



# TOWN OF HUDSON

PEDESTRIAN & BICYCLE PLAN

JANUARY 2019



Prepared by:

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## ACKNOWLEDGMENTS

Thank you to all of the citizens, stakeholders, bike enthusiasts, and City staff that contributed to the creation of the Hudson Pedestrian & Bicycle Plan. Thank you specifically to the members of the steering committee, listed below.

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# 1 INTRODUCTION

The Town of Hudson is a strong and resilient community. A major part of that vitality comes from an effective and versatile transportation network. With an increasing population and a desire for accessible and connected multi-modal transportation options, there is a demand for a more walkable and bikeable community. With those priorities in mind, The Town of Hudson Bicycle and Pedestrian Plan assures success for future generations by creating more active transportation options for residents, businesses and visitors.

## Background

Towns in North Carolina continually strive to provide their residents with a high quality of life. In recent years, this has come to include a walkable and bikeable community that provides safe and accessible transportation options. These amenities have come to be increasingly expected by local residents, and ability to contribute to community vibrancy is well documented. Taking trips by bike or on foot improves the environment, promotes good health, saves money, eases the burden on roadways, and enhances the convenience of living in a small community such as Hudson.

The Hudson Community recognizes these benefits, and has had continued conversations regarding the need to improve their local network. In 2016, the town supported the development of the Western Piedmont Bicycle Plan, which included a recommendation for an improved bicycle route through the heart of downtown. The Hudson Police Department and Recreation Commission have each taken an active role in promoting safe walking and bicycling around town, and the town's development of "the Loop," and 5K course near downtown has provided a safe way to walk or run for exercise. Still, many of Hudson's residential neighborhoods are disconnected from its schools and from downtown, and much of the town lacks accessible facilities. In addition, the railroad that divides Main Street poses safety issues that can be addressed through simple improvements.

This plan addresses those issues and more to think holistically about the steps needed to develop a comprehensive transportation network for the future.

The development of the Town of Hudson Bicycle and Pedestrian Plan was funded through a grant awarded by the North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation (NCDOT-DBPT) through its Planning Grant Initiative. Through the Planning Grant Initiative, NCDOTDBPT encourages the development of bicycle and pedestrian plans at the municipal level by offering planning grants, totaling nearly \$4.6 million across 186 municipalities since 2004.

## PLANNING PROCESS

The planning process began in early 2019 and was guided by the four main principles:

- Make better, more accessible places by creating better transportation options
- Value the voices of strategic stakeholders and local citizens
- Use current plans as a starting point for future strategies
- Create solutions customized to fit the needs of your community

Public input was a critical feature of this planning process, with major guidance provided throughout by a steering committee made up of community stakeholders, which met four times throughout the project. Two community workshops were held at critical points in the planning process, and one online survey provided all community members the opportunity to participate. Together these informed every key decision.

These components were incorporated into a schedule which amounted to a three-phase planning process that occurred over the course of one year. These phases were Visioning and Needs, Analysis and Recommendations, and Documentation and Adoption. This process began in January 2019 and continued through the fall of 2019.

## VISION & GOALS

Bicycling and walking in Hudson will be a safe and enjoyable activity for residents, students, workers, and visitors of all ages and abilities. The Town's transportation network will include sidewalks, trails, safe crossings, and on-street bicycle facilities.

As a guiding document, the Hudson Bicycle and Pedestrian Plan is one way the Town is expressing a commitment to:



Creating a healthier, more active community



Connecting our neighborhoods to Downtown



Making our parks and local places more accessible



Providing safe options for all students, from elementary school to college

## Benefits of Biking and Walking

How people move through their environment is a key factor for the success of any community. Providing a safe and efficient bicycle and pedestrian network gives citizens an alternative to traditional vehicular travel modes and helps to create a more efficient, healthier, and safer community. Walking and biking as a means of both transportation and recreation can benefit the Town of Hudson's mobility, safety, health, economy, environment, and quality of life. The plan will have numerous benefits for town residents, businesses and visitors. These benefits will impact the town both immediately and for years to come. Five of the six benefits listed here stem from the five pillars found in WalkBikeNC, North Carolina's Bicycle and Pedestrian Plan. The sixth benefit, livability, is often incidental and happens naturally as efforts are made to enhance mobility, safety, health, economy, and environment.

### HEALTH

Walking and bicycling are forms of physical activity that can be accomplished by most citizens. Almost a third of people who ride bicycles do so for exercise and fitness.

Walking and bicycling are low-impact forms of exercise that can reduce stress and diseases such as high blood pressure and obesity.

There is direct evidence that investment in bicycle and pedestrian infrastructure can reduce the amount spent on medical costs. A 2005 study completed by CDC researchers in Atlanta, Georgia found there was an average \$2.94 medical savings return for every \$1 spent on bicycle and pedestrian infrastructure.

### MOBILITY

Mobility is the equitable availability of transportation options for everyone.

By providing the appropriate facilities, communities allow people to choose how they want to travel. For those who do not have the

option to drive, such as adolescents, elderly, those unable to afford a car, and people with certain disabilities, this lack of choice in transportation creates an inconvenient and socially unjust barrier to mobility. In 2017, the National Household Travel Survey showed that 40% of all trips, both commute and non-commute, taken by Americans are less than two miles, equivalent to a 10-minute bike ride or 30-minute walk. Bicycling or walking can be an attractive travel mode for short trips that would otherwise be made by driving.

Key accessibility improvements also improve quality of life for residents with mobility challenges. Accessibility standards set by the Americans with Disability Act (ADA) are increasingly enforced. These standards require that town facilities provide gentle slopes, well defined landings and wide smooth pathways. These are conveniences for able-bodied users, but essential elements for people with disabilities.

## ECONOMIC

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

## SAFETY

Safe travel conditions result from effective design, enforcement, and education. While Hudson residents reported feeling relatively safe walking and biking in Town even given the limited infrastructure, steps can still be taken to further improve safety. In 2018 the Governors Highway Safety Association reported over 6,200 pedestrians fatalities on U.S. Roadways, up from 4,100 a decade earlier. Officials at the national and state levels are taking great strides to improve pedestrian and bicycle safety. The North Carolina Department of Transportation (NCDOT) is increasing awareness of pedestrian and bicycle safety with the Watch For Me NC program. Watch for Me NC aims to use education, community engagement, and high visibility enforcement to reduce the occurrence of pedestrian and bicycle injuries and fatalities.

## QUALITY OF LIFE

The walkability and bikeability of a community is an

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

## ENVIRONMENT

More people on bikes can result in lower levels of motor vehicle emissions, cleaner air, and stronger preservation of streams and open spaces. As Hudson implements the programs, policies, and infrastructure projects recommended by this plan, it is anticipated that a portion of trips that would have been made by car, releasing harmful emissions, will instead be made by bike.







# 2

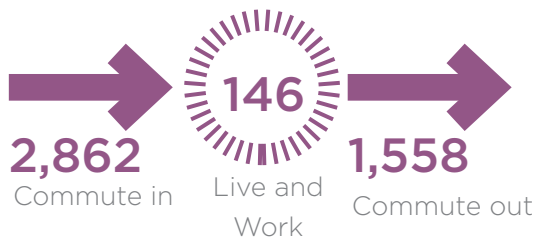
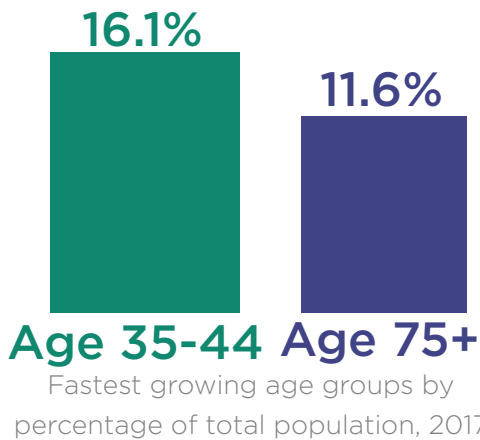
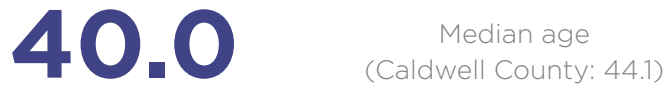
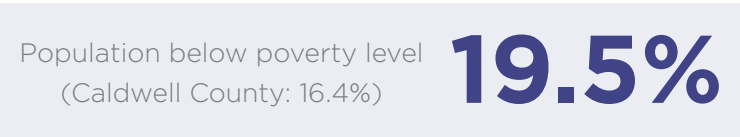
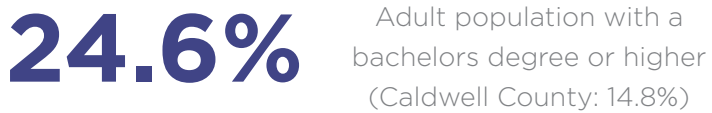
## FOUNDATIONS

How people move through their environment is a key factor for the success of any community. Providing a safe and efficient pedestrian and bicycle network gives citizens an alternative to traditional vehicular travel modes and helps to create a more efficient, healthier, and safer community. This existing conditions report represents the first step toward an ultimate goal of creating a comprehensive pedestrian and bicycle plan for the Town of Hudson.

# Existing Conditions

## DEMOGRAPHICS AT A GLANCE

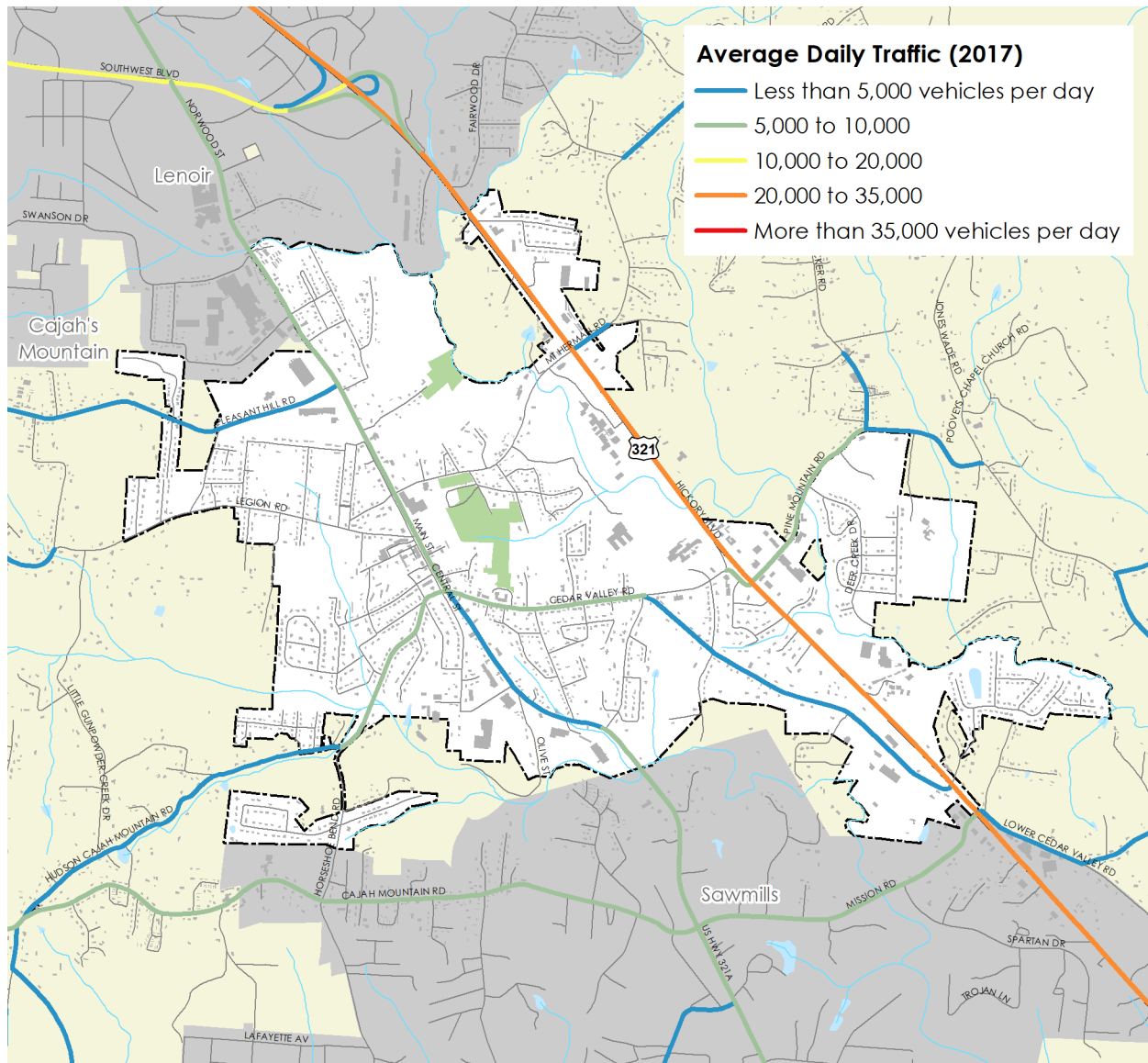
A community's demographic profile helps determine mobility needs and how best to respond. Certain population groups tend to be more reliant on active transportation, more likely to use recreational facilities, or more vulnerable when conditions are hazardous. This section uses the US Census Bureau's 2017 American Community Survey 5-year estimates and 2015 On the Map tool to present relevant demographic community data. This data helps to better understand the needs of Hudson residents, thereby helping to more appropriately tailor the recommendations of the final plan to those needs.



- TOP EMPLOYMENT INDUSTRIES (2015)**
- Educational Services (34.6%)
  - Manufacturing (26.1%)
  - Administration & Support (12.6%)

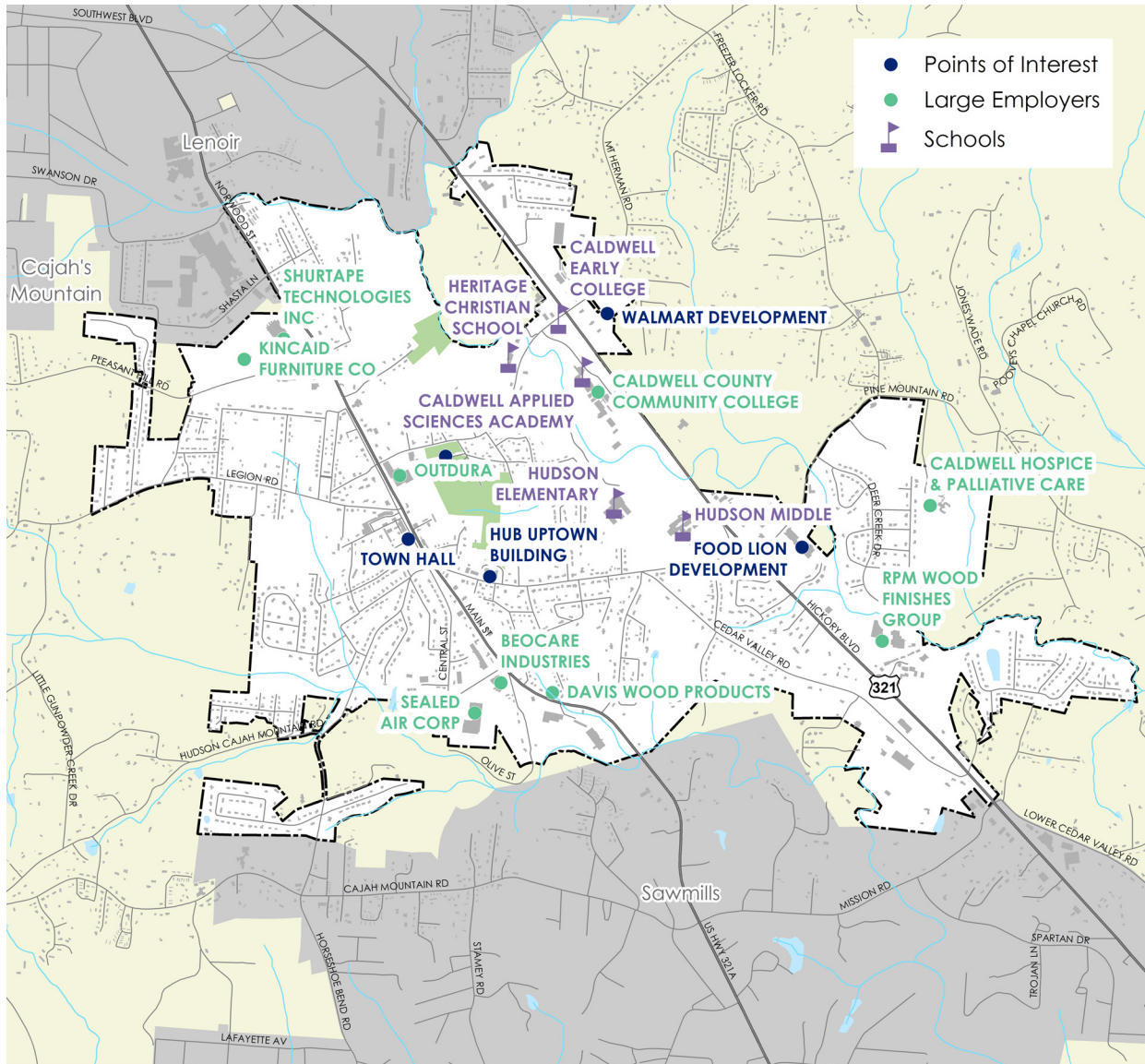


## AVERAGE ANNUAL DAILY TRAFFIC



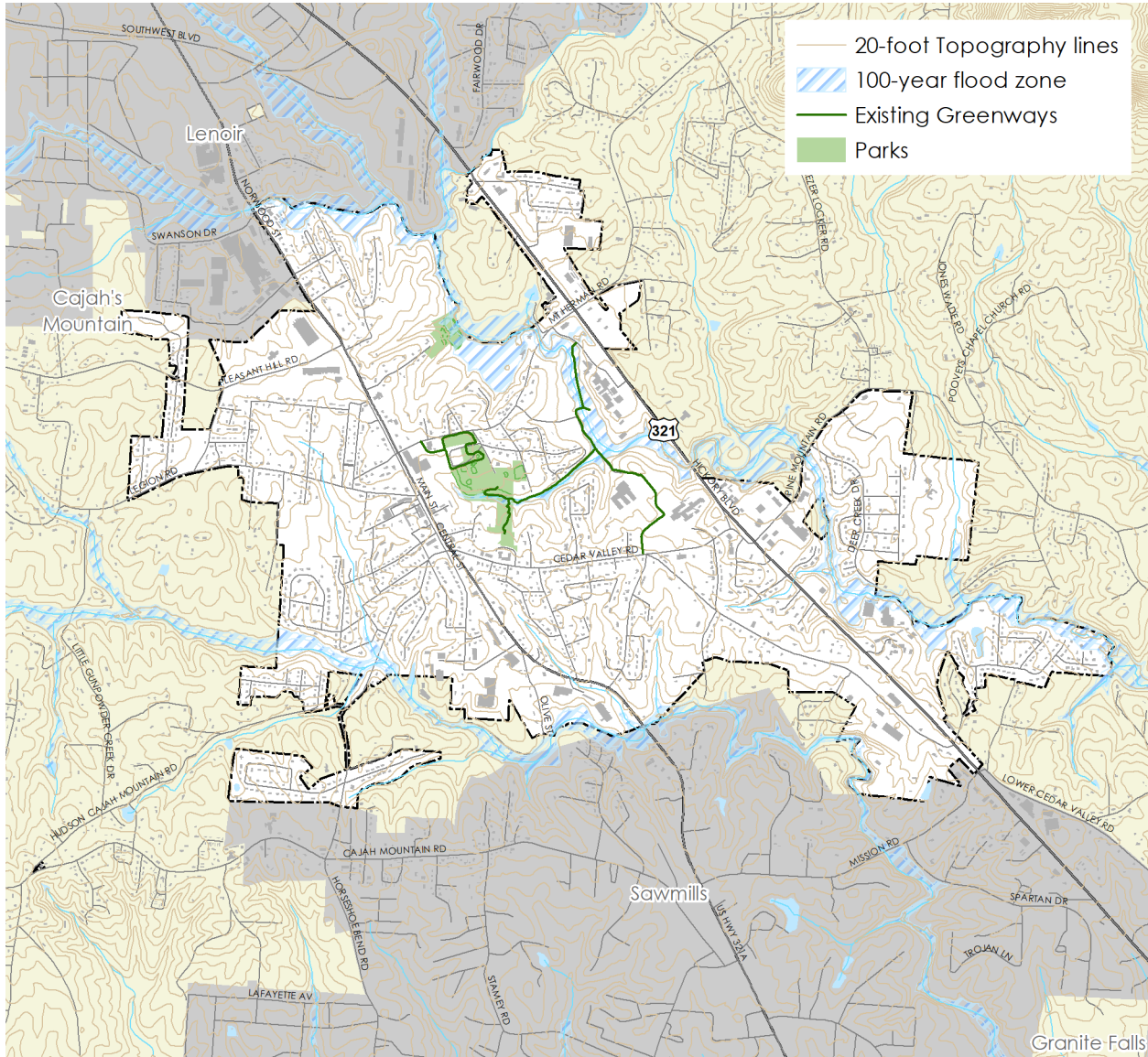
US-321 is a high-traffic road, carrying roughly 33,000 vehicles per day in Hudson. However, the remainder of the town's major corridors are relatively low traffic, with US-321A being the busiest at 9,000 vehicles per day. Data is only available on NCDOT maintained roadways.

## KEY DESTINATIONS



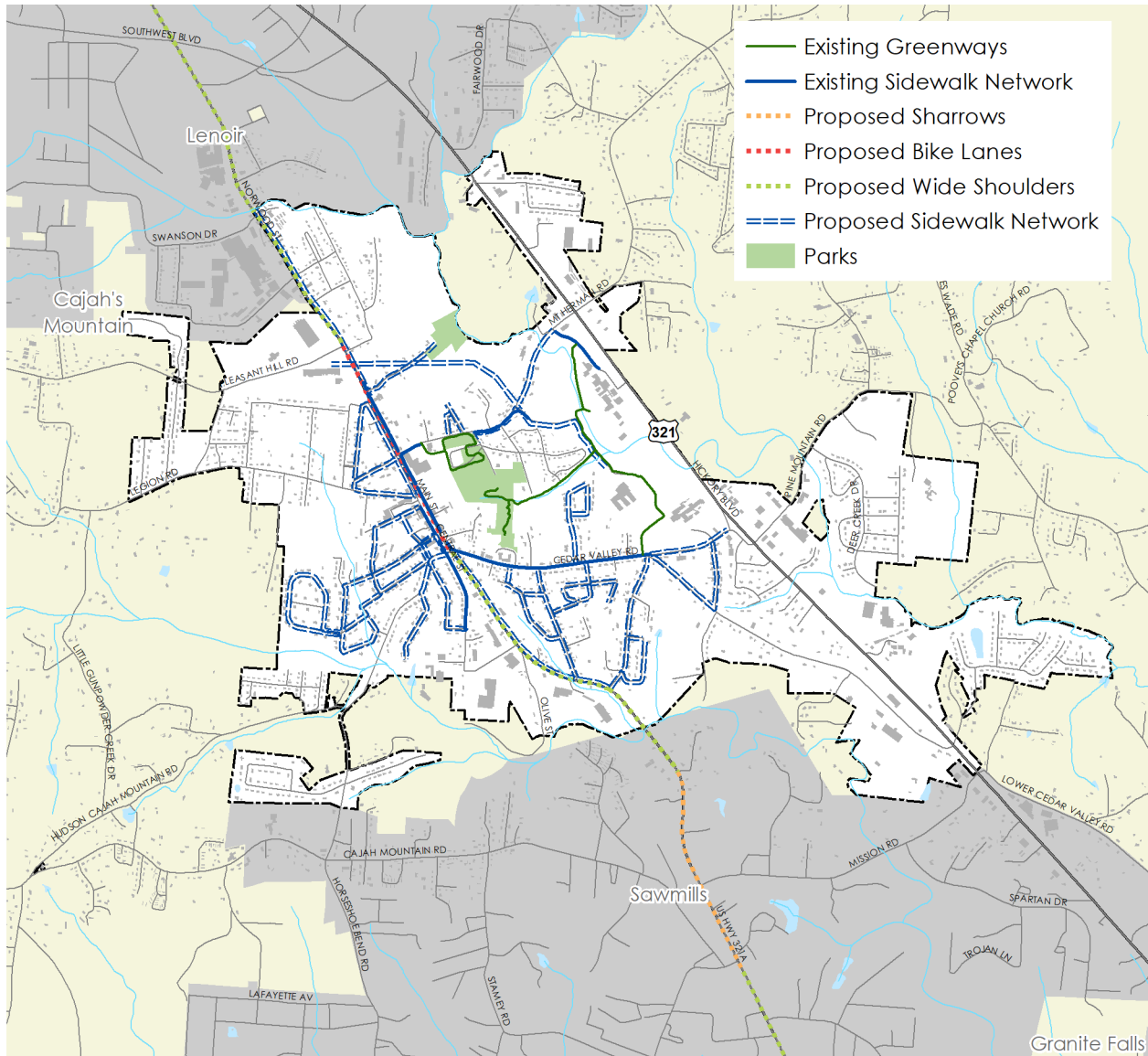
Schools, parks, and major employers are important to highlight when considering connectivity. Based on community and stakeholder feedback, the current pedestrian and bicycle infrastructure generally does not safely and easily connect most residents to these places. Allowing safe and convenient access to major employers, schools, and parks should be a town priority.

## ENVIRONMENTAL CONSIDERATIONS



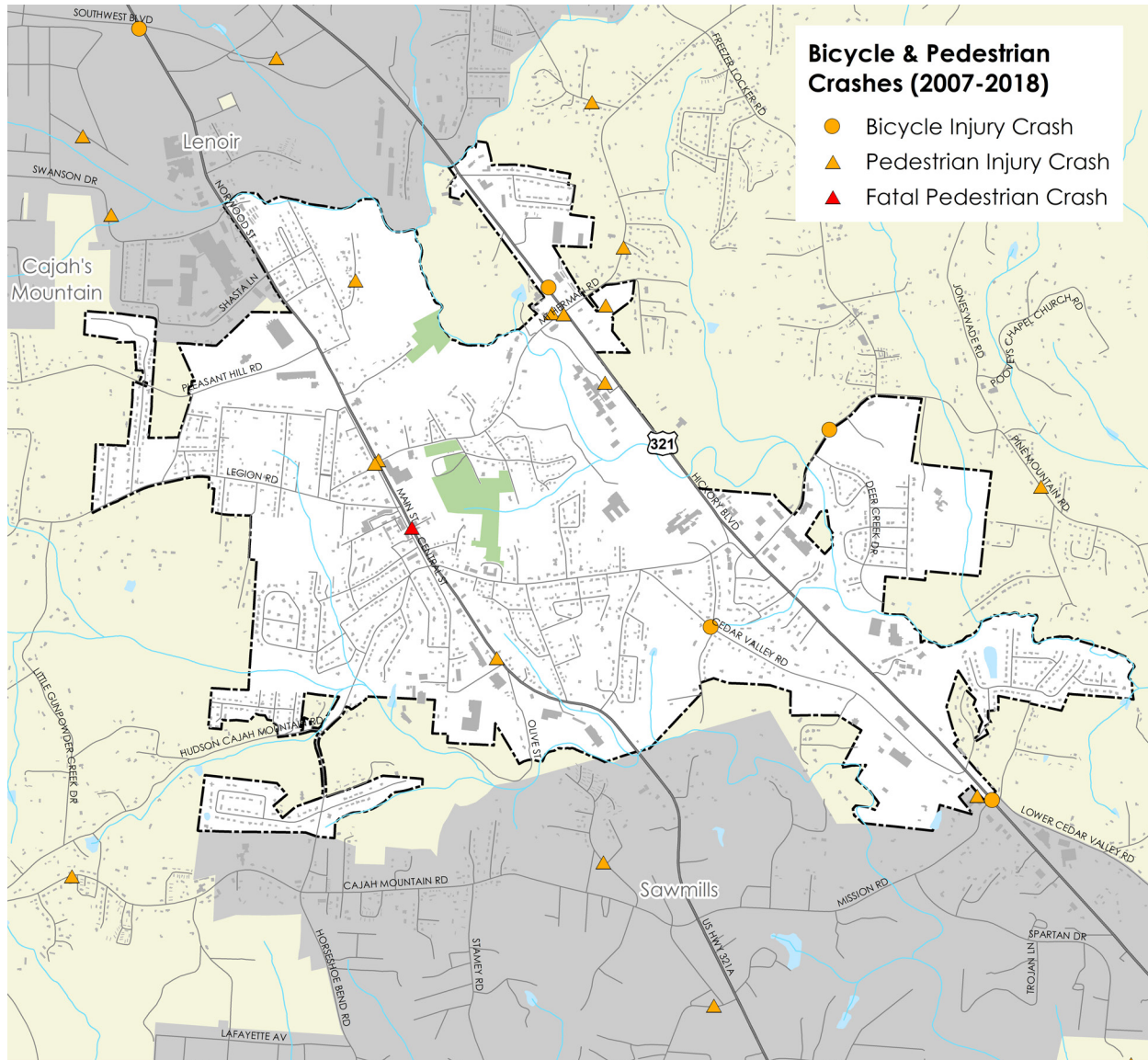
The FEMA 100-Year Floodplains follow Gunpowder Creek and Little Gunpowder Creek through the town. Floodplains present a challenge as well as an opportunity to find creative and unique solutions for additional infrastructure. Additionally, Hudson’s hilly topography, as shown by the 20-foot topography lines on the map above, presents a challenge to creating facilities welcoming to those of all ages and abilities. All pedestrian infrastructure is being planned in accordance with standards set by the ADA.

## CURRENT AND PLANNED FACILITIES



Existing dedicated bicycle facilities in the area are limited strictly to the greenway sections that connect Redwood Park with the Caldwell Community College and Hudson Elementary and Middle Schools. The existing sidewalk network is limited to downtown, and connections to residential neighborhoods and other local destinations are scarce. Planned bicycle facilities were identified from the Western Piedmont Bicycle Plan and the proposed sidewalk network was obtained from the Town of Hudson.

## SAFETY



Between 2007 and 2015, nine injury-causing pedestrian crashes and four injury-causing bicycle crashes were reported within the Hudson Town limits. In 2013, a fatal pedestrian crash occurred in Downtown Hudson. Identifying patterns and areas of risk are a key part of this plan's process, which will recommend safety improvements for areas of concern within the town.



## Assets and Opportunities

A key part of this planning process involves identifying assets to be leveraged and opportunistic ways to improve the pedestrian and bicycle system in Hudson. These characteristics were identified through a review of existing conditions, input from the steering committee, and guidance from the Town of Hudson.

### ASSETS

The Town of Hudson boasts a variety of assets that can contribute to the maturation of the Town's pedestrian and bicycle system. These assets include general characteristics of the community and Hudson's local places.

#### Community Characteristics

- Small town vibe
- Sense of community
- Low crime rates
- Long-time residents
- Good governance
- Accessibility of police
- High daytime population
- Proximity to neighboring communities

#### Local Places

- Downtown
- Neighborhoods
- Schools
- Community college
- Redwood Park
- The Loop
- Shopping Centers
- Employment Centers

### CHALLENGES

Every community has a set of unique challenges that must be overcome to allow its pedestrian and bicycle network to flourish. The challenges facing Hudson include a combination of mobility barriers and physical characteristics.

#### Barriers to Mobility

- US-321 and US-321A
- Railroad
- Limited ADA features
- Car culture mindset
- Lack of public transportation
- Aging population
- Topography

#### Physical Characteristics

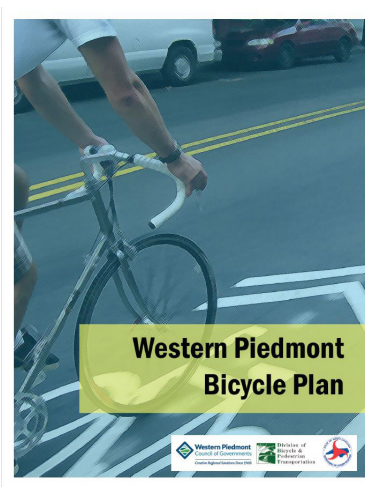
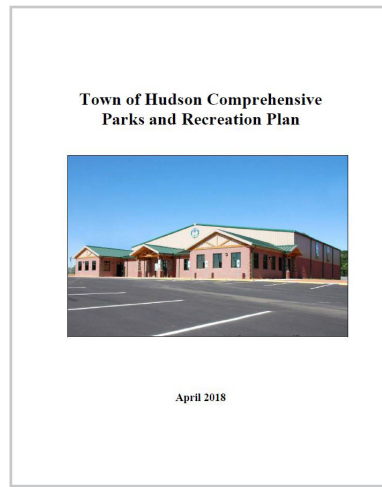
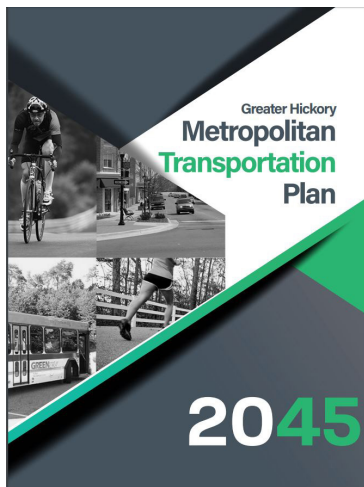
- Limited right-of-way
- Age and condition of sidewalks
- Limited parking downtown
- Poor access to Optimist Park
- Limited sidewalk network beyond downtown
- General accessibility

## Plan Review

Reviewing previous plans is important to understand the planning context of Hudson and what recommendations have already been memorialized. This section outlines various planning efforts that contain recommendations relevant to the development of this plan. All recommendations listed are summarized from their respective documents.

DOCUMENT	RELEVANT RECOMMENDATIONS
<p>Hudson Land Development Plan (2007)</p>	<ul style="list-style-type: none"> <li>• Encourage the increased use of alternate types of transportation, such as walking, bicycles, buses, and railroads.</li> <li>• Provide safe pedestrian access along sidewalks, trails and bicycle routes.</li> <li>• Promote the expansion of the sidewalk network by requiring the installation of sidewalks and greenways in connection with new development.</li> <li>• Develop greenways, trails, and bicycle routes that connect with existing commercial areas and schools in surrounding communities.</li> <li>• Improve connectivity between recreation facilities and other points of interest such as schools, downtown and shopping areas.</li> </ul>
<p>Comprehensive Parks and Recreation Plan (2018)</p>	<ul style="list-style-type: none"> <li>• Construct a walking path around the perimeter of Optimist Park.</li> <li>• If there is a willing owner, pursue a greenway easement from Redwood Park to Optimist Park.</li> <li>• Pursue opportunities to expand the sidewalk network when available, including improve connectivity between the town’s recreation facilities.</li> </ul>

DOCUMENT	RELEVANT RECOMMENDATIONS
Western Piedmont Bicycle Plan (2014)	<ul style="list-style-type: none"> <li>• Eliminate the extra lane on Main Street from Cedar Valley Road to Pleasant Hill Road to provide a bicycle lane.</li> <li>• Consider striping 5-foot bike lanes</li> <li>• Recommends bicycle-friendly policies for integration into local codes and ordinances to assist in implementation.</li> </ul>
Western Piedmont Council of Governments 2045 Metropolitan Transportation Plan (2019)	<ul style="list-style-type: none"> <li>• Use the Western Piedmont Bicycle Plan as a framework to develop new facilities, programs, and policies that support safe and efficient bicycling throughout the region.</li> <li>• Increase pedestrian mobility, safety, and accessibility by adding 84,300 feet of sidewalk in Caldwell County.</li> </ul>
NCDOT STIP Projects U-4700 CB and U-4700 CA (2019)	<ul style="list-style-type: none"> <li>• Widen 13.9 miles of U.S. 321 to a six-lane divided road</li> <li>• Use a reduced conflict intersection—a type of intersection that simplifies how traffic is moved through an area—along U.S. 321</li> </ul>





# 3

## OUTREACH

Public outreach provides an overall compass for the planning process, through both direct engagement with the general public, and the involvement of a select project stakeholder group. Outreach and the outcomes of those efforts contributed significantly to the final outcome of this plan, and helped enrich the results by ensuring the needs of the community were taken into consideration at every step along the way.

## Steering Committee

The steering committee served a critical role in terms of project guidance and decision-making. The committee was composed of a variety of local experts and officials, including representatives from the Town Council, NCDOT, the Parks Department, and town residents. The Steering Committee had four distinct roles.

- Assist with development of the comprehensive pedestrian and bicycle plan;
- Provide feedback on the plan elements throughout the planning process;
- Act as a conduit for community organizations to provide a voice for the process; and
- Provide expert knowledge and local insights.

The steering committee met four times over the course of the project, as described below.

### MEETING OVERVIEWS

#### *JANUARY 30, 2019*

The agenda for the first Steering Committee meeting included:

- An activity to determine key words and phrases to include in the plan's vision statement,
- A discussion of long-term and short-term goals,
- An exercise to identify destinations, challenges, and opportunities, and
- An overview of the planning approach and public engagement strategy, including committee-led outreach opportunities.

#### *MAY 8, 2019*

The second Steering Committee meeting was held in conjunction with the first Public Workshop. To read more about the outcome of this meeting, see a summary of the workshop on page 20.

#### *JULY 10, 2019*

The agenda for the third Steering Committee meeting included a review of the finalized facility recommendations following the May community event, the development of a prioritization methodology to create the action plan, and a discussion of the plan's program and policy recommendations.

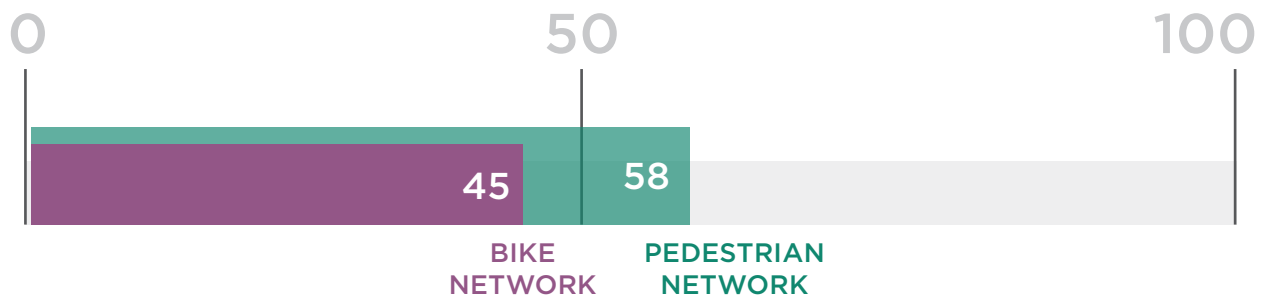
#### *NOVEMBER 20, 2019*

The fourth and final Steering Committee meeting allowed committee members to review the draft plan prior to submittal to NCDOT. Committee members discussed necessary edits and finalized the plan.

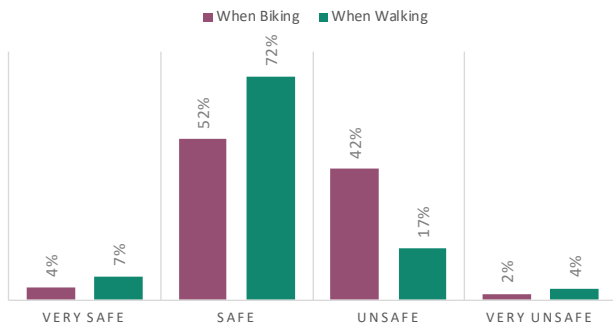
# Online Survey

An online survey was distributed widely via the Town of Hudson and various members of the project steering committee. The survey was open from March 1 to March 22, and gauged respondent's attitudes toward existing conditions, as well as asked for priority ways the network could be improved. A summary of responses are shown below.

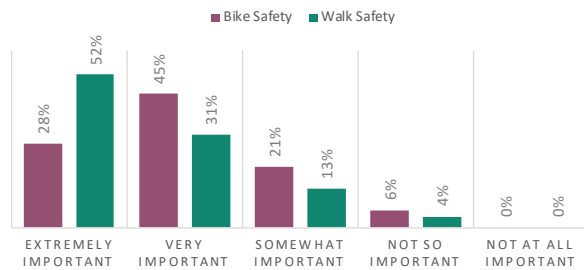
ON A SCALE OF 1-100, HOW WOULD YOU RATE THE CURRENT QUALITY OF THE NETWORK IN HUDSON?



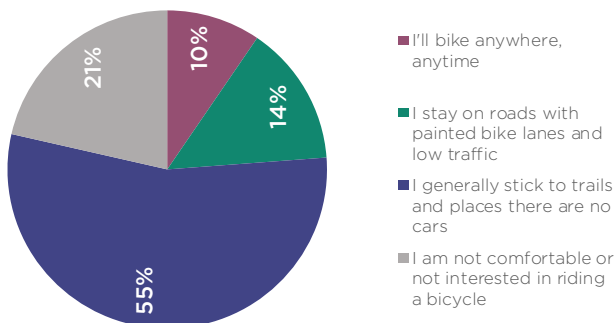
IN GENERAL, IN HUDSON, I FEEL...



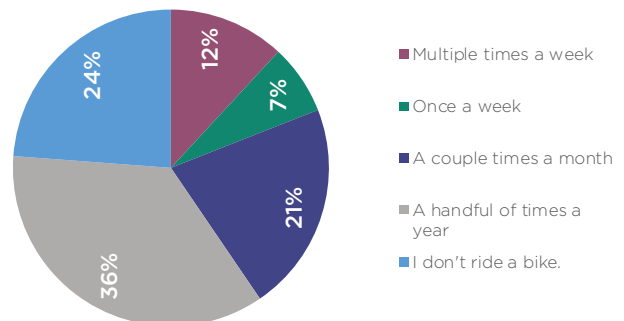
HOW IMPORTANT IS IMPROVING \_\_\_\_\_ SAFETY IN HUDSON?



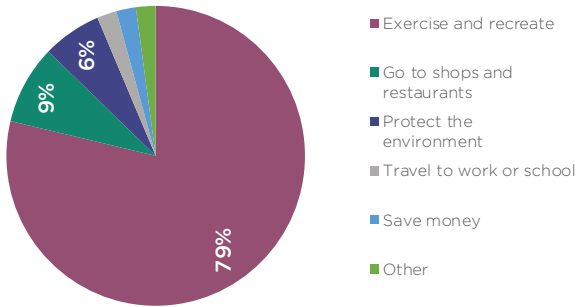
HOW WOULD YOU DESCRIBE YOURSELF AS A BICYCLIST?



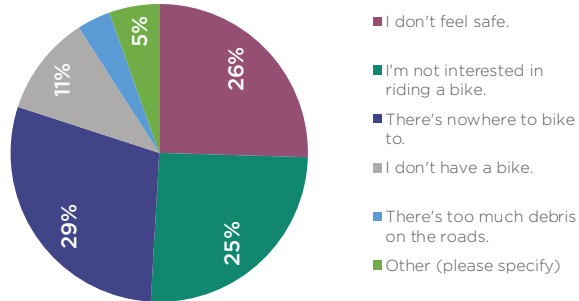
HOW OFTEN DO YOU RIDE YOUR BIKE?



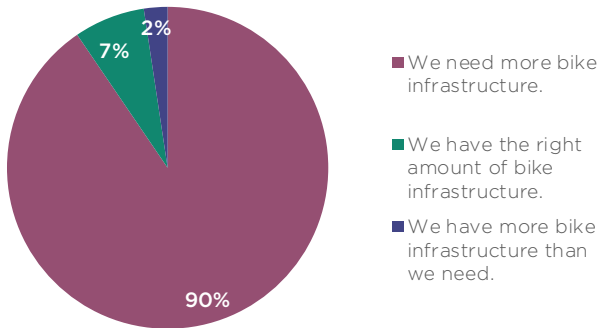
**WHEN I DO RIDE A BIKE, IT'S TO:**



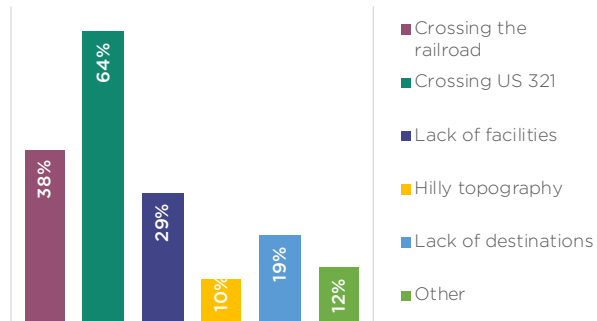
**WHEN I DON'T RIDE A BIKE, IT'S BECAUSE:**



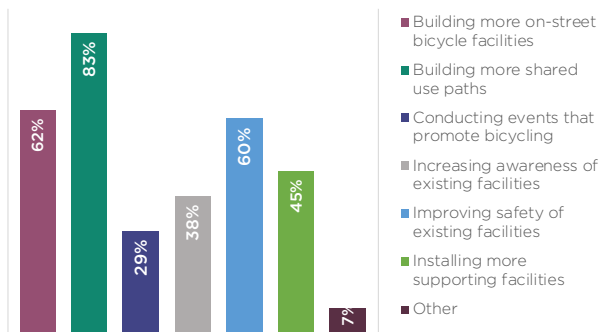
**WHEN CONSIDERING BICYCLE INFRASTRUCTURE IN HUDSON, WOULD YOU SAY...**



**WHAT ARE THE TOP TWO BARRIERS TO BIKING IN HUDSON?**



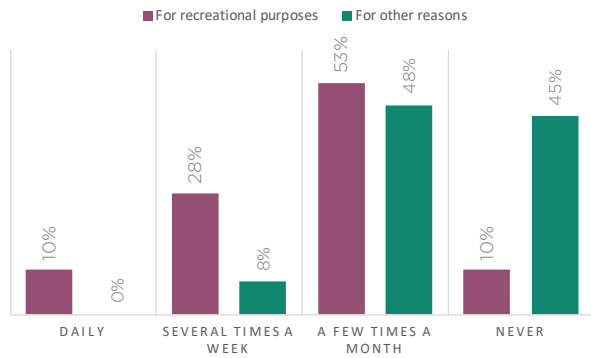
**WHICH OF THE FOLLOWING IS MOST LIKELY TO ENCOURAGE PEOPLE TO BIKE IN HUDSON?**



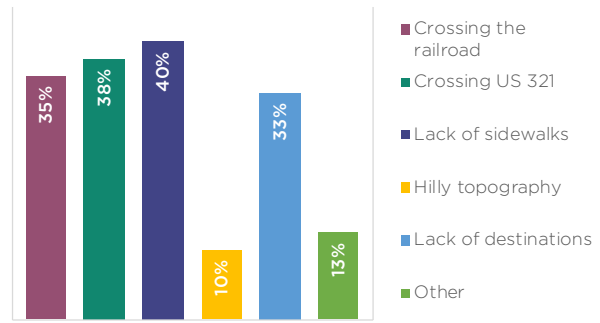
**WHAT SHOULD BE THE HIGHEST PRIORITY FOR NEW BICYCLE FACILITIES?**

- 1 Connecting homes to parks and recreation areas
- 2 Connecting homes to schools
- 3 Connecting homes to Downtown Hudson

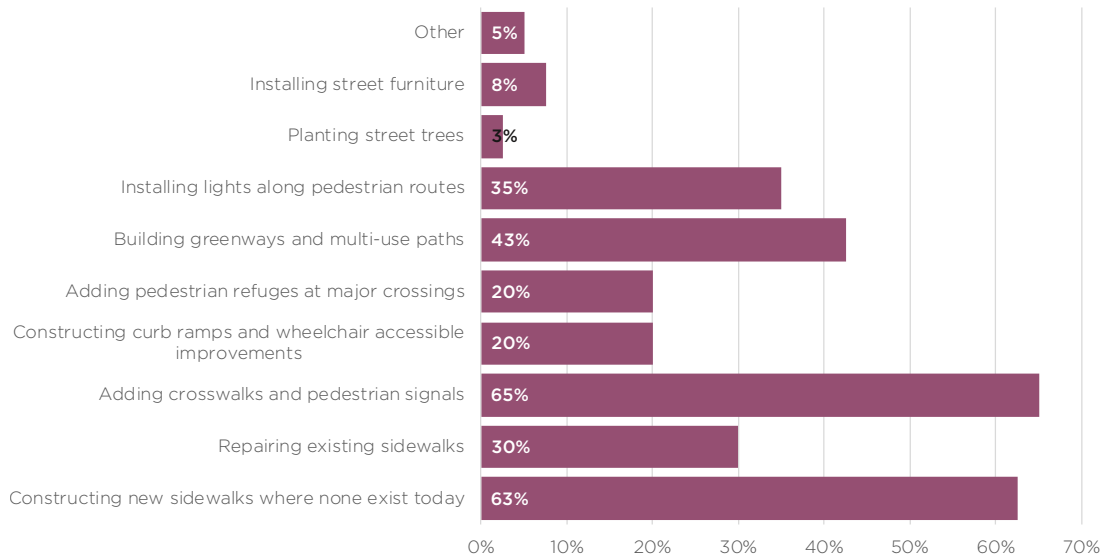
### HOW OFTEN DO YOU WALK IN HUDSON?



### WHAT ARE THE TOP TWO BARRIERS TO WALKING IN HUDSON?



### WHICH OF THE FOLLOWING ARE THE MOST IMPORTANT FACTORS TO IMPROVE WALKABILITY IN HUDSON?



### WHICH LOCAL DESTINATIONS WOULD YOU MOST LIKE TO BE ABLE TO WALK OR BIKE TO?

- 1 Parks
- 4 Caldwell Community College
- 2 Downtown
- 5 Elementary Schools
- 3 Civic Buildings
- 6 Middle Schools



## Public Events

### MAY 8, 2019

The first community engagement event occurred Wednesday, May 8th. Information generated by the participants were vital to the recommendations of the Hudson Pedestrian and Bicycle Plan. Approximately 22 people attended the event and engaged in a number of activities including:

- One Word Activity
- Thought Wall
- Priority Dot Exercise
- Mapping Exercise
- Visual Preference Survey

The event yielded information regarding challenges, common destinations and desired improvements for the area.

### SEPTEMBER 10, 2019

The second community engagement event was hosted in collaboration with the Hudson Police Department and Hudson Elementary School.

The event featured a bike rodeo, free helmet giveaways, raffle prizes from local businesses, and a sno-cone truck. The police department was on hand to teach kids about pedestrian and bicycle safety, while parents and local citizens were able to view the plan's recommendations and provide feedback. Overall, the event was viewed as a success and a model for future town engagement.





# 4 FACILITY RECOMMENDATIONS

The full benefits of a comprehensive active transportation system are achieved when a network of safe and inviting facilities allow residents and visitors to feel comfortable moving around the town. This chapter's facility recommendations lay out the town's desired network of pathways, sidewalks, bike lanes, and other physical infrastructure that will provide a connected network between local destinations. These physical investments form the main part of the plan.

## Introduction

As examined in the Foundations Chapter, Hudson’s current active transportation infrastructure is limited, but the major opportunities exist to improve pedestrian safety conditions and connect destinations throughout the town through continuing investments. This chapter discusses the various physical improvement projects that are recommended to create a comprehensive active transportation network in Hudson, including on and off-road facilities, sidewalk construction and maintenance, and intersection-level improvements. These recommendations were developed based on feedback from the Steering Committee, Town Staff, NCDOT, and Hudson residents. Draft recommendations were formed and presented at a public workshop where participants were asked to provide feedback and comments related to the draft project recommendations, guidelines, and policy measures. The recommendations discussed in this chapter represent the culmination of these outreach efforts.

### CREATING CONNECTIONS

This plan’s vision guided the project team throughout the creation of these recommendations. Early in the process, the community made clear that connectivity and safety were major priorities. Through a guided exercise, the Steering Committee helped the project team identify the community’s major destinations. This exercise yielded a “connect the dots” map – the dots represent the major destinations and lines representing possible routes and facilities. The Steering Committee and the public were responsible for the preliminary connecting of the dots, making decisions about which locations have the greatest potential for improvement considering the context of safety, comfort, connectivity, and equity. The project team then reviewed the preliminary pedestrian and bicycle facility map to fill in network gaps, augment the network with additional recommendations, and make determinations about what facility type would characterize each recommendation. This step included superficial considerations of the operational and geometric characteristics of Hudson’s streets and opportunities to construct off-street facilities such as shared use paths.

Facility recommendations have been developed for the following areas: sidewalks, intersection improvements, and on-street bicycle facilities. It is important for these recommendations to function as a cohesive system. The maps on the following pages document all of the facility recommendations as three separate systems: bicycle facilities, and pedestrian facilities. Though in reality these facilities work together in a cohesive system, it is simpler to depict them separately and think about the connectivity within each travel mode.

## Facility Types

The facility types below represent the six different pedestrian and bicycle facility types that are recommended in this plan. Each type has a general description along with some characteristic features. The photographs shown are examples from other similar places.



### SIDEWALK

**A paved pathway for pedestrians, typically on both sides of a road.**

- Filling gaps will provide connectivity to and between neighborhoods and activity centers
- Create continuous pathways at both sides of intersections
- Recommended connections on one or both sides of existing roadways
- Retrofitting sidewalks that present mobility hazards in accordance with ADA Standards
- Cost: \$85,000 per 0.25 miles



### SHARED LANE MARKING

**A street marking installed to indicate where cyclists may use the entire lane with vehicles.**

- These painted lane markings are often accompanied by signage
- Sharrow markings do not require additional right-of-way acquisition
- Cost: \$450 per marking



### PAVED SHOULDER

**Part of the highway that is directly adjacent to the regularly traveled portion of the highway that more safely accommodates bicycles and pedestrians.**

- Provide additional space at the edge of the roadway for cyclists
- Completed in conjunction with all types of roadway improvements
- Approximately \$90,000 per 0.25 miles



### PAINTED BICYCLE LANES

**A marked travel lane along a portion of the roadway that has been designated for preferential or exclusive use for bicyclists.**

- Dedicated space for bicyclists delineated by painted lines
- May be done in conjunction with road diet projects
- Recommended connections on one or both sides of existing roadways
- Cost: \$12,000 per mile



### SAFE PEDESTRIAN CROSSING

**The portion of the roadway intended for pedestrians to use in crossing the street. It may be distinctly indicated for pedestrian crossing by lines or other signage.**

- Dedicated space for pedestrians delineated by high visibility paint markings or distinctive pavement treatments
- May be paired with pedestrian beacons and signal improvements
- Cost: \$30,000 per intersection (varies depending on treatment)



### MULTIUSE USE PATH

**A facility that may be used by bicyclists, pedestrians, and other non-motorized users. They are separated from the roadway by an open space or physical barrier.**

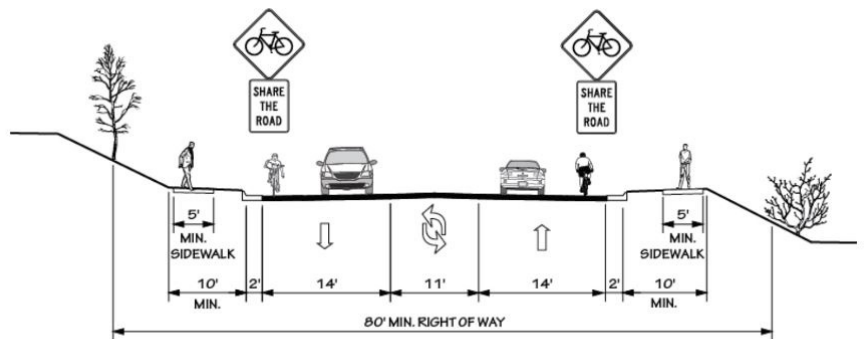
- Provide connections to parks and schools
- Cost: Varies depending on environment

## Sample Cross-Sections

The Western Piedmont Bicycle Plan included several sample cross-sections to guide future roadway design. These cross-sections are based on NCDOT design standards, and are intended to be widely applicable in a broad variety of contexts. However, some departure from the dimensions and cross-section shown below will likely be necessary where space is limited, or where environmental conditions restrict what may be feasible.

### SHARED LANE MARKINGS

Markings should be placed immediately after an intersection and spaced no more than 250 ft apart. Shared Lane Markings should only be used on roads with a travel speed of 35 miles or less.

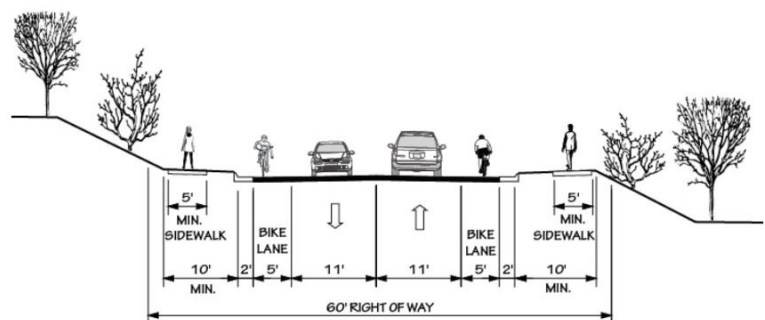


Source: North Carolina DOT

**Note:** Many of the roadways recommended for shared lane markings in Hudson have a narrower right-of-way than that shown above. Most will not include a center turn lane, and lanes in Downtown Hudson are uniformly narrower than 14'.

### PAINTED BICYCLE LANE

Bicycle lanes are appropriate on arterial and collector streets where higher traffic volumes and speeds warrant greater separation. Lanes are typically 4-6 feet, with a preferred width of 5 feet.

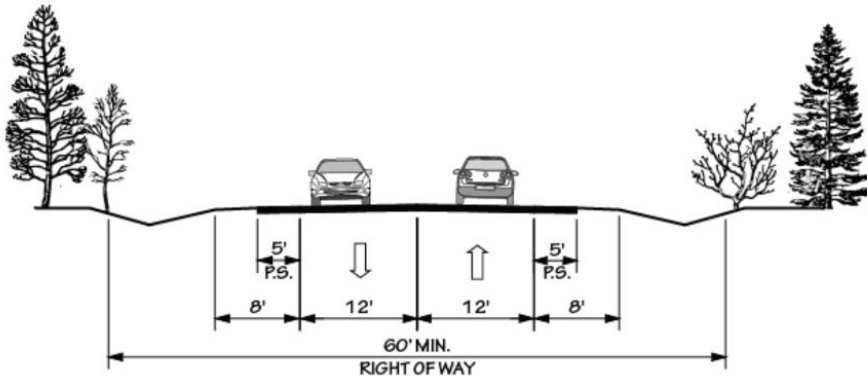


Source: North Carolina DOT

**Note:** Painted lanes are currently only recommended on Main Street in downtown Hudson, per the Western Piedmont Bicycle Plan.

## PAVED SHOULDERS

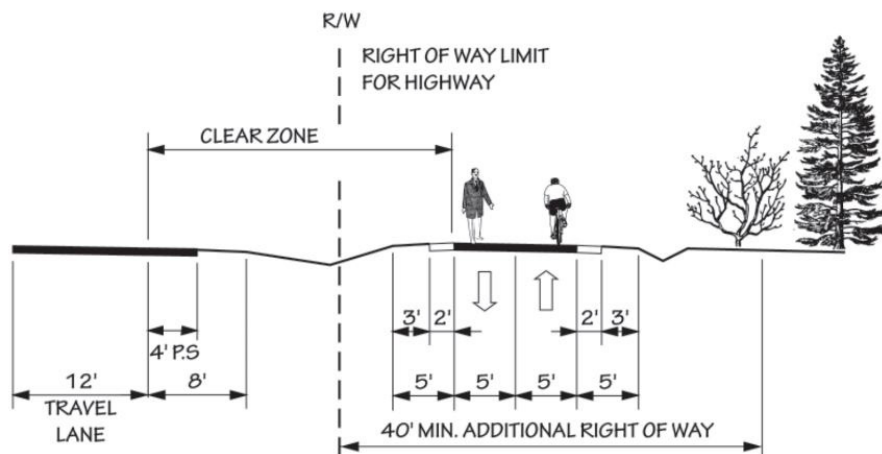
Paved Shoulders are currently recommended on many roadways within Hudson with constrained right-of-way. Paved shoulders may be 4 feet or wider, but 5 feet is the preferred treatment. Paved shoulders should be considered as roadways are widened or reconstructed.



Source: North Carolina DOT

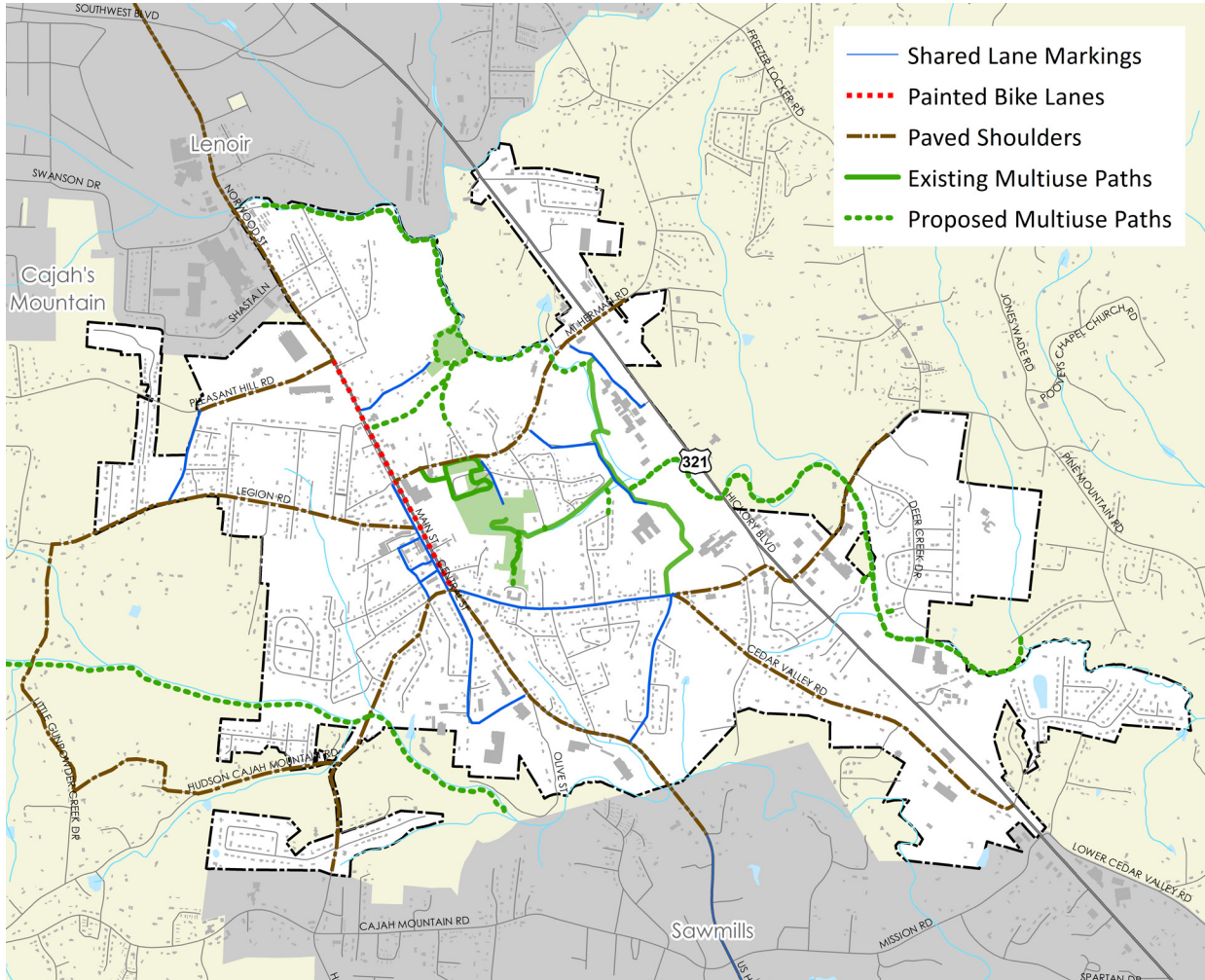
## MULTIUSE PATH

Where Multiuse Paths are located parallel to the roadway, the following cross-section provides design guidance. Most of the recommended multiuse paths in Hudson follow flood plains or other environmental corridors.



Source: North Carolina DOT

# Proposed Bicycle Network



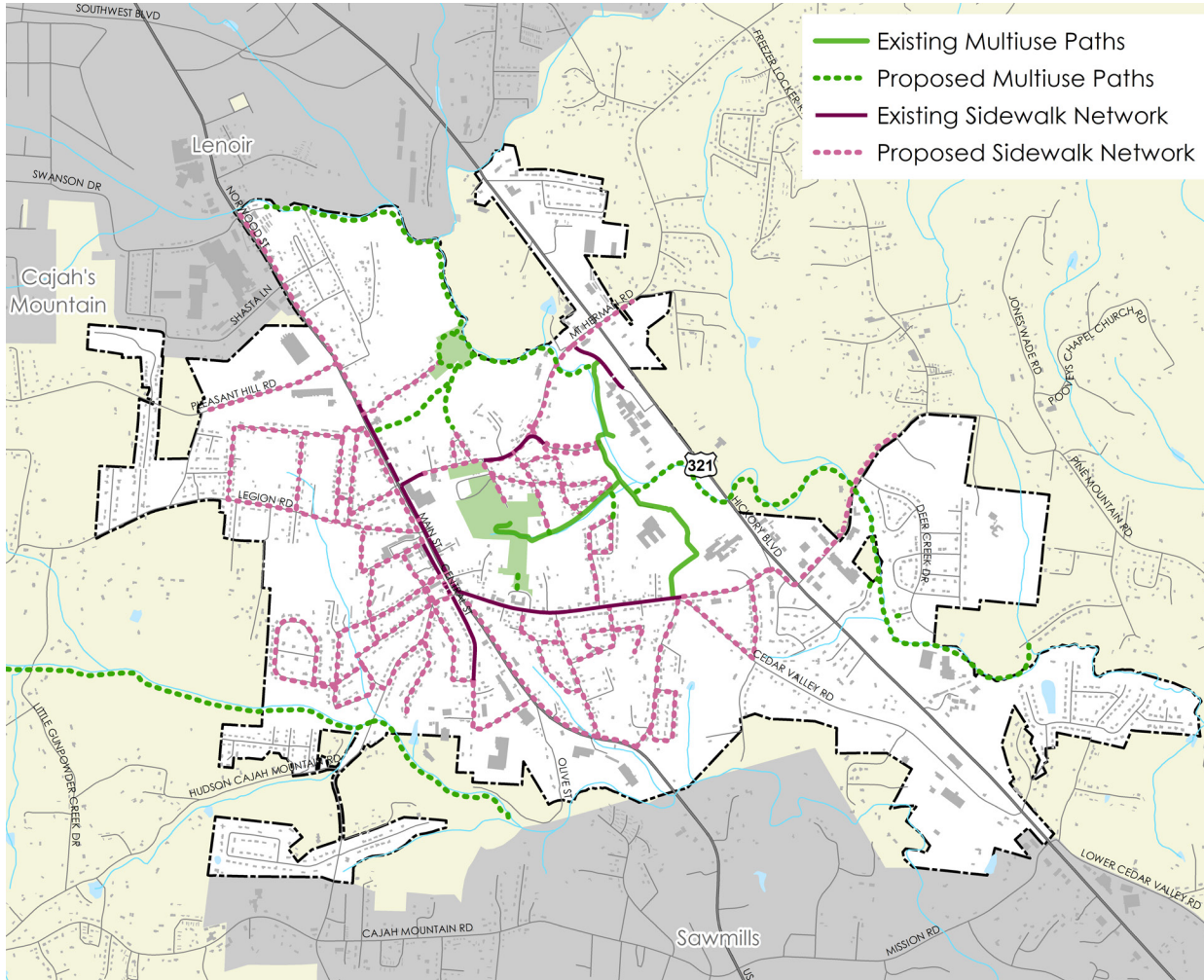
The map highlights the recommended bicycle facilities for the Town of Hudson. These recommendations include on-street bicycle facilities and greenways and multi-use paths.

These recommendations were developed in conjunction with feedback from the first public workshop and online survey, the Town of Hudson, the Project Steering Committee, and previous planning efforts.

Throughout the process, the most important bicycle improvements identified were greenways and trails, connectivity to downtown, and improved sidewalks.



# Proposed Pedestrian Network



This map highlights the recommended pedestrian facilities for the Town of Hudson. These recommendations include sidewalks, improved crossings and intersection improvements, and greenways and multi-use paths.

These recommendations were developed in conjunction with the feedback from the first public workshop and online survey, the Town of Hudson, the Project Steering Committee, and previous planning efforts.

It should be noted that to respond to concerns about upcoming improvements to US 321, sidewalks are recommended to be extended along Mt. Herman Road and Pine Mountain Road to connect to popular retail developments across US 321. A long-term recommendation for a trail is also recommended to provide a low-stress connection across US 321.

# Pedestrian Intersection Improvements

Several types of intersection safety improvements are recommended:

## CROSSING IMPROVEMENTS

Improvements that improve pedestrian safety, visibility, accessibility, and shorten crossing distance including pedestrian refuge island, ADA ramps, and high visibility crosswalks.

## SIGNAL IMPROVEMENTS

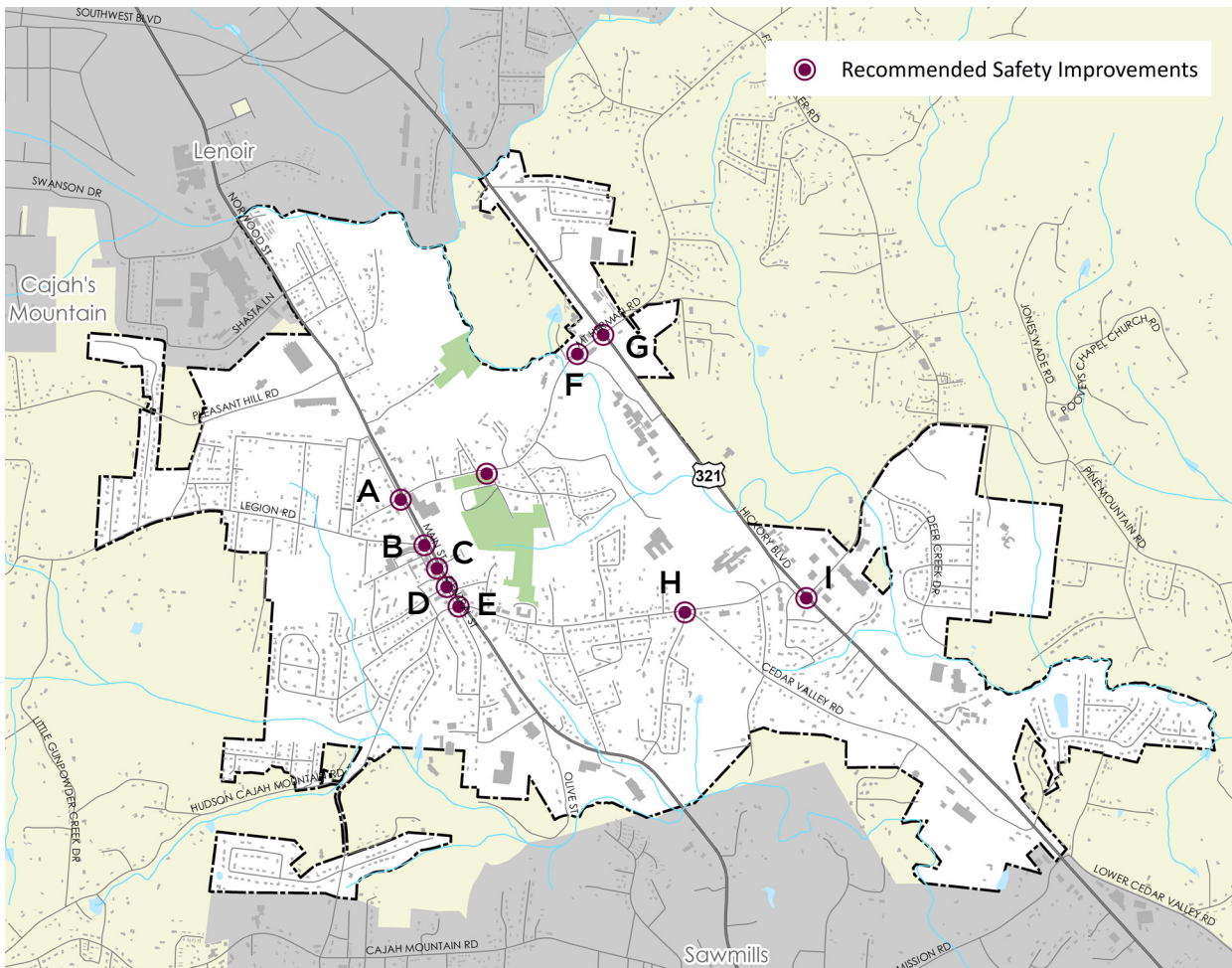
At signalized intersections the following can be applied to enhance safety of those crossing within the crosswalk pedestrian pushbutton, leading pedestrian phase, and pedestrian countdown.

## ACCESSIBILITY IMPROVEMENTS

Sidewalk, trail, and access improvements at all intersections help create continuous ADA-accessible pathways that provide safe, comfortable access for all ages and abilities.

## PEDESTRIAN BEACONS

These beacons can be applied at non-signalized intersections to enhance the visibility of pedestrians and bicyclists crossing mid-block or at marked intersections.



## REDUCED CONFLICT INTERSECTIONS

Improvements at US 321 allow improved pedestrian and bicycle experiences by including:

- Cross one direction of travel at a time
- Pedestrian refuge islands
- Signal lengths provide shorter wait times

## SAFE RAILROAD CROSSINGS

There are a variety of treatments available that improve surface accessibility, crossing visibility, and comply with ADA accessibility standards. Surface treatments should provide a flush path of at least five feet in width.

	Crossing Improvements	Signal Improvements	Pedestrian Beacons	Safe Railroad Crossings	Accessibility Improvements	Reduced Conflict Intersections
<b>A.</b> Central and US 321 A at Mt. Herman Road	✓	✓		✓	✓	
<b>B.</b> Central and US 321 A at Legion Road	✓		✓	✓	✓	
<b>C.</b> Main and Central Streets at Thornburg Avenue	✓		✓	✓	✓	
<b>D.</b> Main and Central Streets at Hickman Avenue	✓		✓	✓	✓	
<b>E.</b> Main and Central Streets at Hudson Cajah Mountain Road	✓	✓		✓	✓	
<b>F.</b> Mt. Herman Road at Claude F. Celia Drive	✓		✓		✓	
<b>G.</b> Mt. Herman Road at US 321					✓	✓
<b>H.</b> Cedar Valley Road at Pine Mountain Road, Willie Thornburg Drive, Eastview Street	✓	✓	✓		✓	
<b>I.</b> Pine Mountain Road at US 321					✓	✓

## Spotlight Projects

The following pages highlight ten recommended projects selected to further explore the types of projects recommended throughout the town. These projects were chosen because they represent a variety of facility types, connect significant community destinations, and each presents a unique blend of challenges. Example graphics show how the projects might look when constructed.

### MAIN STREET BIKE LANES (PLEASANT HILL RD TO CEDAR VALLEY RD)

#### PAINTED BIKE LANES

**Why it's important:** Identified in the Western Piedmont Bicycle Plan, this route makes a critical connection to the surrounding communities. Bike lanes can be added by restriping the roadway to eliminate the existing third lane.

**Potential Challenges:** As a state-maintained road, this improvement requires coordination with NCDOT.

**Estimated Cost:** \$88,000 for restriping



*Example bike lane from another community*

### US 321 INTERSECTION IMPROVEMENTS

#### IMPROVED CROSSING

**Why it's important:** Widening and improvements to US 321 will include new pedestrian crossings at Mt. Herman Road and Pine Mountain Road. These will improve pedestrian safety and increase connectivity across US 321. Sidewalks are recommended to extend across US 321 at both crossing locations to connect with retail developments on the east side of the roadway.

**Potential Challenges:** Project is managed and constructed by NCDOT. Continued coordination is needed to ensure final intersection design matches town's needs.

**Estimated Cost:** Completed in conjunction with US 321 improvements



*Typical pedestrian crossings at Reduced Conflict intersections*

## MAIN STREET IMPROVEMENTS (CEDAR VALLEY RD TO TOWN LIMITS; MT. HERMAN RD TO TOWN LIMITS)

### *SIDEWALKS; PAVED SHOULDERS*

**Why it's important:** Noted in the Western Piedmont Bicycle Plan, Main Street/US 321 A is a vital artery that connects Downtown Hudson to Lenoir and communities to the south

**Potential Challenges:** Improvements should be coordinated with NCDOT, and may require widening in some areas.

**Estimated Cost:** \$1.87 million



*Example of the types of improvements recommended on Mt. Herman Road*

## NEIGHBORHOOD GREENWAY CONNECTIONS

### *MULTIUSE PATHS*

**Why it's important:** These short greenway segments connect existing neighborhoods to existing greenway, expanding access throughout town.

**Potential Challenges:** Some may require minor property purchases.

**Estimated Cost:** \$565,000



*Example of a neighborhood greenway entrance*

## OPTIMIST PARK WALKING PATHS

### *MULTIUSE PATH*

**Why it's important:** Part of the town's Recreation Plan, this pathway provides an additional recreational and fitness amenity.

**Potential Challenges:** Plan is currently under way, but unfunded.

**Estimated Cost:** \$945,000



*Graphic from the Hudson Parks & Rec Plan*

## CENTRAL ST/US 321-A RAILROAD CROSSINGS

### IMPROVED CROSSINGS

**Why it's important:** Simple investments can improve the safety and comfort of pedestrian crossing the railroad. Individual study will be needed at each location to determine the best alternative.

**Potential Challenges:** Improvements will need to be coordinated with the railroad, and likely completed as part of a larger corridor project.

**Estimated Cost:** \$50,000 - \$300,000 depending on treatment



*Example treatment to improve crossing safety*

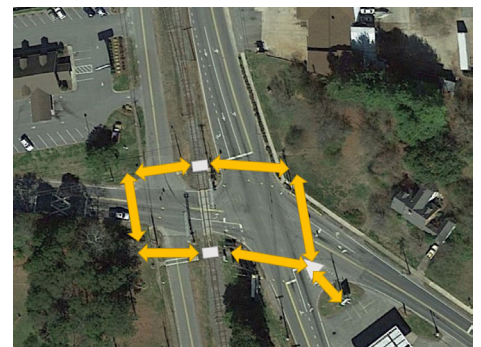
## CENTRAL ST/US 321-A AND CEDAR VALLEY ROAD INTERSECTION

### IMPROVED CROSSING

**Why it's important:** This complex intersection is the gateway to Downtown Hudson. Pedestrians here must cross multiple lanes of traffic and railroad tracks. High-visibility crosswalks, pedestrian refuge islands, railroad crossings, and pedestrian signals will aid safety.

**Potential Challenges:** Improvements will need to be coordinated with NCDOT, and likely will be implemented as part of larger corridor improvements.

**Estimated Cost:** \$230,000



*Example treatment to improve crossing safety*

## DOWNTOWN SHARED LANES

### SHARED LANE MARKINGS

**Why it's important:** This simple improvement denotes preferred bicycle routes through Downtown, and reinforces bicyclists' right to occupy the road.

**Potential Challenges:** Though simple to implement, shared lane markings are low-impact improvements.

**Estimated Cost:** Approximately \$20,000



*Example of shared lane markings in another community*

## MT. HERMAN ROAD IMPROVEMENTS

### *SIDEWALKS; PAVED SHOULDERS*

**Why it's important:** Mt. Herman road is a major connector between downtown Hudson, Caldwell County Community College, US 321, and several businesses.

**Potential Challenges:** This road is currently very narrow. Future improvements may require property on either side of the corridor.

**Estimated Cost:** \$1.8 million



*Example of the types of improvements recommended on Mt. Herman Road*

## GUNPOWDER CREEK GREENWAY

### *MULTIUSE PATHS*

**Why it's important:** Constructing a greenway along the Gunpowder Creek floodplain would connect downtown Hudson with neighborhoods across US 321 and extend the town's recreational options.

**Potential Challenges:** May require minor property purchases.

**Estimated Cost:** \$400,000 - \$1,000,000 (construction cost only, cost may be higher depending on environmental assessment)



*An example of what the Gunpowder Creek Greenway could look like when constructed*

## Project Prioritization

The table below highlights the prioritization process that was complete for each of the recommended projects. Based on public input from the previous open house, the online survey, and in conjunction with the Town and the Project Steering Committee, three factors were identified as important to consider when identifying the top priority projects:

- **Connectivity:** How well will the project connect important town destinations to each other, and to the overall network?
- **Ease of Implementation:** What is the project’s overall cost, and how quickly and easily can it be implemented?
- **Safety:** How much will the project improve safety and comfort levels, encouraging increased walking and biking?

Projects were ranked on each of these three factors on a scale of 1-5, with 1 meaning the project did not meet the goal, and five meaning the project meets the goal. The highest possible score was 15. The final results yielded a total score that sorted the projects into three temporal tiers, with higher score projects becoming short-term priorities. The projects are shown below, sorted into short-term, mid-term, and long-term priorities based on the results of the prioritization.

		Short-term	Mid-term	Long-term	
Facility Name	Type	Extent	Length (miles)	Overall Score	
Mt. Herman Road at US-321	Safe crossing	Intersection	-	13	
Pine Mountain Road at US-321	Safe crossing	Intersection	-	13	
Central Street at Hickman Avenue	Safe crossing	Intersection	-	13	
Central Street Sidewalk infill	Sidewalk	Elm Ave to Sherrill St	0.7	13	
Optimist Avenue Sidewalk improvements	Sidewalk	Optimist Ave	0.2	13	
Main and Central Streets at Throneburg Avenue	Safe crossing	Intersection	-	13	
Neighborhood greenway connections	Multi-Use path	Circle Dr/Mulberry St/Dogwood St to existing trail	0.1	13	
Main Street Improvements	On-Street bike lane	Pleasant Hill Rd to Cedar Valley Rd	0.8	13	
Main Street improvements (South)	Paved shoulders/sidewalks	Cedar Valley Rd to town limits	1.0	13	
Main Street improvements (North)	Paved shoulders/sidewalks	Mt. Herman Rd to town limits	0.8	13	
Hudson Cajah Mountain Road sidewalk infill	Sidewalk	Central St to Elm Ave	-	13	



Facility Name	Type	Extent	Length (miles)	Overall Score
Central Hudson sidewalk improvements	Sidewalk	Legion Rd, Valley St, Hickory St, Fairway Ave, Museum St, Hickman Ave	4.1	11
Downtown shared lane network	Sharrows	Central Street, Fairway Ave, Museum St, Hickman Ave,	1.4	11
Mt Herman Road at Redwood Street	Safe crossing	Intersection	-	11
Northwest Hudson neighborhood sidewalk improvements	Sidewalk	Sherrill St, Mathewson St, Huss Ave sidewalks, Maple Street, Cedar Ave, Legion Road	1.5	11
Redwood Park area sidewalk improvements	Sidewalk	Redwood St, Hayes Ave, Mulberry St, Floral Ave, Dogwood St, Walnut Ave, Roy E Coffey Dr, and Circle Dr sidewalks	2.8	11
Optimist Park Connector South	Multi-Use path	Optimist Park to Claude F Celia Dr	0.5	11
Gunpowder Creek Greenway	Multi-Use path	Palmer Place to Roy E. Coffey Dr	2.1	11
Central and US-321 A at Legion Road	Safe crossing	Intersection	-	11
Main and Central Streets at Hudson Cajah Mountain Road	Safe crossing	Intersection	-	11
Mt. Herman Road at Claude F. Celia Drive	Safe crossing	Intersection	-	11
Pine Mountain Road improvements	Paved shoulder	Cedar Valley Rd to Kirkland Ave	2.3	11
Mt. Herman Road improvements	Paved shoulder	Mt. Herman Rd from Main St to Maple Lynn Place	1.0	11
South Hudson sidewalk improvements	Sidewalk	Huntington Dr, Woodland St, Autumn Ln	-	11
Southeast neighborhood sidewalk improvements	Sidewalk	Evergreen St, Bean Ave, Hawthorne St, Hillcrest St, Vance Ave, Ivy St, Lemont Ave, Shamrock Circle Rd	-	11
Outer Hudson shared lane network	Paved shoulder	Sheldon St, Optimist Ave, Claude F Celia Dr, Roy E. Coffey Dr, Cedar Valley Rd, Eastview St, Central St (S of Elm Ave)	2.8	9
Central and US-321 A at Mt. Herman Road	Safe crossing	Intersection	-	9
Cedar Valley Road improvements	Paved shoulder	Pine Mountain Rd to US-321	-	9
Optimist Park Connector North	Multi-Use path	Optimist Park to Hall Ave/ Norwood St	0.8	9
Optimist Park Walking Paths	Multi-Use path	Within Optimist Park	0.4	7
Cedar Valley Road at Mountain Road, Willie Thornburg Drive, Eastview Street	Safe crossing	Intersection	-	7
West Hudson bike route	Paved shoulder	Legion Rd, Little Gunpowder Creek Dr, Hudson Cajah Mountain Rd	3.8	7
Pleasant Hill Rd Improvements	Paved shoulder, Sidewalk	Pleasant Hill Rd from Sheldon St to US-321 A and US-321 A from Pleasant Hill Rd to town limit	1.0	7
Optimist Park Connectors	Multi-Use path	Optimist Park to Hudson Heights Rd and Main St	-	5
Little Gunpowder Creek Greenway	Multi-Use path	Olive St to town limit	2.5	7



# 5

## IMPLEMENTATION















Creating an environment that encourages and incentivizes safe biking and walking is critical to supporting healthy lifestyles and active transportation. Supportive policies and programs are a major part of creating a community where safe walking and biking is a major focus, rather than an afterthought. Many of these recommendations are also “low hanging fruit” for small communities, meaning they are relatively quick, inexpensive, and easy to implement compared to capital investments.

























# Implementation Strategies

Beyond the funding and construction of physical facilities, the Town and its local and regional partners can undertake programmatic efforts to improve active transportation conditions. These efforts include creating programs or policies to promote and encourage active transportation; educating motorists, pedestrians, and bicyclists about how to safely navigate the Town together; and creating policies that ensure future facilities are considered as new development is constructed.

Each of the policies or programs recommended below address at least one of the plan’s goals.

 Healthy, active community
  Connect neighborhoods to Downtown
  Making parks and local places accessible
  Provide safe options for students

Policy or Program	Goals Addressed			
<p><b>Adopt the future facilities maps and integrate them into the development review process</b></p> <p>Implementation of the future sidewalk and trail network need not rest entirely on the town’s shoulders. By adopting the maps as official town policy and integrating them into the development review process, the Town require that future developments assist by either constructing part of the facility or dedicating land toward its eventual construction.</p>				
<p><b>Establish a sidewalk repair and maintenance program</b></p> <p>Often, the most cost-effective way to improve the town’s overall accessibility is to improve the existing facilities. Identify a sustainable funding source for annual repairs and maintenance, and identify priority areas to focus on.</p>				
<p><b>Establish a Safe Routes to School Taskforce</b></p> <p>Safe Routes to School (SRTS) is a national program that works to promote safe walking and biking to and from school. This would engage with local planning efforts to integrate SRTS goals with local infrastructure projects.</p>				
<p><b>Adopt a local Complete Streets and Traffic Calming Policy</b></p> <p>Complete Streets put the safety of all road users, especially people walking and biking, at the forefront of roadway design. Traffic calming similarly involves slowing traffic through physical infrastructure, to promote the safety of all road users.</p>				

Policy or Program	Goals Addressed			
<p><b>Ensure future roadway projects coordinate with the pedestrian and bicycle plan</b></p> <p>Organize a task force with representatives across the region to meet on a recurring basis to discuss integrating active transportation into upcoming infrastructure projects. Continue to coordinate with NCDOT to ensure the appropriate facilities are integrated into future roadway expansions and improvements.</p>				
<p><b>Create a Pedestrian and Bicycle Advisory Committee</b></p> <p>The Committee should be comprised of community stakeholders, and will meet regularly to hear updates on local transportation projects and have the opportunity to hold local or regional agencies accountable to establish active transportation goals.</p>				
<p><b>Continue hosting pedestrian and bicycle safety events</b></p> <p>The Hudson Police Department has been very active in promoting bicycle safety to young residents. Continue these efforts, targeting drivers, young children, and families through public events such as bicycle rodeos, walking tours, helmet giveaways.</p>				
<p><b>Facility Inventory and Priority Project List</b></p> <p>Conduct a thorough, regular review of the condition of the town's existing pedestrian and bicycle facilities to develop a prioritization list of sidewalk segments to be repaired or constructed through dedicated funding.</p>				
<p><b>Implement a Bicycle/Walk Benefits Program</b></p> <p>This public awareness campaign should encourage residents to walk or bike, rather than drive, for short trips around Downtown, and provide benefits when they do, such as discounts at local stores.</p>				
<p><b>Crossing Study</b></p> <p>Work with Local, County, or NCDOT staff to identify intersections where simple low-cost improvements would provide major benefits for pedestrians.</p>				
<p><b>Require sidewalks as part of all new developments</b></p> <p>Sidewalks are currently required along major thoroughfares in multi-family and commercial developments.</p>				
<p><b>Connect to regional recreational destinations</b></p> <p>Partner with Lenoir and other surrounding towns to identify ways to connect local trails into a regional greenway system.</p>				

Policy or Program	Goals Addressed			
<p><b>Identify regional, state, and federal funding opportunities to implement multimodal opportunities</b></p> <p>Apply for grants and explore partnerships with local businesses and developers to fund the installation of trails, sidewalk improvements, and better pedestrian crossings.</p>				
<p><b>Identify and prioritize locations for bicycle rack installation</b></p> <p>Properly installed and located bike racks encourage people to ride bicycles to town destinations such as schools and downtown, knowing they can secure their bicycles when they arrive.</p>				
<p><b>Become a Watch for Me NC partner community</b></p> <p>Watch for Me NC is a collaborative effort between NCDOT and local communities to reduce the number of bicycles and pedestrians injured in vehicle crashes. The program provides public education and enhanced support and training for police departments.</p>				
<p><b>Educate the public on ADA standards and importance of compliance</b></p> <p>Many of Hudson's walkways and facilities do not meet current accessibility standards. Retrofitting these facilities to be easily accessible to all users should be a priority. Public awareness and acceptance of the importance of such improvements will be key to identifying funding.</p>				
<p><b>Conduct regular pedestrian and bicycle counts</b></p> <p>Conducting regular pedestrian and bicycle counts at key points throughout town, such as at downtown intersections and on the local greenways, helps set a baseline to understand how many users walk on a typical day. These numbers help track progress as the town makes improvements.</p>				
<p><b>Develop a townwide Wayfinding system</b></p> <p>Wayfinding signs help residents and visitors find their way to major destinations, while simultaneously enhancing the unique character and brand of Hudson. Walk [Your City] provides a great low-cost pilot program for creating simple wayfinding signage that encourages increased walking.</p>				
<p><b>Encourage connections with interior sidewalk networks</b></p> <p>Work with existing schools and incoming developments to ensure interior sidewalk networks provide connections to the broader town network, providing mobility to-and-from these important destinations.</p>				

## Funding Sources

Implementation requires taking advantage of federal, state, local, and private funding opportunities. As a municipality in a metropolitan planning organization area in North Carolina, the Town of Hudson can use federal and state funding that has been allocated to NCDOT Division 11 or to the Greater Hickory Metropolitan Planning Organization. The Town's capital improvement program and private entities are other sources that can be used to implement the recommendations of the Pedestrian and Bicycle Plan. These funding sources are summarized in the sections below.

### FIXING AMERICA'S SURFACE TRANSPORTATION (FAST ACT)

The most recent surface transportation legislation, Fixing America's Surface Transportation or FAST Act, was passed in December 2015. It restructured several of the funding programs that were active in the previous legislation, Moving Ahead for Progress in the 21st Century or MAP-21. For the programs described below, the Town of Hudson would apply to the Greater Hickory MPO for funding and provide a 20% local match.

#### ***SURFACE TRANSPORTATION BLOCK GRANT PROGRAM***

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

#### ***TRANSPORTATION ALTERNATIVES***

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

#### ***METROPOLITAN PLANNING***

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

## ***BUILD DISCRETIONARY FUNDS***

Started in 2018 in place of the Transportation Investment Generating Economic Recovery (TIGER) grant program, the Better Utilizing Investments to Leverage Development (BUILD) grant program is a highly competitive program that aids in funding multimodal, multi-jurisdictional projects that are often difficult to fund with traditional funding strategies. BUILD grants can be used for capital projects that generate economic development and improve access to safe and affordable transportation alternatives.

## **NCDOT STRATEGIC MOBILITY FORMULA**

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

## **POWELL BILL FUNDS**

North Carolina's State street-aid program, also known as the Powell Bill program, provides funding for eligible municipalities based on population and mileage of locally-maintained roadways. The primary function of the Powell Bill program is to assist municipalities in funding resurfacing local streets, but the funds may also be used for planning, constructing, and maintaining bikeways, greenways and sidewalks. Powell Bill funds could be pursued as a match for future updates of this Plan. In fiscal year 2019, the Town of Hudson received approximately \$241,000 in Powell Bill funding.

## **CAPITAL IMPROVEMENT PROGRAM**

The Town of Hudson's annual budget for 2019 includes \$168,000 for roadway paving work and

construction. There is not a set amount each year for pedestrian and bicycle facilities; however, projects from this plan can be included as a separate allocation in future years.

## TRANSPORTATION BONDS

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

## PRIVATE DEVELOPMENTS

Updating the Town's zoning and subdivision ordinances to require private developers to include pedestrian and bicycle infrastructure in their site plans will help the Town build out the Pedestrian and Bicycle Plan's facility recommendations. Pedestrian and bicycle infrastructure requirements can include on-street and off-street facilities as well as bicycle parking or pedestrian benches.

## NON-PROFIT ORGANIZATIONS

Non-profit organizations, such as many health care organizations, bicycle advocacy organizations, and community funds, are potential sources of funding for bicycle facilities. PeopleForBikes awards grants through their Community Grant Program. Grant amounts can be up to \$10,000 per project, can't be more than 50% of the project cost, and can be awarded to local governments or non-profit organizations. This has been used successfully in some communities to complete small-scale projects, such as wayfinding, bike-rack installation, or improvements to existing trails and sidewalks.

## PARKS AND RECREATION TRUST FUND

Since 1994 the North Carolina Parks and Recreation Trust Fund (PARTF) awards matching grants to local governments for parks, public beach access, and improvements in state parks. A local government can request a maximum of \$500,000 with each application, and can be used to build or improve facilities for public use, or to acquire land for parks. PARTF funds may be used to improve the accessibility of existing facilities, including to bring them into compliance with current ADA standards. The grants require a 50% match from the applicant.



## Performance Measures

Beyond completing the physical projects and policy recommendations laid out in this plan, the Town of Hudson should consider regularly evaluating the town’s progress in achieving the overall vision of the Pedestrian and Bicycle Plan.

A sample report card is shown below, which should be updated annually to help track progress on a number of key measures. This provides a basic template that communicates key metrics to a variety of audiences, and also shows the importance of continuing to make progress against these goals.

Performance Measure	Desired Trend
Pedestrian and Bicyclist Counts	↑
Miles of ADA-compliant sidewalk	↑
Miles of multiuse paths	↑
Miles of on-street bicycle facilities	↑
Number of benches and pedestrian amenities	↑
Number of bicycle racks	↑
Funding dedicated to multimodal facility construction and maintenance	↑
Number of pedestrians and bicyclists involved in vehicle crashes	↓
Town overall Walk Score (from walkscore.com)	↑
Number of projects and programs implemented	↑
Tickets issued for unsafe behavior (drivers and pedestrians/cyclists)	↓
Number of intersections with pedestrian safety improvements (warning lights, pedestrian buttons, high-visibility crossings, etc.)	↑

## Design Guidelines

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

Resource	Author	Date	Description
Manual on Uniform Traffic Control Devices	FHWA	2019	Part 9 of the MUTCD provides guidance for bicyclist traffic control devices, including signs, traffic signals, and pavement markings on roadways and shared use paths. The document discusses the recommended application, placement, size, colors, and proper maintenance of these devices as they relate to bicyclist traffic. It was recently updated to reflect modern best practices.
NCDOT Complete Streets Planning & Design Guidelines	NCDOT	2012	The guidelines describe how Complete Streets are to be planned and designed for projects funded by NCDOT and/or on state maintained roadways. Facility planning and design for bicycle, pedestrian, and transit infrastructure should respond to the land use context and operational characteristics of the corridor. The document includes illustrative street cross-sections of different types of Complete Streets designs.
Small Town and Rural Multimodal Networks	FHWA	2016	The Small Town and Rural Multimodal Networks report is a resource and idea book intended to help small towns and rural communities support safe, accessible, comfortable, and active travel for people of all ages and abilities. It provides a bridge between existing guidance on pedestrian and bicycle design and rural practice, encourage innovation in the development of safe and appealing networks for bicycling and walking in small towns and rural areas, and show examples of peer communities and project implementation that is appropriate for rural communities.
Guide for the Development of Bicycle Facilities	AASHTO	2012	Originally published in 1999, AASHTO's current Guide for the Development of Bicycle Facilities encourages context-sensitive design and multimodal travel by providing ranges of design values where flexibility is permissible. It also provides suggested minimum dimensions for the design of safe bicycle facilities. The 2019 update will likely include design guidelines for separated bike lanes.
ADA Standards for Accessible Design	US DOJ	2010	The Department of Justice's revised regulations for Titles II and III of the Americans with Disabilities Act of 1990 (ADA) were published in the Federal Register on September 15, 2010. This document provides the scoping and technical requirements for new construction from 2010 onwards.

## Conclusion

Promoting and encouraging multimodal travel is a major priority for the Town of Hudson and for communities across North Carolina. The Hudson Pedestrian and Bicycle Plan is a major step toward the creation of a vibrant community where residents feel comfortable and safe walking to and from church and the store, where kids bike to school more often than not, and where family walks on the local greenways are a treasured pastime. However, the plan alone will not allow the Community to attain its goals. Getting there will be a cooperative effort on the part of Town administration, local businesses and community leaders. This plan serves as a guidebook and an advocacy tool to help community leaders make smart investment and policy decisions that lead Hudson toward its mobility goals.



