



Jackson County Walks

Jackson County's Pedestrian & Greenway Plans

Jackson County, NC

July 2021

County Commission Adoption Date

TBD



Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

CONSULTING TEAM

Traffic Planning and Design, Asheville NC

Rachael Bronson, AICP

Kristy Carter, AICP

Danielle Kauffman

Colin Kinton, PE

Jon Muthersbaugh

Christy Staudt, PE

Chris Wachter, PE

Chipley Consulting, Asheville NC

Sealy Chipley



ACKNOWLEDGMENTS

The Jackson Walks Plan encompasses the combined efforts of many individuals and organizations. The following people had the vision to develop and create this Plan.

The Many Residents and Visitors of Jackson County

Jackson County Commission

Chairman Brian T. McMahan
Commissioner Boyce T. Deitz
Commissioner Mark Jones
Commissioner Tom Stribling
Commissioner Gayle Woody

Jackson Walks Steering Committee

Rose Bauguess, *RPO (Senior Planner)*
Jake Buchanan, *Jackson County Schools (Assistant Superintendent)*
Mike Byers, *WCU (Vice Chancellor for Administration & Finance)*
Shelley Carraway, *Public Health (Director)*
Maggie Carton, *Vision Cashiers*
David Claxton, *Cullowhee Planning Council (Member)*
Debbie Coffey, *Town of Dillsboro/ Town of Webster (Clerk to Board)*
Clark Corwin, *Village of Forest Hills (Councilman)*
Debby Cowan, *441 Planning Council (Chair)*
Michael Cox, *Cashiers Planning Council (Chair)*
Sandy Davis, *Jackson County Planning Board (Member)*
Paige Dowling, *Town of Sylva (Town Manager)*
Stephanie Edwards, *Cashiers Area Chamber of Commerce (Executive Director)*
Rusty Ellis, *Jackson County Parks & Recreation (Director)*
Caroline LaFrienier, *Jackson County Planning (Planner)*
Marianne Martinez, *Vecinos*
Jackie Moore, *Safe Routes to School*
Molly Neary, *Jackson County Parks & Recreation (Outdoor Recreation Manager)*
Shannon Queen, *Jackson County Sheriffs Office (Major)*
Paul Robshaw, *Vision Cashiers*
Tracy Rodes, *Town of Webster (Mayor)*
Julie Spiro, *Jackson County Chamber of Commerce (Executive Director)*

Robin Tanner, *Jackson County Trails and Greenways Committee*

Dr. Don Tomas, *SCC (President)*

Robert Willcox, *Eastern Band of Cherokee Indian*

Leigh Anne Young, *JC Trails & Greenways, Town of Webster*

Jackson County Project Manager

Michael Poston, *Jackson County Planning Director*

North Carolina Department of Transportation (NCDOT)

Chris Lee, *NCDOT (Division 14)*
John Vine-Hodge, *NCDOT Integrated Mobility Division*
Steve Williams, *NCDOT (Division 14)*
Troy Wilson, *NCDOT (Division 14)*
Kathryn Zeringue, *NCDOT Integrated Mobility Division*

Land Acknowledgment

Jackson County is situated on the original homelands of the Cherokee people, and today parts of the County are within what is the Eastern Band of Cherokee Indian's land known as the Qualla Boundary. We respectfully and gratefully acknowledge the Cherokee people's connection and contribution to this land.

Dedication

To our knowledge, during the development of this Plan, two pedestrians were killed while walking in the County. A goal of this Plan is to eliminate such preventable tragedies and ensure that the County is a safe place where anyone can walk regardless of age or ability. We dedicate this Plan to those who have lost their lives while travelling Jackson County's streets in hopes that the future will be a place where all can safely travel on foot.

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Photo Courtesy Jackson County TDA

INTRODUCTION

INTRODUCTION

For the last decade, the people, leadership and municipalities that make up Jackson County have placed a strong emphasis on the needs of people walking. This is evident by the mere fact that the County is planning, guiding and maintaining sidewalk development without the breadth of policy or resources to do so. Within this framework, in 2018, the County applied to the NCDOT Integrated Mobility Division for a Pedestrian Planning Grant, and in 2019 they were awarded funds to develop a Pedestrian Plan. The purpose of this Plan is to provide a framework for the County, residents, NCDOT, developers and other partners to create the vision of a multimodal network and supporting policies to see that through.

VISION & GOALS

Vision and goal statements are helpful for planning projects such as this, as it provides focus to the Plan as it is developed. A vision statement is aspirational and is typically interpreted as someone in the future speaking about their present-day. The following represents the project vision and goals as developed with the Project Steering Committee.

PROJECT VISION

Jackson County is a place where anyone, regardless of age, ability, or socio-economic background can safely travel as a pedestrian for transportation and recreation, and where walking is fostered to create a prosperous and livable community for our children and future generations.

The following goals set the foundation for this Plan:

1. Reduce crashes involving people walking and improve safety for all.
2. Improve network and connectivity to points of interest and commercial areas by developing an action-oriented prioritization of projects investing in sidewalks, greenways, and crossings.
3. Prioritize connections to schools and colleges.
4. Promote inclusiveness and equity.
5. Provide opportunities for physical activity and improved health.

In this Plan, as the recommendations were developed, these five goals were used as a check-point of stated community desires and they served as the foundation of the Action Plan.

WHY THIS PLAN IS IMPORTANT

Building walk friendly communities has certainly become more commonplace in the US over the last decade, and for good reason. The return on investment from multimodal programs and infrastructure is significant; walking is great for communities large and small, urban and rural, and



Image 1. A Family Traveling in Downtown Sylva



Image 2. According to AAA, in 2019 it Cost \$9,282/ Year to Own and Drive a Car, up \$433 from the Previous Year

everything in between. These benefits are not just at the community level but also for the individual quality of life. In a county like Jackson, where there are limited pedestrian facilities, these benefits are especially meaningful and the impacts will be significant.

Mobility for People Walking

A person walking is the fundamental transportation system user and is the baseline for any system. By planning for people walking, we are planning for all users, including the most vulnerable: young, elderly, and disabled. Walking provides quick and convenient access and is the most affordable transportation mode. In addition, walking is a part of every trip. Whether a person chose walking, bicycling, transit or personal vehicle as their primary mode of transportation, each trip began and ended as a pedestrian. Mobility for people walking is the common denominator to any community's transportation system.

Equity: Driving Isn't an Option for Everyone

Simply put, travel by vehicle isn't an option for everyone. Many people are physically unable to drive a vehicle, cannot afford the onerous costs of car ownership (see Image 2), or choose to not drive for other reasons.¹ Socio-economic factors such as age, disability, race and income all impact transportation choice. Providing transportation options and access for these individuals can mean freedom of movement, which translates as significant benefits to the health of the individual and community.

Age

According to the US Census, by 2035 there will be more people over the age of 65 in the United States than under 18. In Jackson County alone, the population of those over the age of 65 living in the County rose 32% between 2010 and 2019.ⁱⁱ The 2018 League of American Bicyclists Benchmarking Report reveals that the percentage of walking trips taken by people over the age of 65 in the US rose from 8.8% in 2009 to 13.8% in 2017 – an increase that was greater than the increase in the share of that population.ⁱⁱⁱ These findings, coupled with the growth of the elderly population, is a reminder that people in this already growing age group are walking more and will become increasingly reliant on this mode of travel. Figure 1 from the 2018 Benchmarking Report reveals this increase in walk mode share among the elderly

(mode share, sometimes referred to as mode split, is the percent of people that use a particular mode of transportation).

On the other end of the age spectrum, increasingly fewer children bike and walk to school than 50 years ago. In 1969, 48% of children walked or biked to school and in 2009 that number fell to 13%.^{iv} Data from the 2017 National Household Travel Survey (NHTS) from the Bureau of Transportation Statistics reveals that biking and walking for any purpose has also declined significantly from 2001 to the recent assessment of the 2017 NHTS for youth, as shown in Figure 2:

Like the elderly, this age group does not often have the ability or resources to drive a vehicle. It is important to consider their mobility needs as we plan

Figure 1. Percent of Trips by People Over the Age of 65 (Source: League of American Bicyclists Benchmarking Report)

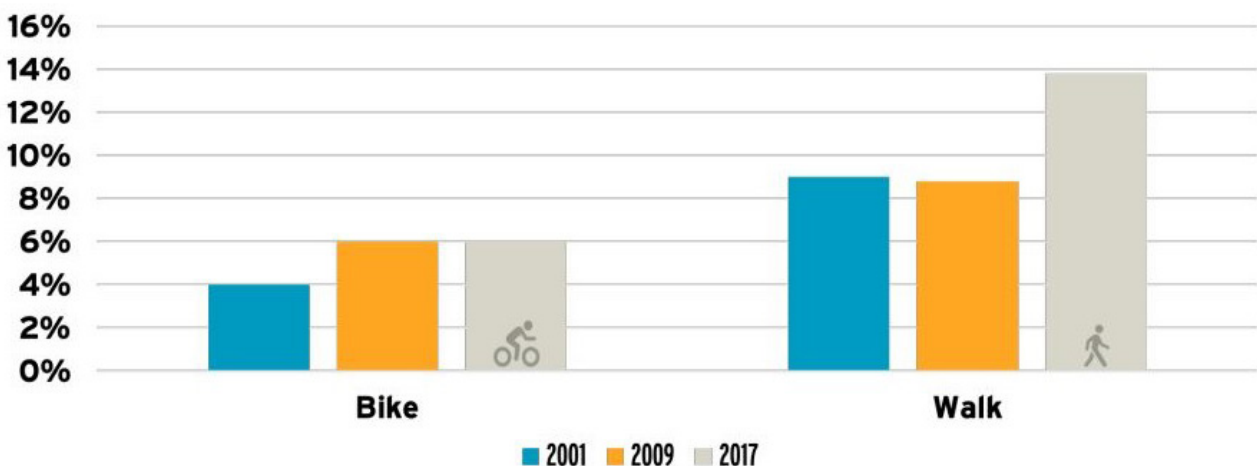
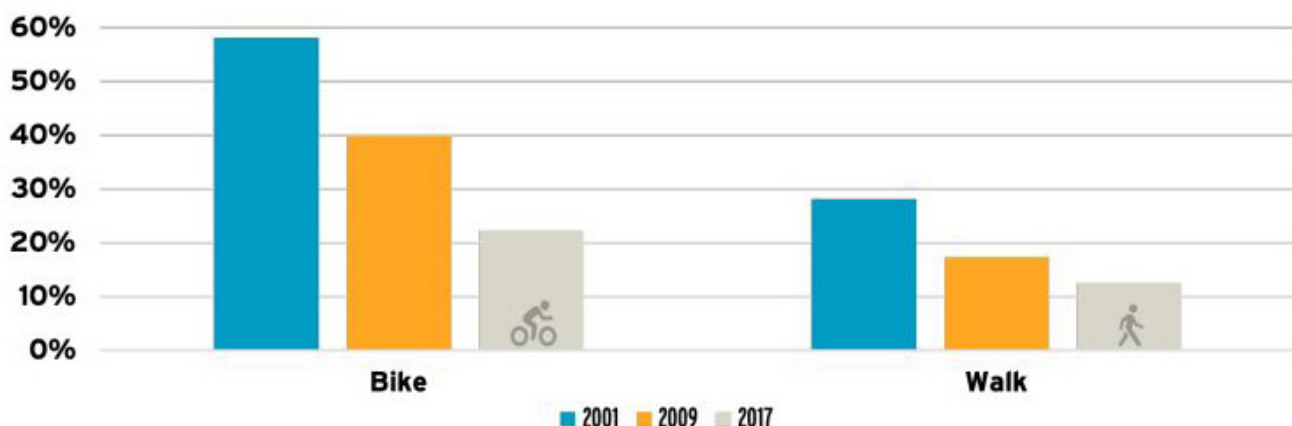


Figure 2. Percent of Trips by Children & Youth (Age 5 to 15) (Source: League of American Bicyclists Benchmarking Report)



transportation systems. Multimodal systems provide freedom of mobility and access to more resources for the next generation. In addition, an expanded network for walking provides additional access to outdoor activities and access to physical activity, which is essential given the increase in obesity among youth.^{vi}

Disability

The US Census reveals that 12.6% of the US population has a disability, as does 14.2% of Jackson County's population.^{vii} Data from the NHTS reveals that 3.6 million of the US population (1.1%) do not leave their home because of their disability. Those that do leave their home take fewer trips per day, and 7 out of 10 people reduce their travel altogether.^{viii} This isolation can have long-lasting effects on the mental and emotional health of individuals. This is a significant portion of the US population that may need other transportation options than what is provided by a motor vehicle.

Income

According to the 2018 Benchmarking Report, walking is a more common means of transportation to work for those who earn less. In every state, people who walk to work are more likely to have incomes of 150% of the federal poverty level or less than the general population.^{ix} In Jackson County, 18.7% of households are considered in poverty and 24.9% of children (under the age of 18) live in poverty.^x These findings emphasize the importance of viable transportation options to ensure that lower-income households, who are in most need, can continue to access jobs and school.

Race

According to NHTS data, race is also a predictor of reliance on walking. In all but a few US states, people of color are over-represented among people who commute to work by foot. Taking this a bit further, people of color are also much more likely to be over-represented among people who take transit to work than those who walk to work, according to a review from the 2018 Benchmarking Report of the 50 largest cities in the US.^{xi}

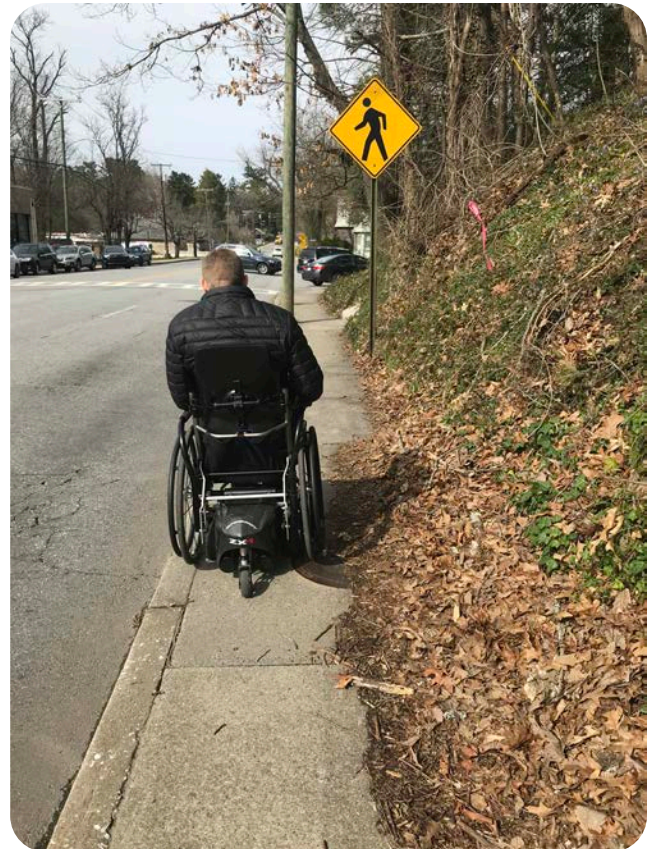


Image 3. Person in a Wheelchair Navigating a Narrow and Constrained Sidewalk.

The Benefits

These data and findings all point to the importance of walking for quality of life. Mobility for people walking out of necessity is critical to access to jobs, healthcare, resources and their community. This freedom of mobility choice is powerful for the individual and the community they thrive in.

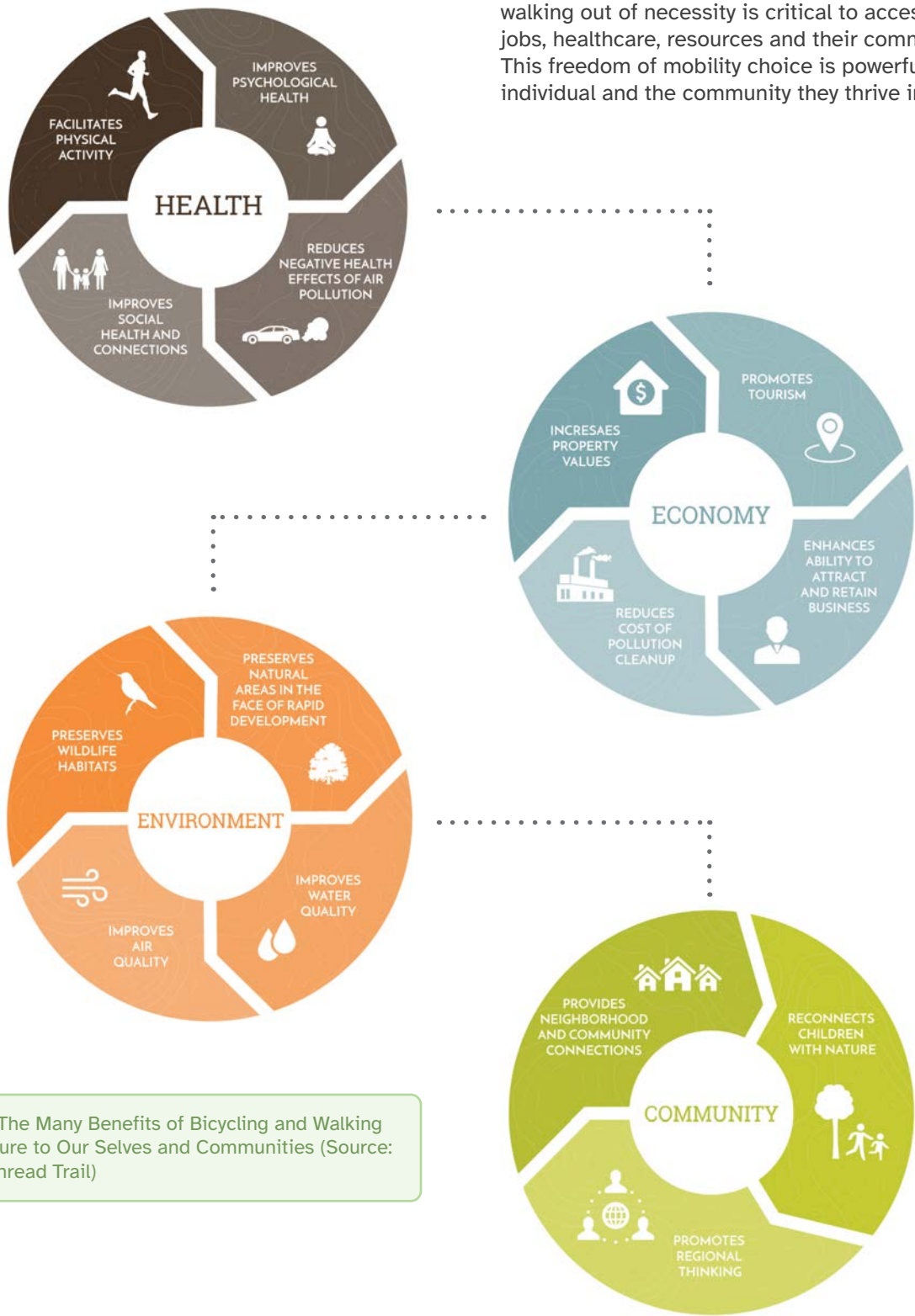
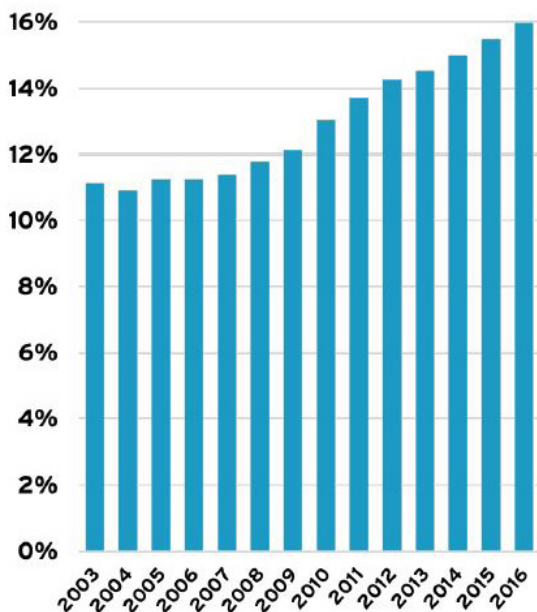


Figure 3. The Many Benefits of Bicycling and Walking Infrastructure to Our Selves and Communities (Source: Carolina Thread Trail)

Figure 4. Percent of All Traffic Fatalities that are Pedestrians (Source: League of American Bicyclists Benchmarking Report)



Safety

When roads are designed to be safe and accommodating for people walking (and biking), they become safer for all transportation users.^{xii} By designing for these baseline users, communities can build safe transportation systems that everyone deserves.

Vulnerable Users

People walking are known as vulnerable users of our streets given the inherent fact that they are not protected by a vehicle and the laws of physics are against them if involved in a collision with a car. These users are also vulnerable because they are disproportionately represented in crashes, a trend that has been increasing consistently for over a decade. Figure 4 underscores this issue.

The most recent data from National Highway Traffic Safety Administration (NHTSA) reveals some equally sobering statistics. In 2018, on average, a person walking was killed every 84 minutes in traffic crashes in the US; this represents a 3.4% increase over 2017. This comprises 17% of the total traffic fatalities.^{xiii}

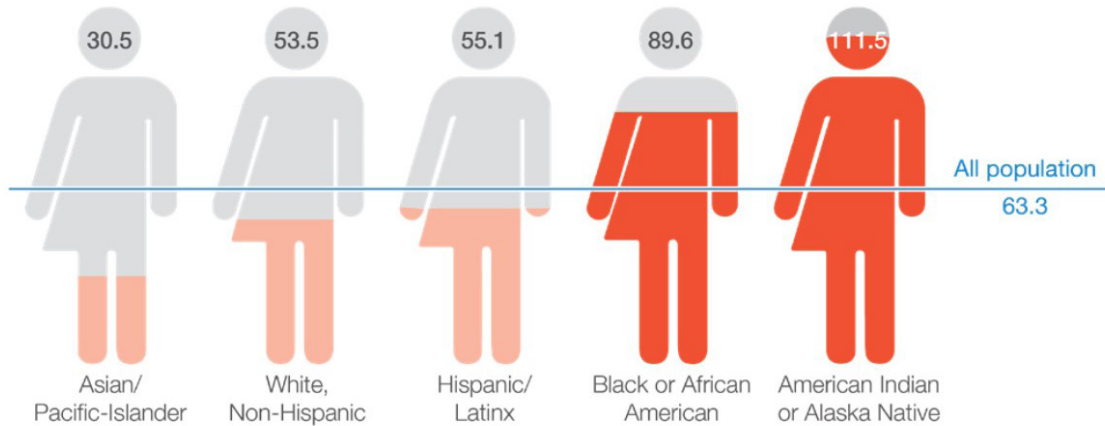
Speed is a major contributor to increasing both the likelihood that a crash will happen and that the crash will be severe in nature. Increased injury severity is a certainty for people walking who are struck by a person driving at higher speeds. A person walking has a 13% likelihood of suffering a severe injury or death when struck by a person driving at 20 mph, compared to a 73% likelihood of severe injury or death when struck by a person driving at 40 mph.^{xiv}

According to the publication *Dangerous by Design*, between 2010 and 2019, there was a 45% increase in traffic fatalities on our nation's roadways. Nationally, people of color die while walking at higher rates when compared to white, non-Hispanic, Asian and Pacific-Islander people. In Jackson County alone, 14% of the crashes involved an individual identified as Black, Indigenous or a Person of Color. Figure 5 underscores this disparity.^{xv}

FAST FACTS

A person walking has a 13% likelihood of suffering a severe injury or death when struck by a person driving at 20 mph, compared to a 73% likelihood of severe injury or death when struck by a person driving at 40 mph.

Figure 5. Relative Pedestrian Danger by Race and Ethnicity (2010-2019) (Source: Dangerous by Design 2021)



According to data presented from NC Vision Zero, a statewide initiative to reduce fatalities and serious injuries using data-driven prevention strategies, there were 231 people killed while walking in North Carolina in 2019 (a 2% increase from 2018). Each year in North Carolina, more than 2,400 people walking are involved in collisions with vehicles.^{xvi} The current conditions section of this report explores these statistics for Jackson County in further detail.

Solution: Safety in Numbers

Although these findings present significant challenges, there are proven engineering countermeasures, or solutions, at hand. There is an observed and well-documented pattern in traffic safety known as “safety in numbers.” This concept reveals that the more people that travel by walking (and biking), the safer conditions become. The 2018 Benchmarking Report explores this topic for the 50 largest cities in the US, where the inverse relationship between rates of use and fatalities is clear. Various other studies have proven this point. As will be explored in the following sections, numerous individual and community benefits result when more people walk.

WHAT HAPPENS TO **YOUR BODY** *on a Walk*



Image 4. Your Body on a Walk (Source: My Fitness Pal Blog)

Health

Roads that are safer for people walking offer inherent health benefits given the reduction of serious injury and fatality. In addition to these positive outcomes, there are several related health outcomes other to walking (and bicycling).

The Centers for Disease Control find that adults reap substantial health benefits from just 20-25 minute a day of physical activity, and these benefits increase even more with 40-45 minutes of daily activities. However, currently only half of the adults living in the US meet the recommended levels of physical activity. For children, this target should be around 60 minutes/day. Walking alone is proven to offer numerous health benefits for the brain, heart, and physical health, including a reduction in chronic disease, heart disease and cancer. The CDC offers several strategies that promote healthy living by modifying the built environment to provide walking and biking opportunities. As noted by the CDC: “Ultimately, individuals make the decision to walk. However, the decision to walk can be made easier by improving and connecting routes and destinations in communities. Modifying the built environment makes it easier for people of all ages and abilities to walk, bike, run, or roll.”^{xvii}

Increased physical activity has been shown to slow down aging in the elderly, and in children, it has been shown to improve learning. In a study called Educating the Student Body: Taking Physical Activity and Physical Education to School, researchers conducted a comprehensive physical activity program for youth. The findings include enhancements to attention, memory and greater capacity for learning, with most positive influences on mathematics and reading subject matters.^{xviii}

FAST FACTS

Jackson County is not exempt from the many national health concerns that are linked to inactivity. In 2018, the County updated their Community Health Assessment. Statistics from this report indicate that the County has a 77.2% rate of overweight or obese individuals; 30% of Jackson County children aged 2-18 are considered overweight or obese. The County has identified Obesity/Physical Activity/Nutrition as the number one health improvement priority and has identified projects and programs to increase opportunities to be physically active and increase accessibility of healthy foods. One such resource is the development of sidewalks and greenways.^{xix}



Image 5. Walking the Greenways and Paths at the Cullowhee Rec Center.

Economics

Walking improves the economy at many scales – the individual, business and community. Recent studies from North Carolina also provide significant evidence of the economic benefit of greenways.

The Individual

The relatively negligible cost of walking is significantly less than a vehicle, allowing any additional personal income to be dedicated to other needs. The ease of access by foot also translates to better access to resources and other individual needs, such as healthcare and basic shopping needs. As reviewed, walking reduces healthcare costs to the individual and allows more leisure time, which results in mental health benefits.

Business Community

When employees partake in more walking and hiking, businesses benefit due to reduced healthcare costs and less sick time. The outdoor industry also benefits when there are more dedicated pedestrian, trail and greenway facilities given the increase in sales resulting in more jobs, wages, and business output. Finally, the construction and operations/maintenance of pedestrian facilities also results in benefits to the business community in terms of jobs, wages and business output.^{xx}

Community At-Large

The community benefits from walking and hiking infrastructure in three primary ways: increase in property values, property tax, and the benefits to the environment. Many communities leverage the potential of hiking-specific tourism and Jackson

THE BENEFITS OF GREENWAYS

Greenways can **increase the value** of homes by up to **5%**

Source: UNC School of Government

Investing in greenways and bicycle-friendly roads is a **cost-effective** way to

SUPPORT LOCAL ECONOMIES
and
GENERATE TOURISM

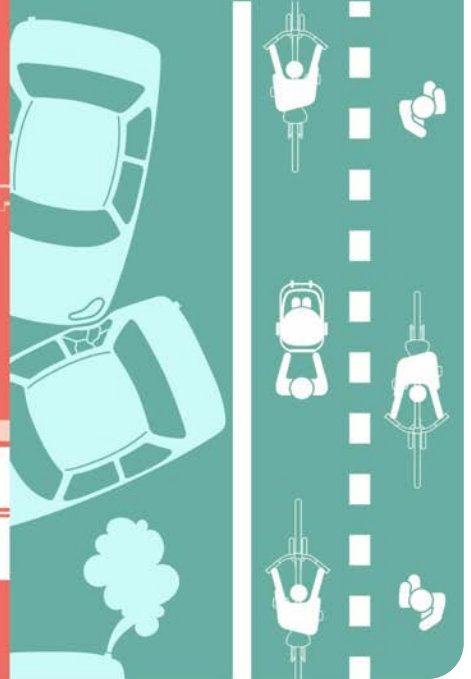
Source: League of American Bicyclists

Greenways can save

MILLIONS

in potential costs from **reductions in congestion, traffic injuries, and air pollution, and an increase in physical activity.**

Source: ITRE/NC DOT



ITRE NC VISION ZERO

Image 6. A Graphic from NC Vision Zero Describing the Economic Benefits of Bicycle and Walking Infrastructure.

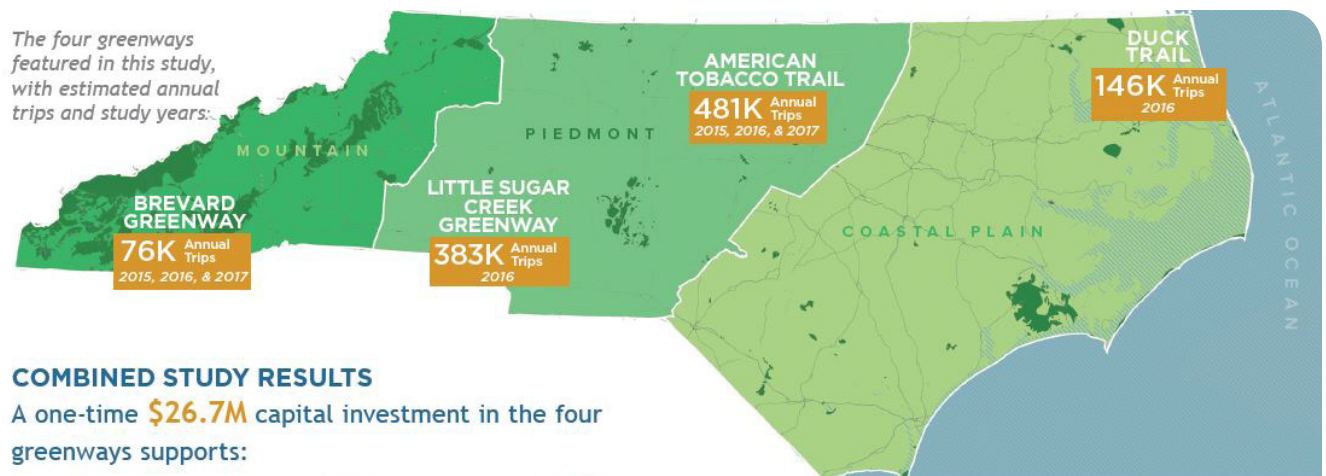
County is no exception to this. These communities understand that this type of infrastructure, which is more cost-effective than other forms of infrastructure, is a way to create jobs.

The COVID-19 Pandemic has resulted in a shift regarding community and transportation preferences. Anecdotally, throughout the nation and certainly in Jackson County, there was an increase in use of trails, greenways and trailheads as people sought ways to cope with the Pandemic in their daily lives. Accessing facilities like the Jackson County Greenway became a way to cope with the dramatic change in lifestyles. A recent national poll from the National Association of Realtors^{xxi} also documented this substantial demand for walkability for Americans of all ages post-Pandemic.

Benefits in NC

Two recent studies in North Carolina underscore these economic benefits. In 2016, NC State University's Institute of Transportation Research and Education (ITRE) released findings from a study that provides empirical evidence that constructing bicycle and pedestrian facilities, particularly those that fill a critical link in non-motorized transportation network, will result in measurable positive impacts. Specifically, they found that after construction of a bicycle and pedestrian bridge, trail users' annual expenditures supported an additional 43 jobs, \$1.3 million in employee compensation, and \$4.9 million in gross business revenues.^{xxii}

In 2018, ITRE released a study evaluating the economic impacts of four shared use paths in North



COMBINED STUDY RESULTS

A one-time **\$26.7M** capital investment in the four greenways supports:



\$19.4M

Estimated annual sales revenue at local businesses along the four greenways



\$684K

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



\$25.7M

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



\$48.7M

Estimated business revenue from greenway construction



790 JOBS

Are supported annually through greenway construction

Image 7. Infographic from 2018 ITRE Study on Economic Impacts of Four Shared Use Paths in NC.

Carolina.^{xxiii} The study found that every \$1.00 of trail construction supports \$1.72 annually from local business revenue, sales tax revenue, and benefits related to health and transportation. See Image 7 for more information about the study.

gas emissions in the United States, at 28%; shifting some of these trips away from driving will provide important benefits to the community in terms of improved air quality and reduced congestion.^{xxiv}

Mobility & Sustainability

Walking and biking investments result in increased use by those modes, which has benefits to community sustainability. In the ITRE bridge connection study cited earlier, the link resulted in a 4% increase in active travel to the trail, a 27% increase in trip distance and a 2% increase in through travel on the trail. These individual travel behavior changes can have larger benefits to a community in terms of reduced vehicle miles traveled, reduced congestion and improved air quality. According to the Environmental Protection Agency, the transportation sector contributes to the largest share of greenhouse

Endnotes

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2



Photo Courtesy Jackson County TDA

CURRENT CONDITIONS

CURRENT CONDITIONS

COMMUNITY OVERVIEW

Demographics

The following is a summary of Jackson County's demographics as revealed in the U.S. Census American Community Survey (2015-2019).¹ All findings are reported for the 2015-2019 timeframe, the most recently available data at the time of this report.



Population

The population of Jackson County was 42,938. The median age was 37.7 years, compared to North Carolina's median age of 39.1. The percent of people over the age of 65 and under the age of 18 has steadily increased. An estimated 16.8% of the population was under 18 years and 19.3% was 65 years and older, while North Carolina had an estimated 21.9% of the population under 18 years and 16.7% over 65 years. See Figure 6 for more detail about Jackson County's population by age and gender.



Households

There were 16,773 households, with the average household size being 2.33 people. Married-couple families made up 43.5% of households in the County. These households are relatively stable; 82.2% of people were living in the same residence as one year earlier.



Education

Eighty-nine percent (89.4%) of residents had at least graduated from high school and 30.4% had a bachelor's degree or higher. An estimated 10.7% did not complete high school.



Employment

Nearly fifty-two percent (51.7%) of the Jackson County population over 16 years of age were currently employed; of these, an estimated 70.6% were employed in the private sector, 22.5% were federal, state or local government workers, and the remaining (6.8%) were self-employed.



Transportation

Two percent (2.4%) of households in Jackson County had no vehicles available to them. An estimated 80.2% of Town workers drove alone to work, and 10.3% carpooled. Among those who did commute to work, it took them an average of 19 minutes to travel. Less than one percent (0.2%) used public transit and 4.8% of people walked to work.



Income

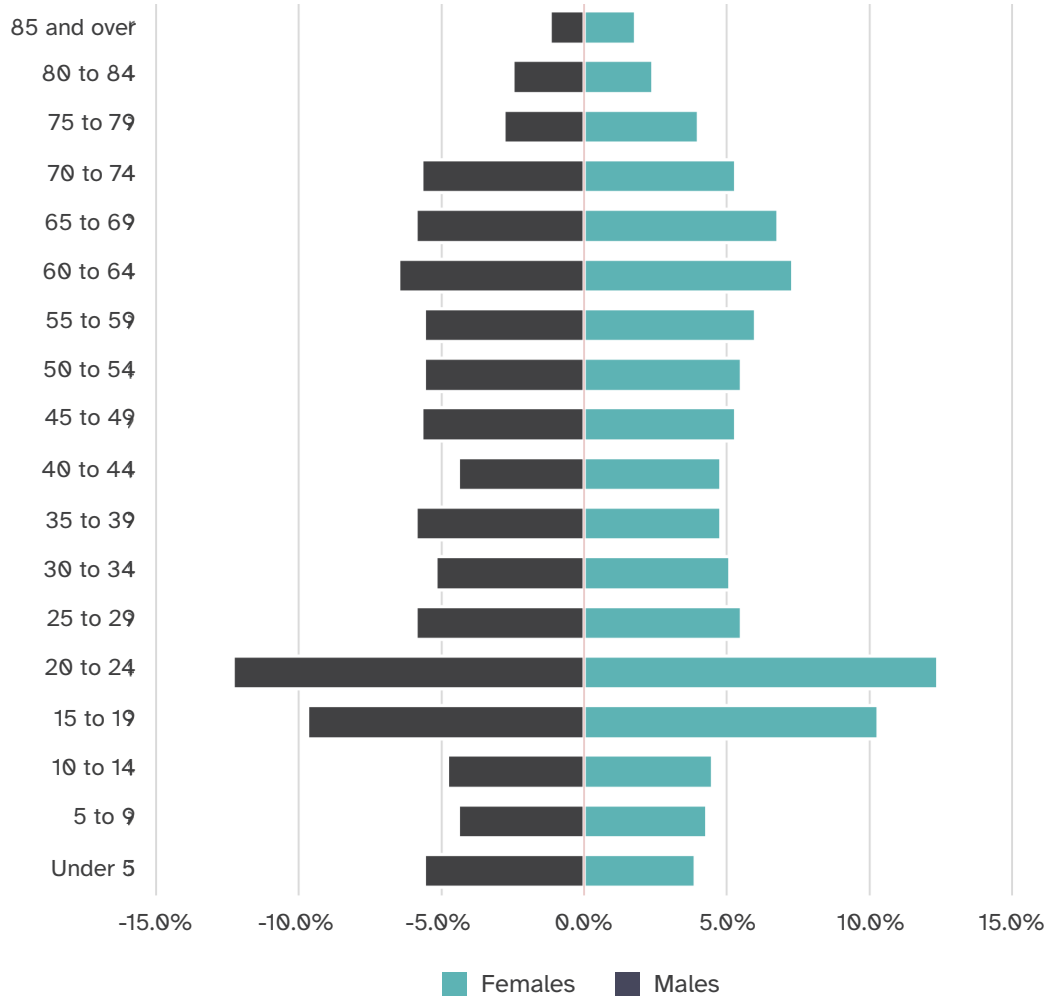
Jackson County's median household income was \$47,252. Twenty-five percent (24.9%) of people over the age of 18 in Jackson County were in poverty. Compared to the state, the median household income in North Carolina was \$54,602 with 21.1% of people living in poverty.



Race & Ethnicity

Racially, Jackson County was predominantly white: for people reporting one race, 83.1% were white, 8.0% American Indian or Alaska Native, 2.2% were Black or African American

Figure 6. Jackson County Population by Age and Sex



and 0.7% Asian. An estimated 5.9% of the people in Jackson County were Hispanic.



Housing Costs

For owner-occupied houses in Jackson County, the median housing value was \$196,100. The median monthly housing cost for owners with a mortgage was \$1,182 and for renters was \$739. Households that pay 30% or more of their income on housing costs are considered cost burdened. Cost burdened households in Jackson County accounted for 27.8% of owners with a mortgage and 51.7% of renters. Transportation costs are also a factor in understanding cost-burdened households, as those costs provide a more accurate

assessment of housing choice and thereby housing cost. For instance, people often look outside of urban areas to purchase a home where the housing costs may be less, but their transportation costs increase as a result; thus it is important to consider housing + transportation when considering housing costs.



Computer & Internet Access

An estimated 72.1% of households in Jackson County had a computer and 71.4% had a broadband internet subscription.

Putting It Together

Currently, Jackson County sees low walking rates, as reported for transportation to work. However, with

the increase in the population of people under the age of 18 and over the age of 65, and the sizable population of college-aged people, there may be a growing population of individuals who are candidates to choose to walk more, whether for transportation or recreation. Additionally, many households in the County are cost-burdened in terms of their mortgage or rent costs, so alleviating some transportation costs by offering walking alternatives may help address these challenges.

Physical Characteristics

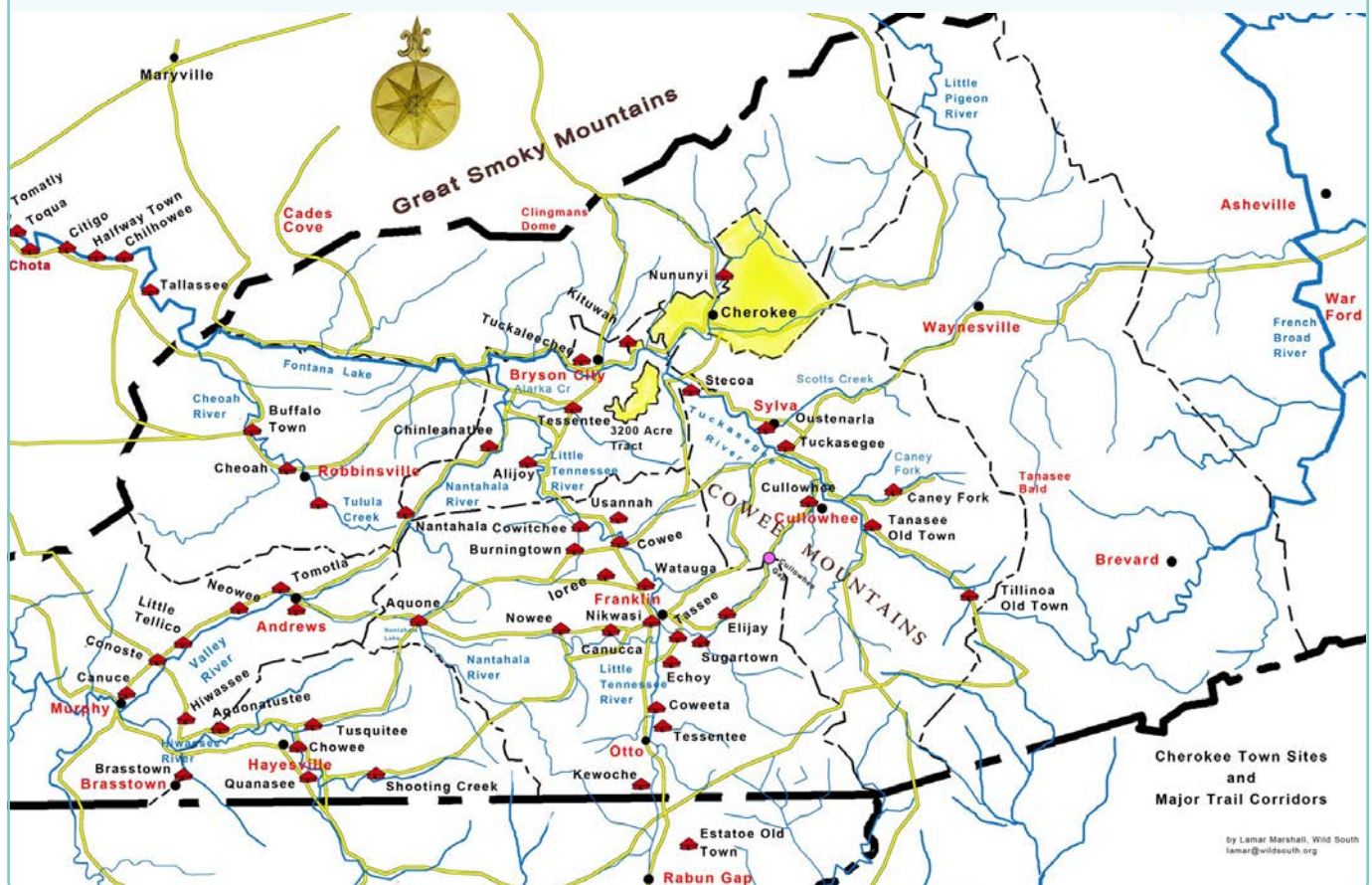
For the millennia prior to the 1800's, Jackson County was land belonging to the Cherokee people, a powerful tribe of Native Americans. They occupied vast land in the southeastern United States on which they hunted, fished, and farmed. The Cherokee people set the foundation for the transportation network that we know in Jackson County today. Many of the roadways that we know of today began as trading and

gathering trails of the Cherokee people, as shown in Figure 7.ⁱⁱ

In the late 1800's, the tribal members purchased 57,000 acres of land, called the Qualla Boundary, which is kept in trust by the federal government.ⁱⁱⁱ Parts of the Qualla Boundary fall within Jackson County, which was incorporated in 1851. Jackson County was originally part of Haywood and Macon counties which were then divided by the Tuckasegee River. The County, which currently encompasses 494 square miles of land, was carved out from these adjacent counties. The County seat was originally located in Webster but was moved to Sylva in 1913. A primary motive for this long-debated relocation of the County seat was due to transportation and access – Sylva was centrally located to a railroad, critical to the Town's economy.

Jackson County has four incorporated towns: Webster, Sylva, Dillsboro and Forest Hills. While a small portion of Highlands is in Jackson County, it was not a central

Figure 7. Major Trail Corridors (Yellow Lines) and Town Sites of the Cherokee People; the Qualla Boundary is Shown in Yellow at the Top of Jackson County. (Source: Wild South)



part of the study. There are three community planning areas that encompass the urban, non-municipal communities of Cashiers, Cullowhee, and the 441 Corridor. These areas are the most developed areas of the County, primarily due to the transportation network and water and sewer availability. Additionally, the non-municipal parts of the community planning areas have a tailored set of zoning standards. Within all community planning areas, the County maintains the sidewalk networks and helps guide the development of future connections. **While most counties are not in the business of transportation planning and construction, this is a reality for Jackson County and is a major factor in the development and need for this Plan. Jackson County has actively been working towards building and maintaining a sidewalk system and this plan will provide the framework to continue to do so successfully.** Map 1 shows these urban areas in context to the County.

Jackson County is characterized by rolling hills, mountains, creeks, streams, rivers and bodies of water. The Tuckasegee River flows almost the length of the county and is a point of pride for the County's natural, cultural and recreational heritage. When compared to neighboring counties (such as Macon County), Jackson County has very narrow valleys and limited land for development.

Land Use Characteristics

With many natural constraints, the existing development in the County is concentrated along the limited low-lying valleys and waterways. The commercial land uses in the County are located along corridors where the land is comparatively less challenging. These corridors include US-23/74, US-23 Business, NC-107, US-64 and US-441. Most of the industrial development is in the Sylva area near the railroad and US 23/74.

A significant portion of land in the County is conserved by the US Forest Service, the National Park Service's Blue Ridge Parkway Corridor, or is protected/managed in some other way such as a conservation easement. See Map 2 for these protected/managed lands.

Jackson County is a popular destination for tourists and second homeowners. The largest concentration of second homes is in southern Jackson County in the Cashiers area.^{iv} This, along with the expansion of both Western Carolina University and Southwestern Community College, has resulted in increased demands on the County's infrastructure and natural resources.

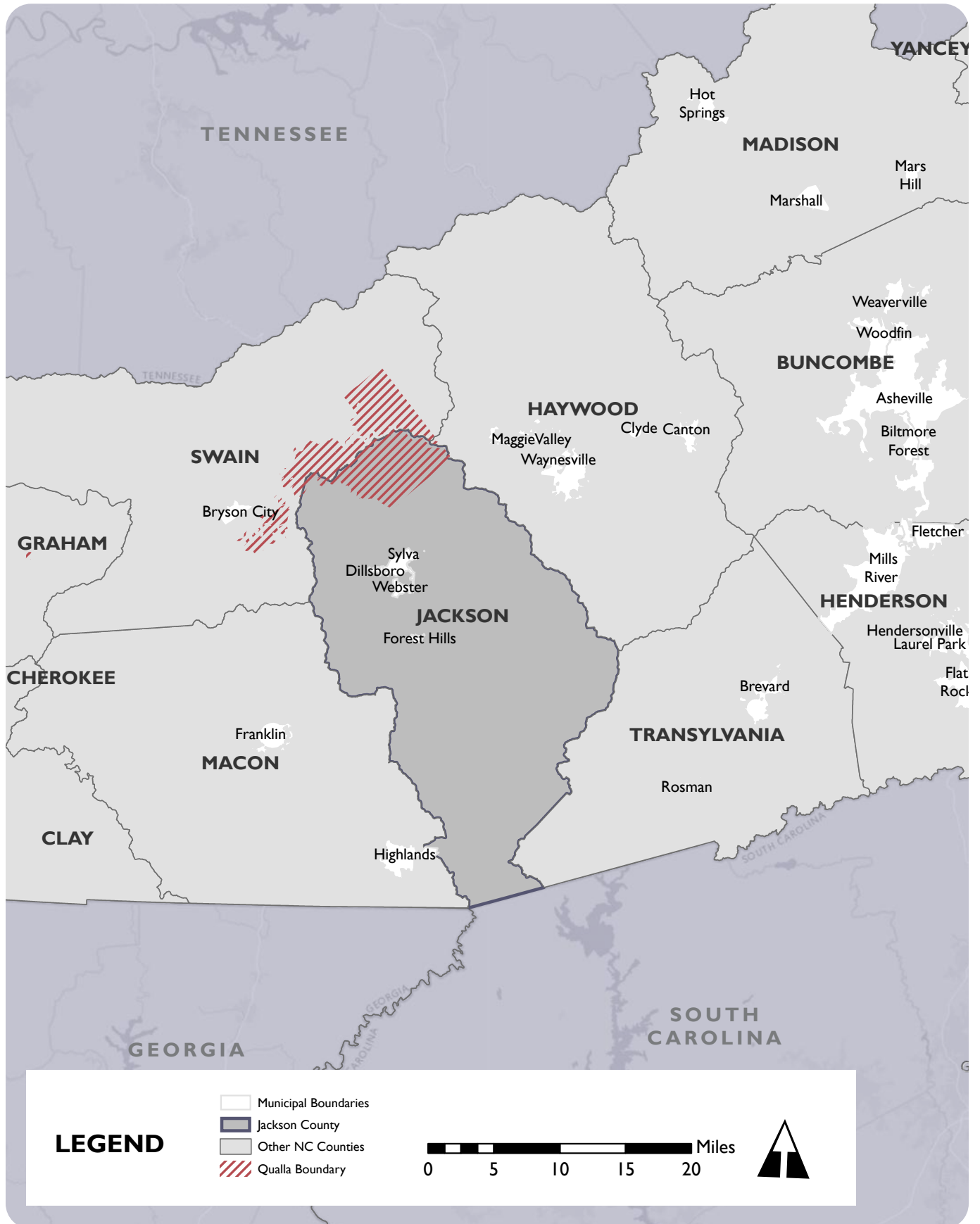
Map 2 shows the towns and urban areas of Jackson County, as well as the road network connecting these nodes. Much of the developed area within the County follows the Tuckasegee River, whereas the remaining land is defined by steep slopes and protected areas. Map 2 also depicts the Cherokee Qualla Boundary.

Transportation Network

Transportation networks are generally defined by the volume, or amount of traffic, travelling on them. Most of the major, high volume roads in Jackson County follow the Tuckasegee River's path or the railroad. NC-107 is the County's major north-south connector, travelling from Sylva to the state line south of Cashiers. In more urban settings, NC-107 has a sidewalk and bike lane, but in other areas of the County it has little to no shoulder. NC-107 serves the Towns of Sylva, Webster, Forest Hills, Cullowhee and the Village of Cashiers, as well as Southwestern Community College and Western Carolina University. NC-281 travels north-south, from Tuckasegee community to Transylvania County, and has no dedicated pedestrian facilities. Other major corridors include the US Routes of 74, 23, 64 and 441, which provide access to Jackson County from adjacent counties; as limited access route highways, these do not have pedestrian facilities. US 441 serves one of the fastest growing areas of the County, the community of Whittier and the Eastern Band of Cherokee Indians. Finally, the Blue Ridge Parkway was constructed to provide a scenic link between the Shenandoah and Great Smoky Mountains National Parks; it winds back and forth along the Jackson/Haywood County border. The Parkway does not have dedicated pedestrian facilities although the Mountains to Sea Trail does roughly follow its course.

Table 1 describes primary, typical characteristics of Jackson County's major roadways, also illustrated in Map Series 3. This table includes the typical, paved width of the street (not including curb and gutter), the number of lanes, AADT (Average Annual Daily Traffic, provided by NCDOT), posted speed limit and the presence of curb and gutter. Even though Jackson County has developed significantly over the last few decades, many of its roads have not; many roads in urban areas are more rural in character with 2 travel lanes and no curb and gutter. The primary network roads are narrow, many with no shoulder, and have posted speed limits of 35-45 mph.

Map 1. Jackson County is Located in Western North Carolina, Bordered by the NC Counties of Macon, Swain, Haywood and Transylvania and by Upstate South Carolina.



SWAIN COUNTY

HAYWOOD COUNTY

TRANSYLVANIA COUNTY

SOUTH CAROLINA

LEGEND

- Qualla Boundary
- Parks/Public Lands
- Jackson County Boundary
- Other NC Counties
- Town or Urban Area
- Railroads

0 1 2 3 4 Miles

Map Labels: 441 Planning Area, 19, 74, Sylva, 23, Dillsboro, Webster, Cullowhee Community Planning Area, Forest Hills, Bear Creek Lake, Lake Glenville, Cashiers Planning Area, 64, 107, 245, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

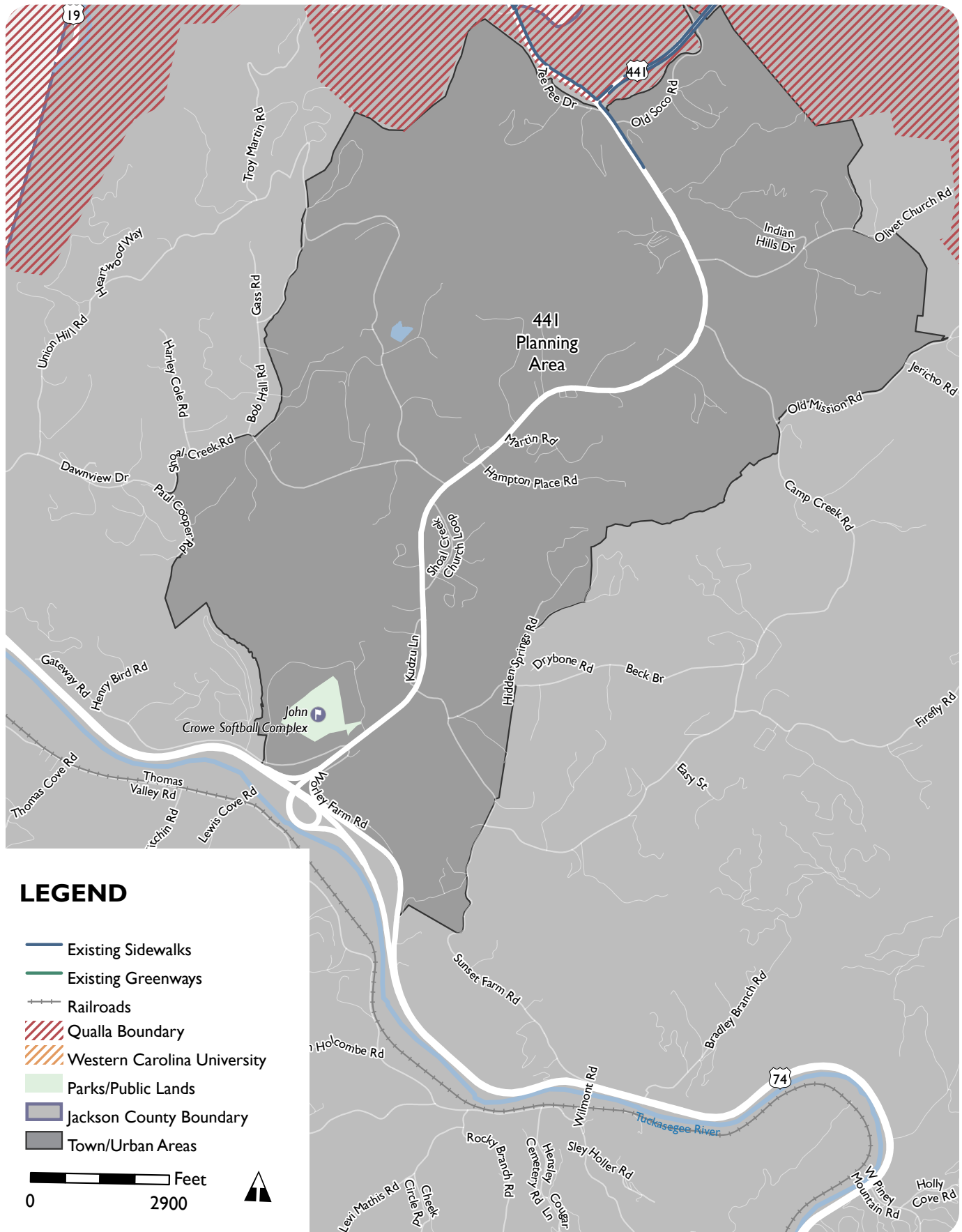
Table 1. Description of Key Roads in Jackson County.

ROAD NAME	TYPICAL WIDTH (FEET)	NUMBER OF LANES	AADT*	SPEED LIMIT (MPH)	PRESENCE OF CURB & GUTTER
PRINCIPAL ARTERIAL					
NC-107 - Downtown Sylva to Fairview Rd Intersection	65	4	19,000-31,000	35	Yes
NC-107 - Intersection of River Crest Dr to Lyle Wilson Rd	65 (road divided)	4	14,500-16,500	45-55	No
NC-107: Lyle Wilson Rd to NC/SC Line	18-23	2		20-55	No
US-74	50 (road divided)	4	14,500-25,500	50-60	No
US-23	65 (road divided)	4	14,000-27,500	35-60	No
Asheville Hwy (US-23 Bus)	20-45	Varies	5,100-22,500	35-55	About 50%
MINOR ARTERIAL					
Webster Rd (NC-116)	22-45	Varies	5,000-9,000	25-55	No
Grindstaff Cove Rd (SR-1513)	30	2	2,800-5,400	35	Yes
Haywood Rd (SR-1514)	24	2	900	35-55	No
Paint Town Rd (US-19)	21-44	Varies	6,000-13,000	35-55	No
US-441	22	2	12,000-17,500	45-55	No
Casino Trail (US-441)	65	5	12,000	45	Yes
US-64	30-55	2	3,400-9,900	30-55	No
Blue Ridge Parkway (FED-900)	22	2	n/a	45	No
W Main St (US-23 Bus)	32	4	5,400-18,000	25-35	Yes
COLLECTOR					
Old Cullowhee Rd (SR-1002)	19	2	600-5,500	35-50	No
Skyland Dr (SR-1432)	19	2	200-6,900	35-55	No
Cope Creek Rd (SR-1449)	20	2	550-4,100	35-55	No
Chipper Curve Rd (SR-1429)	18	2	1,700-1,900	25-35	No
Canada Rd (NC-281)	20	2	150-1,500	35-45	No
Old Settlement Rd (SR-1340)	20	2	1,100-2,200	35-45	No
LOCAL					
Speedwell Rd (SR-1001)	18	2	1,100-2,300	30	No
Savannah Dr (SR-1356)	20	2	1,000-1,300	25-55	No
N River Rd (SR-1359)	20	2	2,400	20-55	No
Fairview Rd (SR-1724)	20	2	3,000	30-55	No
Little Savannah Rd (SR-1367)	30	2	7,700	35	No
Frank Allen Rd (SR-1176)	28	2	n/a	25-55	Yes
S River Rd (SR-1345)	20	2	2,400	35-40	No

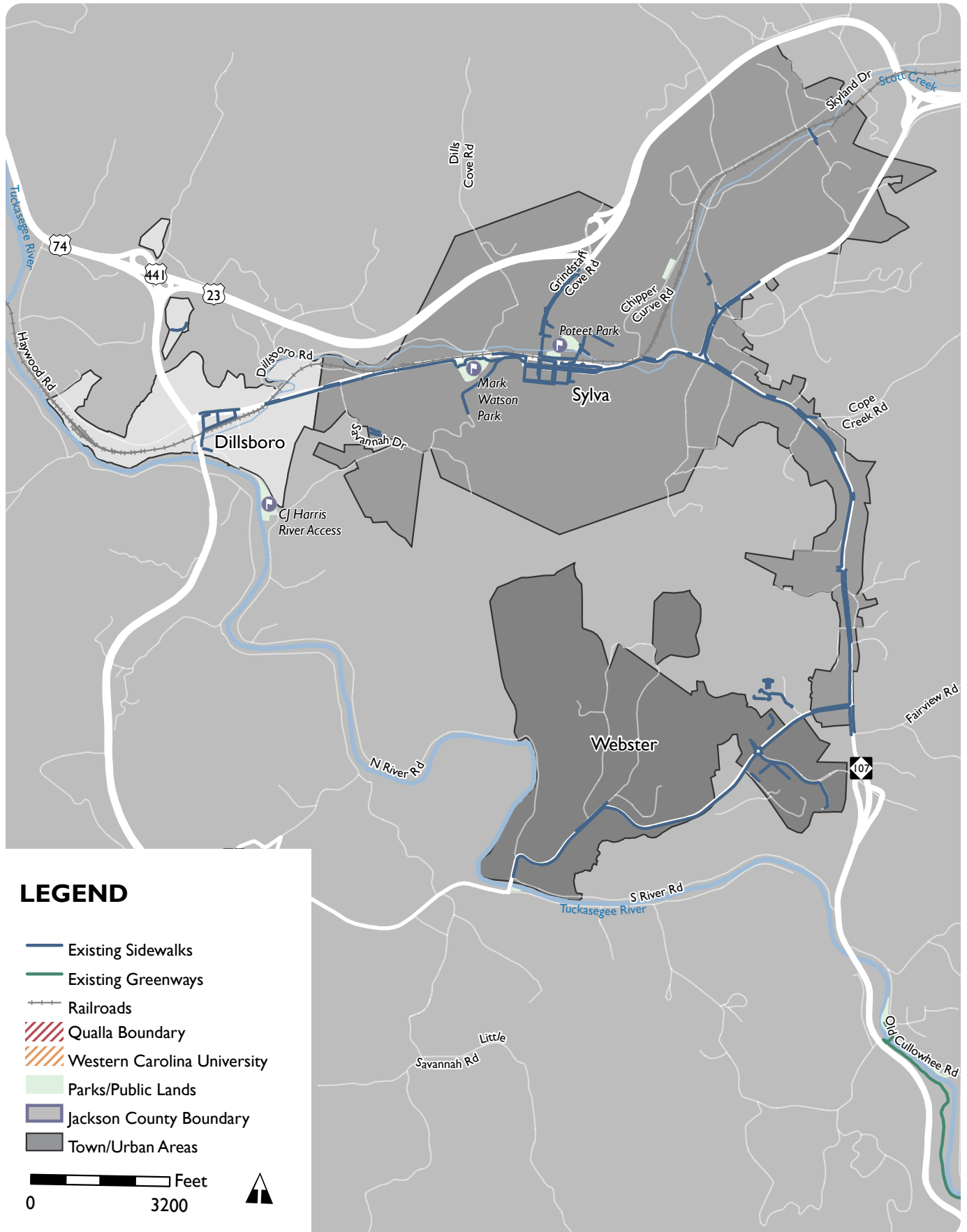
Source: NCDOT AADT Web Map, NCDOT NCRouteCharacteristics Field, Google Map Imagery

*AADT: Average Annual Daily Traffic, the total volume of vehicle traffic for a year divided by 365 days

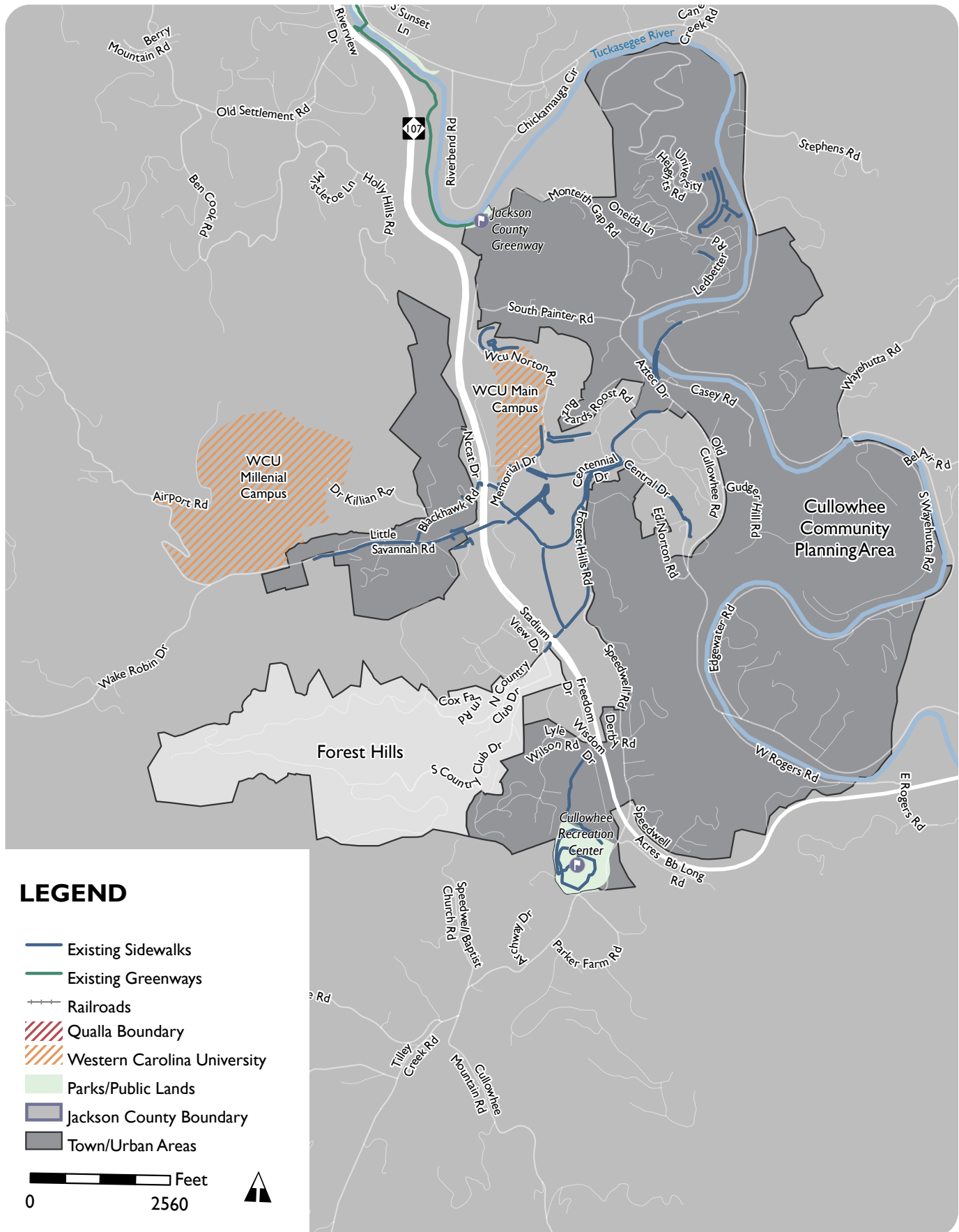
Map 3A. Existing Road and Pedestrian Network – 441 Planning Area



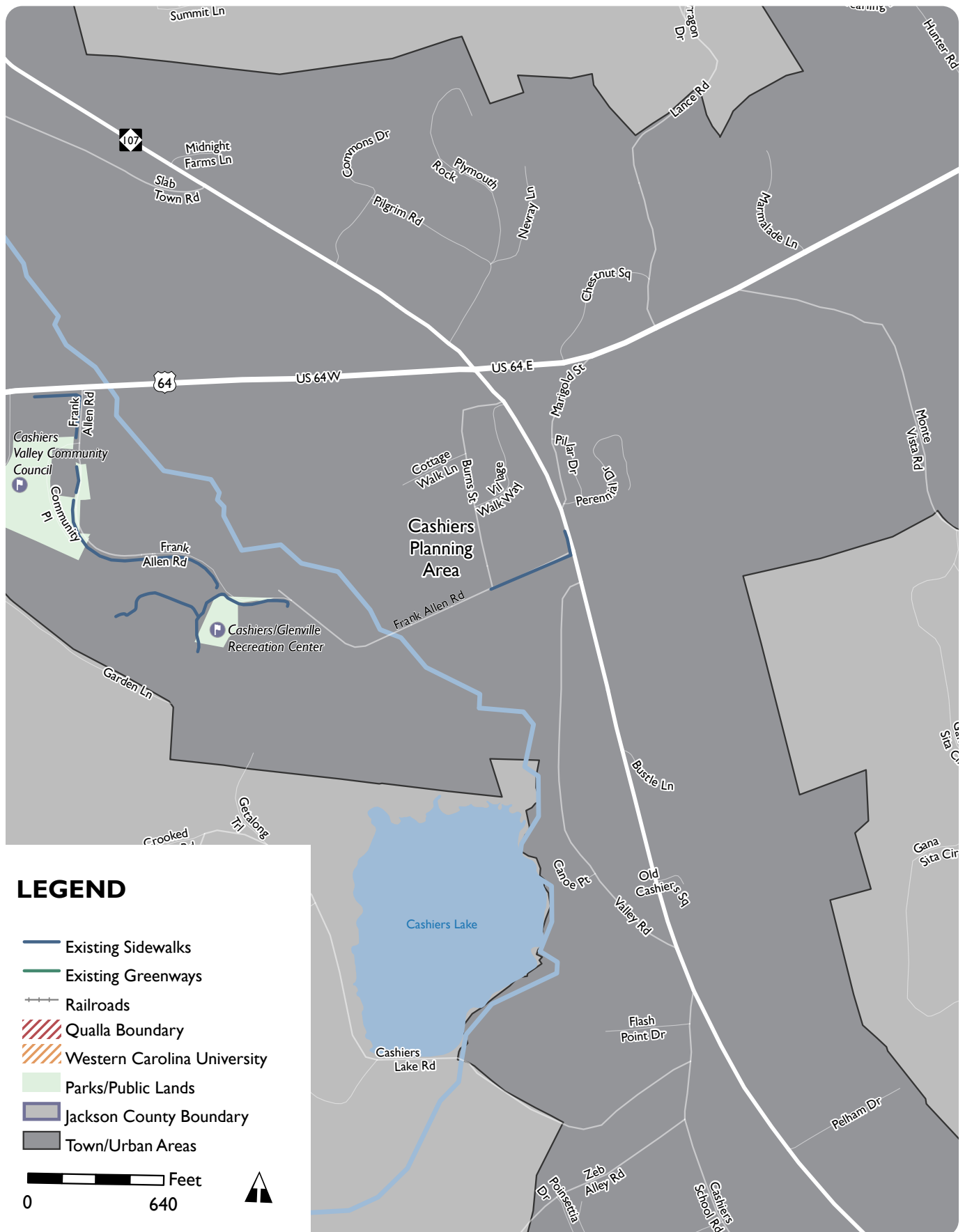
Map 3B. Existing Road and Pedestrian Network (Local Streets Excluded) – Sylva, Dillsboro and Webster



Map 3C. Existing Road and Pedestrian Network – Cullowhee Planning Area and Forest Hills



Map 3D. Existing Road and Pedestrian Network – Cashiers Planning Area



To further describe the roads in Jackson County, Map 4 Series illustrates the functional classification, a common method to characterize roadways, and Map 5 Series illustrates the Average Annual Daily Traffic (AADT), where provided by NCDOT.

EXISTING & PROGRAMMED PEDESTRIAN NETWORK

Currently, there are 25.5 miles of sidewalks in Jackson County. The longest segments are those that connect Sylva with Dillsboro and roughly between Sylva and Webster along NC-107. Other sidewalk connections are within Webster, Cullowhee, Cashiers and around the US-441 corridor. In the last few years, there has been recent sidewalk expansion within central Cashiers, around Western Carolina University, and around the US-441 corridor, where NCDOT installed a mid-block crossing signal. Map Series 3 shows these existing sidewalks; most follow arterial or collector roads and are not located on local streets.

In terms of programmed or funded sidewalk projects, there are three NCDOT projects that are more advanced and have a construction timeline on the horizon.

- The Town of Sylva is partnering with NCDOT to construct a sidewalk along Skyland Drive from Asheville Highway to Chipper Curve (EB-5923).
- The second project is the NC-107 widening and upgrade project through Sylva, which will provide continuous sidewalks throughout the corridor (R-5600).
- Finally, the NCDOT has funds to improve Monteith Gap Road from Old Cullowhee Road to Ledbetter Road with pedestrian and bicycle infrastructure (12.BP.12.R.212).

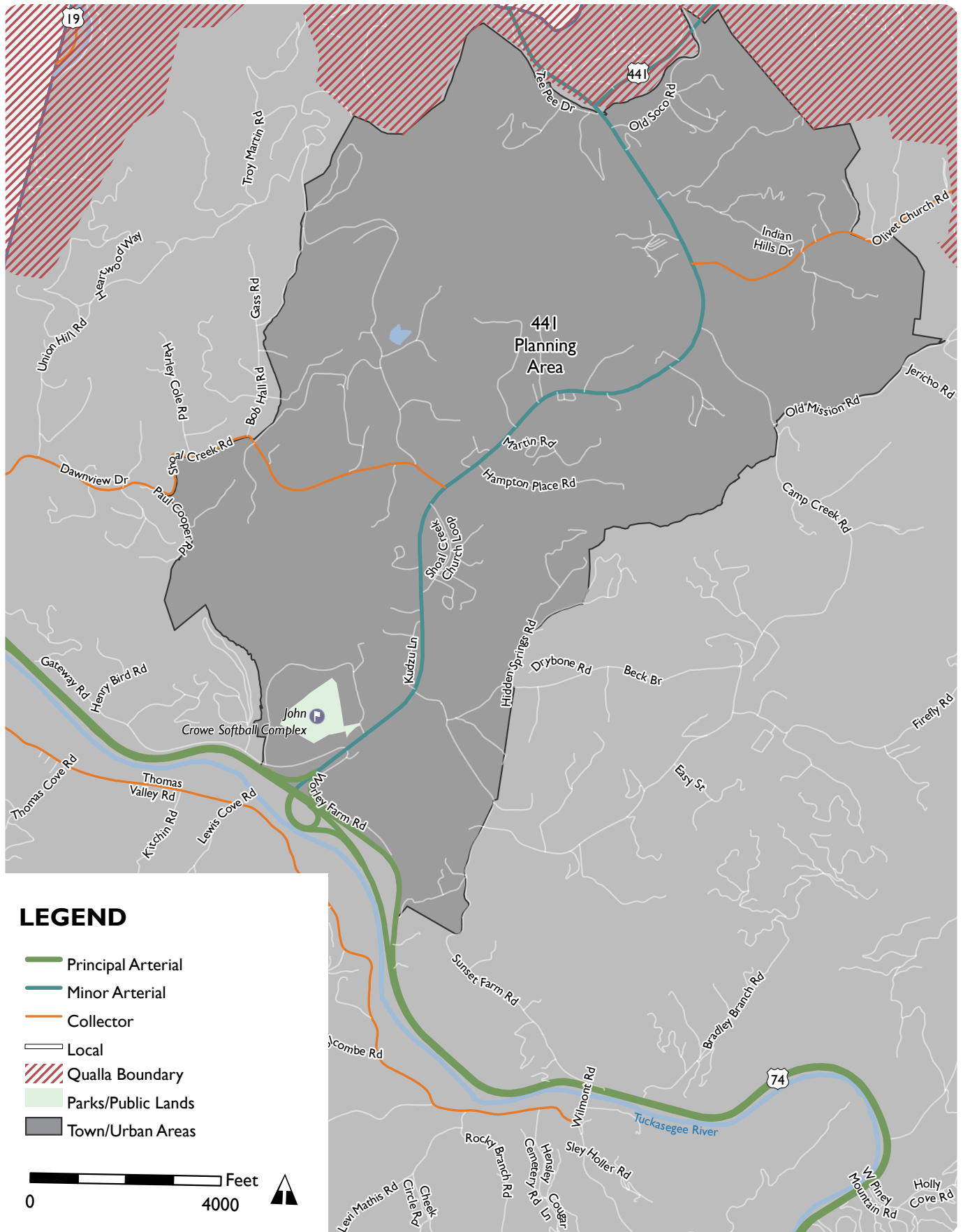
Today, Jackson County has one mile of greenway along the Tuckasegee River. When complete, the greenway will total 3.8 miles from near the intersection of NC-107/Locust Creek Road to near the S Painter/Monteith Road intersection. There are other smaller greenway segments around the Cullowhee Recreation Center and the Cashiers/Glenville Recreation Center. There are two planned greenways as studied in previous planning efforts that have moved beyond the conceptual planning phase: the Cullowhee Creek Master Plan (2019) and the Tuckasegee River Greenway Preliminary Master Plan (2009).

Vision Cashiers, a non-profit volunteer organization dedicated to those who live, work and play in Cashiers, has developed the Cashiers Greenway Ramble Master Plan. This is the plan for an in-town pathway connecting commercial districts with recreation opportunities. Segments of the Ramble have been implemented, and the Plan (further described in the Appendix) provides a vision for the implementation of the remaining segments.

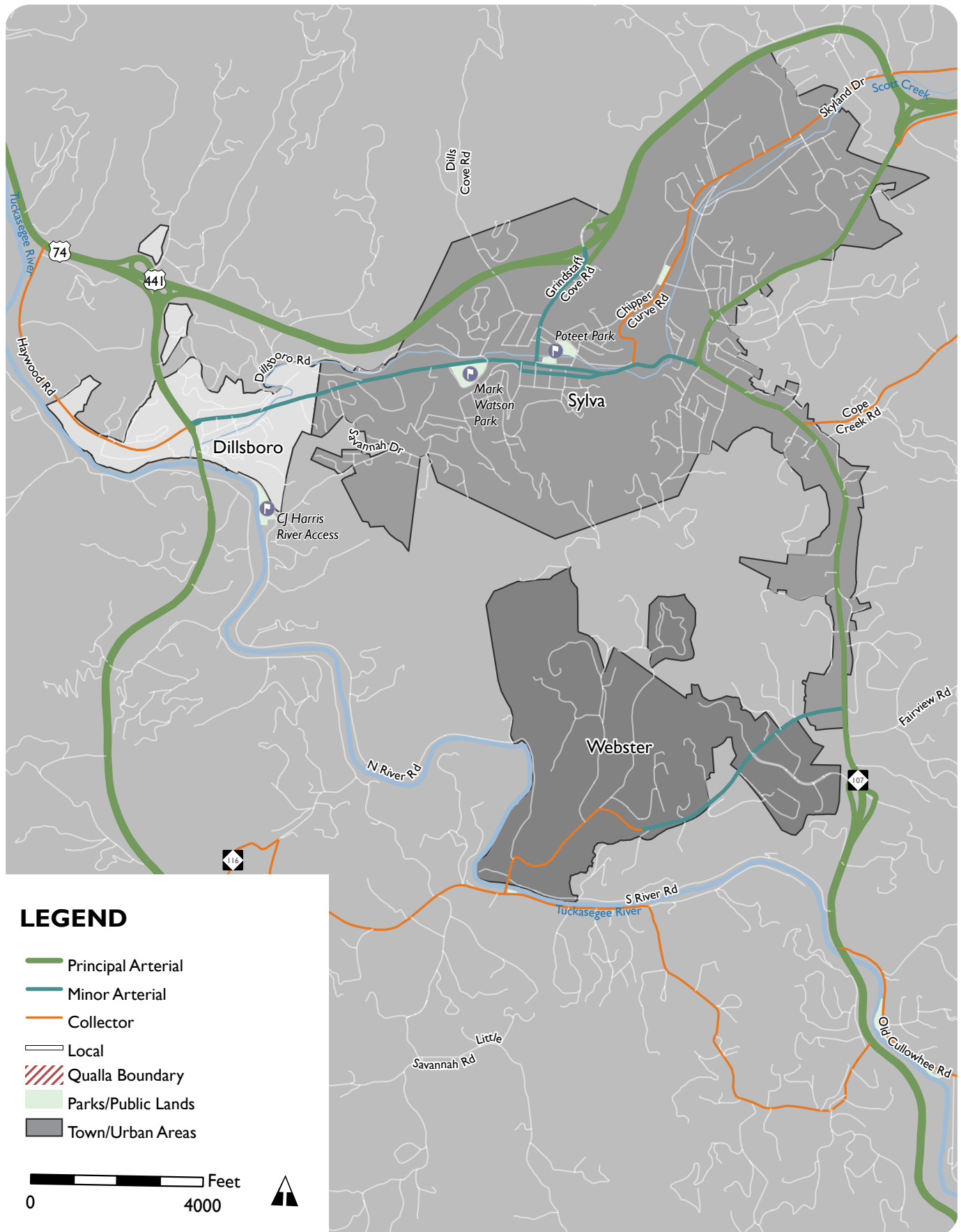


Image 8. Cashier's Ramble Greenway

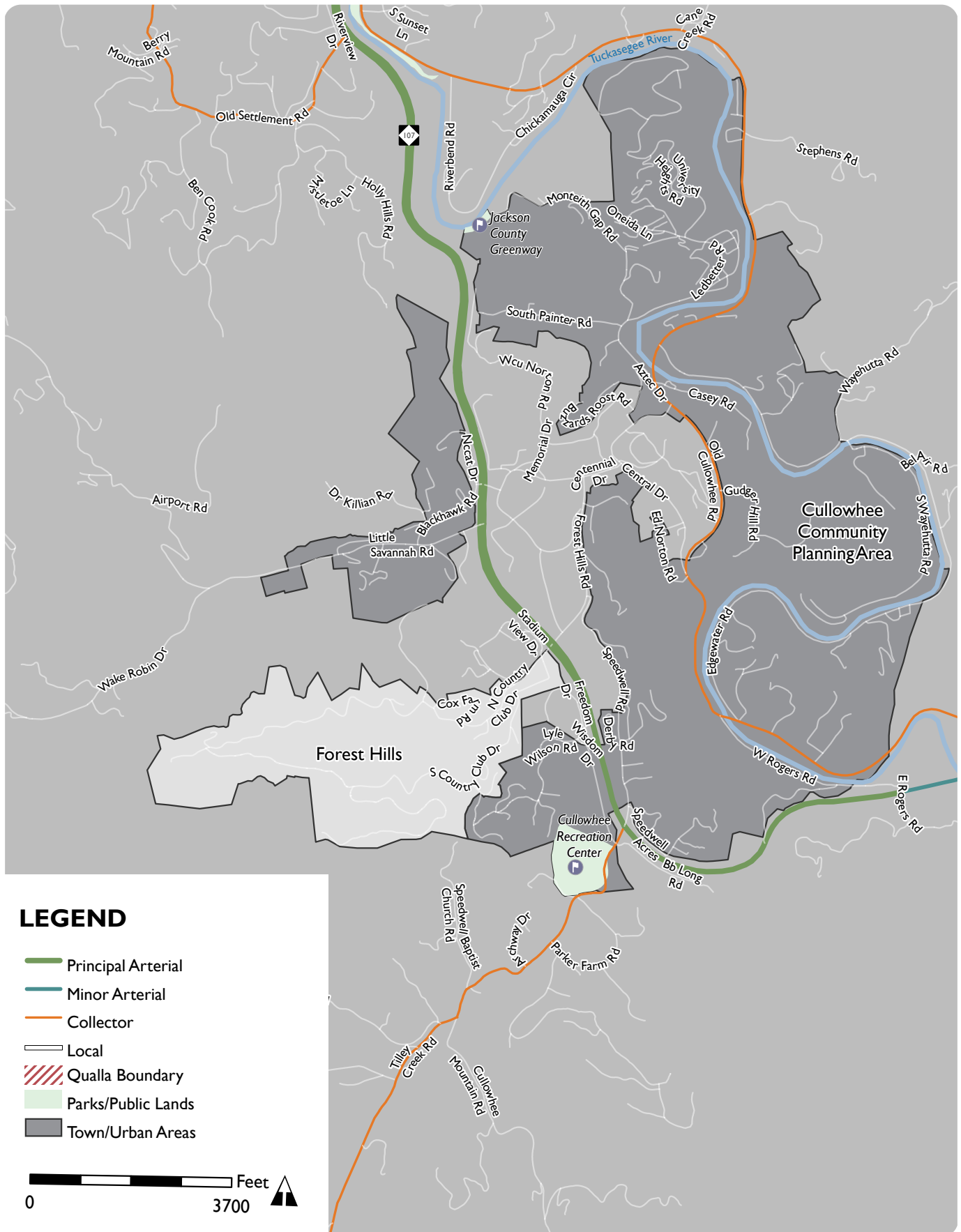
Map 4A. Roadway Functional Classification – 441 Planning Area



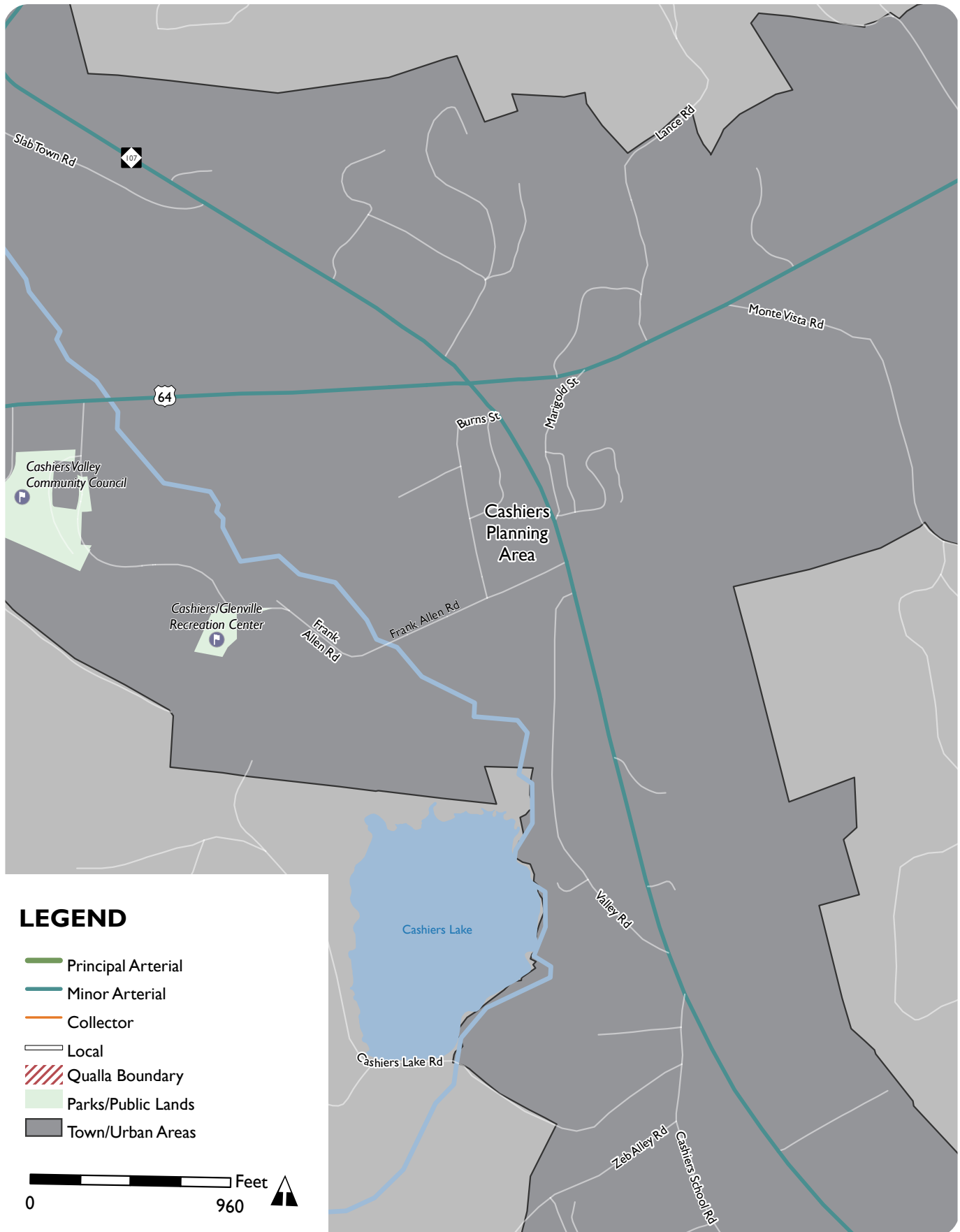
Map 4B. Roadway Functional Classification – Sylva, Dillsboro and Webster



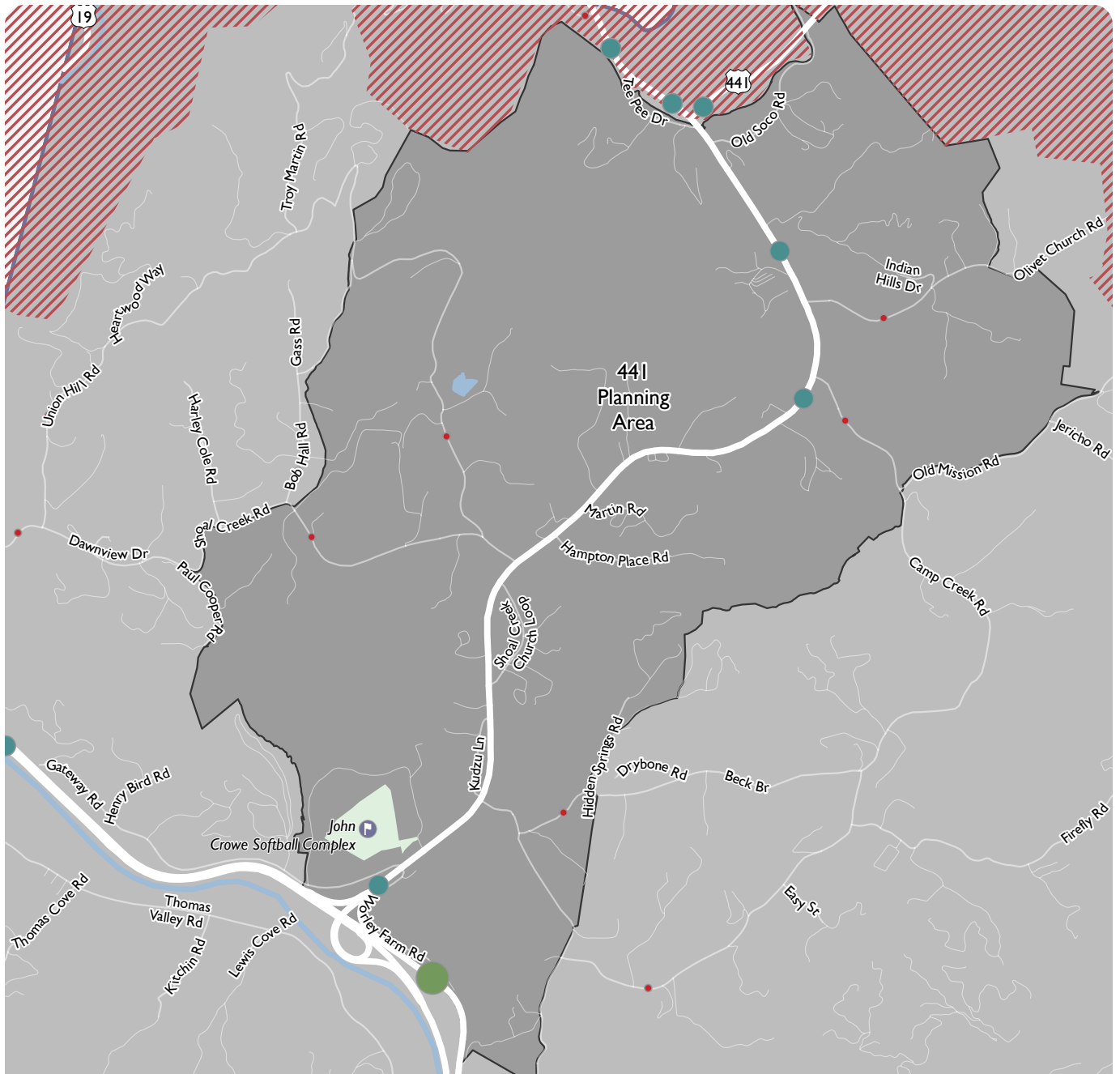
Map 4C. Roadway Functional Classification – Cullowhee Planning Area and Forest Hills



Map 4D. Roadway Functional Classification – Cashiers Planning Area



Map 5A. Average Annual Daily Traffic (AADT) - 441 Planning Area



LEGEND

- Qualla Boundary
- Western Carolina University
- Parks/Public Lands
- Jackson County Boundary
- Town/Urban Areas

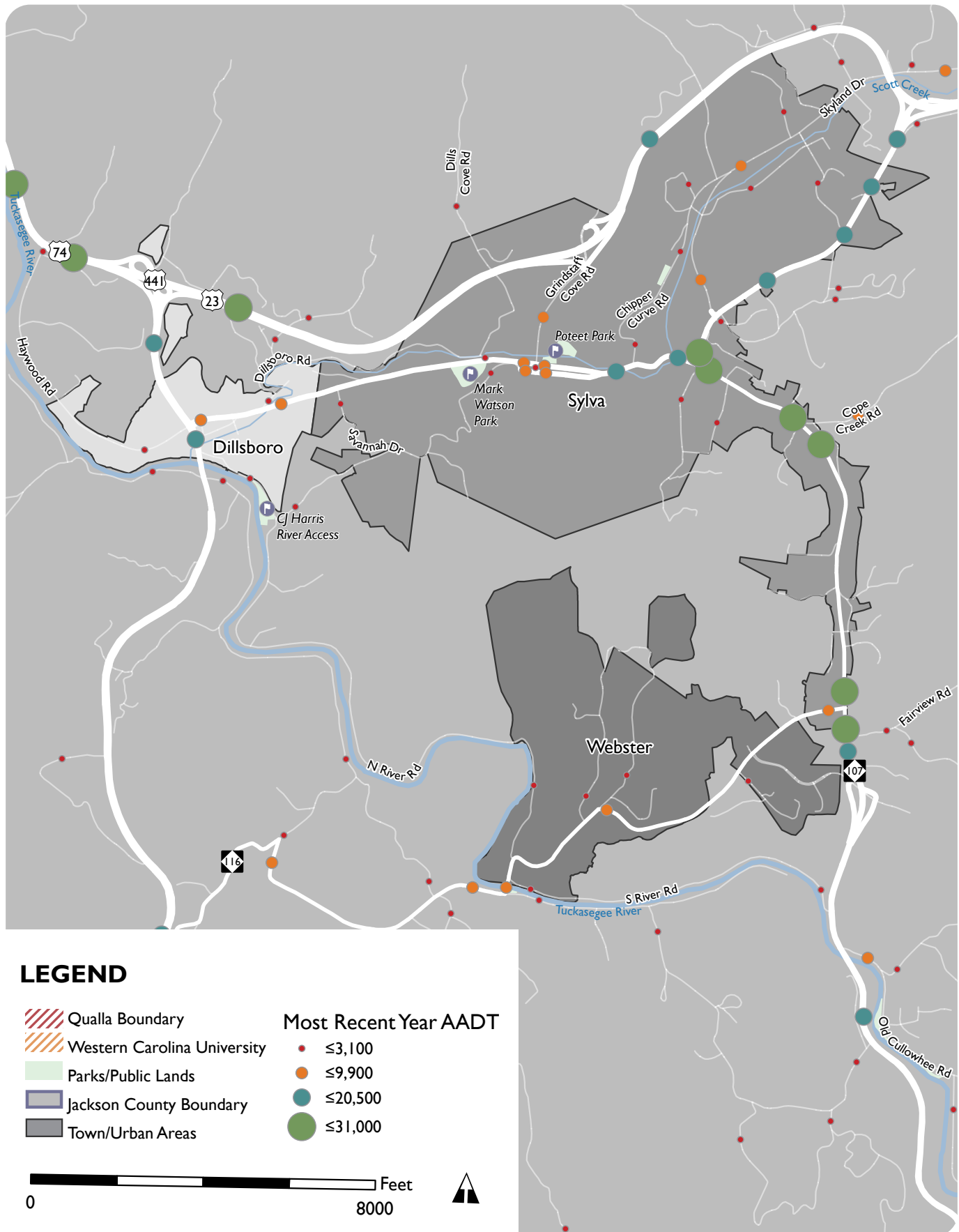
Most Recent Year AADT

- ≤3,100
- ≤9,900
- ≤20,500
- ≤31,000

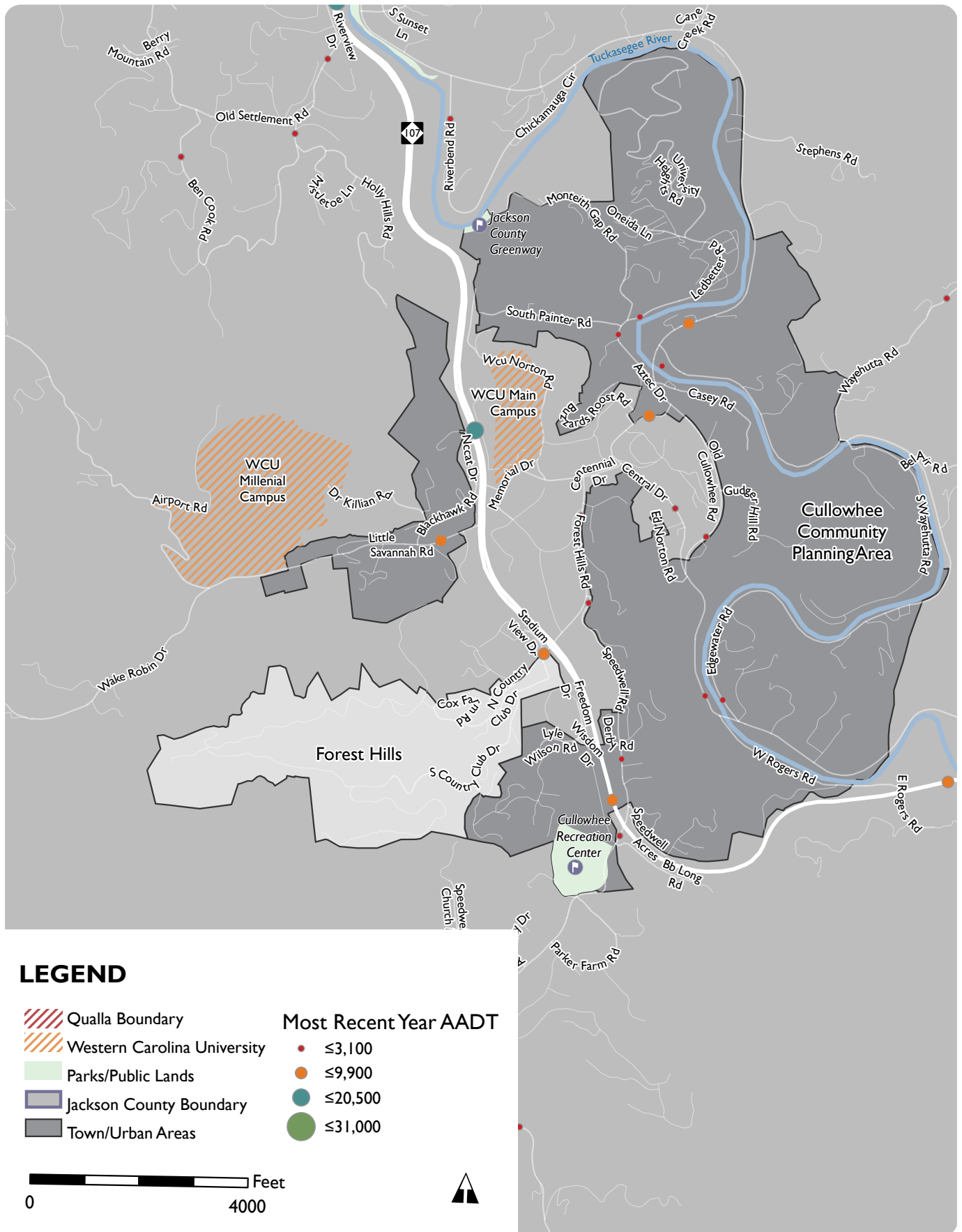
0 4000 Feet



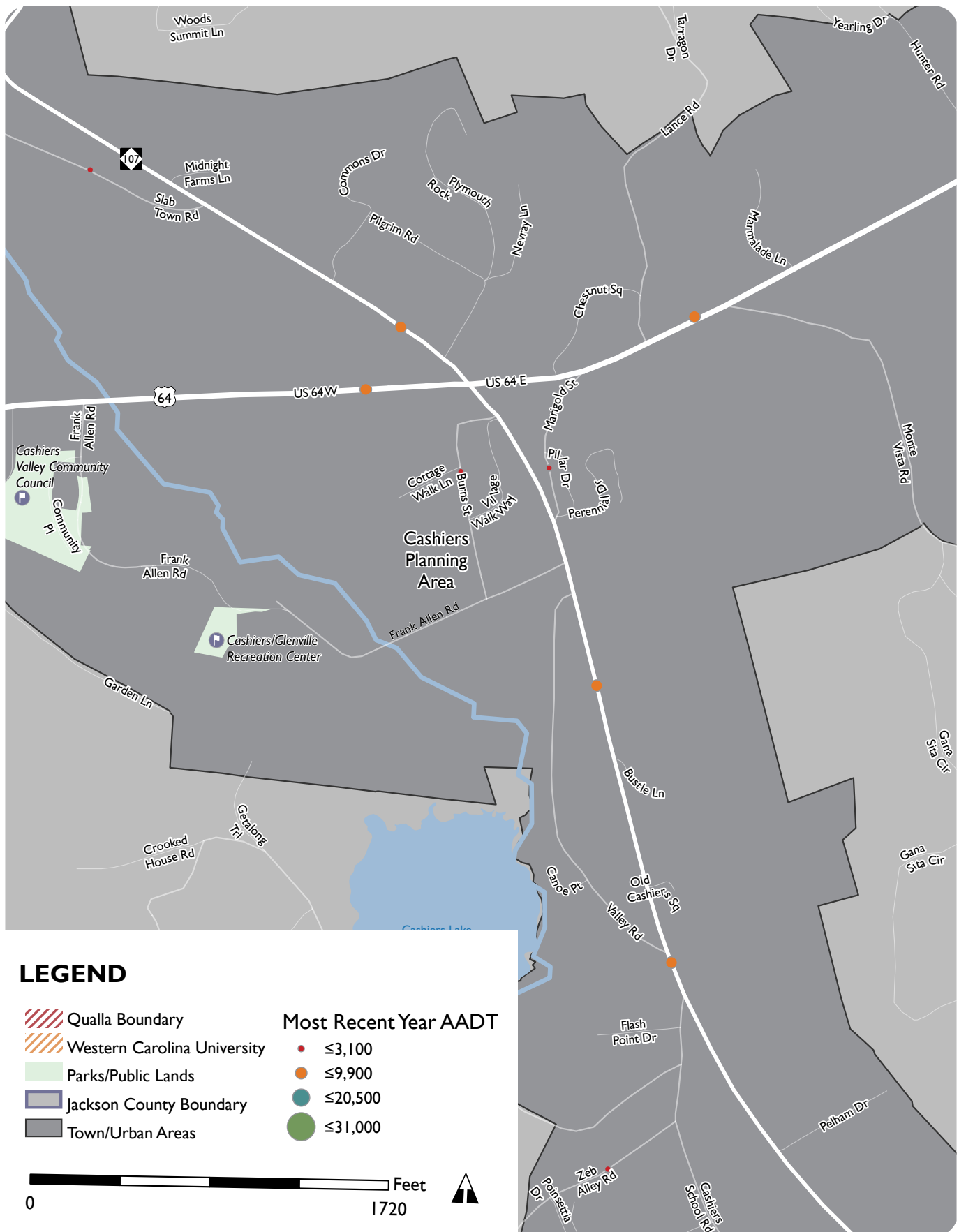
Map 5B. Average Annual Daily Traffic (AADT) – Sylva, Dillsboro and Webster



Map 5C. Average Annual Daily Traffic (AADT) - Cullowhee Planning Area and Forest Hills



Map 5D. Average Annual Daily Traffic (AADT) – Cashiers Planning Area





BIPOC DEFINITION

BIPOC stands for “Black, Indigenous, and people of color”, and is person-first language that acknowledges people and humanity. This language is intended to shift away from words like “minority” or “disadvantaged.” Other person-first language used in this Plan is “people walking” and “people driving” which is intended to remind us that we are all people and humans are our highest priority.

PEDESTRIAN CRASH ANALYSIS

Map Series 6 shows the locations of crashes in Jackson County that involved a person driving colliding with a person walking. These are crashes that took place from 2015 through 2019, the most recent year of full data available. These crashes were reported to NCDOT and do not include any unreported crashes. Most of the crashes occurred on higher volume streets (those with a lot of cars, such as NC-107) in the County and roads that also have higher posted speed limits.

There was a total of 29 reported crashes involving pedestrians between 2015 and 2019. Some key takeaways from this data include:

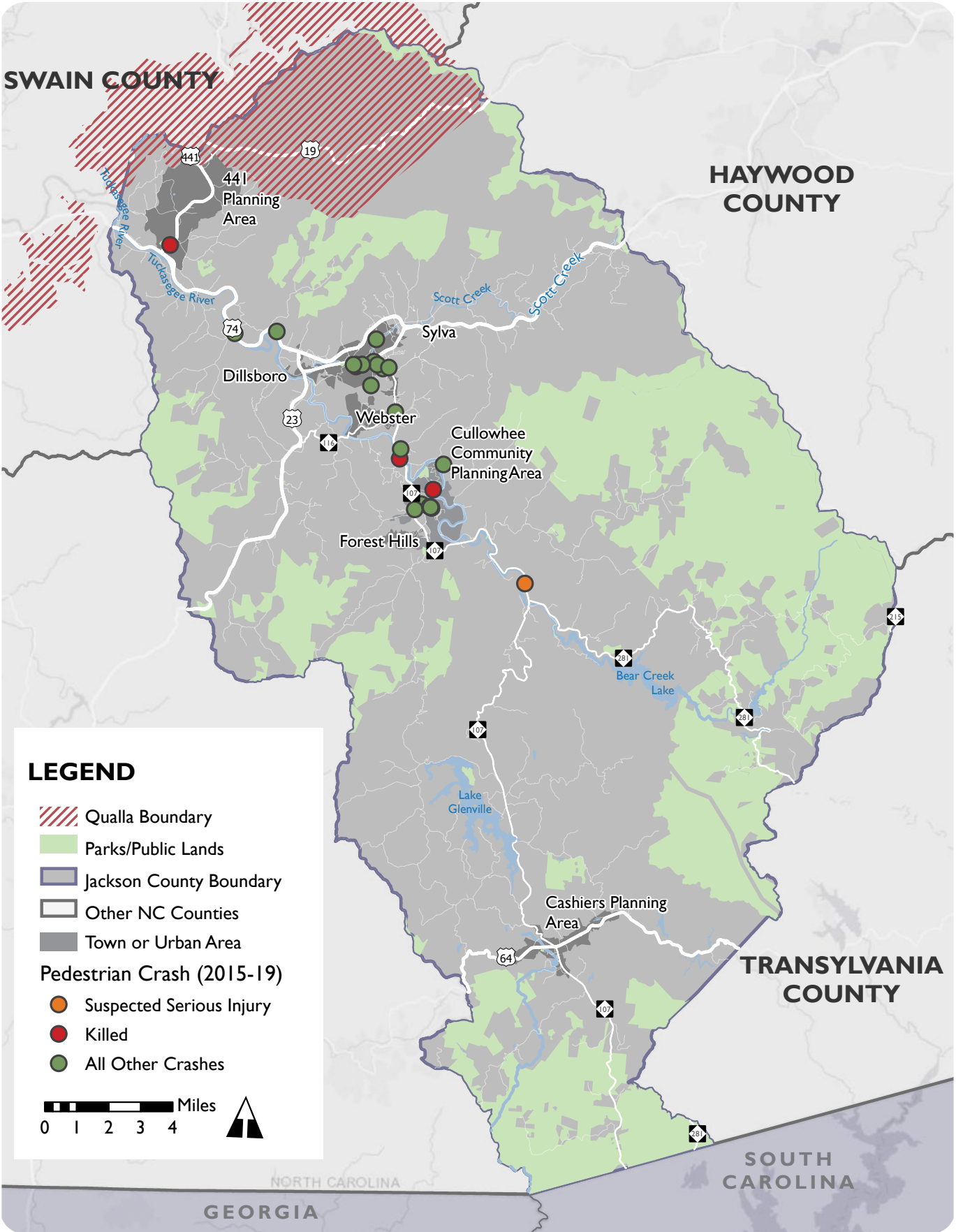
- Eight occurred on or near the Western Carolina University campus, in and around Cullowhee.
- Thirteen occurred within or near the Town of Sylva boundaries.
- Twelve took place at an intersection or were intersection related.
- Three resulted in a death of the pedestrian; 41% resulted in a minor injury of the pedestrian.
- Fourteen percent (14%) of the crashes involved someone identified as Black, Indigenous or person of color (BIPOC). Note that 16.8% of Jackson County's population includes an individual identified as BIPOC.

Map Series 7 illustrates the intersection crash frequency for people driving only between 2015 and 2019. Not surprisingly, intersection crash frequency is highest along Jackson County's high-volume roads. Those locations with higher frequency of crashes include:

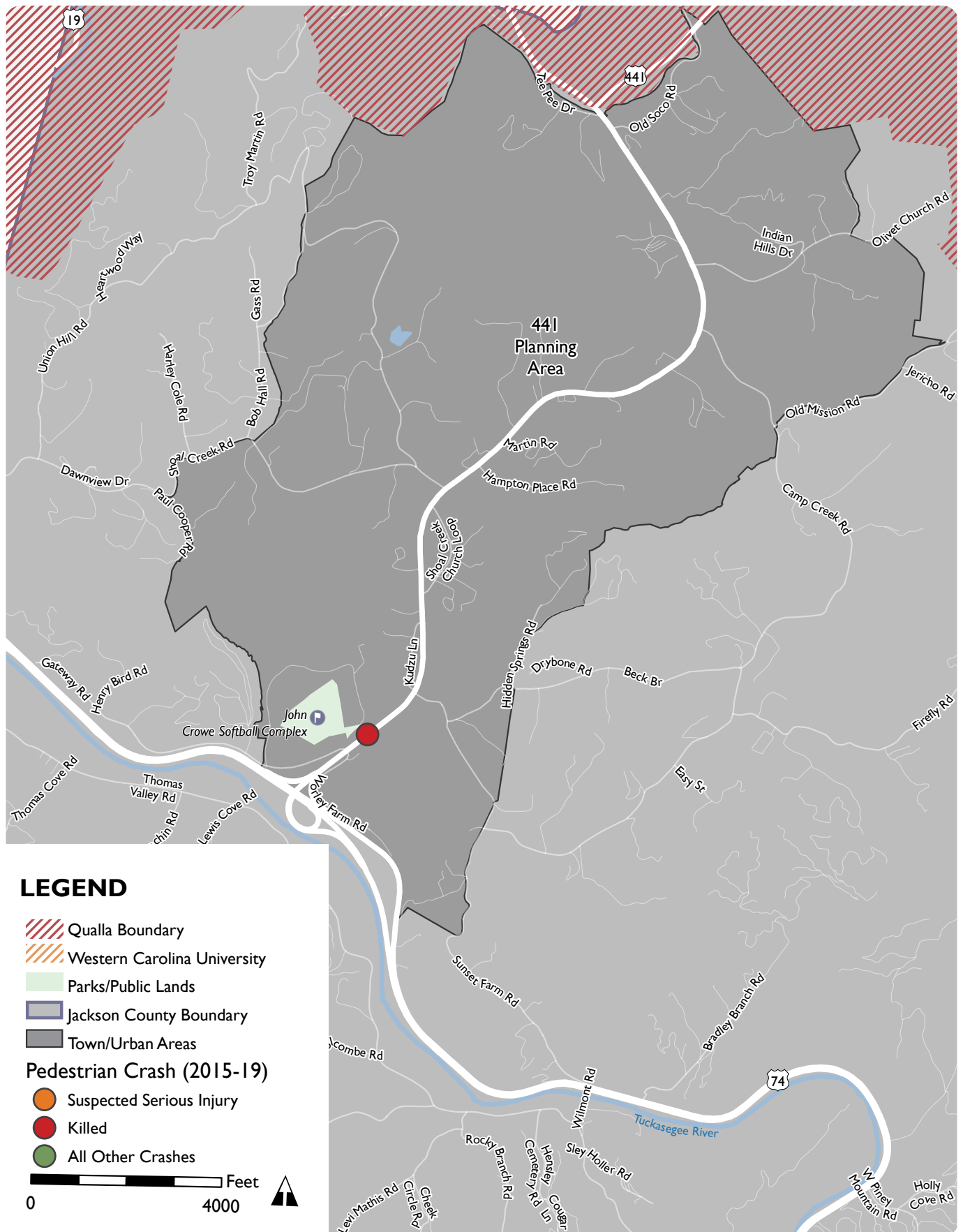
- US-23 and Cope Creek Road (SR-1449)
- US-23 Business and Skyland Drive (SR-1432)
- US-23 Business and NC-107
- NC-107 and Centennial Drive/Black Hawk Road (SR-1325)

Research shows that as roads are improved for people biking and walking, they become safer for all road users, including people driving. Following this logic, an outcome of this plan will be improved safety for all and a reduction in these fatal and severe crashes across the board.

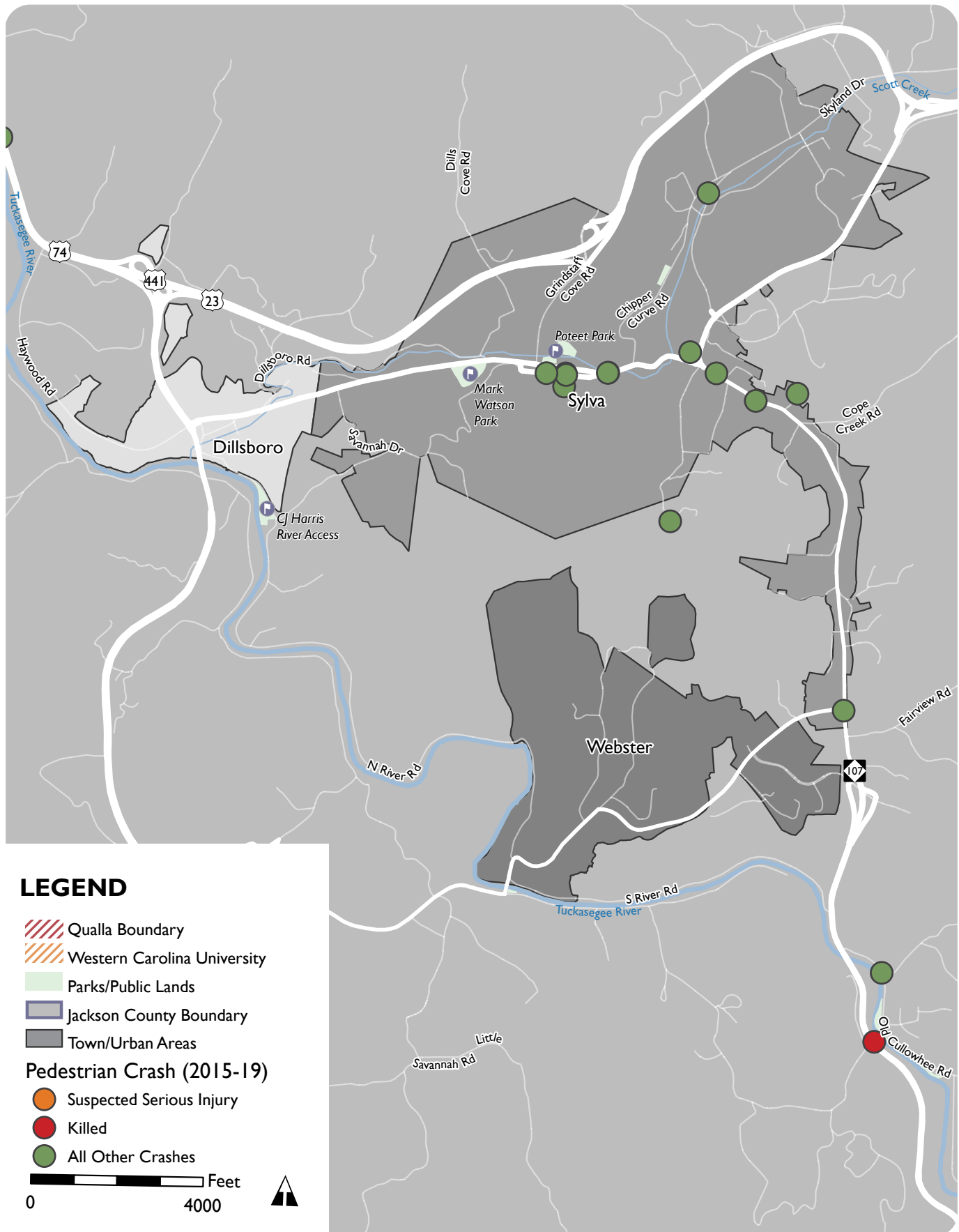
Map 6A. Reported Pedestrian Involved Crashes, 2015-19 - Jackson County



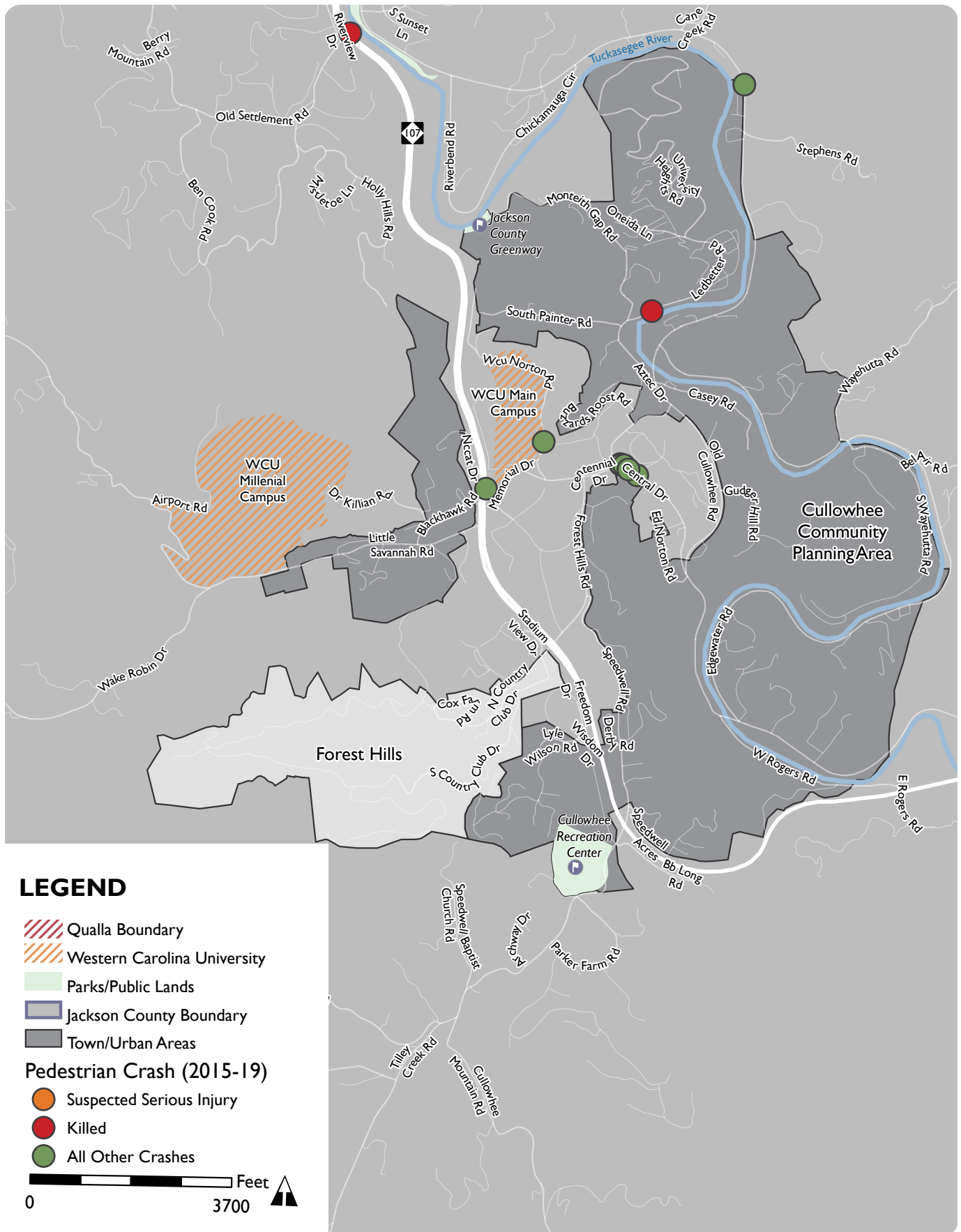
Map 6B. Reported Pedestrian Involved Crashes, 2015-19 – 441 Planning Area



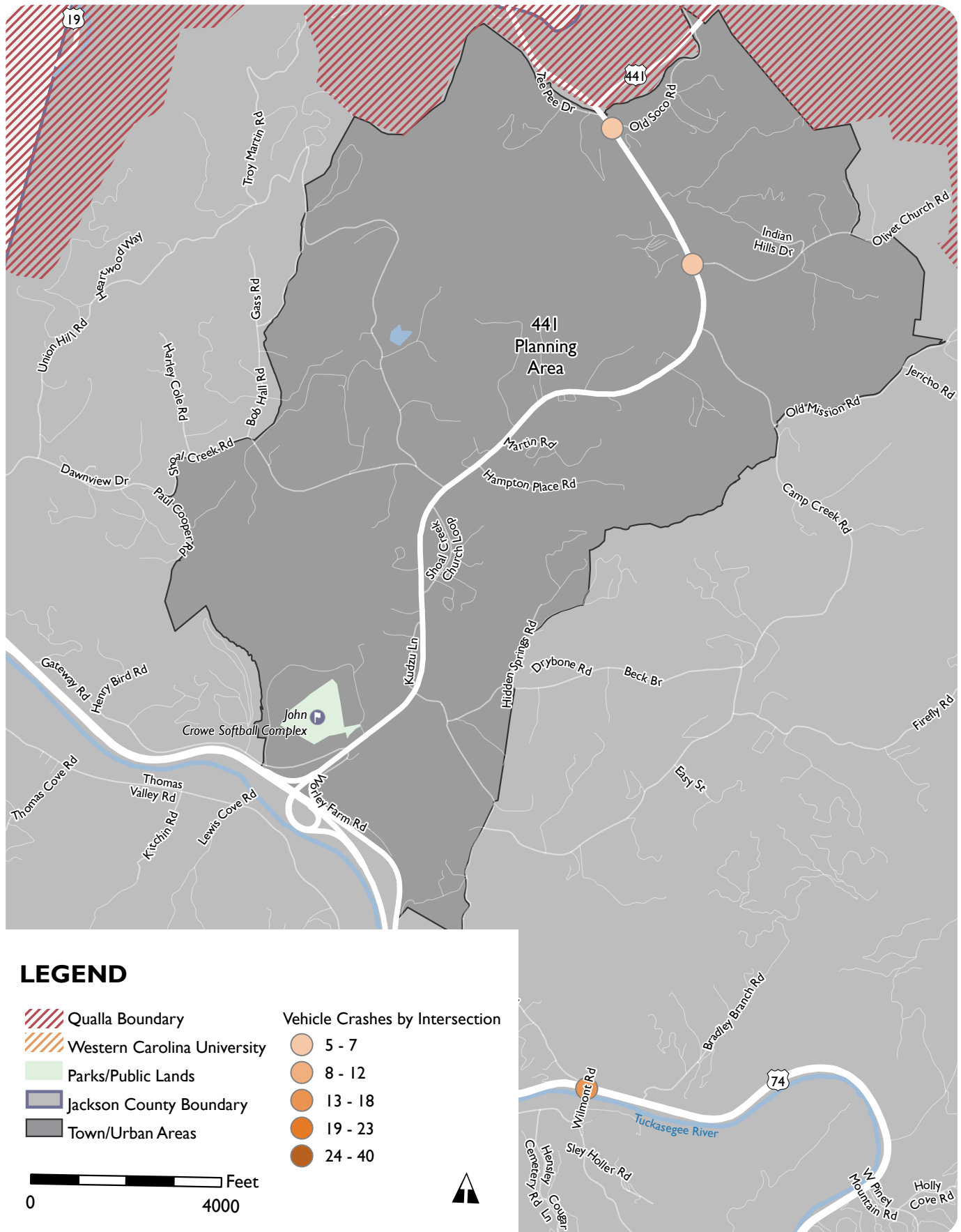
Map 6C. Reported Pedestrian Involved Crashes, 2015-19 – Sylva, Dillsboro and Webster



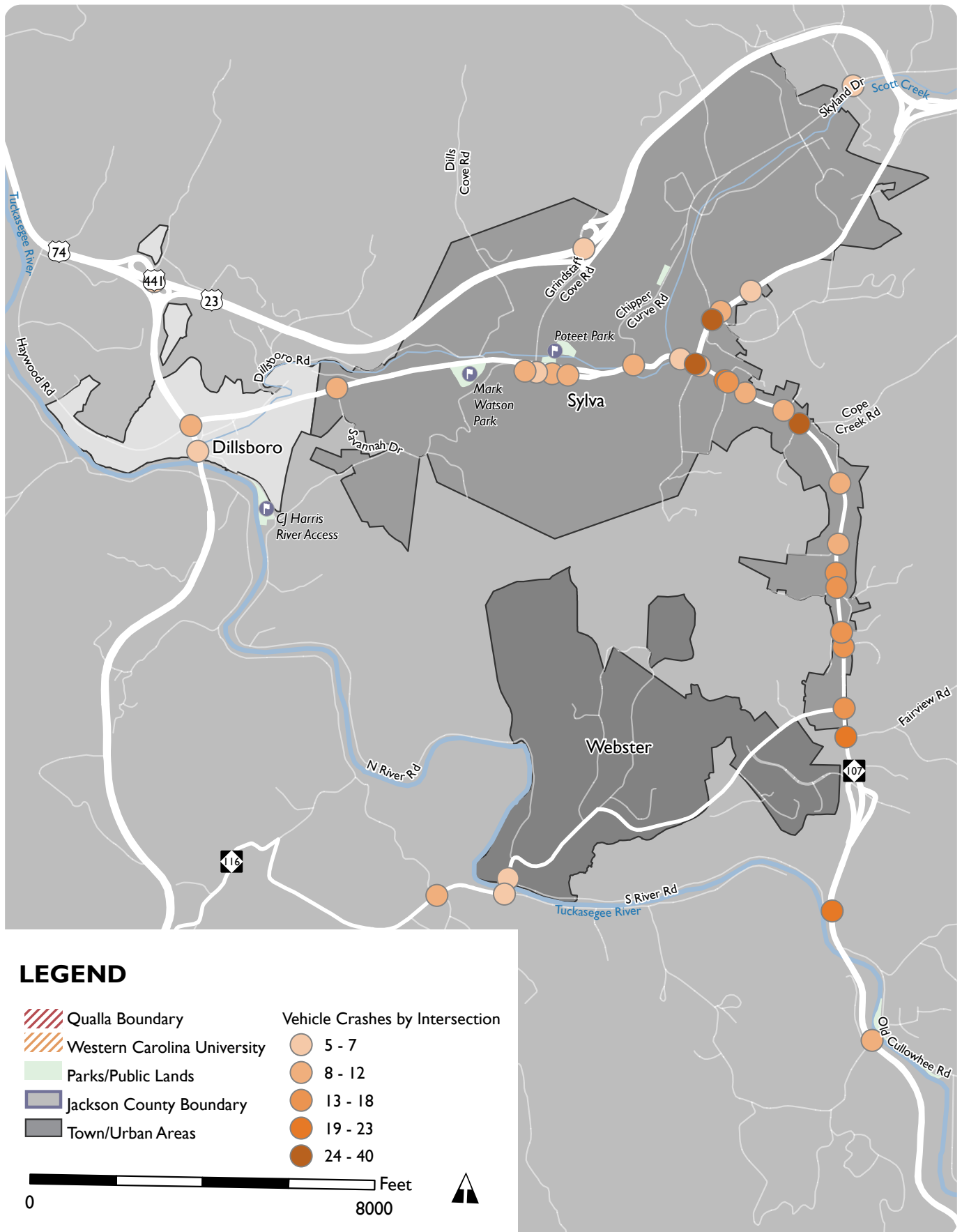
Map 6D. Reported Pedestrian Involved Crashes, 2015-19 – Cullowhee Planning Area and Forest Hills



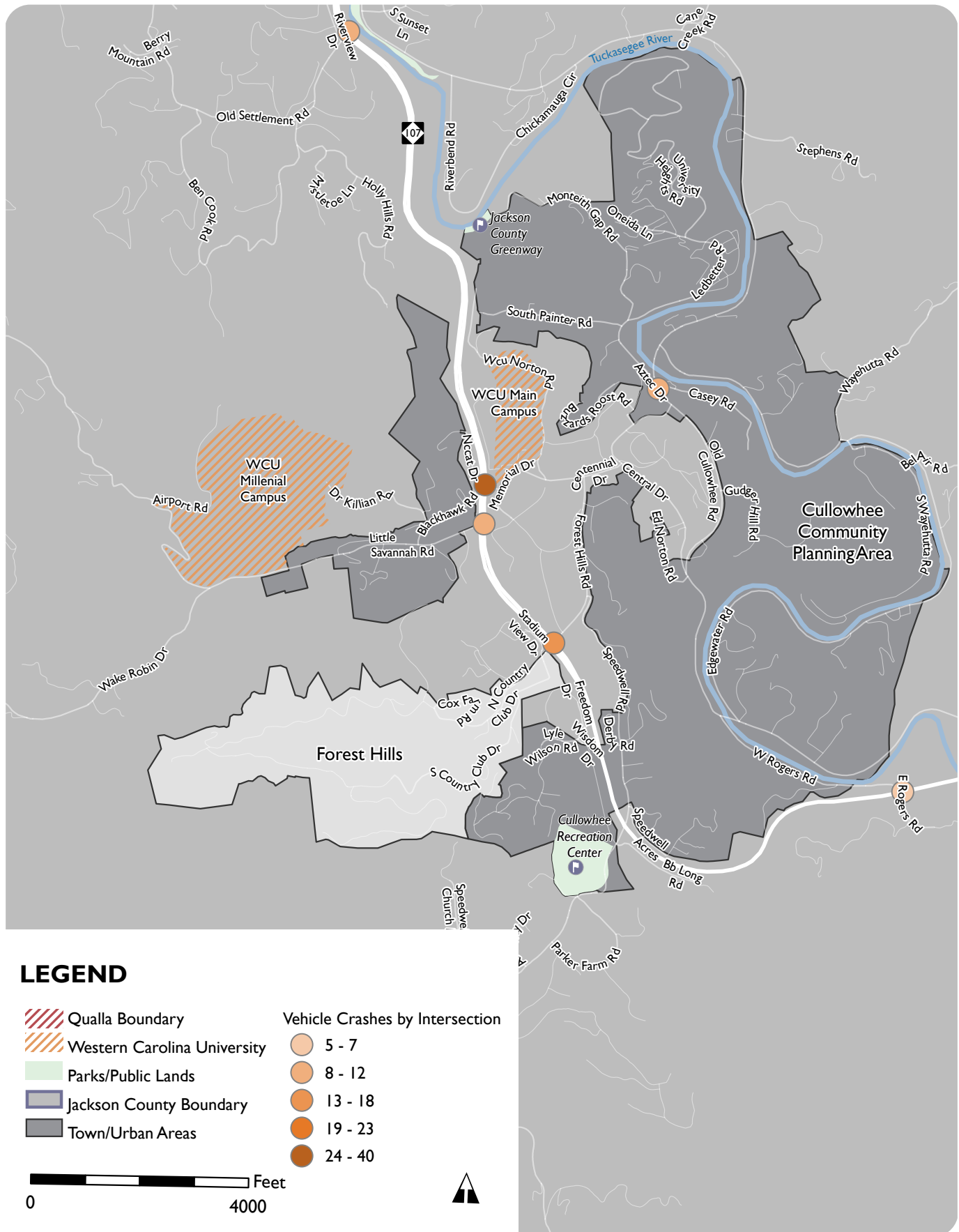
Map 7A. Vehicle Crashes By Intersection, 2015-19 – 441 Planning Area



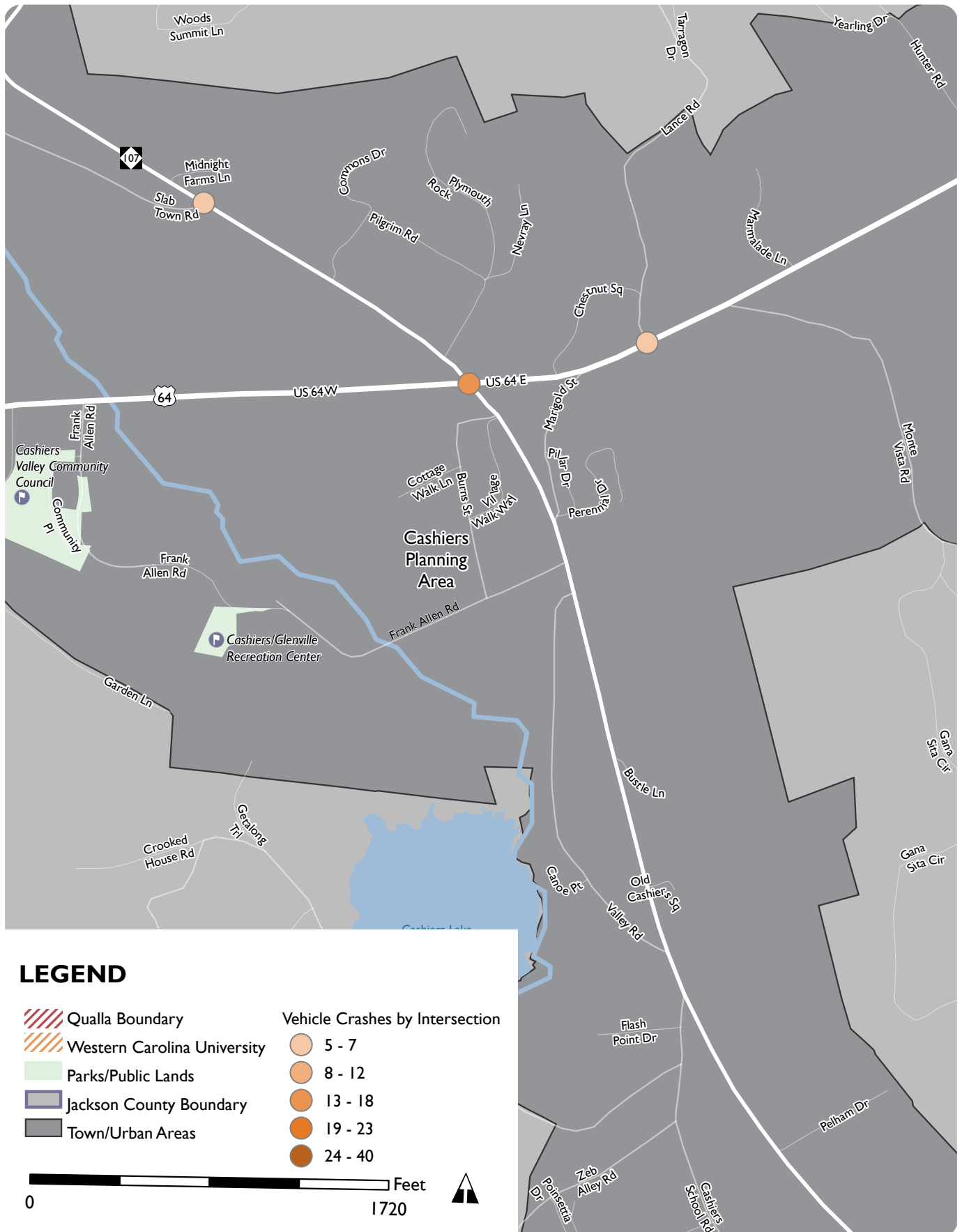
Map 7B. Vehicle Crashes By Intersection, 2015-19 – Sylva, Dillsboro and Webster



Map 7C. Vehicle Crashes By Intersection, 2015-19 – Cullowhee Planning Area and Forest Hills



Map 7D. Vehicle Crashes By Intersection, 2015-19 – Cashiers



SPECIAL POPULATIONS & USER GROUPS

Map 8 Series illustrates an equity composite and analysis of Jackson County based on Census Block Groups. The equity index includes the following data factors: population 65+, non-English language spoken at home, vehicle access at home (zero vehicle households), disabled population, BIPOC population, poverty rank, and median income. These variables are common indicators of equity and individual need.

On Map 8 Series, darker colors indicate a higher equity index value which represents a higher equity need. The northern end of Jackson County, near Cherokee, Whittier and Harrah's Casino, represent the Block Groups with higher equity index value. On the other end of the spectrum, the far eastern and western edge Block Groups of the County comprise lower equity index scores likely because of the significant amount of protected land in those regions and low population density. Central areas of the County, home to Sylva, Dillsboro and Webster, also have higher equity index scores as do the Block Groups just south of the Tuckasegee community.

Jackson County is known for its educational institutions, which brings to focus another special user group – students, faculty and staff. The County is home to Western Carolina University, a an institutional member of the University of NC System, and Southwestern Community College, a member of NC's Community Colleges system. These institutions play an influence on the County's the demographics and transportation patterns/needs.

COMMUNITY CONCERNS, NEEDS AND PRIORITIES

Members of the community shared their thoughts on current walking routes, walking routes they would like to use and barriers to walking. Community participants shared desired destinations to access on foot in the County and general ideas for improvement. Themes from this feedback are further described in the Community Engagement section of this Plan, and the survey results are found in the Appendix.

NOTABLE OPPORTUNITIES & CHALLENGES

Based on feedback received from members of the community, the Steering Committee and the project team assessment, the planning team identified key opportunities and challenges as it relates to creating a more walk friendly Jackson County.

Connectivity

As shown in Map 3 Series, there are many roads in Jackson County but only a few offer connectivity to destinations locally and regionally. Generally, these connecting roads are the US and NC routes that cross the County. This limited connectivity results in more people driving on a few corridors, which translates into less than favorable experiences for people walking on these roads. In contrast to the connecting roads, there are many miles of low volume, low-speed streets and rural roads throughout the County. Some streets are naturally conducive to people walking while others are limited due to terrain or topography. Although some rural streets naturally lend themselves to be more walkable, the remoteness of many rural areas makes it hard to connect to urban centers without a personal automobile.

Coordination with Railroad

While this Planning effort was underway, the NCDOT was working on the development of the Great Trails State Plan. The goal of the plan is to connect all 100 counties by multimodal transportation. At the time of the drafting of this Plan, the first draft of the statewide trails network is being finalized and will be distributed to stakeholders and the public in 2021. Key corridors of the existing and proposed greenways in Jackson County are included in the draft network, including a connection between Dillsboro and Canton in Haywood County which will require coordination with the railroad companies that own the lines. In 2020, NCDOT engaged in conversations with Blue Ridge Southern and Great Smoky Mountains Railroad, both which could be promising to greenway connections.

Problematic Street Crossings

When a street network is largely defined by higher volume connecting roads and lower volume and disconnected local streets, it becomes inevitable that people walking will encounter problematic street crossings. There are several street crossings that community members expressed concerns about, many of which are streets that intersect with NC-107, Webster Road (NC-116), downtown Sylva, Haywood

Map 8. Jackson County Equity Need at the Census Block Group Based on Socio-Economic Factors

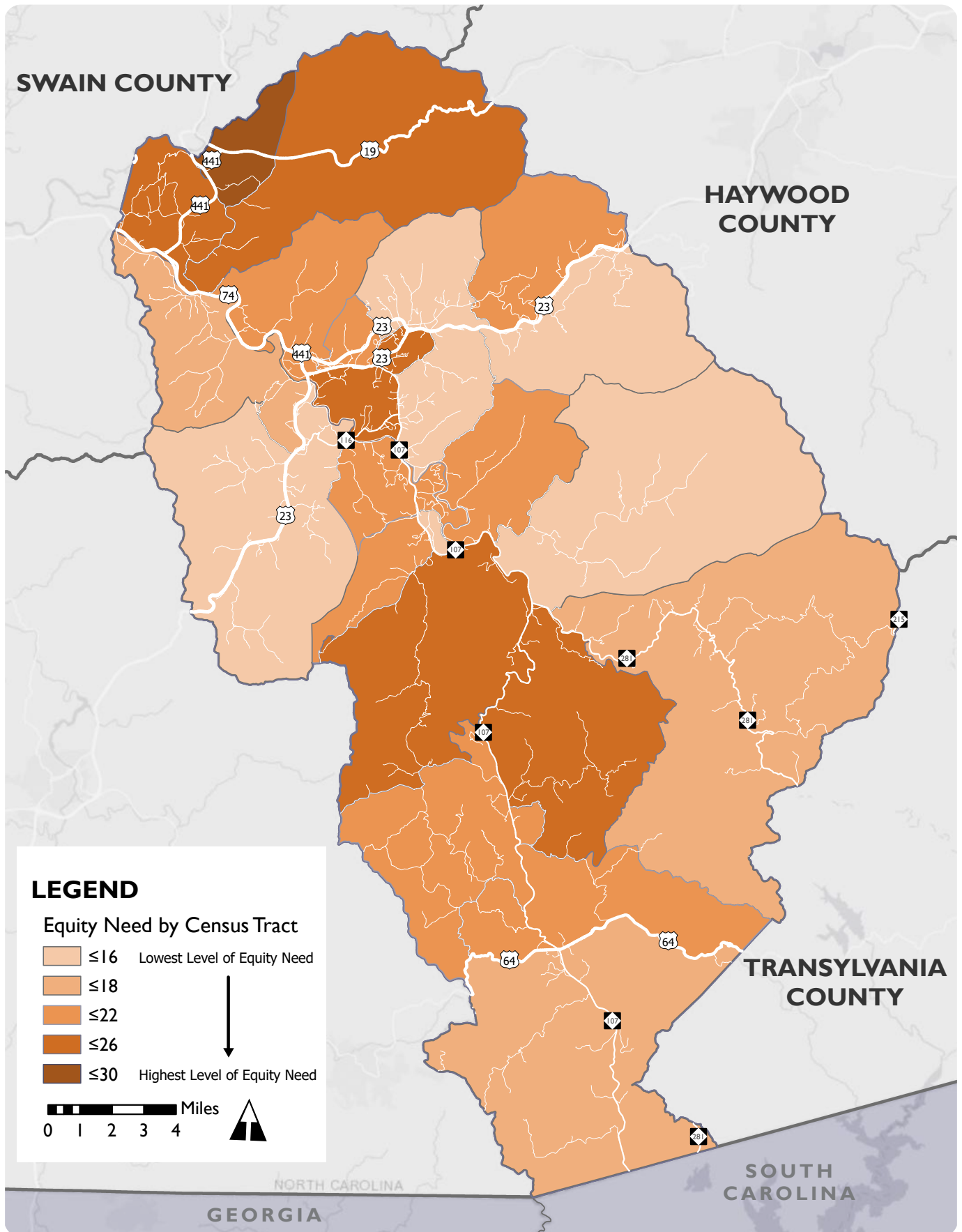




Image 9. An Example of a Lower Volume Roadway (Blackhawk Road) Where it Intersects with a High-Volume Arterial Road (NC-107).

Road at US-23, various crossings on the WCU campus and the Cashiers Crossroads.

County Maintained Sidewalks

The presence of County-maintained sidewalks – and the existence of this Plan – is born out of the structure of Jackson County’s community planning areas. These areas include Cashiers, Cullowhee and the 441 Corridor, where the population growth and land use are such that sidewalks are needed, however what lacks is a local municipality to plan, build and maintain this infrastructure. The County has filled this gap by assuming maintenance responsibility of new sidewalk in these urban areas, yet the County lacks the staff, resources or policies to guide future sidewalk development. This is both a challenge and

an opportunity for the County to address with the development of this Plan.

Road Maintenance

NCDOT maintains most roads in Jackson County while others are maintained by local municipalities or private entities (e.g., WCU). Understanding the maintenance responsibility of roads is important as it identifies the partners that are involved in designing, constructing and maintaining a project. Maintenance responsibility also has implications related to funding opportunities. As the major roadways in Jackson County are under NCDOT’s purview, planned projects would involve close coordination with this agency moving forward.



Image 10. A Young Family Walking on the Jackson County Greenway

Geography & Climate

The weather year-round in Jackson County is supportive of walking: summers generally stay mild and winters do not get too cold. The Jackson County Tourism Development Authority's tag line is "Play On", which alludes to the culture that embraces the outdoors. The accessibility of nature in the County cannot be beat.

Major Physical Barriers

It is important to understand physical barriers to transportation networks as these often have the biggest impact to people walking and can increase the cost and permitting process for new connections. In Jackson County, limited access highways (like US-23, where there are limited places where people

can enter/exit the roadway) pose a significant barrier as there are limited roads that a pedestrian can use to cross it. Other barriers in the County include large parcels of private land that are not traversable, and rivers, creeks or bodies of water that do not have bridges with pedestrian accommodations.

Perhaps the most significant physical barrier to walking in Jackson County is the terrain. Even gentle grade changes can be challenging for different-bodied individuals or those with a disability, and anecdotally, community members flock to locations where walking opportunities are along flatter segments of land (such as the Jackson Greenway or the Senior Services complex off NC-116). The grade also poses a challenge for new construction, as sidewalk connections may involve retaining walls or other intensive infrastructure which increases cost.

Grade also becomes an issue with making sidewalks and ramps ADA compliant.

Latent Demand & Future Growth

There is much potential for more walking in Jackson County, whether in the growing population of older adults or among college-aged students. Growing the sidewalk and greenway network is a critical component of many local and county planning efforts in Jackson County. Additionally, Jackson County has already experienced population growth, which is projected to continue. With growth and development come opportunities to improve the transportation system.

COMMUTING CHARACTERISTICS

To further understand transportation and multimodal potential, it is helpful to understand the work commuting characteristics in the County. For workers over the age of 16, 77.9% worked in Jackson County

and 20.9% worked outside of the county. 10.4% worked from their home. Thirty percent (29.3%) of workers left their home for work between 7:00 am to 7:59 am, and 10% left their home between 8:00 am and 8:29 am. It took 38.6% of workers less than 14 minutes to travel to their workplace. Nearly all households (97.7%) have at least one vehicle available to them.^{vi}

INTERACTION WITH TRANSIT

Jackson County manages Jackson County Transit which provides deviated fixed-route (Jackson Trolley) and demand response services (door to door pick up at customer request). The demand response service provides transportation to the elderly, people with disabilities and the public for various reasons (e.g., shopping, employment, recreational activities). Jackson Trolley follows a set route but may deviate up to a ¼ mile in areas deemed safe for travel. Jackson County Transit services also provide connections to Asheville, Waynesville, Franklin and Bryson City by appointment. It is important to note that as of the end



Image 11. Jackson Trolley is the County's Deviated Fixed-Route Service, Not in Operation during Much of the COVID-19 Pandemic.

Table 2. Jackson Transit Ridership Use by Number of People

FY 2020		FY 2019	
Demand Response	14,609	Demand Response	18,663
Trolley	4,396	Trolley	8,004
TOTAL	19,005	TOTAL	26,667

of March 2020, the deviated fixed-route serving the Sylva-Webster-Dillsboro area (Jackson Trolley) had not operated due to the COVID-19 Pandemic and opened to limited service in spring of 2021.

According to the 2019 Census, 0.2% of people used transit when commuting to work. Table 2 provides ridership numbers for the Trolley and Demand Response services for Jackson County Transit in FY 2020 and FY 2019. The County Fiscal Year runs from July 1 to June 30; note that the FY 2020 includes several months of ridership figures when the Trolley was not in service. Not surprisingly, both Demand Response and the Trolley ridership were impacted by the Pandemic.

While relatively few people currently use Jackson County Trolley for transportation to work, transit could serve work trips very well in the County as many Jackson County residents both work and live in the County and their trip lengths are achievable by transit. Responses to the project surveys indicated some interest in better connections to certain destinations in the County via transit. The pedestrian recommendations in this Plan could serve transit connections very well, a topic addressed in the network recommendations of this Plan.

In addition to the County's transit service, WCU operates the Cat-Tran, or the Catamount On-Campus Transportation System. This is funded through student fees and offers transportation services throughout campus and to the Walmart and Ingles grocery stores on NC-107.

CURRENT WALKING RATES

The County does not have current data on walking rates. To offer an approximation of the trips taken on foot, the online fitness website and app, Strava,^{vii} can provide a broad overview of the networks on which people walk, hike and run. Strava has developed "heat maps" showing aggregated public activities taken by its users over the last two years. In this case, people who travel by foot will use the app or website to record their trip or exercise information. Strava's activity is derived from users who publicly share their routes. Some users may opt out of updating their journeys, and areas with very little activity may not show up on the heat map. It is important to note that these trips are typically taken for recreation purposes and not transportation, so they are less likely to indicate the complete picture as it relates to pedestrian activity. Communities that have actual count data walking can develop factors, or ways to reference the Strava data to actual counts, which enable them to use the Strava heat maps to indicate broader walking rates. In the absence of this data, Jackson County can use the Strava heat map as a relative approximation of walking recreational use.

Figures 8 - 11 show a portion of streets and trails in Jackson County with blue and red colored lines that indicate relative use; blue indicates relatively lower use, and the redder, thicker lines indicate more use. A few notable features of these map include:

- In the 441 Corridor, there is distinct higher use where there are existing sidewalks.

- The heat map indicates more usage around the unincorporated community of Wilmot.
- There is a good bit of pedestrian activity in downtown Sylva, connecting to Dillsboro and down 107 towards Webster Road.
- There is higher amount of activity in Cullowhee, which is consistent with community feedback (many people cited that they drive to the WCU campus to walk).

- Not surprisingly, the Jackson County Greenway sees a lot of activity.
- Despite the relatively few sidewalks in Cashiers, there is quite a bit of pedestrian activity documented.

Figure 8. Heat Map from Strava Indicating Relative Walking/Running/Hiking Use in the 441 Corridor and Cherokee Area

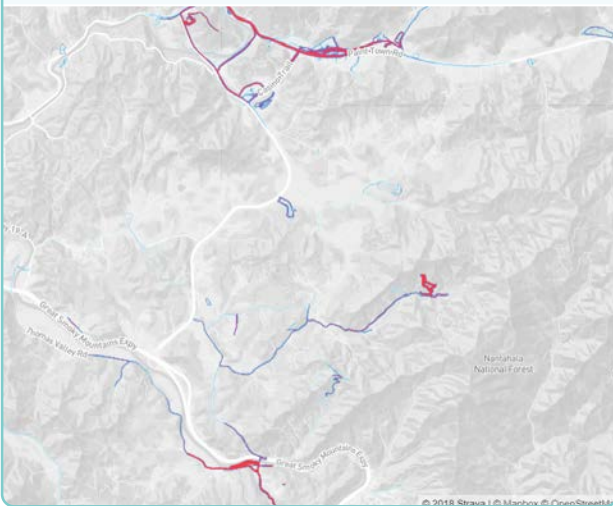


Figure 10. Heat Map from Strava Indicating Relative Walking/Running/Hiking Use in the Cullowhee Area

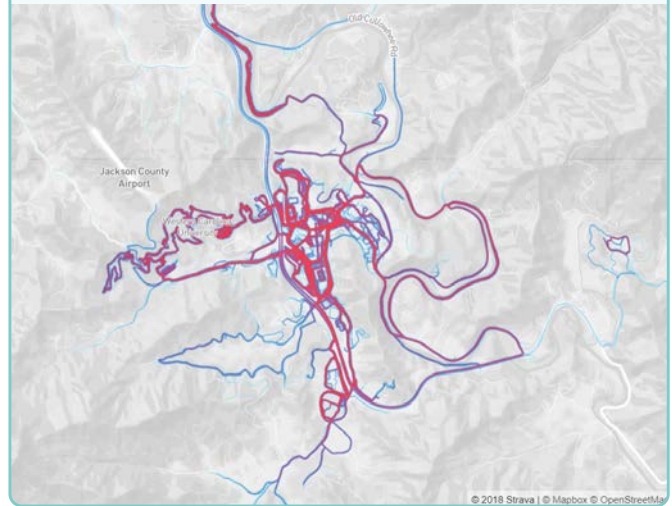


Figure 9. Heat Map from Strava Indicating Relative Walking/Running/Hiking Use in the Sylva, Dillsboro and Webster Area

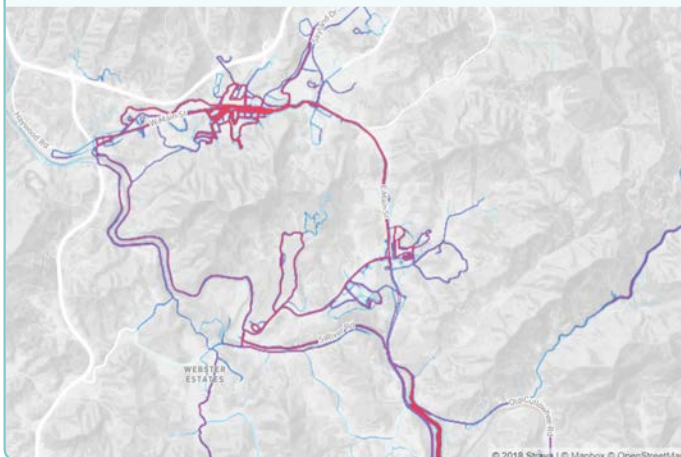


Figure 11. Heat Map from Strava Indicating Relative Walking/Running/Hiking Use in the Cashiers Area



POLICIES AND INSTITUTIONAL FRAMEWORK

When it comes to zoning and development regulation, Jackson County is unusual in that it has three areas with individual zoning ordinances to guide growth and development. The areas include the Cashiers Regulated District, the US 441 Regulated District, and the Cullowhee Community Planning District. While zoning regulations outside of the three regulated districts do not apply, they are subject to a variety of development regulations, such as the County's land subdivision, mountain ridge protection, or signage standards.

In the Recommended Programs and Policies chapter of this Plan, a thorough review of the Jackson County Unified Development is provided as it pertains to sidewalk and greenway development in the un-zoned areas in Jackson County, as well as the three regulated districts. A set of recommendations is provided that aligns with the goals found in the County Comprehensive Plan.

RELEVANT LOCAL, REGIONAL AND STATE PLANS

In Appendix E, the full review of relevant local, regional and state plans is provided. The plans that have been reviewed are shown in Table 3.

Table 3. Previous Jackson County Plan Documents Reviewed as a Part of Jackson Walks

PLAN NAME	YEAR
Tuckaseegee River Greenway Preliminary Master Plan	2009
Jackson County Greenways Project Comprehensive Master Plan	2009
Sylva Comprehensive Pedestrian Plan	2010
Eastern Band of Cherokee Indians Pedestrian Transportation Plan	2010
Cashiers Transportation Priority Plan and Map	2012
NC 107 Corridor Study Report	2012
Cashiers Article VII Sidewalk Amendment	2012
Jackson County Demographic Data Report	2013
Blue Ridge Bike Plan	2013
Southwestern Commission Regional Trails Plan	2013
Webster Heart & Soul	2015
Southwestern RPO Steering Committee Survey Results	2015
Jackson County Comprehensive Transportation Plan	2017
Jackson County 2040 Comprehensive Plan	2017
Cashiers Small Area Plan	2018
Cullowhee Small Area Plan	2019
STIP: Projects funded in Southwestern RPO	2020
Great Trails State Plan	Underway

Overall, these plan documents point to the strong support of pedestrian and greenway infrastructure in the County. Recurring themes in these planning documents include:

- Connecting schools and seeking school-related program opportunities.
- Working with developers to expand walking opportunities.
- Continue greenway system expansion along the Tuckasegee River and elsewhere in the County.
- Coordinate with local municipalities to construct sidewalks and greenways.
- Work with NCDOT and the Southwestern Commission Rural Planning Organization (RPO) on project and funding coordination opportunities.

Map Series 9 indicates the pedestrian projects identified in the 2017 Comprehensive Transportation Plan (CTP). It should be noted that there are priority projects identified in this Plan that are not in the CTP. Some of these priority recommendations were lifted from plan documents developed after the CTP was adopted; and others originated from community feedback. The next chapter of this Plan identifies those projects that are not in the CTP.

LOCAL PROGRAMS AND INITIATIVES

Jackson County's education, enforcement, encouragement, engineering and evaluation programming for walking and biking is managed through the Health Department by the Safe Routes to School Program. This is an exceptional program that has been underway since 2014 and has reach to schools and children that is unlike any other region in the state. This program targets K-8 and offers a variety of projects and events including:

- Walk and bike to/at school programs.
- Summer bicycle and pedestrian programs for camps and summer schools.
- Supporting community bike rodeos, helmet fittings and bike skills clinics.
- Resources to support programs such as pedometers, helmets, bike bells, bike lights, water

bottles, reflective vests etc.

- Let's Go NC! Training for PE teachers, lead teachers and law enforcement agencies.
- Training and assistance in walk audits.

(Insert image 'Sylva summer explorers.jpg' caption: Sylva Police Chief Hatten with Summer Explorers, a Week-Long Youth Training)

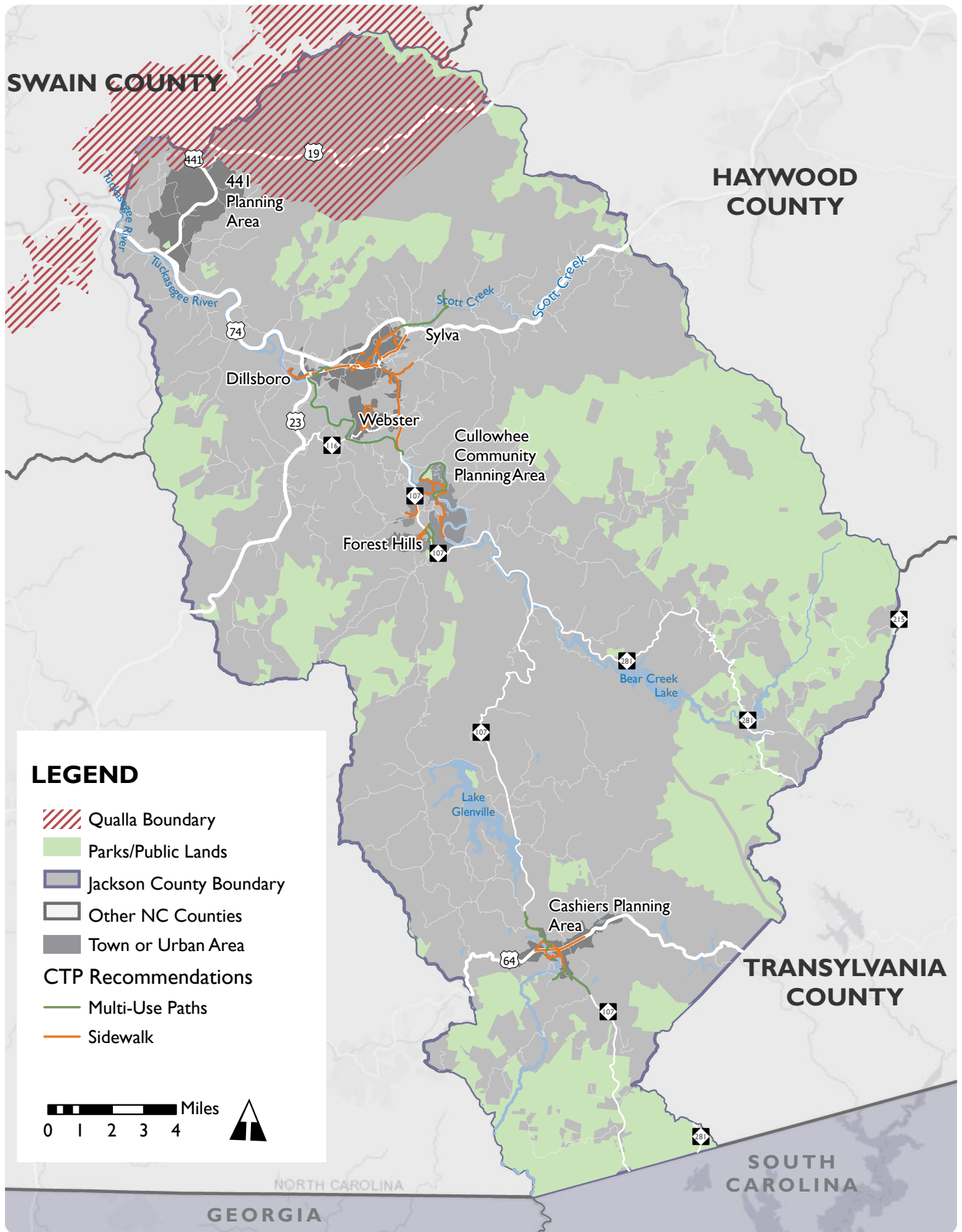
- Assistance to schools in writing and implementing SRTS policies and guidelines on walk and bike at school activities. Jackson County has a walk/bike policy in place as well as a policy to continue to use the Let's Go NC! Curriculum in schools.

The County's Safe Routes to School Project Coordinator sat on the Steering Committee of this project and closely supported the development of the Plan and project recommendations.

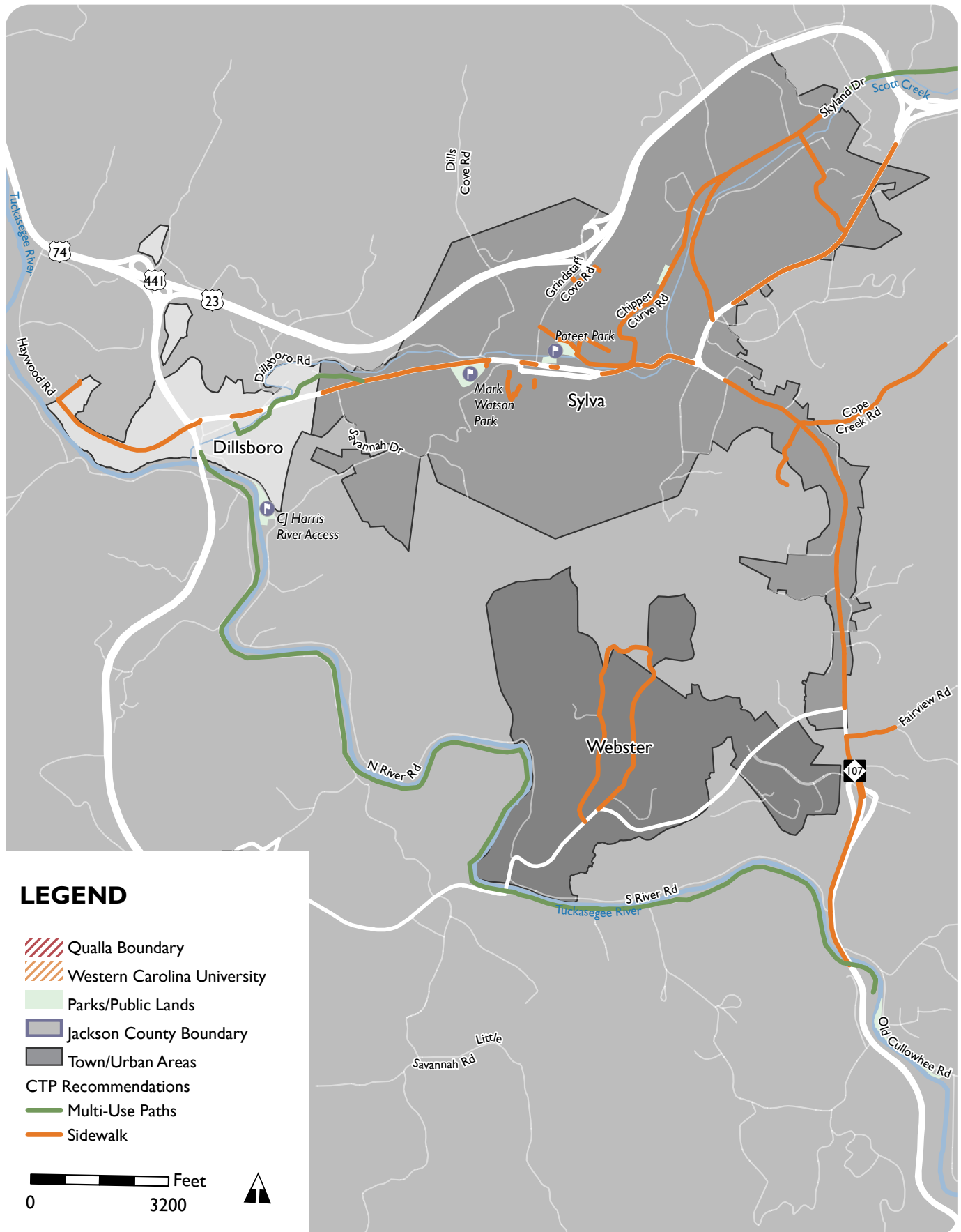


Image 12. Sylva Police Chief Hatten with Summer Explorers, a Week-Long Youth Training (Source: Jackson County SRTS)

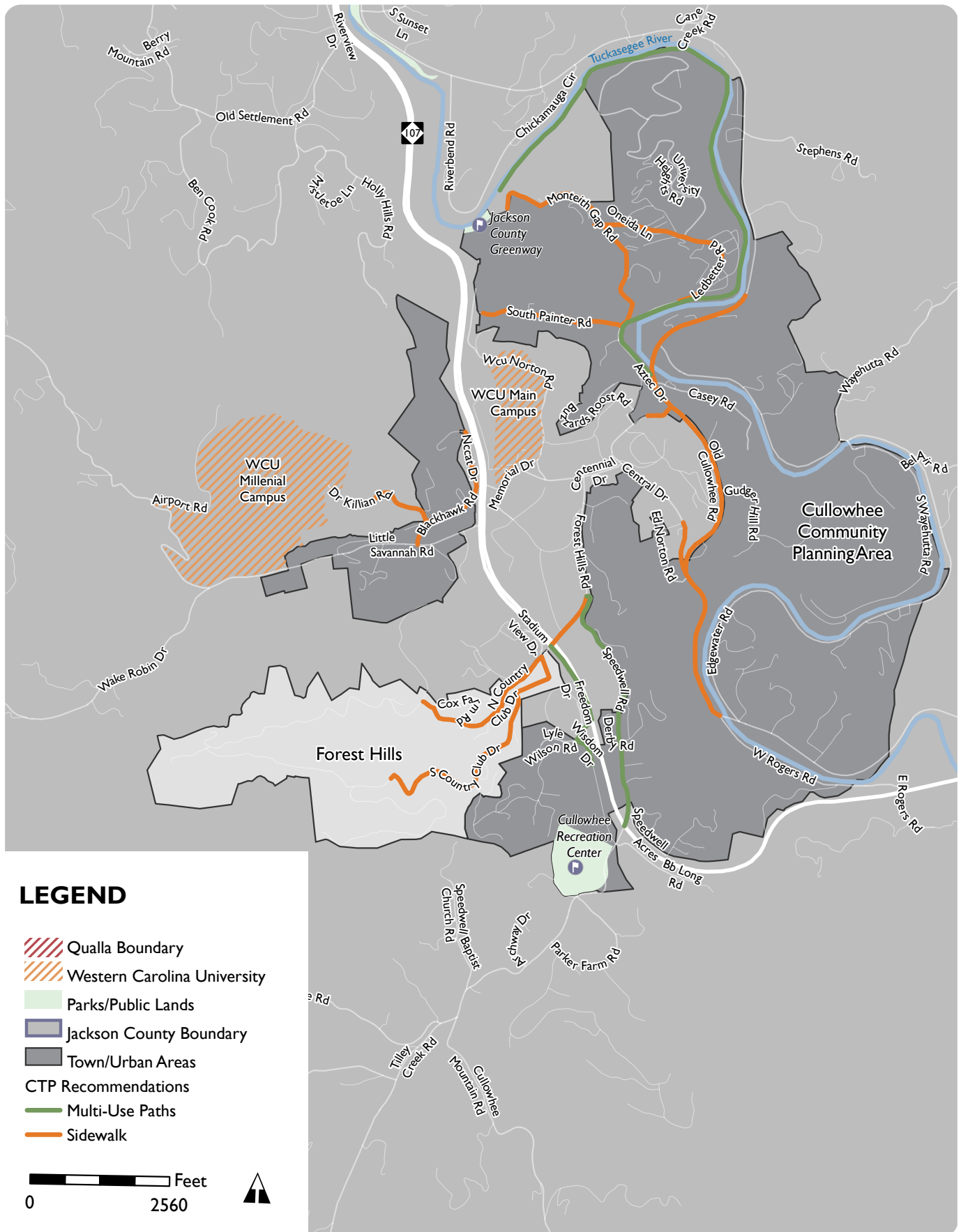
Map 9A. Pedestrian CTP Recommendations – Jackson County



Map 9B. Pedestrian CTP Recommendations – Sylva, Dillsboro and Webster



Map 9C. Pedestrian CTP Recommendations – Cullowhee Planning Area and Forest Hills



Map 9D. Pedestrian CTP Recommendations – Cashiers

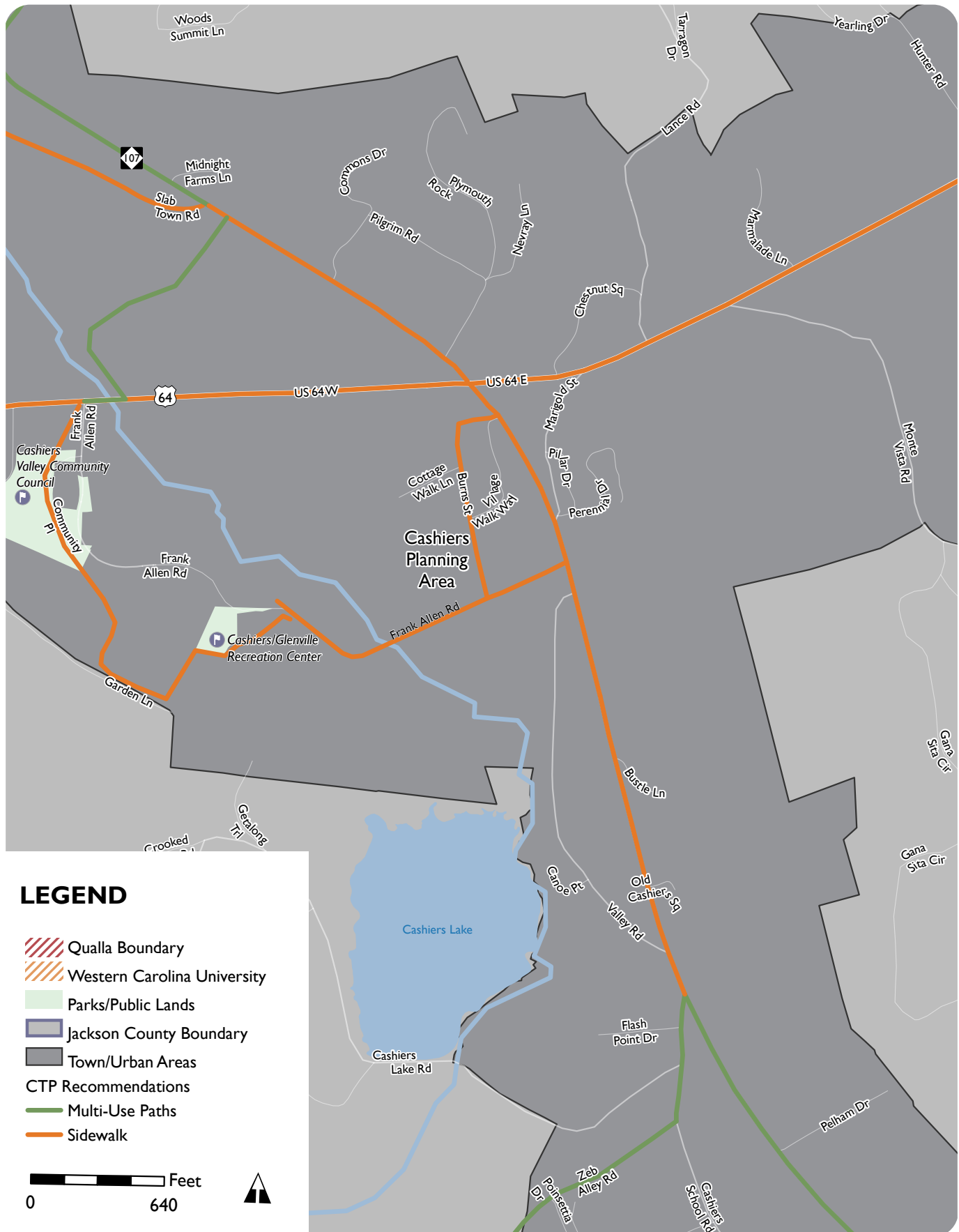


Figure 12. Engagement Process



COMMUNITY ENGAGEMENT

This section describes the public engagement process and highlights key findings. Complete notes and other details from community engagement activities are captured in Appendix A.

Community engagement was an integral component of Jackson Walks plan development. Preferences, recommendations, and specific project ideas were incorporated into the planning process, as shown in Figure 12. Residents, community members, visitors and local interest groups provided their input. The Plan's public engagement included five meetings with the steering committee, 12 focused meetings with targeted interest groups, two public meetings and two online surveys.

A few months into the Plan development, the COVID-19 Pandemic dramatically changed the function of our society. Consequently, the community engagement activities for the project shifted to a virtual format. These activities were structured to

ensure as broad a representation as possible, also allowing for self-guided engagement at an individual's pace.

Steering Committee

The intent of the Project Steering Committee was to provide a voice of the community at a smaller, targeted scale. The Steering Committee was comprised of staff, leadership or individuals from the County, local Towns, NCDOT, RPO, Chamber of Commerce, Eastern Band of Cherokee Indians (EBCI), and community or non-profit organizations. These members were critical in bringing the perspectives of the organizations they represent to the project. A full list of members can be found in the Acknowledgements.

The Steering Committee first met on February 11, 2020. The purpose of this meeting was to introduce the project and to gather initial information. During this meeting, participants identified important problem areas for pedestrians, along with potential

plan recommendations.

The second Steering Committee meeting was held virtually on May 12, 2020 and included a project update since the COVID-19 Pandemic altered the community engagement path initially envisioned. The meeting was held on Zoom, and the Consultant Team gathered feedback on the draft public survey as well as outreach methods to ensure broad response to the survey. Following this meeting, the Consultant Team presented similar content to the County Greenways Committee on May 13, also held virtually, to gather feedback on the survey and gain support on promotion.

Following a series of Focus Group meetings in the summer of 2020, the Steering Committee convened for their third meeting on November 16 to review a list of 47 projects and provide feedback and ranking. The meeting was hosted virtually, and individual rankings were collected using a live, online survey tool known as Mentimeter. These rankings informed the final project prioritization methodology and were assigned 10 points out of 100 for the final projects.

The fourth Steering Committee meeting was held virtually on April 7, 2021 to present the top ten projects that would be proceeding to further development. And the final and fifth Steering Committee was held on May 26, 2021 as an opportunity to provide feedback on the draft Plan.

Focus Group Meetings

As with many aspects of our lives in 2020, the Community Engagement Plan that was envisioned for this project was altered due to the COVID-19 Pandemic. Because of limitations in social distancing and community gathering, the Project Team took a different approach to engagement that involved one-on-one meetings with targeted organizations in Jackson County. Several of these organizations represented special interest groups or disadvantaged communities or individuals. This enabled the Team to achieve the equity goals established at the outset of the project while also being mindful of COVID-19 realities. The Team interviewed a total of 12 groups or individuals, who were asked several essential questions.



Image 13. First (and Only In-Person) Meeting of the Jackson Walks Steering Committee

FOCUS GROUP QUESTIONS

What do you think of when you consider the current walking conditions and accessibility in the public right of way in the County?

Considering the project vision, what should this project focus on to get us there?

Are there any roads, crossings or areas of the County that are problematic to you or others in your community?

Is there anything that this Plan can do to advance your work?

Meeting minutes can be found of Appendix A of this document. The following is a list of those individuals and organizations that were interviewed:

- Jennifer Hinton, Western Carolina University, Recreational Therapy
- Jeff Kegler, Recreational Therapy Advisory Committee
- Chuck Oaks, DisAbility Partners
- Eddie Wells, Jackson County Department on Aging
- Paige Christie, The Community Table
- Carrie McBane and Trevor Gates, Down Home North Carolina
- Destri Leger and Robert Cochran, HERE
- Enrique Gomez, NAACP Jackson County
- Brian Burch, Wanda Austin, Chris Lee – NCDOT Division 14
- Norma Taylor, Jackson County Transit
- Jake Scott, Town of Sylva Public Works
- Mike Byers, Western Carolina University

This feedback directly informed project recommendations and program/policy guidance that formulated the Network and Program Plan.

Community Surveys

As a part of the community engagement efforts, an online survey was distributed to members of the community asking their thoughts about walking in the County. The goal of this survey was to explore walkability in Jackson County by understanding what makes people feel safe and encourages them to walk as well as where and for what reasons they would participate in these activities. The survey was open from June 1 – July 31, 2020 in which time a total of 1,015 people responded.

The team promoted the survey through several outlets: flyers, social media, the County Recreation Center, County schools, property owner organizations, and other Steering Committee partner connections.

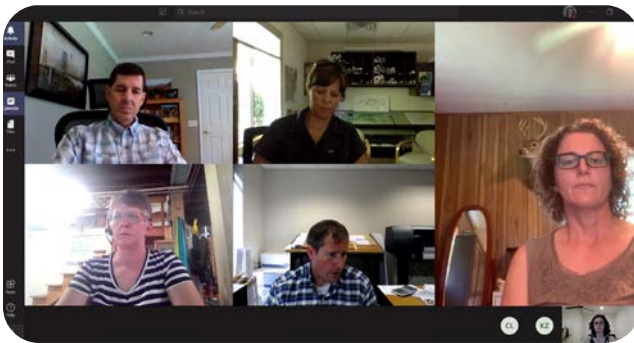


Image 14. A Screen Capture at the NCDOT Focus Group Meeting, Held Virtually

Appendix A includes a full summary of the survey findings, but key highlights include:

- Most people currently walk for health and wellness: recreation and fitness (93%), connecting with nature (72%) and for socialization (50%).
- If road conditions were made to feel safer or more convenient, some people would walk for commuting or shopping more than they currently do.
- When considering prioritization, most people feel that connecting to existing sidewalks should be the top focus, as well as near parks, libraries and community centers.
- Equity was a recurring theme in comments, where comments centered around geographic equity, accessibility needs, or accommodating those without a car.
- There is overwhelming support for greenways along the river and the railroad right-of-way.
- Aged populations desire flat trails and sidewalks with benches, places to warm up in cold weather, and places to use the restroom. Accessible parking is also critical.

Of interest in the survey findings is the difference in responses between why people currently walk and for what purposes they would walk if it were more convenient or safer. Figure 13 shows this difference. More people would walk for commuting, to connect with nature, or for shopping/errands if it felt safer or more convenient.

The respondents of the community survey include the following demographics:

- 10% of respondents have a physical disability that makes walking difficult, and 92% of these individuals travel by their personal automobile. Figure 14 describes the type of physical disability of the respondents who self-reported.
- 69% of respondents self-identified as a female, and the respondents were nearly evenly split in the age groups of 36-45 (23%), 46-55 (23%) and 56-65 (21%).
- Most respondents live in Sylva (44%), Cullowhee (26%) or Cashiers (13%).



Image 15. Imagery Used for Social Media Promotion of the Online Survey

During the project development phase of the project, a second online survey was developed to collect community feedback on the top projects. A total of 429 responses were received for 67 projects during the three weeks that the survey was live. This feedback directly contributed to the overall rankings of the projects and was given 10 points (out of 100) for the final project rankings.

Community Meeting #1

The first community meeting was held virtually on August 25 at 10:00am and 5:00pm. To accommodate the geographic scale of the County, two meetings were held concurrently at both meeting times, one for the northern part of the county and one for the southern part of the county. Both meetings were hosted on WebEx and streamed live to Facebook. The

Figure 13. Survey Questions: For what purposes do you currently walk? and For what purposes would you walk more often if it was more convenient or felt safer?

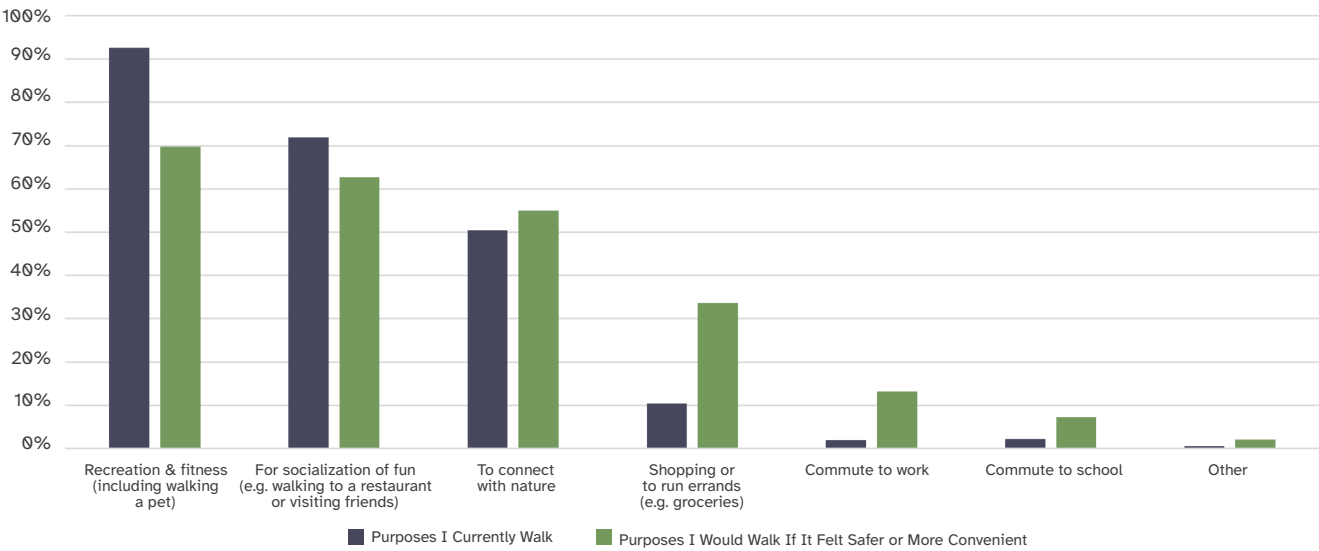


Figure 14. Survey Question: I am an individual that has functional needs or disabilities affecting my ability to use the streets, sidewalks, greenways, or the transit system in Jackson County. The things that affect me include:



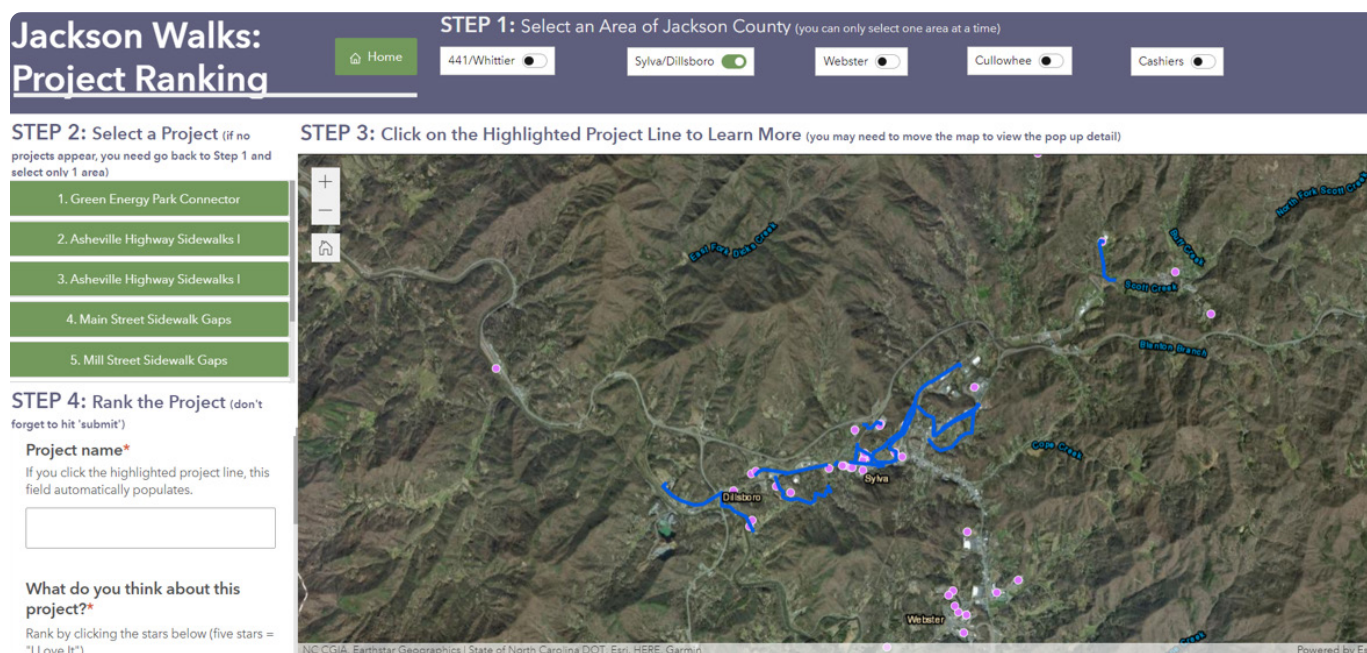


Image 16. A Screenshot of the Landing Page for the Project Development Survey

Facebook pages that hosted the meetings were the Jackson County Parks and Recreation Department site and the Jackson County Planning Department site. The purpose of the meetings was to gather feedback about walking in the County to start developing project recommendations. There were a total of 1,061 views on Facebook and 15 members of the community attended the meetings themselves.

For those unable to join the live, virtual meetings, there was an option to learn more about the project through an ESRI StoryMap that was developed for the project. This provided information about the plan, the existing sidewalks and greenways in the County, and a summary of the online survey feedback. As of March 23, 2021, the StoryMap had 924 views.

Community Meeting #2

Due to the COVID-19 restrictions by the state, the second public meeting was again hosted online via WebEx and broadcast to the Parks and Recreation Department Facebook page. There were three meeting times available, March 17, 2021 at noon, March 17, 2021 at 5:00pm and March 19, 2021 at 10:00am. This was a virtual Q&A session, and the meeting purpose was to share the top ranked projects

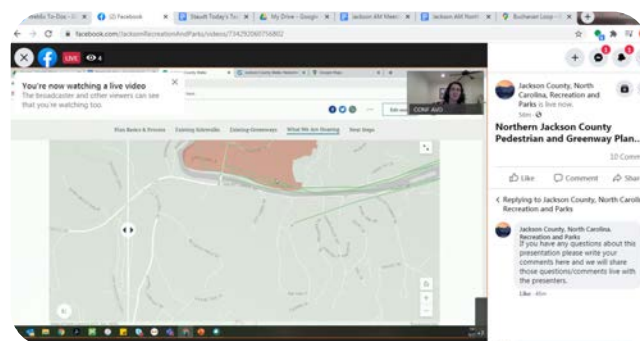


Image 17. A Screen Capture of the First Public Meeting, Held Virtually and as Shown Here, Broadcast to Facebook

and ask the community to prioritize the list so it could be narrowed to the top 10 for conceptual design and cost estimate development. The community was asked to conduct the rankings using the ArcGIS Web Experience site. A total of 19 people attended these meetings on WebEx and there were a total of 888 views on Facebook.

In Appendix A, further details about both public meetings are provided, including links to watch recordings and viewership statistics.

Endnotes

- i U.S. Census Bureau (2019). 2015-2019 American Community Survey 5-year estimates. [Data set]. <https://data.census.gov>
- ii Wild South. (2016, April 8). The Cherokee Territorial Claim Circa 1700. Wild South. <https://wildsouth.org/the-chokeee-territorial-claim-circa-1700/>.
- iii The Eastern Band of Cherokee Indians. Cherokee, NC. <https://visitcherokeenc.com/eastern-band-of-the-chokeee/>.
- iv Jackson County Planning Department. (2017). Jackson County Land Use Plan 2040. <https://www.planning.jacksonnc.org/pdfs/Jackson-County-Comprehensive-Plan-Adopted.pdf>
- v Jackson County Planning Department. (2017). Jackson County Land Use Plan 2040. <https://www.planning.jacksonnc.org/pdfs/Jackson-County-Comprehensive-Plan-Adopted.pdf>
- vi U.S. Census Bureau (2019). Commuting Characteristics by Age, 2015-2019 American Community Survey 5-year estimates. [Data set]. <https://data.census.gov>
- vii Strava. (2021). Strava Global Heatmap. Retrieved from <https://www.strava.com/heatmap>

3



Photo Courtesy Jackson County TDA

PEDESTRIAN NETWORK PLAN

PEDESTRIAN NETWORK PLAN

HOW WE GOT HERE

As previously described, this project is grounded in community engagement and previous plan studies, with recommendations and analyses originating from that foundation. The process is iterative, involving multiple touch points with stakeholders. With the community, the project team established a plan vision and identified project goals. Jackson Walks projects and recommendations are measured against their ability to stand true to the collectively agreed-upon vision and goals.

The project process is described in Figure 15. The project began with a review of current conditions, including demographics, the transportation network,

key destinations and crash history. Working with the Steering Committee and members of the community through meetings and an online survey, the consulting team captured community concerns and ideas. The team then collected the ideas into a master list of potential projects that were explored in varying levels of detail to understand feasibility, opportunities, and constraints. This resulted in an initial project list to again be vetted by the community via meetings and another online survey. Following this feedback, the team developed a final list of recommendations that formed the Project Plan.

PLANNING FOR PEOPLE WALKING: COUNTY-WIDE

Planning for people walking at a county scale is a distinct exercise, and as such, the pedestrian network in this plan does not intend to exclusively cross Jackson County from one end to the other. Most people walk shorter distances and do not desire to cross the county from Whittier to Cashiers – a 37-mile

Figure 15. Project Process



trip! For this reason, this planning scope focused on nodes of pedestrian activity around five key urban areas: the US 441 Corridor Planning Area, Sylva/ Dillsboro, Webster, Cullowhee / WCU, and Cashiers. These urbanized areas are where pedestrian activity is most likely to occur based on density of destinations, population, housing and jobs. While a few priority recommendations in this Plan suggest longer segments, most connections are local or between two urbanized areas.

DESIRED CONNECTIONS & INITIAL PROJECT IDEAS

Based on the community feedback that was obtained during this project, there is a strong desire for connectivity on most of Jackson County's key transportation corridors. Many of these key connection ideas, destinations and potential projects were compiled through the public comment process. Some overall themes that the community shared are as follows:

- o Desire to connect many parts of the County to the existing greenway on the Tuckaseegee River.

- o Better connectivity in Jackson's municipal and urbanized areas along both high volume and low volume roadways.
- o Desire to provide and connect greenways along the County's rivers, creeks, and railroad alignments.
- o Places to walk in the County's geographically remote and rural areas.
- o Connections to existing parks, schools, and universities.
- o Access to key destinations, such as shopping centers and grocery stores.

These and other themes are reviewed in Appendix A within the survey summary.

PROJECT FEASIBILITY CONSIDERATIONS

The project feasibility review considered physical constraints that are common with transportation projects.



Image 18. The Community Expressed a Desire for More Greenways Along Alignments such as the River and Railroad



Image 19. This Cashiers Sidewalk has Been Designed Around Utility Poles to Maintain Sufficient Width for Wheelchair Users.



Image 20. Steep Grades on Chipper Curve (SR 1429)

Private Property Required

Oftentimes, the jurisdiction that maintains a roadway only possesses maintenance authority just beyond the edge of pavement or curb/gutter. In this case, to add a pedestrian facility on the road would require either repurposing existing travel lanes and sidewalks or widening the roadway footprint. Widening often requires the acquisition of private property. Not only is this costly, but certain private landowners may not be interested in donating or selling their property.

Utilities

We often do not notice the infrastructure that surrounds us to provide power, communications, water, wastewater, and other services to our homes and businesses. Some infrastructure is buried underground and other utilities, including electric transmission or telecommunication lines, may be located overhead on poles and power lines. Utilities often run parallel to roadways. When building transportation projects, the challenge with utilities such as these often arises when a road is widened, or a sidewalk is added. Many times, these utility corridors are located where a sidewalk would logically be built, and the relocation of the utility is very costly and complex. For instance, when it may seem simple to relocate one power pole, the powerline system is engineered such that the relocation of one power pole often requires modification to a system of poles.

Steep Grades

Mountains and hills are a reality (and beauty) of our region. From a construction standpoint, having to build around slopes, hills and steep grades is problematic because it requires the excavation of land and can sometimes require the construction of retaining walls or other structures to ensure that the hillsides or grades are not compromised. This can become very costly and can trigger additional property impacts to provide sufficient width for the transportation infrastructure.

Stream Crossings & Environmental Impacts

Crossing streams, creeks, rivers and wetlands can be problematic from an environmental and cost standpoint. Existing bridge structures that cross these waterways may not have accommodations for people walking. Bridges typically have a long lifespan so the opportunity to coordinate sidewalk construction, for instance, may only arise every 30-50 years. Building a standalone structure for people walking is not only costly, but it triggers thorough environmental review to ensure the protection of natural resources and that the flood levels do not rise when placing new infrastructure in the floodway.



Image 21. A Curve in the Road Along Old Cullowhee Rd (SR 1002)

Drainage

On rural roads, particularly like those found in Jackson County, there is commonly not a curb and gutter pan to convey water to underground storm drain systems. Oftentimes, these roads will have drainage swales or roadside ditches to collect water and move it to the nearby rivers and streams. It is important to move water off the roadway as it can puddle and freeze in Jackson County's winters, causing safety issues. Additionally, standing/freezing water leads to increased maintenance issues. Like the challenges with underground utilities, if a roadway is widened for a pedestrian facility, these drainage features will need to be modified with potentially more right-of-way needed to relocate them.

Curves and Sight Lines

A final reality in a geography like that of Jackson County are curves in the road. These curves can be vertical, such as the crest of a hill, or horizontal, such as a turn in the road. At times, roads have been designed with curves to help navigate the terrain, however, these can compromise sight line visibility. A person driving's line of sight is the visible path from the vehicle to the focus area. Sometimes this line can be blocked by a curve or crest of a hill. These areas will need to be closely studied as pedestrian accommodations are considered; people walking move slowly and their visibility can be further diminished at curves.

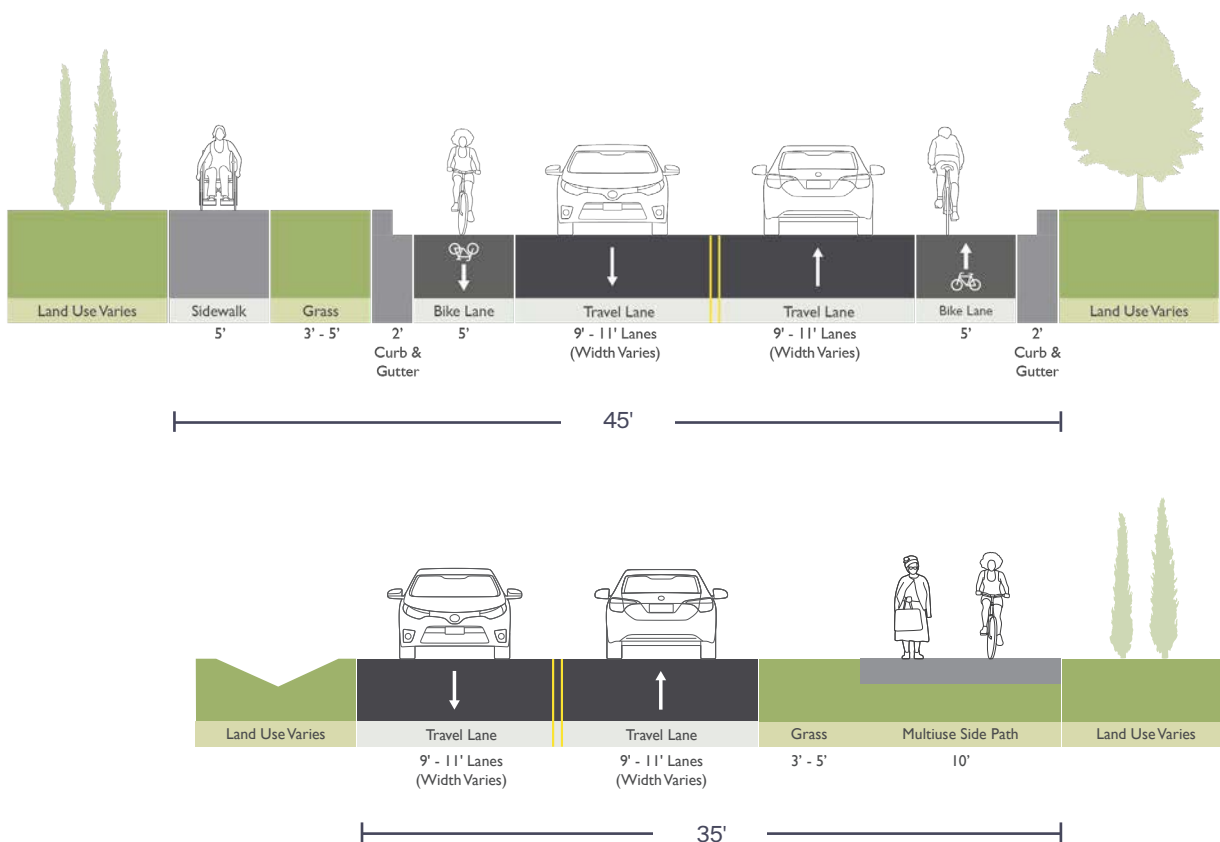
Other Considerations

Based on feasibility review and roadway characteristics, the consulting team identified 68 project recommendations that comprise Jackson County's long range pedestrian network. Since many of these projects are along NCDOT maintained roadways, some flexibility in facility type is built into this plan. If the opportunity arises through an NCDOT maintenance or improvement project, there may be an opportunity to achieve shorter term improvements, such as a wide shoulder or sidewalk instead of a sidepath. The incremental improvement can provide connectivity while funding and right-of-way are in process for the longer-term preferred option. In addition, all projects will require a detailed preliminary engineering review (15-30% design level) to refine

facility type, transitions, alignments and right-of-way needs.

Deciding on the type of pedestrian facility that should be on a street, given the current context, constraints and opportunities, is not a simple task. At the heart of this process is a concept known as 8 to 80 cities (or 80 cities): building cities that are great for an 8-year-old and an 80-year-old.¹ If streets are comfortable for these baseline age groups, then they should be accessible, low stress and comfortable for all user types. This is especially relevant in a community like Jackson County with a higher population of aged adults.

Figure 16. In This Example, a Sidewalk on One-Side and a Bi-Directional Bike Lane Occupies 24' of Space, While a Multi-Use Sidepath Occupies 15'.



The long-term facility selections considered the following general principles:

- o Maximum separation from traffic was preferred for paths that serve all ages and abilities in a community on higher volume, higher speed roads.
- o For roads that need both bicycle and pedestrian facilities, an evaluation compared widening for bicycle lanes (both sides) and sidewalk (one side) vs. a multi-use sidepath (see Figure 16 for an illustration). For bicycle lanes and sidewalk, a minimum of 19 feet of roadway widening is required, which includes curb and gutter on both sides. This increases up to 24 feet of widening if a 5-foot grass buffer strip is included between the roadway and sidewalk (one side). A 10-foot sidepath with a 5-foot buffer requires a minimum of 15 feet of widening and provides more separation from traffic. As such, a sidepath may be the preferred long-term option on most roads rather than separate bicycle and pedestrian facilities. This facility selection may be revised during preliminary engineering based on design constraints. Pathways may also be more suitable for children and families as they provide more

buffer from vehicular traffic and are suitable for both people walking and biking.

- o As discussed, terrain in Jackson County resulting in horizontal curves, vertical curves and steep grades on either side of existing roadways create significant constraints for pedestrian facility development. To minimize significant impacts from the terrain, sidewalks are often recommended with minimal separation from vehicular travel lanes with either a two-foot shoulder or two-foot curb and gutter separation.

FACILITY SELECTION AND PROJECT RANKING

Facility Types

Table 4 describes general facility types that were considered for the Jackson County network connection projects: paved shoulders, sidewalks, multi-use sidepaths and off-road trails. For more information about designing these facilities, see the list of design resources in the Implementation Plan chapter of this report.

Table 4. Primary Facility Types for Jackson County

PAVED SHOULDER/BIKE LANE	SIDEWALK	MULTI-USE SIDEPATH	OFF-ROAD TRAIL
<p>Paved, designated space on the edge of the roadway that is striped.</p>	<p>A designated space along the side of a road for use by people walking. Traditional sidewalk design includes a 5-foot concrete sidewalk. Where possible, separate from traffic with a 3-5-foot minimum grass buffer strip between the sidewalk and nearest travel lane.</p>	<p>A two-way shared use path (minimum 10 feet wide with a 3-5-foot grass buffer strip between the path and nearest travel lane) located immediately adjacent and parallel to a roadway.</p>	<p>A corridor of land, usually following features such as rivers, old railroad lines, which is used for recreation or alternative transportation purposes (e.g., Jackson County Greenway).</p>

Roadway Crossing Treatment Selection

To create a truly accessible community for all transportation modes, facilities must be designed to maximize comfort, convenience and safety – not only along corridors but at locations where people walking interact with streets crossings, trails and driveways (access points).

As discussed in the introduction of this Plan, people walking are disproportionately impacted by traffic crashesⁱⁱ. Potential exposure to people walking is introduced at intersections and crossings where these movements cross the path of motor vehicles. This is evident across the state of North Carolina where over the last 10 years, crossing related crashes accounted for 41% of on-roadway crashes involving people walking.ⁱⁱⁱ

Nationally, locations where there is no traffic control (e.g., no traffic signal or stop sign to stop traffic) correspond to higher crash rates. The Federal Highway Administration (FHWA) has created a Safe Transportation for Every Pedestrian (STEP) Guide that provides crossing guidance for uncontrolled crossings to help local and state agencies “address significant national safety problems and improve quality of life for pedestrians of all ages and abilities”.^{iv}

The STEP Guide includes a process for evaluating crossings and determining appropriate countermeasures for specific crossing conditions based on engineering which includes data collection, site condition analysis and crash history review. These countermeasures range in cost and applicability based on roadway type and conditions. The STEP Guide process includes the analysis and countermeasure selection steps, illustrated in Figure 17.

Within the STEP Guide, seven lower-cost countermeasures (called The Spectacular Seven) are recommended to address significant national safety issues. These seven countermeasures are depicted in renderings and descriptions in Table 5, along with the corresponding reduction in crashes involving a person walking that is associated with each treatment.

Figure 17. Steps Involved for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations (Source: STEP Guide)

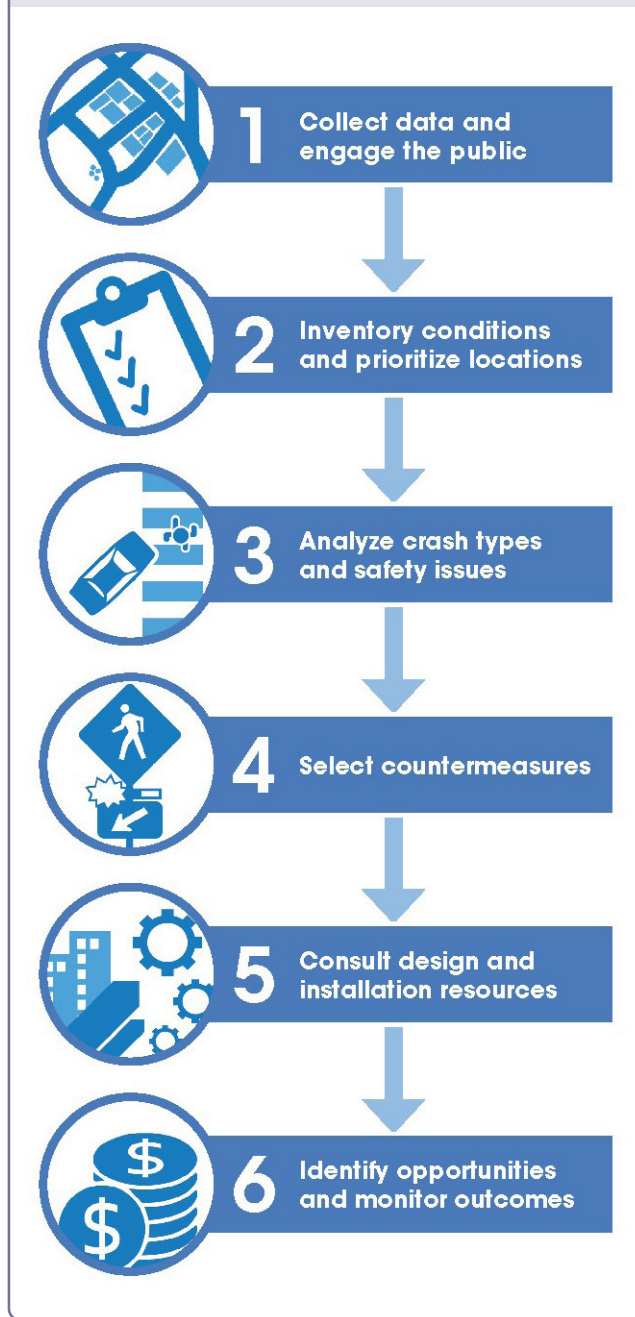


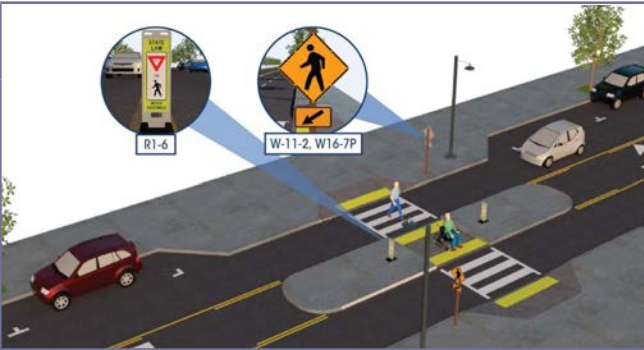
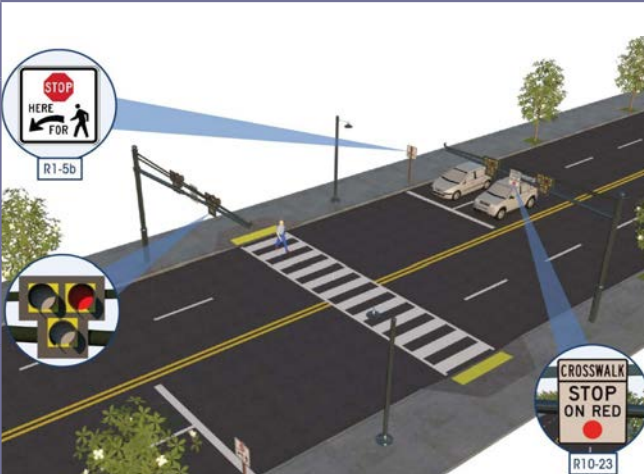





Table 5. Seven Key Solutions to Improve Pedestrian Safety at Intersections (Source: STEP Guide).

COUNTERMEASURE NAME	Crosswalk Visibility Enhancements	
BRIEF DESCRIPTION	Key Elements: <ul style="list-style-type: none"> o High-visibility crosswalks o Pedestrian crossing warning sign (MUTCD W11-2) o Parking restrictions o Lighting o Other treatments may be considered (e.g., curb extension) 	
REDUCTION IN CRASHES INVOLVING A PERSON WALKING	23-48%	
COUNTERMEASURE NAME	Raised Crosswalks	
BRIEF DESCRIPTION	Function as an extension of the sidewalk and allow a person walking to cross the street at a constant grade.	
REDUCTION IN CRASHES INVOLVING A PERSON WALKING	45%	
COUNTERMEASURE NAME	Pedestrian Refuge Islands	
BRIEF DESCRIPTION	Typically constructed in the middle of a 2-way street to provide a place for people on foot to wait for people driving to stop or yield.	
REDUCTION IN CRASHES INVOLVING A PERSON WALKING	32%	
COUNTERMEASURE NAME	Pedestrian Hybrid Beacons (PHB)	
BRIEF DESCRIPTION	Unlike a traffic signal, the PHB rests in dark until a person walking activates it at which time the beacon displays a sequence of flashing and solid lights that control vehicular traffic while the pedestrian signal heads indicate when the pedestrian can walk.	
REDUCTION IN CRASHES INVOLVING A PERSON WALKING	55%	

COUNTERMEASURE NAME	Road Diet	
BRIEF DESCRIPTION	A reconfiguration of the roadway that is appropriate for an undivided road with wide travel lanes or multiple lanes that can be narrowed or repurposed to improve crossing safety for people walking.	
REDUCTION IN CRASHES INVOLVING A PERSON WALKING	19-47%	
COUNTERMEASURE NAME	Rectangular Rapid Flashing Beacon (RRFB)	
BRIEF DESCRIPTION	A pedestrian actuated conspicuity enhancement used in combination with a pedestrian crossing warning sign to improve safety at uncontrolled, marked crosswalks.	
REDUCTION IN CRASHES INVOLVING A PERSON WALKING	47%	
COUNTERMEASURE NAME	Leading Pedestrian Interval	
BRIEF DESCRIPTION	Typically, a 3-7 second head start before vehicles are given a green signal.	
REDUCTION IN CRASHES INVOLVING A PERSON WALKING	59%	

To assist practitioners, the STEP Guide offers a matrix tool to determine appropriate crossing treatments that should be considered at an uncontrolled crossing based on posted speeds, annual average daily traffic (AADT) and the number of lanes a person walking must cross with or without a median or refuge island. These treatments should be based on an engineering judgement. In addition, it is important to note that the matrix provides a toolbox for treatments rather than mandated or required treatments.

For midblock and uncontrolled crosswalks, the STEP Guide advises the following best practices and planning considerations:

- o Consider how far the person walking needs to travel in distance and time (shorter distance and time is most successful)
- o Follow currently used travel routes
- o Connect key destinations

- o Maximize low-risk crossing locations
- o Avoid busy intersections and higher conflict areas if feasible

In addition to the STEP Guide, there are also several design related guides and standards that address crossing design for pedestrian facilities at traffic signals, unsignalized intersections and mid-block (non-intersection) locations. One such resource is the NCDOT Pedestrian Crossing Guidelines (2018). These resources are detailed in the Implementation Plan section of this document.

PROJECT DEVELOPMENT PROCESS

Prioritizing projects in a plan such as this is critical to ensuring that the County maximizes its limited resources and funding to create a friendly environment for people walking. Yet, arriving at a prioritized project list at the county-wide scale was no easy task. The process began with a list of 650 projects which was narrowed down to a list of 10 for full development and cost estimates. Arriving at these 10 projects involved the following steps, also illustrated in Figure 18:

- 1. Public Meeting #1 and Focus Group Meeting Feedback:** in 2020, the initial community survey, a series of initial public meetings, and the 12 one-on-one focus group meetings all combined to result in an initial list of 650 project ideas. Many of these project ideas were duplicates of one another and were eventually refined to a list of 120 project “lines” (e.g., sidewalks) and 27 project “points” (e.g., crossings needed) on a map.
- 2. Alignment and Crossing Sub-Committee Meeting Feedback:** to refine the list of projects to those that would be more easily vetted by the Steering Committee, the list of 120 projects was refined to a list of 52 line segments by a sub-committee represented by Jackson County’s Planning and Parks and Recreation Department leadership and staff. A similar sub-committee provided feedback about the list of 27 point projects, which were refined to 12 primary crossing needs.
- 3. Steering Committee Meeting #3 Ranking:** the 52 line segment projects were ranked by the Steering Committee at their third meeting in November 2020.
- 4. Crossing Sub-Committee Meeting Ranking:** on January 27, 2021, a sub-committee of local and



county staff and community members met to rank and provide feedback about the 12 point projects.

5. **Field Work:** On February 1 and 3, 2021, the consultant team embarked on field visits to investigate the 52 line segment and 12 crossing projects in person, studying the feasibility and constructability of each. Following this site work, an additional 15 opportunity projects were added to the list, resulting in 68 line segment projects. Three additional crossing projects were added to the priority list, resulting in 15 point projects.
6. **Public Meeting #2 Ranking:** the 68 projects were provided to the community for their ranking.
7. **The Top 10:** The feedback from the Steering Committee #3 and Public Meeting #2 was one of five criteria (further described below) that were included in the final project prioritization, which ranked all 68 projects and arrived at the top 10 for more refined analysis and cost estimate

development. Those priority crossing projects that aligned with the top 10 segments were also prioritized for development.

PRIORITIZATION METHODOLOGY

The final prioritization methodology to arrive at the top 10 projects utilized a two-step process that was applied to the 68 projects as described above. First, criteria were used to rank the projects on a scale of 1 – 100. The higher the score, the higher the priority of the project. These criteria and scoring were developed from the project goals and the NCDOT Strategic Prioritization methodology used for bicycle and pedestrian projects and are outlined in Table 6. The full scoring details are provided in the Appendix B.

Table 6. Criteria Used to Rank the Priority Projects.

CRITERIA	MEASURE	TOTAL POINTS
Safety	Recorded crash Speed limit	15
Connectivity/ Accessibility	School/college/university Point of interest Extension of existing sidewalk/greenway	20
Feasibility	Lower cost, do not rely on external partners or high levels of investment, and implemented within a relatively short timeframe	25
Public Feedback	Rank from Steering Committee Rank from Public Meeting	20
Equity	Aged population, non-English, zero vehicle household, disability, BIPOC, poverty and median income	20
TOTAL		100

Once the scores were assigned to each project based on the above criteria, project geography and facility types were also considered to determine the top 10 projects. For this exercise, the County was divided into five primary urban areas: US 441 Corridor Planning Area, Sylva/Dillsboro, Webster, Cullowhee and Cashiers. In each of these areas, the top ranked sidewalk and non-sidewalk (Multi-Use Sidepath, Off-Road Trail or shoulder) projects were included. The exception to this rule was applied to the Cashiers area. Given the great need for sidewalk connectivity in Cashiers, the top two sidewalk projects were selected for this community.

FINAL PRIORITY PROJECTS
.....

The results of the project rankings are shown in Table 7. Each project is indicated with the recommended facility type and status of the project on the NCDOT 2021-2025 Highway Maintenance Improvement Program (HMIP). The HMIP indicates NCDOT’s plan for maintenance to roadways, including preservation, resurfacing/repaving and rehabilitation. Coordination with the HMIP offers opportunities for cost-savings and construction coordination to reduce construction impacts to the community.

These projects are foundational to the Jackson County pedestrian network. They will help grow connectivity for walking and build a spine for the network. As funding opportunities present themselves, this study provides support and justification for the County and NCDOT to prioritize these projects for design and construction.

In Appendix B, the source of each project is identified. In some cases, the project is not in the County Transportation Plan (CTP) in which case they will be added in a future amendment to ensure planning consistency across the County. The following cutsheets describe these projects in further detail including key elements, challenges/constraints, crossings, cross-sections and cost estimates.

PROJECT CUTSHEETS
.....

See cutsheet details in the pages following Table 7.



Image 22. A Priority Project Includes Access to Barkers Creek Bridge, an NCDOT Maintained Footbridge over the Tuckasegee River.

Table 7. Project Ranking Results; Numbering Corresponds to Cutsheet Project Numbers and Do Not Indicate A Particular Ranking

	PROJECT NAME	REGION	FACILITY TYPE	HMIP 2021-2025 STATUS
1	US 441 Westside Sidewalk	US 441 Corridor	Sidewalk	Not listed
2	Smokey Mountain Elementary Connector (Phase I)	US 441 Corridor	Multi-Use Sidewalk	Not listed
3	Mark Watson Park to Dillsboro Road Sidewalk	Sylva/Dillsboro	Multi-Use Sidewalk	Not listed
4	Mill Street Sidewalk Gaps	Sylva/Dillsboro	Sidewalk	Not listed
5	Webster Road Sidewalk Gaps	Webster	Sidewalk	Resurfacing (US 23 to SR 1367)
6	Buchanan Loop Connector	Webster	Traffic Calmed Street	Not listed
7	Campus Sidewalk Gaps: Central Drive	Cullowhee	Sidewalk	Resurfacing (SR 1002 – SR 1002)
8	Cullowhee Valley School to N Country Club Drive Sidewalk	Cullowhee	Multi-Use Sidewalk	Not listed
9	Cashiers Crossroads Sidewalks I (Wendy's to Crossroads)	Cashiers	Sidewalk	Resurfacing (Transylvania County Line – just west of NC 107)
10	Cashiers Crossroads Sidewalks II (Crossroads to United Community Bank)	Cashiers	Sidewalk	Not listed

1

US 441 WESTSIDE SIDEWALK



PROJECT DESCRIPTION

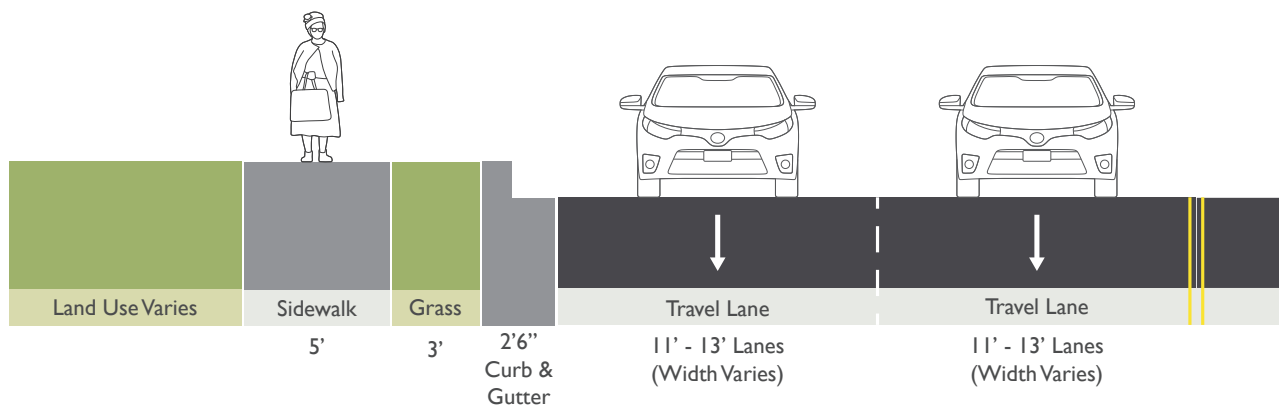
- o 5-foot sidewalk along south side of US 441
- o Curb and gutter with 5-foot minimum grass buffer

PLANNING LEVEL COST ESTIMATE

\$1,258,400

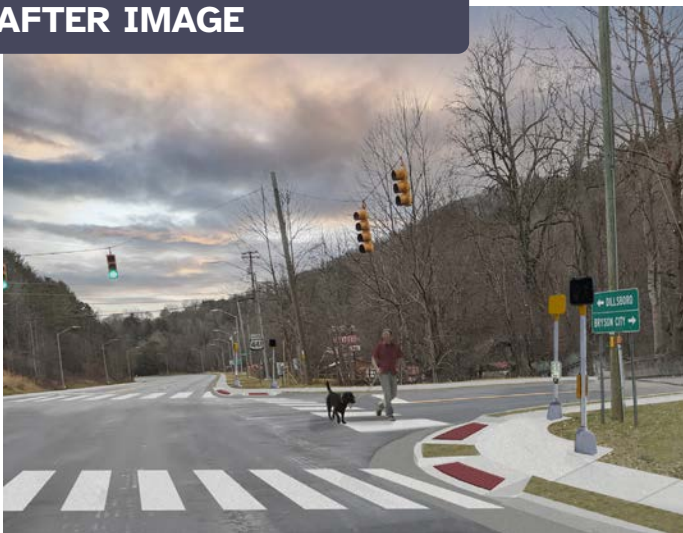
Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool

AFTER CROSS SECTION

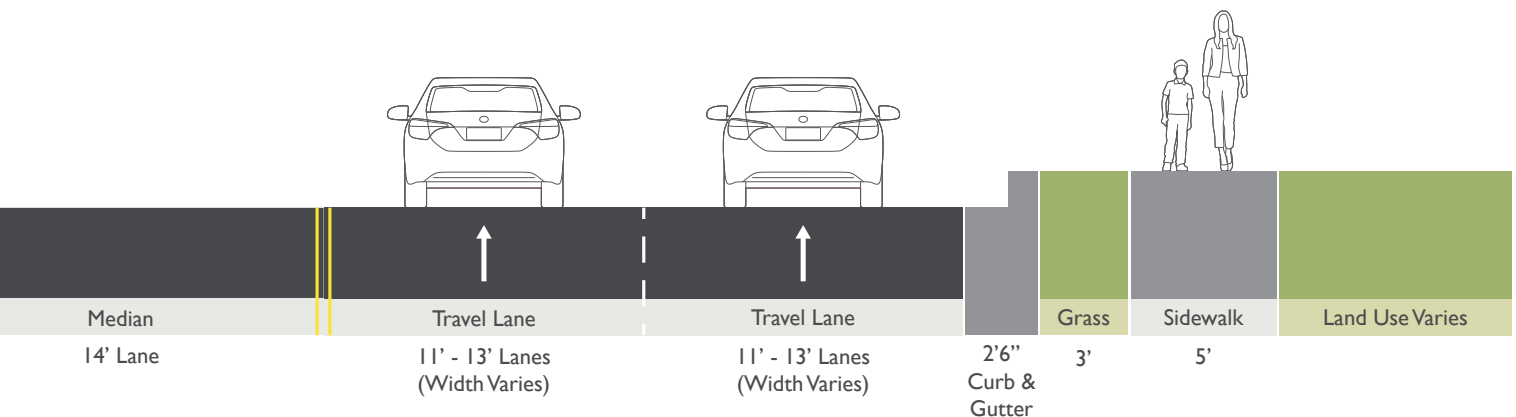


CONNECTIONS		KEY ELEMENTS
		<i>*SEE LOCATION ON MAP BY CORRESPONDING LETTERS</i>
o Casino Trail to Whitewater Drive / Old Number 4 Road		<p>A. Pedestrian signal, ADA and crosswalk pavement marking upgrades</p> <p>B. Existing guardrail (approximately 115-feet) to be relocated/modified for sidewalk (Soco Creek constraint)</p> <p>C. Retaining wall potential constraint: existing grades and motel property</p>
CROSSINGS		
o Pedestrian signal upgrades at Casino Trail and Whitewater Dr / Old Number 4 Rd intersections		<p>D. Pedestrian signal, ADA and crosswalk pavement marking upgrades</p> <p>E. High visibility pedestrian crossing upgrades</p>

AFTER IMAGE



- o Modification to guardrail needed
- o Connection to existing crossing



2

SMOKEY MOUNTAIN ELEMENTARY (PHASE 1)



PROJECT DESCRIPTION

- o 10-foot multiuse sidepath parallel to east side of US 441
- o 10-foot minimum grass buffer

PLANNING LEVEL COST ESTIMATE

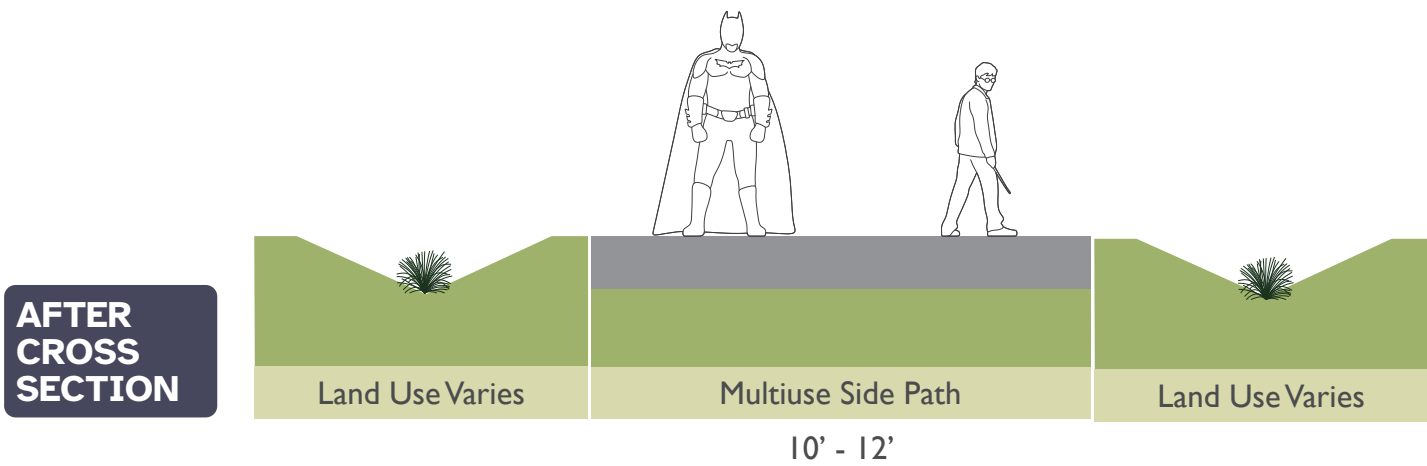
\$1,790,000

Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool



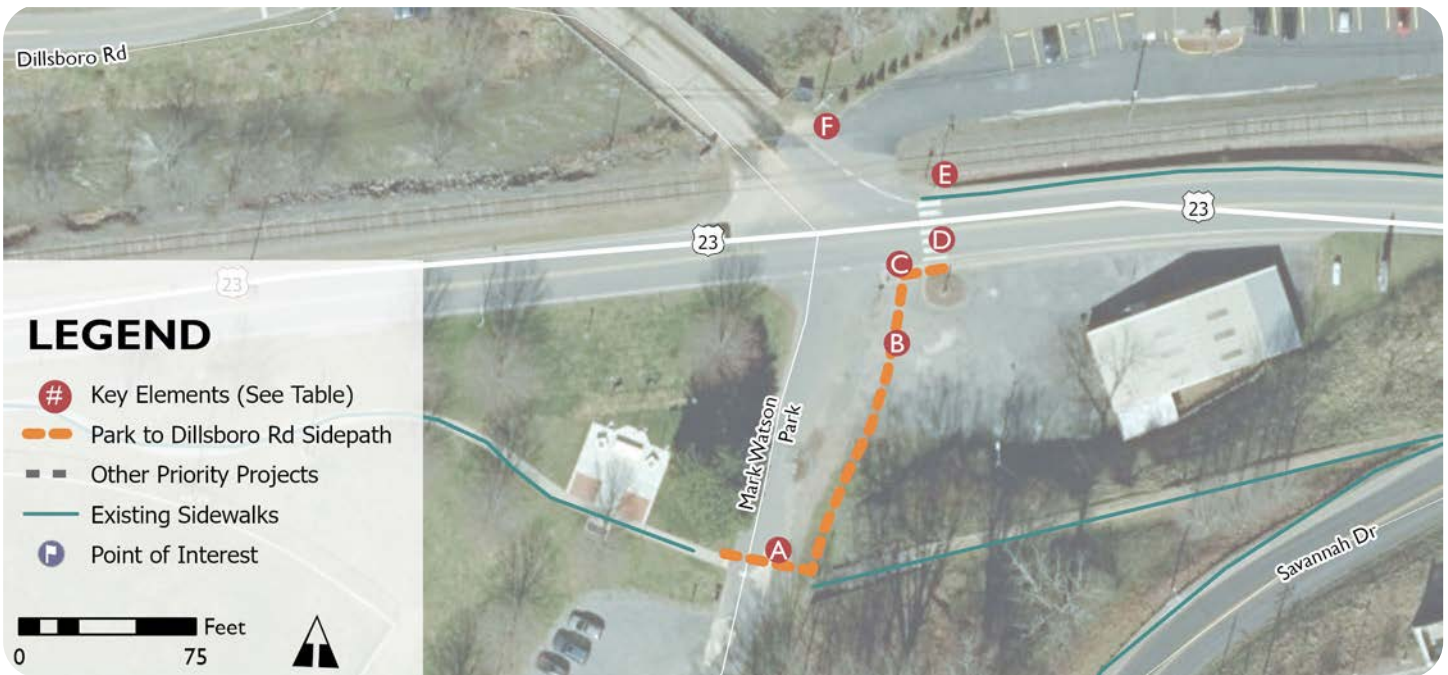
CONNECTIONS		KEY ELEMENTS	
o Worley Farm Road to Smokey Mountain Elementary School		*SEE LOCATION ON MAP BY CORRESPONDING LETTERS	
CROSSINGS		A. Steep grade constraints and property access	
o Sunset Farms Rd – high visibility crosswalk		B. High visibility crossing	
		C. Steep grades and guardrail and creek/water; consider locating along east side of creek	
		D. Potential crossing location of creek	
		E. Property access/crossing to connect to Worley Farm Road	

WALK AT SCHOOL EVENT AT SMOKEY MOUNTAIN ELEMENTARY SCHOOL



3

MARK WATSON PARK TO DILLSBORO ROAD SIDEPATH



PROJECT DESCRIPTION

- o 10-foot multiuse sidepath on south side of W. Main Street at Dillsboro Road intersection
- o ADA crossing upgrades and high visibility crossing treatments at W. Main Street

PLANNING LEVEL COST ESTIMATE

\$400,000

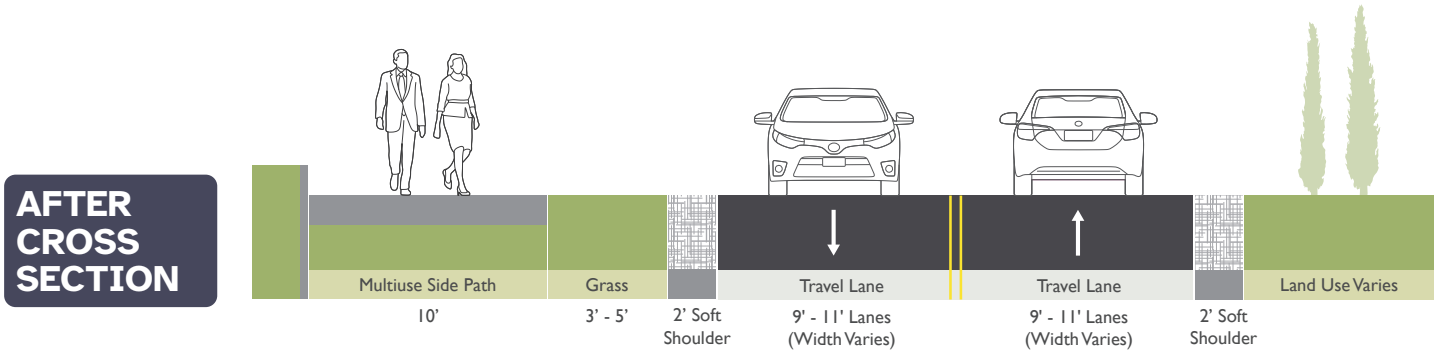
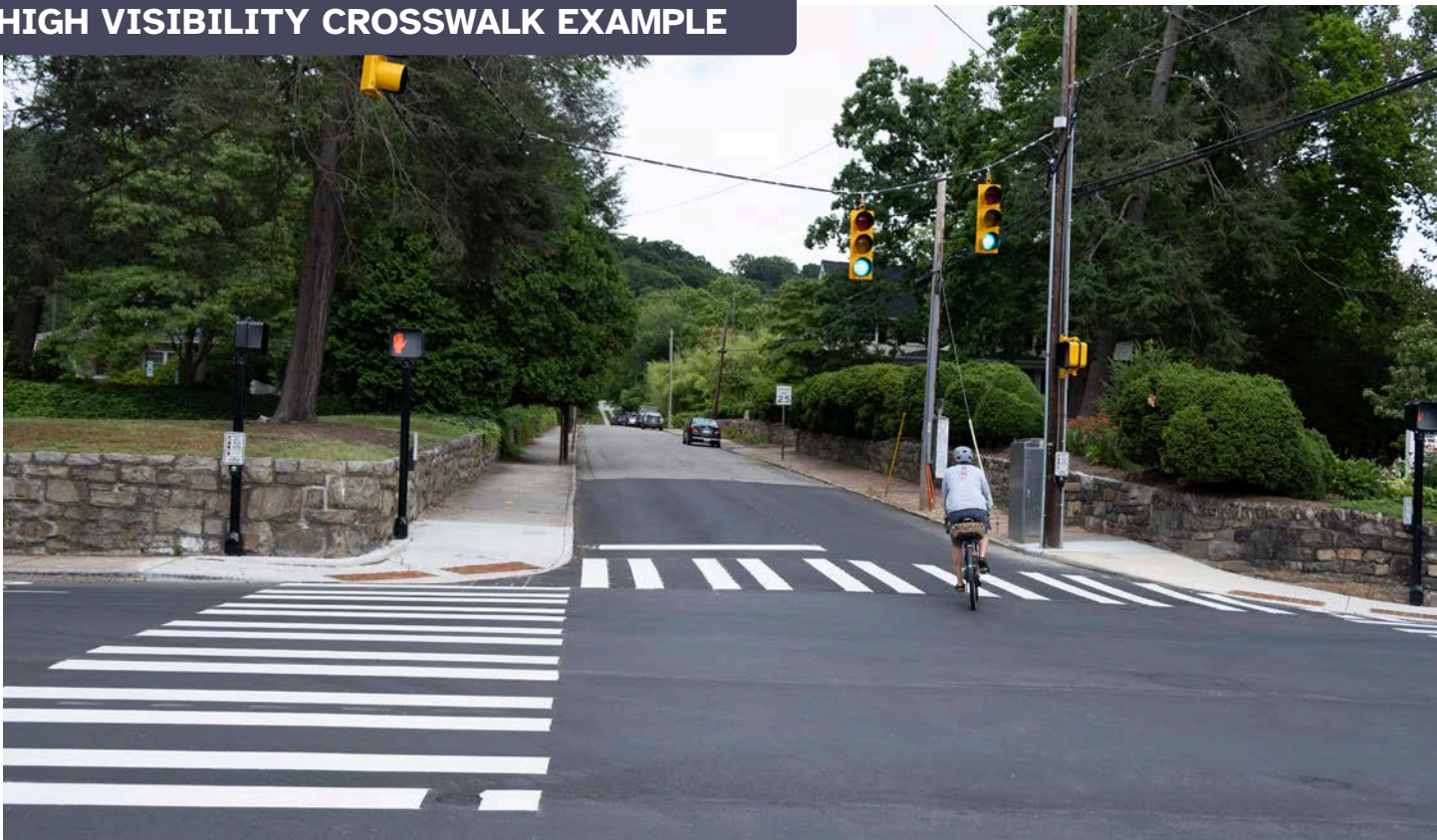
Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool

- o Sidepath will connect to existing facilities in Sylva



<div>CONNECTIONS</div> <div>KEY ELEMENTS</div> <div>*SEE LOCATION ON MAP BY CORRESPONDING LETTERS</div>	
<ul style="list-style-type: none"> o Mark Watson Park to Dillsboro Road and W. Main Street 	<ul style="list-style-type: none"> A. High visibility crosswalk on Mark Watson Park driveway B. Modify driveway of existing commercial property to limit crossing width C. Modify curb and gutter, drainage, intersection radius and landscaped island to support ADA ramp and pathway
CROSSINGS	
<ul style="list-style-type: none"> o W. Main Street – high visibility crossing 	<ul style="list-style-type: none"> D. High visibility crosswalk on W. Main Street E. Relocate streetlight and pole outside of sidewalk ramp area F. Extend sidewalk across railroad tracks, across driveway for Economy Inn and connect to existing bridge sidewalk on Dillsboro Road

HIGH VISIBILITY CROSSWALK EXAMPLE



4

MILL STREET SIDEWALK GAPS



PROJECT DESCRIPTION

- o 5-6-foot sidewalk along north side of Mill Street
- o Curb and gutter with on-street parking
- o ADA and crossing improvements to existing railroad crossings to north side of railroad

PLANNING LEVEL COST ESTIMATE

\$965,000

Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool



- o Parking modification needed to provide space for a sidewalk
- o Address intersection geometry/radii at Allen Street
- o ADA ramps needed

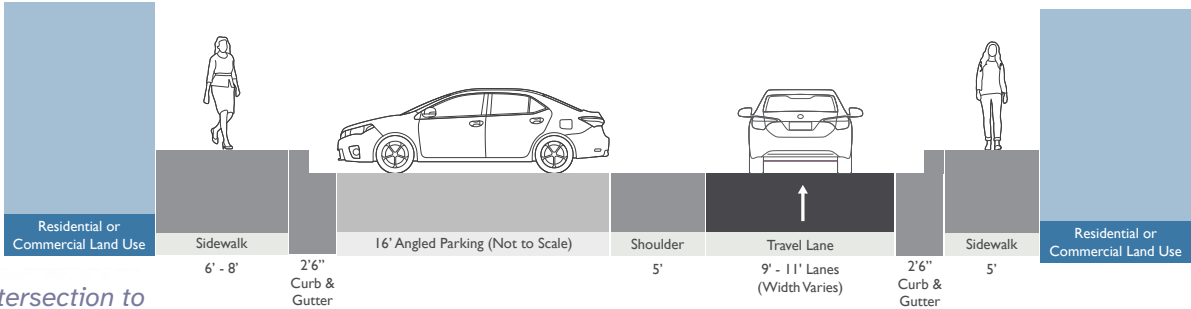
CONNECTIONS		KEY ELEMENTS	
		*SEE LOCATION ON MAP BY CORRESPONDING LETTERS	
<ul style="list-style-type: none"> o Commercial development along Mill Street from terminus of NC-107 o Widening to Keener Street 		<ul style="list-style-type: none"> A. Modification to existing parking to provide space for sidewalk B. Consider constructing sidewalk adjacent to existing buildings C. Modification of intersection radii at Allen Street with ADA ramps and high visibility crosswalk D. ADA updates to intersection at Spring Street with crosswalks on all approaches E. Develop ADA ramps from Mill Street to and across railroad tracks F. Modify intersection of Mill Street at Schulman Street / Grindstaff Cove Rd with pedestrian signals, crosswalks and ADA ramps G. Shift travel lanes between Schulman Street / Grindstaff Cove Road and Keener Street intersections; evaluate limiting the left-turn lane for Keener Street to a short 50-foot pocket turn lane. Repurpose 300 foot section of Mill Street to provide room for wide sidewalk and a 14-foot lane H. - I. High visibility crossing with ADA upgrades 	
CROSSINGS			
<ul style="list-style-type: none"> o Allen Street – signalized intersection o Spring Street – signalized intersection 			

LOOKING WEST FROM SCHULMAN STREET



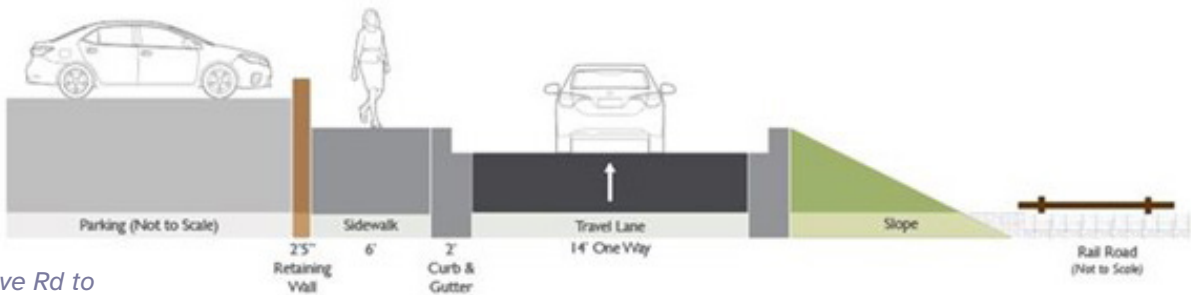
AFTER
CROSS
SECTION

From W. Main St intersection to
Grindstaff Cove Rd



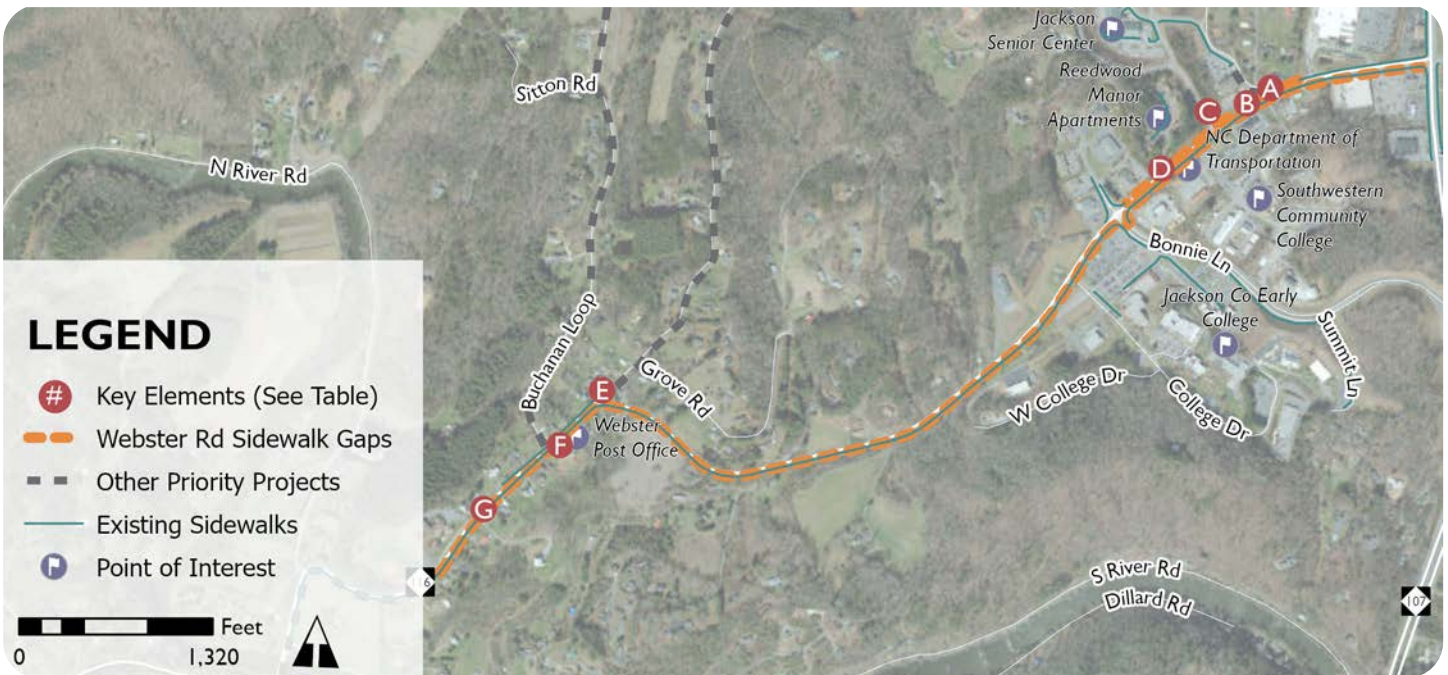
AFTER
CROSS
SECTION

From Grindstaff Cove Rd to
Keener St



5

WEBSTER ROAD SIDEWALK GAPS



PROJECT DESCRIPTION

- o Complete sidewalk construction along south side of Webster Road where gaps exist
- o Address ADA upgrades for accessibility of existing sidewalk
- o Extend sidewalk along north side to roundabout (Bonnie Lane / Success Avenue)
- o Curb and gutter with 0-3-foot grass buffer
- o Address crossings at key locations including Griffin Street

PLANNING LEVEL COST ESTIMATE

\$936,500

Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool

FUTURE SIDEWALK ALONG GRIFFIN STREET



AFTER IMAGE

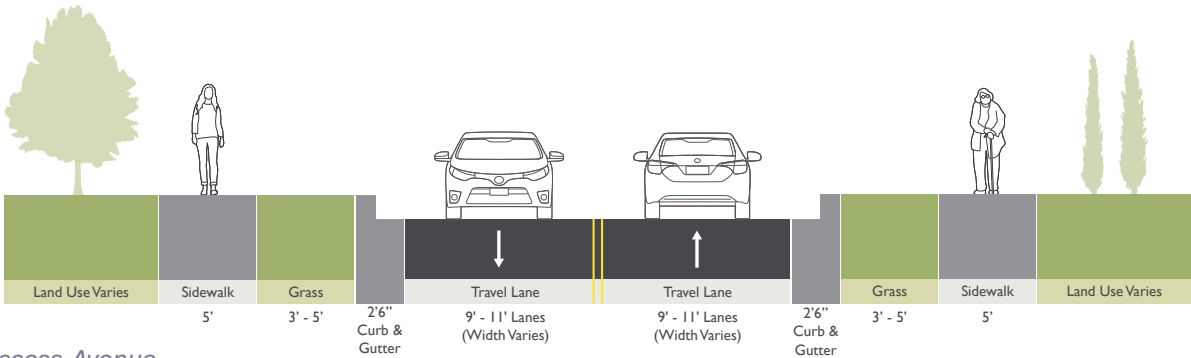


<div>CONNECTIONS</div> <div>KEY ELEMENTS</div> <div>*SEE LOCATION ON MAP BY CORRESPONDING LETTERS</div>	
<ul style="list-style-type: none"> Webster Road residential areas to County services and neighborhood shopping 	<ul style="list-style-type: none"> A. Provide high visibility crossing at Griffin Street B. Provide sidewalk on Griffin Street up to existing sidewalk at Social Services Building C. Modify ditch along north side of Webster Road D. Short section of retaining wall potentially needed behind sidewalk on north side E. Provide high visibility crossing with ADA ramps at Buchanan Loop (east) F. Upgrade pavement markings, signage and ADA ramps at existing Buchanan Loop (west) G. Provide high visibility crossing with ADA ramps at Webster School (east driveway)
CROSSINGS	
<ul style="list-style-type: none"> Griffin Street Buchanan Loop (east) Buchanan Loop (west) Webster School (east driveway) 	

AFTER

CROSS

SECTION

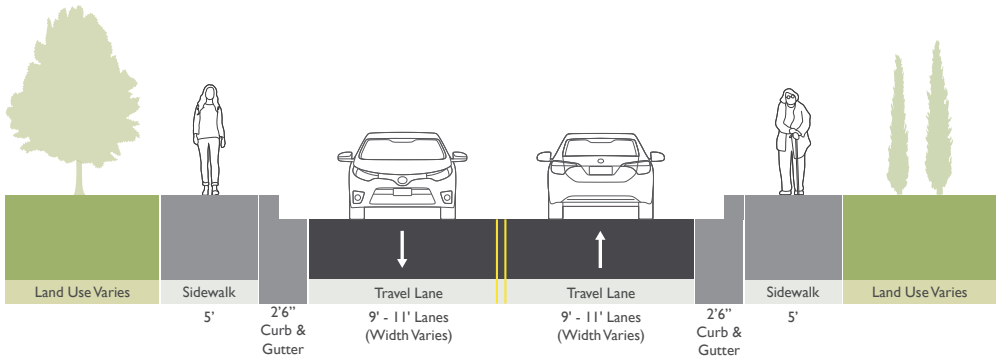


From NC 107 to Success Avenue

AFTER

CROSS

SECTION

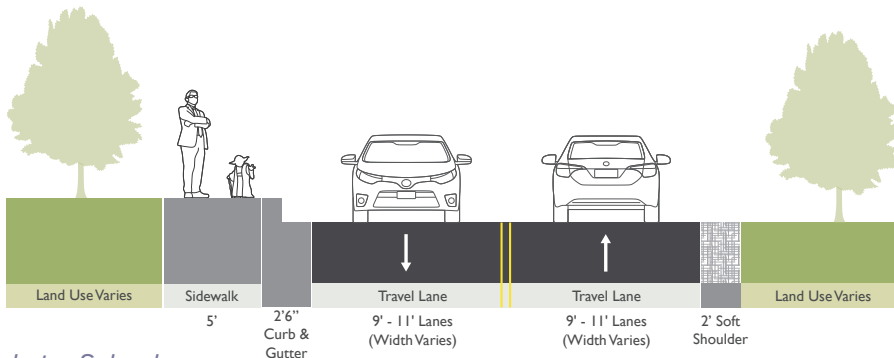


From NC 107 to Success Avenue (where right-of-way and terrain limitations prevent ability to provide grass separation between roadway and sidewalk)

AFTER

CROSS

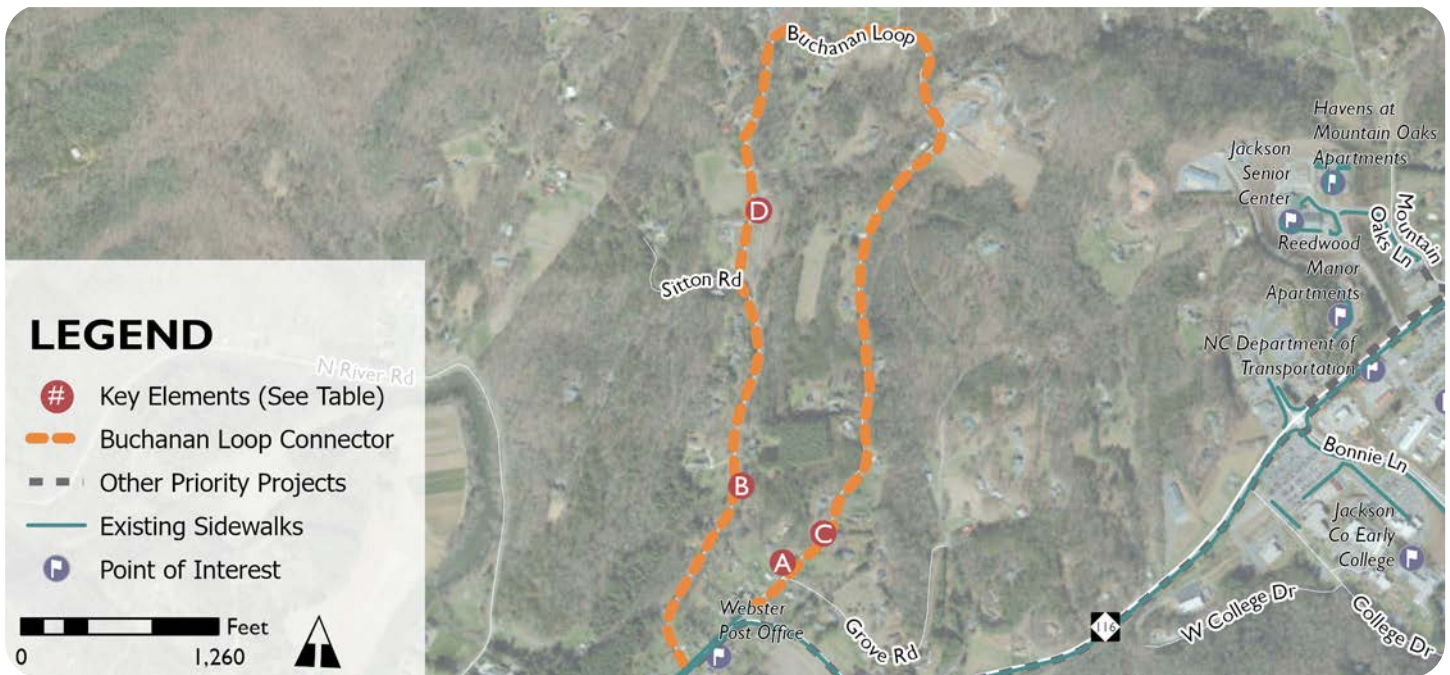
SECTION



From Success Avenue to Webster School

6

BUCHANAN LOOP CONNECTOR



PROJECT DESCRIPTION

- o Traffic calming (speed humps and horizontal features)
- o Shared roadway pavement markings and treatments

PLANNING LEVEL COST ESTIMATE

\$50,000

Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool

EXISTING BUCHANAN LOOP

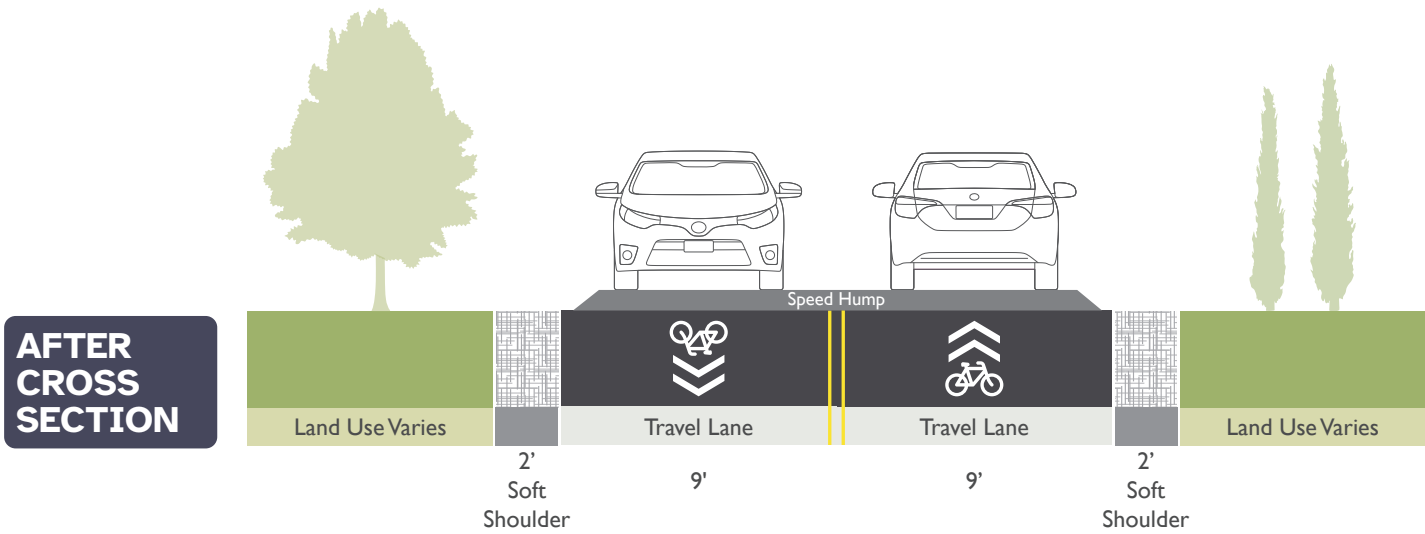


CONNECTIONS	KEY ELEMENTS <i>*SEE LOCATION ON MAP BY CORRESPONDING LETTERS</i>
<ul style="list-style-type: none"> o Pedestrian loop connecting residential area to Webster Road 	<ul style="list-style-type: none"> A. AADT (Average Annual Daily Traffic) western segment: 320 vpd (Vehicles per Day); AADT eastern segment: 180 vpd B. Limited ROW (right-of-way) availability C. 700 foot segment from Grove Road intersection only 1-lane wide D. Cemetery located along east side of roadway

EXAMPLE TRAFFIC CALMING TREATMENT



Source: pedbikeimages.org / Dan Burden



7

CAMPUS SIDEWALK GAPS: CENTRAL DRIVE



PROJECT DESCRIPTION

- o 5-foot sidewalk along south side of Central Drive
- o Curb and gutter with sidewalk at the back of the curb
- o ADA upgrades along existing sidewalk extents

PLANNING LEVEL COST ESTIMATE

\$265,000

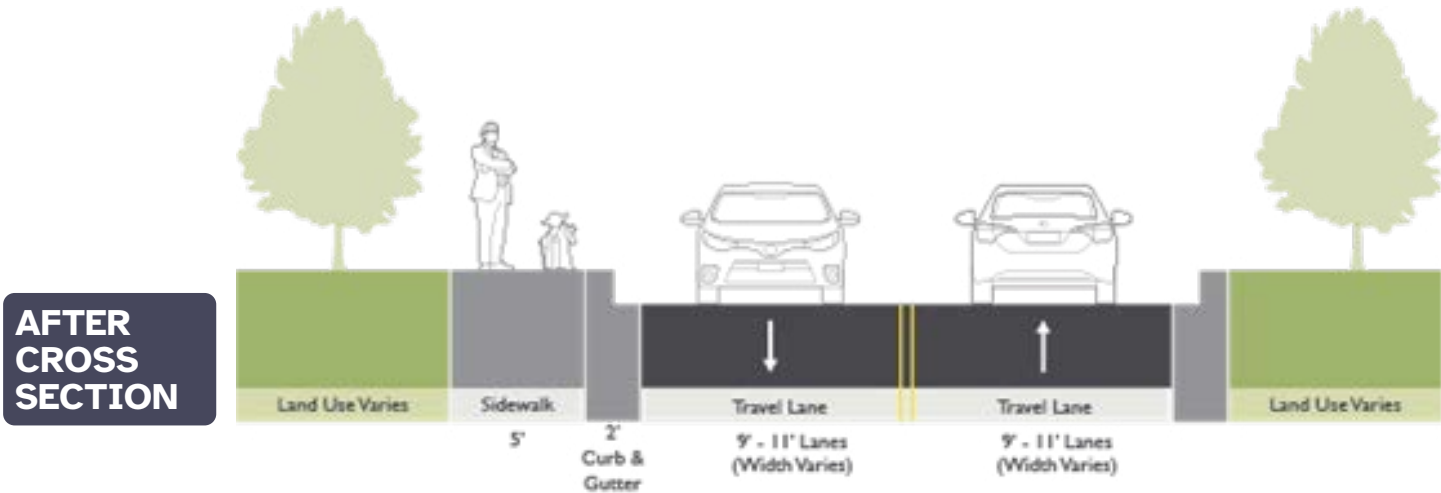
Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool

CONNECT TO EXISTING SIDEWALKS



CONNECTIONS		KEY ELEMENTS
o Existing sidewalk limits to Old Cullowhee Rd		*SEE LOCATION ON MAP BY CORRESPONDING LETTERS A. Approximately 200-feet of guardrail to be modified/ relocated B. Existing speed table crossing; ADA upgrades, signage and pavement markings C – I. Existing crossings; high visibility and ADA upgrades
CROSSINGS		
o Upgrades to existing crossings include re-stripping of continental crossings, signage and speed tables		

UPGRADES WILL CONNECT TO THE HEART OF CAMPUS



AFTER CROSS SECTION

8

CULLOWHEE VALLEY SCHOOL TO NORTH COUNTRY CLUB SIDEPATH



PROJECT DESCRIPTION

- o 10-12-foot multiuse sidepath along west side of NC-107
- o Minimum 10-15-foot separation from travel lanes
- o Incorporate existing pathway adjacent to Cullowhee Valley School
- o Bridge across Cullowhee Creek at Lyle Wilson Drive

PLANNING LEVEL COST ESTIMATE

\$2,552,250

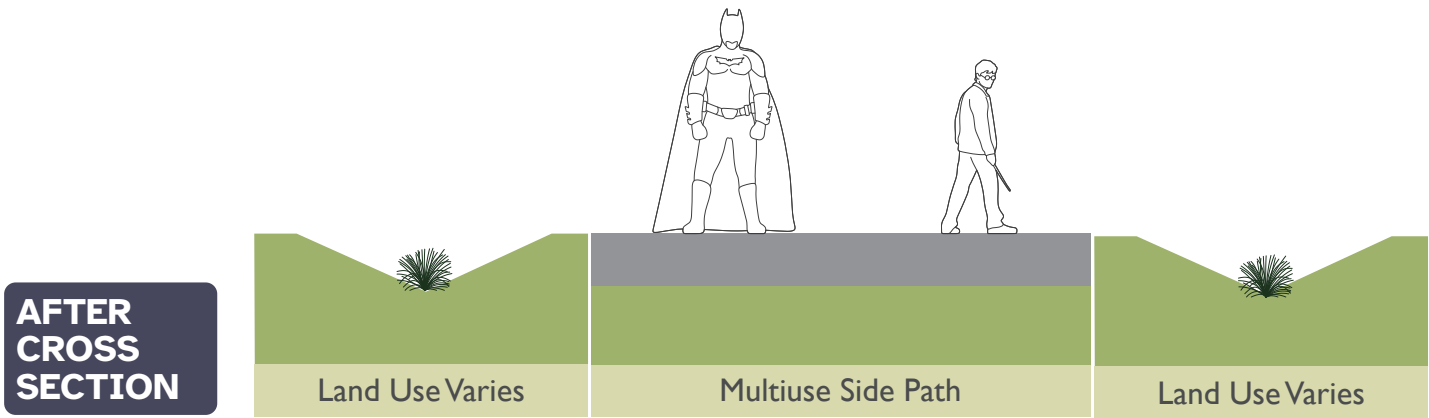
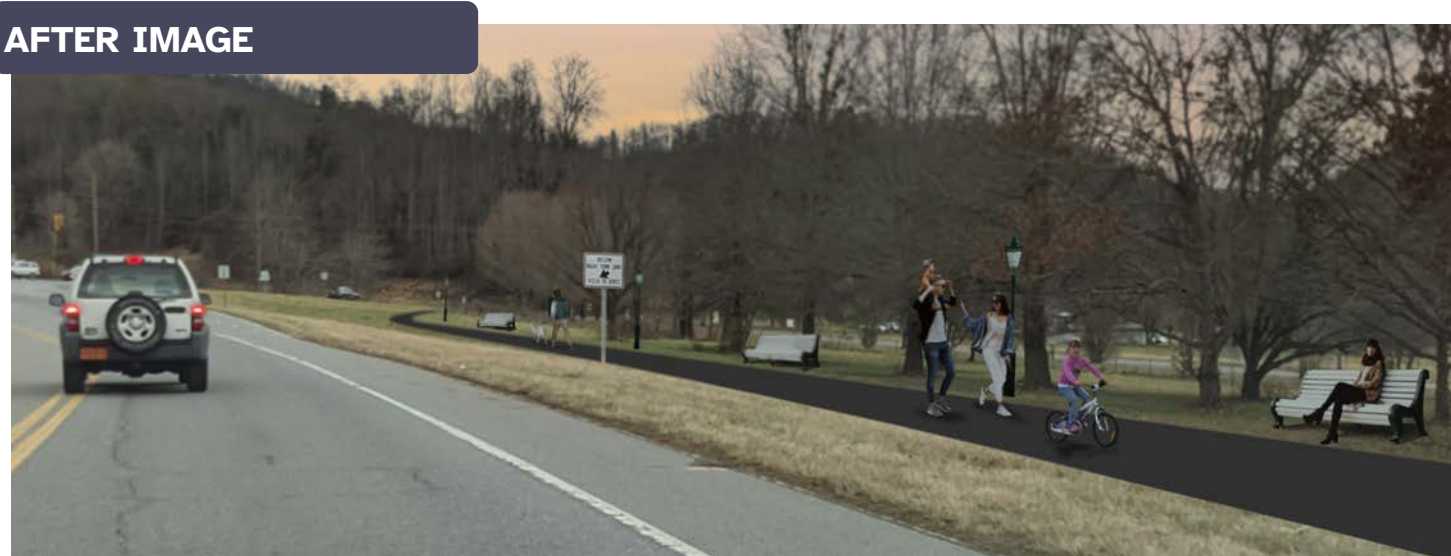
Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool



- o Needed crossing improvements at the intersection of North Country Club Drive with NC-107

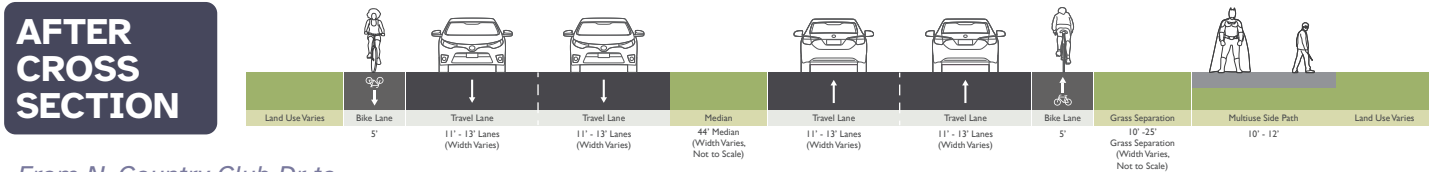


CONNECTIONS		KEY ELEMENTS
o North Country Club Drive to Cullowhee Mountain Road		*SEE LOCATION ON MAP BY CORRESPONDING LETTERS
CROSSINGS		
o Lyle Wilson Drive – high visibility crosswalk		<p>A. Modify existing pathway on school property to a 10-12-foot minimum width</p> <p>B. Construct bridge across Cullowhee Creek between rear access drive to school and NC-107</p> <p>C. High visibility crossing</p> <p>D. Steep grades and creek constrain pathway location; retaining wall may be needed</p> <p>E. High visibility crossing</p>



From Lyle Wilson Dr to Cullowhee Mountain Rd

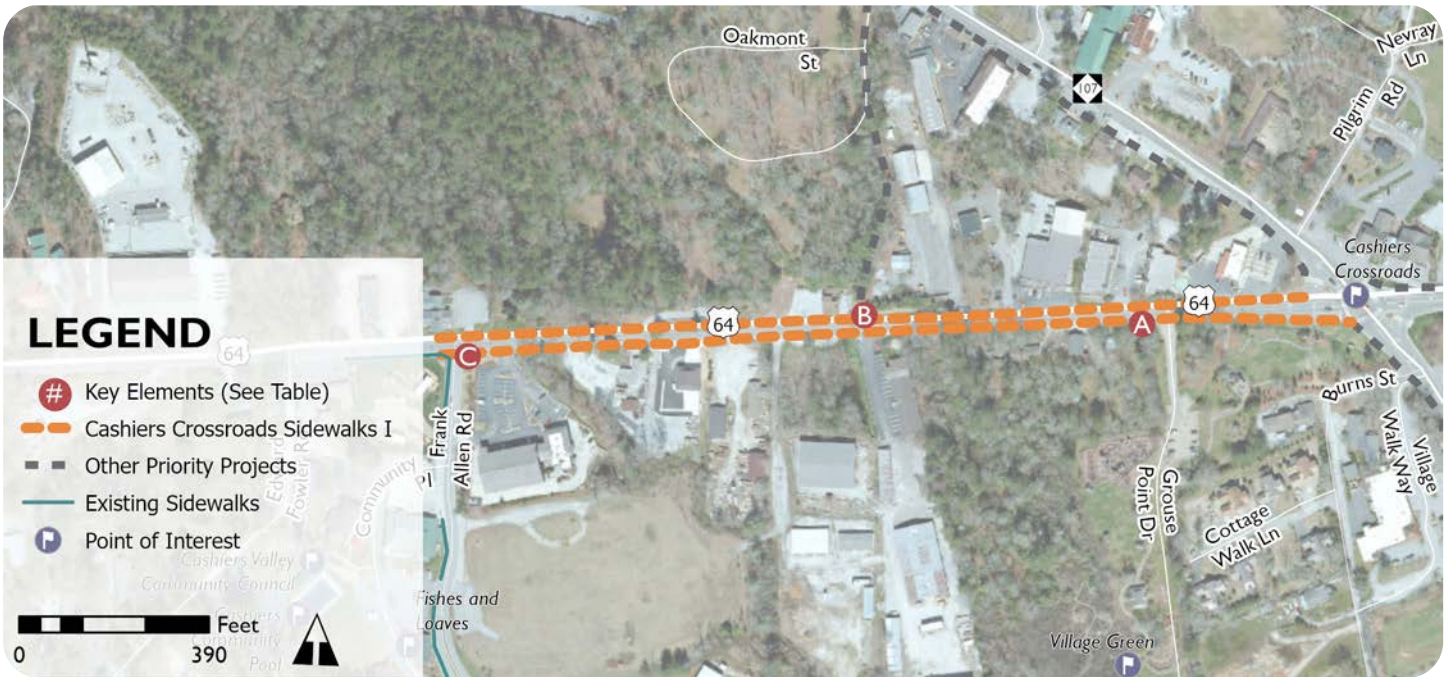
10' - 12'



From N. Country Club Dr to Lyle Wilson Dr

9

CASHIERS CROSSROADS SIDEWALKS I (WENDY'S TO CROSSROADS)



PROJECT DESCRIPTION

- o 5-foot sidewalk along both sides of US 64 from Crossroads (NC-107) to Frank Allen Road
- o Curb and gutter with 0-3-foot grass buffer
- o ADA upgrades on existing sidewalk segments

PLANNING LEVEL COST ESTIMATE

\$855,000

Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool

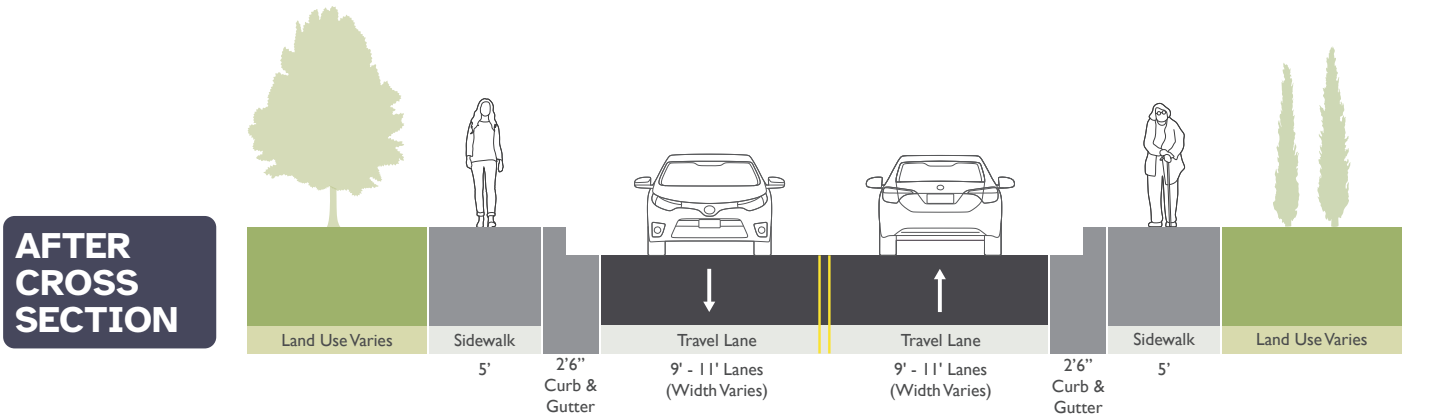
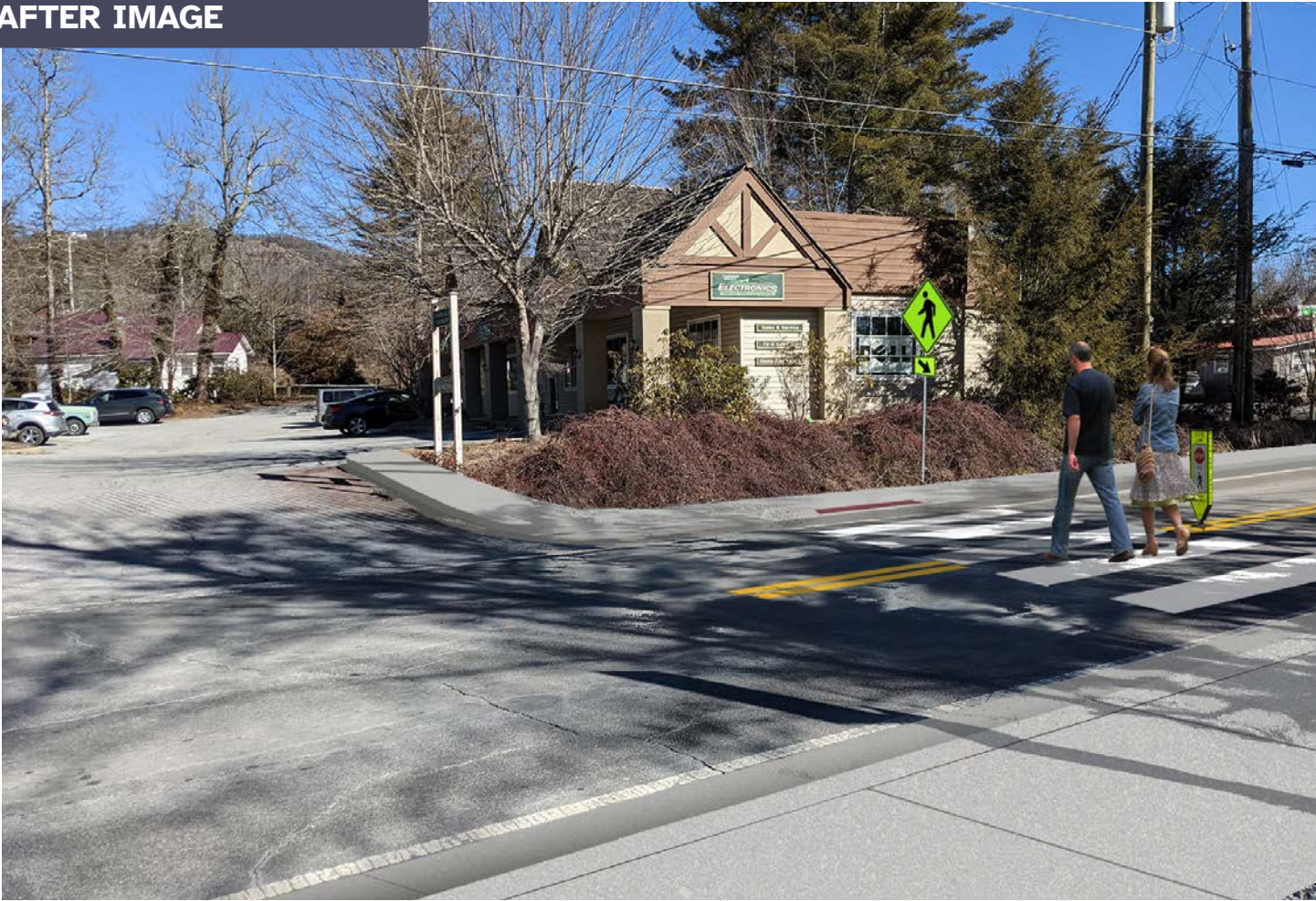


- o Connecting to existing sidewalk



CONNECTIONS	CROSSINGS	KEY ELEMENTS <i>*SEE LOCATION ON MAP BY CORRESPONDING LETTERS</i>
<ul style="list-style-type: none"> o County services along Frank Allen Road to commercial district along US 64 	<ul style="list-style-type: none"> o High visibility crossing at the Village Green and the Ramble crossings 	A, B and C: High visibility crossing upgrades

AFTER IMAGE





PROJECT DESCRIPTION

- o 5-foot sidewalk along west side of NC-107 from Crossroads (US 64) to Frank Allen Road
- o Work with existing on-street parking; potential conceptual design by local planning group

PLANNING LEVEL COST ESTIMATE

\$360,000

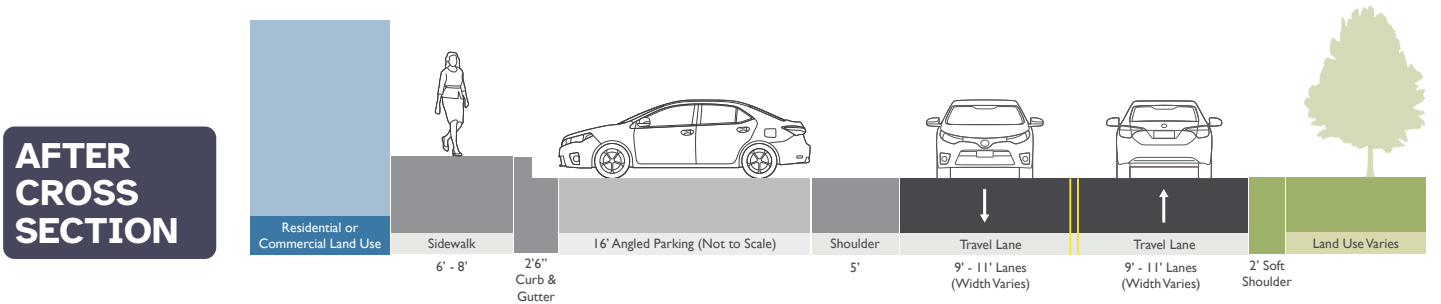
Includes Design, Right-of-Way, Utilities and Construction Per Assumptions from the NCDOT Bicycle and Pedestrian Cost Estimating Tool

PARKING MODIFICATIONS NEEDED



CONNECTIONS	CROSSINGS	KEY ELEMENTS <i>*SEE LOCATION ON MAP BY CORRESPONDING LETTERS</i>
<ul style="list-style-type: none"> Commercial district along NC-107 and Frank Allen Road 	<ul style="list-style-type: none"> Two, high-visibility crosswalks (mid-block) Pedestrian signal upgrades at NC-107 and Frank Allen Road 	<ul style="list-style-type: none"> A. Modify existing parking to facilitate sidewalk construction B. High visibility crossing upgrades C. High visibility crossing upgrades D. Pedestrian signal upgrades

CONNECTIONS TO EXISTING SIDEWALKS



NCDOT Bicycle & Pedestrian Cost Estimation Tool

Select Specific Improvement Type (SIT) ⓘ

Bicycle Projects

SIT 1: Grade-Separated Bicycle Facility

SIT 2: Off-Road/Separated Linear Bicycle Facility

SIT 3: On-Road Designated Bicycle Facility

SIT 4: On-Road Bicycle Facility

SIT 5: Multi-Site Bicycle Facility

Pedestrian Projects

SIT 6: Grade-Separated Pedestrian Facility

SIT 7: Protected Linear Pedestrian Facility

SIT 8: Multi-Site Pedestrian Facility

SIT 9: Improved Pedestrian Facility



Image 23. NCDOT Bicycle and Pedestrian Cost Estimation Tool

COST ESTIMATE METHODOLOGY

The top 10 selected projects were advanced to cost estimate development. The cost estimate details are included in Appendix D and the summary of planning level cost estimates for each project is included in the cutsheets. Depending on when a project is scheduled for construction, a cost escalation index should be applied (to anticipate future changes in cost).

The methodology for cost estimates is summarized in the following three parts.

Part 1: Initial project costs were developed utilizing the NCDOT Bicycle and Pedestrian Cost Estimation (BPCE) Tool, 2019 Version.

Part 2: An initial corridor screening was completed to account for the following cost factors that would potentially increase design and construction beyond those that are included in the BPCE Tool. Costs for the following items were screened and, where present,

adjustments were made to the BPCE tool results:

- o Long stretches of roadside elevation changes that would necessitate extensive retaining wall structures or long sections of guiderail or trail fencing.
- o Additional roadway crossings, including signal improvements beyond the standard BPCE tool assumptions.
- o Larger utility conflicts e.g., sewer line modifications, heavily loaded overhead utility lines, substations etc.
- o Complex drainage modifications that would increase design, permitting and construction fees.
- o Environmental features such as wetlands, endangered species, hazardous waste sites or historic resources.
- o Floodplain and floodway constraints that would impact structure lengths and permitting costs (hydraulic studies).

Part 3: All costs are preliminary planning level estimates and should be verified through feasibility studies and preliminary engineering in order to determine accurate funding levels for full project implementation. The Bicycle and Pedestrian Cost Estimating (BPCE) Tool assumptions are as follows:

- o All costs are based on 2019 prices and cost components are rounded to the nearest \$5,000, with a minimum of \$5,000 per component. This tool assumes that 10% of the utilities located within the project area would need to be relocated.
- o The BPCE tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.
- o The BPCE tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen the specific improvement type (SIT), project length, and project facility width.
- o The BPCE tool is limited in accuracy and costs should be verified through feasibility studies and preliminary engineering tasks based on site specific information.
- o The BPCE tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.
- o Estimates for the construction of new and/or the modification of existing structures (bridges or tunnels) have been simplified to estimate an assumed width of each structure based on the type of feature crossed and other factors. The construction of new and/or modification of existing structures can be exponentially complex based on project specifications. A separate feasibility study is highly recommended to address the high variability associated with structure costs.
- o Given the planning level of detail in these estimates, the BPCE adds contingencies for unforeseen items. For design, utilities, ROW estimate and construction estimates, each item has an added 15% contingency. In addition, a 25% mobilization and miscellaneous line item is added for the construction estimate.
- o The cost estimates do not include estimates specific to the following elements which may be relevant to the projects:

- Streetlights and street lighting design
- Construction inspection and management
- Landscaping or green infrastructure
- Operating and maintenance costs

SECONDARY PROJECTS

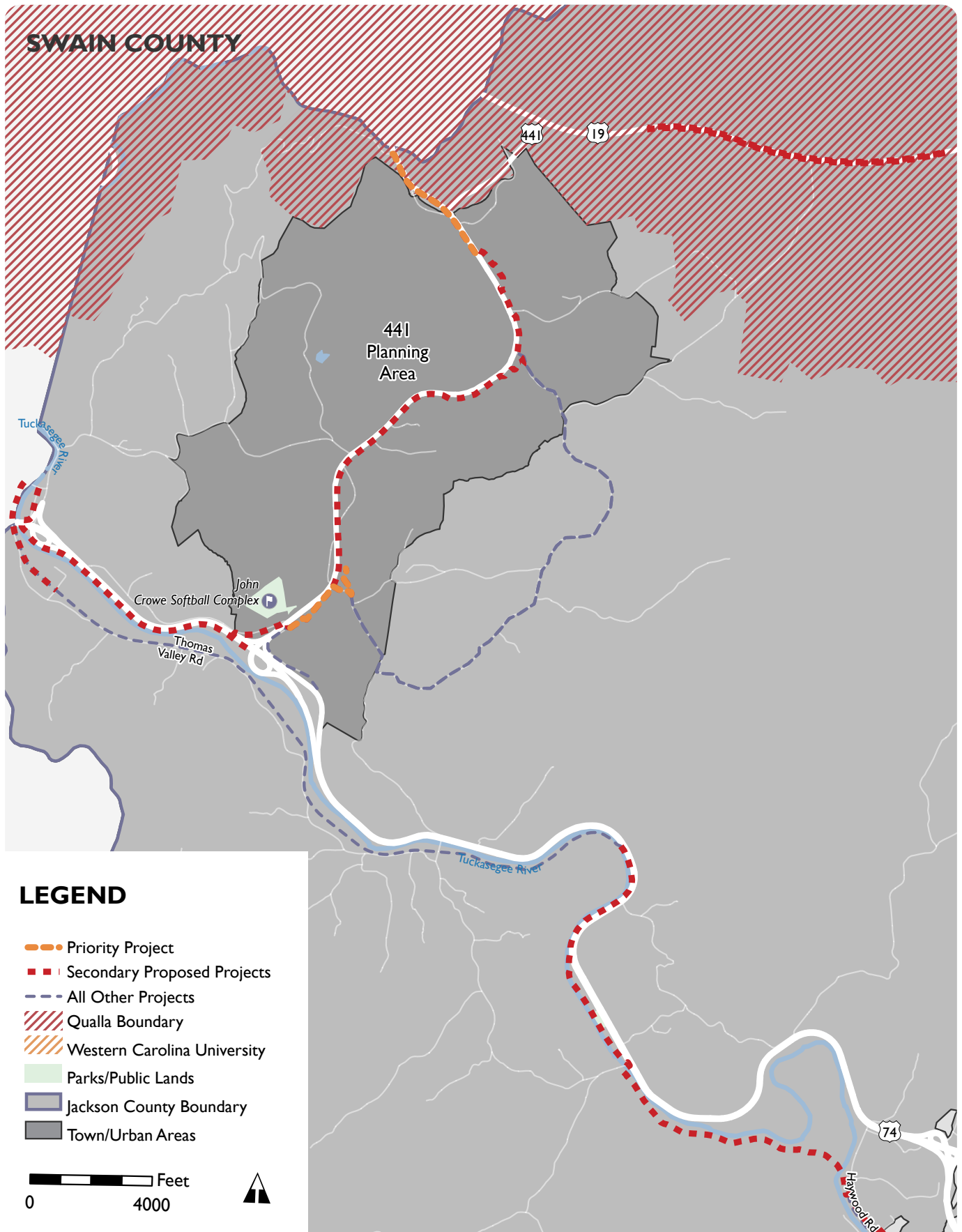
The top 10 projects are shown in Map 10 Series along with secondary projects. Although the top 10 projects are critical to the development of the County's pedestrian system, the remaining projects and crossings from which they were developed remain key components of the plan. These were the projects that were ranked highest but did not make it to the top 10. These are described in further detail in the Appendix B with a summary of the project detail, constraints, existing/proposed cross-sections and source. The source detail clarifies whether the project is in the County Transportation Plan (CTP); if it is not, it will be included in a future amendment to ensure planning consistency across the County.

OTHER PROJECTS (NOT RANKED)

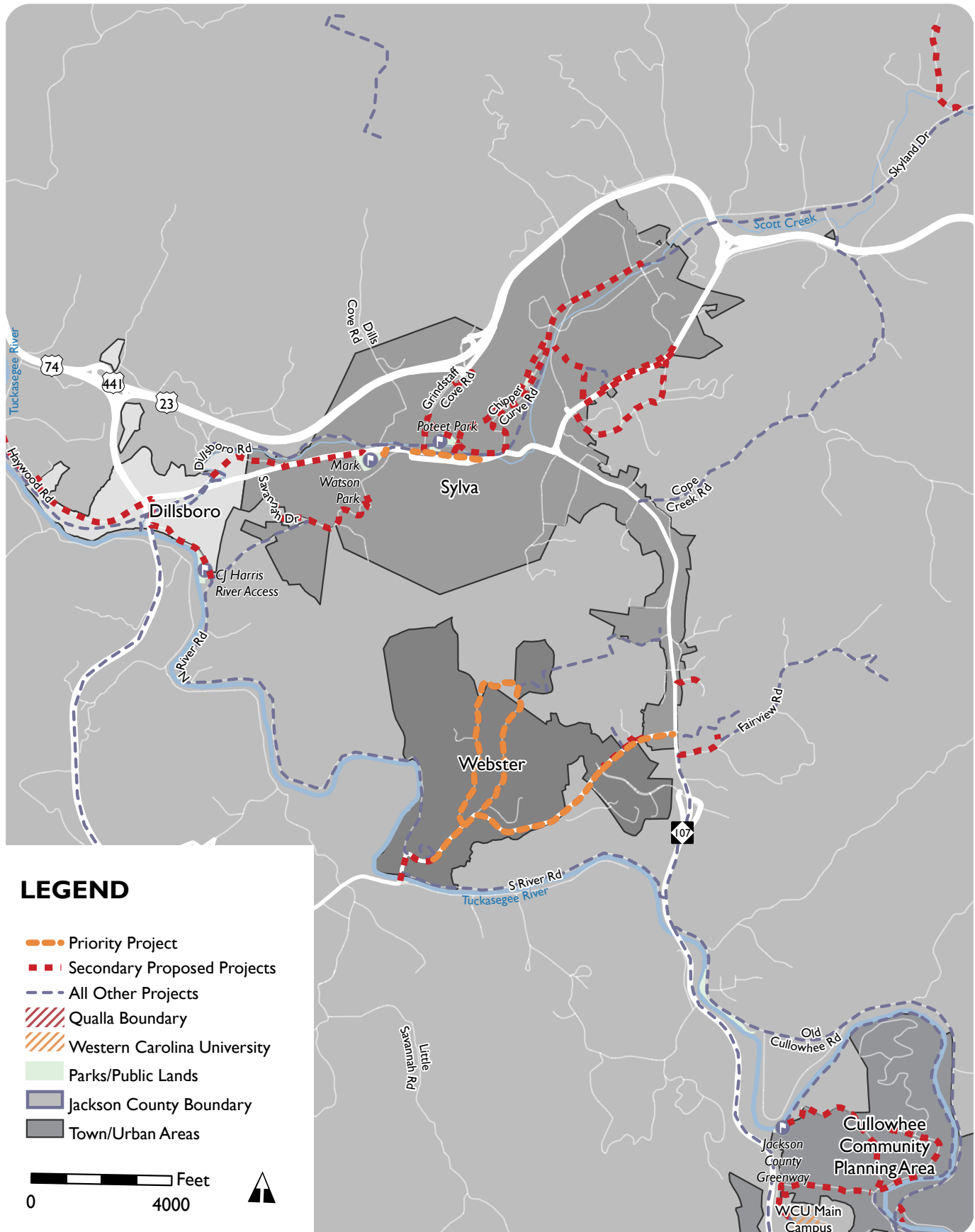
A critical aspect of sidewalk and greenway planning is the concept of network connectivity. When pedestrian facilities are connected to each other and to key destinations in the community, they serve a broader range of ages and abilities for cycling and walking trips. Facilities that are disconnected hinder people's ability to travel on foot or using a mobility device, which also limits transit access and the ability to access community resources to meet daily personal needs. In addition, when greenway facilities are not well connected to communities and neighborhoods, it increases parking demand and the likelihood for trail users to have to drive to a trailhead. For multimodal investments to be worthwhile and maximize community benefits, the network connections are critical.

At the same time, planning a pedestrian and greenway network comprised of cross county connections is not a realistic goal given the topography and geography of the County. As such, this plan looked largely at community connections for the various urbanized areas within Jackson County. As discussed earlier in this chapter, most people walking travel shorter distances and do not desire to cross Jackson County from one end to the other. For this reason, this planning scope focuses on smaller network connections in urbanized areas with a few broader, regional connections.

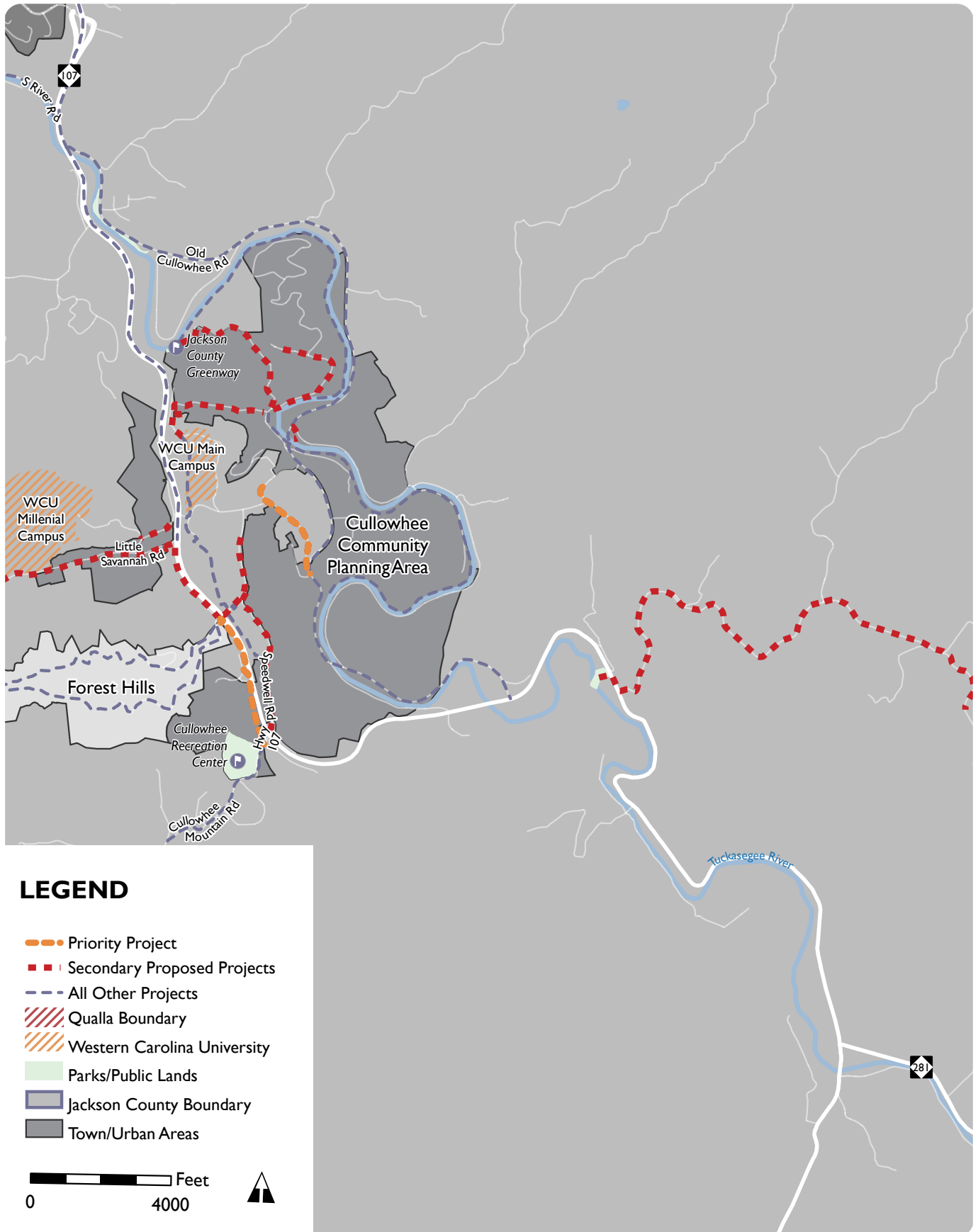
Map 10B. Priority, Secondary and All Other Proposed Projects – 441 Planning Area



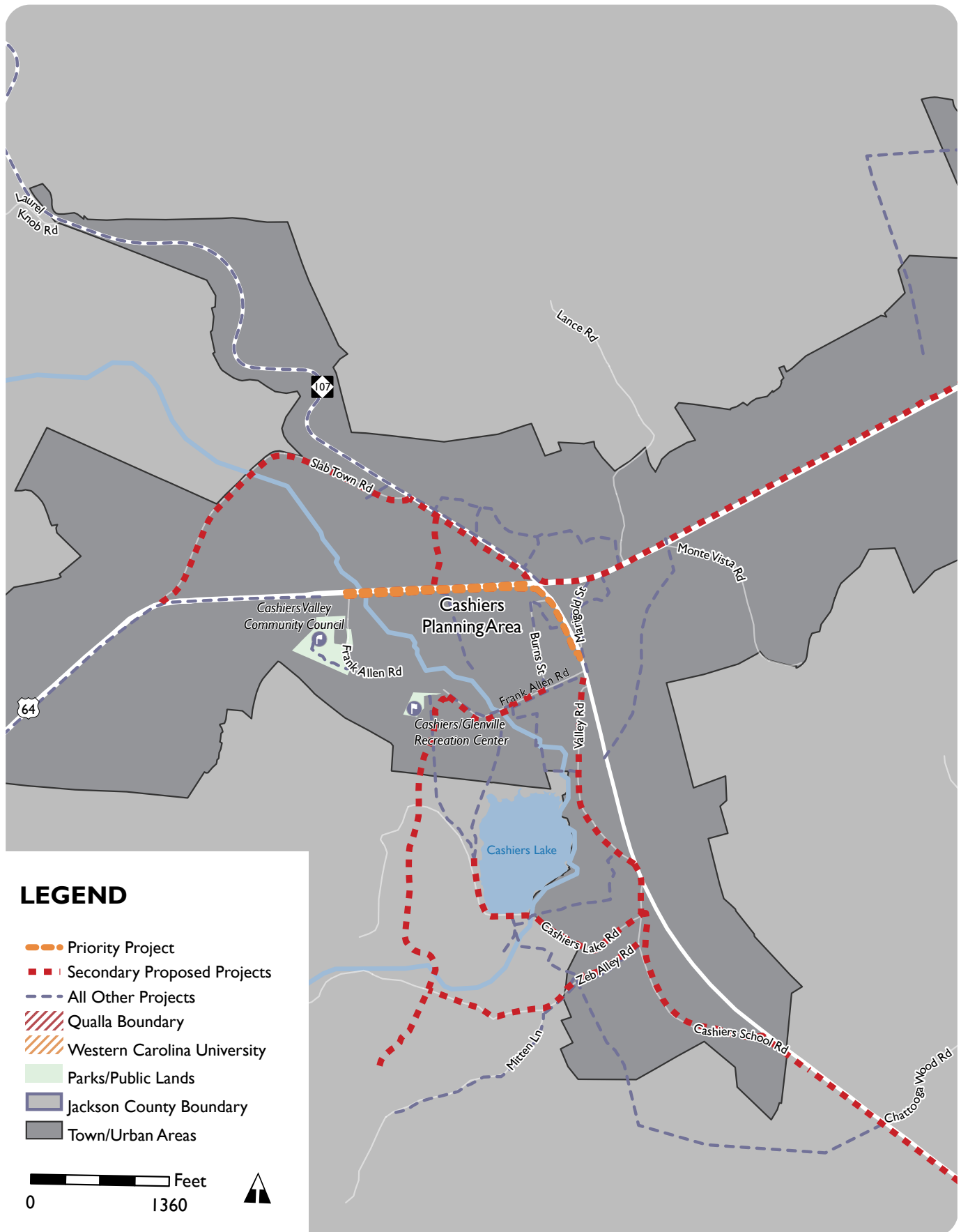
Map 10C. Priority, Secondary and All Other Proposed Projects – Sylva, Dillsboro and Webster



Map 10D. Priority, Secondary and All Other Proposed Projects – Cullowhee Planning Area and Forest Hills



Map 10E. Priority, Secondary and All Other Proposed Projects – Cashiers Planning Area



To improve connectivity across the communities in Jackson County, this plan must go beyond the top 10 projects in the county. As such, most projects identified during this process remain in the plan even if they were not included in the final rankings and community meetings. Having a plan to complete these connections – whether they are prioritized or not – will prepare the County to take advantage of partnerships to get the full system in place. For example, by having a plan in place, when a bridge or road is modified by NCDOT or a local developer, there is potential to have that section of the pedestrian network completed. These partnership opportunities also eliminate the need to modify a roadway or development parcel twice, which reduces costs, environmental and community disruption by consolidating two construction projects into one.

Map 10 (and the table in Appendix B) summarize the pedestrian and trail connection needs in other areas of Jackson County. These projects have been identified as a reference for future opportunities such as development or NCDOT roadway maintenance, safety and modernization projects.

FUNDED OR STUDIED PROJECTS

Three NCDOT funded projects in Jackson County were omitted from the project prioritization process and recommendations of this Plan; these are shown

in Table 8 and are further described in the Current Conditions Chapter of this Plan. These projects have been omitted as a network recommendation since they are already advanced in design and the Team wanted to ensure that the prioritization process would not be skewed by these developed projects. Any crossings associated with these projects were omitted from the final prioritization for similar reasons.

There are four projects that have been studied at various levels of design but do not have funding assigned to them. These are also identified in Table 8. Regardless of whether a project has funding assigned to it or has been studied at an additional level of detail, these projects will remain as priorities to the County.

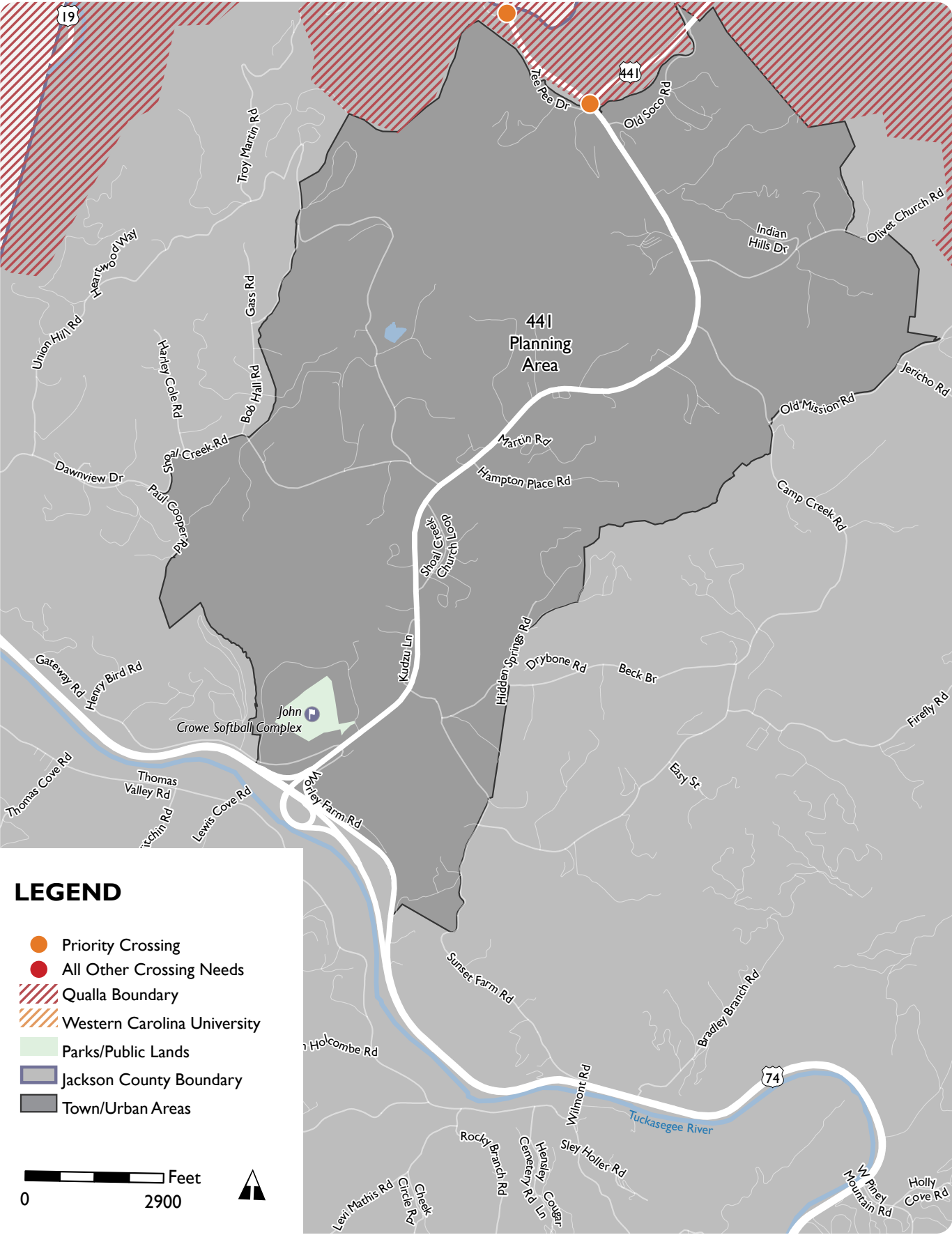
RECOMMENDED CROSSINGS

The project development process identified a set of priority and secondary crossing needs. These are captured in Map 11 Series and the table in the Appendix. The priority crossings correspond with the priority projects that have been identified, and these priority crossing recommendations are referenced in more detail in the priority project cutsheets.

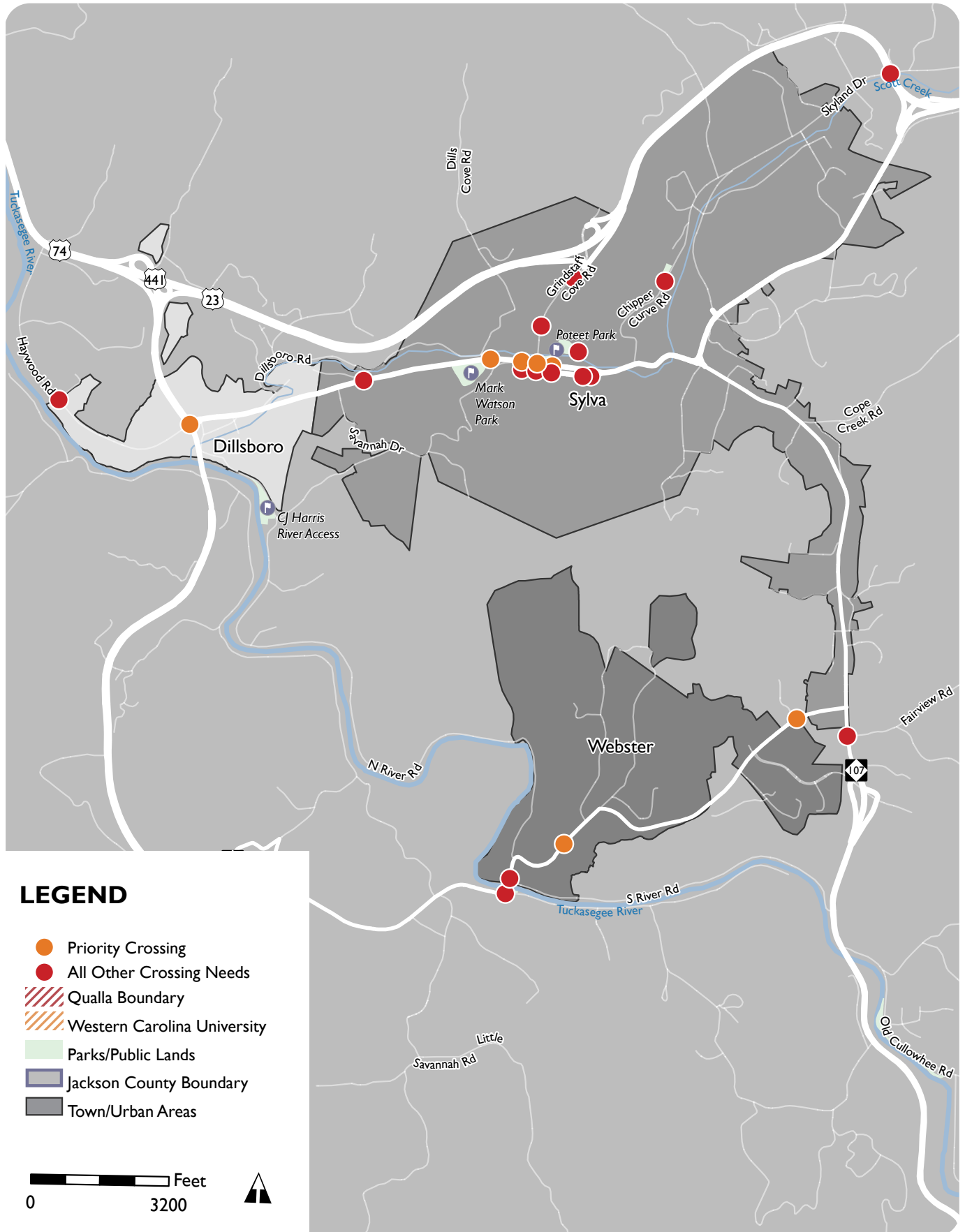
Table 8. Funded or Studied Projects in Jackson County.

ROADWAY	NCDOT PROJECT NUMBER	STATUS
NC-107	R-5600	Funded
Skyland Drive	EB-5923	Funded
Monteith Gap Road	12.BP.12.R.212	Funded
Cashiers Crossroads	R-5881	Studied but Not in Progress
Fairview Road	H172074	Studied but Not in Progress
Ledbetter Road	H170786	Studied but Not in Progress
East Hometown Place	N/A	Studied but Not in Progress

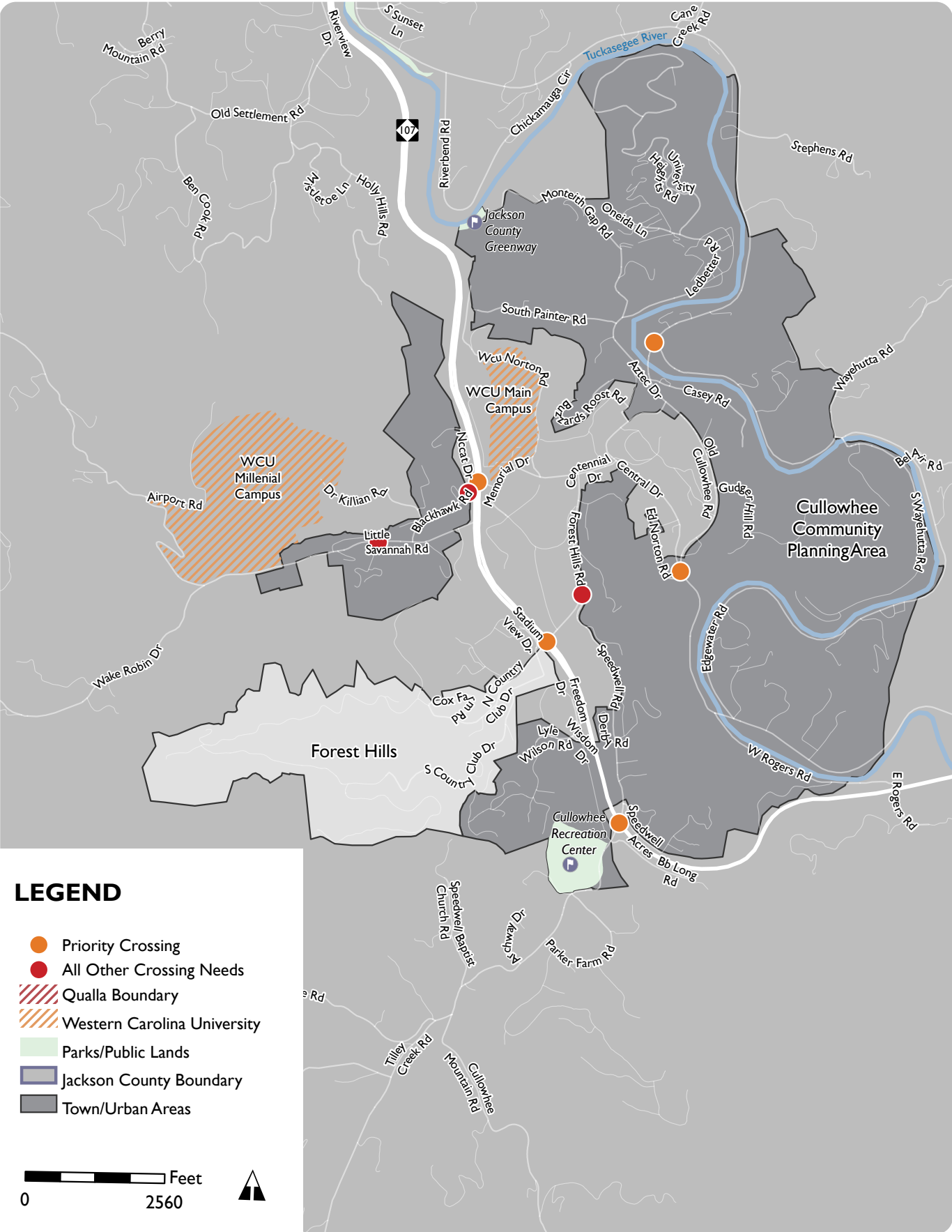
Map 11A. Priority and Secondary Crossing Projects - 441 Planning Area



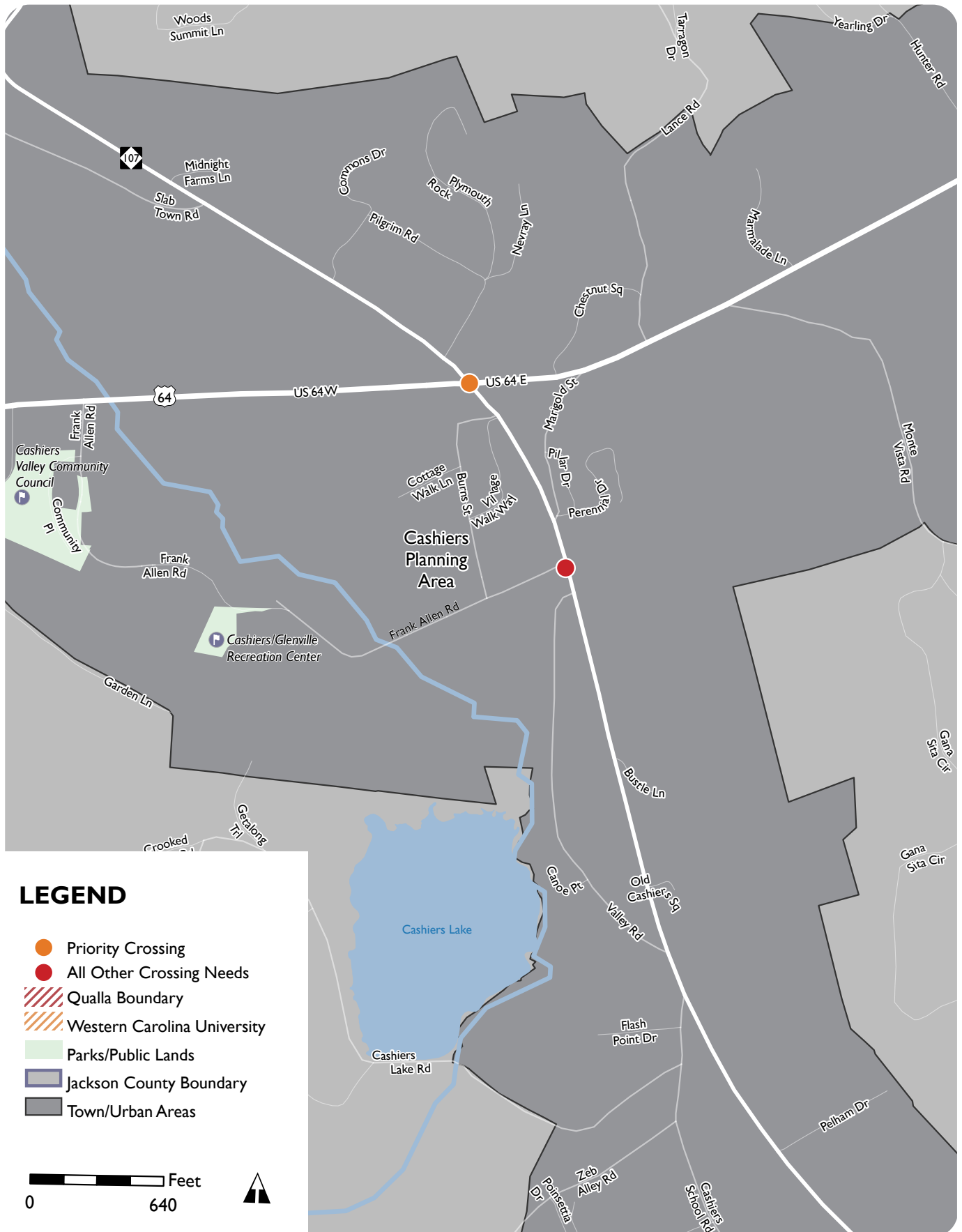
Map 11B. Priority and Secondary Crossing Projects - Sylva, Dillsboro and Webster



Map 11C. Priority and Secondary Crossing Projects -Cullowhee Planning Area and Forest Hills



Map 11D. Priority and Secondary Crossing Projects -Cashiers Planning Area



PROJECT ELEMENTS FOR PEOPLE WALKING

The work of pedestrian system planning also includes the finer details such as traffic calming, access to transit and ADA accessibility. This section focuses on the finer, yet necessary, details that ensure that the pedestrian network is functional for all.

Traffic Calming

As traffic congestion and travel speeds increase on a street, there can be negative impacts to people walking. Traffic calming is a tool to manage the negative impacts of traffic on the street through physical design and other measures. In addition, as reviewed, speed is a major predictor of injury severity, thus calming traffic will help reduce severe and fatal crashes involving people walking.

The Federal Highways Administration (FHWA) and Institute of Transportation Engineers have developed the Traffic Calming ePrimer^v in which they provide the following broad categories of traffic calming:

- o Horizontal deflection requires a person driving a car to navigate around a feature, including:
 - Curb extensions
 - Median crossing islands
 - Lateral shift/chicane (modification to roadway design to eliminate straight, unimpeded section of roadway)
- o Vertical deflection requires a person driving a car to travel over a feature, such as:
 - Speed humps/bumps
 - Raised crosswalks
 - Raised intersections
- o Roundabouts utilize both horizontal and vertical deflection
- o Street width reduction by using tools such as a road diet or lane narrowing
- o Routing restrictions place closures and turn restrictions such as:
 - Diverters
 - Half or full closures
 - Median barrier
 - Turn restriction

Traffic calming measures can be applied to projects in this Plan as ways to improve the walkability and

WHAT IS TRAFFIC CALMING?

The primary purpose of traffic calming is to support the livability and vitality of residential and commercial areas through improvements in non-motorist safety, mobility, and comfort. These objectives are typically achieved by reducing vehicle speeds or volumes on a single street or a street network. Traffic calming measures consist of horizontal, vertical, lane narrowing, roadside, and other features that use self-enforcing physical or psychoperception means to produce desired effects. (Source: FHWA Traffic Calming ePrimer)

safety on Jackson County streets. Projects, such as Buchanan Loop, may only have traffic calming treatments as a recommendation.

Decorative Crosswalks

Increasingly, municipalities are interested in making their downtowns both aesthetically pleasing and friendly for people walking, and one commonly sought-after way to do this is through streetscape elements like colored or decorative crosswalks. Various decorative crosswalk options are available that can be customized to increase crosswalk visibility while not distracting people driving from the road. FHWA issued a memorandum on August 15, 2013^{vi} related to decorative crosswalk patterns. Based on



Image 24. Jackson Trolley Stop in Downtown Dillsboro.

the FHWA memorandum, it is possible to develop an aesthetic crosswalk pattern if it meets the following criteria:

- o No retro-reflective, traffic control or distracting elements within the vehicular traveled way
- o Acceptable pattern examples are repetitive such as brick, lattice, cobbles or paving stones
- o Acceptable colors are neutral such as red, rust, brown etc.

Any such treatment placed on an NCDOT-maintained roadway need be closely coordinated with the Division 14 office to ensure it meets both the FHWA memorandum as well as NCDOT standards.

Access to Transit

Understanding transit in relation to a pedestrian network is important as both modal opportunities offer enhancements to each other and are most

effective when seen as a unit. Every person taking transit is also a person walking, and for transit systems to be effective, the “first and last mile” of a person’s transit trip is often taken by foot. The phrase “first and last mile” is frequently used when understanding transportation systems and is not intended to be literal but rather a reference to the first and last leg of a transit trip that is taken on foot. For both systems to work together well, transit and pedestrian networks need to be safe, efficient and connected. This means solutions such as sidewalks connecting to bus stops and bus stops with shelters.

As reviewed, Jackson County transit operates deviated fixed route and paratransit service to people in Jackson County. The service most relevant to the “first and last mile” connections is the deviated fixed route, or Jackson Trolley. A review of Jackson Trolley’s service area is contained in Appendix E. There are a few limitations to Jackson Trolley that were brought up at various times in this planning study:

- o Limited access to transit stops for people walking;
- o No bus shelters for people to rest and dwell;
- o Limited-service hours that do not correspond well with peak commuter needs; and
- o No connection to the Western Campus or to the Cat-Tran (WCU transit service), where there is a population of students, faculty and staff with limited or no transportation access.

While Jackson County is unique in that it is a rural county with municipal and non-municipal areas, upgrades to the transit system will support the current population and also in the areas projected to grow, such as Cullowhee. Nonetheless, the following high-level items are recommended to ensure that transit and pedestrian systems are better integrated:

- o Prioritize projects that provide high quality (direct and safe) access to bus stops for people walking;
- o Enhanced crossings and signal timings for people walking near transit stops;
- o Enhanced Jackson Trolley and Cat-Tran transfer opportunities and system overlap, allowing students to travel into Sylva and other areas of Jackson County;
- o Bus shelters, benches and trash receptacles;
- o Accessible bus stop landings; and
- o Education and encouragement campaigns to promote service.

Accessibility for All

The Americans with Disabilities Act (ADA) of 1990 is a civil rights law that prohibits discrimination based on someone's disability. Title II of the Act requires cities and towns to have a plan to make accommodations for everyone.

Sidewalks, street crossings, and other elements in the public right-of-way can pose challenges to accessibility and many people with disabilities rely on the multimodal network as their primary, or only, way to get from place to place. According to the American Community Survey, in 2019 14.2% of Jackson County's population had some type of disability.^{vii} Creating an equitable transportation system requires that people with disabilities can move about without barriers.

To address these challenges, the US Access Board has developed a set of design standards for transportation: the "Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way", or PROWAG. The PROWAG addresses people's access

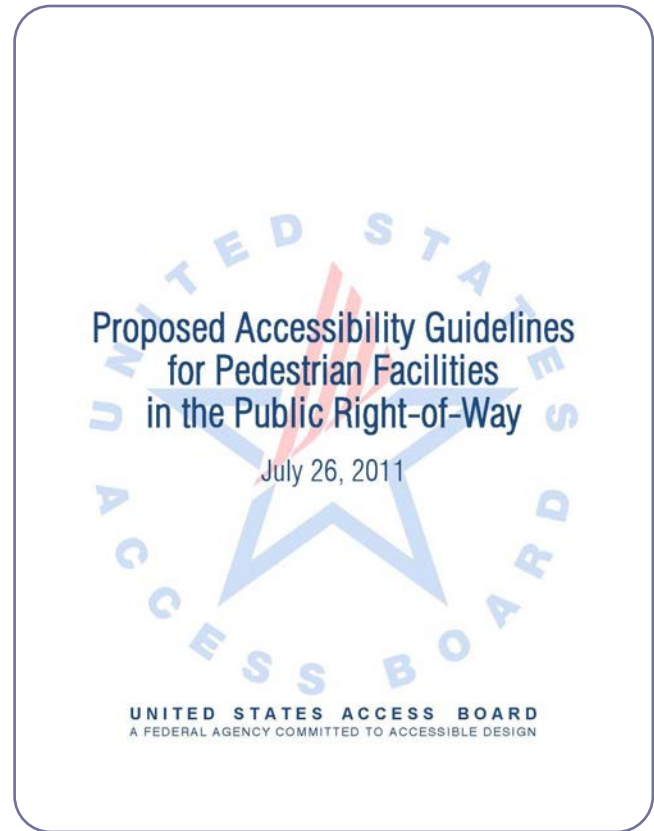


Image 25. These Guidelines Propose Accessibility Guidance for the Design, Construction and Alteration of Pedestrian Facilities in the Public Right-of-Way

to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way. The goal of the access board in developing these guidelines "is to ensure that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection, and safety afforded the public generally is available to pedestrians with disabilities". Once these guidelines are adopted by the Department of Justice, they will become enforceable standards under Title II of the ADA.

Although these guidelines are currently in development, many jurisdictions have adopted these as their local standard. These standards represent industry best practices and should be followed for all future transportation infrastructure projects in Jackson County.

ADA Transition Plan Requirements

Title II of ADA pertains to the programs, activities and services public entities provide, including public transportation services and programs, such as walkways and trails. Title II necessitates that public agencies with 50 or more employees develop a Transition Plan pursuant to 28 CFR §35.150(d).

A Transition Plan must include a schedule for providing accessible features, including curb ramps for walkways. The schedule should provide for pedestrian access upgrades to government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas. The Transition Plan should accomplish the following four tasks:

- o Identify physical obstacles in the public agency's facilities that limit the accessibility of its programs or activities to individuals with disabilities;
- o Describe in detail the methods that will be used to make the facilities accessible;
- o Specify the schedule for taking the steps necessary to upgrade pedestrian access to meet ADA and Section 504 requirements in each year following the transition plan; and
- o Indicate the official responsible for implementation of the plan.

Developing an ADA Transition Plan should be on Jackson County's radar as the County grows in population and staffing resources.

Wayfinding

Signage for people walking is a critical aspect to complement any pedestrian system. This signage offers the user information about destinations of interest, their distance away (in feet/miles and/or minutes) and the direction. Such wayfinding sign systems would be a compliment to the County's sidewalk network as well as a compliment to towns within the County. A wayfinding system can guide people walking to key destinations such as in downtown Sylva or Cashiers.



Image 26. Examples of Wayfinding from Dillsboro and Chapel Hill, NC (Source: Downtown Chapel Hill and TPD)

Endnotes

- i 880 Cities. (2020). <https://www.880cities.org/>
- ii The League of American Bicyclists. (2018). *Bicycling and Walking in the United States: 2018 Benchmarking Report*. <https://bikeleague.org/benchmarking-report>.
- iii NCDOT Bicycle and Pedestrian Crash Database: 2007-2018
- iv EDC-5: Safe Transportation for Every Pedestrian. (2020, May 26). Accessed April 2021 https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/step2.cfm
- v FHWA. (2017). *Traffic Calming ePrimer*. https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm
- vi MUTCD Official Ruling 3(09)-24(I) – Application of Colored Pavement
- vii U.S. Census Bureau (2019). *Disability characteristics, 2015-2019 American Community Survey 5-year estimates*. [Data set]. <https://data.census.gov>

4



Photo Courtesy Jackson County School District

RECOMMENDED PROGRAMS & POLICIES

RECOMMENDED PROGRAMS & POLICIES

GETTING PEOPLE OUT

Building a more pedestrian friendly community requires an integrated approach and diverse partners – there is no one task, person or agency to arrive at this outcome. While infrastructure and facilities are critical to the foundation of these systems, programming efforts, such as education, encouragement and enforcement are also integral. These tasks can be implemented alongside the planning and implementation of pedestrian infrastructure. Incorporating these efforts builds a more robust pedestrian program and engages key partners to share in the challenges and opportunities of this work, thus building a stronger base from which these programs can flourish.

Currently, Jackson County's education, enforcement or encouragement campaign for walking is managed by the Safe Routes to School (SRTS) Program at the Jackson County Department of Public Health. The Coordinator for the County's program served on this plan's Steering Committee. The SRTS Program hosts walk to school day events and organizes various other activities (see Current Conditions chapter for more information).

The following are various other programs and efforts that can be considered for Jackson County. While the County has limited resources to coordinate many of these activities on their own, Safe Routes to School has provided a venue for partnership with communities and local/regional organizations to

develop these programs. These programs should continue to expand as this Plan is implemented.. Education efforts should prioritize efforts to engage youth and senior populations in walking activities.

EDUCATION & ENCOURAGEMENT PROGRAMS

Education and encouragement efforts often go hand in hand. Education is critical to offering those who choose to walk– and those who interact with these users – the knowledge, skills and confidence they need. Encouragement is marketing and promotional efforts that create and celebrate the culture of walking, running and hiking. The following are key education and encouragement programs that may work to build a stronger pedestrian program in Jackson County.

For education and encouragement programs to be successful, the messages they convey should be carefully crafted to Jackson County's voice and demographic. Any messages created for a campaign should be inspirational, creative and relevant. "Scared straight" campaigns designed to encourage a certain type of behavior have been proven to be less effective and polarizing, where the outcome becomes an issue of managing fear and not the actual behavior.ⁱ Messages such as "share the road" have also become diminished in their effectiveness and comprehension based on evidence from 'Share the Road' signage studies.ⁱⁱ

Watch for Me NC

Watch for Me NC is a comprehensive program, run by NCDOT in partnership with local communities, aimed at reducing the number of people walking or biking that are hit and injured in crashes with vehicles. The Watch for Me NC program involves two key elements: 1) safety and educational messages directed toward



Image 27. Walk and Bike to School Day Event at Fairview Elementary School (Source: Jackson County SRTS)

people walking, biking and driving, and 2) high visibility enforcement efforts by area police to reduce violations of traffic safety laws. Local programs are typically led by municipal, county, or regional government staff with the involvement of many others, including pedestrian and bicycle advocates, city planners, law enforcement agencies, engineers, public health professionals, elected officials, school administrators, and others. Annually, NCDOT issues a call for applicants and accepted communities receive the following: print collateral and advertising, law enforcement training, progress check-ins, earned media and technical support. In 2020, the Sylva Police Department was a Watch for Me NC Participant and these programs should continue throughout the County as this Plan is implemented.

[More information here.](#)

Safe Routes to School

This statewide, national and international program involves facilitating the planning, development and

implementation of projects and activities to improve safety and reduce traffic, fuel consumption and air pollution near schools. In North Carolina, this program is managed by NCDOT. Jackson County currently has a strong Safe Routes to School program and this program should continue to build off its great success of the last 7 years and expand reach to new students and administrators.

[More information on the NCDOT initiative here.](#)

Let's Go NC

Let's Go NC is designed to aid instructors in teaching and encouraging safe behaviors for people walking and biking. Through this curriculum, children develop skills that will promote healthy transportation choices. Let's Go NC! gives instructors throughout NC elementary grade schools, community centers such as YMCA and 4-H Clubs, health programs, law enforcement agencies, and more the tools needed to help inform decision making in the need to create healthy active lifestyles in our youth. All curriculum materials are available for free download including lesson plans, lesson videos, and guidance materials for instructors. Currently, this curriculum is taught to instructors throughout Jackson County and this effort should be continued.

[More information here.](#)

Walk and Bike to/at School Day

Thousands of schools across America – from all 50 states, the District of Columbia, and Puerto Rico – participate in this event to walk/bike to/at school. Walk to School Day takes place in October and bike to/at school takes place in May each year. The goal of this program is to encourage more walking/biking to/at school, reduce childhood inactivity, and connect children with their environment. These events can also be coupled with a walk audit to encourage better

infrastructure around schools. Jackson County has a strong legacy of hosting these events and should continue the momentum.

[More information here.](#)

Walking School Bus

A walking school bus is just as it sounds – it is a gathering of children with an adult chaperone for pick up and drop off to and from school. Instead of an actual school bus, the children travel by foot with an adult. These can be as informal as a couple of neighbors taking turns walking their kids to and from school, or much more organized with pick up spots, timetables and a schedule of volunteers. The National Center for Safe Routes to School offers online resources for these events and should continue the momentum.

[More information here.](#)

Safe Routes to Parks

Safe Routes to Parks are ten-minute walks or bike rides to parks that are accessible by all modes of transportation and for people of all ages and abilities. They are intended to end at well-maintained parks, thus doubling the physical activity benefit – both en route and at the destination. Such programming may be a great option for Jackson County where parks offer a way to connect the community.

[More information here.](#)

20 Is Plenty

A campaign that is growing in its popularity is known as 20 is Plenty, which aims to educate people about the issues of speeding in neighborhoods and other pedestrian centric areas. This encourages drivers to reduce their speed to 20 mph where the posted speed is 25. Some communities have been so successful with these campaigns that they have convinced lawmakers to reduce the posted speed limit to 20 mph. Jackson County may consider exploring a campaign like this in partnership with local jurisdictions.

[More information on a locally led program here.](#)

Ciclovía or Open Streets

Ciclovía or Open Streets events were first practiced in Colombia and today they are popular in the US. They involve closing a portion of a street to vehicle traffic and engaging the community to walk, bicycle and celebrate the corridor. Organizers of these events often program the corridor with various performers and interactive booths. Open streets events are also a great way to showcase a demonstration of how a bicycling or walking facility might operate by installing a temporary application of a permanent project.

[More information here.](#)



Image 28. Children Walking at Cullowhee Valley School
(Source: Jackson County SRTS)

Other Targeted Encouragement Programs

Jackson County Parks and Recreation Department provides gear for rent to people of the community, such as archery equipment. A targeted encouragement activity that was shared during the community engagement portion of this Plan was the concept of trekking pole rentals for seniors or those with a disability. Trekking poles can be very beneficial to people walking, even if on relatively flat terrain. This may be a possible partnership opportunity with AARP.

ENFORCEMENT PROGRAMS

Currently, there is some debate in the bicycle and pedestrian community about the relevance of enforcement to bicycle and pedestrian programs. In 2020 the Safe Routes Partnership, a national organization promoting Safe Routes to Schools, removed enforcement from their resources and added engagement as a core strategy. This leading organization felt that this aligned with their work to advance social justice and racial equity. Other organizations and municipalities are working to understand what enforcement activities do, or do not, provide for their bicycle and pedestrian programs.

We acknowledge this shift in practice and understand that change will be gradual and is still being understood by many. For Jackson County, enforcement can be a community-based tool to ensure that our spaces are indeed safe for people of all ages, abilities and backgrounds. Law enforcement officers often know the nuances of traffic, trends and behavior on our streets better than anyone and they are well-known and respected members of our community. They play varying roles to ensure the safety on our streets and that of people walking and bicycling, such as providing education and encouragement to the community at events such as Walk to School Day. They have invested time in training to teach the Let's Go NC Curriculum as well. These community approaches to traffic safety are a great option for Jackson County.

Additionally, streets that are constructed with strong traffic calming elements offer enforcement of traffic speeds without having to burden already-taxed enforcement officers. These types of infrastructure are recommended elsewhere in this Plan.

Positive Reinforcement

Some in the bicycling and walking community feel that targeted enforcement of bicycle and pedestrian behavior is not a fair practice. People walking and biking are the most vulnerable users of a roadway system and some feel that enforcement only causes more harm to these modes of transportation. Some evidence shows that non-compliant behavior stems from a desire for personal safety (e.g., people riding their bikes on the sidewalk where it is not allowed but doing so because it feels safer).ⁱⁱⁱ One consideration to address this issue is positive reinforcement. Positive reinforcement for good behavior can create positive peer pressure among people walking and create good public relations and media coverage. Delivery of these programs is best done by people on foot so that they are viewed as peers. Freebies such as discounts for meals can be rewards for good behavior.



Image 29. Children Walking at Fairview Elementary School (Source: Jackson County SRTS)

JACKSON COUNTY UNIFIED DEVELOPMENT ORDINANCE (UDO) REVIEW

When it comes to zoning and development regulation, Jackson County is an unusual county in Western NC. Jackson County has three areas with individual zoning ordinances to guide growth and development. The areas include the Cashiers Regulated District, the US 441 Regulated District, and the Cullowhee Community Planning District. While zoning regulations outside of the three regulated districts do not apply, they are subject to a variety of development regulations, such as the County's land subdivision, mountain ridge protection, or signage standards.

This UDO review investigates regulations that pertain to sidewalk and greenway development in the unzoned areas in Jackson County, as well as the three regulated districts. The review also includes sets of recommendations for Jackson County and the regulated areas. The included recommendations align with a variety of goals found in the Jackson County Comprehensive Plan, which is summarized in Appendix E.

What the UDO Encourages or Requires

Jackson County's UDO requires developers to build sidewalks under the following conditions:

Subdivision Design:

Under current regulations, developers in Jackson County are not explicitly required to build sidewalks or greenways. However, developers of major subdivisions in Jackson County are required to set aside a portion of the development for open space (*UDO Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66)*). Developers of major subdivisions (8 or more lots) and conservation subdivisions may build sidewalks, greenways, or trails to meet open space requirements.

Open space standards that could add to Jackson's sidewalk or greenway/trail network include:

(iii)Open space areas shall have connections to subdivision roads and/or trail systems that will permit access by all subdivision residents. (*UDO Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66); (d) Designation of Land for Open Space*)

(vi)any land designated as a future greenway on any official plan adopted by the County shall be designated as open space. The land to be designated as open space must be approved by the

County Planning Board as part of the subdivision preliminary plat approval process. (*UDO Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66; (d) Designation of Land for Open Space*)

(iv) Greenways dedicated to environmental, scenic, or recreational purposes. (*UDO Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66; (g) Allowable/Qualified Open Space*)

(iii) Sidewalks may be provided per Section 4.3.5 (j). (*UDO Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66; (i) Location and Design.*)

(i) For all open space requirements not involving property designated as a greenway on any official plan adopted by the County, a property owner may elect to pay a fee-in-lieu of open space instead of providing the required open space provided that the Planning Board finds during the preliminary plat review that there is reasonable existing or future open space proximate to the subject parcel available for use by the future residents of the proposed subdivision. (*UDO Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66; (l) Fee-In-Lieu.*)

(ii)Funds collected in this manner shall be maintained in a separate account and shall be used to purchase property, or to enhance recreational use of property, or to implement projects identified in the Greenway Master Plan and/or the County parks and recreation master plan provided such features are reasonably proximate to the site(s) from which the funds are collected (located in the same County commissioner district as the subdivision providing the fee in lieu). Where practical, the collected fees for each project shall be designated for specific parks and recreation acquisitions and/or enhancements by the County. (*UDO Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66; (l) Fee-In-Lieu.*)

In addition to *Section 4.3.2 Open Space—Major Subdivisions (Sec. 28-66)*, the UDO's Open Space standards for Conservation Subdivisions (*Sec. 4.3.3 Open Space—Conservation Subdivisions*) states that **"(iii) Sidewalks may be provided by the developer, if approved by the Planning Board, to access a pedestrian destination point, such as a school, park, etc., and may constitute part of the open space requirements."** (*Sec. 4.3.3 Open Space—Conservation Subdivisions, (b) Open Space Use, Location and Design (Sec. 28-68(a)), iii*)

It is a positive step that Jackson County has open

space standards, some of which encourage trail, greenway, and sidewalk development. It is also a positive that the UDO clearly states that a development's fee in lieu revenue is to be used for greenway and park-like projects.

Recommendations:

While the open space regulations have standards to address trails, greenways, and sidewalks, development of these facilities is not required. Additionally, it is not clear if developed facilities are encouraged to be or must be open to the public. Suggested recommendations and strategies for improving open space standards include:

- A. Consider **requiring** sidewalks on public streets for new larger residential developments. The County would need to engage in a discussion to define larger developments. For example, the Cullowhee Community District standards require sidewalks at 12 or more housing units.
- B. Consider **requiring** sidewalk construction for all new commercial construction, and rehab projects with a considerable level of investment (to be defined by the County) that front key pedestrian streets. These are areas of the county (in unregulated areas) that may experience urban style development. The Plan consulting team identified potential key pedestrian streets (see map in Appendix B). The Jackson County Planning Board and Board of Commissioners should officially adopt a key pedestrian street map.
- C. Throughout the UDO, clarify that sidewalks and greenways are for public use.
- D. Consider developing incentive thresholds to encourage developers to open their trails and other facilities for public use. For example, a developer may receive a density bonus if they provide public pedestrian facilities.
- E. Amend the UDO to change the reference from **"Greenway Master Plan and/or the County parks and recreation master plan"** to "any plan adopted by the county that includes a plan for a bicycle, pedestrian, or greenway facility." Current plans (such as this one) include: Greenway Master Plan, County Parks and Recreation Master Plan, the Jackson County CTP, and small area plans.

Cashiers Regulated District

The Cashiers Regulated District was Jackson County's first zoned district. The district currently only applies to Cashiers' commercial areas. The District has two

zoning districts, the Village Center District (VC) and the General Commercial District (GCD).

The purpose of the of the VC is to "enhance the traditional core of the village." Enhancing the village includes development that is sensitive to pedestrians. Examples of district standards that are sensitive to pedestrians include: street trees, landscaped parking lots, limited property access points (no more than two) and encouraged shared access points. The district standards also include standards related to shared parking and remote parking. The GCD does not include a stated purpose.

Recommendations:

- A. The Cashiers Regulated District does not explicitly require sidewalks, although this has been the County's intent. With recent development projects, the County has worked with developers to include sidewalks with development projects. Jackson County should amend the Cashiers Regulated District standards to include sidewalk development standards like those found in the Cullowhee District.
- B. The Cashiers Regulated District allows for shared and remote parking. However, the UDO does not require standards requiring pedestrian connections from the parking areas to the intended destinations. Jackson County should consider adding standards to ensure pedestrian connections between parking locations and destinations.
- C. The existing parking lot landscaping standards do not include required pedestrian aisle or pedestrian pathway standards to ensure pedestrians have a safe space to navigate through parking lots. Jackson County should amend the Cashiers Regulated District to include standards to reduce pedestrian/vehicle conflict in parking lots.

Cullowhee Community Planning District

Several districts in the Cullowhee Community Planning District explicitly require pedestrian facilities.

"Pedestrian Facilities: A sidewalk meeting NCDOT standards shall be required along all street and road frontages. If a greenway route is indicated as crossing the property on Jackson County's Greenway Master Plan, the easement for the greenway shall be dedicated to Jackson County as a condition of project approval. The dedication of the easement(s) shall count toward the open space requirements for

the proposed development.” (Sec. 9.4 - Cullowhee Community Planning District, Sec. 9.4.3 General and Special Use Districts, (b) Commercial District, (iii) Development Standards, 9 AND (c) Institutional District, (iii) Development Standards, 9)

In the **Multifamily Residential – High Density District** and **Multifamily Residential – Low Density District**, the pedestrian facilities standards are the same as above, except for the inclusion of a statement that clarifies “This standard shall not apply to single family home developments of less than 12 lots/ homes.” (Sec. 9.4 - Cullowhee Community Planning District, Sec. 9.4.3 General and Special Use Districts, (e) Multi-Family Residential—Medium Density District (MFM), (iii) Development Standards, 10) Pedestrian Facilities AND (f) Multifamily Residential – Low Density District (MFL), (iii) Development Standards, 10) Pedestrian Facilities)

In all above districts, **open space** shall contain at least 10 percent open space, which must be maintained in a vegetative, natural state.

In the single-family residential districts, which include the **Single Family Residential District** and the **Single Family Residential – Manufactured Home District**, the pedestrian facilities state:

“Pedestrian facilities. A sidewalk meeting NCDOT standards shall be required along all street and road frontages for subdivisions of more than 12 lots/ homes. In lieu of sidewalks, trails may be provided upon approval by the Community Planning Council. If a greenway route is indicated as crossing the property on Jackson County’s Greenway Master Plan, the easement for the greenway shall be dedicated to Jackson County as a condition of project approval for subdivisions of more than 12 lots/homes. The dedication of the easement(s) shall count toward the open space requirements for proposed subdivision development. (Sec. 9.4 - Cullowhee Community Planning District, Sec. 9.4.3 General and Special Use Districts, (g) Single Family Residential District (SF), (iii) Development Standards, 9) Pedestrian Facilities AND (h) Single Family Residential—Manufactured Home District (SF-MH), (iii) Development Standards, 9) Pedestrian Facilities)

The **open space requirements** for the single-family districts state that open space shall contain open space as required by the Jackson County Subdivision Section.

Under the **Additional Standards: Special Uses** section for Manufactured Home Parks and RV Parks the UDO notes:

- Pedestrian trails or sidewalks, meeting the standards of Jackson County, shall parallel all internal streets and roads.
- A sidewalk meeting NCDOT standards shall be constructed along all portions of the property abutting a public road.

Recommendations:

- A. Throughout the Cullowhee Community Planning District Standards, clarify that sidewalks and greenways are for public use.
- B. Consider developing incentive thresholds to encourage developers to open their trails and other facilities for public use. For example, a developer may receive a density bonus if they provide public pedestrian facilities.
- C. The Cullowhee Community Planning District allows for shared and remote parking. However, the UDO does not require standards requiring pedestrian connections from the parking areas to the intended destinations. Jackson County should consider adding standards to ensure pedestrian connections between parking locations and destinations.
- D. Additionally, the existing parking lot landscaping standards do not include pedestrian aisle / pedestrian pathway standards to ensure pedestrians have a safe space to navigate through parking lots.
- E. The Additional Standards: Special Uses section references “meeting the standards of Jackson County.” Jackson County does not have specific standards related to pedestrian trails or sidewalks. The UDO should be amended to only reference NCDOT Standards.

US 441 Gateway District.

The US 441 Gateway District has 10 different character areas, which are similar to zoning districts. Of the 10, Recreation (RC), Planned Residential Community (PR), Village Center (VC), and the Institutional (IS) districts are the more pedestrian oriented. Throughout the US 441 Gateways District Standards, there is a key to which standards apply in the different various districts. The District’s Connectivity standards have the most relevance to pedestrian connectivity. However, in general, many of the standards work to create an overall pedestrian friendly environment. Examples include access management standards (which minimize the number of driveways and therefore pedestrian conflict points)

and cross parcel access, which means vehicles do not have to use 441 to get from one business to the next (which reduces pedestrian/vehicle exposure).

Connectivity Standards

The US 441 Gateway District's Connectivity standards apply to the following character areas: Recreation, Rural Living, Golf Course Community, Planned Residential Community, Townhome/Condo Community, Gateway Corridor, Village Center, Industrial, and Institutional. (Sec. 9.5 - US 441 Gateway District, Sec. 9.5.11 Access Management, US Highway 441, (e) Connectivity)

The following section summarizes the connectivity standards with relevance to pedestrian connectivity include:

(ii) *Pedestrian Connections*. Pedestrian connections shall be provided between adjacent properties in addition to roadway connections. These pedestrian connections shall provide for safe pedestrian travel along roadways and across parking areas to site buildings.

1. All new residential development other than single family homes.
2. All new office/commercial or institutional development
3. Expansions to an existing office/commercial or institutional development or use where the gross floor area of the expansion is equal to or greater than 50 percent of the gross floor area of the pre-expansion development or use.
4. Improvements to an existing office/commercial or institutional development or use when the cost of the improvement is equal to or greater than 50 percent of the value of the existing development (building) or use as determined by the Jackson County Tax Office.
5. Along at least one side of private drives serving multi-family, institutional, and/or office/commercial uses in the Gateway Corridor and Village Center Districts to provide a pedestrian connection from the building entrance(s) to a public street or road and/or to a pedestrian facility.

(iii) *Construction Standards*. Sidewalks must have a minimum five-foot width and meet all current Americans with Disabilities Act (ADA) standards. NCDOT will allow sidewalks within their right-of-way by encroachment and will not accept responsibility for maintenance.

1. In lieu of constructing a sidewalk, multi-family residential, institutional, and/or office/commercial uses may construct a greenway trail to provide a pedestrian connection across their property. The location, design, and construction specifications for the greenway trail shall be approved by Jackson County as part of the development plan approval.

Recommendations:

The consulting team does not have specific recommendations for the Connectivity standards; however, the 441 Connectivity standards and others could be a guide to improving connectivity in the other regulated districts.

Recreation Character (RC) Area

It is unusual that greenways and pedestrian paths are called out as a permitted use in RC, but not others. In general, when a land use is listed in one district but not in others, it is generally considered prohibited in others. Since greenways and pedestrian paths are linear, they may pass through more than one zoning district (or character area).

Recommendations:

Jackson County should amend the UDO to include greenways and pedestrian paths as a permitted use in all character areas throughout the US 441 Gateway District.

Miscellaneous references throughout the UDO

Sign Regulations

Throughout the ordinance, there are references that state that signage shall not impede the flow of pedestrian traffic, including projecting signs, suspended or transom signs, and stationary sandwich board signs.

Recommendations:

The standards in the sign ordinance provide for adequate passage and this plan does not have additional recommendations.

JACKSON COUNTY SIDEWALK ACCEPTANCE POLICY RECOMMENDATIONS

As the greenway and sidewalk network are expanded throughout the County, it will be important for the responsible maintenance agency to ensure that facilities are constructed in compliance with federal accessibility standards (see the Accessibility for All section on page 122 for more details).

As such, it is important that any public transportation pedestrian facility for which Jackson County accepts liability and maintenance should be reviewed for ADA compliance prior to acceptance. There are a number of policies that can be considered. The planning team recommends the following for Jackson County.

Recommendation:

Adopt a policy that requires a final ADA inspection checklist to be completed and submitted prior to acceptance. According to team communication with NCDOT Division 14 staff, the agency does not have a formal checklist or system to document ADA compliance for sidewalks. However, NCDOT does ensure that developers meet the agency's construction standards, which are ADA compliant. Jackson County should take steps to ensure that it does not accept sidewalks in private developments or public sidewalks that do not follow NCDOT's sidewalk development standards and/or are not ADA compliant. Jackson County should consider performing its own inspection checklist prior to accepting new sidewalks. The checklists can be simple or comprehensive. A few examples are as follows:

Simple Ramp Checklist Example:

<https://www.dot.state.mn.us/ada/pdf/PDFCurbRampForm.pdf>

Combined Ramp, Sidewalk and Construction Zone Checklist (Signals Included):

https://epg.modot.org/files/1/1a/136.9.4_Mar_2021.docx

Additionally, all greenways with public funding should also be ADA compliant. Jackson should ensure that the developers hired to build its greenway segments are knowledgeable about ADA compliance. To provide oversight that Jackson County may not have in-house, it could contract with an independent engineering firm to review plans and/or provide construction inspection.

Recommendation:

Establish a grievance procedure. Per accessibility regulations, public entities must adopt and publish grievance procedures providing for prompt and equitable resolution of complaints (28 CFR Sec. 35.107(b)). This requirement provides for a timely resolution of all problems or conflicts related to ADA compliance before they escalate to litigation and/or the federal complaint process.

Example Grievance Procedure:

https://www.gastongov.com/government/departments/ada_coordinator/index.php

Recommendation:

Establish a maintenance plan and funding resources for repairs to sidewalks, paths and curb ramps. More details on development of a maintenance plan are provided in the FHWA 2013 publication, "A Guide for Maintaining Pedestrian Facilities for Enhanced Safety". Some highlights from this guide are included in the section below and included in the Appendix.

Example sidewalk maintenance programs:

<https://www.mylongview.com/458/Sidewalk-Repair-Program>

<https://charlottenc.gov/Transportation/CDOTServices/Pages/StreetSidewalkMaintenance.aspx#:~:text=Residents%20can%20request%20a%20sidewalk,the%20appropriate%20process%20to%20follow.>

Recommendation:

Develop a sidewalk maintenance reporting tool allowing residents to report compliance concerns.

Example tools from North Carolina municipalities:

<https://www.ashevillenc.gov/service/sidewalk-repairs/#:~:text=Damaged%20or%20uneven%20sidewalks%20are,call%20828%2D259%2D5852.>

<https://cornelius.maps.arcgis.com/apps/webappviewer/index.html?id=c5624e973a994e469cc3876246c13a29>

Sidewalk, Ramp and Path Maintenance - Best Practices

FHWA released “A Guide for Maintaining Pedestrian Facilities for Enhanced Safety” (FHWA 2013). The FHWA publication summarises the common repair and seasonal maintenance practices for pedestrian facilities. The guide recommends that local maintenance plans include thresholds for repair and replacement in order to address degradation in surface conditions that may create tripping hazards or steep running or cross slope conditions that make routes inaccessible. The maintenance thresholds should consider ADA standards and cover items such as:

- Displacements
- Surfacing issues such as cracks, holes, surface deterioration
- Grades and cross slopes
- Other: Detectable warning fields, ramp problems, etc.

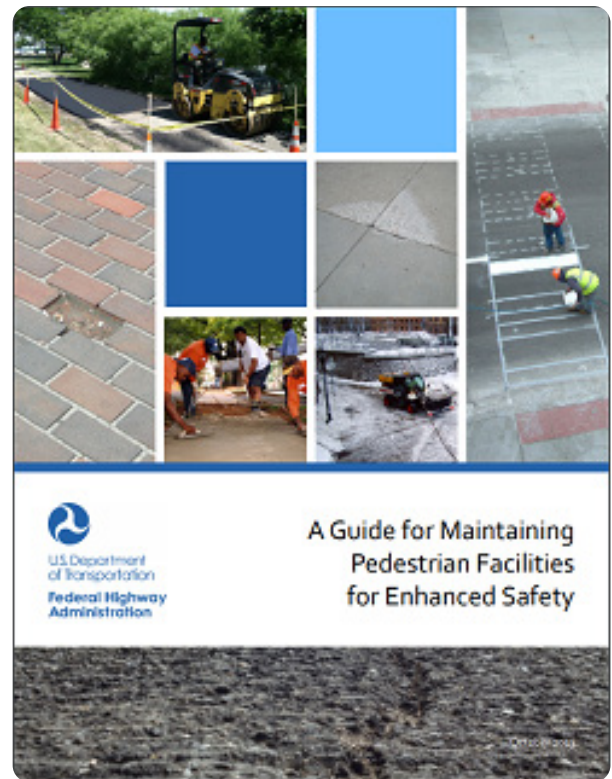


Image 30. A Guide for Maintaining Pedestrian Facilities for Enhanced Safety. Source: https://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa13037/chap5.cfm

Endnotes

- i Carey RN, McDermott DT, Sarma KM (2013) The Impact of Threat Appeals on Fear Arousal and Driver Behavior: A Meta-Analysis of Experimental Research 1990–2011.
- ii Hess G, Peterson MN (2015) “Bicycles May Use Full Lane” Signage Communicates U.S. Roadway Rules and Increases Perception of Safety. PLOS ONE 10(8): e0136973.
- iii Marshall, W. E., Piatkowski, D., & Johnson, A. (2017). Scofflaw bicycling: Illegal but rational. Journal of Transport and Land Use, 10(1). <https://doi.org/10.5198/jtlu.2017.871>

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Photo Courtesy Jackson County TDA

IMPLEMENTATION PLAN

IMPLEMENTATION PLAN

IMPLEMENTATION OVERVIEW

Jackson Walks is an action-oriented plan that is derived from community feedback. For the Plan to be effective, it needs a clear implementation plan that identifies the next steps to achieving its vision. This Implementation Plan indicates a timeframe to implementation, lead agency, key partners, and performance measures to evaluate success. This approach will allow the County to be strategic yet flexible as opportunities arise.

ORGANIZATIONAL FRAMEWORK & PARTNER NETWORK

It is important to note that this Plan will not be led exclusively by the County; success will involve collaboration with regional and state agencies, local partners, the private sector and non-profit organizations. Figure 19 indicates the key partners whose roles include the following:

Jackson County Commission:

- Adopting and implementing the Plan, amending the County's UDO, affirming their support of walking, coordinating with the Southwestern Commission RPO and NCDOT

Jackson County Staff:

- Coordinating with the RPO and NCDOT on funding and project implementation
- Seeking development regulations and opportunities to expand the walking network
- Seeking other project development opportunities
- Developing programmatic activities and events in the community to support the network

Southwestern Regional Planning Organization (RPO)

- Coordinating on funding opportunities
- Incorporating Jackson Walks into the long-range transportation planning including the CTP

Local Jurisdictions

- Coordinating on funding opportunities
- Seeking plan expansion opportunities
- Adopting development regulations to deliver elements of the pedestrian network

NCDOT Integrated Mobility Division

- Guidance on bicycle and pedestrian policy / Complete Streets
- Coordinating with local division offices
- Funding and grant opportunities

NCDOT Division 14

- Coordinating on funding opportunities
- Coordinating on resurfacing or roadway/bridge reconstruction projects
- Incorporating Jackson Walks into the CTP

Figure 19. Key Partners in Project Development



- Monitoring construction of the network

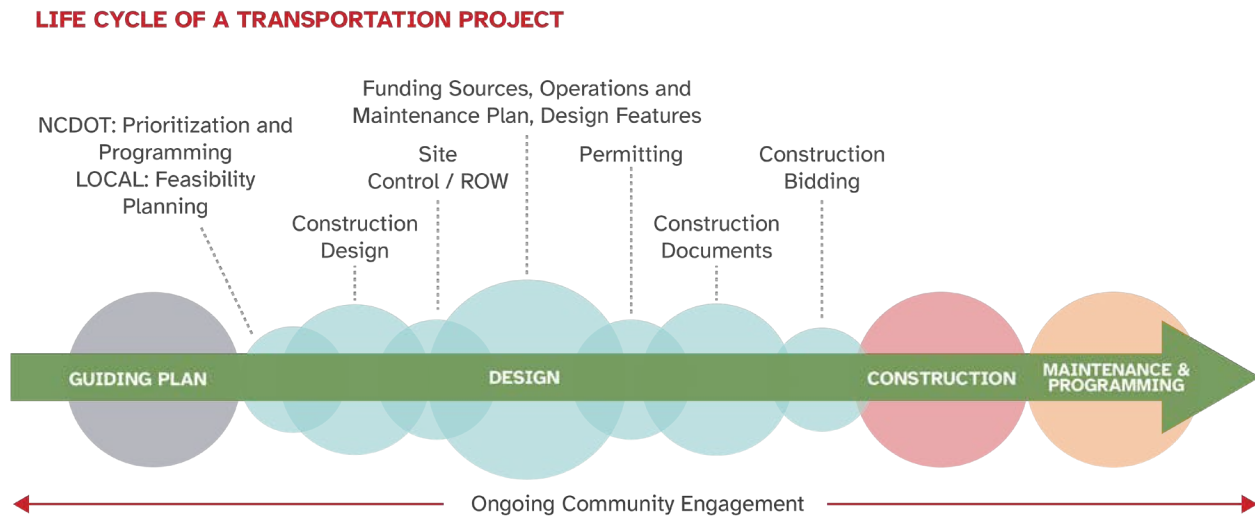
Community Members (residents, visitors, business owners, County Greenway Committee members)

- Generating public support for walking
- Advocating to elected officials or others for better funding of walking projects
- Volunteering at events or other programs

Private Sector (developers, other funders such as non-profit)

- Supporting development of facilities
- Funding opportunities

Figure 20. Typical Lifecycle of a Multimodal Project from Planning, to Design and then Construction/Maintenance.



LIFECYCLE OF A MULTIMODAL PROJECT

The project recommendations in this Plan are a starting point for the County to develop a network for people walking. Many of the project recommendations appear as lines on a map, and these are intended to be a high-level concept for the County to develop further as the project advances into the next stages of a typical project lifecycle. These lines are not intended to represent the final alignment for construction; they are simply a starting place for the County to work with their partners in project development and pedestrian network expansion. This Plan provides the 15-20 year vision for the County to improve walking for its residents and visitors.

Figure 20 describes the typical lifecycle of a multimodal project. The Jackson Walks Plan represents the ‘Guiding Plan’ phase of this process; from there, a project identified in this Plan will move into the many stages of design, then construction, and then maintenance and programming. It is important to acknowledge this process as it helps set the stage for project success.

The time it takes to implement a project can depend on how uncomplicated or complex the project may be, who “manages” the project (e.g., local jurisdiction or NCDOT), the type of funding involved, how much land is needed, and the scale (size) of the project. An example of an uncomplicated project is a new crosswalk. An example of a complex project is a greenway that requires the purchase of private property and crosses streams and busy roadways.

The following Action Plan offers a rough estimate of the timeframe in which projects should be completed; however, it should be noted that this depends on resources and budget. The COVID-19 Pandemic has strained both local and state budgets, and project timeframes are variable based on funding, resources and other unforeseen project elements.

THE ACTION PLAN

The Action Plan describes the administrative, infrastructure, policy, and program steps needed to see Jackson Walks forward. It should be noted that evolving project partner and funding opportunities may shift priorities and require changes action items.

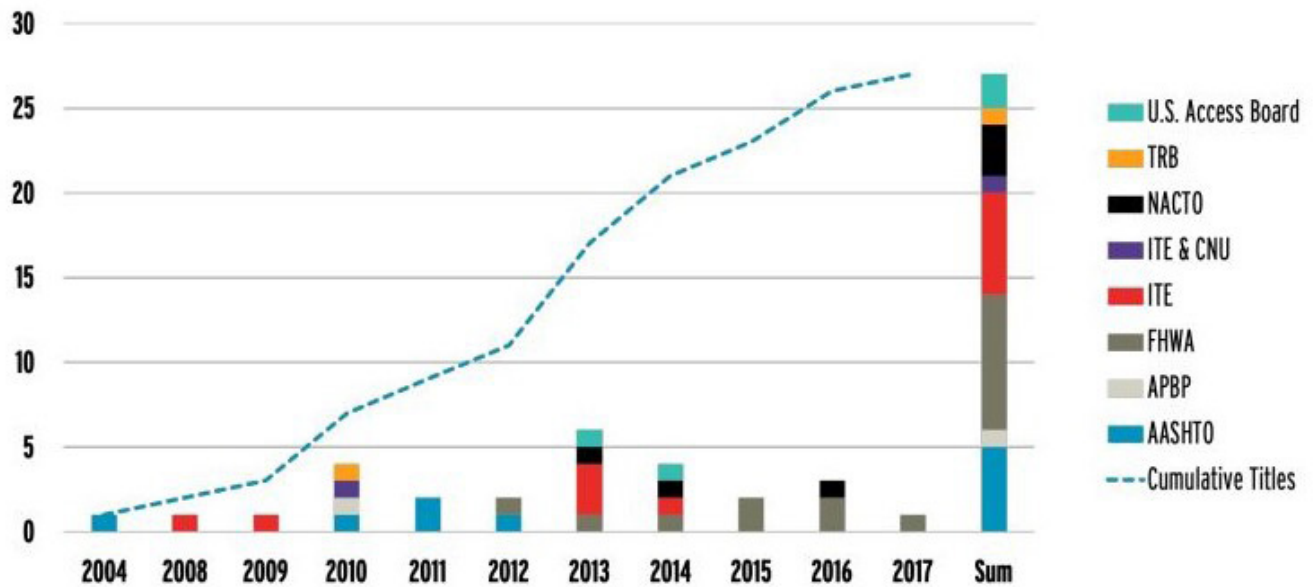
Table 9. Action Plan

TASK #	DESCRIPTION	LEAD	PARTNER	TIME FRAME	HOW WILL SUCCESS BE MEASURED
ADMINISTRATIVE ACTION ITEMS					
1	Adopt Jackson Walks as the County's Pedestrian Plan. This allows the Plan to become the official planning document for the County and shows intention to support implementation over time. The Plan should be shared with regional and state partners for inclusion in the CTP and other planning documents.	County Commission	County Staff, Steering Committee, NCDOT, RPO, Local Jurisdictions	2021	Adopted Plan
2	Task the County Planning Board and area planning board with a planning advisory role on pedestrian issues. Rather than proposing the formation of a standalone Pedestrian Advisory Committee, this approach would be mindful of limited staff resources yet continue to engage partners on progress and collaboration opportunities. Additionally, enlist the County's Greenways and Trails Committee and the Recreation Advisory Board to assist as needed.	County Planning Board	County Staff	2021	Expanded Planning Board role
3	Ensure that recommendations from Jackson Walks are incorporated into regional plans, such as the CTP and future County Comprehensive Plans.	County Staff, NCDOT, RPO	County Commission	2022	Amendments to Plan documents
4	Send staff to NCDOT Complete Streets Trainings and other multimodal design opportunities as they are offered.	County Staff		2023	Attendance at training events
5	Update Jackson Walks in 5 years. If any projects or programs have been completed, a new set of priorities should be proposed.	County Staff	County Commission, NCDOT, RPO, Local Jurisdictions	2026	Initiated planning process
6	Seek future funding opportunities for facility construction.	County Staff, NCDOT, Local Jurisdictions	County Commission	Ongoing	Secured funding

TASK #	DESCRIPTION	LEAD	PARTNER	TIME FRAME	HOW WILL SUCCESS BE MEASURED
7	Actively participate in regional trail planning efforts to ensure a regional trail network and connectivity.	County Staff, RPO, Local Jurisdictions	FBRMPO, Henderson County	Ongoing	Attendance at coordination meetings
INFRASTRUCTURE ACTION ITEMS					
8	Begin setting the groundwork for Top 10 Projects. Develop feasibility study for three projects.	County Staff	County Commission, Local Jurisdictions, RPO, NCDOT	2022-25	Feasibility study for three of the Top 10 Projects.
9	Create a pedestrian count program to collect counts of people using the Jackson County Greenway and existing sidewalks using automated counting systems (5 sites).	County Staff, RPO, Local Jurisdictions		2025	Data from 5 sites; sidewalk system collected every 3 years and greenway annually.
10	Work with NCDOT Division 14 to review their 3-year resurfacing program to identify possible opportunities on the horizon for pedestrian project implementation.	County Staff, NCDOT, RPO	County Commission	2022	Annual coordination meeting agenda and minutes
11	Advance one project that has been studied and has a concept or design (see Table 8)	County Staff, RPO, NCDOT, Local Jurisdictions	County Commission	2023	One project advanced
12	Work with local jurisdictions to develop and implement a pedestrian-scale wayfinding system that is cohesive County-wide.	County Staff, Local Jurisdictions	County Commission	2026	Draft wayfinding system
13	Ensure that Jackson Walks recommendations are implemented as a part of new development in the County.	County Staff	County Commission	Ongoing	New multimodal connections included in development process
14	Ensure that signalized and uncontrolled pedestrian crossings meet current standards through an inventory and engineering review.	County Staff	County Commission, NCDOT	2025	Countermeasure application at existing and new crossings.
15	Working with NCDOT, perform a countywide evaluation of speed limits, considering context, and explore ways to make changes.	County Staff, RPO, NCDOT	County Commission	2026	Complete evaluation
POLICY & PROGRAM ACTION ITEMS					
16	Implement an ADA Transition Plan for Public Right of Way.	County Staff	County Commission, NCDOT	2026	Completion of Transition Plan Document

TASK #	DESCRIPTION	LEAD	PARTNER	TIME FRAME	HOW WILL SUCCESS BE MEASURED
17	Include funds for pedestrian projects in the annual budget.	County Commission, County Staff		Annually	Dedicated funding for pedestrian projects
18	Work with a local jurisdiction (that was not a previous recipient) to apply to be a Watch for Me NC Partner.	Community members, Local Jurisdiction, County Staff	County Commission	2023	Apply in the 2023 round (advertisement typically at the end of the year)
19	Launch a new pedestrian initiative such as Open Streets.	Community members, County Staff		2023	Launch one new initiative
20	Work with Jackson County municipalities to develop consistent sidewalk development standards to minimize the potential for sidewalk gaps and foster predictability for developers.	County Staff, Local Jurisdictions	County Commission, NCDOT	2022-2023	Adopted changes to Jackson County's UDO and local jurisdiction zoning ordinances
21	Jackson Walks UDO recommendations are detailed in Chapter 4. Use the UDO recommendations as a checklist to research, develop, and adopt UDO changes.	County Staff, Planning board (for Jackson County and the regulated districts)	County Commission	2021-2020	Adopted changes to Jackson County's UDO
22	Implement policy recommendations related to County acceptance of sidewalks constructed by outside entities.	County Staff	NCDOT, County Commission, Private Partners	2024	Implementation of new policies and procedures
23	Send County Maintenance Staff to a training on ADA self evaluations and elements of the PROWAG, such as the LTAP offered through NC State University.	County Staff		2023	Staff attended training
24	Continue to conduct local walk audits.	County Staff	Local Jurisdictions, NCDOT	2023	Conduct a walk audit every other year in a new jurisdiction
25	Consider expanding traffic safety approach to one of Vision Zero; consult with other NC counties that have adopted Vision Zero.	County Staff	Local Jurisdictions, NCDOT	2026	Become a Vision Zero County
26	Continue the Safe Routes to School program after the current program grant ends in 2022.	County Staff		2022	SRTS program continuation
27	Finalize and adopt a Key Pedestrian Street policy and map to direct sidewalk investments in non-municipal areas of the County.	County Commission, County Staff		2024	Key Pedestrian Street Policy and Map adoption

Figure 21. Recent Design Guidance for Biking & Walking by Publisher Over Time (Source: 2018 League of American Bicyclists Benchmarking Report)



DESIGN GUIDELINES RESOURCES

Planners, engineers and project designers need standards and guidance as they implement pedestrian and bicycle facilities to ensure safety, consistency and predictability. Historically, the resources to design these multimodal facilities have been limited; while some guidance has existed, it has been limited in its scope to street or geographic contexts and has not offered the nuanced detail needed for certain conditions or applications. As shown in Figure 21 from the League of American Bicyclists Benchmarking Report, over the last 15 years design guidance has improved, equipping practitioners with the resources to develop ideas and try out innovations seen in other communities and internationally. The result has been multimodal design that is more inclusive to people of all ages and abilities and that can be well-customized to the local context, whether that be urban or rural environment.

Good pedestrian facility design is the function of many factors, including connectivity, comfort, continuity, and convenience. The following are state and national design guideline resources that collectively work to achieve these multimodal design goals. These resources provide the guidance that planners and designers in Jackson County need to ensure that the transportation system serves these multimodal users and thereby increases mode shift of these users.

Pedestrian design is constantly evolving and innovating, so updates of the following resources should be sought out following the publication of this Plan. As designs are complex, it should be noted that treatments must be tailored to individual situations and contexts. Good engineering judgement should always be practiced, and decisions documented.

Complete Streets in North Carolina

NCDOT adopted a Complete Streets policy in 2009. The policy directs transportation engineers and planners to consider and incorporate different types of transportation into road projects, where feasible. In 2018, the DOT embarked on an evaluation of this policy, and in 2019 the Transportation Board approved an update to the policy that focuses on evaluating every mode of travel for projects. The policy update requires NCDOT planners and designers consider and incorporate multimodal facilities in the design and improvement of all appropriate transportation projects in North Carolina. Routine maintenance projects may be excluded from this requirement if an appropriate source of funding is not available.

This policy sets forth the protocol for the development of multimodal transportation networks. The purpose of the policy is to guide existing decision making and design processes to ensure that all users are included during the planning, design, construction, funding, operation and maintenance of North Carolina's transportation network, and will not create barriers or hazards to the movements of those users. Consideration of multimodal elements will begin at the inception of the transportation planning process and the decisions made will be documented.

The process for project advancement under the new policy is through Strategic Prioritization and the local Comprehensive Transportation Plan (CTP). The importance of this new policy to municipalities like Jackson County cannot be underscored; it eliminates cost-sharing burdens that many counties and towns do not have the budget for, if a project is in a Plan (like Jackson Walks) or the CTP. Jackson County may coordinate with their local NCDOT Division Planning Engineer or Corridor Development Engineer to understand how a complete street project is moving through the project development process.

Designing for People Walking

The following are state and national resources related to designing for people on foot or traveling with a disability.

North Carolina Guidance

North Carolina Department of Transportation (NCDOT)

Complete Streets Policy A.09.0106 (2019)



Evaluating Temporary Accommodations for Pedestrians (2018)

Pedestrian Crossing Guidelines (2018)

Roadway Design Manual (2018)

Greenway Accommodations Guidelines (2015)

WalkBike NC: The Statewide Pedestrian and Bicycle Plan (2013)

National Guidance

American Association of State Highway and Transportation Officials (AASHTO)

Guide for the Development of Bicycle Facilities (2012)

Guide for the Planning, Design and Operation of Pedestrian Facilities (2004)

Federal Highway Administration (FHWA)

Bikeway Selection Guide (2019)

Strategies for Accelerating Multimodal Project Delivery (2019)

Guide for Improving Pedestrian Safety at Uncontrolled Crossing Intersections (2018)

Achieving Multimodal Networks (2016)

Small Town and Rural Multimodal Networks Design Guide (2017)

Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts (2016)



Guidebook for Developing Pedestrian and Bicycle Performance Measures (2016)

*Manual on Uniform Traffic Control Devices (MUTCD)
2009 MUTCD Guidance and Supplemental Information (including NC Supplement)*

US Access Board

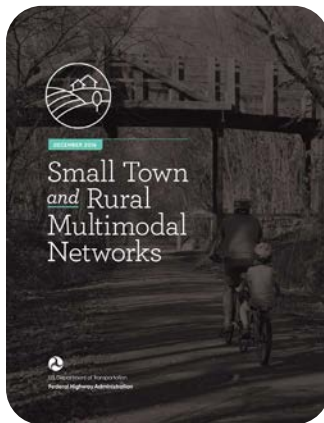
Proposed Public Rights-of-Way Accessibility Guidelines (PROWAG) (2011)

Guide to the Standards (2010)

USDOT/DOJ

USDOT ADA Standards for Transportation Facilities (2006)

*DOT/DOJ Joint Technical Assistance Memos
ADA Standards (2010)*



6



CLOSING

CLOSING

CLOSING THOUGHTS

Jackson County is a place where the diverse qualities of Western North Carolina come together: urban and rural communities; picturesque natural environment; great educational institutions; tourist destinations; second home communities; and deep cultural traditions and values of the Cherokee Nation. These qualities each contribute in their own way to shaping the existing and desired pedestrian network of the County.

Currently, Jackson County has a modest network of sidewalks and greenways that the residents appreciate, and there is great desire for more opportunities to walk, run and hike, especially on multiuse sidepaths and greenways. Much of the existing sidewalk network is within the Towns of Sylva, Webster and Dillsboro, where these facilities are maintained by local jurisdictions and the NCDOT.

The County has experienced steady growth over the last decade, which is projected to continue in large part due to the Western Carolina University campus expansion. Three key unincorporated areas of the County that are experiencing growth have seen the most recent expansion of the sidewalk network: 441 Planning Area, Cullowhee and Cashiers. The County has stepped in as a leader in the development of these pedestrian networks to oversee the planning and maintenance of these connections for people walking.

The 2020 year brought many changes across the globe, and Jackson County was no stranger to the effects of the COVID-19 Pandemic. Coping with the quarantine established in the state, people sought

outdoor recreational activities with great enthusiasm. Jackson County, with its easy access to the best of the Blue Ridge outdoors, became a place many people visited or returned to in the Pandemic. Building permits have been issued in numbers not seen since before the 2008 recession, and housing, especially in southern Jackson County, is in great demand. As broadband internet continues to expand across the County and elsewhere in Western North Carolina, more residents with second homes will stay year-round and prospective buyers with work-from-home capabilities will be attracted to the area. These trends combine to indicate steady population growth in the County; however, what is unknown is how long the growth and demand will continue.

This Plan offers a framework for the County and its partners to create more places for walking. The key projects will expand existing places to walk, and the policies and program recommendations will enable the County and its partners to expand and maintain this system as the County grows in population. With this plan and policy document, the County will be an even better steward of the pedestrian system it maintains, will have a strategic focus in partnering with local municipalities and NCDOT, and will have a vision for the future of its sidewalk network.

Given that Jackson County is largely rural, many of its roads are 2-lane corridors and retrofitting these roads for people walking will be costly (especially considering the County's terrain and limited space for development). To ensure the implementation of this Plan, strong partnerships between local, regional and state agencies will need to be continued and the community will need to voice their support for pedestrian connections.

With the path towards a walkable Jackson County more defined, the County will become a place where people of all ages and abilities can comfortably travel on foot or with a mobility device.

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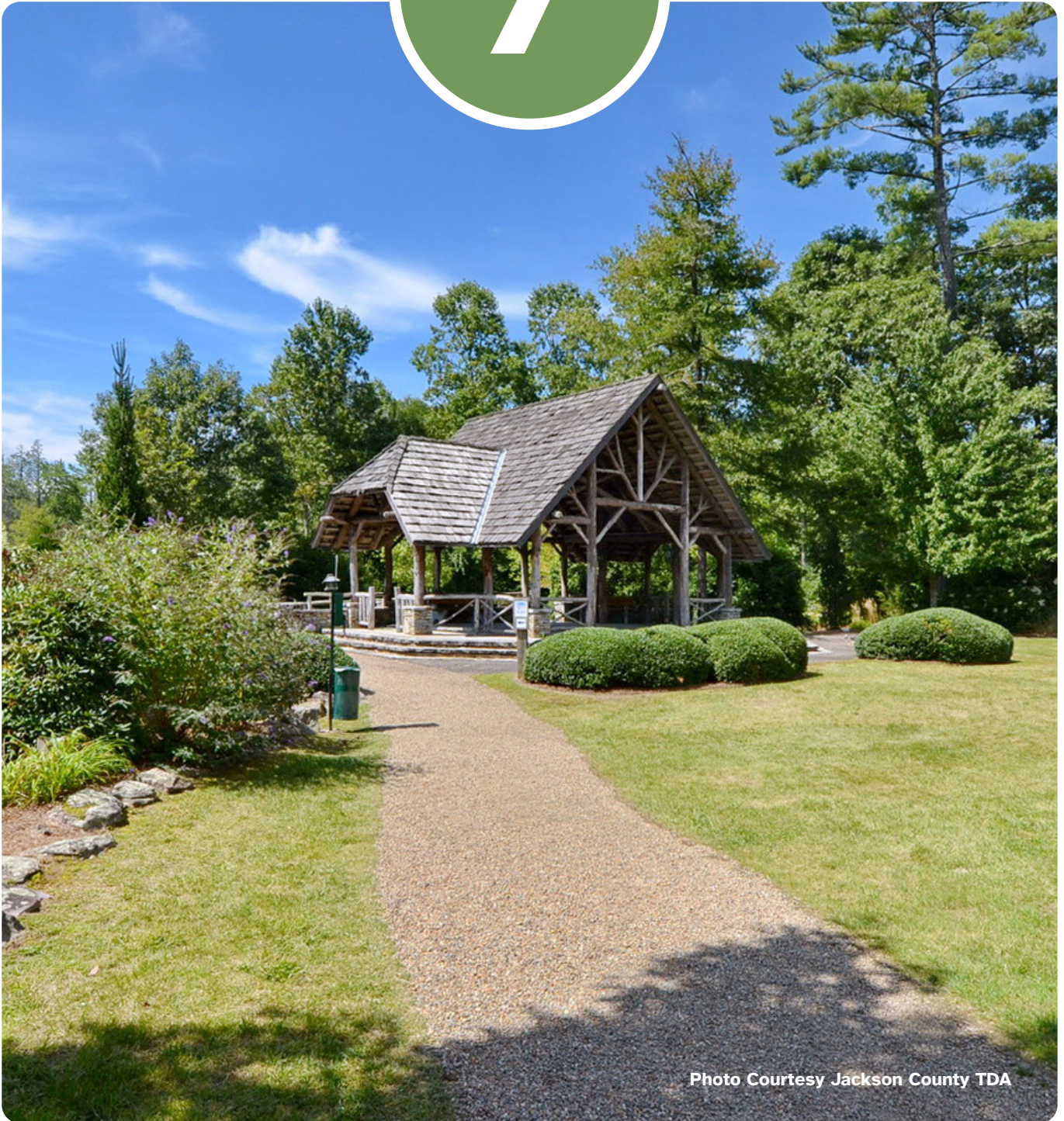


Photo Courtesy Jackson County TDA

APPENDIX