidson National Citizen Survey rated "travel by car" positively.
- Streets in Davidson serve local and regional passthrough traffic. Regional traffic patterns bring traffic in and out of town, especially on Highway 115, which provides relief to traffic on I-77.
- The town is lacking continuous north-south roadway corridors besides Main Street.
- Intersections such as Griffith and Beaty, and Main and Davidson-Concord, are often cited as unsafe for walking/crossing and challenging for all users regardless of their mode of travel.
- There are several areas in town where crashes are common. These are discussed further in the Safety Spotlight on pages 36 through 41.

BY THE NUMBERS

The map to the right shows average daily vehicle counts for some of Davidson's major roadways, collected by the North Carolina Department of Transportation (NCDOT) for 2016.

Using these vehicle counts and existing roadway capacity, a Level of Service (LOS) for motor vehicles was determined for each roadway. Level of Service A indicates a relatively congestion-free roadway with little travel delays, while Level of Service E indicated more congestion and higher delays.

Based on the average annual daily traffic counts (AADT), **Griffith Street and Concord Road stand out as the most congested corridors**

with an LOS of E. Other moderately congested areas include Main Street and Davidson-Concord Road, with an LOS of C. Currently, Rocky River Road and Grey Road have relatively few issues with congestion.


EXISTING CONDITIONS: STREET AND VEHICULAR MOBILITY

Level of Service B Level of Service C Level of Service E \times Average Annual Daily Traffice (AADT) Note: Level of Service is based on AADT



Parks & Open Space Water Body Davidson Town Limits Davidson SOI Study Area



NCDOT MAINTAINED ROADWAY NETWORK





0



Secondary Route







An assessment of the Town of Davidson crash data from 2013 to 2017 was conducted to identify "hot spot" areas. Over the past five years, 842 crashes have occurred in Davidson. These crashes have large impacts on the community, resulting in 238 injuries and one fatality over the five year period measured. Notably, there has also been a sharp upward trend in crashes over the five year period.

Peak commuting period crashes also create unpredictable travel patterns related to congestion and travel delays. By creating safer streets for all users, the community can save time, money, and lives.

The maps on the following page show that there are high concentrations of crashes along I-77 (238 crashes in the past 5 years), Griffith Street (132 crashes), and Main Street / NC 115 (103 crashes). In addition to these corridors, several intersections with a high frequency of crashes were identified. Notably, the four intersections with the highest number of crashes are all located along **Griffith Street.**

CRASH SUMMARY BY YEAR

YEAR	TOTAL CRASHES	TOTAL FATALITIES	TOTAL INJURIES
2013	140	0	50
2014	130	0	35
2015	161	0	38
2016	220	1	57
2017	191	0	58
TOTAL	842	1	238

Source: Town of Davidson Police Department

HIGH FREQUENCY CRASH INTERSECTIONS

INTERSECTION	TOTAL CRASHES (2013 - 2017)
Griffith at I-77	59
Griffith at Harbour Place / Davidson Gateway	44
Griffith at Jetton	30
Griffith at Davidson Gateway	26
NC 115 / Main at Depot	22
NC 115 / Main at Concord	20
NC 115 / Main at Jackson	17
NC 115 / Main at Delburg / Glasgow	14
Griffith at Sloan / Beaty	12
Davidson-Concord at Robert Walker	11

Source: Town of Davidson Police Department



EXISTING CRASH HOT SPOTS: TOWNWIDE (2013 - 2017)



EXISTING CRASH HOT SPOTS: DOWNTOWN (2013 - 2017)





EXISTING CONDITIONS: BICYCLE SAFETY



0	Davidson	College

- Grocery Store
- School
- Community Center
- ----→ Railroad





EXISTING CONDITIONS: PEDESTRIAN SAFETY

Pedestrian-Involved Crashes (2007-2016)

- O No/Possible/Unknown Injury
- Evident or Disabling Injury

Fatality

- Davidson College
- Grocery Store
- School
 - Community Center
 - --- Railroad





 Pedestrian-Involved Crashes (2007-2016)

 No/Possible/Unknown Injury

 Evident or Disabling Injury

 Fatality

- Davidson CollegeGrocery Store
- SchoolCommunity Center
- Railroad





The Town performed a comprehensive parking study in 2011 and updated this study's data and findings in 2017. The 2017 parking study update surveyed nearly 2,000 spaces downtown. with approximately 700 of these spaces, or roughly one third, owned and managed by the Town and fully available for public access. The remaining spaces are privately owned and generally reserved for employees or visitors of the establishments they support. This onethird-public ratio is not an unusual balance for a small downtown without

structured parking facilities and where regulated on-street parking is limited. However, it has potential implications for reliably available parking, especially for occasional visitors, as less than half of all existing parking can be centrally managed by one entity.

In addition to the detail on inventory, the 2017 parking study update surveyed parking occupancy to understand how parking is being used throughout the day. The diagrams on pages 44 through 47 illustrate this, and they show a core set of street parking and off-street public spaces in regularly high use during the day.

As a parking industry rule of thumb. utilization rates of 85 to 90 percent are considered optimal efficiency: there is always some space available to receive users, but not so much availability that significant amounts of parking supply are unused. The Town's 2017 parking study update showed that several locations reach or even exceed this amount even multiple times of the day. This suggests that current levels of regulating parking, which today include only two-hour time limits on around 180 of the public spaces, are not sufficiently encouraging turnover and availability.







OPPORTUNITIES

- Introducing parking fees for town-owned lots is one mechanism to consider in order to increase the availability of parking in downtown.
- Additional parking opportunities exist in close proximity to downtown, but are often underutilized. Wayfinding signage can help direct drivers to find these spaces more readily.

CHALLENGES

- Encouraging the use of available parking outside of the immediate downtown retail area will take coordinated efforts to educate and inform residents and visitors.
- Access to parking beyond the immediately adjacent lots in the downtown core can be improved through improved pedestrian facilities and safe crossings.

BY THE NUMBERS

Within the historic downtown area and the immediate surrounding blocks, there are...

> **371** Public On-Street Parking Spaces

328 Public Off-Street Parking Spaces

1,231 Private Off-Street Parking Spaces

74%

Maximum Parking Spaces Occupied on a Saturday

59%

Maximum Parking Spaces Occupied on a Thursday







THURSDAY, APRIL 6, 2017, 10:00 AM

under 40%
40 - 60%
60 - 80%
over 80%



THURSDAY, APRIL 6, 2017, 12:00 PM

under 40%	
40 - 60%	
60 - 80%	
over 80%	
DAVIDSON MOBILITY PL	AN



THURSDAY, APRIL 6, 2017, 6:00 PM





SATURDAY, APRIL 1, 2017, 10:00 AM

under 40%	
40 - 60%	
60 - 80%	
over 80%	



OPPORTUNITIES

- The concurrent North Corridor Transit Alternatives study is looking at viable transit corridors in addition to the existing locally preferred alternative (LPA) that recommends commuter rail service along the Norfolk Southern rail line from Charlotte to Mooresville. Alternatives may include light rail or bus rapid transit (BRT) options.
- The pilot trolley service in Davidson in 2017 was well received by residents and may provide the template for a more formal trolley or local circulator service.
- Recent updates to the CATS bus routes 97 and 99 offer improved local service. 77x Express bus service will be improved with more direct routes to Charlotte with the opening of toll lanes on 77.

CHALLENGES

- Current management's policy at Norfolk Southern Railroad does not allow passenger rail service on the existing tracks.
- Local bus services on routes 97 and 99 run daily from 6 am to 8 pm every only 30 minutes.
- Express service via the 77x route to Charlotte run at peak times only, 5 am to 9 am and 4 pm to 9 pm. Midday and weekend service is not currently available.



North Corridor Transit Alternatives. (Source: CATS)



EXISTING CONDITIONS: TRANSIT MOBILITY

- CATS Bus Stops
 Bus Route 77x (Express)
 Bus Route 99 (Local)
 Bus Route 97 (Local)
- Davidson College
- Grocery Store
- School
- Community Center
 - Railroad





BUS TRANSIT

Current transit service in Davidson is provided by Charlotte Area Transit Service (CATS), and is a mix of local and express services. CATS Route 99 (the North Meck Village Rider) provides a circulator loop with all-day service through Davidson's historic downtown and the Gateway Village district. connecting to Cornelius and Huntersville and traveling further south to the Northlake Mall parkand-ride facility. Travel to central Charlotte on this route requires a transfer at Northlake to another CATS local route, although it does operate seven days per week (with weekend service ending in afternoons).

The town is also served by an express transit service, Route 77X (the North Mecklenburg Express), which provides peakhour service to uptown Charlotte and makes multiple stops through the town before returning to the I-77 corridor. This route operates only on weekdays and in the peak hours. The main Park and Ride area is located at the on-street parking on Jetton Street near Davidson Gateway. When the I-77 toll lanes are completed (early 2019), the

77X bus will use these lanes for efficiently within the Town. express service to Charlotte. Residential densities in the

There are many residents of Davidson who could benefit from transit. As a largely residential community with a substantial portion of employment outside of the town, commuting alternatives to driving alone on the I-77/ NC 115 corridor have sufficient appeal and demand for an express bus service to serve the town. Low density development patterns have made traditional transit service more difficult to provide

Residential densities in the town limits average around 2 dwelling units per acre or less in most neighborhoods, such as McConnell, Old Davidson, and River Run. The St. Albans neighborhood and Circles at 30 South are exceptions, at 4 and 13 dwelling units per acre, respectively (see map below for details). Seven dwelling units per acre has been used as a threshold density for supporting traditional bus service. However, transit providers are looking at new technologies and new vehicle



types for transit service without a) the adherence to minimum densities; and, b) the relatively high cost of traditional transit operations needed to provide a sufficient level of service.

HIGH CAPACITY REGIONAL TRANSIT

CATS's 1998 transit system master plan called for a North Corridor commuter rail service operating on Norfolk Southern's track. This service would have included stops in Davidson and Cornelius. As that transit vision has evolved and faced unwillingness from the railroad owner, CATS and its partner agencies are considering other potential concepts and technologies for this corridor's transit, including a bus-based corridor service in the I-77 managed lanes serving similar functions to commuter rail.

CATS is currently conducting an ongoing study of the North Corridor transit options. Recommendations from the study will be incorporated into the 2030 Transit Corridor System Plan. In any scenario, Davidson is well positioned for a station location, with a variety of destinations and mix of land uses within a convenient distance of the town center and Exit 30.

TRANSIT SHUTTLE SERVICE

In 2017, Davidson operated a pilot limited-service, fare-free shuttle on weekends (Friday and Saturday evenings and Saturday morning) that connected destinations primarily in its downtown. Although a popular service, this trolley was operated solely by the Town with no established longterm funding source. It did demonstrate the demand for short-distance transit service in the town, especially for connection to special events. The Town continues to contract out trolley services for Park and Ride and neighborhood pickup for special events such as Christmas in Davidson and Town Dav.



Source: Town of Davidson



NEW MOBILITY AND TECHNOLOGIES

Technology is quickly changing the way people travel, particularly in urban areas. Mobile devices are making it easier to check transit status in real-time, call-a-ride sharing service, or access a bike share system. These services also create opportunities to integrate modes, making it easier to use more than one mode to complete a trip. Additionally, autonomous vehicles will soon be a regular part of travel options for individuals and transit services. Where does Davidson stand today?



RIDE-SHARING

Ride-sharing apps, such as Uber and Lyft, are becoming widely used. While ridesharing has the potential to free up in-demand parking spaces, there are also potential congestion issues as many vehicles stop to pick up or drop off passengers. With no designated areas for drop offs, especially in downtown, oftentimes the vehicles stop within the travel way, which can lead to traffic congestion and unsafe maneuvers by both vehicles and pedestrians.

Ride-share has been a particularly attractive option for airport drop off and pick up for Davidson residents, as the fare each way is in the \$30-40 range, and on-site parking costs a minimum of \$10/day for the daily parking deck.

CAR-SHARING

Car-sharing services such as Zipcar or car2go allow users to rent cars by the hour using a mobile app. Davidson College has a ZipCar program for students, faculty, and staff. However, There are currently no other formal car-sharing services or infrastructure in the town. However, peer-topeer car sharing apps such as Turo are making car sharing widely available, including in the Lake Norman area.

BIKE-SHARING

Davidson College recently implemented a pilot dockless bike sharing program through Mobike. Bike share users utilize their smart phones to scan a code on each bike, which automatically unlocks the bike. After the bike is locked, users are automatically charged for the time spent on the bike. Dockless bike share bikes do not have to be returned to a fixed bike share station. The College worked with Mobike to provide designated parking areas around campus. Davidson's program was notable for being the first partnership between Mobike and a higher education institution in the US. **The pilot program was discontinued in 2018.**

There are also four dockless VBike bike share bikes in Davidson, which are operated independently by a private company (www. vbike.com). VBikes are available for use by the public through the company's mobile application. Ingersoll Rand has also experimented with bike share bikes on their campus.



Mobike users can see where nearby bikes are located when they open the Mobike app. (Source: Mobike app)



A Davidson College student uses a Mobike on campus. (Source: The Davidsonian)

COMMUNITY ENGAGEMENT

DAVIDSON | MOBILITY PLAN

OVERVIEW

Community input was a fundamental element of this plan and was used to develop project principles, recommendations, and priorities. Public outreach was conducted throughout the project through a variety of means including a **project website, online interactive Wiki-mapping, outreach at community events, a "community conversation" event, public presentations, focus group interviews, walking tours, biking tours, on-the-street interviews, and a 3-day public charrette**.





DAVIDSON | MOBILITY PLAN

ENGAGEMENT HISTORY

Public input was gathered through multiple avenues and outlets in order to gather a broad perspective on mobility issues and needs. This plan will not only affect those who reside in Davidson, but also those who work, own businesses, shop, attend school or college, and visit the town.



Key Types of Meetings & Public Input:

10	STAKEHOLDER COMMITTEE MEMBERS
4	STAKEHOLDER COMMITTEE MEETINGS
35+	FOCUS GROUP MEETING ATTENDEES
70+	ATTENDEES AT COMMUNITY CONVERSATION AND TWO MOBILITY TOPIC PRESENTATIONS
2	PUBLIC OUTREACH SESSIONS AT LOCAL EVENTS
3	DAY COMMUNITY CHARRETTE
100+	INTERACTIVE MAP COMMENTS SUBMITTED
5	WALKING + BIKING TOURS
1	DAY OF ON-STREET INTERVIEWS
4	DRAFT AND FINAL PLAN PRESENTATIONS

COMMUNITY ENGAGEMENT PHOTO GALLERY

Images from the public outreach events during the 2018 planning process. Over 300 people participated in the process through the charrette, emails to staff, walking and biking tours, on-street interviews, stakeholder meetings, and community events.













DAVIDSON | MOBILITY PLAN

PUBLIC INPUT PHOTO GALLERY



Community presentation on Roads and Greenways, held in May 2018.



Davidson residents discussed current mobility limitations and opportunities with consultant team during the 3-day charrette, held May 2018.

Davidson residents on a downtown walking tour with consultant team and guest speaker, held February 2018.



Davidson resident participating in an "on-the-street interview". She reports that "Cars don't observe crosswalk @ Robert Walker- Go Too Fast"



Davidson residents discussing existing conditions and previous recommendations at a public workshop.



Davidson residents respond to draft mobility recommendations after the presentation held at the end of the charrette.



DAVIDSON | MOBILITY PLAN

THE CHARRETTE PROCESS

A three-day charrette was held May 22-24, 2018. This open-studio workshop was an opportunity for the consulting team to develop recommendations alongside the public, in a collaborative setting. A review of each day's progress was held each evening, with a final presentation and summary of the recommendations on the third day. The project team set a goal to reach as many residents as possible and to hear from diverse constituents. The charrette gave the public multiple opportunities to participate, provided avenues for detailed project review, and produced draft recommendations that were reviewed by the steering committee.



PUBLIC INPUT MAP

This map depicts the most mentioned areas for improvements identified through public input.

- A: Greenway connection from Fisher Farm to McConnell neighborhood
- B: Intersection improvements at Sam Furr and Davidson-Concord Road
- C: Bike and pedestrian facilities along Grey Road connecting Downtown and neighborhoods to Fisher Farm
- D: Intersection improvements at Main and Potts and Main and Davidson St. (YMCA entrance)
 - for cars, bikes, and people
- E: Bike and pedestrian facilities along N. Main Street (NC 115) - connecting downtown Davidson to northern neighbors
- F: Greenway connection from Fisher Farm to Rocky River Road
- G: Bike and pedestrian facilities along Concord Road
- H: Roadway and intersection improvements to Beaty Street/Main Street





PUBLIC INPUT SUMMARY

The following is a summary of the public input statements that were received through the various forms of public input. This input provided both broad priorities for improving mobility, as well as identifying specific issues and problem areas. The number of comments in each category gives a sense of relative importance of topics to citizens who participated in the process. Providing a better walking and biking environment was a clear priority.

PROVIDE MORE + ENHANCED PLACES TO WALK, BIKE, RUN

Sidewalk Maintenance and Repair Issues:

- 10 year plan on sidewalks
- ADA [American Disability Act] accessibility on sidewalks/curb cuts
- Ability to walk to all major destinations Sidewalks broken by trees
- Sidewalks on Griffith Street are uneven/ cracked
- Sidewalks are too narrow
 on NC-115 between
 railroad underpass and
 Catawba Avenue
- Sidewalks on Davidson-Concord Road are too narrow
- Sidewalk on S. Main Street: widen; make ADA accessible

Sidewalk/Bikeway Gaps:

- Prioritize pedestrian infrastructure over bike infrastructure
- In Old Davidson, walking, biking, and transit as focus; connect inner town with greenways
- More sidewalks; close gaps
- 35 sidewalk gaps in Village
- Potts Street needs bike/ pedestrian facilities (both sidewalks and multi-use path requested)
- Sidewalk and bike facility on Beaty Street; improve existing sidewalk; multi-use path
- Bike/walk path near or along NC-115 to Pine Lake Prep
- Bike/walk facility on NC-115 between Beaty Street/ Ridge Road
- Safe crossing/sidewalk to

YMCA, Shops on 115

- Bike or walk access along Davidson-Concord Rd.; from Robert Walker Drive to entrance at River Run; connect to Woodland Street
- Sidewalk on Lorimer Road at library
- Catawba Avenue
- Extend sidewalk from Appolinaire Drive to Robert Walker Drive on west side of Davidson-Concord Road
- Twin Oaks Road needs a sidewalk
- Watson Street- gaps on east side of street
- Delburg Street- multiple gaps
- Jetton Street needs sidewalk on south side of street
- Bike lanes needed on loop consisting of Grey Road, Shearer Road, E. Rocky River Road, Concord Road

Cultivate a bikeand walkerfriendly town

PROVIDE MORE + ENHANCED PLACES TO WALK, BIKE, RUN (continued)

Signals/intersections Improvements

- Potts Street/Catawba Avenue at community garden: low visibility at crossing
- NC-115/Railroad Underpass: no safe pedestrian or bike facilities
- Regulation needed at Baker
 Drive/Concord Road
- Crossing signals too short to cross safely in downtown
- Walk signals are confusing, esp. near Flatiron
- Crosswalks on Main Street are not visible (e.g., Depot Street)
- Ridge Road/Beaty Street needs crosswalks and/or signal/control
- Jackson Street/Depot Street needs crosswalks
- Signal at Flatiron is too long to wait as pedestrian: allway ped-scramble?
- Better crossings on S. Main Street

More Greenways

- "I love the multi-use paths proposed."
- Need connection to Fisher Farm/Abersham
- Need path to Davidson Pointe
- Make nature preserve trail wider between Summers Walk and greenway
- Incentivize dirtways in advance of greenway development
- Create bike/pedestrian pathways where street easements exist
- Prioritize bike/ped accessways to Davidson Elementary School

Bikeways

- Need signage for bikefriendly routes
- Emphasize familyfriendly bike facilities (vs. provisions for routes for fitness/sport cyclists)
- Lorimer Road as a bikeway; no on-street parking
- Make sure parking does not block the bike lanes
- Bike lane or other bike facility on Potts? Continue with facilities from NC-115
- Separated bike lanes
- Davidson-Concord Road: traffic is too fast
- Eliminate parking on Concord Road, Main Street, South Street and use space for separated bike lanes

Biking and walking is why I moved to Davidson.

CREATE MORE EFFICIENT/SAFER MOTOR VEHICLE MOVEMENT

Invest in roadway projects

- Smith Road (Cornelius) • to Pine Road
- Davidson-Concord Road to NC-115 to Presbyterian to Concord
- More roadway options around town

Better Alternatives to Cars

- Remove on-street parking on Delburg Street to make safer for cyclists
- Prioritize bike/pedestrian Enforcement investments vs. new roads in neighborhoods
- "Make driving NO FUN • so walking and cycling becomes more attractive and safe and fun"
- Where are golf carts allowed in town? Allow LSEV [low-speed electric vehicles]/golf carts on local streets and greenways

Need More Traffic Calming/ **Reduced Speeds**

- Beaty Street: speeding and curve it make unsafe for walking and biking
- Catawba Avenue
- Woonerf streets
- Potts Street
- Major roadways at pedestrian crossings: speed humps
- Lorimer Road
- Woodland Street

- 3-way stop at Woodland Street/Ridgewood Avenue
- Enforce distracted driving
- Stop sign running •
- No Trucks on Potts Street •

Intersections

- Turn lane on Main Street at Concord Road
- Refine intersection options at NC-115/Potts Street (reduce size of roundabout or consider signal and new underpass at railroad)
- 3-way stop at Catawba Avenue/Potts Street/ Community Garden
- Manage left turns on Potts Street at Jetton Street
- Add left turn lane on Beaty Street at Griffith Street
- Add traffic light at Beaty Street and Armour Street

Traffic

- CSD carpool traffic should circle through parking lot, not on street (too narrow)
- Consider converting Watson Street to one-way

Parking

- There is enough parking downtown; people should walk more:
- Charge for parking
- Add parking for greenway and park access; include on maps
- Limit on-street parking on narrow streets (Depot Street, Chairman Blake Lane, Delburg Street)

l avoid Main Street on foot & car b/c of traffic.

EXPAND TRANSIT OPTIONS

More consistent transit

- A Train
- On evenings/weekends
- Make 99 bus (CATS) run more than once/hour

Covered bus stops/benches

- Make bus stops more visible on Main Street: covered benches
- Can Davidson College students help design a bench for bus stop in front of the VAC [Belk Visual Arts Center]?

Education on transit options (e.g., CLT Sprinter, Mall, etc.)

 CATS bus schedules available on campus (paper copies)

Add Trolley schedule and location to Town app

IMPLEMENT EDUCATION/ ENCOURAGEMENT/ ENFORCEMENT PROGRAMS

Need education component

- Education programs on bike/car etiquette
- Courtesy campaign
- Pedestrian awareness
 campaign so people know it
 is a walking community and
 will look for pedestrians

More bike share

- Use hybrid dock-based system; incentivize docking or locking to fixed objects
- I like Mobikes: visiting parents can use them

Maps and wayfinding

- Include parking on maps of greenways
- Provide wayfinding for walking and biking routes
- Create a bike/pedestrian suitability map, especially for routes to schools and for seniors

Restrict carpool traffic to school when buses available

OTHER

- Enhance community gateways into Davidson with iconic elements
- Toll lanes are great! Can't wait to reduce my commute time
- Preserve private property; reduce eminent domain
- Street lights

Open Space

- Preserve greenspace in town
- Increase public access to the lake
- Davidson needs a skate park

We need expanded transit service to Charlotte (midday, nights, weekends)

MOBILITYRECOMMENDATIONS

FRAMEWORK FOR MOBILITY

The vision for mobility in Davidson is that the town will be a place where a **balanced and connected network of comfortable facilities for pedestrians, cyclists, transit, and private vehicles** is provided to all residents; where mobility options are efficient, safe, and convenient throughout Davidson; and where pedestrian-friendly design is prioritized in all development projects.

The recommendations in the plan are based on a mobility framework developed through the planning and community input process. This framework emphasizes the efficient movement of people and equitable allocation of street space to accommodate a wide range of users and activities, with **pedestrian access and mobility as the top community priority.**

Using this framework, recommendations for pedestrian, bicycle, transit, and vehicular mobility are presented in this chapter. All **recommendations are rooted in previous planning efforts and the public process** of this plan to reflect the needs and wants of the people of Davidson. The framework recognizes that NCDOT and developers will be primary partners for new roadway development.



PROJECT PRIORITIZATION

This plan is designed to serve as the Comprehensive amount of investment. In Transportation Plan for the Town of Davidson, and as such its recommendations aim to help community members move around the community safely. efficiently, and conveniently while maintaining and enhancing the guality of life for which they come to live, work, and play in Davidson.

Full implementation of the recommended network improvements included in this plan will take many

years and require a significant order to identify high priority initiatives, the project team developed a methodology to determine priority initiatives. as shown in the graphic below. The methodology can be used to revisit the priority project list on a regular basis to reevaluate a specific project's importance as the Town adjusts its goals and objectives (such as through the development and adoption of the new Comprehensive Plan). In this way the Town

can ensure that the priority list achieves the desired goals while responding to changes in the growth of the Town and funding availability over time.

Using the criteria shown below, the Stakeholder Committee created a prioritized list of projects for pedestrian, bicycle, intersection improvement, and roadway projects. This chapter outlines these priority projects, as well as related project recommendations for each travel mode.


The Stakeholder Committee and Planning Department developed the prioritization criteria in order to score projects on factors that collectively contribute to maintaining a high quality of life for residents and visitors. The table below details the criteria on which each project was evaluated for each prioritization factor.

The prioritIzation process was used to score **sidepath**, **greenway**, **roadway**, **intersection**, and **bikeway projects** (sidewalk projects have previously been prioritized in the 2013 Davidson Walks and Rolls: Active Transportation Master Plan and were not re-scored for this plan). The scored results of the prioritization process are summarized in Appendix D.

PRIORITIZATION FACTOR	CRITERIA
1. SAFETY (5 points)	 a. Within 1/4 mile of a crash b. Dedicated separate facility (bicycle or pedestrian) c. Adds traffic calming elements to new or existing street d. Improves intersection crossing for pedestrians and cyclists e. Increases/promotes education, awareness, or visibility (e.g., signage, unique design, frequency of presence leads to better anticipation)
2. REDUCED TRAVEL TIME (2 points)	 a. Intersection improvement for managing vehicular traffic b. New connection parallel to congested collector / arterial corridor
3. HEALTH/ ENVIRONMENTAL QUALITY (2 points)	 a. Active Transportation Project (Bike / Pedestrian / Transit Project) b. Mitigates against increasing pressure/needs for parking in downtown by reducing necessity or desirability of 1-2 occupant vehicles
4. CONNECTIVITY (3 points)	 a. Commercial Connections: within 1/4 mile from a mixed-use land use (Apartment, non-residential, Office, Retail, Vertical Mixed Use, Commercial Node) b. School Connections: within 1/4 mile of school c. Park / Greenway Connections: Within 1/4 mile of park Connects to existing greenway Connects to an existing sidewalk
5. COST (1 point)	a. Lower cost facility (e.g. bike lanes, side paths, multi-use paths, sidewalks, striping) under \$800,000*
6. IMPLEMENTATION & USEFUL LIFE (2 points)	 a. Over 70% right-of-way acquired b. Will not be eliminated or destroyed by development in fewer than 5 years after completed.
7. PUBLIC SIGNIFICANCE (2 points)	a. Included in at least two (2) previous plans or moreb. Identified as a "most-mentioned" project through public input analysis
8. VALUE (2 points)	 a. Grants and Public/Private Partnerships to share costs are available. b. Not currently addressed in other/third-party plans; or not reasonably anticipated to be constructed by others within five (5) years.
9. REGIONAL SIGNIFICANCE (3 points)	 a. Connects to facility outside of municipal/Sphere of Influence (SOI) limits. b. Connects to NC and/or US highways or interstate highways. c. Anticipates and seeks to proactively address known or reasonably expected increased traffic volume and land development pressures from neighboring jurisdictions and/or transportation system plans.

*\$800,000 is assumed to be the threshold cost as projects under this cost are not recommended by the CRTPO for state/ federal funding due to the number of steps required to administer a state- and federally-funded project.

PRIORITY PROJECT LIST

In addition to the quantitative prioritization scoring described on the previous pages, the Mobility Plan Stakeholder Committee identified top priority projects based on input gathered during the course of the Mobility Plan study. The following Priority Project List highlights 13 projects that the Stakeholder Committee has put forward for consideration by the Town Board of Commissioners for near-term funding and implementation. These projects are mapped on pages 72 and 73.

RANK	PROJECT DESCRIPTION	SAFETY	REDUCED TRAVEL TIME	HEALTH/ENVIRON- MENTAL QUALITY	CONNECTIVITY	COST	IMPLEMENTATION & USEFUL LIFE	PUBLIC SIGNIFICANCE	VALUE	REGIONAL SIGNIFICANCE	TOTAL SCORE
1	SIDEPATH along BEATY STREET from NORTH MAIN STREET to GRIFFITH STREET (see page 93 for details) ¹	3	0	2	3	0	2	2	2	1	15
2	WEST BRANCH ROCKY RIVER GREENWAY connecting the existing WEST BRANCH RR GREENWAY at FISHER FARM PARK to the funded GREENWAY west of NARROW PASSAGE	2	0	2	1	0	1	1	2	0	9
-	SIDEPATH along GREY ROAD from WOLFE STREET to SHEARERS ROAD (see page 94 for details) ²	3	0	2	2	0	2	2	2	2	15
3	GREENWAY from MCCONNELL NEIGHBORHOOD to FISHER FARM PARK (see page 95 for details) ²	1	0	2	1	0	1	2	2	0	9
4	INTERSECTION IMPROVEMENT at N MAIN STREET, BEATY STREET, and RIDGE ROAD (see page 107 for details)	2	0	0	2	0	1	1	2	2	10
	WALNUT STREET-to-VERNON DRIVE BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12
-	EASTWAY STREET-to-SOUTH STREET BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12
5	DOGWOOD LANE-to-CONROY AVENUE BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12
	HILLSIDE DRIVE-to-CATHEY STREET BIKE-PED CONNECTOR ³ (see page 96 for details)	2	0	2	3	1	1	1	2	0	12

NOTES:

¹ Where denoted, detailed project cutsheets have been developed and can be found on referenced page.

² These two projects are ranked as one because they are two options that are interchangeable in terms of the what they provide and therefore only one would probably be built.

³ These projects are ranked as one, as they similar projects that could be implemented individually or together as opportunity allows.

RANK	PROJECT DESCRIPTION	SAFETY	REDUCED TRAVEL TIME	HEALTH/ENVIRON- MENTAL QUALITY	CONNECTIVITY	COST	IMPLEMENTATION & USEFUL LIFE	PUBLIC SIGNIFICANCE	VALUE	REGIONAL SIGNIFICANCE	TOTAL SCORE
6	SIDEWALK INFILL PROJECTS (various locations)	-	-	-	-	-	-	-	-	-	-
7	INTERSECTION IMPROVEMENT at SAM FURR ROAD/NC 73 and DAVIDSON-CONCORD ROAD (see page 108 for details)	2	1	0	0	0	1	1	1	3	9
8	INTERSECTION IMPROVEMENT at CONCORD ROAD, GREY ROAD, and PINE ROAD (see page 109 for details)	3	1	0	1	0	2	1	2	2	12
9	SIDEPATH along DAVIDSON-CONCORD ROAD from the existing sidepath to SAM FURR ROAD/NC 73 (see page 97 for details)	2	0	2	1	0	2	1	2	2	12
10	WEST BRANCH NATURE PRESERVE GREENWAY from the existing WEST BRANCH ROCKY RIVER GREENWAY to HELEN BENSON BOULEVARD	2	0	2	2	0	1	0	2	0	9
11	DAVIDSON EAST GREENWAY from JULEES WALK to BRADFORD REGIONAL PARK	2	0	2	2	0	1	1	2	2	12
12	DAVIDSON-CONCORD ROAD EXTENSION from CONCORD ROAD/ROCKY RIVER ROAD to PRESBYTERIAN ROAD (see page 110 for details)	2	1	2	2	0	1	1	2	2	13
13	BIKE LANES (various locations)	-	-	-	-	-	-	-	-	-	-

NOTES:

¹ Where denoted, detailed project cutsheets have been developed and can be found on referenced page.

² These two projects are ranked as one because they are two options that are interchangeable in terms of the what they provide and therefore only one would probably be built.

³ These projects are ranked as one, as they similar projects that could be implemented individually or together as opportunity allows.



PRIORITY PROJECTS

Proposed Facilities

- Intersection Improvement
- Multi-Use Path
- Bike-Ped Connector
- New Roadway Connection
- Existing Facilities
 Greenway
- ••• Greenway (Funded)
- Bike-Ped Connector
- Shared Lane Marking
- Bike Lane
 Unpaved Trail
- Davidson College
 Grocery Store
 School
 Community Center

Railroad





PRIORITY PROJECTS

- Proposed Facilities
 O Intersection Improvement
- Multi-Use Path
- Bike-Ped Connector
- New Roadway Connection
- Existing Facilities
 - Gleenway
 - •••• Greenway (Funded)
 - Bike-Ped Connector
 - Shared Lane Marking
 - Bike Lane
 - Unpaved Trail
- Davidson College
- Grocery Store
- SchoolCommunity C
 - Community Center Railroad
- Water Body Davidson Town Limits Davidson SOI Study Area

Parks & Open Space



SIDEWALK PRIORITY PROJECTS

The 2013 *Davidson Walks and Rolls: Active Transportation Master Plan* provides a comprehensive list of sidewalk recommendations for the Town of Davidson. The Town has done an outstanding job of implementing these recommendations over the past 5 years with new or funded pedestrian projects built by the Town, NCDOT, or private developers (e.g., Jackson Street, I-77 bridge, Mock Circle/Mock Road, Grey Road, Watson Street, as well as pedestrian signal and crossing improvements). There remain many sidewalk gaps in Davidson's network, however.

Priority sidewalk sections from the Walks and Rolls plan that have not been completed or funded and remain priorities are highlighted in yellow in the table at right.

This plan proposes that the Town formally adopt a sidewalk infill prioritization methodology in order to address these remaining gaps in a systematic and equitable fashion. Further details can be found on the following page.

Project Name Feet Miles Recommendation Priority Beaty St (Griffith 3,726 Phase I: South side 5' sidewalk con-High / Near-term N. Main) structior 5.229 0.99 Phase II: Replace existing north side sidewalk with 10' sidepath N Main: 5' sidewalk construction on √ain St (Beaty 4,045 High / Near-term South Town limits) east side (Ridge to existing sidewalk 1,850 S Main: Sidewalk replacement (Cataw ba to Twin Oaks/Town Boundary) Main St Sidepath 2,000 0.38 Widen sidewalk between Griffith and High / Near-term (Glasgow to Glasgow to 10' Chariman Blake) Griffith St (Spin-1,755 0.33 5' sidewalk construction High / Near-term naker Cove Dr Concord Rd (N. 5,969 1.13 5' sidewalk construction on north side High / Near-term Main - Dowing St) Potts St (S. Main 1,855 5' sidewalk construction High / Near-term 601 011 5' sidewalk construction on east side Watson (Delburg-High / Negr-term Griffith) 4.299 0.81 10' sidepath construction on the south High / Near-term DCR - Sidepath ide of DC Jackson St (S. 2,430 0.46 Alternative 1: East side 5' sidewalk High / Near-term Main - Delburg) constructior Alternative 2: 10' sidepath construction on East side Griffith St (Beaty 1,660 5' sidewalk construction Griffith St (Port-3.300 0.63 5' sidewalk construction Medium / side - Spinaker Medium-term 0.94 Cove Dr) 500 Bridge Retrofit Sidewalk construction (side of the Delburg (Beatystreet TBD by City Public Works) Jackson St (S. 2,430 0.46 5' sidewalk construction on West Side Low / Long-term Main - Delburg) Jetton St (Da-Sidewalk construction on both sides Low / Long-term Potts) Grey Rd (Con-1,736 0.33 South side 5' sidewalk construction Low / Long-term cord - Wolfe) Concord Rd (N. 4,299 0.81 Sidewalk replacement to 10' sidepath Low / Long-term between Kimberly & Pine Main St Sidepath 2,000 0.38 Widen path along entire length to Low / Long-term (Glasgow to 10-12' and enhance intersections and Chariman Blake) signage for bike/ped use

Priority sidewalk projects from the Davidson Walks & Rolls Plan. Projects not constructed or funded are highlighted in yellow.

SIDEWALK INFILL PRIORITIZATION

While this plan identifies a few top priority projects, there are a number of sidewalk gaps that remain in Davidson's network. The Town should formally adopt a sidewalk infill prioritization methodology in order to address these remaining gaps in a systematic and equitable fashion (Action 1.4, see page 77).

The methodology can be similar to that used for prioritizing projects within this plan as described in the pages above, the method used in the Walks and Rolls plan, or a simplified version as described in the graphic below.

The development of the sidewalk prioritization methodology should be informed by a public input process that will ensure that the prioritization criteria reflect the needs and values of Davidson residents. By formalizing this process, the Town will be able to develop a more transparent, systematic, and objective approach to identifying priority projects for implementation. Some key considerations that should be addressed when developing the prioritization process will be:

- How to weigh competing demands (e.g., whether to install sidewalks on the second side of a highpedestrian-traffic street that already has a sidewalk on one side or to install a sidewalk one side of a lower-pedestrian-traffic street)
- How to balance immediate needs related to safety and access (i.e., ADA compliance) against longterm network expansion.

SIDEWALK INFILL PRIORITIZATION

The prioritization criteria are based upon best-practices and are used to score project recommendations. The prioritization process was designed to be an objective, data data-driven process, using proximity to the criteria to assign scores. Using this method, projects that meet more criteria receive highest scores, corresponding to the highest priority projects



PUBLIC INPUT

Davidson has engaged the public through public workshops, stakeholder meetings, and an online mapping exercise. Projects with demonstrated public endorsement qualify for this prioritization criterion.



PROXIMITY TO SCHOOLS

To encourage more students to walk and bicycle to school, proposed facilities that connect to, or travel within a quarter mile of K-12 schools (public and private) qualify for this prioritization criterion.



EQUITY

Areas with high concentrations of seniors, youth, people with disabilities, and low income households or households without cars. typically have higher rates of walking and bicycling, and are usually more underserved when it comes to existing infrastructure. US Census data is used, and projects that serve areas with a high concentration of historically underserved populations score more points than areas with lower concentrations of these populations. Included data cover age, race, income, educational attainment, Limited English Proficiency (LEP), and access to a private vehicle.

Example sidewalk infill prioritization methodology DAVIDSON | MOBILITY PLAN



CONNECTIONS TO ACTIVITY CENTERS

By increasing pedestrian accessibility to major activity centers (e.g. parks, major retail areas, employment centers, etc.), the Davidson Mobility Plan recommendations can reduce traffic congestion and support residents and visitors who choose to bicycle or walk for transportation. Projects that connect to these centers qualify for this prioritization criteria.

PROJECT COST

Sidewalk facilities range in project readiness and construction cost. Sidewalk and pedestrian projects that require minimal changes to the built environment score higher on this criterion.

CONNECTIVITY TO EXISTING PEDESTRIAN FACILITIES



Extending the existing network to create longer continuous routes will result in a more connected system as it expands versus implementing isolated and disconnected projects. Facilities that connect to an existing trail or sidewalk qualify for this scoring criterion.



PEDESTRIAN AND BICYCLE CRASHES

Projects that include corridors or intersections with higher rates of pededstrian- and bicycle-involved crashes (according to data from the past five years) score higher than those where no crashes have occurred.



PEDESTRIAN MOBILITY

BY THE NUMBERS

Davidson's Vision for Pedestrian Mobility, when fully realized, will include:

> **50+** Miles of Sidewalks

26

Miles of Greenways and Trails

> **21** Miles of Sidepaths

2 Miles of Bike-Ped Connectors

10

Miles of new sidewalks and pathways in the Town by 2023

WALKING GOALS

Maintaining and enhancing Davidson as a pedestrianoriented community is the highest priority mobility goal for Davidson citizens. The envisioned pedestrian network is guided by the Town's Mission Statement ("pedestrian and bicycle orientation"), Mobility Plan Guiding Principles, previous planning efforts, and public input to achieve the following goals & objectives:

- Make ALL streets pedestrian-friendly and accessible to all
- Connect greenways to popular destinations town destinations
- Reduce pedestrian-involved crashes
- Continue to implement the Walks & Rolls Plan

- Implement five high priority pedestrian projects by 2021
- Fill gaps in the sidewalk network
- Enhance existing sidewalks with streetscaping and maintenance
- Improve ADA accessibility
- Provide safer and more frequent crossings
- Enhance safe crossings through measures such as high visibility markings, RRFBs (rectangular rapid flash beacons) and HAWK (High-Intensity Activated crossWalk) signals where context-appropriate; and
- Improve and expand greenway and trail network for transportation, recreation, and exercise.



DAVIDSON | MOBILITY PLAN

PROJECT TYPES

To accomplish these goals, this plan identifies the following pedestrian project types:

- **Sidewalks** to fill key connectivity gaps identified in the 2013 Davidson Walks and Rolls and this plan.
- **Greenways** along key natural and off-road corridors.
- **Sidepaths** (multi-use pathways for walkers and cyclists) along major roads.
- **Bike-Ped Connectors** that connect pedestrian and bicycle facilities across short distances, usually a retrofit solution to connect two streets or pathways.
- Intersection and Crossing improvements for people walking.

ACTION STEPS

Constructing greenways and shared use paths, and retrofitting streets with sidewalks can have significant costs. Action steps for getting these projects built are outlined below.





Pedestrian infrastructure will include a variety of improvements from sidewalks to greenways and intersection improvements.

- 1.1. Include pedestrian and greenway improvement projects in the local Capital Improvement Program (CIP), increasing consistent year-to-year funding levels.
- 1.2. Evaluate a cost-share program for sidewalk maintenance to ensure sidewalk repair is implemented equitably.
- 1.3. Increase minimum sidewalk width on major roads (e.g., Main Street/NC-115, Griffith Street, Concord Road, etc; and future roadway types "Parkway" and "Urban Avenue/ Boulevard" in the Planning Ordinance) and other arterial or collector type streets with at least 3,000 cars/day (e.g., Potts, Jetton, Beaty) to 6-foot minimum.
- 1.4. Develop/implement a sidewalk infill prioritization methodology based on recommendations in this plan and previous plans (see page 75 for more details).
- 1.5. Install more consistent crosswalk treatments throughout town, especially at priority crossings identified on page 85.
- 1.6. To increase readiness for grant funding, develop preliminary plans (30% construction drawings) for priority sidewalk projects. This action will also help leverage the recently approved bond monies to be used as an effective match for larger grants.
- 1.7. Update Planning Ordinance to reflect recommendations for advisory shoulder and sidepath design standards as detailed on page 81 and 83, respectively.





DESIGNING FOR ALL USERS

The transportation network should accommodate pedestrians with a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical characteristics, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. Older adults walk more slowly and may require assistant devices to help with their walking stability, sight, and hearing. The table below summarizes common pedestrian characteristics for various age groups.

The Manual on Uniform Traffic Control Devices (MUTCD) recommends a normal walking speed of 3.5 feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to 3 feet per second for areas with older populations and persons with mobility impairments. The transportation system should accommodate these users to the greatest extent possible.

AGE	CHARACTERISTICS
0-4	Learning to walk
	Requires constant adult supervision
	Developing peripheral vision and depth perception
5-8	Increasing independence, but still requires supervision
	Poor depth perception
9-13	Susceptible to "darting out" in roadways
	Insufficient judgment
	Sense of invulnerability
14-18	Improved awareness of traffic environment
	Insufficient judgment
19-40	Active, aware of traffic environment
41-65	Slowing of reflexes
65+	Difficulty crossing street
	Vision loss
	Difficulty hearing vehicles approaching from behind

Source: AASHTO. Guide for the Planning, Design, and Operation of Pedestrian Facilities, Exhibit 2-1. 2004.



Preferred Operating Space 6' (1.8 m)

ADVISORY SHOULDER

Advisory shoulders create dedicated, usable space for pedestrians and bicyclists on a street whose right-of-way may be otherwise too narrow for sidewalks or other separated facility. The center lane functions as a two-way travel lane; vehicles may enter the advisory shoulders when no pedestrians or bicyclists are present and when passing oncoming traffic. The shoulders can be paved in contrasting materials and have dashed white lines along the edge.

This treatment is cost-efficient and can be applied without needing to widen the road. Advisory shoulders can fill gaps between important destinations in a community and may be a good interim treatment for neighborhood streets where sidewalk installation is not likely in the near term, for example:

- Virginia Road,
- Thompson Street,
- College Street, or
- Watson Street between Griffith Street and Depot Street.

For further design guidance on advisory shoulders, refer to the *Small Town and Rural Multimodal Networks* guide, available at https://www.fhwa.dot.gov/environment/bicycle_ pedestrian/publications/small_towns/fhwahep17024_lg.pdf. This report is a design resource and idea book to help small towns and rural communities support safe, accessible, comfortable, and active travel for people of all ages and abilities.



Example of advisory shoulder in Hanover, NH.

For use outside, between, and within built-up areas with bicycle and pedestrian demand and limited available paved roadway surface.



APPLICATIONS

SPEED AND VOLUME

For use on roads with low volumes, and low-speed motor vehicle traffic. Roads with few driveways are preferred to reduce potential conflict points.

NETWORK

LAND USE

For use on constrained connections between built-up areas.





MULTI-USE PATHS

Multi-use paths play an important role in Davidson's pedestrian network, providing safe, enjoyable walking environments. This section provides guidance on multiuse path design that elaborates on the design standards that are already in Davidson's Planning Ordinance and in the Walks and Rolls Plan of 2013. The Planning Ordinance currently uses the terms multi-use paths, multi-use trails, and greenways interchangeably, while the Walks and Rolls Plan describes greenways and sidepaths as two types of the broader category of multi-use paths. It also uses the term shared-use paths as a synonym for multi-use paths. This plan recommends clarifying the language of the Planning Ordinance to follow the language of the Walks and Rolls Plan and to specify the design standards for these two types of multi-use paths—greenways and sidepaths—as defined and described below.

GREENWAYS AND TRAILS (OFF-ROAD)

A multi-use path that is off-road is referred to here as a greenway, and it provides a travel area separate from motorized traffic for bicyclists, pedestrians, skaters, wheelchair users, joggers, and other users. Greenways can provide a low-stress experience for a variety of users using the network for transportation or recreation. Greenways follow utility corridors, railroad alignments (both active and abandoned), and greenway/stream corridors.

The geometric design of greenways should support the speed and volume of expected user types. As recommended in the Walks and Rolls Plan, 10 ft -12ft width is recommended in most situations and will be adequate for moderate to heavy use.



APPLICATIONS

SPEED AND VOLUME

Paths operating in independent corridors are fully separated from traffic. Facility provision is based on opportunity and connectivity rather than roadway context. In some cases, an independent corridor may offer similar connectivity and access to destinations as a nearby roadway.

NETWORK

Serves connections independently of the street network. May function as a network alternative road and highway connections.



LAND USE

Generally appropriate outside of built-up areas, and also as a corridor connection within urban areas.



SIDEPATHS (ALONG ROADWAY)

A sidepath is a bidirectional multi-use path that is located immediately adjacent and parallel to a roadway. These trails can offer a high-quality experience for users of all ages and abilities as compared to on-roadway facilities in heavy traffic environments, allow for reduced roadway crossing distances, and maintain rural and small town community character.

A sidepath along the roadway can encourage bicycling and walking in areas where high-volume and high-speed motor vehicle traffic would otherwise discourage it.



- Sidepath width standards are similar to greenway dimensions, with a minimum of 10 feet recommended, and 12 feet recommended in areas that get heavy use.
- Separation from the roadway should be informed by the speed and configuration of the adjacent roadway and available right-of-way and engineering judgment. Preferred minimum separation width is 6.5ft. Minimum separation is 5ft. Separation narrower than 5ft is not recommended without the use of a physical barrier.
- Special consideration at intersections and driveways. For example, a high visibility crossing treatment has been implemented where the existing sidepath crosses Davidson-Concord Road, as shown in the photo below.



APPLICATIONS

SPEED AND VOLUME

For use on roads with high volumes, and moderate-to high-speed motor vehicle traffic. Roads with few driveways are preferred to reduce potential conflict points.

NETWORK

For use on arterial links on the regional or local biking and walking network.



LAND USE

For use inside of built-up areas to provide a dedicated space for pedestrians and bicyclists.



INTERSECTION + CROSSING TREATMENTS

The specific type of treatment at a crossing may range from a simple marked crosswalk to a full traffic signal or grade separated crossing. Before a marked crosswalk is installed, appropriate selection of crossing treatments should be evaluated in an engineering study, which should consider number of lanes, presence of a median, distance from adjacent signalized intersections, pedestrian volumes and delays, average daily traffic (ADT), speed limit, geometry of the location, possible consolidation of crossing points, availability of street lighting, and other appropriate factors. Davidson has already begun implementing improved crossing treatments using flags and high visibility crosswalks at minor crossing; Rectangular Rapid Flashing Beacons (RRFBs) at more heavily trafficked crossings; and <u>H</u>igh-Intensity <u>A</u>ctivated cross<u>WalK</u> beacons (HAWKs) at major crossings, such as the roundabouts at Griffith Street.

1 MARKED CROSSWALKS	MARKED CROSSWALKS WARNING SIGNAGE										
4 PEDESTRIAN HYBRID BEACON	ERE TO	5 FUL	LTRA	FFIC SIGN	AL	6	GRADE	SEPA	RATIO		
PEDESTRIAN CROSSING CON- TEXTUAL GUIDANCE At Unsignalized Locations	Lo Stre 15-25	cal eets mph	C	ollector Stree 25-30 mph	StreetsArterial Streetsmph30-45 mph						
						2 lanes 2 with 3 4 4 lanes lanes median lanes lanes an refuge					
FACILITY TYPES	2 Ianes	3 Ianes	2 Ianes	2 lanes with median refuge	3 lanes	2 Ianes	2 lanes with median refuge	3 Ianes	4 Ianes	4 lanes with medi- an refuge	
FACILITY TYPES 1 Crosswalk Only (high visibility)	2 Ianes	3 Ianes	2 Ianes EJ	2 lanes with median refuge EJ	3 Ianes X	2 Ianes EJ	2 lanes with median refuge	3 Ianes	4 Ianes	4 lanes with medi- an refuge	
FACILITY TYPES 1 Crosswalk Only (high visibility) 2 Crosswalk with warning signage and yield lines	2 lanes ✓ EJ	3 lanes	2 lanes EJ ✓	2 lanes with median refuge EJ ✓	3 lanes X ✓	2 lanes EJ EJ	2 lanes with median refuge EJ EJ	3 Ianes X EJ	4 lanes X X	4 lanes with medi- an refuge X X	
FACILITY TYPES 1 Crosswalk Only (high visibility) 2 Crosswalk with warning signage and yield lines 3 Stop Sign Controlled	2 lanes ✓ EJ X	3 lanes ✓ ✓ EJ	2 lanes €J ✓	2 lanes with median refuge	3 lanes X ✓	2 lanes EJ EJ	2 lanes with median refuge EJ EJ ✓	3 lanes X EJ ✓	4 lanes X X X	4 lanes with medi- an refuge X X ✓	
FACILITY TYPES 1 Crosswalk Only (high visibility) 2 Crosswalk with warning signage and yield lines 3 Stop Sign Controlled 4 Active Warning Beacon (RRFB)	2 lanes ✓ EJ X X	3 lanes ✓ EJ X	2 Ianes EJ ✓ ✓ EJ	2 lanes with median refuge EJ ✓ EJ EJ EJ	3 lanes X ✓ EJ	2 EJ EJ ✓ EJ	2 lanes with median refuge EJ EJ ✓	3 lanes X EJ ✓	4 lanes X X X X	4 lanes with medi- an refuge X X ✓	
FACILITY TYPES1Crosswalk Only (high visibility)2Crosswalk with warning signage and yield lines3Stop Sign Controlled4Active Warning Beacon (RRFB)5Full Traffic Signal	2 lanes ✓ EJ X X X	3 lanes ✓ EJ X X	2 Ianes ✓ ✓ EJ EJ	2 lanes with median refuge EJ ✓ EJ EJ EJ EJ EJ	3 lanes ✓ ✓ EJ EJ	2 EJ EJ ✓ EJ EJ	2 lanes with median refuge EJ ✓ ✓ EJ	3 Ianes K EJ ✓ EJ	4 lanes X X X X ✓	4 lanes with medi- an refuge X X ✓ ✓ ✓	Mo

Most Desirable
Engineering Judgment
Not Recommended

CROSSING TREATMENTS

The Town should endeavor to provide more consistent crosswalk treatments throughout town, based on guidance provided on previous page.

The following locations have been identified as priorities for improved crossing treatments, based on existing conditions and traffic analysis, as well as public input:

- Griffith Street & Spinnaker Cove Drive
- Jackson Street & Depot Street
- Jackson Street & Griffith Street
- Main Street & Depot Street
- Main Street at library bulb-out
- Delburg Street & Jackson Street
- Delburg Street & Watson Street

Midblock crossings can provide legal crossings at locations where pedestrians want to travel, and can be safer than crossings at intersections because traffic is only moving in two directions. **Location criteria for where midblock**

crossings should be considered include:

- Long blocks (longer than 400) with destinations on both sides of the street;
- Locations with heavy pedestrian traffic, such as schools or shopping centers; and
- Midblock transit stops, where transit riders must cross the street on one leg of their journey.
- For more guidance on the provision of midblock crossings, refer to Section 4.2.8 of the National Cooperative Highway Research Program's (NCHRPO) 2018 report *Design Guide for Low-Speed Multimodal Roadways* or the Federal Highway Administration's (FHWA) 2005 report *Safety Effects of Marked versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines.*

- Beaty Street & Lakeview Avenue
- Watson Street & Depot Street
- Jackson Street & S Main Street
- N Main Street at Ridge Road/Beaty Street
- S Main Street & Catawba Avenue
- S Main St at Railroad Underpass

Specific locations to consider for midblock crossings that meet these

criteria and have also received public interest for having improved crossings, are:

- Main Street at the bulbout near the library
- Griffith Street at
 Spinnaker Cove Drive
- Griffith Street at Lakeside Drive
- Jetton Street at Hamilton Street



BY THE NUMBERS

Recommendations, when implemented, will result in:

18

Total Miles of Bike Lanes

19

Total Miles of Family Friendly Bike Routes

27

Total Miles of Wide Shoulders and Shared Use Markings

49

Total Miles of Greenways, Trails, and Shared Use Paths

94

Additional Miles of Bicycle Facilities in the Town

BICYCLING GOALS

Creating cycling options comfortable for all users was a key mobility theme identified during the planning process. The proposed bikeway network aims to fulfill this vision by addressing the following goals:

- Provide safe routes comfortable for bicyclists of all ages and abilities;
- Improve connectivity to commercial destinations and expand the role of cycling beyond recreation to a viable transportation mode for everyday trips;
- Provide neighborhood bikeway connections for families;
- Implement high-quality, low-stress bikeways;
- Improve connectivity to parks, greenways, and shared use paths;
- Install adequate bicycle parking as required in Planning Ordinance; and
- Implement five miles of new bikeways by 2023.



Davidson resident (college student and transit rider) participating in an "on-thestreet" interview says he would like "A biker-friendly Davidson."



PROJECT TYPES

To accomplish these goals, the following bicycle project types were identified:

- Family Friendly Bikeway Routes along Spring Street, Lorimer Road, Woodland Street, Depot Street, Dogwood Street, and many other neighborhood roads to provide safe family biking environments;
- **Bike lanes** along Concord Road, Jetton Street, Griffith Street, and the Davidson Gateway to improve onstreet bikeway connectivity;
- Shared Lane Markings along Potts Street, Sloan Street, and Main Street; and
- Sidepaths and paved shoulders along rural roads such as Concord Road, to provide transportation, recreation, and exercise options for different cyclists.



ACTION STEPS

Bikeway funding can be leveraged to create a low-stress network that is comfortable for all users.

- 2.1. Include bicycle projects in the local Capital Improvement Program (CIP), increasing consistent year-to-year funding levels.
- 2.2. Conduct corridor studies along Griffith Street, Concord Road, and Main Street/NC-115 in order to assess feasibility of enhanced bicycle facilities along these key corridors.
- 2.3. Fund bicycle facility maintenance and consider funding additional maintenance equipment needed to adequately maintain a low-stress bikeway system.
- 2.4. To increase readiness for grant funding, develop preliminary plans (30% construction drawings) for priority bicycle projects.
- 2.5. Increase bicycle parking facilities (both short- and long- term, as defined by Planning Ordinance) by 50% by 2023 at destinations.





Paved Shoulder







DESIGNING FOR

ALL USERS

The last decade has seen tremendous investment in bicycle infrastructure locally and across the United States. However, one key realization is now shaping how bicycle investments are made.

Although some bicyclists will ride on any road, regardless of an available bikeway ("strong and fearless"), a much larger portion of the population will ride only where there is a high-quality bikeway ("interested but concerned" population). Understanding this concept has led us to design more low-stress bikeways that provide the highquality experience the majority of cyclists desire.

The chart on this page shows a "typical" distribution of

bicyclists while also capturing the general type of experience they prefer.



DESIGNING FOR ALL CONTEXTS

Selecting the best bikeway facility type for a given roadway can be challenging since the selection must balance traffic conditions (speed and volume), land use context, and implementation cost.

Selecting a bikeway type is not a prescriptive process and other factors need to be considered beyond speed and volume. For instance, the types of traffic (transit, truck traffic, taxi zones, etc), on-street parking, available roadway or roadside space, intersection density, and surrounding land use all play a role in determining the best low-stress facility type.

Once a facility type is identified, the reference table on the next page provides additional high-level information regarding the design and implementation for each facility type.

to 80 will be the most effective way to reach the "Interested but Concerned" group

Designing for ages 8



< 2% Strong & Fearless



5% Enthused & Confident

nterested but Concerned

35% No Way, No How

BIKE FACILITY TYPES

The Davidson Walks and Rolls Active Transportation Mobility Plan already provides detailed design guidance for the bicycle facility types, as depicted below. These design standards should be referenced when implementing bicycle facility projects recommended in this plan.

For further design guidance on advisory shoulders, please refer to the *Small Town and Rural Multimodal Networks* guide. Additional guidance on bicycle facility treatments is also available in the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide and the Federal Highway Administration (FHWA) Separated Bike Lane Planning and Design Guide.



Arterial/Highway Bikeway Continuum (with curb and gutter)



BICYCLE PARKING

The Walks and Rolls Plan of 2013 (pages 5-47, 5-48; 6-1, 6-2) and Section 86 of the Planning Ordinance provide detailed guidance on bicycle parking design and recommendations for increasing the number and locations of bicycle parking facilities. The Town of Davidson should continue to implement these recommendations and standards that require the installation of bicycle parking in new non-residential and multi-family developments. Easily accessible and available bicycle parking can help encourage bicycling as a convenient travel mode around town and can also reduce the incidence of improperly parked bikes (e.g., within the pedestrian or roadway right-of-way) including shared bikes.



The following pages highlight some of the pedestrian and bicycle projects that were identified as priorities during plan process. These project cutsheets include preliminary concepts and cost estimates that can be used to inform the Town's implementation of these projects.

PROPOSED BEATY STREET SIDEPATH (N MAIN ST TO GRIFFITH ST)



ABOUT THIS PROJECT

- This project will complete the pedestrian network by connecting to existing sidewalks on N. Main Street and those already on Beaty Street.
- This sidepath will be part of the Mooresville-Charlotte Trail
- The side of the street that this facility will be installed on has yet to be determined. Major destinations to connect to include Ingersoll Rand, Community School of Davidson, Oakhill Apartments on the north side, and the future park on the south side.

PROPOSED IMPROVEMENTS

EXISTING CONDITIONS





PRIORITY SCORE



ESTIMATED COST*

\$1,513,687.50

*Detailed cost estimates are provided in the Appendix, reflecting 2017 prices; typically a 10% escalation in costs per year can be expected.

PED + BIKE PROJECTS

year can be expected. **DAVIDSON | MOBILITY PLAN**

ESTIMATED COST*

\$3,960,000

*Detailed cost estimates are provided

typically a 10% escalation in costs per

in the Appendix, reflecting 2018 prices;

ABOUT THIS PROJECT

PROPOSED GREY

(WOLFE ST TO GREENWOLD DR)

ROAD SIDEPATH

- Multi-use path along the south/ east side Grey Road provides critical bike/ped connection
- Functions as alternate active transportation route to Fisher Farm Park (see greenway recommendation, facing page)

EXISTING CONDITIONS



PROPOSED IMPROVEMENTS



PRIORITY SCORE



PED + BIKE PROJECTS

PROPOSED McCONNELL-FISHER FARM GREENWAY

ABOUT THIS PROJECT

- This greenway connection was the most highly requested mobility recommendation as a result of the community engagement efforts
- Proposed greenway would connect dense residential McConnell and St Alban's neighborhood to Davidson's premier regional park destination
- It is assumed that this project will require some landowner involvement to acquire the space necessary for the alignment.



PROPOSED IMPROVEMENTS



Davidson Rural Area Plan)



ESTIMATED COST*

\$3,880,000

*Detailed cost estimates are provided in the Appendix, reflecting 2018 prices; typically a 10% escalation in costs per year can be expected.

PROPOSED BIKE-PED CONNECTORS



ABOUT THESE PROJECTS

- Connectors serve bike and pedestrian access needs within the existing street network without allowing vehicular cut-through
- Connectors are ideally 10-foot asphalt paths, with a minimum of 6 feet where conditions are constrained. Treatment can be applied at dead-ends of residential street, such as Dogwood Lane, on the right (please see map below for map of some locations that the neighborhood connector treatment could be applied). A full list of connector projects is provided in the Appendix.

POTENTIAL LOCATION



APPLICABLE CONNECTOR LOCATIONS



PRIORITY SCORE



- Vernon Drive to Walnut Street*
- 2. Eastway Street to South Street*
- 3. Armour Street to N. Main Street
- 4. Brook Street to Hillside Drive
- 5. Lorimer Road to Brook Street connector
- 6. Hillside Drive to Cathey Street*
- 7. Cathey Street to Spring Street
- 8. Goodrum Street to Cathey Street
- 9. South Street to Greenway Street
- 10. Dogwood Lane to Conroy Avenue*
- *Stakeholder-Identified Priorities

ESTIMATED COST

Variable

Cost will vary depending on which connections are identified for implementation. It is dependent on available right of way, length and materials used for the facility, as well as engineering costs.

PROPOSED DAVIDSON-CONCORD ROADWAY (SIDEPATH EXTENSION TO NC 73)



ABOUT THIS PROJECT

- Sidepath would be a continuation of the existing facility along the south side of Davidson-Concord Road
- Sidepaths provide multimodal mobility along high-speed, high traffic-volume corridors
- Additional critical sidepath segments include: Concord Road (Kimberly Road to Crescent Drive), Beaty Street (Main Street to Griffith Street), and Griffith St (Main St to Davidson Gateway Dr)

EXISTING CONDITIONS



PROPOSED IMPROVEMENTS



PRIORITY SCORE



ESTIMATED COST*

\$3,220,000

*Detailed cost estimates are provided in the Appendix, reflecting 2018 prices; typically a 10% escalation in costs per year can be expected.



STREET AND VEHICULAR MOBILITY

BY THE NUMBERS

Recommendations, when implemented, will result in:

5

Miles of Additional Town Street Connections

37

Miles of Rural Connections Recommended in the Rural Area Plan

2

Miles of Streets with New Developments

Shared Use Street Focus Project (Festival Street/Woonerf)



More Miles of Street Connections

ROADWAY GOALS

The plan first and foremost aims to create a Davidson where all users of the roadways are safe. The proposed improvements also aim to enhance vehicular mobility by providing convenient and efficient driving options. The proposed street network aims to fulfill this vision by addressing the following goals:

- Improve intersections to enhance capacity and promote safety;
- Provide additional roadway connections to provide local alternatives to thoroughfares such as I-77 and Highway 115; and
- Promote traffic calming to reduce speeding in residential areas.



DAVIDSON | MOBILITY PLAN

PROJECT TYPES

To accomplish these goals, several high priority street and roadway projects are identified:

- Roadway extensions for Concord Road and Grey Road;
- Shared use streets for lowspeed, low-volume streets such as Spring Street;
- Intersection improvements at NC 73 and Davidson-Concord Road; Grey/ Pine and Concord Road; North Main and Beaty/ Ridge Road; and Main and Concord Road; and
- New street connections to be constructed with continuing development projects.



ACTION STEPS

To create the street network outlined in this Plan, a variety of implementation strategies will need to be considered.

- 3.1. The Town can use the concepts and policies presented in this Plan to implement proposed improvements through regularly scheduled capital projects, such as streetscape projects, street resurfacing, or new public or private development projects.
- 3.2. Departments like Public Works can use their maintenance resources and staff to support programs, planning efforts, and infrastructure maintenance.
- 3.3. The Town will need to actively manage the list of projects in this plan and assign appropriate funding and staff time to implement them. It should also be flexible and opportunistic with funding and prioritization of projects to deliver projects as quickly as possible.
- 3.4 The Town should update its Planning Ordinance to include design standards for shared streets/festival streets/woonerfs, as a street classification that better accommodates all travel modes on low-speed, low-traffic-volume streets, such as Spring Street.
- 3.5. The Town should continue to work with regional partners to develop final alignments for the North-South Parkway that is anticipated to provide an alternative route to I-77 and NC-115 as well as for the Grey Road and Davidson-Concord Road extensions.



RECOMMENDED STREET NETWORK

- Intersection Improvement; roundabout
- New Roadway Connection
- New Street Connection (with Development)
- Shared Use/Festival Street
- ---- Rural Area Plan Proposed Street Network
- Davidson College
- Grocery Store
- School
- Community Center
- Railroad
- Parks & Open Space Water Body Davidson Town Limits Davidson SOI Study Area



RECOMMENDED STREET NETWORK

- Intersection Improvement
- New Roadway Connection
- New Street Connection (with Development)
- Shared Use/Festival Street
- ---- Rural Area Plan Proposed Street Network
- Davidson College
- Grocery Store
- School
- Community Center
 - ----- Railroad



DAVIDSON | MOBILITY PLAN



There is more than one way to configure a street. Some configurations prioritize motor vehicles, while others better accommodate all modes. The cross-section illustrations here display the hierarchy of alternative configurations options for different land use and transportation contexts in Davidson. Consider adding these typologies to the Planning Ordinance.

SHARED-USE STREETS AND FESTIVAL STREETS

Shared-use streets, also known as yield roadways, festival streets or woonerfs. use traffic calming techniques and a curbless configuration to create a comfortable and safe shared environment for all users. This treatment is applicable on low volume and low speed streets. The graphics to the right show different possible crosssections for a shared-use street depending on the context. This configuration is proposed for an extension of Spring Street (see facing page).

VILLAGE CONTEXT: MATERIALS DIFFER FOR ALL REALMS (TRAVEL, PARKING, WALKING)





NEIGHBORHOOD CONTEXT: MIDBLOCK, PARKING-ALLOWED SECTION (YIELD CONDITION)

P



DAVIDSON | MOBILITY PLAN

5' PARKING

SHARED-USE STREET CONCEPT APPLICATION: SPRING STREET

EXISTING CONDITIONS



ABOUT THIS TYPE OF PROJECT

•

- Shared streets can be applied to a number of residential, lowspeed (ideally, 20mph or less), low-volume streets (ideally, fewer than 1,000 vehicles/day; see <u>Yield Roadways</u> for info.)
- Pavers, signage, and other design elements prioritize functions beyond vehicular travel, such as space for recreating, socializing, and leisure

PROPOSED IMPROVEMENTS





NORTH-SOUTH PARKWAY SUB-AREA STUDY

- A North-South Parkway Sub-Area Study is currently underway to identify new north-south connections that will span from Huntersville to Mooresville.
- The study recommends identifying more than one connections/ alignments that will distribute north-south traffic across existing facilities.
- Preliminary alignments include June Washam Rd and Shearer Rd (yellow line in map at right), Davidson-Concord Road and its extension north as described at right and on page 110 (red line in map at right), and Shiloh Church Rd and Odell School Rd (blue line in map at right).
- The cross-section through Davidson would adhere to the Town's standards for a 2-lane road with parallel multiuse path (sidepath), as defined in the "Scenic Byway Overlay" section of the Ordinance.

This is a map of the preliminary Recommended Alignments from the ongoing North-South Parkway Sub-Area Study. The Davidson town limits are shown with a dashed-orange line. For more details on this plan, see the project website at <u>www.Northsouthparkway.org</u>



DAVIDSON | MOBILITY PLAN
GREY ROAD EXTENSION

- This is a regional priority outside of Davidson and would require planning by CRTPO and Iredell Co.
- One of several regional connections recommended in the North Davidson Parkway Alignment Study of 2010 and the Rural Area Plan
- New roadway connection between Shearers and Hwy 3/Coddle Creek Road
- Provides vital east-west traffic outlet for connection to Cabarrus
- Cross section would include 2-lane road and separated, shared-use path, as defined as "Scenic Byway Overlay"
- Reference Rural Area Plan for more details and design guidance



DAVIDSON-CONCORD ROAD EXTENSION

- This is a local and regional priority that extends into and would require coordination with Iredell County, as well as CRTPO
- This connection has been recommended in multiple previous plans, including the Davidson Parkway Alignment Study of 2010 and the Rural Area Plan, and is part of one of the alignments proposed in the North-South Parkway Sub-Area Study
- New roadway connection between Concord Road and Presbyterian Road
- Provides vital north-south traffic outlet that bypasses downtown Davidson
- See project cutsheet on page 110, and Rural Area Plan for more details and design guidance





The following pages highlight the roadway projects that were identified as priorities during public input process. These project cutsheets include preliminary concepts and cost estimates that can be used to inform the Town's implementation of these projects.

PROPOSED N MAIN STREET + BEATY ST/RIDGE RD INTERSECTION IMPROVEMENT

ABOUT THIS PROJECT

- Project normalizes the offset intersection that currently exists at this location, enhancing safety and crossing opportunity for pedestrians.
- Project will link with proposed sidepath on Beaty St.Signalization decreases delay and enhances safety
- for traffic leaving Ingersoll Rand and going to points north during the afternoon peak hour
- Opportunity to create northern entry to Town and reduce speeds of vehicles entering Davidson from the rural 55 mph segment of NC 115 to the north.
- Project will require coordination with Davidson College.

PROPOSED IMPROVEMENTS

EXISTING CONDITIONS





PRIORITY SCORE



ESTIMATED COST*

\$980,000

PROPOSED NC 73 + DAVIDSON-CONCORD ROAD INTERSECTION IMPROVEMENT

INTERSECTION



ABOUT THIS PROJECT

- Addition of a southbound right turn lane is a near-term treatment that will relieve some of the traffic at this intersections at peak travel times and rectify the unsafe condition with vehicles traversing an unpaved shoulder to cut the corner.
- The long-term treatment will be a reconfigured intersection as part of the scheduled NC-73 upgrade (2025).
- The relatively low cost of adding a turn lane at this location may provide reduction in delay at this intersection in the interim until the above described project is completed.

PROPOSED IMPROVEMENTS

EXISTING CONDITIONS





PRIORITY SCORE



ESTIMATED COST*

\$350,000

PROPOSED GREY ROAD/PINE INTERSECTION ROAD + CONCORD ROAD () INTERSECTION IMPROVEMENT

ABOUT THIS PROJECT

- A realignment of Grey Road and Pine Rd to be closer to 90 degrees will allow better visibility and traffic flow at this busy intersection.
- With the soon to be constructed sidewalk along the north segment of Grey Road this intersection will likely have more pedestrian traffic desiring to cross from Pine to Grey. Normalizing the intersection to a true 90 degrees will enhance pedestrian and vehicle safety.

EXISTING CONDITIONS



PROPOSED IMPROVEMENTS



PRIORITY SCORE



ESTIMATED COST*

\$1,440,000

PROPOSED DAVIDSON-CONCORD ROAD EXTENSION

NEW STREET

ABOUT THIS PROJECT

- New roadway connection between Presbyterian Rd and the existing intersection of Davidson-Concord Rd, Concord Rd, and Rocky River Rd. Provides vital northsouth traffic outlet for connection to Mooresville.
- This concept is currently under joint study as part of the North-South Parkway Study and is supported by Huntersville, Mooresville, and Davidson.
- Cross section will include 2-lane road, bike lanes, and sidewalks and or a separated, multi-use path, as described and illustrated in Action 5.5 of the Rural Area Plan.
- It is assumed that some of this project will be implemented with new development and in partnership with NCDOT, CRTPO, Mooresville, and Iredell County.

PROPOSED ROADWAY



ACTION STEPS Adopt alignment, and include in CRTPO Comprehensive Transportation Plan Protect ROW and implement congruently with new development 5 Bike Turn Lane or Bike Walk Travel Lane Travel Lane Shared Use Path Buffer Median Buffer Lane Lane 10-14' 6' 2' 5' 10' 12' 10' 5' 2 6' 6'

80'- 84' ROW

PRIORITY SCORE



ESTIMATED COST*

\$23,600,000



PARKING RECOMMENDATIONS

BY THE NUMBERS

According to the *Comprehensive Parking Study* that was conducted for the Town of Davidson in 2017, **the town has an overall parking surplus of approximately 16 percent** (2,034 spaces available for a parking demand estimate of 1,699). However, there are areas within the downtown core that experience parking deficits during peak demand (e.g., lunchtime on weekdays). In order to address these deficits, a series of recommendations are offered below.

(For details on the parking analysis, see Appendix B and the full Comprehensive Parking Study available on the Town's website at <u>http://www.ci.davidson.nc.us/700/Comprehensive-Parking-</u><u>Study</u>.)

Parking Spaces Available within Downtown Core

2,034

1,699

Parking Spaces in Demand in Downtown Core

16%

Overall Parking Surplus in Downtown Core

ACTION STEPS

To create the parking recommendations outlined in this Plan, a variety of implementation strategies will need to be considered. The Town should:

- 4.1. Adopt and implement a performance-based parking program.
- 4.2. Conduct a pilot application of pricing, using pay station meters, for on-street parking in the downtown retail district.
- 4.3. Establish the administrative authority for staff to set parking prices based on observed demand.
- 4.4. Establish a regular monitoring and reporting schedule for parking utilization and enforcement in order manage its performance-based parking program.
- 4.5. Create a shared parking program that will maximize the use of existing public and private parking spaces in and around the downtown retail district.
- 4.6. Invest in a parking wayfinding system to direct drivers to available parking spaces.

ACTION STEP 4.1 PERFORMANCE-BASED PARKING

The Town should adopt and implement a performancebased parking program. Performance-based management adjusts rates and regulations to make it as easy as possible to find a parking space. The two primary stages of regulation—time limits and price—should each take effect when downtown facilities reach an appropriate level of use, as described in Table 5.1 below. Consistent availability, not additional revenue, is the primary goal.

The "right price" is always the lowest price that will achieve an availability target. Adjusting rates over time-up where demand is higher and down where demand is lower-will allow Davidson to better distribute parking demand across its downtown and make more efficient use of existing spaces. In general, the Town should treat its on-street spaces as its most valuable, as these provide critical customer access to retail businesses in a manner that is convenient and desirable. Off-street parking should provide a cheaper, long-term option for visitors who still want convenience but wish to stay for longer periods.

Action steps 4.2 through 4.4 in the following subsections provide more detail on this program and are based on application of pricing to some of downtown's spaces.

ACTION STEP 4.2 PILOT BASED PRICING

Current management of onstreet parking in downtown's retail district is only on a time-limit basis, but observed parking utilization is still very high (and full in some locations). The Jackson Street surface lot shows similar characteristics, with consistently high rates of use throughout the day.

The study recommends a pilot application of pricing in these locations, using pay station meters to allow payment for an entire group of spaces at once. Cities using pay stations typically install one of these stations per uninterrupted block-face, meaning that each group of parking spaces separated by a driveway or cross street can have one meter.

Pay station meters can also be used for off-street locations as a lower-cost way of managing payment, and this may be considered for the Jackson Street lot if the Town observes continued patterns of high use there.

In locations where pricing is applied, time limits should be eliminated. This is to allow price to function as an effective provider of parking availability and allowing customers wishing to pay for use of downtown's most valuable spaces to do so. It is also intended as a way to counteract the imposition of price, which typically generates concern among stakeholders (especially businesses).

On-street parking in the core of downtown has a higher level of demand than parking in surrounding locations. Pricing should reflect this, and this means that on-street pricing on Main Street and South Street should be higher than pricing rates in offstreet lots.

TABLE 5.1: THRESHOLDS FOR APPLYING PARKING REGULATIONS (TIME LIMITS AND/OR PRICE)

FACILITY TYPE	PROPOSED TIME LIMIT THRESHOLD	PROPOSED PRICING THRESHOLD
On-Street Parking	Utilization on an entire block surpasses 75% for at least 6 hours per day	Utilization on an entire block surpasses 85% for at least 6 hours per day
Off-Street Parking Lots	Utilization surpasses 75% for at least 8 hours per day	Utilization surpasses 85% for at least 8 hours per day
Off-Street Parking Garages	No threshold: time limits not used	Utilization in public spaces surpasses 85% for at least 8 hours per day

ACTION STEP 4.3 ESTABLISH AUTHORITY FOR PARKING CHARGES

This involves providing staff the administrative authority to set parking prices up to a certain amount that the Town determines appropriate. Since the Town currently has no pricing on any public parking, the Mobility Plan recommends an easily-understood and relatively affordable amount such as \$1.00 per hour as a maximum. Granting administrative authority would allow staff to make rate changes based on observed demand-including reducing rates if a price left some parking underutilized.

Creating an ordinance to codify this authority is an important first step to establish a price system. By then allowing administrative authority to change rates, the Town may react and adjust more quickly than if Council had to approve each rate change.

The Mobility Plan does not make specific recommendations on a type of parking revenue technology or a vendor to supply it, though it does recommend that the Town undertake a detailed feasibility and strategy study to identify this—which would include an assessment of potential pricing levels and the return on this investment for the Town in

terms of capital cost recovery and increased business activity due to more customers having available parking. This study does not need to be large or complex; it should use the basic parameters of the Mobility Plan's recommendation on performance-based pricing to identify locations for applying the pilot pricing program and gathering information on required costs and infrastructure needs.

The Town should **consider the following best practices in parking pricing and technology**, understanding that the rapid pace of new technology being introduced might mean that new information should also be considered into the future:

- Parking meters that accept credit cards in addition to cash are a more customer-friendly form of technology and generally help to ensure greater compliance with payment requirements.
 - Multi-space parking meters are generally more efficient for cash collection and maintenance, though depending on where they are being applied and how many are acquired for a system, they may not be less expensive to install. It is difficult to provide detailed price information in a general sense because the unit prices of different technologies vary greatly by product and the scale of an overall system application. Furthermore, there is no set industry standard for

how many individual parking spaces these may serve, although for on-street parking it is common practice to have at least one per blockface (one side of a street between two intersecting streets).

Mobile payment programs that use smartphones and other mobile devices are increasingly popular, but typically provided by separate vendors and/or as separate contracts from those related to single-space or multispace meters.

ACTION STEP 4.4 ESTABLISHING A MONITORING AND REPORTING SCHEDULE

The Town will need to update its data to understand when proposed management thresholds are met and when to apply them. The parking study recommends a regular review of parking utilization along with ongoing parking enforcement responsibilities to be able to periodically adjust its management schedule. This is detailed in Table 5.2 (following page).

ACTION STEP 4.5 CREATE A SHARED PARKING PROGRAM

Shared parking programs maximize use of existing parking facilities, reduce the overall need for additional parking, help reduce congestion, facilitate more walkable, safe, and active downtowns, and ensure more efficient use of public dollars. Better use of existing and available facilities is important to downtown Davidson's success and growth, and a shared parking program that begins downtown can later be expanded to other parts of the Town.

The Town should create and pilot a shared parking program based on a two-tiered approach: a first tier in which the Town uses its knowledge and regularly-updated parking count information to help offer or 'broker' shared parking agreements between private developments, and a second tied in which the Town or other entity manages private parking as "public" parking.

For the first tier, the Town would help development applicants and existing businesses searching for additional parking to find sharing agreements. Some private property owners may wish to share all or a portion of their parking, but would prefer to share with other private entities, such as a specific employer or business, and have a third-party operator manage their parking. To support private-to-private agreements, the Town could proactively offer ongoing technical assistance to both parties.

FIRST TIER: SHARED PARKING DATABASE

Action: The Town develops a working database of its parking inventory, both private and public, on-street and off-street, and updates this at least twice per year with utilization information. This inventory is already substantially complete for Downtown Davidson and discussed in the 2011 and 2017 parking studies. The Town may opt to expand this inventory to other parts of its jurisdiction, and should update occupancy data a minimum of twice per year so that the shared parking database reflects current patterns. This would ideally be captured in a geospatial database (GIS) to facilitate spatial analysis and understanding the parking patterns of small areas around a particular location.

How it is applied: The Town would help development applicants and existing businesses

searching for additional parking to find potential sharing agreements. Some private property owners may wish to share all or a portion of their parking, but would prefer to share with other private entities, such as a specific employer or business, and have a third-party operator manage their parking. However, many development applicants or existing businesses may not be well positioned to seek out these arrangements themselves To support private-to-private agreements, the Town could proactively offer ongoing technical assistance to both parties and can identify candidate sharing arrangements based on its database.

Other resources for the Town to consider providing in this tier:

- Educational materials about benefits of shared parking
- Sample language and agreements
- Cost and revenue sharing information

SECOND TIER: PARKING MANAGEMENT AGENCY

As downtown continues to develop, the Town or another entity that may be established in the future (such as a parking or development authority) could take an additional step and lease (or purchase) underutilized parking from

TABLE 5.2: MONITORING AND REPORTING SCHEDULE

FACILITY TYPE	COLLECT UTILIZATION	REVISIT REGULATIONS
On-Street Parking	Every 3 months	Every 6 months
Off-Street Parking Lots	Every 3 months	Every 6 months
Off-Street Parking Garages	Every 6 months	Every 12 months

private owners, making this available to the public similarly to the Town-owned lots and garages.

Action: The Town formally establishes this authority. whether as one of its administrative departments, a separate authority, or some other independent organization (such as a business improvement district).

How it is applied: Under such an approach, he Town or other entity would directly lease parking from a private facility for use as public parking. The entire facility, or portion of the facility, would be open for public use. Public use could be restricted to certain hours/days, depending on tenant needs.

To incentivize participation, the Town or other entity would collect revenue during the public hours. Any net revenue could also be shared as part of the agreement.

ACTION STEP 4.6 INVEST IN PARKING & MULTI-MODAL WAYFINDING

With the proposed performance-based program in Recommendation 1, signage and wayfinding will be especially important to communicating pricing, regulations, and parking availability.

Coordination of facilities serving major parking owners, such as the Town, the churches, and shopping centers should be a priority. At a minimum, the Town should work with these major partners to ensure that signage provides consistent information and functionality. With a majority of Davidson's off-street parking spaces on private properties, the full impact of a wayfinding program will be limited without private sector participation.

Signage and wayfinding is a core component of communicating the performance-based management program. For example, street signage should be used to display pricing tiers and level of availability for multiple parking options so that drivers can make an informed parking decision.

Wayfinding is also critical for the walking, biking, transit, and driving systems in the

town and should be coordinated and enhanced concurrently with parking wayfinding. The

WAYFINDING PRINCIPLES

1. CONNECT PLACES



Facilitate travel between destinations and provide guidance to new destinations.



2. KEEP INFORMATION SIMPLE

Present information simply, using clear fonts and simple designs, so that it can be understood quickly.



3. MAINTAIN MOTION

Be legible and visible for people moving so that they can read the signage without stopping.



4. BE PREDICTABLE

Standardize the placement and design of signs so that patterns are established and the signage becomes predictable.



Encourage increased rates of active transportation by helping bikeway and pedestrian network

5. PROMOTE ACTIVE TRAVEL

people to realize they can use the to access the places they want to go.

Wayfinding signage guidance.

Town currently has a wayfinding signage program for vehicles with some parking info, but does not offer wayfinding for pedestrians, bicyclists, or transit riders.

This action suggests that the Town develop a plan for and invest in these types of wayfinding signs to help to improve the overall legibility of Davidson's transportation system for motorists, pedestrians, cyclists and transit users in town.

The Davidson Walks and Rolls Plan provides wayfinding guidance that should be referenced when developing a multi-modal wayfinding signage program. See Chapter 5 for more information.

TRANSIT RECOMMENDATIONS

Transit options in Davidson consists of three bus routes one express route to Charlotte, and two local routes between Davidson, Cornelius, and Huntersville.

Opportunities to expand the options for public transit include a recent study to explore options for commuter rail, light rail, and or bus rapid transit service between northern Mecklenburg County, Mooresville, and Charlotte. The recommendations of that study have not been finalized as of the time of the Mobility Plan draft.

Other options for transit service in Davidson include an updated trolley service that was piloted in 2017. This section outlines recommendations for how to pursue these transit opportunities in the near- and long-term.



The 99 Village Rider- Huntersville bus provides local hourly service between 5:40 AM and 7:30 PM service between Davidson, Cornelius, Huntersville and Charlotte on week days, with more limited service on weekends.

ACTION STEPS

To improve transit options available in Davidson, the Town should take the following actions steps:

- 5.1. Continue to work with CATS and major employers in and around Davidson to expand transit services to all-day and weekends for local and express bus service
- 5.2. Work with CATS and neighboring municipalities to implement fixed guideway regional transit station(s) in Davidson and complementary mobility hub services.
- 5.3. Work with CATS to improve bus stop amenities to make access and waiting for the bus more comfortable and attractive
- 5.4. Work with CATS and local employers and schools to implement a local transit service that will provide connections within Davidson

REGIONAL TRANSIT/MOBILITY HUBS

The town's primary opportunities for preparing for regional transit lie in providing mobility connections to potential station areas that will be served by the transit services recommendations from the North Corridor Transit Alternatives Study. The alignments recommendations will likely include bus rapid transit (BRT) along Interstate 77 and potentially commuter rail service on the Norfolk Southern rail line in the long term.

In anticipation of whatever transit services result from the North Corridor study, Davidson will need transit station areas that will facilitate easy access via walking, biking, local transit, and motorized vehicles. Ensuring equitable access via walking, biking, sharedride companies, and other mobility choices will reduce the need for parking at or near transit stations. Regional transit station areas should be designed as comprehensive mobility hubs that include provisions for parking for cars and bikes, shared-mobility options (e.g., car-share and bike-share), shared-ride and carpool pick-up and dropoff, and local bus transit transfer area, real-time transit information kiosk, and/or other commuter mobility services and amenities.



North Corridor Transit Alternatives. (Source: CATS)

TRANSIT RECOMMENDATIONS

LOCAL TRANSIT STOPS

Bus transit service in Davidson, consisting of three existing routes (locals 97 and 99, and express 77x to Charlotte), could be made more attractive transportation choices for more people and more comfortable for those already use it by improving the bus stop environment. The Walks and Rolls Plan of 2013 outlines recommendations for improving bus shelter amenities. The Town should make an effort to implement the recommendations of the Walks and Rolls Plan. such as encouraging CATS to equip key bus stops with seating or a platform for waiting, and shelter or shade structures for stops that receive large amounts of traffic or do not have any protection from the sun. The Walks and Rolls Plan identifies the following priority bus stops with high usage

that should receive benches/ shelters:

- Gateway Park-n-Ride
- Sadler Square (Watson Street and Griffith Street)
- Sloan Street

In addition, the bus stop at Griffith Street and Lakeside Avenue has been identified as requiring a formal pedestrian crossing treatment, including a pedestrian refuge median, signage, and crosswalk markings.



Davidson Gateway Park-n-Ride Bus Stop



Sloan Street Bus Stop at Depot Street



Sadler Square Bus Stop on Griffith Street



Griffith Street Bus Stop at Lakeside Avenue

MOBILITY HUBS FOR DAVIDSON

Mobile technology has already expanded transportation options with private sector services such as ridesource/share, car share, bikeshare, and scootershare. Mobility hubs — next generation transit stops or park-n-rides — provide a central location for a variety of transport related services and amenities and strategic vehicle storage spaces. Key elements can be mixed and matched to create a mobility hub that's customized for the location. In addition to transit pick-up/drop-off and parking and access to shared mobility services, mobility hubs may include waiting areas, restrooms, remote package pick-up kiosks, micro/convenience retail or mobile retail, placemaking, public art, and green infrastructure. The Town should establish mobility hub elements around future regional transit stations (Exit 30 area in the near term) and in downtown for local mobility connections. The concepts below show some mobility hub elements that may be appropriate for Davidson.



Next Generation Bus Stop/Micro Mobility Hub: Elements could include (F) a bus stop, on-street parking/loading zone for ride share and/or parking for car share; (E) pedestrian-support infrastructure: water fountain, trash receptacle, shade structure, seating, public restroom; (D) wifi-hub/electronic ticketing/wayfinding kiosk/charging station for electric bikes or scooters, or mobile repair stand for bikes; (A, B, C) bike/bike share and scooter-share parking. Such a hub could also include electric car parking. Some or all of these elements at this scale would be appropriate in Downtown.



Next Generation Park-n-Ride/Regional Transit Mobility Hub: Elements could include (A) bus transfer station and/or (B) bus stops; (C) electric vehicle charging; (D) parking for car share, carpoolers, and commuters; (E) commuter support infrastructure: bike/scooter parking, water fountain, trash receptacle, shade structure, seating, public restroom, wifi-hub/electronic ticketing/wayfinding kiosk/charging station for electric bikes or scooters, mobile repair stand for bikes. Such a concept could be implemented as a retrofit of existing or future parking lots in cooperation with private development.

LOCAL TRANSIT SERVICE OPTIONS

Davidson previously operated a pilot limited-service, fare-free shuttle on weekends that connected destinations primarily in downtown. Although a popular service, this trolley was operated solely by the Town with no established long-term funding source. It did demonstrate the demand for short-distance transit service in the town, especially for connection to special events.

The Mobility Plan recommends two different approaches for restoring local transit service to Davidson. These involve a more conventional approach using **a fixed-route service** to connect to a larger part of the town than what is served by the CATS Village Rider but also **a hybrid service using "new mobility" options to supplement transit's reach**.

This hybrid service provides the kind of last-mile connectivity and community transit options that service providers like CATS are increasingly beginning to explore as a cost-saving alternative to regular fixed routes. It acknowledges that Davidson has different markets for transit service, with a greater density of population and attractions around downtown than in the Town's eastern neighborhoods. To this end.

regular shuttle service may only be part of a transit service district, with shared-ride providers working in a formal partnership with CATS providing service to the district.

The Town should work with CATS to identify funding for this service and whether any of the operating resources used on current transit service might be transferred to such a shuttle. The service concepts proposed here may supersede some or all of CATS's fixedroute service in the area, potentially requiring no net increase in operating costs (and therefore no additional funding responsibility for either CATS or the Town). The advantage to the Town in having a more community-focused. demand-responsive service is that residents feel like transit fits their schedules and needs and does not follow timetables that may sometimes require long waits between vehicles. The advantage to CATS is that the agency actually be able to provide the same level of transit service (in terms of riders served) without the same level of fixed-route resources.

Such a service may be better suited for a community like Davidson, where transit dependency is low and nearly all of the community is currently accustomed to vehicle travel for commutes and other primary trips outside of the community, in that it allows transit providers to be more flexible with how service is deployed and to gather more direct information on potential ridership based on



A Davidson resident participating in an "on-the-street" interview: "I would use the trolley and not drive, if the shuttle ran more frequently even if it was seasonal."

a known number of rides outside of a regular transit service area.

It is important to note that the planning for these service concepts did not perform a detailed ridership modeling or estimation exercise, and that the Town will need to continue working with CATS to tailor any transit service to the actual ridership being served. However, as the popular reception of the Town's previous shuttle indicates, there is interest in having such a service in Davidson.



This service option provides service through much of the Town's planning area, extending beyond the current Village Rider's reach and into the eastern residential neighborhoods along Davidson-Concord Road. The service connects the I-77 park-and-ride facility with a loop of Davidson-Concord and Rocky River Roads, and to maintain comparable operating costs and bus needs to the Village Rider, would operate on 30-minute headways.

Service advantages and disadvantages.

This is a similar model to the Village Rider. but tailored to more of Davidson's Town limits and therefore covering a much larger service area. It would place more of the town within a walking reach of transit and would extend support services such as CATS's Special Transportation Service (STS) paratransit, which the Americans with Disabilities Act requires be provided within three-quarters of a mile of either side of a fixed-route transit service, to more of the town. However, the eastern neighborhoods have a lower population density than other parts of the town and many locations are not readily transit-supportive. The Town should invest in pedestrian and bicycle enhancements to these streets and roads to ensure safe access to transit vehicles.

In addition, this service concept also covers an extensive route—over 13 miles— and a full trip along the route would take nearly 45 minutes to complete. Transit service providers generally have more difficulty maintaining schedules and on-time arrivals the longer a route, suggesting that in addition to the same frequency as today's service, this service concept might also be less reliable for on-time performance.

SHUTTLE CONCEPT 1: DETAILED OPERATIONS

PLANNING FACTOR	SERVICE FEATURE CONCEPTS
Service Length	13.8 miles (6.9 miles each way)
Assumed Travel Time	48.9 minutes (full round trip)
Peak Hour Service Spans	6:30 - 9:30 AM; 4:00 - 7:00 PM
Peak Hour Service Head- way	30 minutes
Number of Vehicles Required to Operate Service	2
Annual Service Hours	3,556
Annual Service Cost	\$360,000

SHUTTLE CONCEPT 1: ROUTE DIAGRAM





Instead of coverage, this service option focuses on providing frequent service in a part of the town with higher density of population, employment, and destinations. This is a strategic approach envisioned to partner with the Mobility Plan's recommendations for greater sharing of parking, as frequent circulation within a larger district allows downtown and the Gateway Village district to function as more of a park-once area than they are today.

With a total route length of only 2.4 miles, a full trip on this route would take only 9 minutes, allowing greatly reduced time between buses for the same amount of operating resources as today's Village Rider (as many as five buses per hour in peak periods, instead of the two in service today). Frequencies such as these begin to fall into a general transit industry definition of frequent service, in which schedules are less critical for users due to the shortened waiting time between buses.

Service advantages and disadvantages. Although covering a less expansive area of the town, this service option provides among the most frequent service of any transit in the Charlotte region and provides a longer span of service (the hours of the day in which transit service operates) than the previous Saturday Shuttle. It also allows the general public to better understand a short extent of key thoroughfares as primary transit corridors for the town. Its connection to the Gateway Village and I-77 park-and-ride also take advantage of a broader supply of parking to serve downtown, especially to provide relief to parking facilities that are in heavy use throughout the day.

However, this concept provides significantly less coverage and limits mobility alternatives largely outside of downtown Davidson.

SHUTTLE CONCEPT 2: DETAILED OPERATIONS

PLANNING FACTOR	SERVICE FEATURE CONCEPTS
Service Length	2.4 miles (each way)
Assumed Travel Time	9.2 minutes
Peak Hour Service Spans	6:30 - 9:30 AM; 4:00 - 7:00 PM
Peak Hour Service Head- way	12 minutes
Number of Vehicles Required to Operate Service	2
Annual Service Hours	3,556
Annual Service Cost	\$360,000

SHUTTLE CONCEPT 2: ROUTE DIAGRAM





This service option recognizes the recent changes that have come to transit service planning. It engages mobile-device transportation network company services (TNCs, such as Uber and Lyft) and other new mobility technologies as part of transit's broader mission to serve riders and promote personal independence through driving-free travel. This combines the shorter service of Service Option 2 with an on-demand 'ride-hail zone' in which CATS or another transit operator would subsidize the cost of rides that originate and terminate.

This option would allow the operating costs to be spent on the fixed-route portion of this service to be reduced but still maintain comparable frequencies to those in Shuttle Concept 2. Instead of providing fixed-route service to the other areas of the town, as in Option 1, CATS would reserve the amount for subsidies of ride-hail trips. If no riders used this service, the operating funds would not be spent, allowing CATS greater flexibility in deploying resources to serve travel demand.

Service advantages and disadvantages. Although covering a less expansive area of the town, this service option provides among the most frequent service of any transit in the Charlotte region and provides a longer span of service (the hours of the day in which transit operates). It also offers CATS to test new ridership markets in a much less costly way than offering fixed-route service. The eastern neighborhoods of the town are less immediately transit-supportive than the general downtown area, and although there may be potential for service, use of a partner-based solution allows CATS to understand this potential and tailor service accordingly. Cost sharing options with the College and other stakeholders could also be explored.

SHUTTLE CONCEPT 1: DETAILED OPERATIONS

PLANNING FACTOR	SERVICE FEATURE CONCEPTS
Service Length	2.4 miles (each way)
Assumed Travel Time	9.2 minutes
Peak Hour Service Spans	7:00 - 9:00 AM; 4:30 - 6:30 PM
Peak Hour Service Head- way	15 minutes
Number of Vehicles Required to Operate Service	2
Annual Service Hours	2.540
Annual Service Cost	\$256,000
Operating Surplus from Concepts 1 and 2	\$104,000
Average Daily Surplus	\$423
Assumed Ride Hail Credit	\$4/ride
Potential Number of Rid- ers Served per Day with Subsidy	100 - 105

SHUTTLE CONCEPT 3: ROUTE DIAGRAM



NEW MOBILITY SOLUTIONS



As Davidson continues to be a leader in innovative solutions to enhance the community's quality of life, it will be important to stay abreast of new opportunities for enhancing mobility with new technology. Many believe that autonomous/ driverless cars are the panacea to our mobility ills (the heaven scenario), whereas others believe that congestion and sprawl will both increase (the hell scenario). As with all advancements in technology the future is much more likely to be much too nuanced to place into one bucket.



However, there are four key elements for Davidson to consider in preparing for the mobility evolution that is unfolding in the next decade.

The new and emerging mobility technologies and solutions that have developed in the market over the last ten years have come in **four principal categories: Autonomous, Connected, Electric, and Shared (ACES)**. While some solutions fall in all four categories, each has potential benefits for the Town to consider when evaluating its overall mobility system.

Davidson's quality of life has long been centered on the fact that it is a community that prioritizes the pedestrian in mobility and design. The next generation of transportation tools should facilitate better mobility but not at the expense of the pedestrian. Sidewalks are for pedestrians first and foremost; streets should be safe and easy to cross as a pedestrian; and mobility investments should prioritize those that favor people over vehicles.

ACTION STEPS

To anticipate and accommodate new mobility options in Davidson, the Town of Davidson should take the following actions steps:

- 6.1. Require the installation of Electric Vehicle (EV) charging capacity and/or infrastructure for all new construction
- 6.2. Promote and encourage the installation of additional super-charging stations at key locations (e.g., Davidson Commons, MSC, Downtown)
- 6.3. Convert Town vehicle fleets to electric when practical
- 6.4. Update the Town's Code of Ordinances to align with North Carolina General Statutes so as to clarify difference between recreational and transportation low-speed vehicles and how they may be used on Town roads.
- 6.5. Promote, encourage, and manage (through regulation) the continued expansion of dockless bike, scooter, and similar mobility solutions throughout the community, with particular attention to parking regulation. For guidance on how to develop policies to regulate shared-mobility services, refer to the <u>NACTO Guidelines for the Regulation and Management of Shared Active Transportation</u>.
- 6.6. Investigate a partnership with ride-share services for trips that have their original or destination in the downtown
- 6.7. Work with CATS to investigate ride-share service subsidies for town residents
- 6.8. Conduct a feasibility study for the deployment of a driverless shuttle system in the Griffith Street, Concord Road, and Main Street corridors
- 6.9. Work with CATS to develop Mobility Hub concepts for downtown and exit 30 that may combine transit access and shared/new mobility service options
- 6.10. Pilot ride-share pick up/drop off and local delivery zones in the downtown
- 6.11. Investigate the potential for a geo-fenced area—consider the Jackson Street and Concord Road corridors as the highest priorities
- 6.12. Maintain a high level of awareness and education for autonomous technologies amongst the Town staff
- 6.13. Ensure that all new street infrastructure projects have accommodations for fiber-optic through the placement of additional conduit for future expansion or the installation of cabling
- 6.14. Install parking sensor technology and provide a mobile app or provide an Application Programming Interface (API) to facilitate third party usage (e.g., Google Maps) to broadcast parking availability
- 6.15. Evaluate the installation of DSRC equipment in a connected corridor (e.g., Jackson Street, Concord Road, Main Street)

NEW MOBILITY SOLUTIONS



In the near term, the categories of **Electric** and **Shared** mobility options will be most relevant for Davidson and are discussed first, followed by a discussion of **Autonomous** and **Connected** mobility technologies that will become more viable on a longer time-horizon.

ELECTRIC + LOW SPEED VEHICLES

Electric vehicles (EVs) have long been a technology that transportation planners have embraced as a mean to reduce the negative impacts of air and noise pollution emanated by the internal combustion engine. To date, the limited range (under 120

miles per full charge) and high cost have limited their general acceptance. That has changed in the past two years as dramatic advances in battery storage have more than doubled the range potential (240-300 miles per charge). Further, production technologies are reducing costs such that industry experts recently estimated that the cost of delivering an automobile with an electric engine will be cheaper than a similar model with an internal combustion engine within five years (2023). The limiting factor in widespread adoption of electric vehicles will be the charging network. Tesla and some regional power companies, are leading the way with the construction of a network of super-charging



Electric charging station

stations across North America, but a more fine-grained network of local charging stations will need to be constructed.

What this means for Davidson: The key to widespread adoption of electric vehicle technology will be a predictable network of electric charging stations. A number of jurisdictions are amending their ordinances to require that all new construction accommodate electric vehicle charging. In Atlanta, twenty percent (20%) of the parking spaces in new commercial and multifamily parking structures be EV ready and all new residential home must be pre-wired to accommodate install EV charging stations. There are a couple of public EV charging stations around Davidson, but more will be needed in the future.

Key Actions:

- 6.1. Require the installation of EV charging capacity and/ or infrastructure for all new construction
- 6.2. Promote and encourage the installation of additional super-charging stations at key locations (e.g., Davidson Commons, MSC, Downtown)
- 6.3. Convert Town vehicle fleets to electric when practical

Coincident with the rise in popularity of electric vehicles, there is a growing interest in **low-speed vehicles** (such as golf carts) **as environmentallyfriendly, economic alternatives to conventional vehicles**.

Davidson's ordinances currently include language that define limited terms for driving golf carts and "similar vehicles" on public streets. Driving golf carts in Davidson is limited to the hours between 6:00 a.m. and 11:00 p.m. and to roads with speed limits of 35 mph or less. And golf carts are not to be used as an alternative means of transportation.

The Town's definition of golf cart and "similar vehicles," and its restrictions for their use, are not in sync with the North Carolina General Statutes. The discrepancy lies in the fact that the Town's definition of golf carts does not distinguish between golf carts, whose maximum speed is 20 mph and primary purpose is recreation, and other "lowspeed vehicles," whose top speed is greater than 20 mph but less than 25 mph and whose primary purpose is transportation. Common uses for these low-speed vehicles include meter maids, campus security, and grounds keeping, but more recently they have gained popularity as an alternative to cars for short distance trips and commuting.

The North Carolina General Statutes allow for low-speed vehicles to be driven on streets and highways where the speed limit is 35 mph or less without any other restrictions, so long as the low-speed vehicle is registered, insured, and equipped with the necessary features to make it safe (head lights, brake lights, rear-view mirror, seat belts, etc.).

The Town ordinances' ambiguous definition of golf carts and "similar vehicles" does not allow for the differences in the intended use of golf carts versus lowspeed vehicles. Clarifying the difference between these two different types of vehicles and how they may be used on Davidson's streets will be important as the popularity of low-speed vehicles for personal travel increases. For more details on current Town and NC statutes, see the Town of Davidson's Municipal Code of Ordinances, available at: <u>https://library.municode.</u> <u>com/nc/davidson/codes/</u> <u>code_of_ordinances</u>, and the North Carolina General Statutes at: <u>https://www.</u> <u>ncleg.net/gascripts/</u> <u>statutes/Statutes.asp</u>

Key Actions:

6.4. Update the Town's Code of Ordinances to align with North Carolina General Statutes so as to clarify difference between recreational and transportation lowspeed vehicles and how they may be used on Town roads.



Low-speed vehicle (Photo courtesy of dirtlegal.com)

NEW MOBILITY SOLUTIONS

SHARED-VEHICLES

Shared mobility has historically taken the form of public transit - buses and trains - where many people share a vehicle to travel in similar directions. The great recession gave rise to a sharing economy that leveraged the power of social networking and mapping to rent out a variety of assets including extra bedrooms (AirBNB), office space (WeWork), and available car seats (Uber/ Lvft). For vehicle trips, drivers share trips with a passenger through the use of a user-friendly app that rates both driver and passenger and simplifies the payment system. As of

summer, 2018, both Uber and Lyft were providing somewhat reliable services in the North Mecklenburg.

This network of rides has now extended in the Charlotte region to the **shared use of other mobility services including bicycles** (both docked and dockless) **and electric scooters.**

Additionally, manufacturers and service providers have been developing new vehicle technologies known as **microtransit or driverless shuttles** to provide short distance connectivity — typically less than 2 miles in length — in business districts, office and college campuses, and in high tourist areas.

What this means for Davidson: In Spring, 2018, Davidson College became the first higher education institution in the country to partner with Mobike, the world's first and largest bike-sharing company. A few other shared-bikes have also appeared in Davidson. The current evolution of shared bikes provides a simple user interface for reserving. finding, and payment and handsome, durable equipment. As Davidson has long been a bike-friendly community, this additional network of bicvcles spread through town further encourages bicycle use.

With regard to **shared-ride** companies (also referred to as Transportation Network Companies or TNCs), the Town's 2017 Parking Study suggested potential partnerships to encourage their use to travel to and from downtown to minimize parking demand. A number of other communities have partnered with TNCs to supply these services both to defray parking demand as well as to provide efficient on-demand transportation services.



Mobikes. Source: Mobikes.com/us/

And finally, there are a number of manufacturers who are producing driverless shuttles. These shuttles are in operation across the globe and are ready for use in slow speed, low volume, mixed traffic corridors. A number of towns around the country are deploying these shuttles in pilot form to better understand the technology its benefits and its challenges — and to explore consumer willingness to use it.

This plan recommends that the Town explore a pilot driverless shuttle service along Griffith Street corridor from Davidson College or downtown via Jackson Street out to Davidson Commons/Jetton Street. A pilot can last for a week to a year. As potentially the first community in the Charlotte region to deploy such technology there are a number of potential partners that will likely be interested in helping to defray the potential costs (e.g., telecoms, power utilities, transit service providers).

Other recommended action steps are noted below.

Key Actions:

- 6.5. Promote, encourage, and manage (through regulation) the continued expansion of dockless bike, scooter, and similar mobility solutions throughout the community, with particular attention to parking regulation. For guidance on how to develop policies to regulate sharedmobility services, refer to the NACTO Guidelines for the Regulation and Management of Shared Active Transportation.
- 6.6. Investigate a partnership with ride-share services for trips that have their original or destination in

the downtown

- 6.7. Work with CATS to investigate ride-share service subsidies for town residents
- 6.8. Conduct a feasibility study for the deployment of a driverless shuttle system in the Griffith Street, Concord Road, and Main Street corridors
- 6.9. Work with CATS to develop Mobility Hub concepts in downtown and exit 30 that may combine transit access and shared/ new mobility service options. (See Transit section in this chapter for more discussion of this topic.)



Rendering of a driverless shuttle in a campus setting



NEW MOBILITY SOLUTIONS

CURB ACCESS ZONES

In the downtown area, there is increasing demand for use of the curb for parking, drop-off/pick-ups, and deliveries. As ride sharing services continue to grow in popularity, particularly those serving Davidson's growing restaurant scene, there will be pressure to find dedicated locations along Main Street for safe and convenient drop off/ pick up locations. This will put pressure on some existing on-street parking space in certain blocks.

As demand for ride-sharing to restaurants is typically off-peak (in the evening) the conversion of 1-2 onstreet spaces may not be as critical to the overall supply. Signage will be important as will increased education for others who might be using these zones (e.g., delivery trucks). In the future, these can be required with new commercial development.

Key Actions:

6.10. Pilot ride-share pick up/drop off and local delivery zones in the downtown. Consider dedicated on-street spaces near Summit and Kindred. Require new curb access zones with new development.



Curb access concept showing dedicated curb space for parking and pick-up/drop-off



Ride-share pick up/drop off loop

Ride-share pick up/drop off loop sign

AUTONOMOUS

Perhaps the most popular in terms of mainstream attention, autonomous vehicles are those that operate independent of the world around them and do not need a driver. Such vehicles depend on a sophisticated set of sensors and computing to construct a digital map of the world around them in real time and move accordingly. Trials and pilots of autonomous vehicles, particularly cars, have been occurring around the world for a number of years with millions of miles of successfully logged trips. Manufacturers include not just the legacy automobile manufacturers (e.g., General Motors, Ford, Volkswagen) but also include other technologybased firms including Google/Waymo, Uber, Lyft, and Apple who are developing fleets of cars, trucks, and even delivery vehicles to operate without a driver. Investment in autonomous technology has now become mainstream with billions of dollars in new investments being announced on a regular basis.

What this means for Davidson:

As a wealthy, educated community in the Charlotte region, adoption of autonomous technology is likely to be higher per capita. In addition, because implementation of autonomous technology will likely begin in "geo-fenced" areas – geographies that can be easily managed (e.g., urban downtowns, campuses, regional corridors) – Davidson resident's use of the



Diagram of an autonomous vehicle's sensor system



Rendering of a Smart Street

NEW MOBILITY SOLUTIONS



AUTONOMOUS, continued

Interstate-77 corridor could be one such location for early implementation. As the technology improves, other geographies will be added until there is an inflection point where autonomous will be the norm, if not the requirement in many areas. Davidson can be a leader through continued education and advocacy in the adoption of this technology and invest in the 3D mapping and surveying necessary to set up a geo-fenced network. Consider partnering with UNC Charlotte or another institution to develop the necessary three-dimensional mapping." Mapping an area is a low cost and quick exercise with the largest part of the expense in the processing and cleaning up of the data once it is collected. This can be done by either a university or a consultant.

Key Actions:

- 6.11. Investigate the potential for a geo-fenced area

 consider the town
 core including the Exit
 30 area as the highest priorities.
- 6.12. Maintain a high level of awareness and education for autonomous technologies amongst the Town staff



Easy Mile's EZ10



Inside Local Motors' Olli

CONNECTED

The ability for a vehicle to speak to other vehicles (Vehicle to Vehicle - V2V). the surrounding infrastructure (Vehicle to Infrastructure - V2I), and to every other potential device (Vehicle to Everything - V2X) is made possible through a series of external devices and communications protocols. Connections provide additional information to the vehicle such as the location of potential accidents ahead, ride hailing by a passenger, location/ availability of parking spaces, and location/availability of charging stations. At it's most basic level, today's mapping applications on our phones are examples of how information is communicated through a connected system that pools information from other drivers to improve the experience for everyone. The infrastructure that permits this

type of communication travels across the current 4G mobile networks, across local Wi-Fi, as well as with Dedicated Short-Range Communications (DSRC) devices mounted in the car and along the roadside. At present only, DSRC can provide fast enough communications for a car to react in real time - such as when the vehicle in front of you suddenly stops short. In the future, 5G mobile networks are expected to deliver similar if not faster communication speeds.

What this means for Davidson: The underlying backbone for connected communications is a fiber-optic network. At a minimum, **the Town should always plan for fiber optic capacity with every roadway project** with the installation of extra conduit. If possible, the Town should work with the local utilities to ensure that sure capacity is provided throughout the community. As identified in the 2017 Parking Study, the Town can **begin researching** and testing potential connected devices to transmit available parking information in the downtown area to potential patrons. With experience, additional communications devices can be installed throughout the town to prepare for additional advances in vehicle technology, particularly for shared transit vehicles.

Key Actions:

- 6.13. Ensure that all new street infrastructure projects have accommodations for fiber-optic through the placement of additional conduit for future expansion or the installation of cabling
- 6.14. Install parking sensor technology and provide a mobile app or provide an Application Programming Interface (API) to facilitate third party usage (e.g., Google Maps) to broadcast parking availability
- 6.15. Evaluate the installation of DSRC equipment in a connected corridor (e.g., Jackson Street, Concord Road, Main Street)



Rendering of a Connected system

PROGRAMS + POLICIES

OVERVIEW

Policies establish priorities for decision making about infrastructure design, mobility services and programs, and transportation investments. They provide guidance in decision-making that will lead to successful implementation and achievement of the goals for mobility in Davidson.

Programming supports changes in travel behavior, choices, and demand. These changes can be accomplished by focusing on education, encouragement, enforcement, and evaluation programs. Successful programs help expand travel choices, reduce transportation costs for consumers, improve travel safety, improve access to jobs, businesses, and services, and help measure successful achievement of mobility outcomes.

Programming + Policy Goals:

- Prioritize travel safety in Davidson
- Expand travel choices to get to, and around, Davidson
- Improve the predictability and reliability of traveling to, and around, Davidson

The following chapter details policy changes and programming recommendations for the Town of Davidson.

PROGRAMS + POLICY AREAS COVERED:

- Traffic Impact
 Analysis
- Education Campaign
- Transportation Demand Management
- Wayfinding



Residents listen to a community presentation on transportation planning policy.

REVISE TRAFFIC IMPACT ANALYSIS

Like most municipalities, Davidson requires an analysis of traffic impacts of new developments and redevelopments to assess if the existing mobility network can adequately accommodate new growth without undue impacts to the traveling public. Davidson diverges from most other communities in focusing not solely on motor vehicle impacts and mitigation such as road widenings and turn lanes to rectify, but on solutions focused on mode choices and land use mixtures and development patterns that result in less overall traffic impact than conventional suburban development.

The Town's TIA process includes utilizing Townadministered on-call traffic consultants to prepare TIA's. Developers will be "assigned" an oncall TIA consultant upon application.

Since the Town is beginning the process of revamping their Comprehensive Plan, it would be premature to conduct a comprehensive overhaul of the Traffic Impact Analysis (TIA) requirements (Section 6.10 of the Davidson Planning Ordinance) until future land use goals and vision are solidified in the Comprehensive Planning process, but some best practices to be considered for Davidson from other communities are recommended in this Mobility Plan. The Town did incorporate several minor revisions in July of 2017, but **any substantial modifications should wait until the results of the Comprehensive Plan** set the direction for the next iteration of land use planning in Davidson.

The following are areas for consideration in a rewrite of the TIA requirements. The different types of impact analysis could be used independently or in conjunction with each other.

Base decisions on increment of delay, not simply letter-grade level of service (LOS). The City of Chattanooga, TN, now bases its decisions on the increment of additional vehicular delay resulting from a proposed development proposal. By focusing on the number of additional seconds a person may expect to spend waiting in traffic rather than a nebulous and rather misleading letter grade, the Town and the public can clearly see the impact a new development will have on their daily lives, and the Town can plan accordingly with mitigation measures.

2 Use new available technologies to help validate or augment conventional traffic analysis. Real-time trip making characteristics data is available from several sources, mined from cell phone data. The Town and/or its consultants can purchase such data to evaluate trip-making characteristics to determine average trip lengths, travel times, mode choices, passby propensity, and many other characteristics not available from conventional Institute of Transportation Engineer (ITE) methods of trip generation, distribution. and assignment. Using this data for the Town of Davidson would augment the analysis obtained from more conventional methods and allow evaluators to better determine forecasted traffic impacts rather than relying simply on methodologies based on outdated and often suburban context case studies that the ITE methodologies are based upon.

3. Consider replacing LOS as the measure of traffic evaluation with vehicle-miles traveled (VMT). A VMT-level approach better determines the impacts attributable to a specific development based on its particular land use plan (single use vs.

mixed use) and surrounding land use context (urban infill site vs. suburban greenfield). A VMT analysis also takes advantage of modal splits (% of trips by each mode of travel) due to a proposed development's proximity to transit or active transportation facilities such as trails or greenways. The Town should consider utilizing a VMT analysis at the discretion of the applicant as a means to better determine the ability of a proposed development to cover trips by other modes or to even shorten trip lengths due to the development pattern and surrounding context.

4. The Town should consider using Multi-Modal Level of Service (MMLOS) as a measure of effectiveness.

The Charlotte Department of Transportation (CDOT) currently requires a MMLOS analysis for their TIA's in addition to the conventional vehicular LOS analysis. Like Davidson, Charlotte must coordinate with NCDOT due to the number of state roads within their jurisdiction, but by understanding the MMLOS framework surrounding a particular development, the City is able to address shortfalls in the modal networks that would otherwise not be evaluated or considered in a conventional TIA process. The Town could develop an equivalency matrix among roadway (turn lanes, lane widenings, etc) and other mitigation items (transit shelter, multi-use path, sidewalks, enhanced crossings, etc) through quantifying the cost of various mitigation measures and offering a "menu" based on the equivalent cost of a roadway item.

5. The Town should allow applicants to take advantage of research focused on evaluating and documenting the differences in trip making characteristics of mixed-use environments. The National Cooperative Highway Research Project (NCHRP) published Enhancing Internal Trip Capture Estimation for Mixed Use Developments in 2011 to study the interrelationship of mixed land uses in a development to better determine trip origin and destination characteristics. particularly internal capture (trips that never leave the development and therefore do not impact the surrounding roadway network). The research was done as a response to the lack of an analysis method to determine the interaction among differing uses that could be trip producers and attractors within a single development. Previously, there was no mechanism (nor research) to adequately measure the lesser vehicle impacts on surrounding streets of having a mixture of land uses internal to a single site. For Davidson, the ability to evaluate development impacts in this manner would be particularly useful and informative in the decision-making process. In addition to the document, the

NCHRP project includes a spreadsheet to estimate trip capture for proximate land uses. It is recommended that this methodology should also be allowed for applicable mixed use development proposals within the town.

6. Finally, the Town should formalize and adopt non-personal motor vehicle-related mitigation measures. For instance, if a development is located in proximity to a transit stop or greenway, the provision by the applicant of features intended to enhance use of these modes (such as transit passes, transit shelters onsite, or bikeshare/loaner bikes or other shared mobility devices) could count toward mitigating their development impact on traffic.

While it is important to provide adequate facilities for development within the town, it is equally or more important to make sure that the right facilities are provided to maintain and not detract from the quality of life that Davidson has and will continue to enjoy in the future. For those reasons, it is imperative that consideration of best practices in data collection, analysis, and mitigation can create a data-rich environment to inform decision-making for development in the future.

EDUCATION CAMPAIGNS

Education for transportation system users (e.g., drivers, cyclists, pedestrians, transit riders) was noted as an overarching priority and principle by people who participated in the plan's public input process.

The Town already offers some education programs in the form of bicycle safety and training for children through the Parks and Recreation Department. A bike skills training course for children is offered twice a year and coincides with early-dismissal days for Charlotte-Mecklenburg Schools.

The Parks and Recreation Department also partners with the Town of Cornelius to host a Bike Expo once a year, where bicycle safety information and resources are provided. The Expo also includes a family-friendly bike tour around the two towns to help familiarize cyclists with navigating the towns' bike facilities and family-friendly routes.

The national "Walk with a Doc" program has recently been implemented in Davidson to encourage regular physical activity. The town's website describes the details of the program: "A doctor gives a brief presentation, on a pertinent health topic, and then leads









An example of a multi-modal safety campaign

participants on a walk, at their own pace, engaging walkers and answering questions."

To build off of these existing programs, the **Town should continue to implement the education recommendations outlined in the Walks and Rolls Plan** of 2013. These recommendations include:

- **Traffic Safety Village:** for primary-school age children to learn about road safety from the point of view of pedestrians, cyclists, and drivers.
- Positive Media Campaign: continue to use the NCDOT Watch For Me, NC materials (www.watchformenc.org/) and other resources, such as those pictured at left, to encourage a culture of safety and respect for all travel modes.
- Walking + Biking Maps: updated maps of existing bicycle and pedestrian facilities can help inform and encourage residents to use active travel modes on a more regular basis.

In addition, the Town should consider developing a **Vision Zero plan** to eliminate roadway deaths and injuries through data-driven prevention strategies. Resources for developing such a program, which include education campaigns for pedestrians, bicyclists, and drivers alike, can be found at <u>NCvisionzero.org</u>.

TRANSPORTATION DEMAND MANAGEMENT

The Town should consider establishing transportation demand management (TDM) programs that promote transit, walking, bicycling, carpooling, ridesharing, telecommuting, and other options to increase accessibility and reduce dependence on singleoccupancy vehicle travel. TDM efforts can reduce congestion. reduce parking demand, and reduce travel costs at the individual and community level. Successful TDM programs expand mobility for residents, commuters, and visitors so that they have the freedom of choosing between multiple options to meet their travel needs.

Many TDM programs already exist in town but need to be promoted more widely to increase awareness. Some **existing programs to consider promoting and/or expanding** include the following:

- Safe Routes to School: the Town already supports SRTS through is sponsorship of Walk to School Day in October and Bike to School Day in May. Expanded efforts to make carpooling, busing, walking and biking to schools in town can help relieve traffic congestion related to dropoff and pick-up times, while also establishing healthy lifelong habits of walking and biking and transit use.
- Charlotte Area Transit Service (CATS) provides express and local bus



Parking Pricing +

Management

- Increase Use of Walking, Biking, + Transit
- Enhance Economic Development Opportunities

Overview of TDM framework

Rideshare

- service to Davidson and a **vanpool service** that allows 5 to 15 commuters from the same area to share their ride to work. For more information, visit <u>https://charlottenc.gov/</u> <u>cats/commuting/vanpool/</u> <u>Pages/default.aspx</u>
- CATS also encourages commuters to "Buddy Up" in a carpool by helping interested commuters find others in their area to carpool with through the SharetheRideNC ridematching website, available at: www. sharetheridenc.com/
- Bike-share programs and programs that are currently available on the Ingersoll Rand corporate campus and Davidson College

campus can serve as models for expanded service throughout town.

 Likewise, the car-share service (ZipCar) that is available on Davidson College could be expanded to the town and other car-sharing apps (e.g., Turo) could be promoted.

Additional TDM programs that the Town might also explore include:

- A town-sponsored TDM webpage to promote local transport options and partners.
- Events and competitions that can encourage and challenge area employers and schools

TDM, continued

to increase alternative travel modes.

- Town-lead outreach as expanded transit services (see Transit recommendations in Chapter 4) are implemented—e.g., geofenced social media & direct mail to people along the routes; encourage bike connections: a photo scavenger hunt or business passport promotion on or near launch to encourage people to use transit options.
- An Annual Employer/ School Commute
 Summit. As major
 employers and schools
 contribute significantly
 to traffic in Davidson,
 convening these groups
 plus CATS and the Town
 each year to develop
 coordinated strategies
 for TDM will help create
 efficiencies and shared
 actions.
- A Developer TDM ordinance to assess increased Vehicle Miles Traveled (VMT) and allow developers to "buy down" their burden from a menu (e.g., see https://sf-planning.org/ transportation-demandmanagement-program)
- A Town TDM ordinance that requires large employers to conduct an annual survey to determine their mode

split and come up with plans to reduce singleoccupancy trips and designate an Employee Transportation Coordinator (ETC).

- Bundle **TDM projects and benefits into new parking revenue** plans (see Parking recommendations in Chapter 4)
- Open Streets Events the temporarily closure of streets to cars for a day-can help open town residents up to new ways of using their streets by encouraging walking, bicycling, skating, playing sports, and so on. These events have been very successful in cities across North America in encouraging alternative transportation modes on a more regular basis. For more information about open street events visit: openstreetsproject.org/ This type of event can be

used as a incremental step towards larger TDM efforts.

- Incentives for businesses that implement measurable TDM programs that contribute to Town goals.
- Other TDM-related programs such as parking pricing and enhanced transit services are discussed in Chapter 4.

Thousands of workers and students (and their parents) come to Davidson each day to our many employers and our highly regarded public, private, and charter schools and preschools. Most of these people arrive in personal private vehicles. If even 5-10% of these trips could be diverted to other modes of travel (transit, carpooling, walking, biking, telework, etc.), there would be a measurable decrease in cars coming to Davidson in the peak travel times and potential increases in safety, air quality, and public health. For examples of TDM programs that have been implemented in other small communities see Transportation Demand Management: A Small and Mid-Size Communities Toolkit.
MULTI-MODALWAYFINDING

The Town in collaboration with NCDOT, local businesses (Downtown Davidson business group and Circles at 30 business group), and institutions (e.g., Davidson College), should develop and implement a multimodal wayfinding plan that complements the existing motor vehicle wayfinding system.

The Town has invested in a wayfinding sign program that helps direct motorists to the downtown retail district and other popular destinations. A similar wayfinding signage program for pedestrians and bicyclists can help promote the fact that many of the town's key attractions can be reached easily and quickly by foot and bicycle and transit.

The Walks and Rolls Plan of 2013 provides detailed recommendations for the development of bicycle signage that can form the basis of a bicycle and pedestrian wayfinding program. Adding these types of wayfinding signs can help to improve the overall legibility of our pedestrian and bicycle system in town and encourage residents and visitors to consider other transportation options.

DAVIDSON WALKS & ROLLS: ACTIVE TRANSPORTATION MASTER PLAN SIGN TYPES Description A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. There are three general types of wayfinding signs: Confirmation Signs 🗕 ⁄ 🕭 Davis Park Indicate to bicyclists that they are on a designated bikeway. Make motorists aware of the bicycle route. Can include destinations and distance/time. Do not include arrows. Turn Signs Indicate where a bikeway turns from one street onto another street. Can be used with pavement Davis Pa markings.Include destinations and arrows. Belmont Elementary Decisions Signs Mark the junction of two or more bikeways. Inform bicyclists of the designated bike route to access key destinations. Destinations and arrows, distances and travel times are optional but recommended. Alternative Designs VIDSON TOWN O A customized alternative design may be used to include pedestrian-oriented travel times, local city logos, and sponsorship branding. TOWN HALL I min walking/0.5 min bikin DAVIDSON COLLEGE 5 min. walking/2 min. biking 0.3 mi DAVIDSON ELEMENTARY/ SOUTH PRONG ROCKY Discussion **RIVER GREENWAY/CTT** 12 min. walking/5 min. biking There is no standard color for bicycle wayfinding signage. Section IA.12 of the MUTCD establishes the STREE ROLLWAY general meaning for signage colors. Green is the color used for directional guidance and is the most common color of bicycle wayfinding signage in the US, including those in the MUTCD. Additional References and Guidelines Materials and Maintenance AASHTO. (2012). Guide for the Development of Bicycle Facilities. Maintenance needs for bicycle wayfinding signs FHWA. (2009). Manual on Uniform Traffic Control Devices. are similar to other signs and will need periodic NACTO. (2012). Urban Bikeway Design Guide. replacement due to wear. chapter 5 : facility standards | 5-39





OVERVIEW

This chapter defines a structure for managing the implementation of the Davidson Mobility Plan. Implementing the recommendations within this plan will require leadership and dedication to the Town's mobility vision by elected officials and citizens and a variety of agencies, organizations, and partners. The Town will not be able to accomplish the recommendations of this plan by acting alone; success will be realized through collaboration with state and federal agencies, neighboring communities, land owners, the private sector, and non-profit organizations. Equally critical, and perhaps more challenging, will be meeting the need for a recurring source of revenue. Even small amounts of local funding will be very useful and beneficial when matched with outside sources.

It is difficult to know what financial resources will be available at different time frames during the implementation of this plan. However, there are still important actions to take in advance of major investments, including key organizational steps, the initiation of education and safety programs, and the development of strategic, lower-cost infrastructure projects. Following through on these priorities will allow the key local and regional partners to implement the larger list of projects of programs over time while taking advantage of strategic opportunities, as they arise.

The three main ways to improve mobility conditions in Davidson are through transportation facility construction and improvement, program implementation, and policy/ regulatory changes and evaluation. This chapter outlines the primary roles for key players in plan implementation and how they relate to one another. Specific action steps are provided in this chapter along with a suggested approach for evaluating and implementing priority projects in Chapters 4 & 5 over time.

KEY PARTNERS IN IMPLEMENTATION

The recommendations in this plan will be implemented in collaboration with various local, regional, and state partners including, but not limited to the organizations in the list below. The roles of the primary entities responsible for plan implementation are described in the paragraphs on the following pages.

- Town of Davidson Board of Commissioners
- Planning Board
- Livability Board
- Planning Department
- Public Works
 Department
- Parks and Recreation Department
- NCDOT
- Police Department
- Charlotte Regional Transportation
 Planning Organization (CRTPO)
- Cabarrus Rowan MPO
- Lake Norman Transportation Commission (LNTC)
- Developers
- Local Residents, Clubs, and Advocacy Groups
- Charlotte Area Transit System (CATS)
- Davidson College
- Neighboring Jurisdictions

THE ROLE OF THE TOWN OF DAVIDSON'S BOARD OF COMMISSIONERS

The Town Board of Commissioners will be responsible for adopting this plan and approving future planning, prioritization, funding, and staff expenditures related to plan implementation. By adopting this plan, the Town Board of Commissioners is also signifying that they are prepared to support the efforts of other key partners in the plan's implementation, including the work of it's own departments and state and regional partners.

If the Board of Commissioners adopts this plan, they will:

- Approve priority projects and ordinance updates related to the plan implementation.
- Include priority projects in upcoming local and regional project plans. Advocate for the plan's recommendations to CATS, the County, and CRTPO and neighboring jurisdictions and regional organizations such as the Cabarrus - Rowan MPO, the Lake Norman Transportation Commission (LNTC), and the Centralina Council of Governments.
- Consider bond referendums and other transportation funding mechanisms for plan implementation.

THE ROLE OF THE TOWN OF DAVIDSON'S PLANNING BOARD

The Town of Davidson Planning Board serves as an advisory board to the Board of Commissioners on all matters of planning and zoning.

The Planning Board should be prepared to address the following items:

- Understand and incorporate mobility plan-related policy into public and private plan reviews and potential revisions to the Planning Ordinance.
- Become familiar with the recommendations of this plan, and be prepared to support its implementation.
- Participate in at least annual reviews of plan implementation and project prioritization.

THE ROLE OF THE TOWN OF DAVIDSON'S LIVABILITY BOARD

The Livability Board has a primary role in providing recommendations related to greenways and bicycle and pedestrian mobility.

The board should be prepared to address the following items: 144

- Meet with staff from the Planning Department; evaluate progress of the plan's implementation and offer input regarding bicycling issues; assist staff in organizing pedestrian- and bicycle-related events and educational activities.
- Build upon current levels of local support for walking and bicycling issues and advocate for local project funding.
- Work with local advocacy groups and Town staff and partners to assist in organizing pedestrian- and bicycle-related events, educational activities, and enforcement programs.

THE ROLE OF THE TOWN OF DAVIDSON'S PLANNING DEPARTMENT

The Planning Department staff will take primary responsibility for tracking the implementation of the plan.

The department will lead or participate in the following tasks:

- Pursue grants for funding priority projects and priority programs.
- Communicate and coordinate with the Town of Davidson Public Works Director and the Town of Davidson Parks and Recreation Director on priority projects for townmaintained roadways and greenway corridors/easements.
- Communicate and coordinate with local developers on adopted plan recommendations for all mobility related elements.
- Communicate and coordinate with the Parks and Recreation Department, Mecklenburg County, NCDOT, CATS, and neighboring municipalities (e.g., Kannapolis and Cabarrus County) on regional mobility projects; partner for joint-funding opportunities.
- Ensure that when NCDOT-maintained roadways in Davidson are resurfaced or reconstructed, that this plan's adopted recommendations are included on those streets.
- Meet with the Livability Board and Mobility subcommittee of the Planning Board; provide progress updates for plan implementation and gather in put regarding mobility issues.
- Ensure that recommended programs are carried out by various partners.
- Maintain and update the list of proposed projects for the Town. They will manage planning projects and/ or consultants to see that projects and policies are completed.
- Present mobility-related policy and policy revisions to the Planning Board and Town Board of Commissioners for their approval. Provide information to the Board of Commissioners regarding funding for plan implementation.

The Public Works Department will take primary responsibility for the construction and maintenance of Town-owned and maintained roadways and sidewalks, as well as construction and maintenance of Town greenway trails.

The department will lead or coordinate with other partners the following tasks:

- Construct and maintain pedestrian and bicycle facilities (on Town roadways and greenways).
- Notify the Planning Department of all upcoming mobility related construction or resurfacing/restriping projects, no later than the design phase; provide sufficient time for comments; incorporate recommendations from the planning staff and others.
- Communicate and coordinate with NCDOT Division 10 on priority projects for NCDOT-maintained roadways.

THE ROLE OF THE TOWN OF DAVIDSON'S PARK AND RECREATION DEPARTMENT

The Town of Davidson Parks and Recreation Department operates the recreation, athletic, and special event programs for the citizens of Davidson. They also maintain a variety of community, neighborhood, greenway, and natural park areas. This department also oversees the majority of greenway planning and greenway land acquisition, and is involved in construction of greenways.

The Parks and Recreation Department should be prepared to address the following items:

- Work with the Livability Board and the Town of Davidson Planning Department on review and development of priority greenway trails.
- Communicate and coordinate with the Town of Davidson Planning Department, Mecklenburg County, and neighboring municipalities on regional greenway corridors; partner for joint-funding opportunities.
- Work with local advocacy groups and the Livability Board to assist in organizing pedestrian- and bicycle-related events, educational activities, and enforcement programs.

THE ROLE OF THE LOCAL NCDOT, DIVISION 10

Division 10 of the NCDOT is responsible for the construction and maintenance of NCDOT-owned and maintained roadways in the Town of Davidson (among all other NCDOT roadways in their five-county Division).

Division 10 should be prepared to address the following items:

- Become familiar with the recommendations for NCDOT roadways in this plan; take initiative in incorporating this plan's recommendations into the Division's schedule of improvements.
- Notify the Town of Davidson Planning Department of all upcoming roadway reconstruction or resurfacing/restriping projects in Davidson, no later than the design phase; provide sufficient time for comments from the planning staff.
- Seek guidance and direction from the NCDOT Division of Bicycle and Pedestrian Transportation on issues related to this plan and its implementation.

THE ROLE OF THE TOWN OF DAVIDSON POLICE DEPARTMENT

The Town of Davidson Police Department is responsible for making Davidson a safe place to live, work, and raise a family.

The Police Department should be prepared to address the following items:

- Continue to be experts on mobility-related laws in North Carolina.
- Enforce laws that affect walking and bicycling, speeding, running red lights, aggressive driving, etc.
- Participate in motorist, pedestrian- and bicycle-related education programs.

THE ROLE OF DEVELOPERS + LANDOWNERS

Developers and landowners in Davidson play a critical role in facility development whenever a project requires the enhancement, dedication, or construction of roadways or greenways.

Developers/landowners should be prepared to address the following items:

- Become familiar with the recommendations in this plan as it relates to the requirements of the Planning Ordinance.
- Work with Town staff and elected officials and the public to implement the recommendations in this plan as required by the Planning Ordinance.

THE ROLE OF LOCAL RESIDENTS, CLUBS, + ADVOCACY GROUPS

Local residents, clubs, and advocacy groups, including, but not limited to the Davidson Village Network, Save Davidson, the Rocky River Road Bicycle Club, etc., play a critical role in the success of this plan.

They should be prepared to address the following items:

- Continue offering input regarding mobility issues in Davidson.
- Assist town staff and Livability Board by volunteering for mobility-related events and educational activities and/or participate in such activities.
- Assist Town staff and Livability Board by speaking at Town Board of Commissioners meetings and advocating for mobility project and program funding.

PROJECT SELECTION + UPDATING OVERVIEW

The priority project list (Chapter 4) and action steps (Chapters 4 & 5 and in the table that follows) from this plan will be reviewed and updated annually and recommendations for new projects will be developed at that time. Further details about project development and implementation roles are noted above and in the table on the following pages. In general,

- The Priority Project List and recommended actions will be reviewed and modified as needed. **At least annually**, and prior to development of the town's capital improvement plan (CIP), Town staff will review project prioritization and actions and provide staff recommendations for the following fiscal year.
- An **annual joint Livability / Planning Board meeting** will be scheduled to review the recommended priority projects and proposed updates to the project list for the purpose of making a recommendation to the Town Board of Commissioners.
- Priority project and funding lists will be presented to the Town Board of Commissioners for Approval.
- Town Staff will pursue grants each year for priority projects based on the Town-board approved list of projects. For grant amounts under \$100,000 for priority projects or programs, prior board approval will not be required assuming no local match is required or that matching funds have been previously approved.
- **Every five years** a more comprehensive review of project status and prioritization should be considered.
- Every year an **Action Plan** for each annual list of priority projects will be developed by Town staff. The annual action plan should be populated with the current priority projects from the Mobility Plan. The action plan should include, but is not limited to the following elements:
 - 1. Project / Policy Name:
 - 2. Responsible Departments/Staff:
 - 3. Funding sources:
 - 4. Time Allocation:
 - 5. Partners needed:
 - 6. Board Action required:
 - 7. Process for approval and implementation:
 - 8. Timeline to complete:

ACTION STEPS

The action steps in the following tables are integral to achieving the goals and vision of this plan. As guiding recommendations and the clearest representation of specific items to accomplish, they should be referred to often, but at least annually when developing Town budgets and work plans. Action numbers refer to action steps enumerated in Chapters 4 and 5 with the exception of action step numbers beginning with 8, which are administration and planning tasks noted for the first time in this chapter.

The action steps are provided in the following phases: Short-term (1-3 years), Medium-term (3-5 years), Long-term (5 years and beyond), and Ongoing.

ACTION STEPS							
ACTION	TION LEAD AGENCY SUPPORT DETAILS PHASE						
PLAN ADMINIST	PLAN ADMINISTRATION AND EVALUATION TASKS						
8.1. Present plan to Town Board of Commissioners	Davidson Planning Department	Project consultant	t Presentation to Town Board of tant Commissioners in summer 2019				
8.2. Adopt this plan	Davidson Town Board of Commis- sioners	Davidson Planning Department	Through adoption, the plan becomes a legal planning document of the Town. The plan is intended to be incorporated into the Comprehensive Plan, upon adoption of that plan. Projects will also be incorporated into regional planning lists.				
8.3. Designate staff	Davidson Town Board of Commissioners, Town Manager	Leadership of town departments	Designate staff to oversee the implementation of this plan and the proper maintenance of the facilities that are developed. It is recommended that a combination of existing Planning, Public Works, and Parks & Recreation staff oversee the day-to-day implementation of this plan.	Ongoing			
8.4. Identify and secure specific funding for implementation	Davidson Planning Department	Town Manager, other town departments, Public Works, Park & Recreation	anager, own nents, Norks, tion				
8.5. Complete top priority projects	Davidson Public Works, Park + Recreation staff, NCDOT Division 10 + developers	Davidson Planning Department, NCDOT Division 10, Developers, CATS	This plan contains ranked lists of projects by mode and type to mobility. The Town Board of Commissioners and departments will want to revisit priority projects in each budget cycle and as funding opportunities arise.	Ongoing			

ACTION STEPS				
ACTION	LEAD AGENCY	SUPPORT	DETAILS	PHASE
8.6. Continually support and evaluate implementation of this plan	Planning Board, Livability Board	Davidson Planning Department, Town Board of Commissioners, Public Works, Park & Recreation	These appointed boards should be updated on mobility topics bi-annually at least, and one of their meetings each year should be dedicated to evaluating the implementation of this plan. Annual meetings with staff should be focused on re-prioritizing	Ongoing
8.7. Present this plan to other local and regional bodies and agencies.	Planning staff	Planning Board, Livability Board	This plan should be presented to other local and regional bodies and agencies. Possible groups to receive a presentation might include the regional transportation and greenway planners, schools and youth organizations, civic organizations, major local employers including Davidson College, IR, and MSC, and large neighborhood groups.	Ongoing
8.8. Coordination with key project partners	Planning staff	Town/County departments, CATS, NCDOT, Livability Board, and local & regional stakeholders	Davidson Planning staff, the Town Board of Commissioners, members of appointed boards, and local and regional stakeholders should meet on an annual basis to coordinate on mobility plan implementation.	Ongoing
8.9. Seek multiple funding sources for facilities and programs	Planning staff, Park + Recreation staff	Finance Director, Livability Board	The project descriptions in this plan provide preliminary information, including some project cost estimates.	Ongoing
8.10. Ensure planning efforts are being integrated regionally	Planning staff	CRTPO, neighboring municipalities, Planning & Livability Boards, CATS	Combining resources and efforts with surrounding municipalities, regional entities, and stakeholders is mutually beneficial, especially with trail development. Communicate and coordinate with the regional partners on regional trails and bicycle facilities and partner on joint-funding opportunities. After adoption by the town, this document should also be recognized in regional transportation plans.	Long-term/ Ongoing
8.11. Develop a long term funding strategy	Town Manager + Finance Director	Planning staff & Board of Commissioners	To allow continued development of the overall system, capital funds for mobility projects and programs should be set aside every year. Funding for an ongoing maintenance program should also be included in the town's operating budget.	Short-term

ACTION STEPS					
ACTION	LEAD AGENCY	SUPPORT	DETAILS	PHASE	
PLAN RECOMM	ENDATION ACTIO	N ITEMS			
PEDESTRIAN MOBI	LITY (SEE CHAPTER	4)			
1.1. Include pedestrian and greenway improvement projects in the local Capital Improvement Program (CIP)	Planning, Public Works, Park + Rec	Livability Board, Planning Board,	Increasing consistent year-to-year funding levels.	Annual; Ongoing	
1.2. Evaluate a cost-share program for sidewalk maintenance	Planning, Public Works	Livability Board, Planning Board,	To ensure sidewalk repair is implemented equitably.	Short-term	
1.3. Increase minimum sidewalk width on major roads	Planning, Public Works	Livability Board, Planning Board,	(E.g., Main Street/NC-115, Griffith Street, Concord Road, etc; and future roadway types "Parkway" and "Urban Avenue/Boulevard" in the Planning Ordinance) and other arterial or collector type streets with at least 3,000 cars/ day (e.g., Potts, Jetton, Beaty) to 6 feet minimum	Short-term	
1.4. Develop/ implement a sidewalk infill prioritization methodology	Public Works, Planning	Livability Board, Planning Board	See page 74-75 for more details	Short-term	
1.5. Install more consistent crosswalk treatments throughout town	Public Works, NCDOT	Planning, Livabil- ity Board	Especially at priority crossings identified on page 85. See pages 84-85 for more info.	Short- term/ Ongoing	
1.6. Develop preliminary plans (30% construction drawings) for priority sidewalk projects.	Public Works	Planning, Livability Board	This action will help determine ac- curate costs and also help leverage local capital funds to be used as an effective match for larger grants (e.g., from CRTPO).	Ongoing	
1.7. Update Planning Ordinance to reflect recommendations for advisory shoulder and sidepath design	Planning	Planning Board, Livability Board	As detailed on page 81 and 83, respectively.	Short-term	

ACTION STEPS						
ACTION	LEAD AGENCY	SUPPORT	DETAILS	PHASE		
BICYCLE MOBILITY	(SEE CHAPTER 4)					
2.1. Include bicycle projects in the local Capital Improvement Program (CIP)	Planning, Public Works, Park & Rec	Livability Board, Planning Board,	Increasing consistent year-to-year funding levels.	Annual; Ongoing		
2.2. Conduct corridor studies along Griffith Street, Concord Road, and Main Street/NC-115	Planning, Public Works	Livability Board, Planning Board,	In order to assess feasibility of enhanced bicycle (and multi-modal) facilities along these key corridors.	Short- term/ Medium- term		
2.3. Fund bicycle facility maintenance	Public Works, Finance	Livability Board	Consider funding additional maintenance equipment or staff to sweep on-road bikeways, refresh striping, and other bikeway maintenance needs.	Ongoing		
2.4. Develop preliminary plans (30% construction drawings) for priority bicycle projects.	Public Works	Planning, Livability Board	To increase readiness for grant funding,	Ongoing		
2.5. Increase bicycle parking facilities	Public Works, Economic Development	Livability Board	(both short- and long-term parking, as defined by Planning Ordinance) by 50% by 2023 at destinations.	Medium- term		
STREETS AND MOT	OR VEHICULAR MO	BILITY (SEE CHAP	ΓER 4)			
3.1. Use the concepts and policies presented in this Plan to implement proposed improvements	Planning, Public Works	Livability Board, Planning Board	Through regularly scheduled capital projects, such as streetscape proj- ects, street resurfacing, or new pub- lic or private development projects.	Ongoing		
3.2. Use maintenance resources and staff to support programs, planning efforts, and infrastructure maintenance.	Public Works, Planning, Park & Recreation	Livability Board	Regular maintenance of roadways, multi-use paths, sidewalks, and bike- ways is essential to providing safe and accessible mobility choices.	Ongoing		
3.3. Actively manage the list of projects in this plan and assign appropriate funding and staff time to implement them.	Public Works, Planning, Park + Recreation	Livability Board, Planning Board	Be flexible and opportunistic with funding and prioritization of projects to deliver projects as quickly as possible.	Ongoing		

ACTION STEPS					
ACTION	LEAD AGENCY	SUPPORT	DETAILS	PHASE	
3.4. Update Planning Ordinance to include design standards for shared streets/ festival streets/ woonerfs.	Planning	Planning Board	These are street classifications that can accommodates all travel modes on narrow low-speed, low-traffic- volume streets, such as Spring Street.	Short-term	
3.5. Continue to work with regional partners to develop final alignments for the North-South Parkway.	Planning	Planning Board	This roadway network is anticipated to provide an alternative route to I-77 and NC-115 as well as for the Grey Road and Davidson-Concord Road extensions.	Medium- term/Long- term	
PARKING RECOMM	ENDATIONS (SEE CH	APTER 4)			
4.1. Implement a performance- based parking program.	Planning, Economic Development	Public Works	For the downtown area, specifically.	Short-term	
4.2. Conduct a pilot application of pricing	Economic Development, Public Works	Planning, Police	Using pay station meters, for on- street parking in the downtown retail district.	Medium- term	
4.3. Establish the administrative authority for staff to set parking prices based on observed demand.	Economic Development	Planning, Police	Ordinance change	Short-term	
4.4. Establish a regular monitoring and reporting schedule for parking utilization and enforcement	Public Works, Economic Development, Police	Planning	In order manage its performance- based parking program.	Short- term/ Ongoing	
4.5. Continue shared parking program	Economic Development, Public Works	Planning	Maximize the use of existing public and private parking spaces in and around the downtown retail district	Short- term/ Ongoing	
4.6. Expand parking & multi- modal wayfinding system	Economic Development, Public Works	Planning	To direct drivers to available parking spaces.	Medium- term	
6.14. Install parking sensor technology Economic Development, Public Works Planning And por program facilit Goog availa		And provide a mobile app or provide an Application Programming Interface (API) to facilitate third party usage (e.g., Google Maps) to broadcast parking availability	Medium- term/Long- term		

ACTION STEPS					
ACTION	LEAD AGENCY	SUPPORT	DETAILS	PHASE	
TRANSIT RECOMM	ENDATIONS (SEE CH	APTER 4)			
5.1. Work with CATS and major employers in and around Davidson to expand transit services	Planning, CATS	Davidson College, major employers and schools	Expand to all-day and weekends for local and express bus service	Short-term	
5.2. Support implementation of fixed guideway regional transit station(s) in Davidson and complementary mobility hub services.	CATS, Planning, developers/ landowners	Planning Board	A BRT design study will begin in FY2020	Ongoing/ Medium- term/Long- term	
5.3. Improve bus stop amenities to make access and waiting for the bus more comfortable and attractive.	Planning, Public Works	CATS	See also Walks & Rolls Plan recommendations	Medium- term	
5.4. Implement a local transit service that will provide connections within Davidson	Planning, CATS	local employers and schools	Explore options suggested on pages 120-123	Short- term/ Medium- term	
NEW MOBILITY RE	COMMENDATIONS (S	SEE CHAPTER 4)			
6.1. Require the installation of Electric Vehicle (EV) charging capacity and/or infrastructure	Planning	Planning Board	For all new construction. Change to Ordinance	Short-term	
6.2. Promote and encourage the installation of additional super- charging stations at key locations	Public Works	Planning, Eco- nomic Develop- ment	(E.g., Davidson Commons, MSC, Downtown, College)	Medium- term	
6.3. Convert Town vehicle fleets to electric when practical	Public Works, Fire, Police, Park + Rec		As individual vehicles need replac- ing, they should be replaced with new electric.	Ongoing	
6.4. Update Ordinances to align with NC Statutes regarding low-speed vehicles.	Planning, Legal/ Admin	Planning Board	Clarify language to differentiate between recreational and transpor- tation low-speed vehicles.	Short-term	

ACTION STEPS				
ACTION	LEAD AGENCY	SUPPORT	DETAILS	PHASE
6.5. Promote, encourage, and manage the continued expansion of dockless bike, scooter, and similar mobility solutions	Planning, Public Works, Economic Development	Davidson College, IR, schools and major employers and developers, Livability Board	With particular attention to parking regulation. For guidance on how to develop policies to regulate shared-mobility services, refer to the <u>NACTO Guidelines for the</u> <u>Regulation and Management of</u> <u>Shared Active Transportation</u> .	Short-term
6.6. Investigate a partnership with ride-share services for trips that have their original or destination in the downtown	Planning	Economic Development	Facilitating ride-share services to/ from downtown may be a strategy to help reduce the demand for park- ing downtown.	Short-term
6.7. Investigate ride-share service subsidies for town residents	Planning, CATS	Davidson College	How might the Town facilitate the use of ride-share services to fill gaps in regular transit services	Short-term
6.8. Conduct a feasibility study for the deployment of a driverless shuttle system	Planning, CATS	major employers	In the Griffith Street, Concord Road, and Main Street corridors	Medium- term
6.9. Develop Mobility Hub concepts for downtown and exit 30	Planning, CATS	Davidson College, major employers, developers	Combine transit access and shared/ new mobility service options. See also Transit section.	Medium- term
6.10. Pilot ride- share pick up/ drop off and local delivery zones in the downtown	Economic Development, Public Works	Planning	Consider dedicated on-street spaces near Summit and Kindred. Require new curb access zones with new development.	Short-term
6.11. Investigate the potential for a geo-fenced area	Planning	Public works	Consider the Jackson Street and Concord Road corridors as the highest priorities	Medium- term
6.12. Maintain a high level of awareness and education for autonomous technologies amongst the Town staff	Planning, Public Works, Police		Stay up-to-date with latest innovations through resources like the Shared-Use Mobility Center, available at <u>sharedusemobilitycenter.org/</u>	Ongoing
6.13. Ensure that all new street infrastructure projects have accommodations for fiber-optic	Planning, Public Works	NCDOT	Through the placement of additional conduit for future expansion or the installation of cabling	Ongoing

ACTION STEPS					
ACTION	LEAD AGENCY	SUPPORT	DETAILS	PHASE	
6.15. Evaluate the installation of DSRC equipment in a connected corridor	Planning, Public Works	Davidson College	(E.g., Jackson Street, Concord Road, Main Street)	Medium- term/Long- term	
PROGRAMS AND P		ATIONS (CHAPTER	? 5)		
7.1. Revise Traffic Impact Analysis (TIA) Requirements	Planning	Planning Board	Substantial modifications should be based on the outcomes of the Comprehensive Plan in regards to Land Use goals.	Short-term	
7.2. Develop/ Implement Education Campaigns	Police, Planning, Park + Rec	Livability Board	Continue to implement the mobility education recommendations outlined in the Walks & Rolls plan	Ongoing	
7.3. Develop a Vision Zero Plan (see page 138 for more details)	Planning, Police	Livability Board	Implement data-driven prevention strategies to eliminate roadway deaths and injuries.	Medium- term	
7.4. Develop a Transportation Demand Man- agement (TDM) Action Plan (see pages 139-140 for more details)	Planning	Major employers, CATS, (Park & Rec for Safe Routes to School)	Coordinate with support agencies to promote programs (some already exist, e.g., Safe Routes to School, CATS carpooling) that encourage transit, walking, bicycling, carpooling, ridesharing, telecommuting, and other alternatives to single occupancy vehicle travel	Medium- term/ Ongoing	
7.5. Implement Multi-modal Wayfinding	Economic Development, Public Works, Park + Rec	Planning, NCDOT, Livability Board	Develop a multi-modal wayfinding plan. See also Parking Recommendations.	Short-term	

FUNDING SOURCES

The Town will utilize to various fundings sources to accomplish the goals and recommendations set forth in this plan. The list of funding sources and their deadlines and requirements change frequently, so staff will need to review grant source information each year to confirm deadlines and requirements.

When considering possible funding sources for the Town of Davidson's mobility projects, it may be necessary to consider multiple sources of funding, that when combined, will support full project completion.

Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This section outlines the many potential sources of funding from the federal, state, and local government levels as well as from the private and non-profit sectors. It should be noted that this section reflects the funding available at the time of writing. The funding amounts, fund cycles, and even the programs themselves are susceptible to change without notice.

Funding sources may include but are not limited to the following:

FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/CONSTRUCTION
F	EDERAL FUNDI	NG	
FAST Act			x
Transportation Alternatives	x	x	x
Surface Transportation Program			x
Highway Safety Improvement Program		x	x
Congestion Mitigation/Air Quality		x	x
FTA Metropolitan Planning Program	х		
FTA Enhanced Mobility of Seniors and Individuals with Disabilities	x		x
Partnership for Sustainable Communities	x	x	x
Land and Water Conservation Fund	x		x
Rivers, Trails, and Conservation Assistance Program	x		
Federal Lands Transportation Program			x
Energy Efficiency and Conservation Block Grants	x		x
STAT	E/REGIONAL FL	JNDING	
CRTPO Unified Planning Work Program	х		
CRTPO Traffic Data Program	x		
NCDOT State Transportation Improvement Program*			x
Incidental Projects			x
Spot Safety Program (anywhere is eligible, but more likely in dense areas)			x
Pedestrian Funds			X
High Hazard Elimination Program (anywhere is eligible, but more likely in dense areas)			x

FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/CONSTRUCTION
NCDOT Contingency Fund			x
Small Urban Funds*			x
Spot Improvement Program			x
Small Construction Funds			x
Governor's Highway Safety Program			x
Bicycle and Pedestrian Planning Grant Initiative	x	х	
Road Resurfacing			x
Eat Smart, Move More North Carolina Community Grants		x	x
The North Carolina Division of Parks and Recreation			x
The North Carolina Parks and Recreation Trust Fund (PARTF)			x
Adopt-A-Trail Program			x
Powell Bill Funds			x
Community Development Block Grant	x	x	x
Clean Water Management Trust Fund (CWMTF)	x	x	x
Safe Routes to School Program	x	x	x
Urban and Community Forestry Grant	x		x
Watch for Me NC		x	
State Revolving Fund Loans			x
	LOCAL FUNDIN	G	
Capital Reserve Fund			x
Capital Project Ordinances			x
Local Improvement District (LID)			x
Municipal Service District			x
Tax Increment Financing			x
Installment Purchase Financing			x
Sales Tax	x		x
Property Tax	x		x
Occupancy Tax			x
Fees			x
Stormwater Utility Fees			x
Negotiated Voluntary Contributions			x
In-Lieu-Of Fees			x
Bonds and Loans			x
Revenue Bonds			x
General Obligation Bonds (cities, counties and service districts)			x
Special Assessment Bonds			x
PRIVATE	E/ NON-PROFIT	FUNDING	
The Robert Wood Johnson Foundation	x	x	
North Carolina Community Foundation	x	x	
Carolina Thread Trail Grants	x		x
Walmart State Giving Program	x	x	x
The Rite-Aid Foundation Grant		x	x
Z Smith Reynolds Foundation			x

*These funds are typically distributed through the CRTPO

FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/CONSTRUCTION
Bank of America Charitable Foundation Inc	x	х	
Duke Energy Foundation		x	
The Trust for Public Land	x	x	
American Greenways Eastman Kodak Awards	x	x	x
National Trails Fund		x	x
The Conservation Alliance	x	x	
Blue Cross Blue Shield of North Carolina Foundation		x	x
National Fish and Wildlife Foundation	x	x	x
Bikes Belong Grant			x
Alliance for Biking and Walking Advocacy Grants			x
Local Trail Sponsors			x
Corporate Donations	x	x	x
Private Individual Donations	x	x	x
Fundraising/ Campaign Drives	x	x	x
Volunteer Work	х	х	x

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 anywhere from five percent to fifty percent, but there are sometimes exceptions, such as the recent American Recovery and Reinvestment Act stimulus funds, which did not require a match. 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

The largest source of federal funding for pedestrian and bicycle projects is the USDOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal-Aid Road Act of 1916. The latest act, FAST, was enacted in 2015. The Act

FAST authorizes funding for federal surface transportation programs including highways and transit. It is not possible to guarantee the continued availability of any listed FAST programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and thus may continue to provide capital for multimodal transportation projects and programs.

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.

There are a number of programs identified within the FAST Act that are applicable to pedestrian and bicycle projects. These programs are discussed below.

For more information: https://www.fhwa.dot.gov/fastact/

TRANSPORTATION ALTERNATIVES

Transportation Alternatives (TA) is a funding source under the FAST Act that consolidates three formerly separate programs: Transportation Enhancements (TE), Safe Routes to School (SR2S), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, and rail-trails. TA funds may also be used for selected education and encouragement programming such as Safe Routes to School.

Note that state DOT's may elect to transfer up to 50 percent of TA funds to other highway programs, so the amount listed on the website represents the maximum potential funding. Remaining TA funds (those monies not re-directed to other highway programs) are disbursed through a separate competitive grant program administered by NCDOT. Local governments, school districts, tribal governments, and public lands agencies are permitted to compete for these funds.

For funding levels and eligible activities, visit: <u>https://www.fhwa.dot.gov/fastact/factsheets/</u> <u>transportationalternativesfs.cfm</u>

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 bicycle and pedestrian improvements are eligible, including on-street bicycle facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, 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 bicycle and 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 suballocated geographically by population to the MPOs; the remaining 50 percent may be spent in any area of the state.

For more information: <u>https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm</u>

HIGHWAY SAFETY IMPROVEMENT PROGRAM

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HS IP provides \$2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HS IP but discontinues the High-Risk Rural roads setaside unless safety statistics demonstrate that fatalities are increasing on these roads. 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: <u>https://safety.fhwa.dot.gov/hsip/</u>

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 nonattainment 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.

More Information: https://www.fhwa.dot.gov/fastact/factsheets/cmaqfs.cfm

FEDERAL TRANSIT ADMINISTRATION (FTA) METROPOLITAN PLANNING

This program provides funding for statewide and metropolitan coordinated transportation planning. Federal planning funds are first apportioned to State DOTs. State DOTs then allocate planning funding to MPOs. Eligible activities include pedestrian or bicycle planning to increase safety for non-motorized users, and to enhance the interaction and connectivity of the transportation system across and between modes.

For more information: <u>https://www.transit.dot.gov/funding/grants/metropolitan-statewide-planning-and-nonmetropolitan-transportation-planning-5303-5304</u>

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: <u>https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/funding/</u>grants/37971/5310-enhanced-mobility-seniors-and-individuals-disabilities-fact-sheet_1.pdf

PARTNERSHIP FOR SUSTAINABLE COMMUNITIES

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (US DOT). The partnership aims to "improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide." The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure ("Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health").

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including both TIGER I and TIGER II grants). North Carolina jurisdictions should track Partnership communications and be prepared to respond proactively to announcements of new grant programs. Initiatives that speak to multiple livability goals are more likely to score well than initiatives that are narrowly limited in scope to pedestrian improvement efforts.

For more information: <u>https://www.hud.gov/hudprograms/sci</u>

https://www.epa.gov/smartgrowth/smart-growth-partnerships

Resource for Rural Communities: <u>https://www.epa.gov/sites/production/files/</u> <u>documents/2011_11_supporting-sustainable-rural-communities.pdf</u>

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.

More information: http://www.ncparks.gov/About/grants/lwcf_main.php

RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM

(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.

More information: <u>http://www.nps.gov/ncrc/programs/rtca/</u> or contact the Southeast Region RTCA Program Manager Deirdre "Dee" Hewitt at (404) 507-5691

FEDERAL LANDS TRANSPORTATION PROGRAM

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. \$300 million per fiscal year has been allocated to the program for 2013 and 2014.

More information: <u>http://www.fhwa.dot.gov/map21/fltp.cfm</u>

ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANTS

The Department of Energy's Energy Efficiency and Conservation Block Grants (EE CBG) 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.

More information: <u>https://www.energy.gov/eere/wipo/energy-efficiency-and-conservation-block-grant-program</u>

STATE FUNDING SOURCES

The funding sources covered in this section were updated in the Fall of 2013 and reviewed for accuracy by NCDOT Division 8 staff as well as staff from the Division of Bicycle and Pedestrian Transportation. However, at the time of development of this plan, the Strategic Transportation Investment initiative was being reviewed by the Joint Legislative Transportation Oversight Committee. Therefore, the status of future funding sources is subject to change. The availability of these funding resources should be confirmed during the implementation of a project.

CRTPO UNIFIED PLANNING WORK PROGRAM

The Unified Planning Work Program (UPWP) is a listing of the projects, priorities, and work tasks the Charlotte Regional Transportation Planning Organization (CRTPO) will undertake during the fiscal year. It provides details on funding sources, agencies responsible for completing the described work, and the expected products of that work. Most of the tasks outlined in the UPWP are required by either State or Federal law and are ongoing. This program may provide funding for projects that reflect the short-range planning needs

outlined in the Comprehensive Transportation Plan (CTP), developed by the MPO and required by law in the state of North Carolina.

Funding for transportation planning is a product of Federal, State and local funding sources with the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) providing 80 percent of the funding for local planning. The remaining 20 percent is the required match for Federal funds and is provided by local jurisdictions.

More information: <u>http://crtpo.org/PDFs/UPWP/FY2019%20UPWP.pdf</u>

CRTPO TRAFFIC DATA PROGRAM

Beginning in fiscal year (FY) 2016, the CRTPO launched the MPO Traffic Data Program. Each fiscal year, CRTPO issues a 21-day call for projects to be submitted for the annual Traffic Data Program. This program provides member jurisdictions with needed traffic data to be used to support transportation planning and research efforts that will advance initiatives and planning projects throughout the MPO planning area.

An allocation of \$100,000 will be applied to projects eligible for PL funds and that meet the criteria specified by the Traffic Data Program. Due to the federal funding type, a minimum 20% match is mandatory for all project submittals.

More information: <u>https://www.crtpo.org/resources/traffic-counts</u>

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STATE TRANSPORTATION IMPROVEMENT PROGRAM

Transportation Investments bill, signed into law in 2013. The Strategic Transportation Investments (STI) initiative introduces the Strategic Mobility Formula, a new way to fund and prioritize transportation projects to ensure they provide the maximum benefit to our state. It allows NCDOT to use its existing revenues more efficiently to fund more investments that improve North Carolina's transportation infrastructure, create jobs and help boost the economy.

The new Strategic Transportation Investments initiative is scheduled to be fully implemented by July 1, 2015. Projects funded for construction before then will proceed as scheduled under the current Equity Formula; projects slated for after that time will be ranked and programmed according to the new formula. The new Strategic Mobility Formula assigns projects for all modes into one of three categories: Statewide Mobility, Regional Impact, and Division Needs. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are ranked on the following five criteria:

- Safety
- Access
- Demand or density
- Constructability
- Benefit/cost ratio

This ranking largely determines which projects will be included in the department's State

Transportation Improvement Program (STIP). The STIP is a federally mandated transportation planning document that details transportation improvements prioritized by stakeholders for inclusion in the Work Program over the next ten years. The STIP is updated every two years.

The STIP contains funding information for various transportation divisions of NCDOT including: highways, aviation, public transportation, rail, bicycle and pedestrians, and the Governor's Highway Safety Program. Access to many federal funds require that projects be incorporated into the STIP. The STIP is the primary method for allocating state and federal transportation funds. However, beginning July 1, 2015, state funds cannot be used to match federally funded projects. Only Powell Bill or local funds can be used as a match for federally funded bicycle and pedestrian projects.

For more information on STI: <u>https://www.ncdot.gov/initiatives-policies/Transportation/stip/</u> Pages/strategic-transportation-investments.aspx

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

For more about the STIP process: <u>https://www.transit.dot.gov/regulations-and-guidance/</u> <u>transportation-planning/statewide-transportation-improvement-program-stip</u>

INCIDENTAL PROJECTS

Bicycle and pedestrian accommodations such as bike lanes, sidewalks, intersection improvements, widened paved shoulders and bicycle and pedestrian-safe bridge design are frequently included as incidental features of highway projects.

In addition, bicycle-safe drainage grates are a standard feature of all 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 or with a local fund match.

Each of the 14 NCDOT Highway Divisions administers \$100,000 in pedestrian funds within its jurisdiction. These funds are used for new sidewalk construction. A written request should be submitted to the Division Engineer providing technical information such as justification, location, improvements being requested, timing, etc., for thorough review.

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 (SO C) reviews and recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SO C 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: <u>https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx</u>

HIGH 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 (SO C) 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).

More information: <u>https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx</u>

NCDOT CONTINGENCY FUND

The Statewide Contingency Fund is a \$10 million fund administered by the Secretary of Transportation. The Division Engineer elicits written requests from municipalities, counties, businesses, schools, citizens, legislative members and NCDOT staff. The appeals are reviewed on their merits by the Contingency and Small Urban Funds Committee, which makes recommendations for funding to the Secretary. Written requests must provide technical information such as justification, location, improvements being requested, timing, etc., for thorough review.

More information: <u>https://connect.ncdot.gov/resources/safety/Teppl/Pages/Teppl-Topic.</u> <u>aspx?Topic_List=F19</u>

SMALL URBAN FUNDS

Each NCDOT Highway Division administers \$2 million of funds for small-scale improvement projects in urban areas. Projects must be within 2 miles of city limits and have a maximum cost of \$250,000. Requests for small urban funds may be made by municipalities, counties, businesses, school and industrial entities. A written request should be submitted to the Division Engineer providing technical information such as justification, location, improvements being requested, timing, etc., for thorough review.

SPOT IMPROVEMENT PROGRAM

The Division of Bicycle and Pedestrian Transportation (DBPT) budgets \$500,000 per year for "spot" safety improvements throughout North Carolina. Eligible improvements include drain grate replacement, bicycle loop detectors, pedestrian signals and other small-scale improvements. These funds are used for small-scale projects not substantial enough to be included in the STIP. Proposals should be submitted directly to the Division of Bicycle and Pedestrian Transportation.

SMALL CONSTRUCTION FUNDS

Each of the 14 NCDOT Highway Divisions administers \$357,000 of small construction funds. The purpose of these funds is to finance improvements on the State System (US, NC, and SR routes) to be used for projects anywhere in the counties. These funds are used to fund a variety of transportation projects for municipalities, counties, businesses, schools, and industries throughout the state. There is a \$250,000 maximum amount per request per fiscal year. Any project with a total cost greater than \$150,000 requires a resolution or a letter of support for the project from the local jurisdiction. The former NCDOT Statewide Discretionary Funding program has been consolidated into this funding mechanism.

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 GHS P funding ends. State Highway Applicants must use the web-based grant system to submit applications.

More information: http://www.ncdot.org/programs/ghsp/

BICYCLE AND PEDESTRIAN PLANNING GRANT INITIATIVE

The Bicycle and Pedestrian Planning Grant Initiative is a matching grant program administered through NCDOT that encourages municipalities to develop comprehensive bicycle plans and pedestrian plans. The Division of Bicycle and Pedestrian Transportation (DBPT) and the Transportation Planning Branch (TPB) sponsor this grant. All North Carolina municipalities are eligible and are encouraged to apply. Funding allocations are determined on a sliding scale based on population. Municipalities who currently have bicycle plans or pedestrian plans, either through this grant program or otherwise, may also apply to update their plan provided it is at least five years old.

More information: <u>https://connect.ncdot.gov/municipalities/PlanningGrants/Pages/Planning-Grant-Initiative.aspx</u>

ROAD RESURFACING

When space allows the inclusion of a bicycle lane onto a road without requiring significant drainage, Right-of-Way, or grading work, NCDOT can install the improvement during road resurfacing projects. If a project is feasible, the NCDOT can inform the affected community and offer them the opportunity to contribute to the marginal cost associated with these improvements.

EAT SMART, MOVE MORE NORTH CAROLINA COMMUNITY GRANTS

The Eat Smart, Move More (ES MM) 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.

More information: http://www.eatsmartmovemorenc.com/Funding/CommunityGrants.html

THE NORTH CAROLINA DIVISION OF PARKS AND RECREATION

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.

More information: http://www.ncparks.gov/About/grants/main.php

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.

For more information: <u>http://www.ncparks.gov/About/grants/partf_main.php</u>

NC DEPARTM ENT OF ENVIRONMENT - RECREATIONAL TRAILS AND ADOPT-A-TRAIL GRANTS

The State Trails Program is a section of the N.C. Division of Parks and Recreation. The program originated in 1973 with the North Carolina Trails System Act and is dedicated to helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking and horseback riding to river trails and off-highway vehicle trails. The Recreation Trails Program awards grants up to \$75,000 per project. The Adopt-A-Trail Program awards grants up to \$5,000 per project.

POWELL BILL FUNDS

Annually, State street-aid (Powell Bill) allocations 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.

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 (HU D) to the state of North Carolina. Some urban counties and cities in North Carolina receive CDBG funding directly from HU D. Each year, CDBG provides funding to local governments for hundreds of critically-needed community improvement projects throughout the state. These community improvement projects are administered by the Division of Community Assistance and the Commerce Finance Center under eight grant categories. Two categories might be of support to pedestrian and bicycle projects in 'entitlement communities': Infrastructure and Community Revitalization.

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.

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

SAFE ROUTES TO SCHOOL PROGRAM (MANAGED BY NCDOT, DBPT)

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate 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. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding.

The state of North Carolina was allocated \$15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. In 2009, more than \$3.6 million went to 22 municipalities and local agencies for infrastructure and non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding.

For more information: <u>https://connect.ncdot.gov/projects/BikePed/Pages/Safe-Routes-To-School.aspx</u>

https://www.ncdot.gov/divisions/bike-ped/Documents/NCDOT_SRTS_Description.pdf

Or contact DBPT/NCDOT at (919) 807-0774.

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.

For more about Tree City USA status, including application instructions, visit: <u>http://</u><u>ncforestservice.gov/Urban/urban_grant_overview.htm</u>

WATCH FOR ME NC

Watch for Me NC is a statewide program that aims to reduce pedestrian and bicycle injuries and deaths through a comprehensive, targeted approach of public education, community engagement, and high-visibility law enforcement. Eligible communities can apply to be partners with the program. Partners receive a variety of program materials for distribution, free training for law enforcement, action planning workshops for community agencies, and technical support that aids in local decision-making.

More information: https://www.watchformenc.org/about/participate/

LOCAL GOVERNMENT FUNDING SOURCES

Municipalities often plan for the funding of pedestrian and bicycle facilities or improvements through development of Capital Improvement Programs (CIP). 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 decisionmakers to balance all capital needs. Typical capital funding mechanisms include the following: 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 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, streetscapes, 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.

OTHER LOCAL FUNDING OPTIONS

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

PRIVATE AND NON-PROFIT FUNDING SOURCES

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

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: <u>http://www.land4tomorrow.org/</u>

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 assure 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

For more specific information about what types of projects are funded and how to apply, visit: <u>http://www.rwjf.org/applications/</u>

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 nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, 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: <u>http://nccommunityfoundation.org/</u>

CAROLINA THREAD TRAIL GRANTS

The Carolina Thread Trail is a regional trail funding initiative that aims to connect 15 counties and 2.3 million people in south-central North Carolina. The initiative is led by the Catawba Lands Conservancy and a collection of local partners who help to fund trail projects throughout the region. There are currently 117 miles of trail in place. The Town of Davidson should consider partnering with the Carolina Thread Trail to connect local greenway projects to the surrounding region and for funding assistance with planning, design, land acquisition efforts.

WALMART STATE GIVING PROGRAM

The Walmart Foundation financially supports projects that create opportunities for better living. Grants are awarded for projects that support and promote education, workforce development/economic opportunity, health and wellness, and environmental sustainability. Both programmatic and infrastructure projects are eligible for funding. State Giving Program grants start at \$25,000, and there is no maximum award amount. The program accepts grant applications on an annual, state by state basis January 2nd through March 2nd.

Online resource: <u>https://walmart.org/</u>

THE 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. A wide array of activities are eligible for funding, including infrastructural and programmatic projects.

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. They have two grant cycles per year and generally do not fund land acquisition. However, they may be able to offer support in other areas of open space and greenways development.

For more information: <u>www.zsr.org</u>

BANK OF AMERICA CHARITABLE FOUNDATION INC.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

For more information: <u>http://www.bankofamerica.com/foundation</u>

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 three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training and research around environmental and energy efficiency initiatives.

For more information: <u>http://www.duke-energy.com/community/foundation.asp</u>

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: <u>http://www.conservationfund.org</u>

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 \$240,000 to 56 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: <u>http://www.americanhiking.org/national-trails-fund/</u>

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 (one to two years).
- Funding emphasis may not be on general operating expenses or staff payroll.

More information: <u>http://www.conservationalliance.com/grants</u>

NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)

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

The Foundation awards matching grants under its Keystone Initiatives to achieve measurable outcomes in the conservation of fish, wildlife, plants and the habitats on which they depend. Awards are made on a competitive basis to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per

year. Grants generally range from \$50,000-\$300,000 and typically require a minimum 2:1 non-federal match.

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: <u>https://www.nfwf.org/whatwedo/grants/Pages/home.aspx</u>

THE TRUST FOR PUBLIC LAND

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well-being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

More information: <u>http://www.tpl.org</u>

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. The Health of Vulnerable Populations grants program focuses on improving health outcomes for at-risk populations. The Healthy Active Communities grant concentrates on increased physical activity and healthy eating habits. Eligible grant applicants must be located in North Carolina, be able to provide recent tax forms and, depending on the size of the nonprofit, provide an audit.

For more information: <u>http://www.bcbsncfoundation.org/</u>

ALLIANCE FOR BIKING AND WALKING: ADVOCACY ADVANCE GRANTS

Bicycle and pedestrian advocacy organizations play the most important role in improving and increasing biking and walking in local communities, states, and provinces. Advocacy Advance Grants enable state and local bicycle and pedestrian advocacy organizations to develop, transform, and provide innovative strategies in their communities. Thanks to remarkable support from SRAM, Planet Bike, and Bikes Belong, the Alliance for Biking & Walking has awarded more than \$500,000 in direct grants, technical assistance and scholarships to advocacy organizations across North America since the Advocacy Advance Grant program's inception. In 2009 and 2010, these one-year grants were awarded twice annually to startup organizations and innovative campaigns to dramatically increase biking and walking. Through the Advocacy Advance Partnership with the League of American Bicyclists, the Alliance also provided necessary technical assistance, coaching, and training to supplement the grants.

More information: <u>http://www.peoplepoweredmovement.org</u>

BIKES BELONG GRANTS

The Bikes Belong Grant program funds important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include greenways and rail trails accessible by pedestrians and bicyclists. Applicants can request a maximum amount of \$10,000 for their project, and priorities are given to areas that have not received Bikes Belong funding in the past three years. Community Partnership Grants are a new Bikes Belong opportunity. These grants are designed to foster and support partnerships between city or county governments, non-profit organizations, and local businesses to improve the environment for bicycling in the community. Grants will primarily fund the construction or expansion of facilities such as bike lanes, trails, and paths. The lead organization must be a non-profit organization with IRS 501(c)3 designation or a city or county government office.

More information: https://peopleforbikes.org/our-work/community-grants/

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.

APPENDICES

APPENDIX A - Community Engagement

STAKEHOLDER COMMITTEE

A stakeholder committee was convened at the beginning of the planning process. Community members representing a variety of interests and constituencies were represented on the committee, including the Town Planning Department, Public Works Department. Parks and Recreation, the Planning Board, the Livability Board, Charlotte Area Transit System (CATS), NC Department of Transportation (NCDOT), and Davidson College. The stakeholder committee was convened for a total of four meetings to review the progress of the plan and provide guidance and feedback on the recommendations contained therein.

PROJECT WEBSITE

The project website, www. davidsonmobilityplan.com, was launched at the beginning of the project in February 2018, as a central clearinghouse for all information and events related to the Davidson Mobility Plan. The website was accessible through the Town of Davidson's main website. and was used on all public outreach materials, press releases, and social media posts to in order to spread awareness and promote public outreach events related to the plan. The website included links to a summary of the project, the interactive mapping website (described below), the events calendar, materials shared at Davidson Mobility Plan public events, and a blog covering related events and information from throughout the life of the project.

INTERACTIVE WIKIMAP

The interactive Wikimap was a mobile-friendly web interface that provided the opportunity to crowdsource ideas on where people were experiencing mobility issues and where improvements were needed. The tool was structured to enable users to provide feedback in the form of points, lines, and pictures for different modes of travel (walking, biking, driving, and public transit). The information was be used to assess system needs, develop network recommendations, and prioritize projects.



MAP ABOUT **EVENTS** DOCUMENTS

BLOG

Search the site

CONTACT

0



DavidsonMobilityPlan.com was a central clearinghouse of information about the plan.

COMMUNITY CONVERSATION

A Community Conversation was held in February 2018 to kick off the Davidson Mobility Plan. The event was well attended, with more than 50 people participating. The event consisted of a presentation on planning for livable transportation from a leading industry expert, followed by a polling exercise and mapping activity. These activities helped the consulting team gather input on stakeholders interests. concerns, and priorities for mobility improvements.

FOCUS GROUP

Six focus group interviews were conducted on February 20, 2018, in an effort to gather input from different segments of our community, including the many schools around town; the surrounding municipal jurisdictions; business owners and non-profit organizations; and neighborhood and homeowner associations. These focus groups were an opportunity to have indepth conversations around mobility issues particular to these groups' concerns, such as commuting, carpooling, regional traffic patterns, and neighborhood traffic concerns.

Two public presentations were provided in April and May 2018 on the topics of Future Transportation and Transit; and Roads, Bicycles, and Pedestrians. These presentations, led by the consultant team, Town staff, and CATS representatives. covered current and emerging practices in mobility planning as a way to familiarize town residents with the process. These presentations are available through the project website.

PUBLIC EVENT TABLING

The consultant team conducted outreach tables on Davidson College's campus on May 3, and at Davidson's Town Day on May 5. These tabling events were an opportunity to collect input from a broad cross-section of the community, especially those who are under-represented at other public outreach events, such as college students and families with small children. The tabling events offered the opportunity to review maps of existing facilities, provide feedback on where new facilities are needed. learn more about the project, spread the word about the project website and online mapping activity, and provide general comments on what is needed to help people move throughout town. The table events were well attended. with over 50 visitors providing comments and input to the maps and comment board.



Residents attended a community presentation on "Roads, Bicycles, + Pedestrians"

WALKING + BIKING TOURS

A preliminary walking tour of downtown Davidson was held before the Community Conversation in February 2018. This walking tour provided town residents a demonstration of and opportunity to participate in the existing conditions assessment of the downtown area. Given the large turnout at this walking tour, and requests for tours of other areas in town, four additional walking tours and a biking tour were added during the charrette week. These additional walking tours covered Westside Davidson, South Main Street, Potts Street, and the Exit 30 area. The biking tour covered a loop around the Westside, the greenway, and Old Davidson.

ON-THE STREET INTERVIEWS

Interviews on the street were conducted to capture candid opinions and feedback on mobility and commuting issues. These impromptu interviews, which were done on Main Street, the greenway, at Harris Teeter, and on the bus, provided a personal and human connection to inform the policy recommendations.

APPENDIX B- Existing Conditions



Memo

Reference: Town of Davidson Mobility Plan – Existing Conditions Assessment

This memo contains a summary of the existing mobility assessment for the Town of Davidson.

SAFETY AND CRASH DATA

A high-level assessment of the Town of Davidson crash data from 2013 through 2017 (5 years) was conducted in order to identify "hot spot" areas. **Figure 1** shows a heat map of the crash locations throughout the Town of Davidson, while **Figure 2** shows the heat map for a zoomed-in portion near downtown.

Figure 1: Existing Crash Hotspots - Town-wide





Figure 2: Existing Crash Hotspots – Downtown Davidson & Surrounding Area

The maps show that there are high concentrations of crashes along I-77 (238 crashes in the past 5 years), Griffith Street (132 crashes), and Main Street / NC 115 (103 crashes). **Table 1** shows a summary of the crashes in the Town of Davidson by year and severity. **Table 2** summarizes the high-frequency crash locations in Davidson. A spreadsheet containing all of the crash data, as well as a map with crashes plotted individually are included in the memo attachments.

Table 1: Crash Summary by Year

Year	Total Crashes	Total Fatalities	Total Injuries
2013	140	0	50
2014	130	0	35
2015	161	0	38
2016	220	1	57
2017	191	0	58
Totals	842	1	238

Table 2: High Frequency Crash Intersections

Intersection	# of Crashes (2013-2017)
Griffith at I-77	59
Griffith at Harbour Place / Davidson Gateway	44
Griffith at Jetton	30
Griffith at Davidson Gateway	26
NC 115 / Main at Depot	22
NC 115 / Main at Concord	20
NC 115 / Main at Jackson	17
NC 115 / Main at Delburg / Glasgow	14
Griffith at Sloan / Beaty	12
Davidson-Concord at Robert Walker	11

DEDICATED BICYCLE AND PEDESTRIAN INFRASTRUCTURE

The Town of Davidson currently has several dedicated facilities for bicycles and pedestrians. **Figure 3** shows a map of the dedicated bicycle facilities Town-wide and the different types provided for each roadway. **Figure 4** shows a zoomed-in section of the area near downtown with bicycle counts at several locations along Griffith Street, Main Street, and Concord Road. **Figure 5** shows a map of dedicated pedestrian infrastructure town-wide and **Figure 6** shows a zoomed-in section near downtown with pedestrian counts along the same roadways noted above. Additional high-resolution maps showing zoomed-in sections of the Town are included in the memo attachments.

Figure 3: Existing Bicycle Infrastructure





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eference: Town of Davidson Mobility Plan – Existing Conditions Assessment

gure 4: Existing Bicycle Infrastructure and Counts - Downtown Davidson



Figure 5: Existing Pedestrian Infrastructure





Figure 6: Existing Pedestrian Infrastructure and Counts – Downtown Davidson

The figures show that sidewalks can be found on most Town streets, but there are notable gaps in connectivity. The *Davidson Walks and Rolls Active Transportation Plan*¹ indicates that Davidson currently has 42.22 miles of sidewalk, but that an additional 8.5 miles is required in order to increase connectivity and improve pedestrian safety.

The bicycle and pedestrian counts noted in the figures are discussed further in the "Existing People Capacity" section below.

EXISTING PEOPLE CAPACITY

PEDESTRIANS AND BICYCLES

The Institute for Transportation Research and Education (ITRE) installed permanent bicycle and pedestrian count stations at three locations in Davidson in May 2017. Raw, preliminary, unadjusted data was obtained by the project team for these locations in order to determine the existing usage of the bike and pedestrian facilities on Griffith Street, Main Street, and Concord Road.

Additionally, traffic counts (including vehicles, bikes, and pedestrians) were available for morning, afternoon, and evening peak periods in November 2016 at the following locations along Griffith Street:

- Davidson Gateway Drive (west) / Harbour Place Drive
- Jetton Street
- Davidson Gateway Drive (east)
- Beaty Street / Sloan Street

The data from all of the available counts is shown graphically at each available location in **Figures 4 and 6** above. It should be noted that the ITRE data is shown as a daily average, calculated over the period between May and August 2017, and only reflects pedestrian and bicycle movements along Griffith Street itself (not crossing Griffith). The counts at the Griffith Street intersections listed above are shown to represent an 8-hour period on a single-day in November 2016, and reflect all movements at the intersection; not just those along Griffith Street. It is likely that the counts taken between May and August would be higher than an average over the course of an entire year. May through August is one of the warmest periods of the year, which is more inviting for walkers and bike-riders than a cold February, for example. Conversely, the bicycle and pedestrian counts taken in November are likely lower than what one would expect over the course of an entire year, as November is typically one of the colder months, and the counts were only taken on one day.

Overall, the data indicates that some of the heaviest pedestrian movement is along Griffith Street. Perhaps one of the most surprising points was along Main Street, which had one of the lowest pedestrian counts, and the lowest of the three May thru August data collection sites.

VEHICLES

Average Annual Daily Traffic (AADT) data for the year 2016² was obtained from NCDOT was used to evaluate the existing road capacity for vehicles within the Town of Davidson. Based on Generalized Volume Level of Service tables

¹ Davidson Walks and Rolls Active Transportation Master Plan. (2013). Retrieved from http://www.townofdavidson.org/774/Davidson-Walks-Rolls-Active-Transportati

² NCDOT Traffic Survey Group. (n.d.). Interactive Traffic Volume Map. Retrieved from http://ncdot.maps.arcgis.com/apps/webappviewer/index.html?id=5f6fe58c1d90482ab9107ccc03026280

provided in the *Florida Department of Transportation's (FDOT) Quality / Level of Service Handbook*³, a level of service was determined for each roadway. **Figure 7** shows the daily traffic volumes which were available for the Town of Davidson, and the associated level of service for that roadway segment.

³ FDOT Systems Planning Office. (2009). Generalized Annual Average Daily Volumes for Florida's Urbanized Areas. Page 1.





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EXISTING VEHICULAR AND BICYCLE PARKING

VEHICULAR PARKING

Based on the *Comprehensive Parking Study*⁴ conducted for the Town of Davidson in 2017, there are 371 existing public on-street parking spaces, 328 off-street parking spaces, and 1,231 private off-street parking spaces within the historic downtown area and the immediate surrounding blocks. The occupancy study portion of the report indicated that a maximum of 515 spaces out of 694 spaces were utilized on a Saturday, an occupancy of 74 percent. **Figure 8** shows the occupancy rates for each parking type on the Saturday when the observations were conducted. On a Thursday, a maximum of 1,210 spaces out of 2,044 spaces were occupied, which equates to an occupancy rate of 59 percent. **Figure 9** shows a summary of the occupancy rates for each parking type on the Thursday when the observations were conducted.



Figure 8: Saturday Occupancy Chart

⁴ Stantec, & Town of Davidson. (2017). Comprehensive Parking Study.



Figure 9: Thursday Occupancy Chart

Overall, the area studied showed a parking demand of 1,699 compared to a supply of 2,034. While this does indicate an overall parking surplus of approximately 16 percent, there were areas within the downtown core which experienced parking deficits.

There are other major dedicated parking areas along Griffith Street that are primarily associated with schools, hotels, multi-family housing, or retail. These areas are mainly served by surface parking lots, but several streets adjacent to Griffith Street provide on-street parallel or angle parking options for residents and patrons. Recent parking studies do not contain data for parking outside of the immediate downtown area, so it is difficult to estimate the supply and demand of parking in other areas of town, namely along Griffith Street.

BICYCLE PARKING

The Town of Davidson does not keep records of the placement and availability of bike racks and other bicycle parking infrastructure. Short of completing a thorough field survey to count the number of dedicated bicycle parking fixtures, which is not included in the scope of work, we are not able to determine this based on the data available. If this data is important to the Town for the purposes of this study, we recommend performing a field survey and subsequently mapping the areas in ArcGIS. Bike parking in general is a critical component in encouraging active transportation and understanding the existing supply is important. This parking data, combined with the existing bike count data above, would allow us to identify areas where there is currently a bike parking shortage or excess.

EXISTING RIDE-SHARING, CAR-SHARING, AND BIKE-SHARING INFRASTRUCTURE

There is very little sharable infrastructure in the Town of Davidson currently. Ride-sharing apps, such as Uber and Lyft, are becoming widely used, particularly by college students through the week and by restaurant and retail patrons on Friday evenings and weekends. Town and Stantec staff have observed many vehicles stopping to pick up or drop off passengers in the downtown area. With no designated area for this to be facilitated, often times the vehicles will stop within the travel way, which can lead to traffic congestion and unsafe maneuvers by both vehicles and pedestrians.

Based on recent research, there is no car-sharing infrastructure or availability in the Davidson area at this time.

The only bike-share program in Davidson is on the campus of Davidson College, where they have recently implemented the use of 50 "Mobikes". Mobikes are mobile bikes that can be locked and left anywhere and do not require use of traditional bike racks or dedicated storage.

STANTEC CONSULTING SERVICES INC.

Kellie Reep, PE Transportation Engineer

Phone: (980) 297-7668 Fax: (919) 851-7024 Kellie.Reep@stantec.com

Attachments:

Crash Heat Map – Entire Davidson (Figure 1) Crash Heat Map – Downtown Davidson (Figure 2) Crash Heat Map – South Davidson Plotted Crash Data Points Town of Davidson Raw Crash Data (Excel format) Existing Bicycle Infrastructure – Entire Davidson (Figure 3) Existing Bicycle Infrastructure – Downtown Davidson with Bike Counts (Figure 4) Existing Bicycle Infrastructure – Concord Road Existing Bicycle Infrastructure – South Davidson Existing Pedestrian Infrastructure – Entire Davidson (Figure 5) Existing Pedestrian Infrastructure – Downtown Davidson with Ped Counts (Figure 6) Existing Pedestrian Infrastructure – Downtown Davidson With Ped Counts (Figure 6) Existing Pedestrian Infrastructure – Concord Road Existing Pedestrian Infrastructure – Davidson-Concord Road Existing Pedestrian Infrastructure – South Davidson Vehicular Level of Service and AADT's (Figure 7)

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APPENDIX C- Previous Plans Summary

То:	Travis Johnson, Town of Davidson
From:	Wade Walker & Heather Seagle, Alta Planning + Design
Date:	April 30, 2018
Re:	Davidson Mobility Plan- DRAFT Technical Memorandum #1- Summary of Previous Transportation Planning Efforts (Revised)

Davidson has a rich history of transportation planning that aligns land use planning with transportation strategies. As part of the assessment for the Mobility Plan, these previous planning efforts have been reviewed and summarized to understand what transportation facilities have been planned and recommended previously, which of those recommendations have been implemented, and which recommendations may no longer be valid. The previous plan initiatives are summarized in both written narrative and in tabular and/or mapping format consistent with their recommendations, and it has been noted if an initiative has been completed or is in the process of being implemented. This assessment is intended to give the reader an overview of the myriad of planning efforts conducted over the past 15+ years and to inform the development of the current Mobility Plan.

The following prior plans have been reviewed and a summary of mobility and connectivity recommendations from each is summarized below:

Plan Name	Adoption Date
Downtown Pedestrian Safety Enhancement Plan	February 2002
Circulation Plan	April 2003
Connectivity and Traffic Calming Report	2003*
Davidson Transit Station Small Area Plan	September 2005
Potts-Sloan-Beaty Street Corridor Land Use Plan	May 2007
Bicycle Transportation Plan	Oct 2008
Davidson Comprehensive Plan	August 2010
Comprehensive Parking Study	2011*
Station Area Plan Update	2012*
Davidson Walks and Rolls: Active Transportation Master Plan	November 2013
Circles at 30 Small Area Plan	2013*
Parks and Recreation Master Plan	November 2014
Rural Area Plan	September 2016

Table 1. List of Previous Plans Included in Analysis

* These plans have not been formally adopted by Davidson Board of Commissioners, but they have been reviewed and summarized here to make sure that the Mobility Plan reflects a comprehensive understanding of previous planning efforts.

Downtown Pedestrian and Bicycle Safety Enhancement Plan (2002)

Adopted in February 2002, this plan outlines pedestrian crossing improvements and bicycle facility improvements in order to protect the pedestrian- and bicycle-oriented character of central Davidson. The crossing improvements, which generally consist of curb bulb-outs and new or realigned bricked crossings, are recommended at the intersections of Main Street and Concord Road, Main Street and Depot Street, Concord Road and Lorimer Road, and Concord Road and College Street. All of the crossing improvements proposed in this plan have been implemented.

The bicycle facility improvements called for are the installation of bicycle lanes along Concord Road, from Lorimer Road to Kimberly Lane, to improve safe bicycle access between downtown, residential neighborhoods, and Davidson's greenway trails. The proposed bike lanes have been installed from Lorimer Road to Pine Road.



Figure 1. Downtown Pedestrian and Bicycle Safety Plan Recommended Connections

Proposed Facility Type	Status	Project Corridor	From_	То_
bike lanes	Completed	Concord Rd	Lorimer Rd	Grey Rd
bike lanes	Proposed	Concord Rd	Grey Rd	Kimberly Rd
sidewalks both sides	Proposed	Concord Rd	Woodland St	Downing St
trail/path	Completed	Concord Rd	Kimberly Ln	Rocky River Rd
trail/path	Completed	Davidson-Concord Rd	Rocky River Rd	South Prong Branch Rocky River

Table 2. Downtown Pedestrian and Bicycle Safety Plan Projects

Circulation Plan (2003)

This plan, adopted in April 2003, summarizes the results of an extensive connectivity study of how to improve circulation and mobility, as well as pedestrian and bicycle connectivity. The recommendations and priorities established were based on citizen stakeholder input, as well as input from Town staff and consultant research. The following roadway connections were identified and described in the report, along with accompanying maps. A prioritization score was calculated for the projects by a group of twenty-one stakeholders. Stakeholders scored the potential connections on their ability to 1) relieve traffic congestion on major thoroughfares and at primary intersections, 2) enhance movement safety in the area, and 3) maintain and enhance quality of life in Davidson. Projects were scored based on a scale of -2 to 2, with -2 representing a significant negative impact and +2 representing a significant positive impact. (Some projects were not scored. It is unclear from the report why this is the case.) The resulting prioritized list of connection is as follows:

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
bike/ped connector		Proposed	Ardley Cir connector	Ardley Cir	Pat Stough Ln
bike/ped connector		Proposed	Churchill-Woody connector	Churchill Rd	Woody Ln
bike/ped connector		Proposed	Hudson Pl eastern extension	e. terminus	new street connection
bike/ped connector		Proposed	Lynbrook Dr extension	Patrick Johnston Ln	Churchill Rd
bike/ped connector		Proposed	Westmoreland Farm Rd	<null></null>	<null></null>
greenstreet		Proposed	Woodland St	Brook St	Lorimer Rd
greenstreet; sidewalks		Proposed	Lorimer Rd	Woodland St	Thompson St
new street connection	new street connection	Completed	Brook St extension	Woodland St	east of Woodland
new street connection		Proposed	Brook St extension	e. terminus of Brook St	Pinecrest St
new street connection		Proposed	Catawba Ave extension	S. Main St	Spring St extension
new street connection		Proposed	Cathey St extension	current s. terminus of Cathey St	Eastway St
new street connection		Proposed	Goodrum St extension	e. terminus of Goodrum	Cathey St

Table 3. Proposed Connections from the Circulation Plan of 2003

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	To_
new street connection	new street connection	Completed	Goodrum St extension	Walnut St	South St extension
new street connection		Proposed	Grey to NC 115	Grey Rd	NC 115
new street connection		Proposed	Hillside Dr extension	s. terminus of Hillside Dr	Cathey St
new street connection		Proposed	Hudson Pl-Westmoreland connector	Hudson Pl	Westmoreland Farm
new street connection		Proposed	N. Thompson extension	N. Thompson St	Beaty St (via Ridge Rd)
new street connection	new street connection	Proposed	new street connection	Hudson Pl	<null></null>
new street connection		Proposed	new street connection	<null></null>	<null></null>
new street connection		Proposed	new street connection	<null></null>	<null></null>
new street connection		Proposed	new street connection	Spring St	Goodrum ST
new street connection	new street connection	Completed	Patrick Johnston Ln	Hudson Pl	<null></null>
new street connection		Proposed	Peters Pl extension	Peters Pl	Thompton St extension
new street connection		Proposed	Potts St-to-Catawba Ave connector	Potts St	Catawba Ave
new street connection		Proposed	Ridgewood Ave extension	Pinecrest St	Thompson St
new street connection	new street connection	Completed	South St	southern terminus	Antiquity neighborhood
new street connection	new street connection	Completed	Spring St extension	Eugenia St	Walnut St
new street connection		Proposed	Walnut-Vernon connector	Walnut St	Vernon Dr
new street connection		Proposed	West Rail St	Armour St	Potts-Sloan Connector
new street connection		Proposed	Wyatts Way Extension	Pine St	South St
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Proposed	Brookhollow	Bradford Park	Hudson Pl extension
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Proposed	Eugenia St	Spring St	S. Main St
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Proposed	June Washam to Shearer Rd	June Washam Rd	Shearer Rd
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Proposed	new development	Park Terrace	greenway connection
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Proposed	Wyatts Way	Pine St	Patrick Johnston Ln
				E 1.01	
new street connection*; Shared Road	new street connection	Proposed	Spring St	Eugenia St	James Alexander Way
new street connection*; trail/path	new street connection, sidewalks, bike lanes	Proposed	Bailey to Davidson Concord connector	Bailey Rd	Davidson-Concord Rd
new street connection*;	new street	Completed	Hudson Pl	<null></null>	<null></null>
trall/path	connection				

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
new street connection*; trail/path	new street connection	Completed	Samuel Spencer Pkwy	Hudson Pl	s. terminus of Samuel Spencer
new street connection; bike lanes	new street connection; bike lanes	Completed	Shearer Rd extension	Dembridge Dr	White Quartz Ln
new street connection; bike lanes		Proposed	Shearer Rd extension	White Quartz Ln	NC 73
new street connection; bike lanes; sidewalk		Proposed	Potts St-to-Sloan St connector	Potts St	Sloan St
new street connection; bike lanes; sidewalk		Proposed	Samuel Spencer Pkwy extension	s. terminus of Samuel Spencer	<null></null>
new street connection; paved shoulder; trail/path		Proposed	Avinger-Chapel connection	Chapel Way	South Prong Rocky River Greenway
new street connection; Shared Road		Proposed	Pine Rd-to-Thompson St connector	Pine Rd	Thompson St extension
new street connection; Shared Road		Proposed	Thompson St extension	Ridgewood extension	Avinger Ln
new street connection; trail/path*	trail/path	Partially Completed	South Prong Rocky River Greenway	Avinger Ln	South St
new street connection; trail/path		Proposed	Brook St extension	Hillside Dr	Woodland
new street connection; trail/path		Proposed	Concord to Grey connection	Concord Rd	Grey Rd
new street connection; trail/path		Proposed	Dogwood Ln extension	Dogwood Ln	Conroy Ave
new street connection; trail/path		Proposed	Eastway-South connection	Eastway St	South St
new street connection; trail/path		Proposed	Greenway St-to-South St connector	Greenwya St	South St
new street connection; trail/path		Proposed	Greenway St-to-The Pines extension	Greenway St	The Pines
new street connection; trail/path		Proposed	Lorimer Rd-to-Brook St connection	Lorimer Rd	Brook St extension
new street connection; trail/path		Proposed	new street connection	Davidson-Concord Rd	<null></null>
new street connection; trail/path		Proposed	Walnut-Vernon connector	Walnut St	future Kincaid Greenway
new street connection; trail/path*	trail/path	Partially Completed	Eastway-The Pines	Eastway St	The Pines
new street connection; trail/path*		Funded	new street connection	Westbranch Pkwy	new development road
new street connection; trail/path*		Funded	new street connection	Westbranch Pkwy	new development road
sidewalks		Proposed	Eastway St	w. terminus of Eastway	s. terminus of Eastway
sidewalks		Proposed	Goodrum St	South St	Walnut Rd
sidewalks		Proposed	Greenway St	Ridgewood Av	southern terminus of Greenway St
sidewalks		Proposed	Hillside Dr	Lorimer Rd	s. terminus of Hillside Dr
sidewalks		Proposed	Meadowbrook Ln	Vernon Dr	Twin Oaks Rd
sidewalks		Proposed	Pinecrest sidewalk	Ridgewood Ave	Brook St
sidewalks		Proposed	Potts St	n. terminus of Potts	Catawba Ave

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
sidewalks		Proposed	Ridgewood Ave	Woodland St	Pinecrest St
sidewalks		Proposed	Spring St	James Alexander Wy	South St
sidewalks		Proposed	Thompson St	Concord Rd	s. terminus of Thompson St
sidewalks		Proposed	Vernon Dr	Twin Oaks Rd	Meadowbrook Ln
sidewalks		Proposed	Woodland St	Concord Rd	Spring St
sidewalks*; trail/path	Sidewalks	Partially Complete	Hudson Pl	Kimberly Rd	Patrick Johnson Ln
sidewalks; Shared Road		Proposed	Cathey St sidewalk	South St	Walnut St
sidewalks; Shared Road	sidewalks; Shared Road	Completed	Pine Rd	Concord Rd	Patrick Johnston Ln
sidewalks; trail/path	Sidewalks	Partially Complete	Kimberly Rd	Concord Rd	Hudson Pl
trail/path		Proposed	Cathey St greenway	Hillside Dr	South Prong Rocky River Greenway
trail/path		Proposed	greenway connection	Patrick Johnston Ln	Pat Stough Ln



Figure 2. Circulation Plan Recommended Connections

Connectivity and Traffic Calming Report (2003)

This plan is the implementation plan that followed the Circulation Plan of 2003. This plan has not been adopted by Town Council. It provides details of the traffic calming measures and intersection treatments that should be applied to specific new roadway connections in order to ensure that the neighborhood streets maintain their character, and that town-wide street connections are designed to accommodate traffic without directing unnecessary traffic into neighborhoods. The plan outlines a number of guiding design and engineering principles that support these proposed recommendations. For instance:

- Streets need to provide mobility for vehicles, pedestrians, and bicyclists
- Street capacity should be measured by the number of *people* it serves and not just vehicles.

- Vehicular capacity is maximized with speeds of 25-30 mph so Davidson should limit design speeds and posted speed limits to maximize efficiency and pedestrian and bicyclist safety.
- Designing for lower speeds will allow for shorter sight distances that allows for more roadside treatments, such as street trees, lighting, and other pedestrian amenities.
- Traffic calming measure can lower design speeds to match sight distance, which will decrease the potential severity of accidents while also enhancing quality of the environment.

Priority projects outlined in the report are:

- Potts-Sloan connection *[funded; in planning/design phase]*
- Davidson-Concord Road to Bailey Road connection *[implemented]*
- Concord Road to Grey Road and Grey Road to N. Main Street (near Beaty Street)
- Shearer Road to NC 73

The report also recommends policy and funding mechanisms that should be considered in order to ensure that these projects can be implemented. These include:

- Identifying prioritized projects in the MPO's Long-Range Transportation Needs Plan and have them placed within the Region's Thoroughfare Plan
- Updating Davidson's Adequate Public Facilities Ordinance (APFO) to establish an annexation fee policy in the Davidson ETJ (rural area) to be applied to all residential developments that wish to annex into the town limits.
- Determining universal impact areas for which new development impacts, and establish a per unit fee that would pay for transportation improvements to these areas that are impacted by development, no matter what the location. Potential universal impact areas include the Elementary school walk zone, Main/Concord intersection, Bailey Middle School Area.



Figure 3. Connectivity & Traffic Calming Plan Recommended Connections

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	To_
bike/ped connector		Proposed	Ardley Cir connector	Ardley Cir	Pat Stough Ln
bike/ped connector		Proposed	Churchill-Woody connector	Churchill Rd	Woody Ln
bike/ped connector		Proposed	Hudson Pl eastern extension	e. terminus	new street connection
bike/ped connector		Proposed	Lynbrook Dr extension	Patrick Johnston Ln	Churchill Rd
bike/ped connector		Proposed	Westmoreland Farm Rd extension	new street connection	w. terminus of Westmoreland Farm Rd
greenstreet		Proposed	Woodland St	Brook St	Lorimer Rd
greenstreet; sidewalks		Proposed	Lorimer Rd	Woodland St	Thompson St
new street connection	new street connection	Completed	Brook St extension	Woodland St	east of Woodland

Table 4. Projects from the Connectivity & Traffic Calming Report

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
new street connection		Proposed	Brook St extension	e. terminus of Brook St	Pinecrest St
new street connection		Proposed	Catawba Ave extension	S. Main St	Spring St extension
new street connection		Proposed	Cathey St extension	current s. terminus of Cathey St	Eastway St
new street connection		Proposed	Goodrum St extension	e. terminus of Goodrum	Cathey St
new street connection	new street connection	Completed	Goodrum St extension	Walnut St	South St extension
new street connection		Proposed	Grey to NC 115	Grey Rd	NC 115
new street connection		Proposed	Hillside Dr extension	s. terminus of Hillside Dr	Cathey St
new street connection		Proposed	Hudson Pl- Westmoreland connector	Hudson Pl	Westmoreland Farm
new street connection		Proposed	N. Thompson extension	N. Thompson St	Beaty St (via Ridge Rd)
new street connection	new street connection	Proposed	new street connection	Hudson Pl	Westbranch Pkwy
new street connection		Proposed	new street connection	Vernon Dr	Zion Ave
new street connection		Proposed	new street connection	Concord Rd	Westmoreland Farm Rd
new street connection		Proposed	new street connection	Spring St	Goodrum ST
new street connection	new street connection	Completed	Patrick Johnston Ln	Hudson Pl	<null></null>
new street connection		Proposed	Peters Pl extension	Peters Pl	Thompton St extension
new street connection		Proposed	Potts St-to-Catawba Ave connector	Potts St	Catawba Ave
new street connection		Proposed	Ridgewood Ave extension	Pinecrest St	Thompson St
new street connection	new street connection	Completed	South St	southern terminus	Antiquity neighborhood
new street connection	new street connection	Completed	Spring St extension	Eugenia St	Walnut St
new street connection		Proposed	Walnut-Vernon connector	Walnut St	Vernon Dr
new street connection		Proposed	West Rail St	Armour St	Potts-Sloan Connector
new street connection		Proposed	Wyatts Way Extension	Pine St	South St
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Partially Complete	Brookhollow	Bradford Park	Hudson Pl extension
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Partially Complete	Eugenia St	Spring St	S. Main St
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Partially Complete	June Washam to Shearer Rd	June Washam Rd	Shearer Rd
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Partially Complete	new development	Park Terrace	greenway connection

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Partially Complete	Wyatts Way	Pine St	Patrick Johnston Ln
new street connection*; Shared Road	new street connection	Partially Complete	Spring St	Eugenia St	James Alexander Way
new street connection*; trail/path	new street connection, sidewalks, bike lanes	Partially Complete	Bailey to Davidson Concord connector	Bailey Rd	Davidson- Concord Rd
new street connection*; trail/path	new street connection	Completed	Hudson Pl	<null></null>	<null></null>
new street connection*; trail/path	new street connection	Completed	Samuel Spencer Pkwy	Hudson Pl	s. terminus of Samuel Spencer
new street connection; bike lanes	new street connection; bike lanes	Completed	Shearer Rd extension	Dembridge Dr	White Quartz Ln
new street connection; bike lanes		Proposed	Shearer Rd extension	White Quartz Ln	NC 73
new street connection; bike lanes; sidewalk		Proposed	Potts St-to-Sloan St connector	Potts St	Sloan St
new street connection; bike lanes; sidewalk		Proposed	Samuel Spencer Pkwy extension	s. terminus of Samuel Spencer	<null></null>
new street connection; paved shoulder; trail/path		Proposed	Avinger-Chapel connection	Chapel Way	South Prong Rocky River Greenway
new street connection; Shared Road		Proposed	Pine Rd-to-Thompson St connector	Pine Rd	Thompson St extension
new street connection; Shared Road		Proposed	Thompson St extension	Ridgewood extension	Avinger Ln
new street connection; trail/path*	trail/path	Partially Complete	South Prong Rocky River Greenway	Avinger Ln	South St
new street connection; trail/path		Proposed	Brook St extension	Hillside Dr	Woodland
new street connection; trail/path		Proposed	Concord to Grey connection	Concord Rd	Grey Rd
new street connection; trail/path		Proposed	Dogwood Ln extension	Dogwood Ln	Conroy Ave
new street connection; trail/path		Proposed	Eastway-South connection	Eastway St	South St
new street connection; trail/path		Proposed	Greenway St-to-The Pines extension	Greenway St	The Pines
new street connection; trail/path		Proposed	Lorimer Rd-to-Brook St connection	Lorimer Rd	Brook St extension
new street connection; trail/path		Proposed	new street connection	Davidson-Concord Rd	<null></null>
new street connection; trail/path		Proposed	Walnut-Vernon connector	Walnut St	future Kincaid Greenway
new street connection; trail/path*	trail/path	Partially Complete	Eastway-The Pines	Eastway St	The Pines
new street connection; trail/path*		Funded	new street connection	Westbranch Pkwy	new development road
new street connection; trail/path*		Funded	new street connection	Westbranch Pkwy	new development road

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	To_
sidewalks		Proposed	Eastway St	w. terminus of Eastway	s. terminus of Eastway
sidewalks		Proposed	Goodrum St	South St	Walnut Rd
sidewalks		Proposed	Greenway St	Ridgewood Av	southern terminus of Greenway St
sidewalks		Proposed	Hillside Dr	Lorimer Rd	s. terminus of Hillside Dr
sidewalks		Proposed	Meadowbrook Ln	Vernon Dr	Twin Oaks Rd
sidewalks		Proposed	Pinecrest sidewalk	Ridgewood Ave	Brook St
sidewalks		Proposed	Potts St	n. terminus of Potts	Catawba Ave
sidewalks		Proposed	Ridgewood Ave	Woodland St	Pinecrest St
sidewalks		Proposed	Spring St	James Alexander Wy	South St
sidewalks		Proposed	Thompson St	Concord Rd	s. terminus of Thompson St
sidewalks		Proposed	Vernon Dr	Twin Oaks Rd	Meadowbrook Ln
sidewalks		Proposed	Woodland St	Concord Rd	Spring St
sidewalks; Shared Road	sidewalks; Shared Road	Completed	Pine Rd	Concord Rd	Patrick Johnston Ln
trail/path		Proposed	Cathey St greenway	Hillside Dr	South Prong Rocky River Greenway
trail/path		Proposed	greenway connection	Patrick Johnston Ln	Pat Stough Ln

Davidson Transit Station Small Area Plan (2005)

This plan, adopted in September 2005, summarizes the findings of a study to select the locations of a transit station and parking lot in anticipation of the extension of rail transit and enhanced bus services from Charlotte to Mooresville. The Station Area includes the land on either side of the railroad tracks, between Delburg Street and the back of Town Hall. Three station platform opportunities were examined (see graphic at right):

- North of Griffith Street,
- Between Griffith and Depot Street, and
- South of Depot St. The locations were evaluated for proximity to the town core, proximity to parking, ease of access to the platform.

The goals outlined in the report are to:

- Select the station platform and parking locations for the transit system,
- 2. Identify and reevaluate the infrastructure issues that will affect the station plan and will be affected by the transit system, and
- 3. Discuss options for development in five areas around the proposed Station Area.

An evaluation of platform locations advantages and disadvantages produced the following conclusions:

• Option 1- North of Griffith- was discarded due to considerable distance from the town core



Fig. 1.3- Platform Proposal Locator Map of Davidson

- Option 2- Between Griffith and Depot St.- was considered in more detail because of the Sadler Square Property, which is a potential parking site.
- Option 3- South of Depot St.- was decided upon as the best location because it is closest to the heart of downtown Davidson and has the potential access to parking along Jackson St. and the Metrolina Warehouse parking location.

The five areas of future development opportunities around the proposed Station Areas, shown in the graphic at right, are based on a market study performed by Robert Charles Lesser. These sites include:

- 1. Town Hall and Jackson Street Area
- 2. Metrolina Warehouse
- 3. Sadler Square (South of Griffith St.)
- 4. Sadler Property (north of Griffith St.)
- 5. Wachovia Property

A recommendation was made to adopt a Transit Oriented Development Zoning Classification to support mixed-use development around the future station.

In addition to the location assessment, the surrounding area was assessed for whether the land uses and street pattern/connectivity supported transit. Maps are provided



Fig. 5.2- Five Development Opportunity Sites in Davidson, NC



identifying "Transit Supportive Land Uses" and "Non- Transit Supportive Land Uses or Building Form."

Other maps identify connectivity opportunities to mitigate barriers to active transport access to the station location. The connectivity recommendations include:

• Improved pedestrian access

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- o Intersection improvements
 - Concord Rd. & Main St
 - Depot St. & RR tracks
 - Sloan St. & Griffith St.
 - South St. & Main St.
- o Sidewalks on both sides of the road within a 10-minute walk from the platform
- New connecting Streets
 - o New "West Rail St."- between Eden St. and Armour St (no signal at Griffith)
 - o Potts St-Sloan St connection
 - o Extend Concord Rd to Jackson St
 - o Crane St-Potts St connection
 - o Realign Jetton St./Catawba Ave. intersection with Main St.




Figure 4. Transit Station Small Area Plan Recommended Connections

Potts-Sloan-Beaty Street Corridor Land Use Plan (2007)

Adopted in May 2007, this report details the analysis and planning of an alternative north-south corridor to Main St./NC-115 along Beaty St., Sloan St., and Potts St., including a new street connection between Sloan St and Potts St. in order to alleviate current and future traffic along NC-115. The report details the findings of a SWOT (Strengths-Weaknesses-Opportunities-Threats) analysis, and the desired characteristics of the corridor, based on public input. Detailed aerial maps with callout boxes provide details of the opportunities and proposed changes to the corridor, including bicycle & pedestrian connections, development opportunities, landscaping, intersection improvements, and roadway cross section descriptions.

The overall corridor plan consists of:

- Potts Street
 - Rural Vernacular & Village-Like character
 - Sidewalk on west side of street from Main to Jetton Street and on east side of street from Jetton Street to proposed Potts-Sloan connector
 - Drainage swales abutting auto-lanes
 - New intersection treatment at S. Main St (2 preliminary alternatives provided- signalized or roundabout)
- Sloan Street
 - Mixed-use development around station area
 - Sidewalks:
 - on both sides of Sloan right-of-way between Griffith St to Eden St,
 - on east side of Potts-Sloan connector between Eden St and Jetton St
 - Shared use path along Sloan St, from Eden St to Depot St
 - Curb and gutter streets
 - Green buffer between street and sidewalk
 - Tree canopy to screen residential and commercial areas
 - Bike lanes to be integrated with auto-lanes (shared-lane markings, since right-of-way is not wide enough for separate bike lanes)
- Beaty Street
 - Parkway character
 - Landscaped median/turn-lanes
 - Tree canopy and green buffer
 - Sidewalks on both sides
 - Bike lanes to be integrated with auto-lanes (shared-lane markings)



Figure 5. Potts Sloan Beaty Corridor and Land Use Plan Recommended Connections

Bicycle Transportation Plan (2008)

The 2008 Davidson Bicycle Transportation Plan was designed to enhance and promote the Town as a destination for bicyclists and a livable community for local residents. It was adopted in October of 2008. A significant length of bicycle facilities, including multi-use paths, are included in the network of recommendations. These types of paths strengthen the pedestrian facility network as well and enhance active living as well. The Recommended Bicycle Facility Network Map is shown below:



Figure 6. Bicycle Transportation Plan Recommended Connections

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	To_
bike lanes		Proposed	Beaty St	N. Main St	Griffith St
bike lanes	bike lanes	Completed	Concord Rd	Lorimer Rd	Grey Rd
bike lanes	bike lanes	Proposed	Concord Rd	Grey Rd	Kimberly Rd
bike lanes		Proposed	Davidson Gateway	Gateway Crossing Ct	Jetton St
bike lanes		Proposed	Grey Rd	Concord Rd	Wolfe St
bike lanes		Proposed	Jetton St	Griffith St	Potts St
bike lanes	Shared-Lane Markings ("Sharrows")	Proposed	Main St	Beaty St	Concord Rd
bike lanes		Proposed	NC-115 (Cornelius)	Potts St	Will Knox Rd
bike lanes		Proposed	Potts St	n. terminus of Potts	S. Main St

Table 5. Bicycle Network recommendations from the Bicycle Transportation Plan of 2008

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
bike lanes	bike lanes	Completed	River Run neighborhood	Davidson-Concord Rd	Shearer Rd
bike lanes		Proposed	Robert Walker Dr	River Crossing Blvd	Overleaf Ln
bike lanes		Proposed	Sloan St	Griffith St	Gamble St
bike lanes*; sidepath	bike lanes	Partially Complete	Davidson Gateway	Griffith St	Gateway Crossing Ct
bike/ped connector		Proposed	Ardley Cir connector	Ardley Cir	Pat Stough Ln
bike/ped connector		Proposed	greenway connection	<null></null>	<null></null>
bike/ped connector		Proposed	Lynbrook Dr extension	Patrick Johnston Ln	Churchill Rd
family friendly bike route; Shared Road	Shared Road	Partially Complete	South St	Main St	Mimosa St
greenstreet		Proposed	Thompson St	n. terminus of Thompson St	Lorimer Rd
greenstreet		Proposed	Woodland St	Brook St	Lorimer Rd
greenstreet; sidewalks		Proposed	Lorimer Rd	Woodland St	Thompson St
new street connection	new street connection	Completed	Bailey Rd	Baileys Glen Blvd	Barnhardt Rd
new street connection	new street connection	Completed	Brook St extension	Woodland St	east of Woodland
new street connection		Proposed	Brook St extension	e. terminus of Brook St	Pinecrest St
new street connection		Proposed	Cathey St extension	current s. terminus of Cathey St	Eastway St
new street connection		Proposed	Grey to NC 115	Grey Rd	NC 115
new street connection		Proposed	Hillside Dr extension	s. terminus of Hillside Dr	Cathey St
new street connection		Proposed	Ridgewood Ave extension	Pinecrest St	Thompson St
new street connection		Proposed	Walnut-Vernon connector	Walnut St	Vernon Dr
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Partially Complete	Brookhollow	Bradford Park	Hudson Pl extension
new street connection*; bike lanes; sidewalk*	new street connection; sidewalks	Partially Complete	Eugenia St	Spring St	S. Main St
new street connection*; Shared Road	new street connection	Partially Complete	Spring St	Eugenia St	James Alexander Way
new street connection*; trail/path	new street connection, sidewalks, bike lanes	Partially Complete	Bailey to Davidson Concord connector	Bailey Rd	Davidson-Concord Rd
new street connection; bike lanes	new street connection; bike lanes	Completed	Shearer Rd extension	Dembridge Dr	White Quartz Ln
new street connection; bike lanes		Proposed	Shearer Rd extension	White Quartz Ln	NC 73

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
new street connection; bike lanes; sidewalk		Proposed	Potts St-to-Sloan St connector	Potts St	Sloan St
new street connection; paved shoulder; trail/path		Proposed	Avinger-Chapel connection	Chapel Way	South Prong Rocky River Greenway
new street connection; Shared Road		Proposed	Pine Rd-to- Thompson St connector	Pine Rd	Thompson St extension
new street connection; Shared Road		Proposed	Thompson St extension	Ridgewood extension	Avinger Ln
new street connection; trail/path*	trail/path	Partially Complete	South Prong Rocky River Greenway	Avinger Ln	South St
new street connection; trail/path		Proposed	Brook St extension	Hillside Dr	Woodland
new street connection; trail/path		Proposed	Concord to Grey connection	Concord Rd	Grey Rd
new street connection; trail/path		Proposed	Dogwood Ln extension	Dogwood Ln	Conroy Ave
new street connection; trail/path		Proposed	Eastway-South connection	Eastway St	South St
new street connection; trail/path		Proposed	Greenway St-to- South St connector	Greenwya St	South St
new street connection; trail/path		Proposed	Greenway St-to- The Pines extension	Greenway St	The Pines
new street connection; trail/path		Proposed	Lorimer Rd-to- Brook St connection	Lorimer Rd	Brook St extension
new street connection; trail/path		Proposed	Walnut-Vernon connector	Walnut St	future Kincaid Greenway
new street connection; trail/path*	trail/path	Partially Complete	Eastway-The Pines	Eastway St	The Pines
paved shoulder		Proposed	Black Farms Rd	Sam Furr Rd	McCord Rd
paved shoulder	trail/path	Partially Complete	Greystone Rd	town limits	Shearer Rd
paved shoulder		Proposed	Mayes Rd	NC-115	Barnhardt Rd
paved shoulder		Proposed	Sam Furr Rd	NC-115	e. town/ETJ limits
paved shoulder		Proposed	Shearer Rd	Presbyterian Rd	Dembridge Dr
paved shoulder + sidepath		Proposed	Barnhardt Rd	Mayes Rd	Davidson Concord Rd
paved shoulder + sidepath		Proposed	Davidson-Concord Rd	South Prong WEst Branch Rocky River	Sam Furr Rd

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paved shoulder + sidepath	trail/path	Proposed	Grey Rd	Wolfe St	Greystone Rd
paved shoulder + sidepath		Proposed	Mayes Rd	Barnhardt Rd	Sam Furr Rd
paved shoulder + sidepath		Proposed	NC-115 (Iredell Co.)	Bridges Farm Rd	Dunmurry Rd
paved shoulder + sidepath		Proposed	Rocky River Rd	Concord Rd	e. town/ETJ limits
paved shoulder + sidepath		Proposed	Shearer Rd	Greystone Rd	Rocky River Rd
Shared Lane Marking ("Sharrow")	sidewalks	Proposed	Concord Rd	Main St	Lorimer Rd
Shared Lane Marking ("Sharrow")		Proposed	Griffith St	Harbour Place	Jetton St
Shared Lane Marking ("Sharrow")		Proposed	Jackson St	Delburg St	Main St
Shared Lane Markings	Shared-Lane Markings ("Sharrows")	Completed	Main St	Concord Rd	Beaty St
Shared Lane Markings; sidewalks both sides	sidewalk 1 side	Partially Complete	Main St	Eugenia St	Griffith Village Ln
Shared Lane Markings; sidewalks both sides		Proposed	Main St/NC-115	Beaty St	Dunmurry Rd
sidepath		Proposed	Griffith St	Portside Dr	I-77 southbound ramps
sidewalk 1 side; Shared Road		Proposed	Delburg St	Beaty St	proposed West Rail St
sidewalk both sides		Proposed	Delburg St	proposed West Rail St	Main St
sidewalk both sides		Proposed	Lorimer Rd	Thompson St	Pine Rd
sidewalk both sides; Shared Road		Proposed	Eden St	RR tracks	Sloan St
sidewalks	sidewalks	Completed	Avinger Ln	Pine Rd	s. terminus of Avinger
sidewalks		Proposed	Eastway St	w. terminus of Eastway	s. terminus of Eastway
sidewalks		Proposed	Greenway St	Ridgewood Av	southern terminus of Greenway St
sidewalks		Proposed	Potts St	n. terminus of Potts	Catawba Ave
sidewalks		Proposed	Ridgewood Ave	Woodland St	Pinecrest St
sidewalks		Proposed	Spring St	James Alexander Wy	South St
sidewalks		Proposed	Vernon Dr	Twin Oaks Rd	Meadowbrook Ln
sidewalks		Proposed	Woodland St	Concord Rd	Spring St
sidewalks both sides	bike lanes	Proposed	Concord Rd	Woodland St	Downing St
sidewalks both sides	bike lanes	Proposed	Griffith St	Spinnaker Cove Dr	Jackson St

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
sidewalks both sides	Shared-Lane Markings; SW both sides	Completed	Main St	cemetery	Eugenia St
sidewalks both sides; festival street		Proposed	Depot St	Sloan St	Main St
sidewalks*; trail/path	sidewalks	Proposed	Hudson Pl	Kimberly Rd	Patrick Johnson Ln
sidewalks, on-street parking		Proposed	Watson St	Griffith St	Depot St
sidewalks; Shared Road	sidewalks; Shared Road	Completed	Pine Rd	Concord Rd	Patrick Johnston Ln
sidewalks; trail/path	sidewalks	Proposed	Kimberly Rd	Concord Rd	Hudson Pl
trail/path		Proposed	Amalfi Dr	Beaty St	Armour St
trail/path		Proposed	Armour St	Watson St	Main ST
trail/path	new street connection; trail/path	Completed	Bailey Rd	NC-115	South Prong Rocky River Tributary
trail/path	new street connection	Proposed	Bailey Rd	South Prong Rocky River Tributary	Barnhardt Rd
trail/path		Proposed	Bridlepath Trail	n. terminus	Saddle Creek Ct
trail/path		Proposed	Catawba Ave extension	Main St	Spring St
trail/path		Proposed	Cathey St greenway	Hillside Dr	South Prong Rocky River Greenway
trail/path	trail/path	Completed	Concord Rd	Kimberly Ln	Rocky River Rd
trail/path		Proposed	Conroy Ave	Caldwell Ln	Dogwood Ln extension
trail/path	trail/path	Completed	Davidson-Concord Rd	Rocky River Rd	South Prong Branch Rocky River
trail/path	trail/path	Completed	greenway connection	Avinger Ln extension	South St
trail/path		Proposed	greenway connection	YMCA parking lot	Faust Rd
trail/path		Proposed	greenway connection	Potts St	YMCA parking lot
trail/path		Proposed	greenway connection	YMCA parking lot	Cornelius St
trail/path		Proposed	greenway connection	Davidson Pointe	<null></null>
trail/path		Proposed	greenway connection	Ashby Dr	Grey Rd
trail/path		Proposed	greenway connection	Ashby Dr	West Branch Rocky River
trail/path		Proposed	greenway connection	NC-115	greenway corridor
trail/path		Proposed	greenway connection	Patterson Court	new greenway
trail/path		Proposed	greenway connection	new greenway	Grey Rd
trail/path		Proposed	greenway connection	Davidson Pointe	NC-115
trail/path		Proposed	greenway connection	new greenway	Concord Rd

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
trail/path		Proposed	greenway connection	new greenway	new greenway
trail/path		Proposed	greenway connection	Ashby Dr	new greenway
trail/path		Proposed	greenway connection	Old Statesville Rd (Cornelius)	West Branch Rocky River
trail/path		Proposed	greenway connection	Thompson St extension	Eastway
trail/path		Proposed	greenway connection	Overleaf Ln	Rocky River Rd
trail/path		Proposed	greenway connection	Old Statesville Rd (Cornelius)	West Branch Rocky River
trail/path		Proposed	greenway connection	Old Statesville Rd (Cornelius)	West Branch Rocky River
trail/path		Proposed	greenway connection	greenway corridor	Thompson St
trail/path		Proposed	greenway connection	Patrick Johnston Ln	Pat Stough Ln
trail/path	trail/path	Completed	Grey Rd	Greenwold Dr	Shearer Rd
trail/path		Funded	Griffith St	I-77 southbound ramps	Davidson Gateway Dr
trail/path		Proposed	Ingersoll Rand	Davidson Pointe	Beaty St
trail/path		Funded	Old Canal	Zion	South St
trail/path		Proposed	Sam Furr Rd	Mayes Rd	Davidson-Concord Rd
trail/path		Funded	Multiple greenway connections	<null></null>	<null></null>
trail/path		Proposed	Multiple greenway connections	<null></null>	<null></null>
trail/path	trail/path	Completed	Multiple greenway connection	<null></null>	<null></null>

Table 6. Priority Intersection improvements from the Bicycle Transportation Plan of 2008

Rank	Intersection Street 1	Intersection Street 2	Intersection Street 3	Recommendation	Status
1	Main St	Concord Rd	n/a	Signage & Detector Loops	Completed
2	Main St	Griffith St	n/a	Signage & Detector Loops	Completed
3	Davidson-Concord Rd	Concord Rd	E. Rocky River Rd	Roundabout	Completed
4	Concord Rd	Grey Rd	Pine Rd	Roundabout	Proposed
5A	Griffith St	Jetton St	n/a	Signage & Education	Proposed
5B	Griffith St	Davidson Gateway Dr	Harbour Place Dr	Signage & Education	Proposed
6	Davidson-Concord Rd	Robert Walker Dr	n/a	Crossing Improvements	Completed

Davidson Comprehensive Plan (2010)

Adopted in August 2010, the Davidson Comprehensive Plan was a community-based effort that was led by a team of consultants, but the citizens of Davidson were actively involved in the various topic area committees that drafted the

Plan. While a Comprehensive Plan is by nature not as project-focused as a small area plan or a comprehensive transportation plan, it does contain goals, policies, and objectives that guide future planning efforts related to mobility.

Within the Mobility Study Group, there was a clear direction that the Plan must "provide a transportation network that is consistent with the land use context, safe and efficient for all types of users, meets basic regional needs, and bears minimal impact on the natural environment."

Specific goals and recommendations related to transportation and mobility include the following, cited by the Vision Statement, Goal number and specific initiatives in the Comprehensive Plan:

- Provide Sustainable and Healthy Choices for Transportation, Food, and Energy Use
 - o Goal 1: Encourage more bicycle and pedestrian travel
 - Goal 2: Promote carpooling, vehicle share programs, and public transit as viable modes of transportation
- Continue to Provide Effective and Efficient Public Services
 - o Goal 4: Continue to provide excellence in recreation, public works, and planning
 - Short Term
 - Repair uneven gutters, pavement, potholes, and brush in the roadways, bikeways, and sidewalks
 - Create a local transportation improvement plan (*this Mobility Plan serves part of that purpose*)
 - Prepare construction documents for priority transportation needs to ensure funding readiness
 - Consider requiring a Traffic Impact Analysis for commercial development (*this has been implemented*)
 - Goal 5: Establish good working relationships and firm priorities with regional agencies, utility providers, and adjoining jurisdictions
 - Identify feasible alternatives for north-south travel with neighboring jurisdictions
 - Support widening I-77 but not at the expense of pedestrian safety or sense of place
 - Continue to work closely with neighboring towns to manage regional traffic concerns and the design of new roads and improvements
- Maintain Quality Design and Sound Planning Principles
 - Goal 1: Prioritize infill and mixed-use development within or near already-developed areas
 - Prepare construction documents and seek funding for a parking deck in the Downtown area
 - Make construction of Downtown and surrounding road connections or improvements a top priority
 - o Goal 3: Preserve the rural landscape

- Reevaluate the alignment of planned roads in the rural area
- Increase road connectivity in developed areas in order to minimize the need for new rural roads

Comprehensive Parking Study (2011)

The Town conducted a comprehensive parking study in 2011 to examine existing parking deficiencies, to help plan for future parking needs, and to develop a funding strategy to allow the Town to make enhancements to parking in Downtown over time. This plan has not been formally adopted. The consultant conducted space count and utilization surveys, and projected parking demand for a five and ten-year horizon. The study indicated that in those time periods, assuming that recommendations were implemented, Downtown would not experience a parking deficit.

Categories of recommendations fell along the following broad types:

- Operational
- Management
- Configuration of existing parking
- Pricing of parking
- Increasing efficiency of supply

The following table, taken from the executive summary of the report, summarizes each recommendation by timeframe, category, order of magnitude cost/budget, and jurisdictional responsibility. <u>As a result of this plan, many 2-hour time limits have been implemented</u> and are now being enforced both on-street and in various lots. In addition, <u>wayfinding related to parking has also been installed</u> at various public lots. One item not specifically called out in this report but that has been implemented is the agreement with Davidson Presbyterian Church on Depot Street to allow for shared off-peak public parking in their lot, which has added around 30 spaces to the downtown parking pool.

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Implementation Time Frame	Category	Recommendation	Status
Mid term	Pedestrian Enhancements	Repair loose and missing bricks along Knox Court and make all entrances barrier free.	
Short term	Pedestrian Enhancements	Add pedestrian wayfinding along Knox Court to facilitate pedestrian movement.	
Short term	Pedestrian Enhancements	At Main St. and Concord Dr. it is recommended that right turning movements on red not be allowed.	
On-going	Lighting	Clean older light fixtures that have a yellowed tint. Replace if lenses cannot be cleaned.	

Short term	Lighting	Add lighting to the Town lot next to the Fire Department and small lot at corner of Depot and Jackson.	
Short term	Lighting	Knox Court should be well lighted to encourage pedestrian use.	
On-going	Lighting	Trim all trees around light fixtures, both along sidewalks and in lots.	
Mid term	Lighting	Once all lighting recommendations are completed hire a lighting specialist to consult on lighting levels.	
Mid term	Add Bicycle Racks to Downtown	Add additional bicycle racks in the downtown.	On-going; some new racks installed
Mid term	Add Bicycle Racks to Downtown	Consider adding a few bicycle lockers near businesses known to have bicycle commuters.	
Mid term	Add Bicycle Racks to Downtown	Consider placing a bicycle shelter in one of the municipal lots near Knox Court.	
On-going	Add Bicycle Racks to Downtown	Regulate and require new businesses to adhere to Davidson's bicycle parking requirements.	On-going
Short term	Add Bicycle Racks to the Downtown and Encourage Bicycle Ridership	Create a marketing program to promote bicycle use as an alternative to driving.	
Short term	Signage	Develop a family of signs for direction/location, identification and vehicle wayfinding.	Completed
Short term	Signage	There is a need for additional directional/location signs in the downtown.	Completed
Short term	Signage	Name all parking lots and place identification signs at the entrance to all public parking lots.	
On-going	Signage	Monitor tree growth and trim foliage blocking signage in lots and on-street.	
Short term	Signage	Install pedestrian wayfinding along Knox Way and in parking areas.	
Short term	Signage	Install at least two kiosks in the downtown with a map, business listings, and parking locations.	Completed
Short term	Signage	All signs should be a height where the sign cannot be blocked by a parked vehicle in both on-street and off-street parking locations.	
Short term	Signage	One-way entrance into the parking lot between The Davidson Village Inn and Bonsai needs better signage.	
Short term	Marketing	The Town's web site should be modified to have a tab on the main page for parking.	
Short term	Marketing	Include hours and days of enforcement, parking regulations and where to pay a ticket if one is received on the parking page of the web site.	
On-going	Marketing	Businesses should be encouraged to have a link to the Town's parking page.	
On-going	Marketing	Create a downtown marketing flyer that lists the downtown businesses included with a map of parking in the downtown.	
Short term	Marketing	Develop a marketing plan to encourage alternative forms of transportation.	
Short term	Marketing	Specific marketing initiatives can be aimed at businesses that inform employees of the importance of keeping on- street parking available for customers and visitors.	

A A b b b b b b b b b b	Constal Events		
Mid term	Parking Plan	Develop a plan for parking during special events that includes a remote lot location and if necessary an agreement with the lot owner as well as a shuttle service.	
On-going	Discourage the Development of Any New Private Parking Lots in the Downtown	Minimize surface lots and large breaks between buildings to promote walking in the downtown.	
On-going	Discourage the Development of Any New Private Parking Lots in the Downtown	Work with private parking owners to allow for public shared use of private parking where possible.	Completed with Davidson Presbyterian Church lot
On-going	Discourage the Development of Any New Private Parking Lots in the Downtown	Davidson should entertain any proposals for a privately developed parking structure especially if there is the possibility for a public/private joint venture to provide additional public parking.	
On-going	Parking Duration/Allocation	Two hour parking should be the dominant duration for on- street parking.	Completed
Mid term	Parking Duration/Allocation	Fifteen minute to thirty minute parking should be located on street for use as customer loading and unloading spaces or very short-term parking.	
Mid term	Parking Duration/Allocation	In areas where there is little or no demand for customer- visitor parking, long term on-street parking can be used to add to the overall long-term parking supply.	
Short term	Parking Duration/Allocation	Convert recommended areas of on-street parking from all-day to two hour parking.	Completed
Short term	Parking Duration/Allocation	The two hour parking in lots should be changed to three hour parking to accommodate the customer/visitor wanting to spend more time in the downtown.	
Short term	Parking Duration/Allocation	The lot in front of Town Hall should be changed to half employee long term parking and half two hour parking.	Completed
Short term	Parking Duration/Allocation	Work with the Post Office to change half of the 21 two hour parking spaces (opposite the 18 Post Office only parking spaces) to long term parking.	
Short term	Parking Duration/Allocation	Consider the possibility of creating a truck delivery loading area on the west side of Main Street that would be signed delivery trucks only in the space(s) for specific hours in the morning (7:00 AM to 10:00 A.M. for example).	
Short term	Parking Duration/Allocation	Consider changing the compact parking only signs to "Compact Cars only No Crossovers or SUV's". Only vheicles under 5'.	
Mid term	Barrier Free Parking	Rich and Associates encourage the development of on- street barrier free stalls to ensure the downtown is accessible to everyone.	
Short term	Barrier Free Parking	The Town Hall long term lot is short one barrier free space and the public long term lot next to the Fire Department has no barrier free parking spaces and two spaces are recommended.	

Station Area Plan Update (2012)

This plan is an update to the Transit Station Small Area Plan of 2005. This updated plan was completed in 2012 but has not been approved by the Davidson Board of Commissioners. Within the report, there is a thorough review of previous plans in Davidson, with a detailed synopsis and map for the following plans:

- 1996 Beaty Street Plan
- 1998 Town Center Plan
- 2002 Griffith Street Plan
- 2006 Station Area Plan
- 2009 North of Griffith Plan
- 2009 Eco-Industrial Plan
- 2010 Comprehensive Plan

The report also reviews the zoning, land-use, open space opportunities.

A Connectivity and Parking assessment was conducted as part of this study, which included a review of the 2003 Circulation Plan, the 2004 Connectivity & Traffic Calming Plan, the 2005 Davidson Transit Station Small Area Plan, the 2007 Potts-Sloan-Beaty Street Corridor Land Use Plan, and the 2008 Bicycle Master Plan (all of which are summarized above in this report). The findings of this review include a recommendation that some street connections recommended within the Circulation Plan of 2003 be replaced with off-road bicycle and pedestrian routes. Connections that may need to be removed from consideration include:

- 3-4 connections east of South Street and south of Lorimer Road
- Parallel connection to South Street behind the 2 schools (replace with bike-ped path from Cathey-Hillside connector to the Kincaid Trail Greenway)

Proposed Facility Type	Existing Facility	Status	Project Corridor	From_	То_
bike lanes	bike lanes	Existing	Griffith St	Jetton St	Jackson St
sidepath	bike lanes (partial- see entry above)	Proposed	Griffith St	Harbor Place Dr	Main St
trail/path		Funded	greenway connection	New development	Westbranch
				roadway	Pkwy
trail/path		Proposed	greenway connection	n. terminus of	RR tracks
				Shearer St	
trail/path		Proposed	greenway connection	Jackson St	Jetton St
trail/path		Proposed	Mimosa St	Walnut St	South St
trail/path		Proposed	RR tracks	n. terminus of	Bridges Farm Rd
				Shearer St	
trail/path		Proposed	Shearer St	Beaty St	n. terminus

Table 8. Station Area Plan Update Recommended Connections



Figure 7. Station Area Plan Update Recommended Connections

Davidson Walks and Rolls: Active Transportation Master Plan (2013)

Adopted in November 2013, the Davidson Walks & Rolls is an active transportation master plan that focuses on pedestrian mobility, but also addresses complementary forms of transportation like bicycle and transit. The plan's intent is to create a vision for an improved walking and bicycling environment in Davidson. Much of the reasoning behind improving these networks is to aid in bettering the health and increasing activity for the residents of Davidson. Other reasons include energy conservation and independence, economic development, and quality of life.

This plan brings forward some of the recommendations of previous plans, such as the Davidson Comprehensive Plan, Carolina Thread Trail, and Lake Norman Regional Bike Plan. In addition, with much of a bicycle and pedestrian network also being part of the parks and recreation system (for example greenways), there is and should be a great deal of overlap between recommendations of the Walks and Rolls Plan and recommendations of a parks and recreation master plan. Much of this plan helps to create a vision for how to link parks, open space, and greenways with residents.

The plan recommends the following facilities connections (also outlined in Tables 8 & 9, on following page):



Figure 8. Davidson Walks & Rolls Active Transportation Master Plan Recommended Connections

Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	To_
bike lanes		Proposed	Robert Walker Dr	Davidson-Concord Rd	Bradford Park Dr
new street connection		Proposed	Grey Rd extension	Shearer Rd	Coddle Creek Rd
new street connection		Proposed	new street connection	Presbyterian Rd	Grey Rd
new street connection		Proposed	new street connection	Grey Rd	Concord Rd
sidewalk 1 side		Proposed	Catawba Ave	w. terminus	Main St

Table 9. Priority Sidewalks/Side Path Recommendations from Walks & Rolls Plan

sidewalk 1 side		Proposed	Crescent Dr	Pine Rd	Virginia Rd
sidewalks both sides		Proposed	Hamilton St	Jetton St	Catawba Ave
Proposed Facility Type	*Existing Facility	Status	Project Corridor	From_	То_
trail/path		Funded	greenway connection	Vernon St extension	South St
trail/path		Proposed	greenway connection	Evening Primrose Dr	Mayes Rd
trail/path		Proposed	greenway connection	NC-115 near Meadow Crossing Ln	NC-115 south of Treynorth Dr
trail/path		Proposed	greenway connection	Summerbrook Dr	Zion Ave
trail/path		Proposed	greenway connection	Chairman Blake Ln	Glasgow St
trail/path		Proposed	RR tracks	Armour St	Potts St
trail/path		Proposed	West Branch Nature Preserve	Summers Walk	West Branch Rocky River Gwy
unpaved trail		Proposed	West Branch Nature Preserve	Summers Walk	West Branch Rocky River Gwy

Table 10. Priority Greenway Recommendations from Walks & Rolls Plan

Name	Feet	Miles	Estimated cost (\$1M/mile)	Priority	Status
Dogwood Lane/Conroy Avenue Connector	535	0.10	\$40,000	High / Near-term	Proposed
Randall Kincaid Greenway Extension (South St to Spring $\mathrm{St})^2$	7,205	1.36	\$1,360,000	High / Near-term	Funded
McConnell to Fisher Farm Greenway	10,611	2.00	\$2,000,000	High / Near-term	Proposed
Jackson Street/Sloan Street Connector ³ Tunnel (see inset below)	514	0.10	\$100,000 \$ 200,000 - 800,000	Medium / Medium-term	Proposed
River Run to Summers Walk Greenway	5,221	0.99	\$990,000	Medium / Medium-term	Partially Complete
Bailey Road/Davidson-Concord Road Connector ⁴ (Primarily a Town of Cornelius Project, with links to Davidson system)	4,271	0.81	\$810,000	Medium-term	Proposed
Main Street/Downtown Greenway (Mooresville-Charlotte Trail Segment S. Main to Jackson Street)	1,056	0.2	\$200,000	Low / Long-term	Proposed
Davidson College Greenway	1,985	0.38	\$380,000	Low / Long-term	Proposed

Table 11. Priority Intersection Recommendations from the Walks & Rolls Plan

Intersection Street I	Intersection Street	Intersection Street	Recommendation	Status
Davidson-Concord	Grey	Pine	High-visibility crosswalks, ped/bike crossing signs, rectangular rapid flashing beacon (RRFB)	Proposed
Davidson Concord	Robert Walker	N/a	High-visibility crosswalks, HAWK signal or RRFB, ped/bike crossing signs	Completed
N Main	Griffith	N/a	High-visibility crosswalks, pedestrian signal	Completed
N Main	Beaty	Ridge	High-visibility crosswalks, rapid flashing beacons	Proposed
S Main	South	N/a	High-visibility crosswalks, pedestrian signals, shared use condition on Main St sidewalk, relocate signal control boxes off of sidewalks	Partially Complete

Circles @ 30 Small Area Plan (2013)

The Circles @ 30 Small Area Plan was conducted in 2013 to focus on the area adjacent to Griffith Street between I-77 and just east of Davidson Gateway Drive. This plan has not been formally adopted by the Davidson Board of Commissioners. The area is a major gateway to Davidson, and has historically had the greatest potential for new development in Davidson proximate to the current nucleus of Town and served by existing infrastructure. The purpose as stated in the Plan is "*to provide a vision for the development of the Circles* @ 30 *area that results in a vibrant, sustainable mixed-use environment within the context of Davidson's small town atmosphere.*" The plan addressed specific development areas, with the land use and architectural components integrated with a series of infrastructure enhancements. Transportation infrastructure recommendations are as follows:

- I-77 Bridge Area
 - Construct roundabouts at I-77 ramp terminals, widen Griffith to four lanes across bridge, construct multi-use path across new bridge [UNDER CONSTRUCTION as part of the I-77 Toll Lanes project]
 - Install HAWK (pedestrian-activated beacon) signal at Griffith Street/Spinnaker Cove Drive to enhance pedestrian crossing [design for rectangular rapid-flashing beacon has been designed, not yet constructed]
- Davidson Gateway West/Davidson Commons East
 - Construct waterfront trail connection to Parham Gateway Park to provide continuous waterfront access.
 - Incorporate on street parking the entire length of Davidson Gateway Drive *[complete]*
 - Modify Griffith Street in the area around Davidson Commons to include on street parking, a widened sidewalk, and street trees on the south side.
- Davidson Commons/Jetton Street area
 - Continue development of on street parking on both sides of Davidson Gateway Drive for its entire length.
 - Install HAWK (pedestrian-activated beacon) signal at Griffith Street/Jetton Street to enhance pedestrian crossing at Davidson Day School *[rectangular rapid-flashing beacon/RRFB has been designed and installed along with enhanced crosswalks at the roundabout*]
 - Construct multi-use path along the north side of Griffith Street to connect the area to the nature preserve and Lake Norman.
 - Complete connection of Gateway Crossing Drive between Davidson Gateway Drive and Jetton Street with cross section to include sidewalks, street trees, and on street parking.



Figure 9. Circles @ 30 Plan Recommended Connections

Parks and Recreation Master Plan (2014)

This plan was adopted in November 2014. It recommends improvements to a number of parks facilities, including the following facility updates:



Figure 10. Parks & Recreation Master Plan Recommended Connections

Some specific facility recommendations in the plan related to connectivity and mobility include:

- Design and construction of the Kincaid Trail Greenway extension (currently underway);
- Design and construction of the Summer's Walk Greenway connection to River Run;
- Securing of land, design, and construction of a greenway from Downtown to Fisher Farm/Abersham/Allison Park;
- Design and construction of the Mooresville to Charlotte Trail through downtown to connect to Roosevelt Wilson Park.

In addition to facilities, the plan has a number of corresponding policy and program recommendations to support and encourage the use of parks and recreation facilities. The plan also includes a comprehensive inventory of the parks and

recreation facilities in town and has example policies, e.g., Joint Use Agreements, that can serve as templates for Davidson's ordinances. Finally, the plan includes a thorough summary of the public input received for the plan. The number one priority facility recommendation based on public input is to "continue to expand the greenway (multi-use trail) system to provide access within a ¼ mile of all households". This recommendation received 10 priority votes, compared to only 3 for the next highest recommendations. Greenways and trails were also the most highly rated facility type selected for the question "If additional facilities were to be provided, which ones do you believe would be most beneficial for you and the Davidson community?"

Rural Area Plan (2016)

The Rural Area Plan was adopted in September of 2016. Davidson's Planning Ordinance specifies that approximately 50% of the Rural Planning Area must be preserved as open space, and 25% of the land has already been preserved as such. The Rural Area Plan lays out policies and strategies to conserve the remaining 25%. These include zoning strategies, development regulations, conservation easements, and other strategies.

In addition to the open space conservation goals, this plan outlines recommendations for improving mobility and the health of the community by providing transportation choices to and within the Rural Planning Area in the form of new roadway connections, sidewalks, and greenways. Chapter 5 of the plan outlines potential vehicular connections in the Rural Planning Area, drawing on *planned* routes from the Charlotte Regional Transportation Planning Organization's (CRTPO) Comprehensive Transportation Plan (CTP), and adding a few new *proposed* roadway connections (see Figure 12, page 38). In addition to the major connections identified in the map on the following page, Map 5.2 in the plan (and Figure 12 on page 38) illustrates the area's envisioned network of interconnected streets—with Action Items 5.5-5.9 identifying additional connections of importance. Graphics showing the cross-sections and multi-modal facilities for major streets/roads are also included.

Likewise, the plan also delineates various greenway and trail connections. Map 5.3 from the plan shows recommended trail connections that reflect *planned* greenways and trails from previous planning efforts, along with newly *proposed* connections (see map 2 pages below). Cross-sections throughout the Chapter 5 depict possible street, greenway, and trail facility components, with Map 5.5 identifying potential "way stations" as part of the extended West Branch Rocky River Greenway—an uninterrupted stretch of pathway envisioned to run tow mile between East Rocky River and Grey Roads, adjacent to Fisher Farm and West Branch Rocky River Parks.



Figure 11. Rural Area Plan Recommended Connections

MAP 5.1 REGIONAL VEHICULAR INFRASTRUCTURE



Figure 12. Map 5.1 from the Rural Area Plan showing existing and planned street connections

MAP 5.2 CONCEPTUAL STREET NETWORK AT BUILD-OUT



Figure 13. Map 5.2 from the Rural Area Plan showing a potential future street network



▲ Map 5.3 of proposed greenways and multi-use paths in the RPA

Figure 14. Map 5.3 from the Rural Area Plan showing a proposed greenway and multi-use path connections

Findings & Conclusion

As can be seen from the preceding summaries, there is a significant amount of overlap in the recommendations from these 13 plans and studies. Many of the recommendations from earlier plans have been refined and modified by later plans. For instance, the generic "bike facility" recommendations from the *Transit Station Small Area Plan* of 2005 were refined into specific bike lanes or shared-lane marking recommendations in the *Walks & Rolls Plan* of 2013. Some connections have been recommended in just one plan, while others have been recommended in five or six plans. Below, the recommendations are mapped according to facility type, and are labeled with the number of times that that

40 of 46

segment has been recommended in a previous plan or study. There is also a summary map annotated with every project segment annotated with how many times it has been recommended (Figure 19 on page 46).

The Potts-Sloan-Beaty Connector segment between Potts St and Sloan St. is the most highly recommended connection of any type from previous plans (8 different plans). Many of the early connections that were recommended as part of the *Circulation Plan* of 2003 also rank highly in terms of the number of times they have been identified in previous plans, which is a reflection of both their enduring importance in connecting people between their homes and popular destinations in town and the area over the time span of these many plans, as well as the priority given to them by the extensive public input that was put into the prioritization evaluation that was completed as part of that Circulation Plan.

A complete inventory of project recommendations from previous plans is attached as an appendix to this memorandum in table form, detailing the project corridor, its end points, recommended facility type, the plans in which it was recommended, and the total number of times it was recommended.

Proposed & Completed Projects by Facility Type



Figure 15. Greenway and multi-use path connection recommendations from previous plans



Figure 16. On-road bicycle facility connection recommendations from previous plans



Figure 17. Sidewalk connection recommendations from previous plans



Figure 18. New street connection recommendations from previous plans



Figure 19. All facility type connection recommendations from previous plans, labeled and graduated based on the number of plans in which it was recommended as a connection of any type

APPENDIX D - Prioritized Project Lists

PRIORITIZATION FACTOR	CRITERIA
1. SAFETY (5 points)	 a. Within 1/4 mile of a crash b. Dedicated separate facility (bicycle or pedestrian) c. Adds traffic calming elements to new or existing street d. Improves intersection crossing for pedestrians and cyclists e. Increases/promotes education, awareness, or visibility (e.g., signage, unique design, frequency of presence leads to better anticipation)
2. REDUCED TRAVEL TIME (2 points)	 a. Intersection improvement for managing vehicular traffic b. New connection parallel to congested collector / arterial corridor
3. HEALTH/ ENVIRONMENTAL QUALITY (2 points)	 a. Active Transportation Project (Bike / Pedestrian / Transit Project) b. Mitigates against increasing pressure/needs for parking in downtown by reducing necessity or desirability of 1-2 occupant vehicles
4. CONNECTIVITY (3 points)	 a. Commercial Connections: within 1/4 mile from a mixed-use land use (Apartment, non-residential, Office, Retail, Vertical Mixed Use, Commercial Node) b. School Connections: within 1/4 mile of school c. Park / Greenway Connections: Within 1/4 mile of park Connects to existing greenway Connects to an existing sidewalk
5. COST (1 point)	a. Lower cost facility (e.g. bike lanes, side paths, multi-use paths, sidewalks, striping) under \$800,000*
6. IMPLEMENTATION & USEFUL LIFE (2 points)	 a. Over 70% right-of-way acquired b. Will not be eliminated or destroyed by development in fewer than 5 years after completed.
7. PUBLIC SIGNIFICANCE (2 points)	a. Included in at least two (2) previous plans or moreb. Identified as a "most-mentioned" project through public input analysis
8. VALUE (2 points)	 a. Grants and Public/Private Partnerships to share costs are available. b. Not currently addressed in other/third-party plans; or not reasonably anticipated to be constructed by others within five (5) years.
9. REGIONAL SIGNIFICANCE (3 points)	 a. Connects to facility outside of municipal/Sphere of Influence (SOI) limits. b. Connects to NC and/or US highways or interstate highways. c. Anticipates and seeks to proactively address known or reasonably expected increased traffic volume and land development pressures from neighboring jurisdictions and/or transportation system plans.

*\$800,000 is assumed to be the threshold cost as projects under this cost are not recommended by the CRTPO for state/ federal funding due to the number of steps required to administer a state- and federally-funded project. THIS PAGE INTENTIONALLY LEFT BLANK

BIKEWAY PROJECTS PRIORITIZATION TABLE

Project Corridor	From	То	Recommended Facility Type
Main St/NC-115	Beaty St	n. town limits	Shared Lane Marking ("Sharrow")
Concord Rd	Grey Rd	Kimberly Rd	bike lanes
Main St	Potts St	Griffith Village Ln	Shared Lane Marking ("Sharrow")
Grey Rd	Concord Rd	Wolfe St	bike lanes
Jetton St	Griffith St	Potts St	bike lanes
Twin Oaks-Ver- non-Summerbrook	Main St	S. terminus of Summerbrook,Vernon	family friendly bike route
Concord Rd	Main St	Lorimer Rd	Shared Lane Marking ("Sharrow")
Jackson St	Delburg St	S Main St	Shared Lane Marking ("Sharrow")
Greystone Rd	Wolfe St	Shearers Rd	paved shoulder
Griffith St	Portside Dr	I-77 southbound ramps	bike lanes
Davidson Gateway	Gateway Crossing Ct	Jetton St	bike lanes
GambleSt-Sloan St	new Potts-Sloan connection	Jetton St	family friendly bike route
Potts St	Jetton St	n. terminus of Potts	Shared Lane Marking ("Sharrow")
Walnut St	Main St	Mimosa St	family friendly bike route
Eugenia St-Spring St	S. Main St	Woodland St	family friendly bike route
Woodland St	Brook St	Lorimer Rd	family friendly bike route
Lorimer-Chairman Blake	Main St	Thompson St	family friendly bike route
Dogwood Ln	Thompson St	e. terminus of Dogwood	family friendly bike route
Delburg St	Beaty St	N Main St	family friendly bike route
Depot St	Sloan St	Main St	family friendly bike route
Watson St	Armour St	Depot St	family friendly bike route
St Albans neighbor- hood	Grey Rd	Concord Rd	family friendly bike route
Concord Rd	Kimberly Ln	Rocky River Rd	bike lanes
Sloan St	Griffith St	Potts-Sloan Connector	Shared Lane Marking ("Sharrow")
Griffith St	I-77 southbound ramps	Davidson Gateway	bike lanes
Griffith St	Harbour Place	Jetton St	bike lanes
Harbour Place	Jetton St	Griffith St	family friendly bike route
Jetton St	Harbour Place	Griffith St	family friendly bike route
Davidson Gateway	Jetton St	Griffith St	family friendly bike route
Faust Rd	Davidson Gateway Dr	Catawba Ave	family friendly bike route
Lakeside-Westside Tr- Park-Mock	Griffith St	Mock Cir	family friendly bike route
South St	Main St	Mimosa St	family friendly bike route
Pine Rd sidewalk	Concord Rd	Patrick Johnston Ln	family friendly bike route
Virginia Rd	Pine Rd	Crescent Rd	family friendly bike route
Thompson St	n. terminus of Thompson	Concord Rd	family friendly bike route
Ridge Rd	Main St	soccer fields	family friendly bike route
Armour St	w. terminus	e. terminus	family friendly bike route
Robert Walker Dr	Davidson-Concord Rd	Bradford Park Dr	bike lanes
Shearer Rd extension	Shearer Rd	NC 73	bike lanes

					Pri	oritiz	ation	Criter	ia (se	e Tab	le on	page	214 f	or def	initio	ns)						
1.a	1.b	1.c	1.d	1.e	2.a	2.b	3.a	3.b	4.a	4.b	4.c	5.a	6.a	6.b	7.a	7.b	8.a	8.b	9.a	9.b	9.c	Total
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1	0	1	0	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	1	1	0	13

BIKEWAY PROJECTS PRIORITIZATION TABLE, CONTINUED

Project Corridor	From	То	Recommended Facility Type																				
Summers Walk neigh- borhood	Rose Glen	Davidson Concord	family friendly bike route																				
Shearer Rd extension	Dembridge Dr	greenway connection	bike lanes																				
Catawba Ave	Faust Rd	Potts St	family friendly bike route																				
Ridgewood-Greenway	Woodland St	S. terminus of Greenway St	family friendly bike route																				
Eastway St	Peter's	Pinecrest	family friendly bike route																				
NC-115 (Iredell Co.)	Bridges Farm Rd	Presbyterian Rd	paved shoulder																				
Kimberly Rd	Concord Rd	S. terminus of Samuel Spencer Pkwy	family friendly bike route																				
Davidson-Concord Rd	South Prong WEst Branch Rocky River	Sam Furr Rd	paved shoulder																				
Robert Walker Dr	River Crossing Blvd	Overleaf Ln	bike lanes																				
Overleaf Ln-East Rock	Robert Walker Dr	Rocky River Rd	family friendly bike route																				
Rocky River Rd	Concord Rd	e. town/ETJ limits	paved shoulder																				
Shearer Rd	Greystone Rd	Dembridge Dr	paved shoulder																				
Davidson Place neigh- borhood	Davidson-Concord Rd	Mayes Rd	family friendly bike route																				
Lorimer Rd	Thompson St	Pine Rd	family friendly bike route																				
Hamilton St	Jetton St	Catawba Ave	family friendly bike route																				
Avinger Ln	Pine St	Terminus of Avinger	family friendly bike route																				
new bike connection on campus	Thompson St	Dormitory Rd on Davidson College	family friendly bike route																				
Bradford Park neigh- borhood streets	Crabapple Ct	Robert Walker Dr	family friendly bike route																				
Barnhardt Rd	Mayes Rd	Davidson Concord Rd	paved shoulder																				
Mayes Rd	Barnhardt Rd	Sam Furr Rd	paved shoulder																				
River Falls Dr	River Crossing Blvd	e. terminus	family friendly bike route																				
Potts St-to-Sloan St connector	Potts St	Sloan St	Shared Lane Marking ("Sharrow")																				
Sam Furr Rd	Mayes Rd	Davidson-Concord Rd	paved shoulder																				
Shearers Rd	Presbyterian Rd	Greystone Rd	paved shoulder																				
Samuel Spencer Pkwy extension	S. terminus of Samuel Spencer Pkwy	Crabapple Ct	family friendly bike route																				
						Pri	oritiz	ation	Criter	ia (se	e Tab	le on	page	214 f	or def	initio	ns)						
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	1	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	1	1	1	1	0	10
	1	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	0	1	1	0	0	1	9

MULTI-USE PATH PROJECTS PRIORITIZATION TABLE

Project Corridor	From	То	Recommended Facility Type
Concord Rd	Grey Rd	Kimberly Rd	sidepath
Beaty St	N. Main St	Griffith St	sidepath
Greystone Rd	Wolfe St	Shearers Rd	sidepath
Griffith St	Davidson Gateway	Beaty St/Sloan St	sidepath
Rail Trail to Mooresville	n. terminus of Shearer St	Bridges Farm Rd	greenway
Sloan St	Griffith St	Potts-Sloan Connector	sidepath
Griffith St	Harbour Place	Jetton St	sidepath
Davidson Pointe greenway connection	Davidson Pointe	NC-115	greenway
Shearer Rd extension	Dembridge Dr	greenway connection	sidepath
Davidson-Concord Rd extension	Presbyterian Rd	Grey Rd	sidepath
Armour-Main Street Connector	e. terminus of Armour	Main St	bike/ped connector
Kincaid Greenway Extension	Main St	Spring St	greenway
Catawba Ave	Potts St	Main St	sidepath
Walnut-Vernon connector	Walnut St	Vernon Dr	bike/ped connector
Hillside extension	s. terminus of Hillside Dr	Cathey St	bike/ped connector
Brook St extension	Woodland St	Hillside Dr extension	bike/ped connector
Lorimer-Brook connector	Lorimer Rd	Brook St extension	bike/ped connector
Cathey St extension	Goodrum St	Spring St	bike/ped connector
Greenway St-to-South St connector	Greenway St	South St	bike/ped connector
Eastway-South connection	Eastway St	South St	bike/ped connector
Dogwood Ln-Conroy connector	Dogwood Ln	Conroy Ave	bike/ped connector
greenway connection allong Main St	Chairman Blake Ln	Glasgow	sidepath
Bailey Springs Dr	Bailey Rd	Bradford Park Rd	sidepath
Bailey Rd	Rocky Branch River	Ayla	sidepath
Davidson-Concord Rd	South Prong WEst Branch Rocky River	Sam Furr Rd	sidepath
Rocky River Rd	Concord Rd	e. town/ETJ limits	sidepath
Davidson-Concord Rd extension	Grey Rd	Concord Rd	sidepath
greenway connection- Davidson East	NC 73	Julees Walk	greenway
Shearer Rd	Greystone Rd	Dembridge Dr	sidepath
Goodrum extension	e. terminus of Goodrum	Cathey St	bike/ped connector
Brook St extension	e. terminus of Brook St	Pinecrest St	bike/ped connector
Ridgewood extension	Pinecrest St	Thompson St	bike/ped connector
Greenway St-to-The Pines extension	Greenway St	The Pines	bike/ped connector
Peters PI extension	Peters Pl	Thompton St exten- sion	bike/ped connector
Thompson St greenway	S. terminus of Thompson	Avinger Ln	greenway
greenway connection	Rocky River	Bailey	greenway
Barnhardt Rd	Mayes Rd	Davidson Concord Rd	sidepath
Mayes Rd	Barnhardt Rd	Sam Furr Rd	sidepath
Potts St-to-Sloan St connector	Potts St	Sloan St	sidepath
greenway connection	YMCA parking lot	Faust Rd	greenway
Ingersoll Rand	Davidson Pointe	Beaty St	unpaved trail

Prioritization Criteria (see Table on page 214 for definitions)																						
1.a	1.b	1.c	1.d	1.e	2.a	2.b	3.a	3.b	4.a	4.b	4.c	5.a	6.a	6.b	7.a	7.b	8.a	8.b	9.a	9.b	9.c	Total
1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	17
1	1	1	0	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0	15
1	1	1	0	0	0	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0	15
1	1	1	0	0	0	0	1	1	1	1	1	0	1	1	1	0	1	1	0	1	0	14
1	1	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	14
1	0	1	0	1	0	0	1	1	1	1	1	1	1	1	1	0	1	0	0	1	0	14
1	0	1	0	1	0	0	1	1	1	1	1	0	0	1	1	0	1	1	0	1	0	13
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0	1	1	0	0	0	0	1	1	0	1	1	0	0	1	1	0	1	1	1	1	0	12
1	1	1	0	0	0	0	1	1	0	1	1	0	0	1	1	0	1	1	1	0	0	12
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 1	1	0	0	0	0	0	1	1	1	0	1	0	0	1	1	0	1	1	1	1	0	12
1	0	1	0	0	0	0	1	1	0	0	1	0	1	1	1	0	1	1	1	1	0	12
 1	1	0	0	0	0	0	1	1	1	0	1	1	0	1	1	0	1	1	0	0	0	11
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1	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	1	11
1	1	0	0	0	0	0	1	1	1	0	1	0	0	1	1	0	1	1	1	0	0	11
1	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	0	1	1	1	0	0	11

MULTI-USE PATH PROJECTS PRIORITIZATION TABLE, CONTINUED

Project Corridor	From	То	Recommended Facility Type
Rocky River greenway	Grey Rd extension	West Branch Nature Preserve	greenway
greenway connection	Davidson Gateway	Peninsula	greenway
Pine-Thompson connector	Pine Rd	Thompson St exten- sion	greenway
Lynbrook extension	Patrick Johnston Ln	Churchill Rd	bike/ped connector
Ardley Cir connector	Ardley Cir	Pat Stough Ln	bike/ped connector
Sam Furr Rd	Mayes Rd	Davidson-Concord Rd	sidepath
new bike/ped connection	Jackson St	under RR tracks	bike/ped connector (tunnel)
Avinger-Chapel connection	Chapel Way	South Prong Rocky River Greenway	greenway
Cathey St extension	Spring St	Eastway	greenway
Rocky River- Overleaf connection	Overleaf Ln	Rocky River Rd	bike/ped connector
northern greenway connection	Grey Rd near Allison Farm Reg. Park	Presbyterian Rd	greenway
Meck Co Iredell Co. line	Shearer Rd	Rocky River/Cabarrus Co. line	greenway
greenway connection	Pine Rd	Patrick Johnston Ln	greenway
greenway connection	Existing greenway	Claires Creek Lane	bike/ped connector
bike/ped connection	South Prong Rocky River Greenway	future Westbranch Pkwy	bike/ped connector
new development	Park Terrace	greenway connection	bike/ped connector
greenway connection	Rocky River Rd	Shearer Rd	greenway
greenway connection	River Falls Dr	River Ford	bike/ped connector
greenway connection	Robert Walker Dr	River Ford	greenway
West Branch Nature Preserve	Summers Walk	West Branch Rocky River Gwy	greenway
West Branch Nature Preserve	Summers Walk	West Branch Rocky River Gwy	unpaved trail
greenway connection	Western Branch Nature Preserve	Existing Greenway	greenway
greenway connection	Davidson-Concord Rd	River Crossing	greenway
McConnell-Fisher Farm Greenway	Ashby Dr	West Branch Rocky River	greenway
Fisher Farm greenway connection	West Branch Rocky River Gwy	Shearer Rd	greenway
Fisher Farm southern greenway con- nection	s. end of Fisher Farm Park	s section of funded WBRR greenway	greenway
new street connection	South Prong Rocky River Greenway	Westbranch Pkwy	bike/ped connector
greenway connection	Riverford	Bridle Path	bike/ped connector
bike/ped connection	Proposed Greenway	Existing Greenway	bike/ped connector
new street connection	Davidson-Concord Rd	Proposed bike ped connector	greenway
greenway connection	Shearer	Fisher Rd	greenway
RR Bluff Nature Preserve greenway connection	Shearer Rd	Rocky River greenway	greenway

Prioritization Criteria (see Table on page 214 for definitions)																						
1.a	1.b	1.c	1.d	1.e	2.a	2.b	3.a	3.b	4.a	4.b	4.c	5.a	6.a	6.b	7.a	7.b	8.a	8.b	9.a	9.b	9.c	Total
1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0	1	1	1	1	0	11
1	1	0	0	0	0	0	1	1	1	1	1	0	0	1	0	0	1	1	0	0	0	10
1	1	0	0	0	0	1	1	1	0	0	1	0	0	1	1	0	1	1	0	0	0	10
1	1	0	0	0	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	0	10
1	1	0	0	0	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	0	10
1	0	1	0	0	0	0	1	1	1	0	1	0	0	0	1	0	1	0	1	1	0	10
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1	1	0	0	0	0	0	1	1	0	0	1	1	0	1	0	0	1	1	0	0	0	9
1	1	0	0	0	0	0	1	1	0	0	1	1	0	1	0	0	1	1	0	0	0	9
0	1	0	0	0	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	0	9
1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	0	1	1	0	1	0	9
1	1	0	0	0	0	0	1	1	0	0	1	0	1	1	0	0	1	1	0	0	0	9
1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0	1	1	0	0	0	9
1	1	0	0	0	0	0	1	1	1	0	1	0	0	1	0	0	1	1	0	0	0	9
1	0	0	0	0	0	0	1	1	1	0	1	1	0	1	0	0	1	1	0	0	0	9
0	1	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0	1	1	1	0	0	9
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0	1	0	0	0	0	0	1	1	0	0	1	0	0	1	1	1	1	1	0	0	0	9
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0	1	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0	1	1	0	0	0	8
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1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	0	1	1	0	0	0	8
0	1	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0	1	1	0	0	0	8

ROADWAY PROJECTS PRIORITIZATION TABLE

Project Corridor	From	То	Recommended Facility Type
Davidson-Concord Rd extension	Presbyterian Rd	Grey Rd	new street
Davidson-Concord Rd extension	Grey Rd	Concord Rd	new street
Spring St extension	Eugenia St	Walnut St	festival street
Potts St-to-Catawba Ave connector	Potts St	Catawba Ave	new street connection with development
Thompson St greenway	S. terminus of Thompson	Avinger Ln	if developed
Catawba Ave extension	S. Main St	Spring St extension	new street connection with development
Potts St-to-Sloan St connector	Potts St	Sloan St	new street
Pine-Thompson connector	Pine Rd	Thompson St extension	if developed
Samuel Spencer Pkwy extension	S. terminus of Samuel Spencer Pkwy	Crabapple Ct	new street connection with development
new street near Rushco	Griffith St	Peninsula Dr	new street connection with development
new street near Exxon	Griffith St	Peninsula Dr	new street connection with development
Grey Rd extension	Shearer Rd	Coddle Creek Rd/NC 3	new street
Catawba-Potts Connector	Jetton St	Catawba Ave	new street connection with development
Davidson-Concord Rd extension	Sam Furr Rd	Ramah Church Rd	new street
Wyatts Way Extension	Antiquity (Cornelius)	Matthew McClure Cir	new street connection with development
new street connection	Concord Rd	Westmoreland Farm Rd	new street connection with development

INTERSECTION IMPROVEMENT PROJECTS PRIORITIZATION TABLE

Road 1	Road 2	Recommended Treatment	
Main St	Concord Rd	add southbound left turn lane	
Griffith St	Main St	crossing improvement	
Jackson St	Main St	crossing improvement	
Potts St	Main St	Roundabout	
Beaty St	Delburg St	pedestrian xing improvement	
Griffith St	Spinnaker Cove Dr	pedestrian xing improvement	
Main St	new Armour St extension	pedestrian xing improvement	
Griffith St	Lakeside Ave	pedestrian xing improvement	
Griffith St	Grocery Ln	pedestrian xing improvement	
Jackson St	Potts St	pedestrian underpass	
Griffith St	Davidson Gateway Dr	pedestiran improvement	
Main St	Catawba Ave	pedestrian improvement; bike station	
Concord Rd	St Albans Ln/Pat Stough Ln	intersection improvements	

					Pri	oritiz	ation	Criter	ia (se	e Tab	le on	page	214 f	or def	initio	ns)						
1.a	1.b	1.c	1.d	1.e	2.a	2.b	3.a	3.b	4.a	4.b	4.c	5.a	6.a	6.b	7.a	7.b	8.a	8.b	9.a	9.b	9.c	Total
1	1	0	0	0	0	1	1	1	0	1	1	0	0	1	1	0	1	1	1	0	1	13
1	1	0	0	0	0	1	1	1	0	0	1	0	0	1	1	0	1	1	0	1	1	12
1	0	1	0	1	0	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	12
1	0	0	0	0	0	1	0	0	1	1	1	0	0	1	1	0	1	1	1	0	1	11
1	1	0	0	0	0	1	1	1	0	1	1	0	0	1	1	0	1	1	0	0	0	11
1	0	0	0	0	0	1	0	0	1	1	1	0	0	1	1	0	1	1	0	1	1	11
1	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	1	11
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0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	0	1	1	1	0	1	8
1	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	0	1	1	0	0	1	8

					Pri	oritiz	ation	Criter	ria (se	e Tab	le on	page	214 f	or def	initio	ns)						
1.a	1.b	1.c	1.d	1.e	2.a	2.b	3.a	3.b	4.a	4.b	4.c	5.a	6.a	6.b	7.a	7.b	8.a	8.b	9.a	9.b	9.c	Total
1	0	1	1	0	1	0	0	0	1	1	1	0	1	1	1	0	1	1	0	1	1	14
1	1	1	1	0	0	0	1	0	1	1	1	0	1	1	0	0	1	1	0	1	1	14
1	1	1	1	0	0	0	1	0	1	1	1	0	1	1	0	0	1	1	0	1	1	14
1	1	1	1	0	1	0	0	0	1	1	0	0	1	0	1	0	1	0	1	1	1	13
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1	1	1	1	0	0	0	1	0	1	0	1	0	1	1	0	0	1	1	0	1	1	13

INTERSECTION IMPROVEMENT PROJECTS PRIORITIZATION TABLE, CONTINUED

Road 1	Road 2	Recommended Treatment	
Concord Rd	Grey Rd	realignment	
Griffith St	I-77 NB ramp	Roundabout	
Griffith St	Sloan St	Roundabout	
Depot St	RR tracks	crossing improvement	
Beaty St	Armour St	pedestrian xing improvement	
Main St	Glasgow St	pedestrian xing improvement	
Dogwood Ln	Grey Rd	pedestrian xing improvement	
Armour St	RR tracks	pedestrian bridge	
Concord Rd	Baker Dr/Woodland St	pedestrian improvement	
Delburg St	RR tracks	pedestrian xing improvement	
S. Main St	Catawba Ave/Jetton St	pedestrian xing improvement	
Beaty St	N. Main St	pedestrian xing improvement	
Concord Rd	Kimberly Rd	intersection improvements	
Shearer Rd	Rocky River Rd	crossing improvement	
Griffith St	I-77 SB ramp	Roundabout	
Davidson-Concord Rd	Robert Walker Dr	crossing improvements	
N Main St	Beaty St/Ridge Rd	realign Ridge + Beaty	
Griffith St	w. of Jackson St	bike station	
Concord Rd	Faculty Dr	bike station	
Griffith St	Davidson Gateway Dr	create Transit/Mobility Hub	
Sam Furr Rd / NC 73	Davidson-Concord Rd	right turn lane- short term fix	
Beaty St	w. of Main St/NC-115	bike station	

					Pri	oritiz	ation	Criter	ria (se	e Tab	le on	page	214 f	or def	initio	ns)						
1.a	1.b	1.c	1.d	1.e	2.a	2.b	3.a	3.b	4.a	4.b	4.c	5.a	6.a	6.b	7.a	7.b	8.a	8.b	9.a	9.b	9.c	Total
1	0	1	1	0	1	0	0	0	0	1	0	0	1	1	1	0	1	1	0	1	1	12
1	1	1	1	0	1	0	0	0	1	1	1	0	1	0	0	0	1	0	1	0	1	12
1	1	1	1	0	1	0	0	0	1	1	1	0	1	0	1	0	1	0	0	0	1	12
1	1	1	1	0	0	0	1	0	1	1	1	0	1	1	0	0	1	1	0	0	0	12
0	1	1	1	0	0	0	1	0	1	1	0	0	1	1	1	0	1	1	0	0	1	12
1	1	1	1	0	0	0	1	0	1	1	0	0	1	1	0	0	1	1	0	0	1	12
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1	0	0	0	0	0	0	1	0	1	1	1	0	1	1	0	0	1	1	0	0	0	9
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0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	1	9
0	0	0	0	0	0	0	1	0	1	1	0	0	1	1	0	0	1	1	0	0	0	7

APPENDIX E - Cost Estimates

DAVIDSON-CONCORD ROAD EXTENSION

Name	Concord Road Extension
	New Roadway connection between existing intersection of Concord and Rocky River Road to Presbyterian
Description	Road. Cross-section will include 2-lane road and separated, shared use path
Total Length	2.4 miles
Estimated Project Cost*	\$ 23,600,000
*Includes Design Fees, Rig	nt of Way Acquisitions, and Contruction

Administration and Inspection. Estimates are in 2018 dollars. Add 10%

escalation per year.

	Description	Quanitity	Unit	Unit Price	Amount
Roadway	2-Lane Shoulder Section W / Paved Shoulder	2.36	per mile	\$3,700,804.91	\$ 8,733,899.59
	Miscellaneous			30%	\$ 2,620,169.88
Bike Ped Facilities	Shared Use Path	2.36	per mile	\$ 1,250,000.00	\$ 2,950,000.00
	Construction Cost Unadjusted				\$ 14,304,069.46
	Construction Contingency			25%	\$ 3,576,017.37
	Construction Cost Estimate with Contingency				\$ 17,880,086.83
	Design			12%	\$ 2,145,610.42
	ROW			20%	\$ 3,576,017.37
	Construction Admin and Inspection			15%	\$ 2,682,013.02
	Total Project Cost				\$ 23,601,714.62

SPRING STREET SHARED STREET/WOONERF

Name	Spring Street Shared Street	
Description	Conversion of gravel street to Woonerf co	onnection with pavers
Total Length	0.14 miles	
Estimated Project Cost*	\$	670,000
*Includes Design Fees, Right of Way Acquisitions, and Contruction		

Administration and Inspection. Estimates are in 2018 dollars. Add 10% escalation per year.

Description	Quanitity	Unit	Unit Price	Am	ount
Paver Street construction	1158.9	SY	\$350	\$	405,611.11
Construction Cost Unadjusted				\$	405,611.11
Construction Contingency			25%	\$	101,402.78
Construction Cost Estimate with Contingency				\$	507,013.89
Design			12%	\$	60,841.67
ROW			20%	\$	101,402.78
Construction Admin and Inspection			15%	\$	76,052.08
Total Project Cost				\$	669,258.33

DAVIDSON-CONCORD ROAD / NC-73 INTERSECTION IMPROVEMENT

Name	NC 73/Davidson Concord Road Intersection Project	
Description	Addition of southbound righ turn lane	
Estimated Project Cost*	* \$ 350,000	
*Includes Design Food Dight of Woy Acquisitions and Contruction		

*Includes Design Fees, Right of Way Acquisitions, and Contruction Administration and Inspection. Estimates are in 2018 dollars. Add 10% escalation per year.

	Description	Quanitity	Unit	Unit Price	Am	ount
Roadway	Add turn lane	350	LF	\$465.59	\$	162,956.50
	Miscellaneous			30%	\$	48,886.95
	Construction Cost Unadjusted				\$	211,843.45
	Construction Contingency			25%	\$	52,960.86
	Construction Cost Estimate with Contingency				\$	264,804.31
	Design			12%	\$	31,776.52
	ROW			20%	\$	52,960.86
	Construction Admin and Inspection			15%	\$	39,720.65
	Total Project Cost				\$	349,541.69

GREY RD/PINE RD/CONCORD RD INTERSECTION IMPROVEMENT

Name	Grey/Pine and Concord Road Intersection Project				
	Realignment of Grey Road and Pine Road, sidewalks, high visbility crosswalks at all four legs, RRFBs on Corcord Road				
Description	for future sidepath				
Estimated Project Cost*	\$ 1,440,000				
*Includes Design Fees, Right of Way Acquisitions, and Contruction Administration					
and Inspection. Estimates are in 2018 dellars, Add 10% assolution per vear					

and Inspection. Estimates are in 2018 dollars. Add 10% escalation per year.

	Description	Quanitity	Unit	Unit Price	A	nount
Roadway	2-Lane Curb and Gutter	0.21	per mile	\$3,263,075.29	\$	673,627.29
	Miscellaneous (sidewalks, high visibility crosswalks)			30%	\$	202,088.19
Bike Ped Facilities	RRFB	1	pair	\$15,000	\$	15,000.00
	Construction Cost Unadjusted				\$	875,715.47
	Construction Contingency			25%	\$	218,928.87
	Construction Cost Estimate with Contingency				\$	1,094,644.34
	Design			12%	\$	131,357.32
	ROW			20%	\$	218,928.87
	Construction Admin and Inspection			15%	\$	164,196.65
	Total Project Cost				\$	1,444,930.53

N. MAIN ST/BEATY ST/RIDGE ROAD INTERSECTION IMPROVEMENT

Name	North Main/Beaty/Ridge Intersection Project			
Description	Road realignment, dedicated turn lanes, median refuge, high visibility cross walks, signalization			
Estimated Project Cost*	\$ 980,000			
*Includes Design Fees, Right of Way Acquisitions, and Contruction Administration and				
Inspection. Estimates are in 2018 dollars. Add 10% escalation per year.				

Description	Quanitity	Unit	Unit Price	Am	iount
2-Lane Shoulder Section	0.09	per mile	\$3,700,804.91	\$	315,409.51
Add turn lane (westbound on Main)	150	LF	\$465.59	\$	69,838.50
Add turn lane (eastbound on Main)	150	LF	\$465.59	\$	69,838.50
Miscellaneous (median refuge, sidewalks, crosswalks)			30%	\$	136,525.95
Construction Cost Unadjusted				\$	591,612.46
Construction Contingency			25%	\$	147,903.12
Construction Cost Estimate with Contingency				\$	739,515.58
Design			12%	\$	88,741.87
ROW			20%	\$	147,903.12
Construction Admin and Inspection			15%	\$	110,927.34
Total Project Cost				\$	976,160.56
	Description 2-Lane Shoulder Section Add turn lane (westbound on Main) Add turn lane (eastbound on Main) Miscellaneous (median refuge, sidewalks, crosswalks) Construction Cost Unadjusted Construction Cost Unadjusted Construction Cost Estimate with Contingency Design ROW Construction Admin and Inspection Total Project Cost	DescriptionQuanitity2-Lane Shoulder Section0.09Add turn lane (westbound on Main)150Add turn lane (eastbound on Main)150Miscellaneous (median refuge, sidewalks, crosswalks)150Construction Cost UnadjustedConstruction Cost UnadjustedConstruction Cost Estimate with Contingency2DesignROWConstruction Admin and Inspection1Total Project Cost1	DescriptionQuanitityUnit2-Lane Shoulder Section0.09per mileAdd turn lane (westbound on Main)150LFAdd turn lane (eastbound on Main)150LFMiscellaneous (median refuge, sidewalks, crosswalks)	DescriptionQuanitityUnitUnit Price2-Lane Shoulder Section0.09per mile\$3,700,804.91Add turn lane (westbound on Main)150LF\$465.59Add turn lane (eastbound on Main)150LF\$465.59Miscellaneous (median refuge, sidewalks, crosswalks)30%30%Construction Cost Unadjusted30%Construction Contingency25%25%Construction Cost Estimate with Contingency12%ROW20%20%Construction Admin and Inspection15%Total Project Cost5%	DescriptionQuanitityUnitUnit PriceAm2-Lane Shoulder Section0.09per mile\$3,700,804.91\$Add turn lane (westbound on Main)150LF\$465.59\$Add turn lane (eastbound on Main)150LF\$465.59\$Miscellaneous (median refuge, sidewalks, crosswalks)30%\$Construction Cost Unadjusted\$\$\$Construction Contingency25%\$\$Design12%\$\$ROW20%\$\$Construction Admin and Inspection15%\$Total Project Cost\$\$

GREY ROAD SIDEPATH

Name	Grey Road Sidepath		
Description	Shared use path along Grey Road from O'Henry to Greenwold Drive		
Total Length	1.92 miles		
Estimated Project Cost*	\$	3,960,000	
*Includes Design Fees, Right of Way Acquisitions, and Contruction			

Administration and Inspection. Estimates are in 2018 dollars. Add 10% escalation per year.

Description	Quanitity	Unit	Unit Price	Ar	mount
Shared Use Path	1.92	per mile	\$ 1,250,000.00	\$	2,400,000.00
Construction Cost Unadjusted				\$	2,400,000.00
Construction Contingency			25%	\$	600,000.00
Construction Cost Estimate with Contingency				\$	3,000,000.00
Design			12%	\$	360,000.00
ROW			20%	\$	600,000.00
Construction Admin and Inspection			15%	\$	450,000.00
Total Project Cost				\$	3,960,000.00

McConnell TO FISHER FARM GREENWAY

Name	New Greenway			
	Greenway from McConnell Neighborhood to Fisher Farm Park with 12' asphalt path and 8' equestrian path			
Description				
Total Length	1.13 miles			
Estimated Project Cost*	\$ 3,880,000			
*Includes Design Foos, Right of Way Acquisitions, and Contruction				

*Includes Design Fees, Right of Way Acquisitions, and Contruction Administration and Inspection. Estimates are in 2018 dollars. Add 10% escalation per year.

Description	Quanitity	Unit	Unit Price	Amount	
Shared Use Path	1.13	per mile	\$ 2,083,333.33	\$	2,354,166.67
Construction Cost Unadjusted				\$	2,354,166.67
Construction Contingency			25%	\$	588,541.67
Construction Cost Estimate with Contingency				\$	2,942,708.33
Design			12%	\$	353,125.00
ROW			20%	\$	588,541.67
Construction Admin and Inspection			15%	\$	441,406.25
Total Project Cost				\$	3,884,375.00

GREY ROAD EXTENSION

Name	Grey Road Extension
	New Roadway connection between Shearers and Highway 3/Coddle Creek. Cross-section will include 2-lane
Description	road and separated, shared use path
Total Length	2.4 miles
Estimated Project Cost*	\$ 15,800,000

*Includes Design Fees, Right of Way Acquisitions, and Contruction Administration and Inspection. Estimates are in 2018 dollars. Add 10% escalation per year.

	Description	Quanitity	Unit	Unit Price	An	nount
Roadway	2-Lane Shoulder Section W / Paved Shoulder	1.58	per mile	\$3,700,804.91	\$	5,847,271.76
	Miscellaneous			30%	\$	1,754,181.53
Bike Ped Facilities	Shared Use Path	1.58	per mile	\$ 1,250,000.00	\$	1,975,000.00
	Construction Cost Unadjusted				\$	9,576,453.29
	Construction Contingency			25%	\$	2,394,113.32
	Construction Cost Estimate with Contingency				\$ 3	11,970,566.61
	Design			12%	\$	1,436,467.99
	ROW			20%	\$	2,394,113.32
	Construction Admin and Inspection			15%	\$	1,795,584.99
	Total Project Cost				\$:	15,801,147.92

DAVIDSON-CONCORD ROAD SIDEPATH

Name	Davidson Concord Road Sidepath						
Description	Shared use path to continue existing facility from Rocky River Greenway to NC 73						
Total Length	1.56 miles						
Estimated Project Cost*	\$ 3,220,000						
*Includes Design Fees, Right of Way Acquisitions, and Contruction Administration and Inspection. Estimates are in 2018 dollars. Add 10%							

escalation per year.

	Description	Quanitity	Unit	Unit Price	A	nount
Bike Ped Facilities	Shared Use Path	1.56	per mile	\$ 1,250,000.00	\$	1,950,000.00
	Construction Cost Unadjusted				\$	1,950,000.00
	Construction Contingency			25%	\$	487,500.00
	Construction Cost Estimate with Contingency				\$	2,437,500.00
	Design			12%	\$	292,500.00
	ROW			20%	\$	487,500.00
	Construction Admin and Inspection			15%	\$	365,625.00
	Total Project Cost				\$	3,217,500.00

BEATY STREET SIDEPATH

POTTS SLOAN BEATY Multi Use Trail				1	Costs in year of Construction (15% increase)			
2 Phase Project	P	hase 1 Costs	Ph	ase 2 Costs	L	Phase 1 Costs w/ Increases	Phase 2	Costs w/Increases
Preliminary engineering/design	\$	75,000.00	\$	125,000.00	\$	86,250.00	\$	143,750.00
ROW acquisition	\$	350,000.00	\$	100,000.00	\$	402,500.00	\$	115,000.00
Construction	\$	440,000.00	\$	750,000.00	\$	506,000.00	\$	862,500.00
Total Construction Costs:	\$	865,000.00	\$	975,000.00	\$	994,750.00	\$	1,121,250.00
NCDOT Management Costs (10%)	\$	86,500.00	\$	97,500.00	\$	99,475.00	\$	112,125.00
Contigency (10%)	\$	86,500.00	\$	97,500.00	\$	99,475.00	\$	112,125.00
CEI Administration (15%)	\$	129,750.00	\$	146,250.00	\$	149,212.50	\$	168,187.50
Total Project Costs	\$	1,167,750.00	\$	1,316,250.00	\$	1,342,912.50	\$	1,513,687.50
TOD Costs (20% min)	\$	233,550.00	\$	263,250.00	\$	268,582.50	\$	302,737.50
Funding Requested	\$	934,200.00	\$	1,053,000.00	\$	1,074,330.00	\$	1,210,950.00
Total Project Cost	\$			2,484,000.00	Ş			2,856,600.00
TOD Costs (20% Min)	\$			496,800.00	Ş	5		571,320.00
Funding Requested	\$			1,987,200.00	Ş			2,285,280.00

The Beaty Street sidepath is "Phase 2" of the project.

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