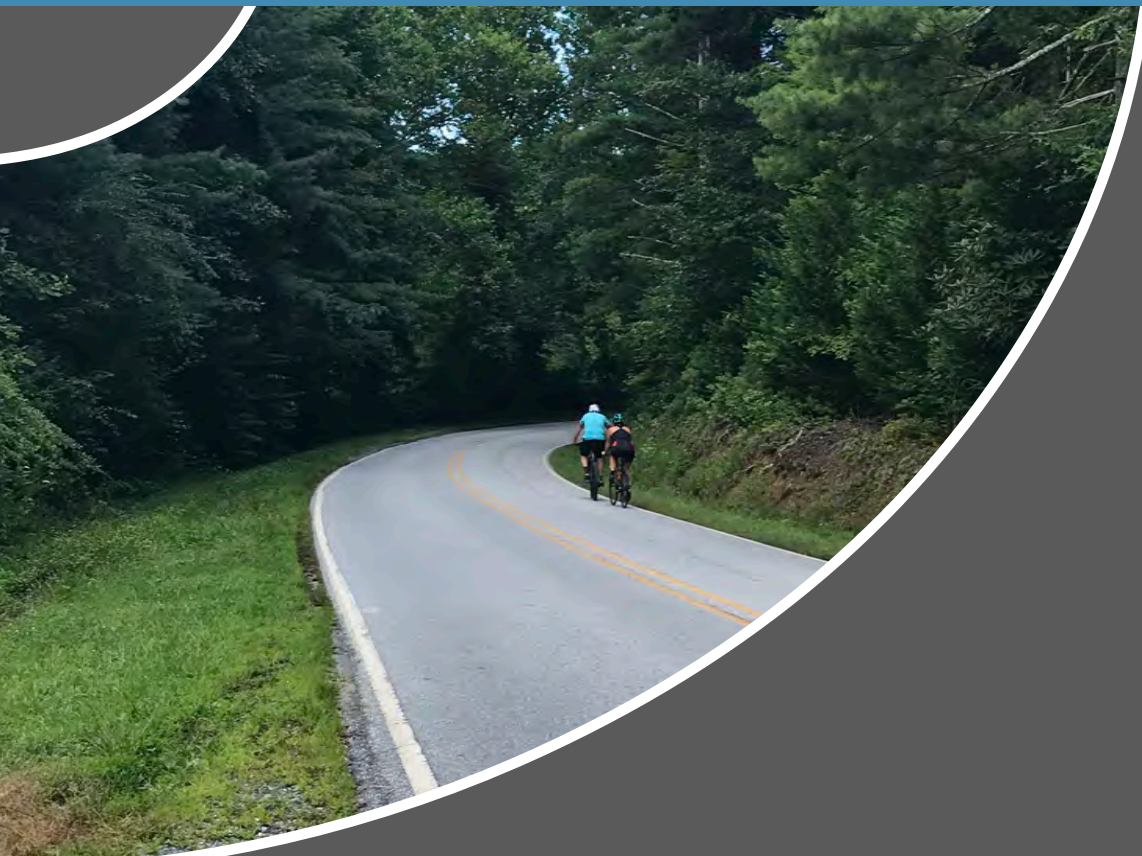


MAY 2019



VILLAGE OF FLAT ROCK
PEDESTRIAN AND BICYCLE PLAN



PREPARED FOR:



PREPARED BY:

Kimley»»Horn

ACKNOWLEDGMENTS

The Village of Flat Rock Pedestrian and Bicycle Plan is the direct result of a collaborative effort between the North Carolina Department of Transportation, Village of Flat Rock, and Blue Ridge Bicycle Club. We extend our sincere appreciation to the residents, business owners, elected officials, and stakeholders who participated in the planning process and guided the development of this plan. Everyone's time, input, and energy are greatly appreciated. A special thank you is extended to those who participated on the Steering Committee, listed below.

STEERING COMMITTEE

Judy Boleman	Village Administrator (retired)
Tyrone Brandyburg	Carl Sandburg Home National Historic Site
Steve Cannon	NCDOT Division 14
John Dockendorf	Council Member
Steven Kidd	Carl Sandburg Home National Historic Site
Rick Merrill	Historic Flat Rock Inc.
Joe Sanders	Blue Ridge Bicycle Club
Nick Scheuer	NCDOT Division of Bicycle and Pedestrian Transportation
Will Sheehan	Blue Ridge Fire and Rescue
Chip Sherer	Bonclarken Assembly, Planning Board Member Planning
Joe Bill Sloan	Board Member
Virginia Spigener	Local Business Owner
Tristan Winkler	French Broad River Metropolitan Planning Organization
David Workman	Local Business Owner



Kimley»Horn

Prepared for the Village of Flat Rock, North Carolina

Project Contact: Pat Christie
110 Village Center Drive, Flat Rock, NC 28731
828-697-8100 | <http://www.villageofflatrock.org/>

This project was made possible through NCDOT Bicycle and Pedestrian Transportation Division's Planning Grant Initiative and local match from the Blue Ridge Bicycle Club.

Prepared by Kimley-Horn
421 Fayetteville Street, Suite 600, Raleigh, NC 27601
919-677-2000 | www.kimley-horn.com

EXECUTIVE SUMMARY

Promoting and encouraging multimodal travel has become a major priority for the Village of Flat Rock and for communities across the region, the state, and the country. Recognizing that walking and bicycling—both as a form of transportation and as a recreational activity—can benefit the Village’s mobility, safety, health, economy, environment, and quality of life, the Village of Flat Rock applied for a grant through the North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation (NCDOT-DBPT) Planning Grant Initiative. The planning grant along with a match from the Blue Ridge Bicycle Club funded the development of this plan.

The development of the Pedestrian and Bicycle Plan was spearheaded by a project team consisting of planners, engineers, bicycling advocates, citizens, and Village staff. A 14-person steering committee met four times over the course of the Plan’s development, setting and refining the Plan’s direction to reflect the needs and desires of the community. Public input was a critical element of the planning process, and public engagement strategies included two public workshops, two online surveys, and a public hearing. Ultimately the overarching and aspirational vision of the Village of Flat Rock Pedestrian and Bicycle Plan is that:

VISION STATEMENT

The Village of Flat Rock will be a bikeable, walkable, and livable place for children, families, and retirees. Biking and walking will be safe and convenient ways to get around the Village and to access other parts of Henderson County.

The Village of Flat Rock Pedestrian and Bicycle Plan consists of five major elements, followed by an Appendix. The Pedestrian and Bicycle Plan begins with an introduction of Flat Rock and the impetus behind the creation of the Plan, followed by a look at the demographic, operational, and administrative characteristics of the Village. The Outreach chapter presents a synthesis of the input contributed by those who participated in the Plan’s public outreach activities. The Recommendations chapter details the facility, policy, and program recommendations to accomplish the Pedestrian and Bicycle Plan’s vision, and the Call to Action chapter provides a framework that describes a timeline of strategies and highlights the parties who will be responsible for implementing those strategies. Summaries of each chapter are shown on the following page.

PLAN STRUCTURE

INTRODUCTION

The Introduction chapter of the Village of Flat Rock Pedestrian and Bicycle Plan presents the timeline of the planning process, starting with the project kick-off in October 2016 and ending with adoption of the Plan by the Village Council. This chapter also introduces the Plan's vision statement and goal statements, and describes how the vision of a more bicycle friendly Flat Rock would benefit residents, business owners, and visitors alike.

EXISTING CONDITIONS

The Existing Conditions chapter defines the starting point for the Pedestrian and Bicycle Plan. The chapter begins with a look at the demographic and commuting characteristics of Flat Rock's residents. The chapter then transitions to an exploration of Flat Rock's transportation network in both driving and multimodal contexts. The chapter concludes with a recognition of existing policies and programs impacting biking and walking in Flat Rock today and an inventory of previous planning efforts that set the stage for the Pedestrian and Bicycle Plan.

OUTREACH

The Outreach chapter describes the Pedestrian and Bicycle Plan's public engagement process and highlights key findings. The Plan's public engagement included four meetings with the steering committee, two online surveys, two public workshops that emphasized issues identification and project prioritization, and a public hearing.

RECOMMENDATIONS

The Recommendations chapter comprises three sections: an overview of the bicycle facility planning process, project profiles, and a compilation of program and policy recommendations. The project profiles include information about planning level cost estimates, key connections, and challenges and opportunities associated with each project. The program and policy recommendations consist of encouragement, educational, and administrative improvements to enhance the Village's pedestrian and bicycle friendliness.

IMPLEMENTATION

The Implementation chapter defines actionable steps for the Village of Flat Rock and its partners in the short-, mid-, and long-term to accomplish the Pedestrian and Bicycle Plan's vision. This implementation plan is supported by an organizational framework that indicates how the Village's partners will be involved; information regarding local, state, federal, and private funding sources; suggestions for ways to measure the performance of the Plan or its individual facility recommendations; and a listing of guidance documents for the planning and design of bicycle facilities.

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INTRODUCTION



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INTRODUCTION

BACKGROUND

In the quest for an improved quality of life, municipalities now strive to provide livable communities that balance travel between modes. A common theme of any livable community is how well it accommodates pedestrians and bicyclists. Taking trips by bike or on foot improves the environment, promotes good health, saves money, eases the burden on roadways, and enhances the livability of a community. The Village of Flat Rock Pedestrian and Bicycle Plan sets the stage for improving walking and bicycling in the Village by providing practical facility and program recommendations.

The development of the Village of Flat Rock Bicycle and Pedestrian Plan was funded through a grant awarded by the North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation (NCDOT-DBPT) through its Planning Grant Initiative and a local match provided by the Village of Flat Rock and the Blue Ridge Bicycle Club. Through the Planning Grant Initiative, NCDOT-DBPT encourages the development of bicycle and pedestrian plans at the municipal level by offering planning grants, totaling nearly \$5 million across 180 municipalities since 2004.

PLANNING PROCESS

The planning process began in October 2016 with an exploration of existing conditions and a multi-faceted outreach campaign. The approach was simple: to create a plan with practical recommendations that responds to the needs of the Village. The underlying philosophy was based on the belief that planning should be done by community leaders, citizens, and stakeholders. Participants should value the process and support the outcome, but also have a clear understanding of what it takes to execute and achieve the desired plan.

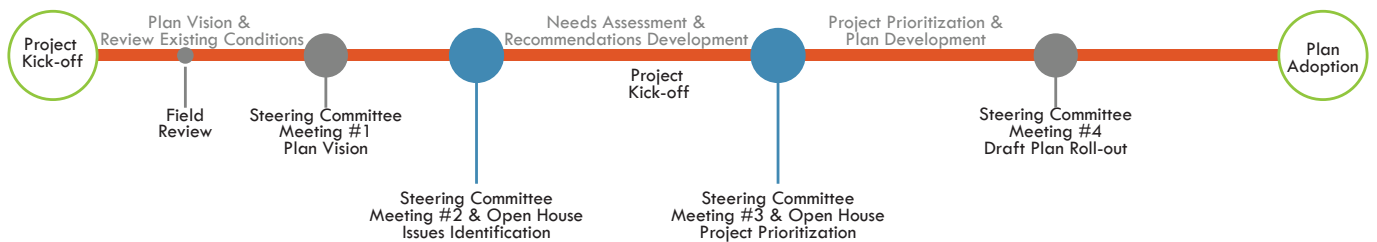


Figure 1-1: Planning Process

A VILLAGE OF GREAT HISTORY AND CHARACTER

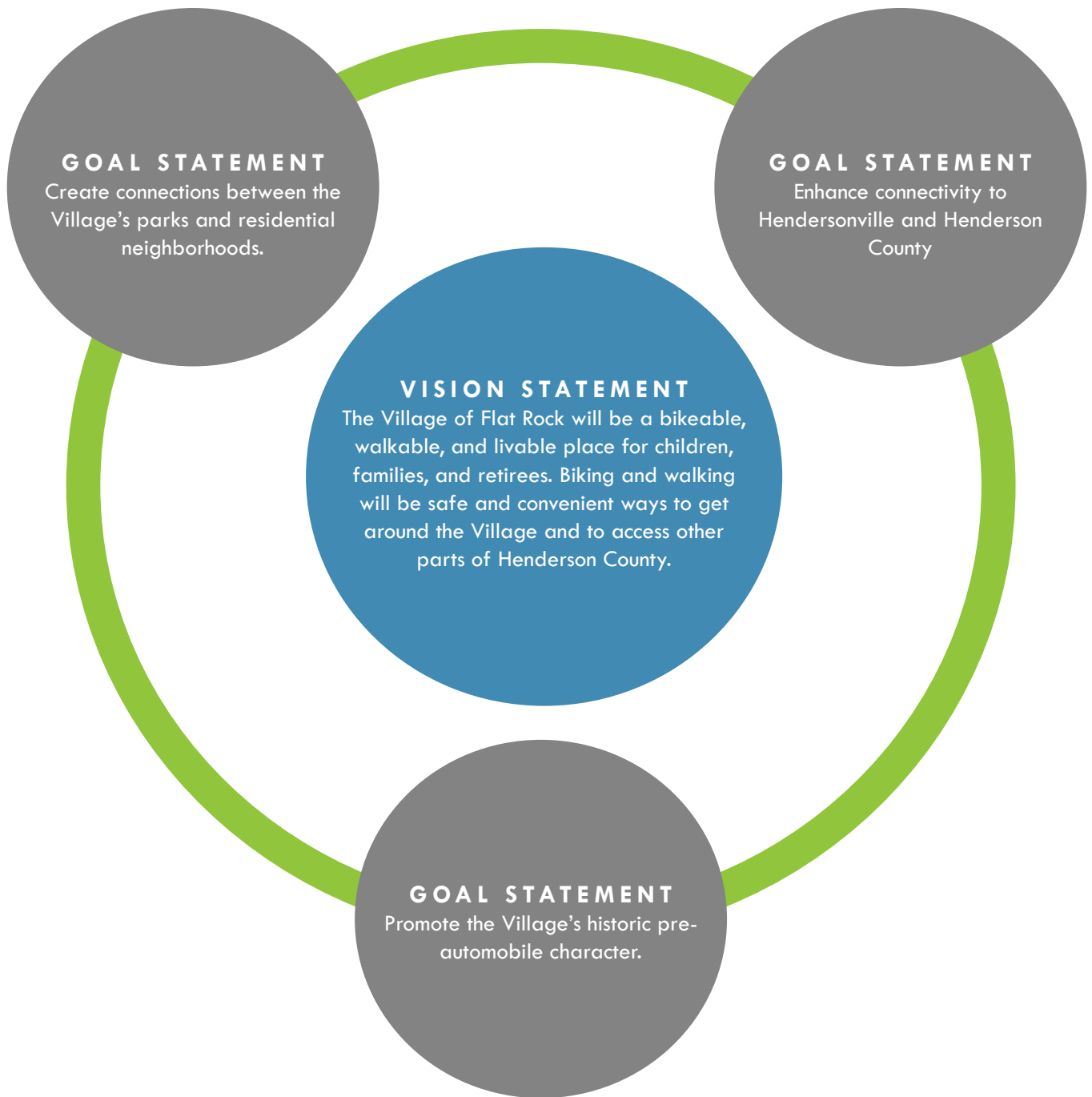
The Village of Flat Rock contains the largest historic district in the State of North Carolina, and is paired with a unique sense of place that has long drawn admiration and investment. Additionally, 8.3 miles of Village roads are designated as North Carolina Scenic Byways, intended to give visitors and residents a chance to experience North Carolina's history, geography, and culture, while also raising awareness for the protection and preservation of these treasures. Prior to European settlement, the area that is now Flat Rock belonged to the Cherokee Nation. In fact, the Village's namesake stems from a large expanse of granite once used as a meeting and ceremony site by the Cherokee. The Village of Flat Rock's history is rich with well-preserved homes, churches, and public gathering places that tell the story of the affluent Charlestonians who retreated to the Village to escape the summer heat and humidity of South Carolina. During the summers, so much of Flat Rock's population was comprised of residents from Charleston, SC, that the Village became known as "Little Charleston of the Mountains." However, as the Village has evolved over the decades, the character and beauty has been preserved. Additionally, just as in the early 1900s, Flat Rock residents have a strong desire to provide recreational opportunities through a network of safe pedestrian walkways and trails. This sentiment was expressed in the 2013 Comprehensive Land Use Plan in action items 2.4, 2.5, 4.4, 4.8, and 4.9 (listed below.)

- Action 2.4. Maintain a detailed long range multi-use trails plan.
- Action 2.5. Coordinate with and support Henderson County efforts to provide active recreation opportunities for Village residents including parks and biking paths.
- Action 4.4. Work with NCDOT to select roadway cross sections that incorporate bicycle lanes, multiuse paths, sidewalks, and traffic calming features as needed for given roadways.
- Action 4.8 Develop sidewalks and multi-use trails using best management practices that are cost effective and harmonious with the natural environment for the enjoyment of residents and tourists.
- Action 4.9 Support the Greenways Committee and charge them to develop and maintain a greenways, trails and sidewalks master plan that:
 - a. Identifies current utilities, roads and drainage easements on which portions of the greenway could be located.
 - b. Requires portions of planned greenways located within proposed subdivisions to be developed and reserved by the developer.
 - c. Connects to greenways in adjacent jurisdictions whenever possible.
 - d. Creates a system for identifying and marking vegetation along greenways to educate users on the natural flora and fauna present in the area.
 - e. Identifies changes that are needed to Village policies to enhance sidewalk, trail and bicycle lane features of all future development.
 - f. Encourages utilities to include trail easements in their negotiations for utility easements.

The Village of Flat Rock Pedestrian and Bicycle Plan aims to honor the unique character and rich history of the Village by the provision of a network of new trails and sidewalks, as well as the restoration of historic trails. Where possible, trails and sidewalks should be constructed of brick pavers or crushed granite fines similar to those found within the historic Village center and Park at Flat Rock. Additionally, any curbing should be constructed of cut granite and all walls and culverts should be covered with stone native to North Carolina.

VISION AND GOALS

The Steering Committee and the Project Team created a vision statement and supporting goal statements that succinctly communicate the desired future for biking and walking in the Village. The vision statement served as a guide throughout the entire planning process.



BENEFITS OF BIKING AND WALKING

Biking and walking for both transportation and recreation can benefit the Village of Flat Rock's economy, environment, health, mobility, and quality of life. The benefits are described in the following graphic.

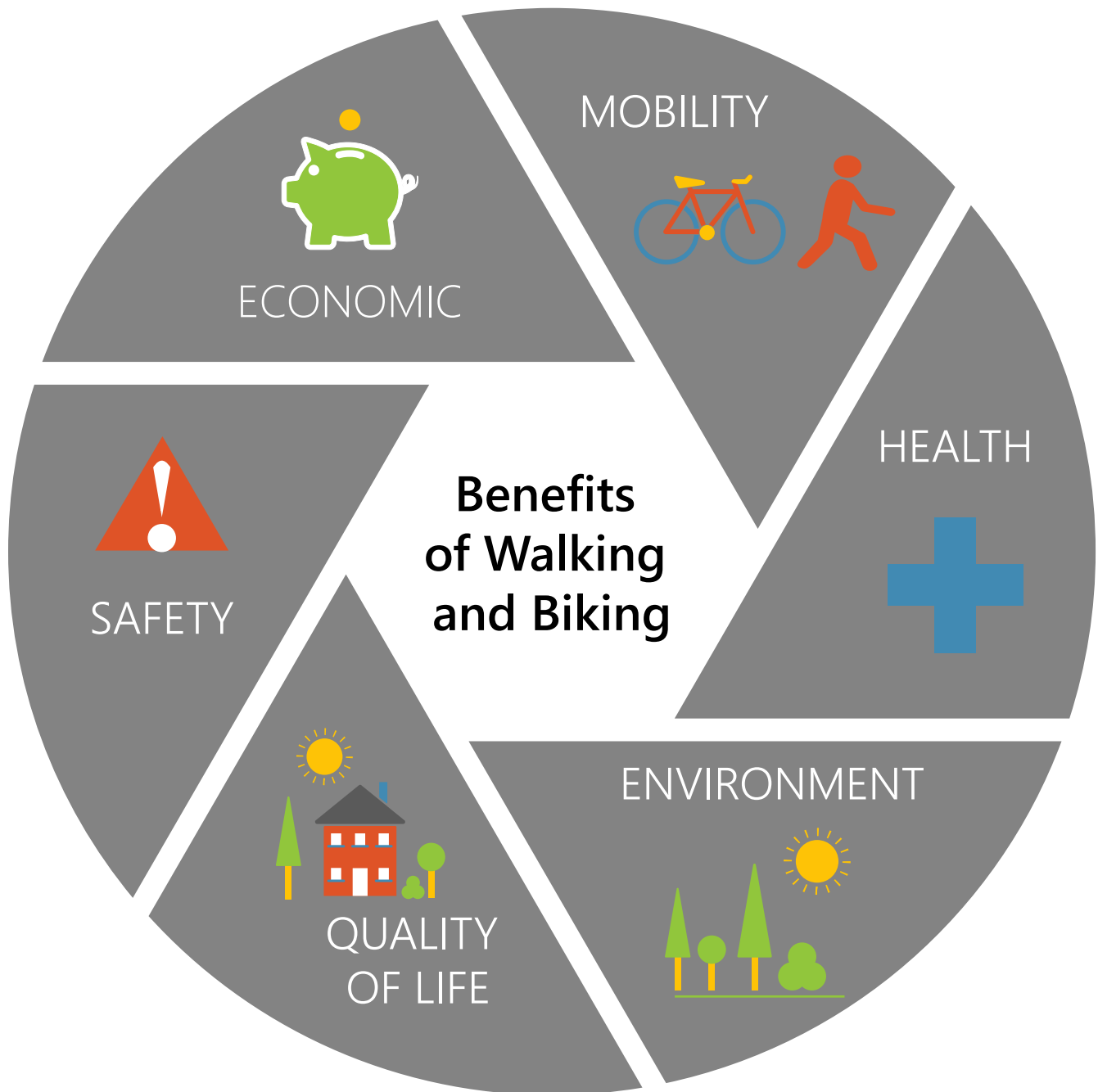


Figure 1-2: Benefits of Walking and Biking

MOBILITY

Mobility is the equitable availability of transportation options for everyone. By providing the appropriate facilities, communities allow people to choose how they want to travel. For those who do not have the option to drive, such as adolescents, elderly, those unable to afford a car, and people with certain disabilities, this lack of choice in transportation creates an inconvenient and socially unjust barrier to mobility.

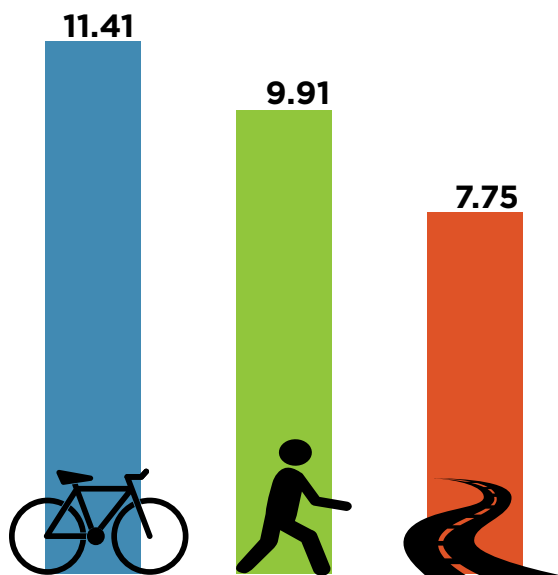
In 2012, the Alliance for Biking and Walking reported that an estimated 40% of all trips, both commute and non-commute, taken by Americans are less than two miles, equivalent to a 10-minute bike ride or 30-minute walk; however, just 13% of all trips are made by walking or bicycling nationwide¹.

SAFETY

Safe travel conditions result from effective design, enforcement, and education. While several Flat Rock residents reported feeling relatively safe walking and biking in Town even given the limited infrastructure, steps can still be taken to further improve safety. In 2015 the National Highway Traffic Safety Administration (NHTSA) reported 5,376 pedestrians fatalities on U.S. Roadways². This count is a 10% jump from the total number of pedestrian deaths in 2014.

Officials at the national and state levels are taking great strides to improve bicycle and pedestrian safety. At the 2015 Summit for Safer People, Safer Streets, the United States Department of Transportation (USDOT) launched the Mayor’s Challenge for Safer People, Safer Streets. The Mayor’s Challenge can be undertaken by any municipality regardless of size, and involves local elected officials to take three simple steps: issue a public statement about the importance of biking and walking, form a local advocacy team, and take action on one of the seven shared challenges³. Challenges range from complete streets design to encouragement and enforcement of rules of the road.

The North Carolina Department of Transportation (NCDOT) is also making great strides in increasing awareness of pedestrian and bicycle safety with the Watch For Me NC program. Watch for Me NC aims to use education, community engagement, and high visibility enforcement to reduce the occurrence of pedestrian and bicycle injuries and fatalities⁴. Communities must apply to become a Partner Community, but once selected receive additional support and training from NCDOT.



ECONOMIC

Walking and cycling are affordable modes of transportation. Car ownership is expensive, and consumes a major portion of many family incomes. When safe facilities are provided for pedestrians and cyclists, people can walk more and spend less on transportation, meaning they have more money to spend on other things. Additionally, the growth of bicycle tourism offers Flat Rock the opportunity to attract bicyclists and in turn increase the sales revenue of local businesses.

The Political Economy Research Institute at the University of Massachusetts reports that investments in bicycle and pedestrian infrastructure yield higher levels of job creation than improvements to roadway infrastructure alone⁵. The graphic below shares the number of jobs created per \$1 million spent on the project.

HEALTH

Walking and bicycling are forms of physical activity that can be accomplished by most citizens. Regular physical activity helps prevent or reduce the risk of heart disease, obesity, high blood pressure, type 2 diabetes, osteoporosis, and mental health problems such as depression.

In 2015, the Center for Disease Control (CDC) reported that 30.1% of North Carolina adults were obese. Additionally, in 2012 North Carolina medical costs related to physical inactivity accounted for \$3.67 billion⁶. However, investment in bicycle and pedestrian facilities can reduce the amount spent on medical costs. A 2005 study completed by CDC researchers in Atlanta, Georgia found that there was an average \$2.94 medical savings return for every \$1 spent on bicycle and pedestrian infrastructure⁷.

ENVIRONMENT

Environmental stewardship holds the community accountable in protecting natural resources. More people walking and riding bikes can result in lower levels of motor vehicle emissions, cleaner air, and stronger preservation of streams and natural spaces. In addition to air pollution, more individuals opting to bike and walk can reduce noise pollution. A research article in *Journal of the American Planning Association* found a 5% increase in walkability to be associated with a 32.1% increase in active travel (biking or walking), 6.5% fewer vehicle miles traveled, 5.6% fewer grams of oxides of nitrogen emitted, and 5.5% fewer grams of volatile organic compounds emitted per capita⁸.

QUALITY OF LIFE

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



EXISTING CONDITIONS



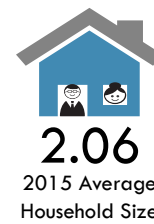
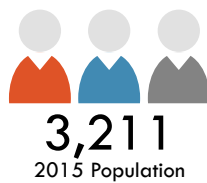
EXISTING CONDITIONS

Early in the planning process an effort was made to observe, identify, and inventory existing conditions. The project team focused on information relevant to walkability and bikeability with an emphasis on demographics, physical features, local attractions, and barriers. Existing conditions are summarized throughout the following pages.

DEMOGRAPHICS AT A GLANCE

The population estimate for Flat Rock in 2015 was 3,211 according to the U.S. Census Bureau's American Community Survey. The median age of Flat Rock residents is 63. The median age for the Village is significantly higher than that of Henderson County (46) and North Carolina (36). The median household income in the Village of Flat Rock is approximately \$66,800, which is higher than both the median household incomes of Henderson County (\$46,448) and North Carolina (\$46,868). Additionally, only 3.4% of households in Flat Rock are below the federal poverty line, in comparison to 13.8% and 17.4% in Henderson County and North Carolina, respectively.

Population & Household Characteristics



Age Cohorts (Age in 2015)

The Silent Generation (>85)

Flat Rock	Henderson Co.	North Carolina
3%	4%	2%
29%	16%	9%
41%	33%	30%
6%	11%	13%
9%	10%	13%
11%	26%	33%

Depression and War Babies (70-85)

Baby Boomers (51-69)

Generation X (35-50)

Millennials (20-34)

Generation Next (<20)

Income & Education Characteristics

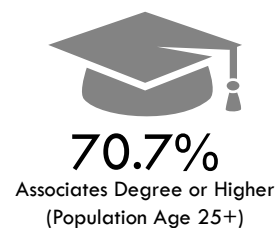
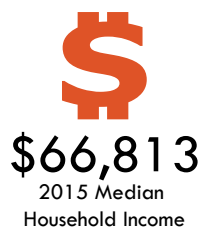


Figure 2-1: Demographic Characteristics

COMMUTING AT A GLANCE

Commuting to work or school is a major consideration for transportation planners, as commute trips generally occur when streets are the most congested. While commute data captured by the American Community Survey is fairly limited and does not effectively reflect commuters who use different modes throughout the week, throughout the day, or even within the same trip, the information still provides insight into commuters' primary mode of transportation.

Due large in part to the high quantity of retirees in Flat Rock, only 36% of the population is active in the workforce, and of those nearly 77% stay within Henderson County for work, while 12% travel outside of the County and another 11% travel out of the state. The graphic below shares more information about the commuting characteristics of Flat Rock residents.

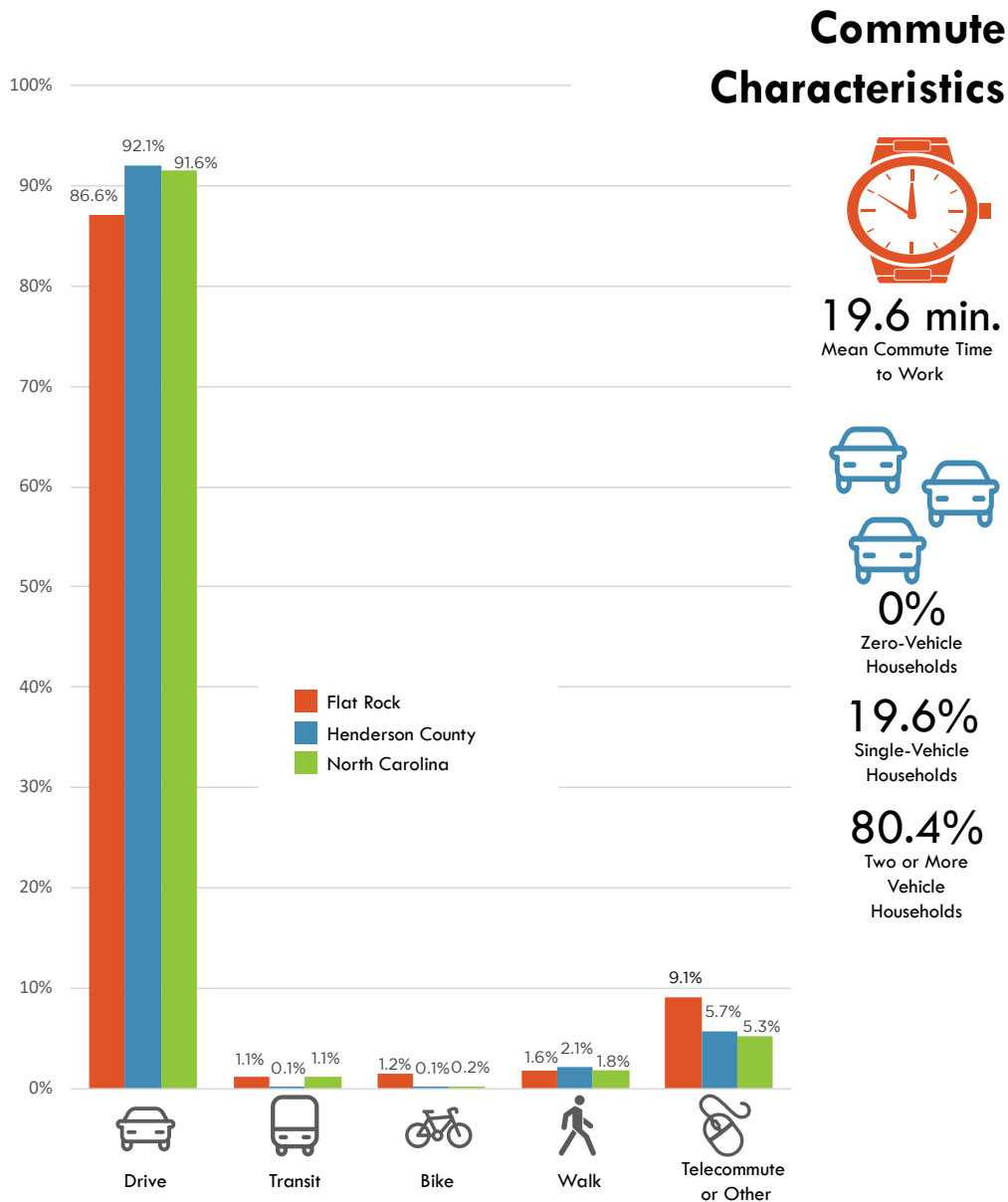
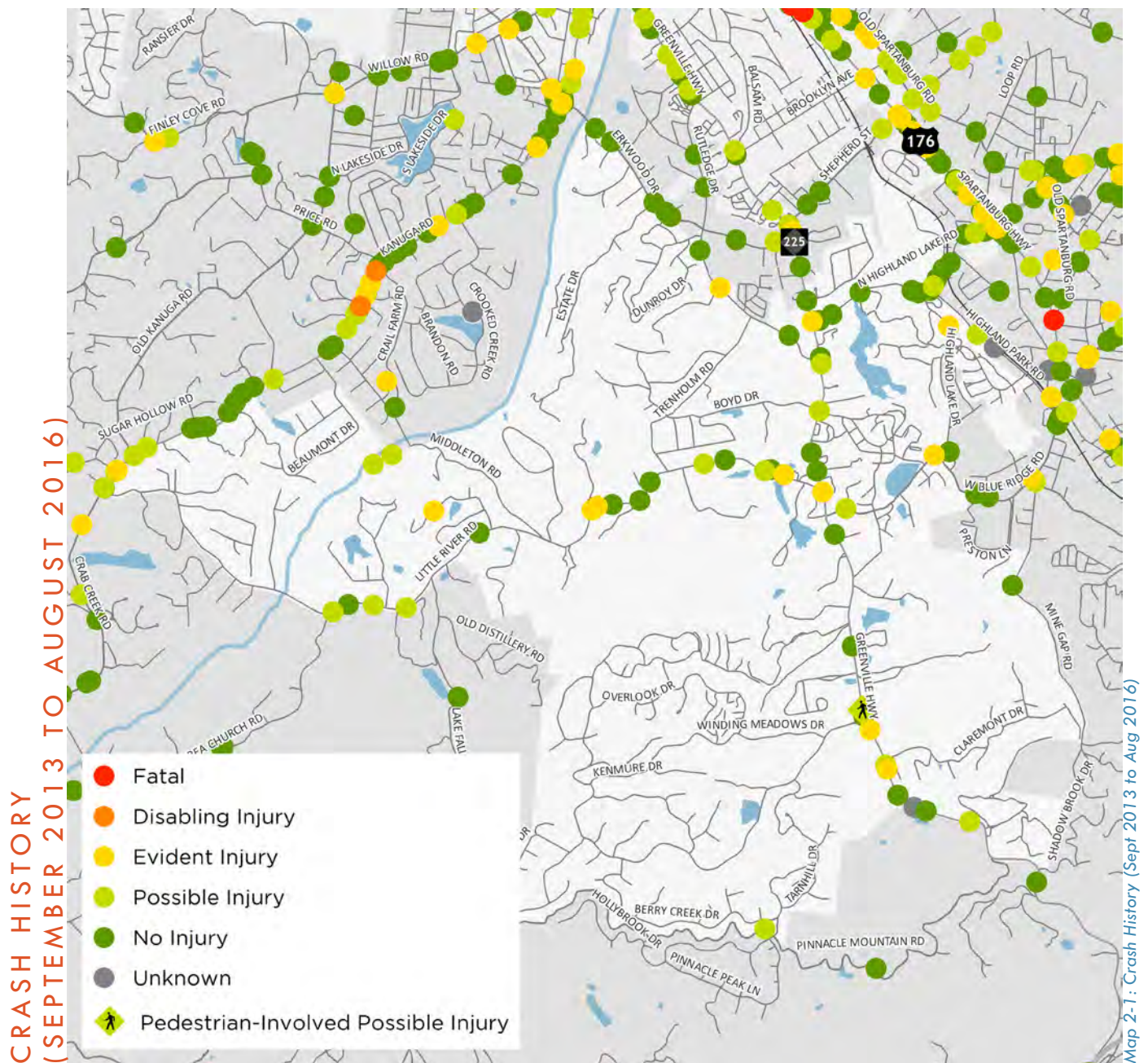


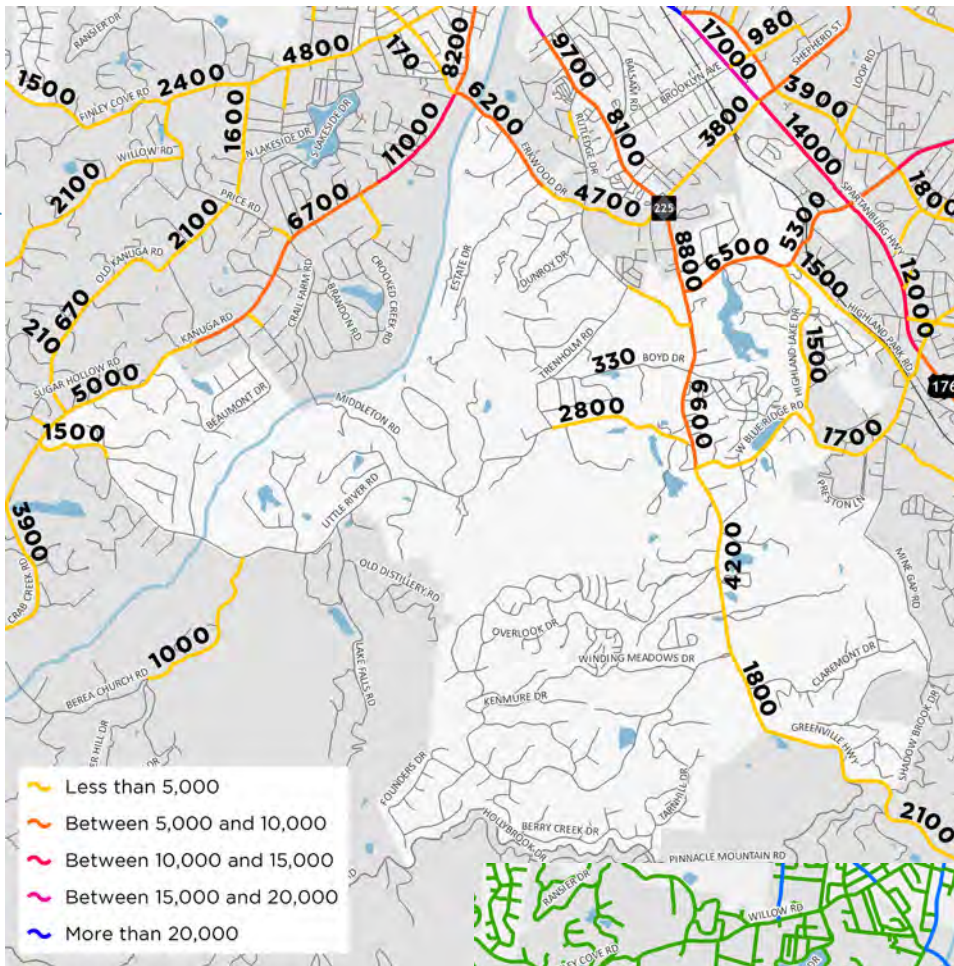
Figure 2-2: Commute Characteristics

STREET NETWORK & CRASH HISTORY

All streets within the Village of Flat Rock are owned and maintained by NCDOT, except for Village Center Drive and some private subdivision routes. NC 225 provides the primary north-south movement of vehicles through the Village. Between Pinnacle Mountain Road and Highland Lake Road, NC 225 is designated as the Historic Flat Rock Scenic Byway and takes travelers past the Flat Rock Playhouse, the Historic Woodfield Inn, and the Carl Sandburg Home National Historic Site. N Highland Lake Road and W Blue Ridge Road provide vital east-west connections to Spartanburg Highway (US 176) and the Village center. The maps over the next two pages display traffic volumes, posted speed limits, and crash history in the Village. Between September 2013 and August 2016 there were a total of 110 crashes in the Village limits. Of the 110 crashes 13 were evident injury crashes and 24 were possible injury crashes. During the three-year time frame there was also one pedestrian accident that occurred on NC 225 north of Kenmure Drive.



Map 2-2: Traffic Volumes

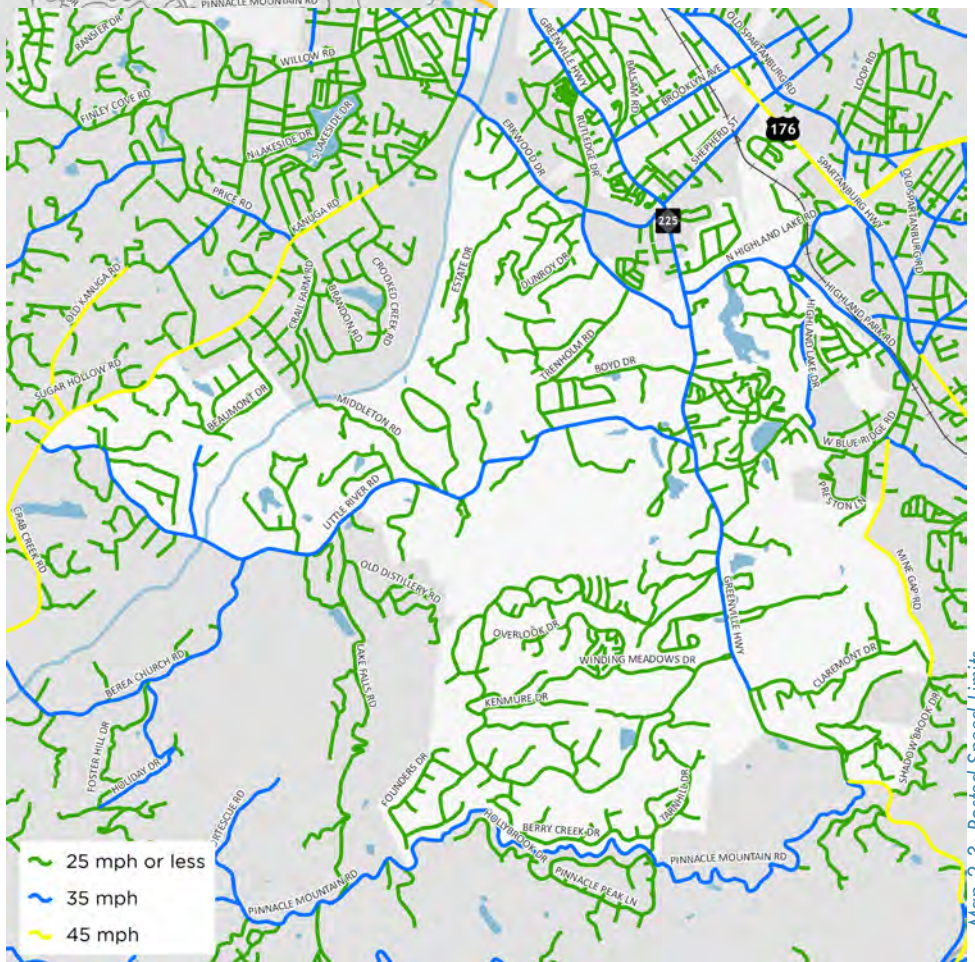


TRAFFIC VOLUMES (VEHICLES PER DAY)

The highest traffic volumes in Flat Rock occur along Greenville Highway north of Blue Ridge Road and N Highland Lake Road. These routes are also the primary access points to several of the village attractions and in turn attractive locations for pedestrian and bicycle facilities. Traveling along major corridors such as these can subject pedestrians and bicyclists to high levels of stress since the routes have little to no dedicated pedestrian and bicycle infrastructure, higher traffic volumes, and higher travel speeds.

POSTED SPEED LIMITS

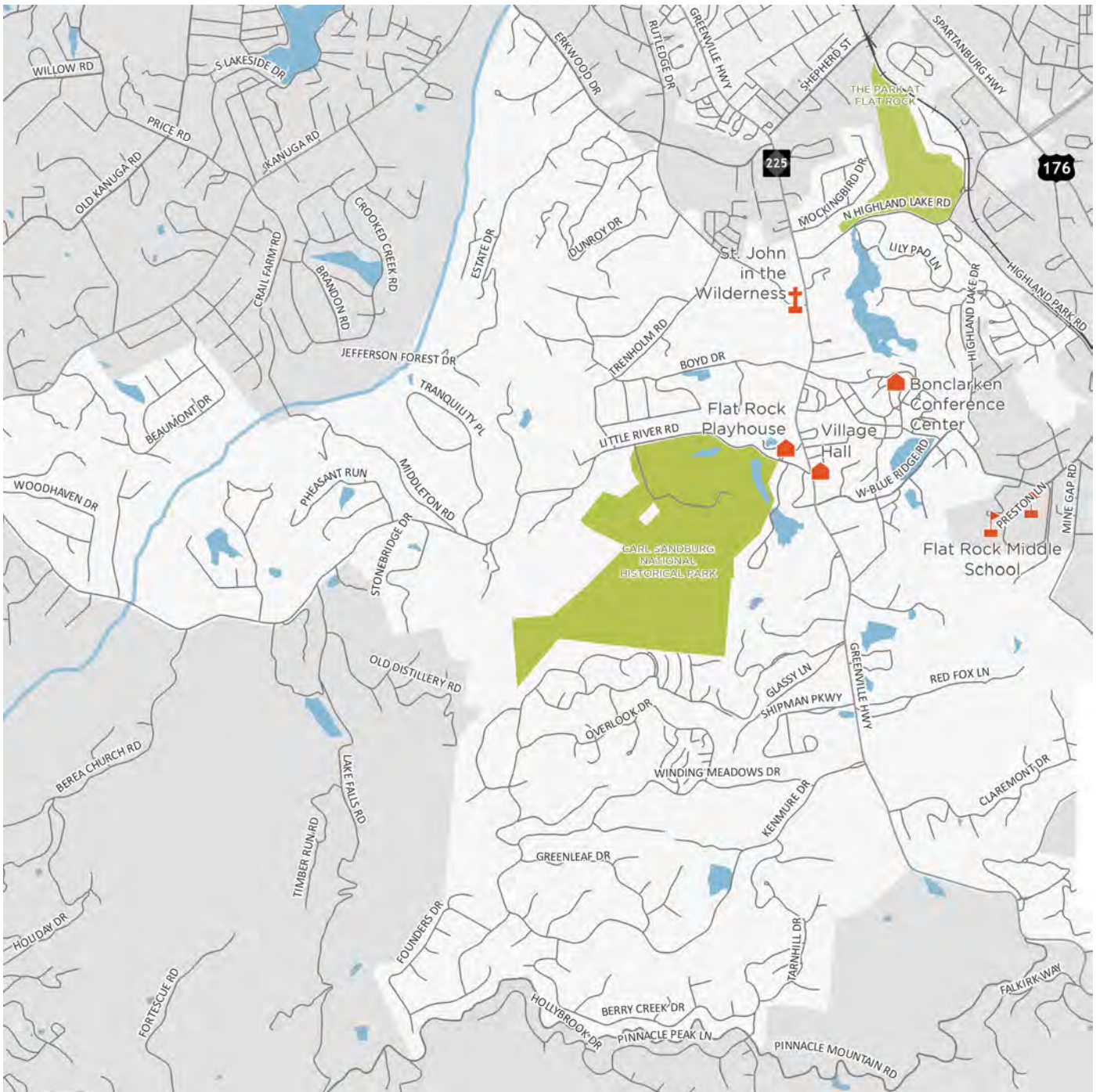
While posted speed limits are exactly indicative of actual travel speeds, they do provide general information about the prevailing travel speeds. In 2014 the University of North Carolina Highway Safety Research Center published data about the relationship between pedestrian fatalities and speed limits. The report shared that 1% of pedestrians struck on roads with speed limits of 25 mph or lower were killed and 4% on 30-35 mph roads. The likelihood of a pedestrian being killed rose to 12%, 21%, and 36% on roads with speed limits of 40-45 mph, 50-55 mph, and 60-75 mph, respectively⁹.



Map 2-3: Posted Speed Limits

DESTINATIONS AND ATTRACTIONS

Two of the primary goals of the Village of Flat Rock Bicycle and Pedestrian Plan are about connecting people to places. The project team with assistance from the Steering Committee worked early in the planning process to identify and provide connection to key destinations around the Village. The Village has many destinations that are attractions for both local residents and tourists including the Carl Sandburg Home National Historic Site, the Flat Rock Playhouse, The Park at Flat Rock, and several Henderson County schools. Additionally, the Village Center contains many local stops for shopping and dining. The map below shows these locations and more.

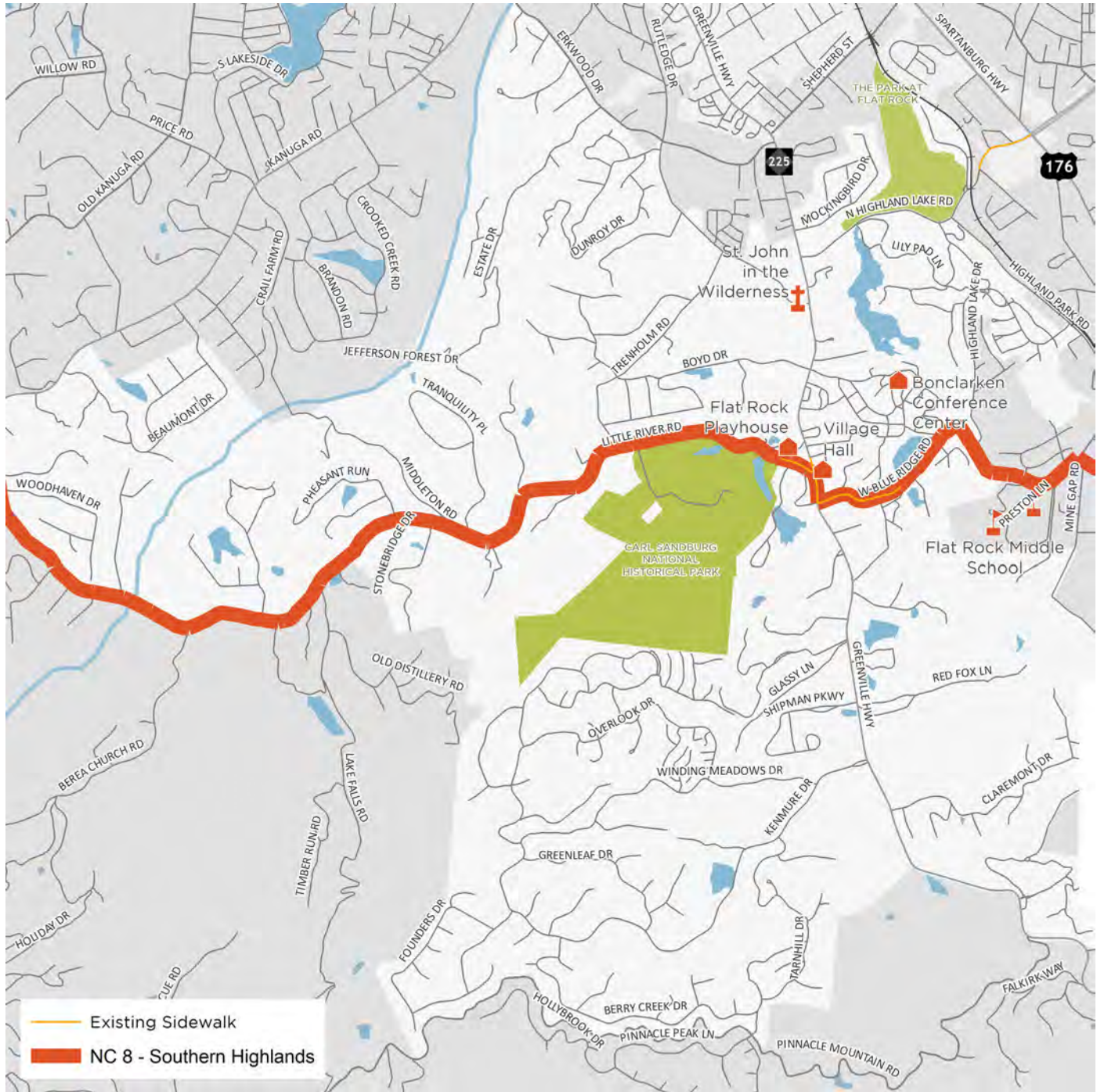


Map 2-4: Destinations and Attractions



EXISTING BICYCLE AND PEDESTRIAN ACCOMMODATIONS

Currently bicycle and pedestrian accommodations in the Village are limited. There is approximately 1 mile of brick multi-use path that runs along Greenville Highway, W. Blue Ridge Road, and Little River Road near the Village Center. North Carolina Bike Route 8, approximately an 120-mile signed state bike route stretching from Brevard to Lincolnton runs east-west along Little River Road and W. Blue Ridge Road. Through the Village of Flat Rock, this signed bike route is not supported by any bicycle specific infrastructure.



Map 2-5: Existing Pedestrian and Bicycle Facilities

PLANNED ROADWAY PROJECTS

The NCDOT State Transportation Improvement Program (STIP) is a 10-year plan that identifies the construction funding for and scheduling of transportation projects throughout the state. The NCDOT draft 2018-2027 STIP provides a listing of funded transportation projects statewide within a ten-year horizon. There are currently two planned roadway projects in the Draft STIP that directly impact bikeability and walkability in the Village. The sections below provide brief project descriptions of these improvements.

N. Highland Lake Road (U-5887)

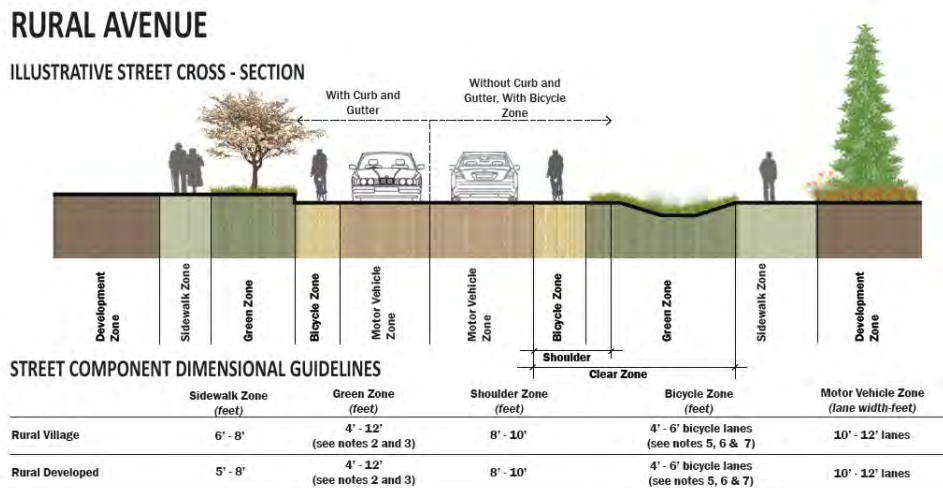
Greenville Highway (NC 225) to Spartanburg Highway (US 176)

This project proposes the upgrading of N. Highland Lake Road to include standard 12-ft lanes, 4-ft paved shoulders, and 6-ft grass shoulders. These improvements will improve the safety of pedestrians and cyclists along an attractive route. Right-of-way acquisition is set for 2019 and construction is scheduled to follow in 2021.

Kanuga Road (R-5748)

Church Street (US 25 Business) to Little River Road

This project proposes the addition of turn lanes and widening where necessary to improve safety and travel efficiency. While not currently listed in the NCDOT STIP improvements, the French Broad River Metropolitan Planning Organization (FBRMPO) has taken a position for the improvement to follow NCDOT Complete Streets Policy to better accommodate bicycle and pedestrian traffic. The first formal public input session will be held on July 18th, 2017. Right-of-way acquisition is set for 2019 and construction is scheduled to follow in 2021 and 2022. The cross-section shown below is the FBRMPO proposed cross-section.



Project sheets provided by the FBRMPO can be found in the Appendix.

UPCOMING PLANNING EFFORTS

The French Broad River Metropolitan Planning Organization (FBRMPO) is including three new greenway feasibility studies in Henderson County. Two of the three studies do not pass through the Village; however, the projects do have a direct impact on regional greenway connectivity and tie-ins to recommendations from this plan. The feasibility study pertaining to roads within the Village is for a multi-use path along NC 225 and Little River Road to connect Highland Lake Road and the Park at Flat Rock to the Carl Sandburg Home. The extents of this feasibility study align with recommendations of this planning effort.

BUILDING ON PREVIOUS SUCCESS

An early stage of the planning process involved understanding the work that had come before. The Village of Flat Rock has made so much progress in recent years based on the hard work of many in the community locally and regionally. It was important that this plan build on that base. Some of planning work that proceeded this effort is described on the following pages.

Table 2-1: Review of Previous Plans

LOCAL PLANNING EFFORTS

Flat Rock Comprehensive Land Use Plan

July 2013

Description	<p>Flat Rock’s Comprehensive Land Use Plan documents how the land in the Village is currently being used and provides direction for future development. The Plan was developed by the Village Land Use Plan Committee with input from Village staff and residents. The Plan’s transportation section acknowledges that there is growing demand for sidewalks, bike lanes, bike routes, and trails in the Village.</p>
Key Findings & Recommendations	<p>“Work closely with allied partners to ensure that existing and future facilities will meet the needs of Flat Rock’s citizens,” “work in close association with the North Carolina Department of Transportation [to] continually improve area roadways and transportation systems for vehicles, bicyclists, and pedestrians consistent with Village policy and planning goals,” and “work with NCDOT to select roadway cross sections that incorporate bicycle lanes, multi-use paths, sidewalks, and traffic calming features for given roadways.”</p> <p>“Create and expand alternative transportation systems and existing bike routes,” “Develop sidewalks and multi-use trails using best management practices that are cost effective and harmonious with the natural environment for the enjoyment of residents and tourists,” and “Support the Greenways Committee and charge them to develop and maintain a greenways, trails and sidewalks master plan that: identifies current utilities, roads and drainage easements on which portions of the greenway could be located; requires portions of planned greenways located within proposed subdivisions to be developed and reserved by the developer; connects to greenways in adjacent jurisdictions whenever possible; creates a system for identifying and marking vegetation along greenways to educate users on the natural flora and fauna present in the area; identifies changes that are needed to Village policies to enhance sidewalk, trail and bicycle lane features of all future development; and encourages utilities to include trail easements in their negotiations for utility easements.”</p>

Rules for the Use and Occupancy of, and the Conduct of Persons in, The Park at Flat Rock

December 2014

Description	<p>This document describes the rules regulating the use of and conduct in The Park at Flat Rock.</p>
Key Findings & Recommendations	<p>“Cyclists shall observe all North Carolina statutes controlling or regulating the operation of bicycles, including, but not limited to the North Carolina Child Bicycle Safety Act. All cyclists are encouraged to wear helmets and appropriate safety gear in the Village of Flat Rock. Bicycles shall be allowed only on designated areas and trails, and on public roadways.”</p>

Village of Flat Rock Land Development Ordinance of the Village of Flat Rock

May 2016

Description	The land development ordinance details requirements for future development and redevelopment within Flat Rock.
Key Findings & Recommendations	<p>“Only landscaping and approved fences, walls and ornamental enhancements shall be permitted within a required buffer, except that sidewalks and other pedestrian walkways, bicycle paths, above ground utilities, drainage ways, and approved signs shall be permitted where they do not comprise more than twenty percent of the total area of the required buffer.”</p> <p>“Gated subdivisions shall not be permitted in any location where the Village Council determines that such location interferes with roadway, pedestrian, or shared-use path networks outlined in an official plan adopted by the Village or NCDOT.”</p> <p>“Cluster subdivisions and planned unit developments shall provide pedestrian sidewalks along one side of all public or private roads within the development. The sidewalks shall be a minimum of five feet in width and paved on a compacted sub-base with four inches of concrete or paving brick or paving stones set on gravel and sand. The Planning Board may recommend and the Village Council may permit pedestrian trails to be used to supplement or substitute for required sidewalks. The ownership and maintenance of all sidewalk and pedestrian trails shall comply with the provisions in Section 915.”</p>

Implementation Plan for the Flat Rock Comprehensive Land Use Plan

October 2016

Description	The Implementation Plan is revisited by the Flat Rock Planning Board at least twice a year and track the Village’s progress in achieving the goals of the Comprehensive Land Use Plan.
Key Findings & Recommendations	The Flat Rock Planning Board tracks the bicycling- and walking-related goals of the Comprehensive Land Use Plan by documenting the number of meetings with NCDOT, the number of improved roadways, the number of sidewalks and multi-use trails developed, and the number of improvements developed by the Greenways Committee.

REGIONAL PLANNING EFFORTS

Blue Ridge Bike Plan

December 2013

Description	Developed by the Land of Sky Regional Council, the Blue Ridge Bicycle Plan (BRBP) is a regional bicycle plan study for seven counties in Western North Carolina, including Henderson County. The plan provides the vision and goals for regional bicycle infrastructure, analysis of current conditions, a map of prioritized regional corridors for bicycle improvements in the future, and a list of policy recommendations.
Key Findings & Recommendations	<p>Regional Priority Corridor 1a: Bike lanes and paved shoulders on NC 225/US 25 from Fletcher to Flat Rock</p> <p>Regional Priority Corridor 3: Paved shoulders on Kanuga Road in Flat Rock to Old US 64 in Brevard</p>

French Broad River Metropolitan Planning Organization Metropolitan Transportation Plan 2040

September 2015

Description	The French Broad River Metropolitan Planning Organization's Metropolitan Transportation Plan 2040 is a federally-mandated document that forecasts regional transportation conditions and recommends improvements for all modes of travel. The MTP also prioritizes projects and identifies potential sources of funding.
Key Findings & Recommendations	HEND43-H/U-5887: Upgrade Highland Lake Road (SR 1783) from NC 225 (Greenville Hwy) to US 176 (Spartanburg Hwy). Construct 24' paved roadway with 4' paved shoulders and 6' grass shoulders.

STATEWIDE PLANNING EFFORTS

NCDOT Complete Streets Policy

July 2009

Description	NCDOT's Complete Streets Policy, approved by the North Carolina Board of Transportation, requires that all NCDOT staff involved in planning and designing transportation infrastructure consider and incorporate multimodal alternatives that accommodate walking, biking, and transit opportunities.
Key Findings & Recommendations	All transportation facility improvements that are funded by NCDOT or are on state-maintained roadways must adhere to the NCDOT Complete Streets Policy. The policy charges NCDOT to coordinate and collaborate with communities in implementing Complete Streets.

North Carolina Complete Streets Planning and Design Guidelines

July 2012

Description	The guidelines describe how Complete Streets are to be planned and designed for projects funded by NCDOT and/or on state-maintained roadways.
Key Findings & Recommendations	Facility planning and design for bicycle, pedestrian, and transit infrastructure should respond to the land use context and operational characteristics of the corridor. The document includes illustrative street cross-sections of different types of Complete Streets designs.

WalkBikeNC – North Carolina Statewide Pedestrian and Bicycle Plan

October 2013

Description	WalkBikeNC is North Carolina's statewide pedestrian and bicycle plan. It offers high-level recommendations for improving infrastructure, programs, and policies across the state, design guidance, and steps to implementation.
Key Findings & Recommendations	The plan's five pillars are Mobility, Safety, Health, Economics, and Environment. Pedestrian recommendations include the continued analysis of crash data and leveraging funding sources such as the Small Town Economic Prosperity Program, the Community Transformation Grant program, and the North Carolina Parks and Recreation Trust Fund. Bicycle recommendations include maintaining state bicycle routes and exploring rail-trail projects.



OUTREACH



OUTREACH

Public outreach – whether through direct engagement or by input of community proxies – is an important part of a successful transportation plan. The objective of engagement for the Village of Flat Rock Bicycle and Pedestrian Plan was to offer a grassroots, community-focused process that offered a variety of methods for input. The following pages provide a brief insight to the public outreach element of the Plan.

OUTREACH AT A GLANCE



2
PUBLIC WORKSHOPS

58
PARTICIPANTS



2
ONLINE SURVEYS

80
RESPONSES



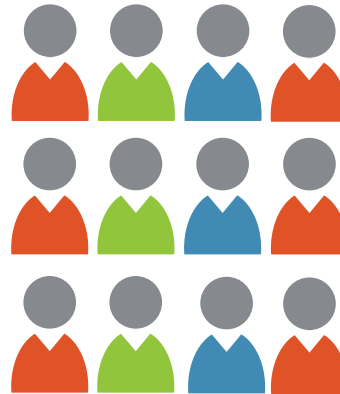
80
WRITTEN COMMENTS

70
MAP MARKERS

56 

MAILING LIST
MEMBERS FOR EVENT
REMINDERS

12
STEERING COMMITTEE
MEMBERS



STEERING COMMITTEE

The Steering Committee for the development of the Plan involved a diverse group of individuals, including representatives from the Village Council, NCDOT, Carl Sandburg, Blue Ridge Bicycle Club, and Village business owners all sharing a passion for bicycling and walking. The Steering Committee convened a total of four times to weigh in on major milestones, refine concepts, and confirm direction toward final recommendations.



MEETING OVERVIEWS

October 16, 2016. Steering Committee members and the Project Team kicked off the first meeting with an overview of the planning process and project schedule. After developing a base understanding of what the next several months of plan development would entail, the Steering Committee worked with the Project Team to identify a Vision Statement and supporting Goal Statements.

January 24, 2017. At the second Steering Committee meeting, members participated in a work session to help identify existing issues and trouble spots, as well as potential solutions. Members divided into two about potential projects. Once each group had prepared a map with their recommended pedestrian and bicycle network, a member from each team presented their network and answered the following questions:

- What is the purpose of the project?
- Which goals does it address?
- What opportunities does it provide?
- What constraints may have to be overcome?
- Why is it a priority?

April 5, 2017. The Steering Committee met in April to review the consolidated facility recommendations from their February work session and to provide input to the project team about prioritization. The Steering Committee also reviewed and discussed the draft program and policy recommendations.

July 18, 2017. The Steering Committee convened a final time in July to review the draft plan and provide comments to the Project Team.

PUBLIC WORKSHOPS

Public Workshop #1 - January 23, 2017

The first workshop allowed resident planners to document existing concerns and helped to capture the Village's desired vision for the future. The workshop contained two primary components: an information wall and an issues identification mapping exercise. There was also a station set up with computers for individuals wishing to complete the online survey. Over 40 people participated in the first public workshop, as well as several members of the Steering Committee and Village Staff.

Public Workshop #2 - April 5, 2017

The second public workshop allowed interested participants to learn more about the Plan's recommendations and provide feedback on what projects were most important to them. Over 15 people participated in the second public workshop.

ONLINE SURVEYS

Visioning and Issues Identification

To broaden the range of perspectives, an interactive web-based questionnaire was launched at the onset of the planning process and approximately 67 individuals participated between February and April. The customized survey yielded a robust dataset of Village preferences, opinions, and issues that ultimately contributed to the development of the recommendations. Participants were asked to use an interactive web-based map to share common destinations, existing issues, and needed improvements. Nearly 70 markers were placed on the map by the 67 participants. Each data point shared by participants was considered in the creation of recommendations.

Project Prioritization

After months of working with the Steering Committee, stakeholders, and the public to identify recommendations a second survey was created to allow participants the opportunity to weigh in on prioritization. A total of 13 participants ranked their most important facility recommendations, as well as their most important program and policy recommendations. These responses were rolled into the final project prioritization.

**“TEAMWORK IS THE ABILITY TO WORK TOGETHER TOWARD A COMMON VISION. THE ABILITY TO DIRECT INDIVIDUAL ACCOMPLISHMENTS TOWARD ORGANIZATIONAL OBJECTIVES. IT IS THE FUEL THAT ALLOWS COMMON PEOPLE TO ATTAIN UNCOMMON RESULTS.”
-ANDREW CARNEGIE**



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RECOMMENDATIONS

RECOMMENDATIONS

In order to achieve a well-rounded bicycle and pedestrian system, it is important to evaluate the performance of infrastructure, guidance, and supporting facilities and programs. The needs of pedestrians and bicyclists are best served when all of these elements complement each other. The recommendations for the Village of Flat Rock seek to achieve this balance.

This chapter includes a discussion of physical improvement projects, including on and off-road facilities as well as intersection-level improvements. Policies and guidelines currently in place have been reevaluated in an effort to strengthen demand. Education, encouragement, and enforcement measures are also discussed.

The Village of Flat Rock Bicycle and Pedestrian Plan was developed based on feedback from the Steering Committee, Village Staff, NCDOT, and Flat Rock residents. Draft recommendations were formed and presented at a public workshop on where participants were asked to provide their feedback and comments related to the draft project recommendations, guidelines, and policy measures. The recommendations discussed in this chapter represent the culmination of these outreach efforts.

BICYCLE AND PEDESTRIAN FACILITY RECOMMENDATIONS

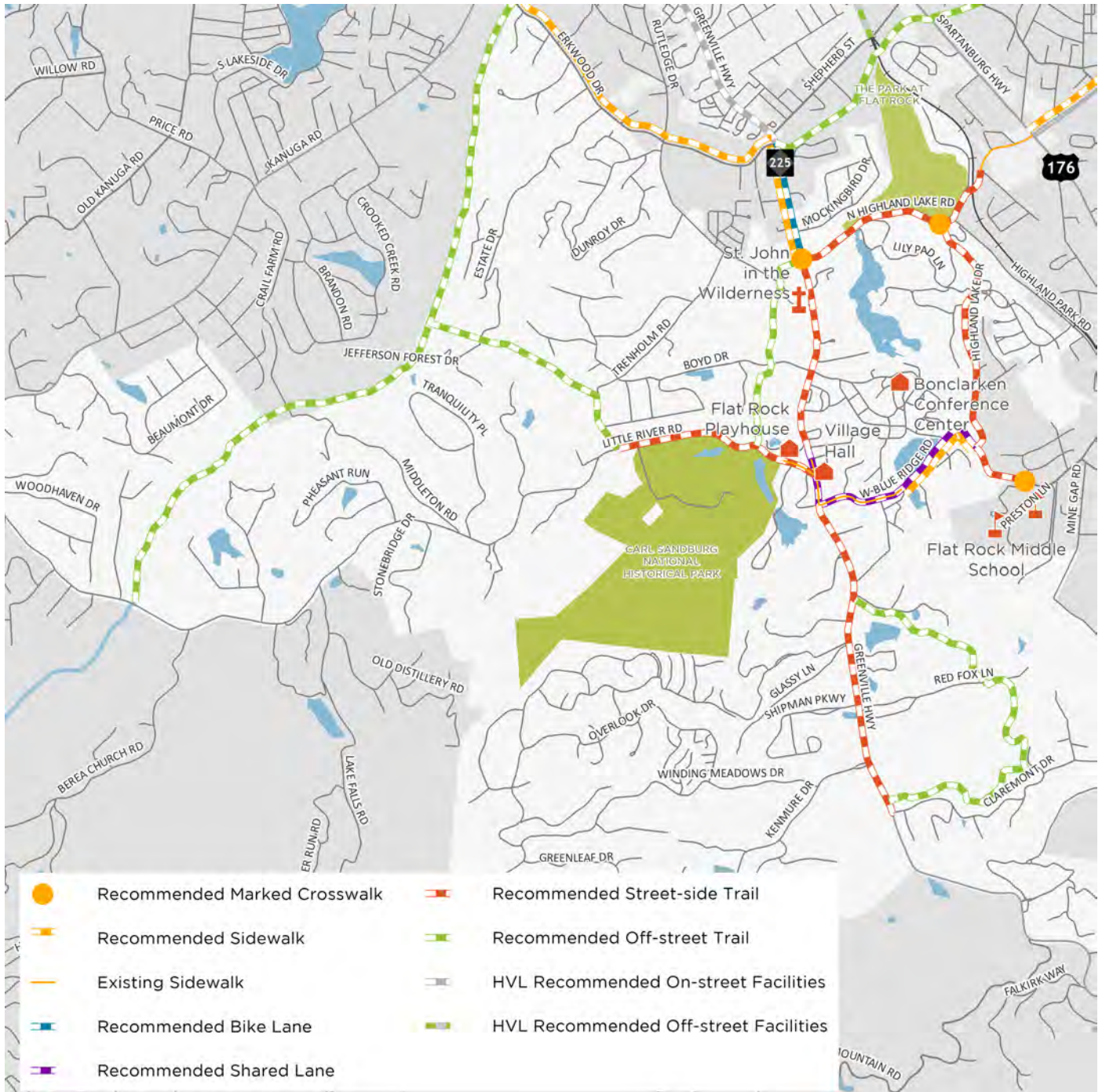
Bicycle and pedestrian facility recommendations were developed based on field review, collaboration with existing planning efforts and ongoing multimodal improvements, public input, and validations by Village staff and NCDOT. The vision for the plan was referenced throughout this process for establishing these recommendations.

The Steering Committee and the public helped the project team identify destinations that people are already biking and walking to along with those destinations that people would like to bike and walk to. This exercise yielded a mostly blank "connect the dots" map – the dots represent the destinations and the lines represent the existing and recommended facilities. The Steering Committee and the public were responsible for the preliminary connecting of the dots, making decisions about which locations have the greatest potential for improvement considering the context of safety, comfort, connectivity, and equity. This step included superficial considerations of the operational and geometric characteristics of Flat Rock's streets and opportunities to construct off-street facilities such as shared use paths.

The project team then reviewed the preliminary bicycle and pedestrian facility map to fill in network gaps, augment the network with additional recommendations, and make determinations about what facility type would characterize each recommendation.

Facility recommendations have been developed for the following areas: sidewalks, shared use paths, intersection improvements, and on-street bicycle facilities. It is important for these recommendations to function as a cohesive system. The map on the next page documents all of the bicycle and pedestrian facility recommendations. This map clearly indicates how the different recommendation types will interface with each other. This map also includes an inventory of the major attractors and destination points within the Village, as well as the facilities recommended for improvement in the Hendersonville Bicycle Plan.

FULL SYSTEM RECOMMENDATIONS



Map 4-1: Full System Recommendations

BICYCLE AND PEDESTRIAN FACILITY TOOLKIT



Sidewalk

Dedicated space within right-of-way for pedestrians, and should include a landscaped buffer from roadway

- Typical width: 5' preferred
- Target User: Pedestrians
- Estimated Cost: \$150,000 per mile (concrete)
\$12 per sq. ft. (pavers)
\$60 per sq. yd. (stamped & colored concrete)



Street-side Trail

Separated from traffic and adjacent to road with more setback and width than sidewalks for a high-quality pedestrian and bicycle experience along high-volume or high-speed roadways

- Typical width: 10' design standard; 8' preferred by Village of Flat Rock to limit impacts to natural environment and maintain historic character
- Target user: Cyclists, Pedestrians
- Estimated Cost: \$220,000 per mile



Trail

Separated from traffic and located in open space or along rivers or streams

- Typical width: 10' preferred
- Target user: Cyclists, Pedestrians
- Estimated Cost: \$220,000 per mile*

*Construction costs can increase in areas with significant environmental constraints



Striped Bicycle Lanes

Exclusive-use area adjacent to outermost travel lane

- Typical width: 4' to 5'
- Target user: Advanced Cyclists
- Estimated Cost (striping only): \$2,000 per mile
- Estimated Cost (new construction): \$800,000 per mile

Shared Lane Markings (Sharrows)

Allow bikes to share roadways with motorists when street sections are not wide enough for bike lanes

- Target user: Advanced Cyclists
- Estimated Cost: \$300 each

PRIORITY NETWORK

Identifying facility needs and improvement types is only one part of the recommendations development process. Given the existing and anticipated funding sources available for bicycle and pedestrian projects in the region, there is a possibility that all of the projects recommended here may not be built within the next 30 years. The first cut of projects for the priority network stemmed from discussions and collaboration between the project team and Steering Committee. This collaboration yielded 10 priority projects. The map on the next page shows the priority network.

The 10 priority projects were further analyzed using both quantitative and qualitative measures. A range of criteria were considered in the further analysis of the priority network, and the Steering Committee was consulted in the development of this approach. These criteria included:

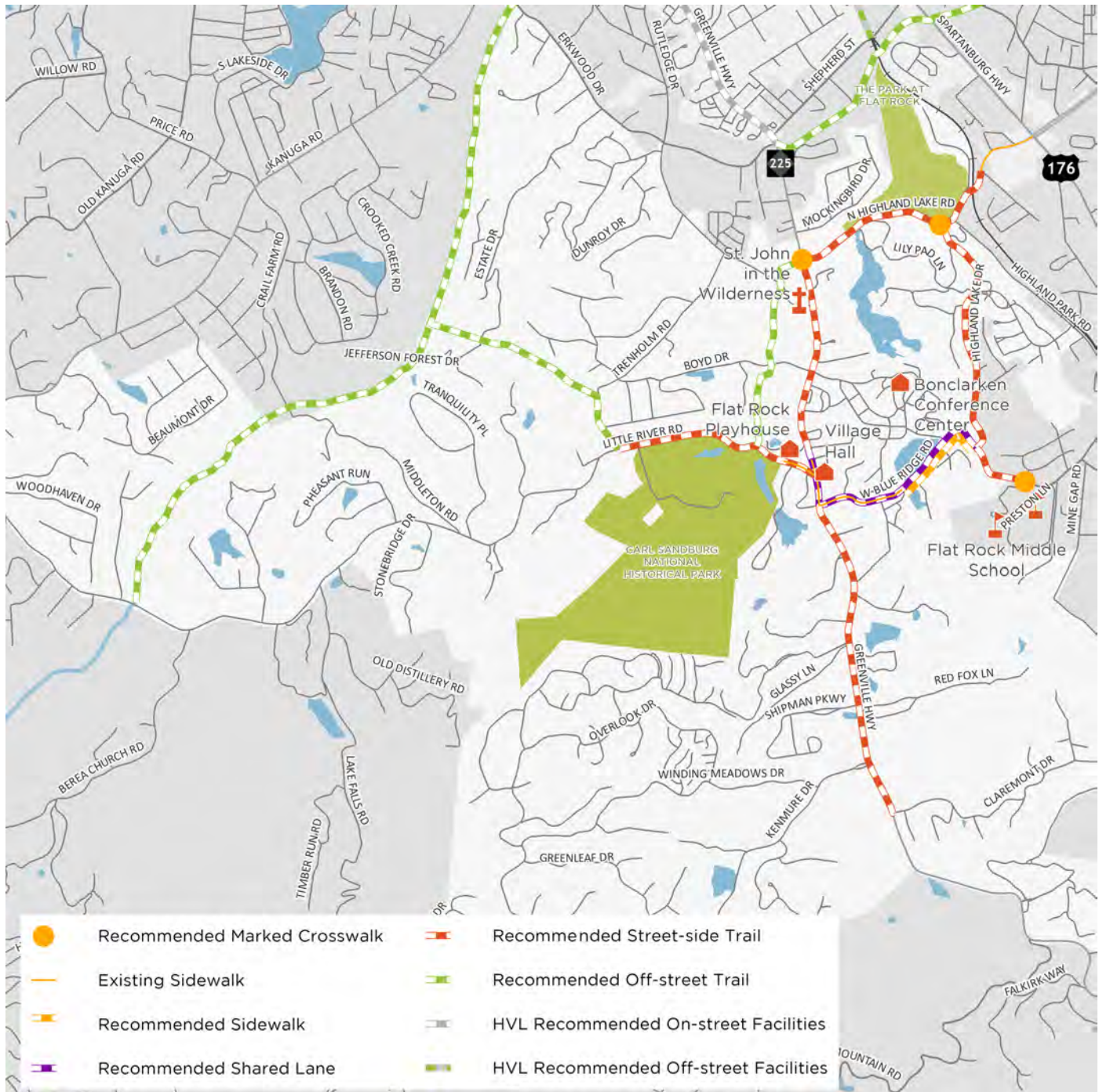
- Connections to existing and proposed facilities
- Connections and links to key village and regional destinations
- Shared or separated facilities
- Likelihood of state funding
- Likelihood of private funding
- Feasibility of construction
- Outreach Rank

Table 4-1: Project Prioritization

	Connections to Existing & Proposed Facilities	Key Destinations	Shared or Separated Facility	State Funding	Private Funding	Feasibility of Construction	Outreach Rank
N Highland Lake Road Street-side Trail	●	●	●	●	●	●	2
Greenville Highway Street-side Trail (North)	●	●	●	●	○	●	1
W Blue Ridge Road Sidewalk	●	○	●	●	○	●	4
Highland Lake Drive Street-side Trail	○	●	●	●	○	●	6
Park to BRCC Trail	●	●	●	●	●	●	9
Mud Creek Trail	○	○	●	○	●	○	7
Little River Road Street-side Trail	●	●	●	●	●	○	3
W Blue Ridge Road Sharrows	○	○	●	●	○	●	7
Greenville Highway Street-side Trail (South)	●	○	●	●	○	●	5
Greenville Highway Sharrows	○	●	●	●	○	●	10

- Mildly Applicable
- Moderately Applicable
- Greatly Applicable

PRIORITY SYSTEM RECOMMENDATIONS



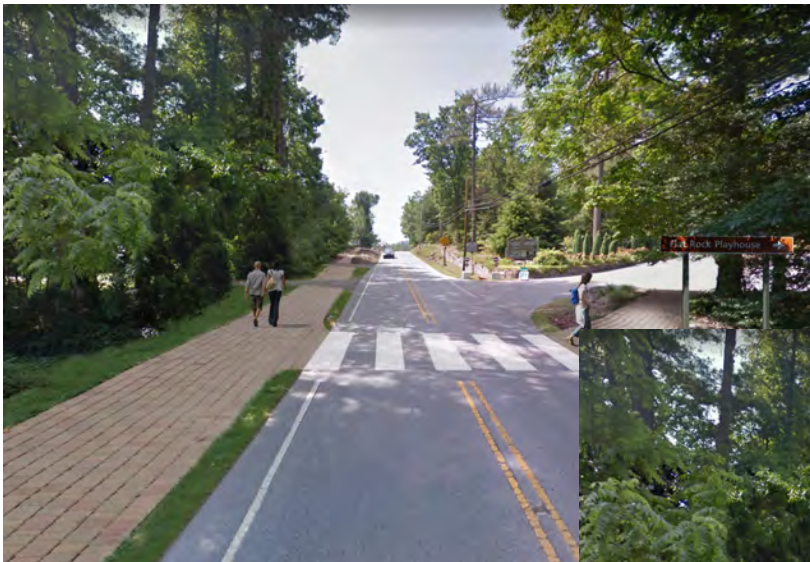
Map 4-2: Priority System Recommendations

GREENVILLE HIGHWAY & N. HIGHLAND LAKE ROAD STREET-SIDE TRAIL

HIGHLAND LAKE ROAD TO CYPRESS GROVE LANE (GREENVILLE HWY)

GREENVILLE HIGHWAY TO JAMES STREET (N. HIGHLAND LAKE RD)

Project Description	This project recommends a 8-ft street-side trail along Greenville Highway and N. Highland Lake Road for use by both pedestrians and bicyclists. The street-side trail runs along the east side of Greenville Highway between Highland Lake Road and Cypress Grove Lane where it ties into existing sidewalk, as well as along the northern side of N Highland Lake Road adjacent to the park. Mid-block crossing enhancements at popular attractions such as the Flat Rock Playhouse should be considered. This project is part of the extents for an upcoming feasibility study which will provide more refined routing and cost opinions.
Key Connections	<ul style="list-style-type: none"> • The Park at Flat Rock (via N. Highland Lake Road) • St. John in the Wilderness • Bonclarken Conference Center • Flat Rock Playhouse • Village Center
Challenges and Opportunities	The construction process will likely involve substantial clearing due to the amount of vegetation in the right-of-way. However, the addition of pedestrian and bicycle facilities along this route supports Regional Priority Corridor 1a proposed in the Blue Ridge Bike Plan to connect along NC 225/US 25 from Fletcher to Flat Rock and could be constructed incidentally with NCDOT STIP project U-5887.
Project Cost	\$1.5 to \$2.1 million



NOTES:

- NCDOT standard trail width is typically 10-ft.
- A natural trail surface type may preclude the Village from receiving state or federal funds.

HIGHLAND LAKE DRIVE/BLUE RIDGE ROAD STREET-SIDE TRAIL N HIGHLAND LAKE ROAD TO PRESTON LANE

Project Description	This project recommends a 1.1 mile in length, 8-ft street-side trail along Highland Lake Drive for use by both pedestrians and bicyclists. The street-side trail runs along the east side of Highland Lake Drive between N. Highland Lake Road and Preston Lane.
Key Connections	<ul style="list-style-type: none">• The Park at Flat Rock• Flat Rock Middle School• Hillandale Elementary School
Challenges and Opportunities	This project will likely require acquisition of right-of-way, as the existing right-of-way is very narrow. Once constructed, however, this will greatly increase multimodal options between the park and Village schools.
Project Cost	\$1.7 to \$2.6 million



NOTES:

- NCDOT standard trail width is typically 10-ft.
- A natural trail surface type may preclude the Village from receiving state or federal funds.

LITTLE RIVER ROAD STREET-SIDE TRAIL GREENVILLE HIGHWAY TO TRENHOLM ROAD

Project Description	This project recommends a nearly 0.8 mile long, 8-ft street-side trail along Little River Road for use by both pedestrians and bicyclists. The street-side trail runs along the north side of Little River Road between Greenville Highway and Trenholm Road. Mid-block crossing enhancements at popular attractions such as the Carl Sandburg Home should be considered. This project is part of the extents for an upcoming feasibility study which will provide more refined routing and cost opinions.
Key Connections	<ul style="list-style-type: none"> • Village Center • Carl Sandburg Home • Flat Rock Playhouse
Challenges and Opportunities	This project offers increased regional connectivity along an already established state bike route and ties the Village Center to Carl Sandburg National Park. The construction will require significant coordination with many property owners.
Project Cost	\$920,000 to \$3.6 million



NOTES:

- NCDOT standard trail width is typically 10-ft.
- A natural trail surface type may preclude the Village from receiving state or federal funds.

BLUE RIDGE ROAD SIDEWALK AND SHARROWS W BLUE RIDGE ROAD TO CLAREMONT DRIVE

Project Description	This project includes sidewalk and sharrows for 0.7 miles along Blue Ridge Road between Greenville Highway and Highland Lake Drive. The addition of sharrows along this route would increase awareness of bicyclists along an established state bike route, while sidewalks would complete the southern quadrant of multimodal facilities around the village center.
Key Connections	<ul style="list-style-type: none"> • Village Center • Flat Rock Middle School • Hillandale Elementary School • Bonclarken Conference Center
Challenges and Opportunities	The sharrow pavement markings are a feasible project that can be implemented in the near term, and greatly increase awareness of bicyclists along the route.
Project Cost	\$1.0 to \$1.5 million



NOTES:

- A natural trail surface type may preclude the Village from receiving state or federal funds.

PROGRAMS & POLICIES

Beyond the facility recommendations included in the previous pages, the Village of Flat Rock and other local groups can undertake programmatic efforts to improve conditions for biking and walking. These efforts can include creating programs or putting on events to promote and encourage biking and walking; educating motorists, pedestrians, and bicyclists about how to safely navigate the Village together; and creating policies that ensure biking and walking is treated as a valid mode of transportation. The project team in coordination with Village of Flat Rock staff created a series of program and policy recommendations. The project team and Village staff presented the following programs and policy recommendations to both the Steering Committee and the general public for feedback and review. Members of the public and the Steering Committee were most interested in programs that advanced walking to school and requiring new developments to construct facilities. The pages that follow detail each of these recommendations.

Table 4-2: Programs and Policies

ADOPT A LOCAL COMPLETE STREETS POLICY

<p><i>Read More</i></p>	<p>Complete Streets policies establish a process which requires planning and designing for all roadway users including pedestrians, bicyclists, and motorists. A local Complete Streets Policy would supplement NCDOT's Complete Streets Policy and would be specifically applicable to Village streets. The links below provide more information about NCDOT's Policy and the City of Asheville's policy.</p> <p>https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx http://www.ashevillenc.gov/departments/transport/bicycle.htm#completestreets</p>
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ADOPT LOCAL STREET DESIGN STANDARDS TO REFLECT NATIONAL BEST PRACTICES

<p>Local street design standards dictate how roadways can be built according to the local Complete Streets Policy. Road design guidelines often control the inclusion and design of bicycle and pedestrian infrastructure. The NCDOT Complete Streets Planning and Design Guidelines can be adopted through reference in the Village's ordinances.</p>
--

CREATE A BICYCLE PEDESTRIAN ADVISORY COMMISSION

<p>A Bicycle Pedestrian Advisory Commission consists of volunteers who provide guidance and leadership concerning bicycles and pedestrian issues to Village staff. The Bicycle Pedestrian Advisory Commission would meet regularly to discuss strategies to improve bicycling and walking conditions in Flat Rock. This group can begin as an extension of the Steering Committee that participated in this planning process.</p>

DEVELOP AND ADOPT A VILLAGE TRAFFIC CALMING POLICY

<p><i>Read More</i></p>	<p>Traffic calming policies enable jurisdictions to retrofit streets with physical and visual features that reduce travel speeds and make streets safer and more comfortable for bicyclists and pedestrians. The Village can look to the City of Asheville's traffic calming policy for guidance.</p> <p>http://www.ashevillenc.gov/departments/transport/traffic_eng.htm#trafficalming</p>
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REQUIRE NEW DEVELOPMENTS TO INCLUDE BICYCLE AND PEDESTRIAN FACILITIES

<p>The Village's zoning and subdivision ordinances currently include sidewalk requirements along one-side of the roads within developments, but contains no bicycle facility requirements. The Council should consider adding language for the provision of bicycle facilities, as well as ancillary facilities such as benches and bike racks. Adding these requirements will leverage the opportunity of new development to expand the Village's multimodal network.</p>
--

IDENTIFY AND PRIORITIZE LOCATIONS FOR BICYCLE RACK INSTALLATION

Properly installed and well-located bicycle racks encourage bicyclists to park their bicycles in secure and convenient locations. Adequate bicycle parking also reduces the likelihood of damage that may result from locking bicycles to trees, sign posts, and other objects.

INCORPORATE BICYCLE AND PEDESTRIAN SAFETY INTO DRIVER EDUCATION AND TRAINING

Including bicycle and pedestrian safety in the curriculum of driver education and traffic school courses will increase motorist awareness about laws pertaining to bicyclists and pedestrians and teach motorists how to drive safely around them.

BECOME A WATCH FOR ME NC PARTNER COMMUNITY

Watch for Me NC, a collaborative effort between NCDOT and local communities, endeavors to reduce the number of bicyclists and pedestrians injured in crashes with vehicles through public education and police enforcement. Partner communities receive additional support and training from NCDOT. The Village can participate by visiting the website below and downloading materials provided by NCDOT for distribution. Additionally, in February when the Call for Participants is announced, the Village should apply either independently or in partnership with Henderson County to become an official partner community.

Read More <http://www.watchformenc.org/about/>

ESTABLISH A LOCAL SAFE ROUTES TO SCHOOL PROGRAM

Safe Routes to School programs promote safe walking and bicycling to and from schools to improve the health and well-being of elementary and middle school students. North Carolina's statewide Safe Routes to School program created a project called Active Routes to School which provides resources and guidance through Regional Coordinators. Henderson County is part of Active Routes to School Region 2 with Regional Coordinator Mary Smith.

Read More <http://www.saferoutesinfo.org/>
Contact Information ActiveKidswnc@gmail.com
828-669-1997

PLAN AND EXECUTE AN OPEN STREETS EVENT

Open Streets events temporarily close streets to motor vehicle traffic, allowing streets to be used for a variety of pedestrian, bicyclist, and recreation activities. These events build community while celebrating the use of non-motorized transportation. The Village could use Greenville Highway between Blue Ridge Road and Cypress Grove Lane to best showcase the vivid Village center and promote local businesses.

Read More <http://openstreetsproject.org/>
<http://www.bikewalkalliance.org/resources/reports/open-streets-guide>

PARTICIPATE IN WALK & BIKE TO SCHOOL EVENTS

Walk & Bike to School Days are national events held each year. These events help children see the value in active transportation and gives city officials, principals, and the community the opportunity to show their support for health, safety, and community livability. The proposed Pedestrian and Bicycle Committee could partner with Active Routes to School and the Blue Ridge Bicycle Club to help promote and support the event through advertising and volunteers.

Read More <http://www.walkbiketoschool.org/>

BECOME A LEAGUE OF AMERICAN BICYCLISTS BICYCLE FRIENDLY COMMUNITY AND A WALK FRIENDLY COMMUNITY

The League of American Bicyclists awards varying levels of the Bicycle Friendly Community designation to applying communities. Bicycle Friendly Communities have demonstrated that they are making bicycling a safe and convenient means of transportation and recreation. Additionally, the Village can apply to become a Walk Friendly Community. The WFC program recognizes communities that are working to improve an array of conditions that improve safety for pedestrians.

Read More <http://www.bikeleague.org/community>
<http://walkfriendly.org/about/>

CREATE A LOCAL BICYCLE BENEFITS PROGRAM

Bicycle Benefits is a program designed to reward individuals and businesses alike for their commitment to creating a more livable and sustainable community. Bicyclists benefit by receiving discounts from participating businesses, and businesses benefit from increased customer traffic.

Read More <http://www.bicyclebenefits.org/#/home>

DISTRIBUTE BIKE LIGHTS, HELMETS, AND BELLS

Bike lights, helmets, and bells are important features of safe bicycling. Distribution of safety equipment will promote responsible bicycling and create safer conditions for both bicyclists and motorists sharing the roadways.

PARTNER WITH HENDERSON COUNTY SHERIFF'S DEPT. TO DEPLOY BICYCLE PATROLS

Bicycle patrols provide officers with more opportunities for positive interaction with the public, while also normalizing bicycling as a form of transportation. Bicycle officers can employ reverse ticketing campaigns where they provide information or safety equipment to bicyclists and pedestrians instead of ticketing them.

DEVELOP A VILLAGE-WIDE SYSTEM OF WAYFINDING SIGNS

The development of a Village-wide wayfinding system will encourage Flat Rock residents and visitors to walk and bicycle, while also enhancing the unique character and brand of Flat Rock. Successful wayfinding signs should be clear and consistent, while providing information about both destinations and attractions.

Read More <https://nacto.org/publication/urban-bikeway-design-guide/bikeway-signing-marking/bike-route-wayfinding-signage-and-markings-system/>
<https://walkyourcity.org/>

SUPPORT REGIONAL TRAIL CONNECTIVITY EFFORTS

Planning for trails and greenways is most effective when accomplished at a regional scale. Greenways and trails are most successful when they connect the most resources and tie communities' recreational, employment, and neighborhood areas together. Regional collaboration helps ensure that the trail network is comprehensive and doesn't end up with large gaps.

Read More <http://www.friendsofoklawaha.org>
<http://www.ecustatrail.org/>

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IMPLEMENTATION



IMPLEMENTATION

The Implementation chapter provides a framework of actionable steps for achieving the vision of the Village of Flat Rock Pedestrian and Bicycle Plan. Action items are categorized by short-term, mid-term, and long-term strategies and indicates who will be responsible for championing them. This chapter also offers guidance for securing funding, establishing design standards, and evaluating performance measures.

ORGANIZATIONAL FRAMEWORK

The organizational framework represents the roles and responsibilities of local, regional, and statewide organizations in implementing the recommendations of the Village of Flat Rock Pedestrian and Bicycle Plan. From setting policy to constructing facilities, from coordinating with other governmental agencies to partnering with pedestrian and bicycle advocacy groups, the Village of Flat Rock will need external support and resources to achieve a more pedestrian and bicycle-friendly community.

Figure 5-1: Organizational Framework



IMPLEMENTATION PLAN

The success of the Village of Flat Rock Pedestrian and Bicycle Plan will hinge on the effective collaboration of local, regional, and state officials to implement its projects and policies in a meaningful way. The recommendations in the plan build upon several historic and ongoing efforts by the Village to improve the multimodal transportation network through facility improvements and Village policies. The implementation plan below lays out a simple set of recommendations to help local staff continue to focus their efforts and seek strategic opportunities to expedite the implementation of this plan.

Table 5-1: Implementation Plan

SHORT TERM EFFORTS

Present the Pedestrian and Bicycle Plan for Village Council Adoption

Description	Following NCDOT-DBPT approval, the project team will present the Pedestrian and Bicycle Plan to the Village Council for their adoption. Adoption of the Pedestrian and Bicycle Plan will communicate to the Village residents and partner agencies that the Village of Flat Rock supports the recommendations of the Plan. Having an adopted Pedestrian and Bicycle Plan clarifies expectations for pedestrian and bicycle facilities on the streets in Flat Rock and aids in securing funding.
Lead Organization	Project Team
Partners	Steering Committee

Create a Pedestrian and Bicycle Advisory Commission

Description	Pedestrian and Bicycle Advisory Commissions consist of members of the community who volunteer their time to be formal citizen liaisons to Village staff. Meeting once a month with Village staff, Pedestrian and Bicycle Advisory Commissions create committees, task forces, and programs to address biking and walking issues and serve as a review board for local projects and initiatives.
Lead Organization	Village Council
Partners	Steering Committee

Coordinate to create a collaborative Regional Pedestrian and Bicycle Advisory Commission

Description	Work with bicycle and pedestrian advocacy groups from neighboring jurisdictions to support shared regional priorities
Lead Organization	PBAC
Partners	Blue Ridge Bicycle Club FBRMPO Henderson County Parks and Recreation Department

Be an active voice for the Apple Country greenway system and other regional connections

Description	A regional greenway and trail system will provide both recreational and economic enhancements for the Village and will see the most success when fully embraced and supported by local communities.
Lead Organization	PBAC
Partners	Village Council

SHORT TERM EFFORTS CONTINUED

Publicize, promote, and present the Pedestrian and Bicycle Plan

Description	The Pedestrian and Bicycle Plan should be made available online and publicized using the Village's website and social media outlets. Additionally, the Pedestrian and Bicycle Plan and its recommendations should be presented to partner agencies including the French Broad River MPO and NCDOT Division 14.
Lead Organization	PBAC
Partners	Blue Ridge Bicycle Club FBRMPO NCDOT

Schedule quarterly coordination meetings between the Planning Board, Park Commission, NCDOT and PBAC

Description	Ongoing coordination between Village departments will streamline the construction of facility recommendations and implementation of programs and policies. Quarterly meetings will provide the opportunity for Village staff to calibrate their respective efforts.
Lead Organization	PBAC
Partners	Village Boards, Commissions, and Staff

Create and adopt a local Complete Streets policy

Description	Complete Streets policies require that all street projects provide safe accommodations for all modes, including bicycling, walking, taking transit, and driving. To supplement NCDOT's Complete Streets policy which only covers state-maintained roadways, the Village of Flat Rock should consider creating and adopting a local Complete Streets policy.
Lead Organization	PBAC
Partners	Village Council

Update zoning and subdivision ordinances to require provisions for pedestrians and bicyclist amenities. (i.e. parking, benches, etc.)

Description	The current ordinances require that new developments include sidewalks but make no mention of bicycle facilities, bicycle parking, or pedestrian benches. Language should be added to the zoning and subdivision ordinances specifying the type, location, and amount of bicycle and pedestrian infrastructure/amenities for new developments.
Lead Organization	Village Council
Partners	Village Zoning Administrator

Become a Watch for Me NC partner community

Description	Watch for Me NC is a statewide bicycle and pedestrian safety campaign. Partner communities are provided with materials including bumper stickers, promotional posters, and informational brochures. The Village of Flat Rock can take advantage of existing resources to improve bicycle safety by applying to become a Watch for Me NC partner community.
Lead Organization	Regional PBAC
Partners	PBAC Henderson County Sheriff's Department Blue Ridge Bicycle Club

SHORT TERM EFFORTS CONTINUED

Include curriculum about bicycling and pedestrian law and safety in driver education courses

Description	There are several driver education providers serving western North Carolina that could enhance their curriculum by educating both new and experienced motorists on how to safely navigate the streets with bicyclists. This effort will require the creation of curriculum and reaching out to driver education providers.
Lead Organization	Regional PBAC
Partners	Bike Walk NC

Create a Pedestrian and Bicycle Advisory Commission

Description	Pedestrian and Bicycle Advisory Commissions consist of members of the community who volunteer their time to be formal citizen liaisons to Village staff. Meeting once a month with Village staff, Pedestrian and Bicycle Advisory Commissions create committees, task forces, and programs to address biking and walking issues and serve as a review board for local projects and initiatives.
Lead Organization	Village Council
Partners	Steering Committee

Form local Safe Routes to Schools programs

Description	Safe Routes to School seeks to make bicycling and walking to school safer for school children. The statewide program supports local SRTS programs by providing resources such as “An event planning guide for Walk to School Day and Bike to School Day” and partner with the North Carolina Division of Public Health to create a project called “Active Routes to School”. The ARTS program is facilitated by regional coordinators who work with their communities to create SRTS events and programs.
Lead Organization	Regional PBAC Henderson County Public Schools
Partners	Active Routes to School Region 2

Plan and install a bicycle or pedestrian facility pilot project. (i.e. Sharrows)

Description	Bike facility pilot projects are temporary installations of bike lanes or traffic-calming measures to demonstrate their efficacy in improving comfort, mobility, and safety. Pilot projects can be implemented quickly because of their temporary nature, and may be installed in isolation or as part of a larger community event. Successful pilot projects are often converted to permanent facilities. An example pilot project in Flat Rock could be the installation of sharrows along W Blue Ridge Road.
Lead Organization	PBAC
Partners	FBRMPO

Plan and install two priority projects

Description	Based on feasibility of construction, available funding, and public support, the Village of Flat Rock should identify two of the ten priority projects to progress into design and installation. Successfully implementing two of the priority projects in the short term will validate the Bicycle and Pedestrian Plan and its recommendations.
Lead Organization	Village Council
Partners	FBRMPO NCDOT PBAC

MID TERM EFFORTS

Identify regional projects to submit to FBRMPO for prioritization for state funding

Description	The French Broad River MPO submits projects to NCDOT for prioritization for state funding representing the MPO's transportation priorities for the region. The Village of Flat Rock should coordinate with FBRMPO to identify which of the Bicycle and Pedestrian Plan's facility recommendations have the greatest likelihood of success in securing state funding.
Lead Organization	PBAC Village Council
Partners	FBRMPO NCDOT

Create a bike rack and bench installation prioritization program

Description	The identification of potential locations for bike rack and bench installation should be formalized to consider potential demand, space availability, and maintenance. In partnership with property and business owners, Village staff should inventory and evaluate these locations to determine where bike racks should be installed first.
Lead Organization	Village Council
Partners	Business Owners HOAs

Complete additional priority projects

Description	Beyond installation of two priority projects in the short-term, the Village of Flat Rock should aim to complete three or more additional priority projects in the mid-term. The top four projects detailed in the Recommendations chapter should be given heavy consideration, since they perform well both quantitatively and qualitatively.
Lead Organization	Village Council
Partners	FBRMPO NCDOT PBAC

Apply to become a Bicycle Friendly Community

Description	The League of American Bicyclists awards the designation of Bicycle Friendly Community to municipalities that have demonstrated success in making their communities more bicycle friendly. Following the completion of the short-term and mid-term actions of the implementation plan, the Village of Flat Rock should be in a prime position to apply for and be awarded a Bicycle Friendly Community designation.
Lead Organization	PBAC
Partners	Blue Ridge Bicycle Club

LONG TERM EFFORTS

Coordinate land acquisition for off-street shared use paths

Description	As the Village of Flat Rock continues expansion of the trail network and promotion of the Apple Country Greenway System, consideration should be given to long-term land acquisition.
Lead Organization	Village Council
Partners	Henderson County Property Owners

Update Bicycle and Pedestrian Plan

Description	Successful implementation of the Bicycle and Pedestrian Plan will necessitate an update in five to ten years. The Bicycle and Pedestrian Plan's recommendations will need to be revisited, revised, and augmented to keep pace with Flat Rock's progress toward a more bicycle friendly community. Municipalities with Bicycle and Pedestrian Plans that are older than five years are eligible to apply for NCDOT Division of Bicycle and Pedestrian planning grants.
Lead Organization	PBAC
Partners	Village Council and Staff

FUNDING OPPORTUNITIES

Implementation requires taking advantage of federal, state, local, and private funding opportunities. As a municipality in a metropolitan planning organization area in North Carolina, the Village of Flat Rock can use federal and state funding that has been allocated to NCDOT Division 14 or to the French Broad River Metropolitan Planning Organization (FBRMPO). The Town's capital improvement program and private entities are other sources that can be used to implement the recommendations of the Pedestrian and Bicycle Plan. These funding sources are summarized in the sections below.

Fixing America's Surface Transportation (FAST ACT)

The most recent surface transportation legislation, Fixing America's Surface Transportation or FAST Act, was passed in December 2015. It restructured several of the funding programs that were active in the previous legislation, Moving Ahead for Progress in the 21st Century or MAP-21. For the programs described below, the Village of Flat Rock would apply to the French Broad River Metropolitan Planning Organization for funding and provide a 20% local match.

Surface Transportation Block Grant Program

MAP-21's Surface Transportation Program-Direct Attributable (STPDA) was changed to the Surface Transportation Block Grant Program (STBG) in the FAST Act. Municipalities within metropolitan planning organization (MPO) study areas, e.g., the French Broad River Metropolitan Planning Organization area, can submit projects for STBG funding through the MPO. Eligible projects include roadways, transit (operations excluded), bike facilities, pedestrian facilities, truck parking areas, and intelligent transportation systems (ITS) improvements.

READ MORE: <https://www.fhwa.dot.gov/fastact/>

Transportation Alternatives

What was once the Transportation Alternatives Program (TAP) is now a set-aside under STBG called Transportation Alternatives (TA). Eligible projects include pedestrian and bicycle facilities, recreational trails, and Safe Routes to School projects. Municipalities can apply for Transportation Alternatives funding in the same way they would apply for STBG funding

READ MORE: <https://www.fhwa.dot.gov/fastact/factsheets/transportationalternativesfs.cfm>

Metropolitan Planning

The FAST Act maintains MAP-21's metropolitan planning funding program. Jurisdictions that are members of an MPO can apply for this funding for planning studies. Localities must provide a 20% local match and can only use the funding on planning studies.

READ MORE: <https://www.fhwa.dot.gov/fastact/factsheets/metropolitanplanningfs.cfm>

TIGER Discretionary Grants

Transportation Investment Generating Economic Recovery (TIGER) grant program is a highly competitive program that aids in funding multimodal, multi-jurisdictional projects that are often difficult to fund with traditional funding strategies. TIGER grants can be used for capital projects that generate economic development and improve access to safe and affordable transportation alternatives.

READ MORE: <https://www.transportation.gov/tiger>

NCDOT Strategic Mobility Formula

NCDOT receives and allocates federal funding using their Strategic Mobility Formula, established by the Strategic Transportation Investments law passed in 2013. The Strategic Mobility Formula is a data-driven and performance-based process of prioritizing projects for federal and state funding, and it updates NCDOT's 10-year State Transportation Improvement Program (STIP) every two years. Projects in the first five years of the STIP have been committed for funding and construction, while projects in the last five years of the STIP are reevaluated every two years using the Strategic Mobility Formula. In the Strategic Mobility Formula, transportation projects are grouped into three separate funding categories: division needs, regional impact, and statewide mobility. All bicycle projects are considered division needs and are only eligible for funding that has been allocated for division needs projects.

The Village of Flat Rock can coordinate with FBRMPO to submit bicycle facility projects for prioritization for funding. Projects identified in this Pedestrian and Bicycle Plan would be eligible for Strategic Mobility Formula Funding.

READ MORE: <https://www.ncdot.gov/strategictransportationinvestments/>

Capital Improvement Program

The Village of Flat Rocks's annual budget for 2018 does not include any street related capital improvement allocations, and there is not a set amount each year for pedestrian and bicycle facilities; however, projects from this plan can be included as a separate allocation in future years.

READ MORE: <http://www.villageofflatrock.org/>

Transportation Bonds

Transportation bonds generate revenue from a tax increase on property values. In North Carolina, bond referendums must be approved by the local council and then included on the ballot to be voted on by residents. Transportation bonds can include roadway, bicycle facility, and sidewalk projects.

PERFORMANCE MEASURES

Beyond completing the action steps in the implementation plan, the Village of Flat rock should consider evaluating its progress in achieving the vision of the Pedestrian and Bicycle Plan. Some of the ways to track this progress is listed below:

Figure 5-2: Suggested Performance Measures

	USAGE	<ul style="list-style-type: none"> • Pedestrian and bicyclist counts • Event/program participation
	INFRASTRUCTURE	<ul style="list-style-type: none"> • Percent of projects implemented • Percent of policies and programs implemented • Mileage of sidewalks • Mileage of shared use paths • Mileage of shared lane markings • Number of benches • Number of bike racks • Funding allocated to multmodal facilities
	SAFETY	<ul style="list-style-type: none"> • Frequency of bicycle and pedestrian crashes • Severity of bicycle and pedestrian crashes
	EDUCATION	<ul style="list-style-type: none"> • Number of drive education events held • Frequency of bicycle and pedestrian information distributed to residents
	ECONOMY	<ul style="list-style-type: none"> • Property values • Sales revenue

DESIGN GUIDELINES

Several guidance documents exist for the planning and design of pedestrian and bicycle facilities. Updated versions of the Manual on Uniform Traffic Control Devices (MUTCD) and Guide for the Development of Bicycle Facilities are expected to be published in 2018. The guidance documents that the Village of Flat Rock should reference when implementing the facility recommendations of the Plan are summarized below.

Table 5-2: Design Guidelines

NATIONAL GUIDELINES

Resource	Author	Date
Guide for the Development of Bicycle Facilities, 4th Edition	AASHTO	2012
Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Edition	AASHTO	2004
Manual on Uniform Traffic Control Devices	FHWA	2012
Separated Bike Lane Planning and Design Guidance	FHWA	2015
Achieving Multimodal Networks	FHWA	2016
Small Town and Rural Multimodal Networks	FHWA	2016
Urban Bikeway Design Guide, 2nd Edition	NACTO	2014
Urban Street Design Guide	NACTO	2013
ADA and ABA Accessibility Guidelines	US Access Board	2004

STATE GUIDELINES

2009 NC Supplement to MUTCD	NCDOT	2009
Statewide Pedestrian and Bicycle Plan	NCDOT	2013
NCDOT Complete Streets	NCDOT	2012
Evaluating Temporary Accommodations for Pedestrians	NCDOT	N/A
NC Local Programs Management Handbook	NCDOT	2009
Traditional Neighborhood Development Guidelines	NCDOT	2000

READ MORE:

<https://www.ncdot.gov/bikeped/walkbikenc/pictures/designtoolbox.pdf>

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



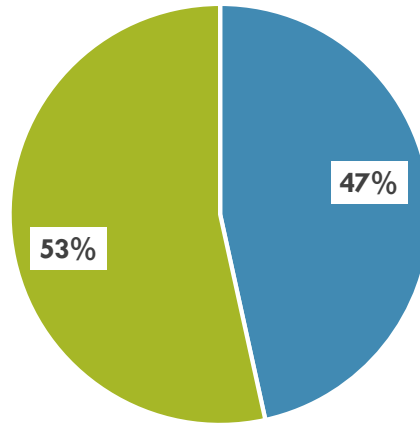
APPENDIX



ONLINE SURVEY RESULTS

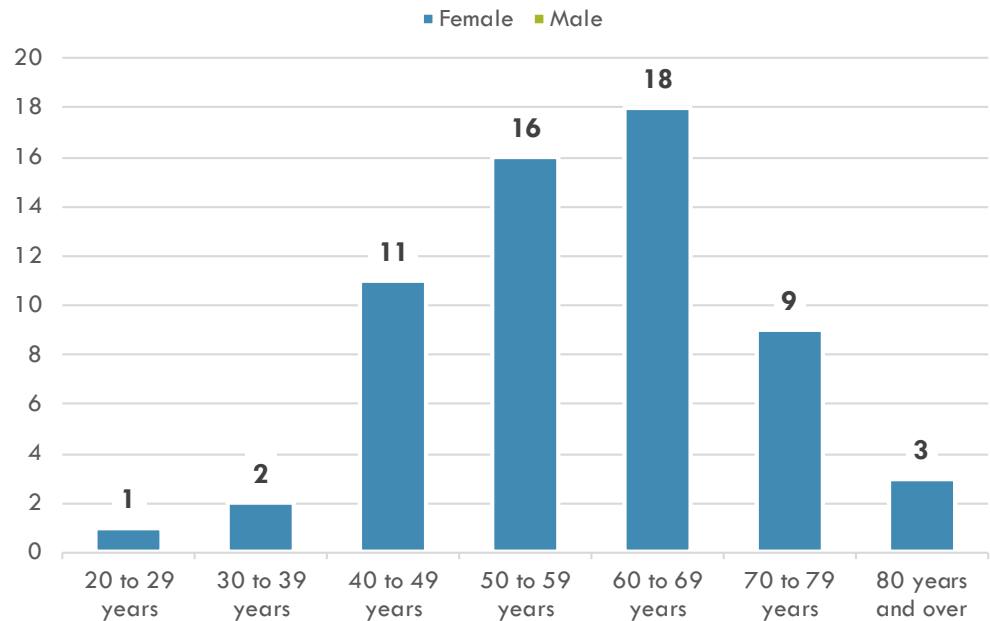
What is your gender?

- Female
- Male
- Prefer not to say



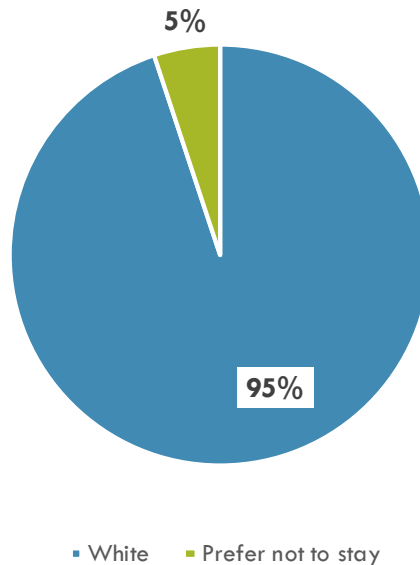
What is your age group?

- 19 and under
- 20 to 29 years
- 30 to 39 years
- 40 to 49 years
- 50 to 59 years
- 60 to 69 years
- 70 to 79 years
- 80 years and over
- Prefer not to say



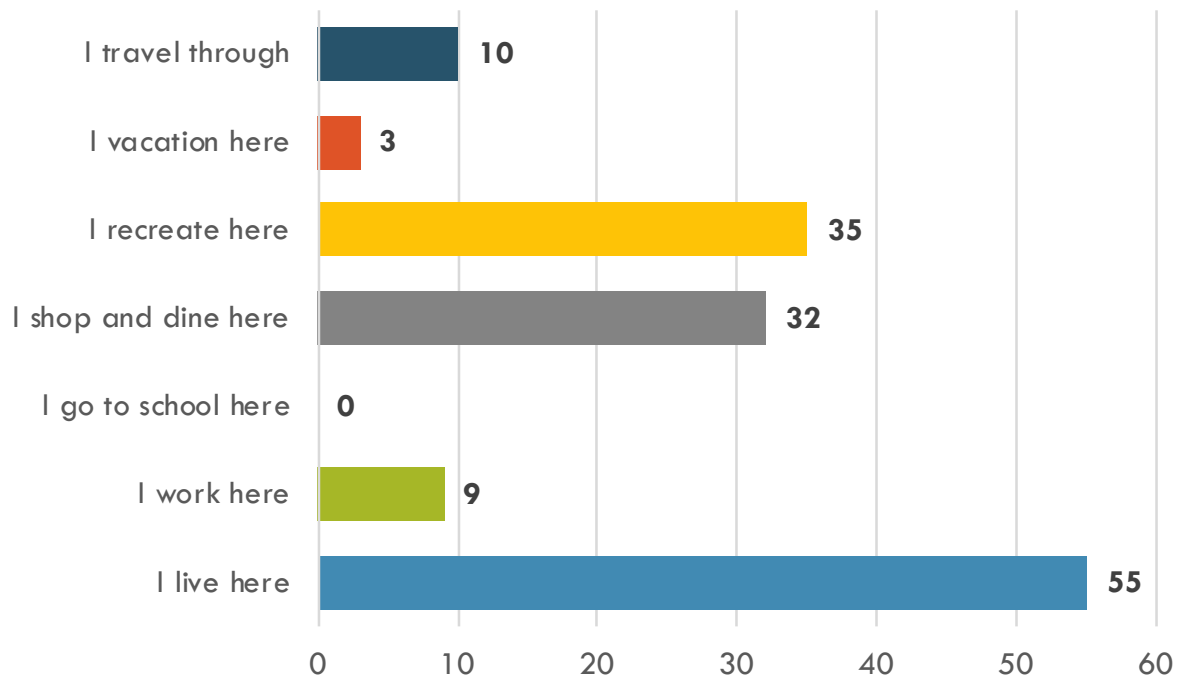
What is your race?

- White
- Black or African American
- American Indian and Alaskan Native
- Asian
- Native Hawaiian and Other Pacific Island
- Some other race
- Prefer not to say



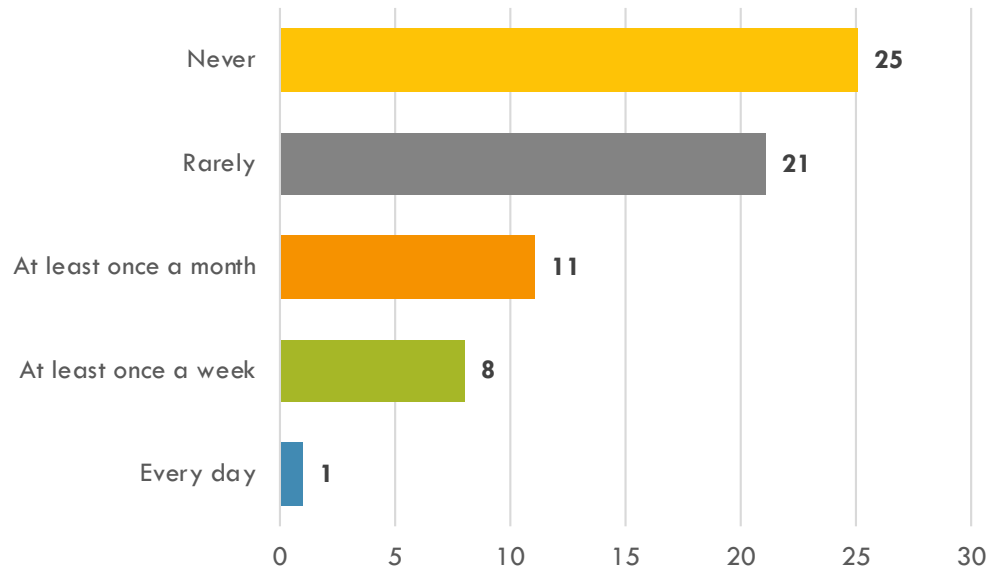
What is your relationship to Flat Rock? [check all that apply]

- I live here
- I work here
- I go to school here
- I shop/dine here
- I recreate here
- I vacation here
- I travel through



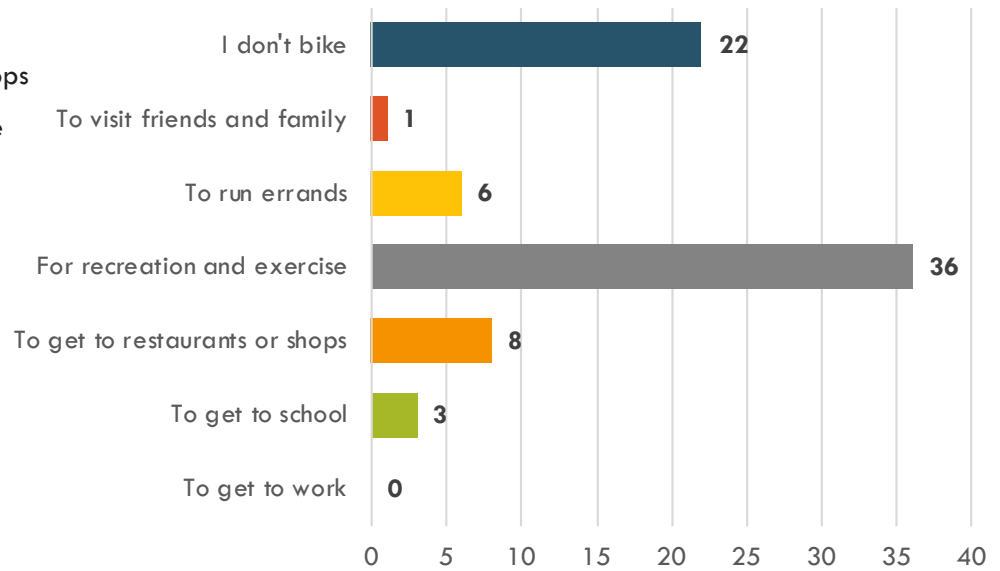
How often do you bike in Flat Rock?

- Every day
- At least once a week
- At least once a month
- Rarely
- Never



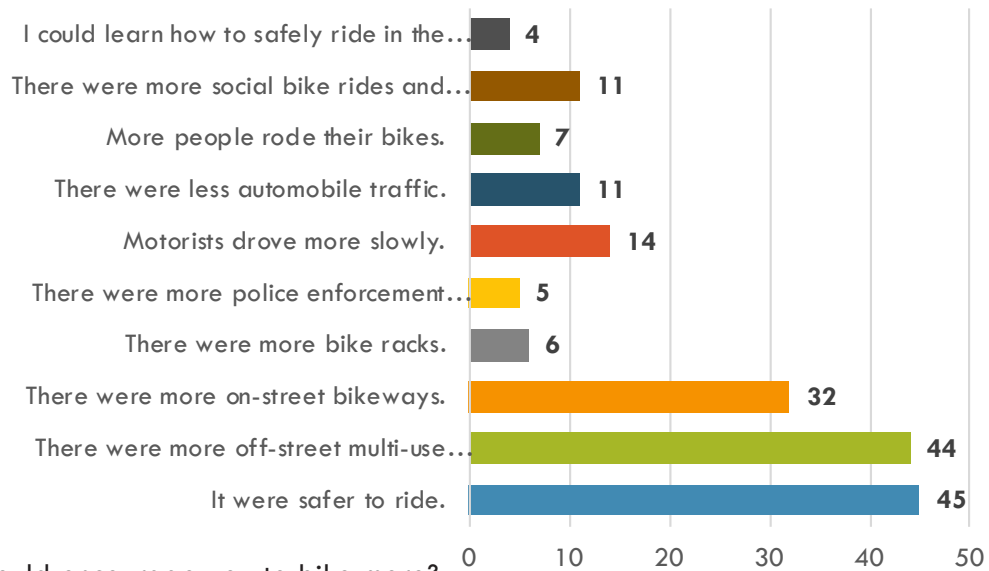
What are your primary reasons for riding a bike in Flat Rock? [check all that apply]

- To get to work
- To get to school
- To get to restaurants or shops
- For recreation and exercise
- To run errands
- To visit friends and family
- I don't bike



“I would bike more if...” [check all that apply]

- It were safer to ride.
- There were more off-street multi-use paths (greenways).
- There were more on-street bikeways.
- There were more bike racks.
- There were more police enforcement of traffic laws.
- Motorists drove more slowly.
- There were less automobile traffic
- More people rode their bikes.
- There were more social bike rides and bike events.
- I could learn how to safely ride in the street.

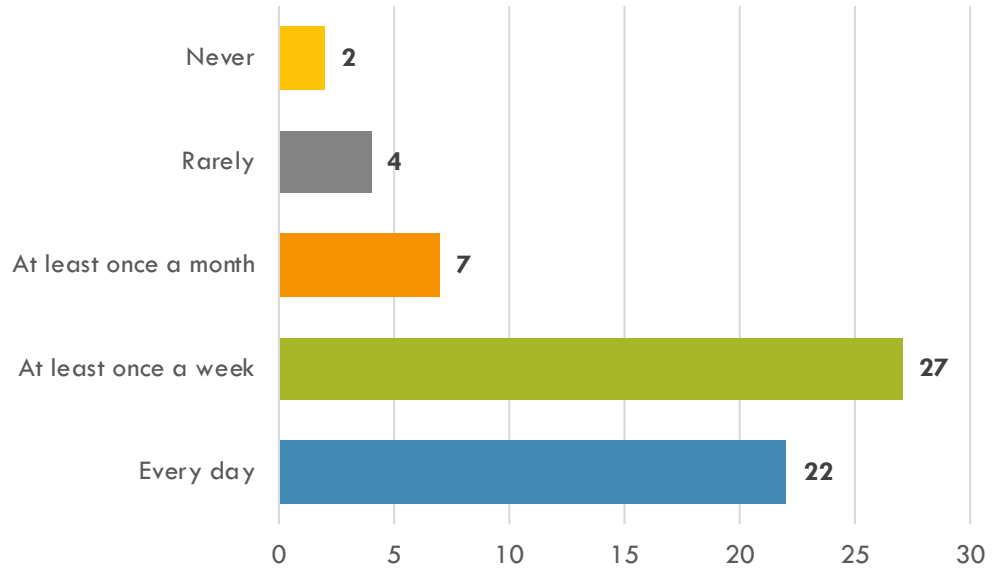


What else would encourage you to bike more?

- Motorists need more education on how to deal with bikers and what rights bikers have to use roads
- If I could bide safely to the park and businesses
- bikeway along greenville hwy and highland lake rd to the park from Staton Woods
- I believe the key is for both cyclists and motorists to have greater respect for each other. That means both need to obey existing traffic laws.
- It really isn't safe bike riding in our area. Moved here from Colorado where biking was wonderful and safe.
- I need exercise
- Incentives to bike instead of drive somewhere close by
- A serious commitment by local jurisdictions to promote and advocate for bike riding - like this process.
- A paved bike path at the Park at Flat Rock, the walking path is not easy to use
- A connecting path to downtown Hendersonville where I live

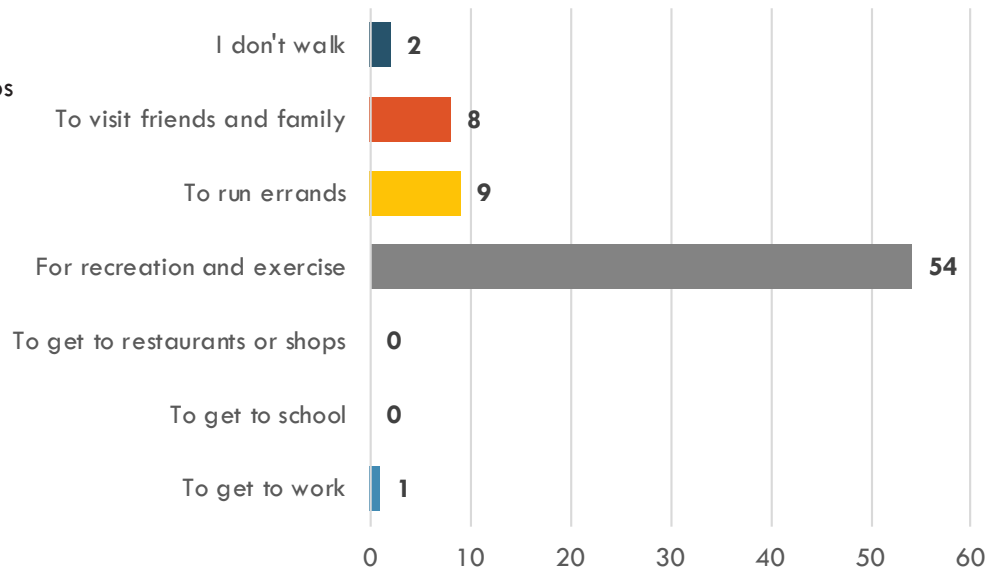
How often do you walk in Flat Rock?

- Every day
- At least once a week
- At least once a month
- Rarely
- Never



What are your primary reasons for walking in Flat Rock? [check all that apply]

- To get to work
- To get to school
- To get to restaurants or shops
- For recreation and exercise
- To run errands
- To visit friends and family
- I don't walk

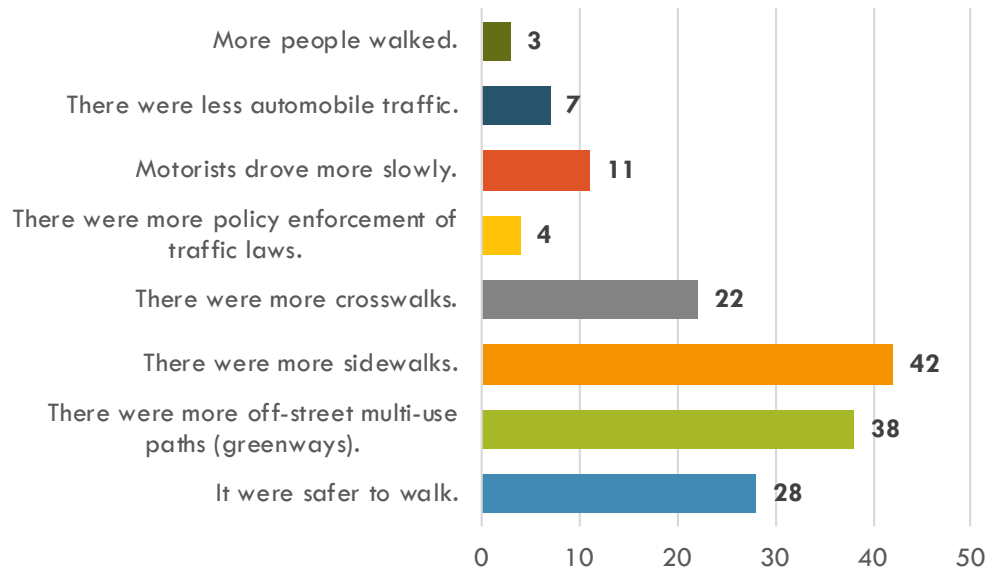


For what other reasons do you walk in Flat Rock?

- the dog
- walk my dog in the Park
- I host Meetup events for the Hendersonville Fun Friends group
- walking my dog
- exercise in the Park
- It's beautiful in the three parks in Flat Rock, being outdoors is good for everyone's mental health.
- walk my dog
- exercise my dog

“I would walk more if...” [check all that apply]

- It were safer to walk.
- There were more off-street multi-use paths (greenways)
- There were more sidewalks.
- There were more crosswalks.
- There were more policy enforcement of traffic laws.
- There were less automobile traffic.
- More people walked.



What else would encourage you to walk more?

- will power
- better lighting in walking areas
- If more people cleaned up their dog mess
- no need for additional walking
- There was a connecting trail to Hendersonville.
- there were more greenways, closed streets, more protected public open space
- Again, motorists need more education on pedestrian laws, crosswalks, when they are to yield to pedestrians
- If I had paths that were safe from automobile traffic and were scenic I would walk more.
- If I lived closer and/or there were more hours in a day!
- Lights at busy intersections...for example by the park
- Especially if Greenville Hwy and Little River Rd had the side walks and bike lanes and folks were educated that these are priorities.

PUBLIC OUTREACH RANK OF PROJECTS

Project	From	To	Rank
N Highland Lake Road Street-side trail	Greenville Highway	James Street	2
Greenville Highway Street-side trail	Cypress Grove Lane	Village Limits	1
W Blue Ridge Road Sidewalk	Old Mill Road	Highland Lake Drive	4
Highland Lake Drive Street-side trail	N Highland Lake Road	Preston Lane	6
Park to BRCC Greenway	The Park at Flat Rock	Blue Ridge Community College	9
Mud Creek Greenway			7
Little River Road Street-side trail	Greenville Highway	Kanuga Drive	3
W Blue Ridge Road Sharrows	Greenville Highway	Highland Lake Drive	7
Greenville Highway Street-side trail	W Blue Ridge Road	Claremont Drive	5
Greenville Highway Sharrows	Cypress Grove Lane	W Blue Ridge Road	10

Policy/Program	Rank
Adopt a local Complete Streets policy.	5
Adopt local street design standards to reflect national best practices.	10
Become a League of American Bicyclists Bicycle Friendly Community.	9
Become a Watch for Me NC partner community.	8
Conduct police training on bicycle safety.	16
Create a Bicycle Pedestrian Advisory Commission.	2
Create a local Bicycle Benefits program.	6
Create events to promote National Bike Month and Bike to Work Day.	12
Develop a Village-wide system of wayfinding signs.	15
Develop and adopt a Village traffic calming policy.	11
Distribute bike lights, helmets, and bells.	17
Establish a local Safe Routes to School program.	3
Identify and prioritize locations for bicycle rack installation.	14
Incorporate bicycle and pedestrian safety into driver education and training courses.	7
Participate in Walk and Bike to School Events.	4
Partner with Henderson County Sheriff's Dept. to deploy bicycle patrols.	17
Plan and execute an Open Streets event.	13
Require new developments to include bicycle and pedestrian facilities.	1

ENDNOTES

1. Biking and Walking in the United States: 2012 benchmarking report, Alliance for Biking and Walking, 2012
2. <https://www.nhtsa.gov/road-safety/pedestrian-safety>
3. <https://www.transportation.gov/mayors-challenge-background>
4. <http://www.watchformenc.org/about/>
5. “Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts,” Political Economy Research Institute, University of Massachusetts, Amherst, 2011
6. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity. Data, Trend and Maps, <https://www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html>
7. “A Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails,” Health Promotion Practice, Volume 6, Issue 2, pp. 174 – 179, 2005
8. Many Pathways from Land Use to Health: Associations between Neighborhood Walkability and Active Transportation, Body Mass Index, and Air Quality, Journal of the American Planning Association, Volume 72, Issue 2, 2006
9. North Carolina Pedestrian Crash Facts 2008 – 2012, UNC Highway Research Center, 2014



VILLAGE OF FLAT ROCK PEDESTRIAN AND BICYCLE PLAN

PREPARED FOR THE VILLAGE OF FLAT ROCK & NCDOT

PREPARED BY KIMLEY-HORN