



# Town of Mount Olive Bicycle & Pedestrian Plan

MAY 2019



Prepared for:



Prepared by:





# Acknowledgments

## Steering Committee

The project team would like to thank the following Steering Committee members for providing guidance throughout the planning process:

- Town of Mount Olive, Mayor's Office
- Town of Mount Olive, Chamber of Commerce
- Town of Mount Olive, Operations and Public Works
- Town of Mount Olive, Parks and Recreation
- Town of Mount Olive, Planning and Zoning
- Town of Mount Olive Police Department
- University of Mount Olive, President's Office
- University of Mount Olive, Recreation and Leisure Studies
- Mount Olive Pickle Company
- Vidant Health – Active Routes to School Region 10 Project Coordinator
- Eastern Carolina Council Rural Planning Organization
- North Carolina Department of Transportation, Division 4
- North Carolina Department of Transportation, Division of Bicycle and Pedestrian Transportation
- VHB Engineering NC, P.C.





# Executive Summary

## Project Background

This Plan is intended to provide a framework for identifying bicycle and pedestrian needs, both in terms of physical infrastructure and encouragement programs for the Town of Mount Olive (Town). The vision for this bicycle and pedestrian master plan is:

Improving non-automotive transportation that promotes healthy, active lifestyles for residents, university students, and visitors as part of a strategic effort to improve safety and revitalize downtown Mount Olive.

This Plan builds upon existing plans and prioritizes public involvement.

Through this Plan and its process, the Town hopes to promote a culture of active living, enhance access to local businesses, neighborhoods, and parks by foot or wheel, and emphasize the safety of cyclists and pedestrians while accommodating motorized traffic in an efficient manner.

## Steering Committee

This planning process involved direct input from local stakeholders, collection and synthesis of existing conditions data, public outreach components, as well as guidance from a Steering Committee of project champions. The project Steering Committee included

business owners, Town staff, University of Mount Olive, NCDOT, Wayne County, and Eastern Carolina Rural Planning Organization (ECRPO). Building on the project vision, the Steering Committee adopted the following Goals and Objectives for the Plan:

1. Plan for an interconnected, safe, pedestrian network
2. Engage the public to identify possible barriers to non-automotive travel
3. Support “downtown as a destination” for bicycling and walking
4. Contribute to the sense of community and “hometown” feel of Mount Olive
5. Prioritize facility recommendations and identify potential funding sources.

## Public Involvement

Two (2) public events were held for the project team to engage the public. Public Event #1 presented existing conditions, as well as goals and objectives of the plan. Attendees were asked to identify typical destinations, potentially unsafe locations, and potential areas for future improvements. Public Event #2 presented priority corridors for discussion as well as draft priority locations and project and policy recommendations. Attendees were asked to provide their input on priority locations, facility improvements, and general discussion on pedestrian issues.



In addition to public events, a public survey questionnaire was conducted to gather preference information from residents. The survey was available online and shared at public meetings and by steering committee members. In total, 205 responses were collected through this nine-month survey.

## Challenges and Opportunities

Town of Mount Olive is a thriving community with many recreation opportunities for both residents and students. It also benefits from a dense, well connected street network that allows people to efficiently walk to their destinations. In addition, there are several parks, restaurants, and shopping destinations conveniently located for pedestrians in the community. Opportunities in Mount Olive include the town's dense and walkable street network, existing sidewalk network, and the involved, passionate community members.

Some of the challenges to improving the pedestrian network include automobile-oriented commercial development along US Highway 117 and NC Highway 55, high posted speed limits, limited sidewalk coverage beyond the downtown, limited marked crosswalks, narrow roadway rights-of-way, and high numbers of pedestrian or bicycle crashes since 2007.

The Mount Olive community has a strong desire to improve bicycle and pedestrian safety in their Town. With the support of safe, connected infrastructure, lower vehicle speeds, and encouragement programming, many residents are willing to be more active.

## Plan Development and Recommendations

The Town has many advantages that encourage active transportation. As a community, it is a natural hub of recreation and social activity and encourages people to go outside and interact in community spaces. The need to build an everyday network for residents was a primary guiding principle in the Plan, as well as creating an aesthetically appealing network, safe crossings, and promoting safe driver, pedestrian, and cyclist behavior.

Qualitative data like these observations supplemented the existing quantitative data to shape the type and location of facility recommendations. They provided the foundation for the prioritization methodology utilized by the project team when ranking potential facility recommendations.

In addition to engineered infrastructure, strong programs and policies can help encourage and support pedestrians and cyclists within the Town. This plan includes recommendations for the other four of the five E's: encouragement, education, enforcement, and evaluation:

- Use encouragement programs to strengthen culture for walking and bicycling within the community.
- Take advantage of existing educational materials from state or federal programs and tailor these to promote safety, traffic rules, and responsibilities for all roadway users.
- Use enforcement programs to inform all roadway users about State or Town traffic laws and incentivizing or rewarding appropriate behavior.
- Establish evaluation efforts to measure or track the performance of strategies over time, including setting goals, collecting baseline data, establishing timelines, and collecting follow up data.

## **Priority Corridors**

Priority corridors are the framework around which individual project recommendations were developed. These serve as the trunk of the network, with secondary corridors branching out and filling in neighborhood communities. Priority corridors represent the most direct routes between residents and desired destinations and were identified as having conditions suitable for near-term facility construction. Secondary corridors support the primary corridors, though they may not form a complete network.

## **Facility Recommendations**

The project team applied an iterative process involving stakeholder direction, geographic distribution, significant destinations, safety considerations, the existing pedestrian network, and priority corridors to identify potential facility recommendation projects. The final list of projects is displayed in Figure ES-1 and Table ES-2.

Each project was then evaluated and ranked using criteria that was developed by the Steering Committee to align the priorities of this Plan with those of the community. More important factors received a score up to 10 points, while less important factors received 5 or 3 points (Table ES-1).

Project rankings are merely a guide for future planning considerations and not necessarily the exact sequence for implementation. The success of certain projects may be contingent on the implementation of other planned recommendations that connect to form a complete network.

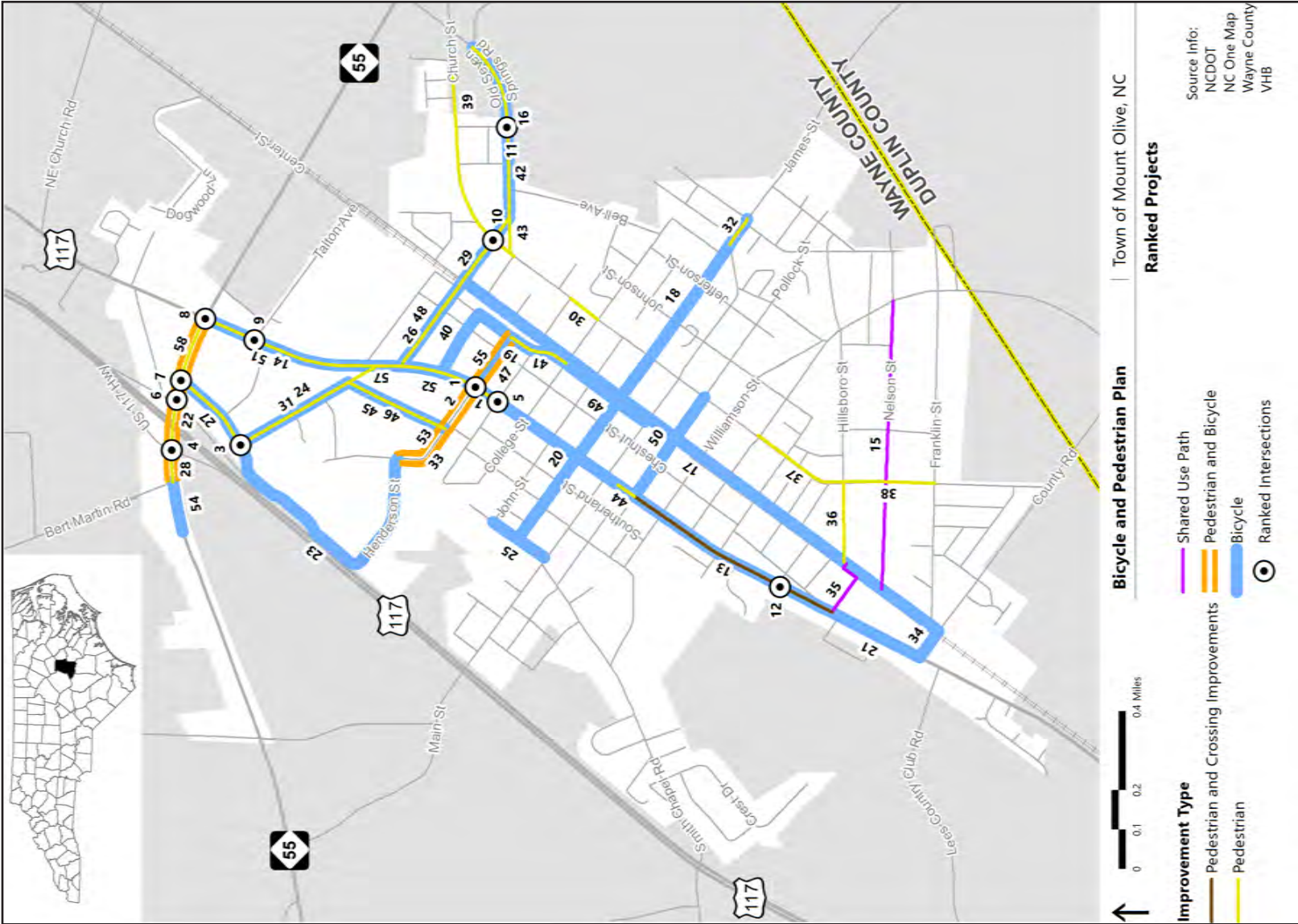


Figure ES-1. Facility Recommendations



Table ES-2. Facility Recommendation Table

ID	Type	Name	Improvement Description	Planning Level Cost	Score	Rank
21	Corridor	Breazeale Ave US117 Alt	Shared Lane Marking	\$10,000	38.8	1
51	Corridor	Breazeale Ave US117 Alt	Bike Lanes	\$18,000	38.4	2
13	Corridor	Breazeale Ave US117 Alt	Sidewalk with four way intersection treatment	\$224,000	37.5	3
2	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$53,000	37.1	4
1	Intersection	US 117 ALT @ Henderson St	Crossing improvements and sidewalks	\$56,000	37.1	4
14	Corridor	Breazeale Ave US117 Alt	Sidewalk	\$166,000	35.9	6
12	Intersection	RRFB at Carver Cultural Center	RRFB and intersection improvements	\$101,000	35.5	7
30	Corridor	N Church Street	Sidewalk	\$50,000	35.1	8
41	Corridor	Center Street	Sidewalk	\$58,000	35.1	8
37	Corridor	Church Street	Sidewalk	\$154,000	34.7	10
22	Corridor	NC Hwy 55	Sidewalk & Separated Bike Lanes	\$277,000	34.4	11
27	Corridor	Henderson Street	Sidewalk (one side)	\$68,000	34.4	11
28	Corridor	NC Hwy 55	Sidewalk and retaining walls under overpass	\$146,000	34.4	11
5	Intersection	US 117 ALT @ W Station St	Crossing improvements	\$19,000	33.9	14
23	Corridor	Henderson Street	Shared Lane Marking	\$8,000	33.6	15
39	Corridor	N Church Street	Sidewalk (one side)	\$167,000	33.1	16
16	Corridor	E Park Avenue	Shared Lane Marking	\$6,000	31.6	17
58	Corridor	NC Hwy 55	Sidewalk	\$60,000	31.6	17
18	Corridor	E James Street	Shared Lane Marking	\$5,000	30.4	19
19	Corridor	Center Street	Shared Lane Marking	\$2,000	30.4	19
52	Corridor	Breazeale Ave US117 Alt	Bike Lanes	\$15,000	30.4	19
11	Intersection	Old 7 Springs Rd @ Francis St	Crossing improvements	\$8,000	30.4	19
26	Corridor	W Park Avenue	Sidewalk	\$161,000	29.9	23
17	Corridor	Center Street	Shared Lane Marking	\$12,000	29.6	24

ID	Type	Name	Improvement Description	Planning Level Cost	Score	Rank
55	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$62,000	29.6	24
35	Corridor	Center Street	Shared Use Path	\$102,000	29.5	26
48	Corridor	W Park Avenue	Shared Lane Marking	\$2,000	28.4	27
49	Corridor	Center Street	Shared Lane Marking	\$2,000	28.4	27
50	Corridor	Pollock Street	Shared Lane Marking	\$2,000	28.4	27
44	Corridor	Breazeale Ave US117 Alt	Sidewalk (one side)	\$16,000	28.3	30
34	Corridor	County Road	Shared Lane Marking	\$1,000	28	31
47	Corridor	Henderson Street	Shared Lane Marking	\$1,000	27.6	32
3	Intersection	Henderson St @ Bert Martin Rd	Crossing improvements	\$5,000	27.2	33
24	Corridor	Bert Martin Road	Shared Lane Marking	\$3,000	27.2	33
54	Corridor	NC Hwy 55	Separated Bike Lane	\$6,000	27.2	33
10	Intersection	E Park St @ N Church St	Crossing improvements	\$16,000	26.4	36
57	Corridor	Breazeale Ave US117 Alt	Sidewalk	\$126,000	26.4	36
29	Corridor	E Park Avenue	Sidewalk (one side)	\$60,000	25.9	38
36	Corridor	Hillsboro Street	Sidewalk (one side)	\$38,000	25.5	39
15	Corridor	Nelson Street	Shared Use Path	\$352,000	24.7	40
42	Corridor	Old Seven Springs Road	Sidewalk (one side)	\$132,000	24.4	41
40	Corridor	Westbrook Street	Shared Lane Marking	\$1,000	23.6	42
31	Corridor	Bert Martin Road	Sidewalk (one side)	\$120,000	23.2	43
53	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$123,000	23.2	43
20	Corridor	W James Street	Shared Lane Marking	\$4,000	22.8	45
25	Corridor	Wooten Street	Shared Lane Marking	\$1,000	22.8	45
9	Intersection	US 117 ALT @ Talton St	Crossing improvements	\$22,000	22.4	47
45	Corridor	Martin Street	Shared Lane Marking	\$2,000	22.4	47
43	Corridor	Old Seven Springs Road	Sidewalk (one side)	\$32,000	21.6	49
4	Intersection	NC 55 at US 117 southbound ramps	Crossing improvements	\$5,000	21.2	50

ID	Type	Name	Improvement Description	Planning Level Cost	Score	Rank
6	Intersection	NC 55 at US 117 northbound ramps	Crossing improvements	\$5,000	21.2	50
32	Corridor	E James Street	Sidewalk (one side)	\$26,000	21.1	52
7	Intersection	Henderson Street @ NC 55	Crossing improvements	\$26,000	19.2	53
8	Intersection	US 117 ALT @ NC 55	Crossing improvements	\$31,000	19.2	53
33	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$62,000	18.4	55
46	Corridor	Martin Street	Sidewalk (one side)	\$82,000	18.4	55
38	Corridor	Church Street	Sidewalk (one side)	\$71,000	10.8	57

## Pilot Projects

Steering Committee members helped to identify six project locations that were commonly identified by residents as initial Pilot Project candidates. These identified projects would be highly visible to the community, and reflect design principals with planning-level guidance that would be consistent with other facility recommendations. For all six Pilot Project cut-sheets, the estimated planning level cost is in 2017 dollars and does not include design costs nor Right-of-Way (ROW) acquisition. The additional costs of design, ROW acquisition, and potential relocation of utilities and other barriers have the potential to significantly increase project costs. As a result, each of these six Pilot Projects will require sites specific environmental, design, and engineering analysis before construction.

## Plan Implementation

Through adoption of this plan, the Town will be empowered to act as a champion for bicycle and pedestrian needs. Steering Committee members should transition to form a Bicycle and Pedestrian committee to guide the implementation of future projects.

Successful implementation of this plan will require the cooperation of the Bicycle and Pedestrian Committee with a variety of agencies and organizations. Several of these partnerships already exist, and this Plan will build on those partnerships between the Town, University of Mount Olive, NCDOT, ECRPO, and local community groups.



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### Project #13: South Breazeale Avenue (US 117 Alt) Sidewalks

An addition of sidewalks on both sides of South Breazeale Avenue would provide a safe pedestrian connection between downtown Mount Olive and the Carver Cultural Center. Because there are no curbs along this section of Breazeale Avenue, there would have to an installation of curb and gutters in addition to the sidewalks. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**

<b>Location:</b> South Breazeale Avenue from W Pollock Street to the Carver Cultural Center
<b>Length:</b> ~3000 feet (.5 miles)
<b>Planning-Level Cost Estimate:</b> \$224,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>Install 5' wide sidewalks on both sides of Breazeale Avenue with a landscaped buffer where there is room.</li> <li>Install high-visibility crosswalks on Breazeale Avenue at intersections with W Pollock Street and W Williamson Street with yield to pedestrian signage based on engineering standards at the time of construction.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>Sidewalk @ \$34/linear foot (\$180,000/mile).</li> <li>High Visibility Crosswalk @ \$2,700 each.</li> <li>Signage @ \$315 each.</li> <li>Curb Ramps @ \$850 each.</li> <li>Curb and Gutter @ \$22/linear foot (\$120,000/mile).</li> </ul>



**Before**



**After**

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## Project #2: Henderson Street Road Diet, Sidewalks, and Bike Lanes

The addition of bicycle lanes and sidewalks to Henderson Street substantially increases pedestrian and bicycle access to Mount Olive University. This project would require re-striping the pavement to change the segment into one lane and a bicycle lane in each direction. This project aligns with recommendations in the Mount Olive Comprehensive Transportation Plan. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**



**Before**

<b>Location:</b> Henderson Street between Breazeale Ave and Martin Street
<b>Length:</b> ~700 feet
<b>Planning-Level Cost Estimate:</b> \$53,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install 5' sidewalks with a landscaped buffer on both sides of Henderson Street.</li> <li>• Install 5' bike lanes in both directions on Henderson Street.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• Pavement Striping @ \$3/linear foot.</li> <li>• Bike Lane Markings @ \$190/each.</li> <li>• Sidewalk @ \$34/linear foot.</li> <li>• Signage @ \$315/each.</li> </ul>



**After**



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### Project #12: Carver Cultural Center Pedestrian Access

In conjunction with an extension of sidewalks to the Carver Cultural Center (Project #13), this would provide pedestrian access for users of the Carver Cultural Center and nearby community facilities. Because of the speed and roadway characteristics, RRFBs are recommended for safe crossings. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**



**Before**

<b>Location:</b> Breazeale (US 117 Alt) Avenue at the Carver Cultural Center
<b>Length:</b> N/A
<b>Planning-Level Cost Estimate:</b> \$101,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install rectangular rapid flashing beacon (RRFB) on south leg of Breazeale Ave.</li> <li>• Install high-visibility crosswalks on south leg of Breazeale Ave and across the entrance to the Carver Center.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• RRFB @ \$23,500 each.</li> <li>• High Visibility Crosswalk @2,700 each.</li> <li>• Curb Ramp @ \$850 each.</li> </ul>



**After**



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### Project #1: Breazeale Avenue (US 117 Alt) at Henderson Street

This project would provide a safe crossing for pedestrians along both Breazeale Avenue and Henderson Street. The 300 feet of sidewalk on both sides of Breazeale would extend the existing network to better connect to Mount Olive University (via Henderson Street) and points of interest along NC 55. This project aligns with recommendations in the Mount Olive Comprehensive Transportation Plan. Project barriers include existing electric utilities on both sides of the roadway and water and sewer on the east side of the roadway.



**Location**



**Before**

<b>Location:</b> Intersection of Breazeale Ave and Henderson St
<b>Length:</b> ~300 Feet
<b>Planning-Level Cost Estimate:</b> \$56,000 <small>(does not include ROW acquisition or design costs)</small>
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install high-visibility crosswalks and pedestrian countdown signals on all four legs of the intersection.</li> <li>• Install sidewalks on both sides of Breazeale Avenue between Henderson Street and W Station Street, including ADA compliant curb ramps at each leg of intersection.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• High Visibility Crosswalk @ \$2,700 each.</li> <li>• Pedestrian Countdown Signals @ \$1,500 each.</li> <li>• Sidewalk @ \$34/linear foot.</li> <li>• Curb Ramps @ \$850 each.</li> </ul>



**After**

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### Project #30: Church Street Sidewalk

In alignment with the Mount Olive Comprehensive Transportation Plan, this project connects the North Church Street sidewalks by filling in a missing leg between East College Street and East Station Street. Four high-visibility crosswalks will allow for safe pedestrian crossing in all directions at the intersection of Church Street and College Street. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**



**Before**

<b>Location:</b> Church Street between E College Street and E Station Street
<b>Length:</b> ~500 feet
<b>Planning-Level Cost Estimate:</b> \$71,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install 5' sidewalks with a landscaped buffer on both sides of Church Street.</li> <li>• Install high-visibility crosswalks across north and south legs of Church Street at College Street intersection with yield to pedestrian signage based on engineering standards at the time of construction.</li> <li>• Install high-visibility crosswalks across east and west legs of Church and College intersection.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• Sidewalk @ \$34/linear foot.</li> <li>• High Visibility Crosswalk @ \$2,700 each.</li> <li>• Signage @ \$315 each.</li> <li>• Curb and gutter @ \$22/linear foot</li> </ul>



**After**



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### Project #28: NC 55 Sidewalks

The addition of a sidewalk on both sides of NC 55 from Henderson Street to Bert Martin Road provides a vital connection identified by both the Steering Committee and the community. This connection would allow students from University of Mount Olive and Town residents to safely walk to a major shopping center on the other side of US-117. This project aligns with recommendations in the Mount Olive Comprehensive Transportation Plan. Project barriers include existing electric utilities on both sides of roadway and the constrained space between the bridge pillars and embankment.



**Location**



**Before**

<b>Location:</b> NC 55 from Henderson Street to Bert Martin Road
<b>Length:</b> ~1300 feet
<b>Planning-Level Cost Estimate:</b> \$146,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install 5' sidewalks outside of existing ditch and swale on both sides of NC 55 and under the US 117 overpass.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• Sidewalk @ \$34/linear foot.</li> <li>• Sidewalk and retaining wall @ \$300/linear foot through underpass.</li> </ul>



**After**





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# 1 Introduction

The Town of Mount Olive Bicycle and Pedestrian Master Plan (“the Plan”) provides guidance for the Town, North Carolina Department of Transportation (NCDOT), and other local and regional stakeholders in developing improvements to its bicycle and pedestrian infrastructure, programs and policies. The Plan serves as a decision-making tool to assist leaders in prioritizing, funding, and implementing projects. The Town should evaluate and update this Plan over time.

## 1.1 Project Background

In 2017, NCDOT awarded the Town of Mount Olive a grant from its Bicycle and Pedestrian Planning Grant Initiative. Instituted in 2004, the grant encourages local communities to develop comprehensive bicycle plans and pedestrian plans. The program is open to all municipalities, as well as counties with populations of less than 50,000 in North Carolina. NCDOT’s Division of Bicycle and Pedestrian Transportation (DBPT) administers the program, and has allocated over \$5.5 million to over 200 North Carolina communities as of October 2018.

This plan is intended to provide a framework for identifying bicycle and pedestrian needs, both in terms of physical infrastructure and encouragement programs. The opportunities and challenges identified in this plan will match the content standards set by NCDOT DBPT regarding the Planning Grant Initiative. The project recommendations outlined in this document will be eligible for inclusion in local Comprehensive Transportation Plans (CTP) and project prioritization.

## 1.2 Project Goals & Objectives

The vision for this comprehensive bicycle and pedestrian plan is to improve non-automotive transportation that promotes healthy, active lifestyles for residents, university students, and visitors as part of a strategic effort to improve safety and revitalize downtown Mount Olive.

Building on this Vision, the Steering Committee adopted the following Goals and Objectives for the Plan:

1. Plan for an interconnected, safe, pedestrian network
2. Engage the public to identify possible barriers to non-automotive travel
3. Support “downtown as a destination” for bicycling and walking
4. Contribute to the sense of community and “hometown” feel of Mount Olive
5. Prioritize facility recommendations and identify potential funding sources.

This Plan heavily prioritizes public involvement in the planning process to identify potential barriers to walking and/or bicycling as well as opportunities to connect destinations that are important to the community. Additionally, this Plan builds upon the existing plans and documentation pertaining to the Town. Using these projects as a foundation for further analysis, this master plan will consolidate the existing work by the County, the ECRPO, and the State to continue building a more vibrant and livable Mount Olive.

### 1.3 Plan Components

This Plan assists the Town in moving from the planning stage into implementation. To do so, it establishes a clear purpose (Section 1), assesses current conditions (Section 2), recommends facility improvements (Section 3), includes program and policy recommendations (Section 4), and outlines a plan for implementation (Section 5). Appendices include a summary of facility types and guidelines, potential funding sources, proposed infrastructure projects, and public comments received by the project team.

#### 1.3.1 Why this Plan is Important

A walkable and bikeable community offers residents the choice of active transportation over traditional motorized transportation. Connecting existing facilities, limiting the physical and psychological barriers that may be preventing people from walking or cycling, and creating a more safe and appealing space for public interaction is the next step.

Through this Plan and its process, the Town hopes to:

- Promote a culture of active living through encouraging walking and cycling.
- Enhance access to local businesses, neighborhoods, parks, and schools.
- Emphasize the safety of pedestrians and cyclists while accommodating motorized traffic in an efficient manner.
- Create an aesthetically attractive environment that will appeal to residents and visitors.
- Develop a framework to update this Plan in the future.

In addition to the specific goals set forth, there is a spectrum of tangible benefits for a municipality that chooses to prioritize active transportation. These include, but are not limited to, accessibility to local destinations from residential neighborhoods, safer roads for residents as well as students, and a healthier, more active community.

#### 1.3.2 Accessibility

Improving accessibility to local destinations by foot or wheel and reducing the dependence of many residents on a motor vehicle is a top priority. To do this, many highly-trafficked corridors will need dedicated pedestrian and/or cyclist facilities installed along the roadside, and safety countermeasures will need to be installed for safe crossing locations. These will be especially important along, N Church Street, NC Highway 55, and S Breazeale Avenue (US 117 Alt). A detailed map of the existing bicycle and pedestrian facilities can be found in Figure 1.

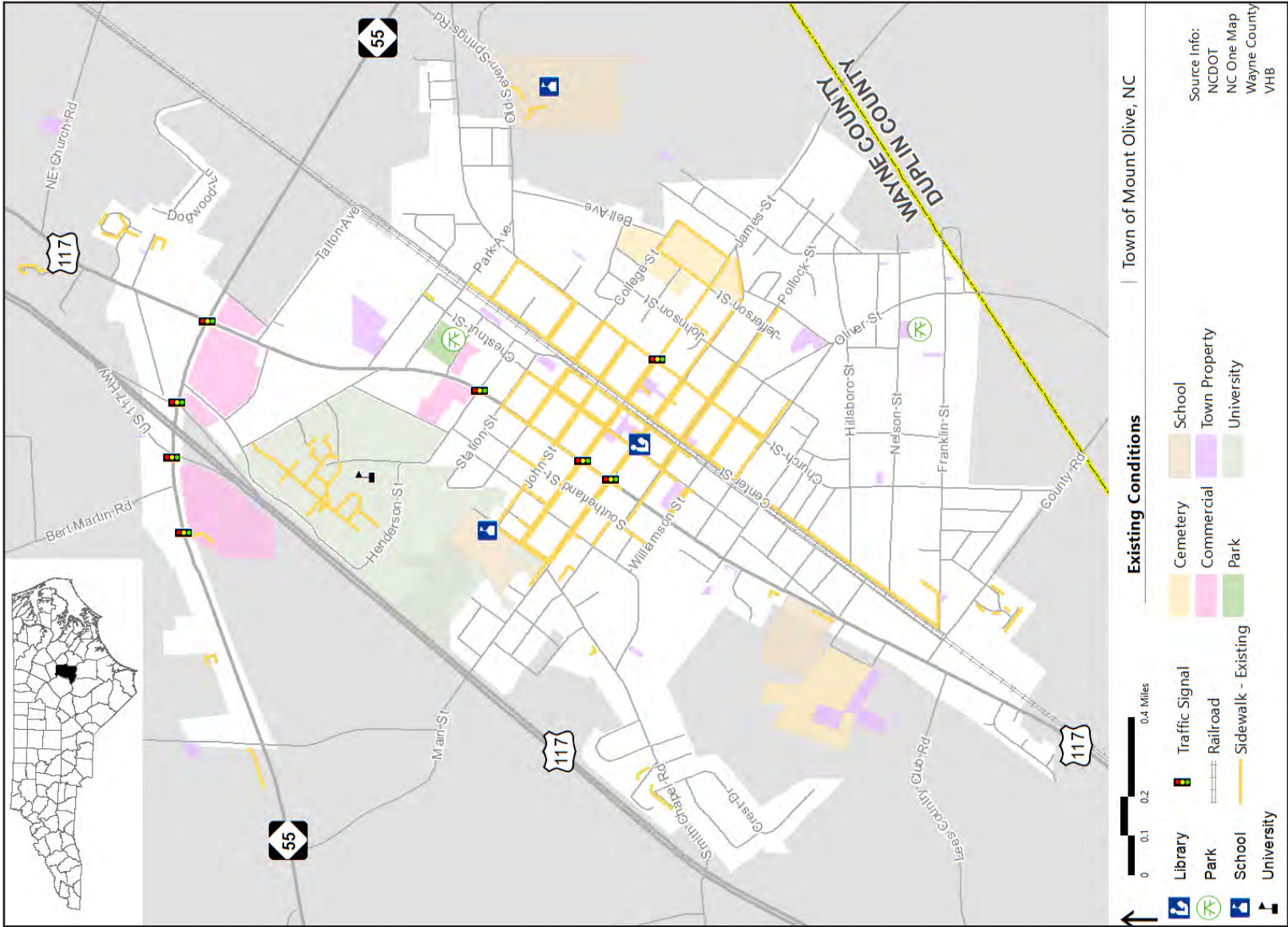


Figure 1. Existing Conditions

Many residential neighborhoods beyond the core of downtown lack dedicated sidewalk facilities. This is further complicated by physical constraints for new infrastructure, such as above-ground utilities, narrow rights-of-way, and roadside drainage ditches. An essential aspect of this Plan is providing dedicated corridors for pedestrians and cyclists to travel from their residences to downtown, parks, the University of Mount Olive, or the Steele Memorial library, without the need to walk or bike within the roadway



Figure 2. Example Town Roadway Infrastructure

### 1.3.3 Safety

From a national perspective, pedestrian and bicycle fatalities have increased both in number of fatalities and proportion of all traffic fatalities in recent years. Pedestrian fatalities in the United States rose by 12 percent from 2006 to 2015, even though total traffic fatalities declined nearly 18 percent during the same time period.<sup>1</sup> According to the Pedestrian and Bicycle Information Center (PBIC), 5,376 pedestrians and 818 bicyclists were killed in collisions with motor vehicles in the United States in 2015. These trends underscore the need for safety improvements to protect these vulnerable users through active safety-focused planning and programming.

Roadways that lack sidewalks indirectly encourage pedestrians to walk with vehicular traffic, leading to potentially unsafe conditions. Likewise, the absence of adequate crossing facilities along certain corridors within Mount Olive may force pedestrians to cross at unsafe intersections or mid-block locations. Bicycle and pedestrian facilities will provide easier and safer access to elderly, non-driving, and low-income residents in Mount Olive. Section 2.1.4 presents crashes within the Town of Mount Olive between 2007 and 2015.

According to the Walk Bike NC, North Carolina’s comprehensive plan for walking and bicycling (2012), investments in infrastructure can significantly improve pedestrian safety. The Statewide Ped/Bike Plan cites a 2008 Federal Highway Administration publication that suggests sidewalk installation results in a 65- to 89-percent reduction in pedestrian crashes.<sup>2</sup> The safety benefits reported not only include collisions with motor vehicles, but other types of injuries as well. Many injuries sustained by pedestrians and bicyclists do not involve a motor vehicle.<sup>3</sup> Sufficient infrastructure and routine maintenance help reduce many incidents of tripping or falling.





Figure 3. Example Town Intersections

### 1.3.4 Public Health

Choosing to walk or cycle for short trips to and from school, local parks, restaurants, retail stores, or even work is one of the best ways to lead a healthier lifestyle. The Centers for Disease Control and Prevention (CDC) recommends 150 minutes of moderate physical activity per week. Infrastructure and encouragement programs can directly support this physical activity goal.<sup>4</sup> Additionally, a 2010 study found that communities were more likely to achieve that activity goal and have lower incidences of diabetes and obesity if they tended to commute to work by bicycle or on foot.<sup>5</sup>

By connecting residences with desired destinations, residents feel empowered to walk and bike to complete daily activities for recreation. Social interactions between neighbors are another benefit of being more physically active. Steering Committee members discussed the importance of promoting an active, healthy lifestyle for the residents of Mount Olive. This not only contributes to a stronger sense of place, but it also instills civic pride and reinforces the perception that Mount Olive is a wonderfully unique place to live and work.

### 1.3.5 Economic Impacts

Walkability and bikeability can have a positive economic benefit to the local community through indirectly increasing property values, job creation, economic development, and tourism. A study by the NC DOT 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. Additionally, WalkBikeNC suggested that a one-time public investment of \$6.7 million in paths and paved shoulders along the Outer Banks has returned \$60 million in annual revenue from tourism and supported 1,400 jobs.<sup>6</sup> The Ecusta rails-to-trails project in Henderson County, North Carolina was estimated to potentially generate \$50 million in total benefit for the local community based on a \$13.4 million project cost.<sup>7</sup>

Investing in active transportation may also have indirect economic benefits of lowering health care costs, improving safety, and reducing congestion or improving commute times. These benefits stem from lower incidents of chronic disease, reduced injuries from crashes, and fewer vehicle miles driven.<sup>9</sup> For instance, the American Heart Association estimated that every \$1 spent on building bicycle and pedestrian trails could yield \$3 in savings on medical costs.<sup>10</sup> Additionally, the installation and maintenance of bicycle and pedestrian facilities in low-income areas will both increase access



to jobs and services for these residents and provide additional revenues for Mount Olive’s local merchants and economy. While these are not the most visible results of encouraging active transportation, they are essential in achieving the goal of making Mount Olive a more livable community for residents and students.



### 1.3.6 Environmental Benefits

Choosing an active transportation option rather than using a traditional vehicle—called mode shift—will reduce vehicular traffic along roadways and shift capacity to sidewalks or bicycle lanes. This moves toward a more efficient use of space in the transportation system. In addition to reduced roadway demand, this shift towards alternative transportation also reduces parking demand. Provision of parking is particularly important for downtowns and environmentally-sensitive areas where impervious surfaces generate the need to manage stormwater runoff. Travel mode shifts also indirectly improve air quality and reduce greenhouse gas emissions. According to the EPA, transportation accounts for roughly a quarter of all greenhouse gas emissions in the United States.<sup>11</sup> By allowing for walking or biking for short trips

or trip-chaining with public transportation instead of driving, walkable communities can help reduce the number of vehicular miles traveled, and, consequently, vehicular emissions.<sup>12</sup>

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## 1.4 Planning Process

This Plan involved direct input from local stakeholders, collection and synthesis of existing conditions data, and public outreach components. Each of these are described in more detail in this section.

### 1.4.1 Steering Committee

The project Steering Committee included residents, business owners, Town staff, Town police, University of Mount Olive, NCDOT, Wayne County, and the Eastern Carolina Rural Planning Organization (ECRPO). The Steering Committee met four (4) times throughout the planning process to discuss goals and objectives, review existing conditions, formulate draft recommendations, and review the Final Plan.

### 1.4.2 Data Collection, Analysis and Documentation

Using data collected from previous related projects, available GIS data, and historic and recent crash data, the project team documented and mapped existing conditions. This assessment also included field investigations to confirm physical conditions, photo-document the project area, and observe pedestrian, cyclist, and automobile behavior. The project team presented the existing conditions mapping, as well as preliminary findings and observations, to the Steering Committee and at public events in April 2018 and October 2018, respectively.

### 1.4.3 Plan Development & Public Involvement

The planning process began with a Kickoff Meeting on February 15, 2018 at the Mount Olive Train Depot. The 15-member Steering



Committee was asked to provide initial impressions of the active transportation environment in Mount Olive and what would help this plan to be successful. The need to make Mount Olive a supportive place for non-automotive mobility, promote healthy and active lifestyles, and support both students and residents was identified as essential to the success of this initiative. The initial Steering Committee Meeting was followed by two consecutive meetings held in May 2018 and July 2018.

In addition to the Steering Committee meetings, there were two public events in April 2018 and July 2018. At these events, the project team gathered observations of existing conditions and engaged the public to identify potential opportunities and obstacles within the Town. Based on these discussions, the project team determined priorities for future bicycle and pedestrian improvement projects and encouragement programs.

At the February 15, 2018 meeting, the project team presented existing conditions, goals and objectives. Attendees identified their typical destinations within Mount Olive, pointed out potentially unsafe locations for pedestrians and cyclists, and outlined areas for future improvements. At the May 31, 2018 meeting, the project team presented a draft of priority corridors, as well as project and policy recommendations, and sought feedback during a question, answer, and comment period. Appendix C provides summary documentation of the public comments and themes from this meeting.

In addition to public events, the project team conducted a 19-question survey to gather input from residents. The survey was available online and distributed by steering committee members and at public meetings. In total, 205 responses were collected through this nine-month survey.



After a review of the draft report and the project recommendations generated through public engagement and the planning process, a final Steering Committee meeting was conducted on March 14, 2019. Revisions to the plan were incorporated into the final plan. The completed plan was presented to the Town Council for adoption on June 3, 2019.

At the July 18, 2017 meeting, the project team presented existing conditions, goals and objectives. Attendees identified their typical destinations within Mount Olive, pointed out potentially unsafe locations for pedestrians, and outlined areas for future improvements. At the October 17, 2017 meeting, the project team presented a draft of priority corridors, as well as project and policy recommendations, and sought feedback during a question, answer, and comment period. Appendix C provides summary documentation of the public comments and themes from this meeting.



# 2 current Conditions

A Comprehensive Bicycle and Pedestrian Master Plan builds upon and enhances the existing network of sidewalks, paths, and roadway crossing infrastructure. An important first step is to accurately document the current conditions as a benchmark for moving forward.

## 2.1 Local Context

The Town of Mount Olive has nearly 5,000 residents, located in southern Wayne County, 15 miles south of Goldsboro. The Town is served by a network of highways with US Highway 117 and NC Highway 55, linking the town to Interstate 40 and the North Carolina Eastern Region’s Global TransPark. The town is located just south of Goldsboro, a Metropolitan Statistical Area which includes Seymour Johnson Air Force Base, and within an hour drive of both the beach and the capital city of Raleigh.

There are a wide variety of natural resources and attractions that make Mount Olive an active, healthy place to live and visit. The community supports two parks, Westbrook Park – with its one-of-a-kind Kids World Playground – and Nelson Street Park. Nature lovers enjoy the Cliffs of the Neuse State Park just 10 miles away. The town also features several events encouraging active living such as the Outlaw Foundation 5k, Cuke Patch 5k, Tour de Pickle, Tuna Run, “Get Your Bark On” dog walk & Family Fun Day, and Heart Walk. Mount Olive celebrates its agribusiness heritage with the NC Pickle Festival – one of the best-known festivals in the state, drawing 40,000 visitors each April.



The main industries in Mount Olive are manufacturing, educational services, and healthcare & social assistance. The Mount Olive Pickle Company is the major employer of the Town, with over 500 employees. Additionally, The University of Mount Olive is both an educational resource and employment center within the Town, annually graduating approximately 800 students and over 400 employees. Industries within Mount Olive employ over 3,000 people; the majority of which reside outside of the Town.

Mount Olive’s downtown street pattern is a highly organized, regularly spaced, urbanized grid. Commercial space is concentrated along Center Street, US Highway 117, and NC Highway 55, while residential is mainly on local streets (Figure 5). The town’s compact network facilitates an easy commute to shopping and business centers. US highway 117 is the main thoroughfare that connects Mount Olive with Goldsboro to the north. It is the most heavily trafficked road in the Town, carrying between 10,000 and 14,000 vehicles per day.

As of July 2018, Goldsboro Wayne Transit will provide Mount Olive with two local bus routes, one connecting Mount Olive with Goldsboro and another to circulate around Mount Olive hourly. The circulator provides residents and students without personal transportation access to major destinations within Mount Olive including Walmart, Carver Cultural Center, Mount Olive Pickle Company, Mount Olive Family Medicine Center, and many others. Fares are \$1 for the circulator, and \$3 for the Goldsboro/Mount Olive connector. Reduced fares are available for seniors and individuals with qualifying disabilities.





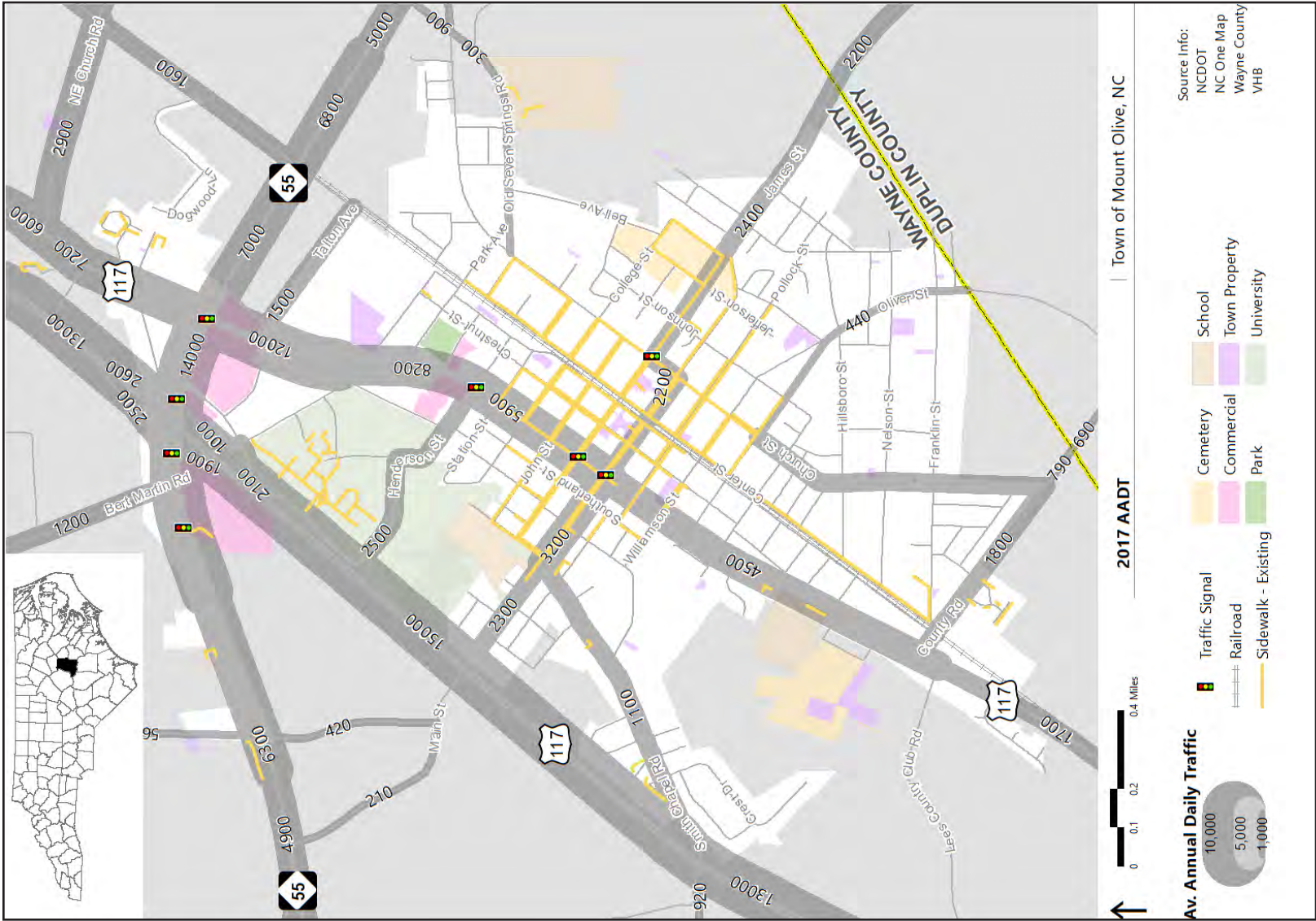


Figure 5. Existing Traffic Volumes

### 2.1.1 Demographics and Mode Share

Since local travel and commuting data is typically unavailable, the next best available dataset is the US Census Bureau’s American Community Survey (ACS) (Table 1). This dataset is a rolling five-year average, indicating that the latest year in the five-year window would only account for 20 percent of the data.

The median age of Mount Olive residents is below the State average (38.3) and much lower than many of its community peers. This is likely influenced by a portion of the 3,400 University of Mount Olive students who also reside in town. According to the 2012-2016 ACS 5 Year estimates, an estimated 6.2 percent of Mount Olive residents walk or bike to work, significantly higher than the State average. These data indicate the need for a system that supports the daily needs of the residents and students of Mount Olive.

### 2.1.2 Opportunities

Mount Olive is a thriving community with many recreation opportunities for its residents, students, and visitors. It also benefits from a dense, well connected street network that allows people to efficiently walk or cycle to their destinations. In addition to university and public parks, there are several popular destinations conveniently located for pedestrians and cyclists in the community (Figure 6). Attractions identified by the community of Mount Olive include:

- Westbrook Park
- Piggly Wiggly & Post Office along US 117Alt (Breazeale Avenue)
- Food Lion shopping center
- Walmart shopping center
- CresCom Bank

Table 1. Demographics Comparison

Location	Total Population	Median Household Income	Median Age	Zero-Vehicle Households	% Zero Vehicle Households	% Walk to Work	% Bike to Work
Mount Olive	4,734	26,099	36.2	367	7.8%	2.2%	4.0%
Pembroke	3,008	17,147	28.1	209	6.9%	1.7%	3.2%
Smithfield	11,746	33,415	44.7	552	4.7%	0.0%	1.7%
La Grange	2,753	27,976	52.3	181	6.6%	0.0%	6.3%
Dunn	9,762	29,552	43.6	643	6.6%	0.1%	1.5%
Clinton	8,799	29,432	39.8	468	5.3%	0.2%	0.8%
Kinston	21,393	31,030	44.2	1,756	8.2%	0.4%	3.5%
North Carolina	9,940,828	48,256	38.3	240,158	6%	0.2%	1.8%

\*Based on the 2012-2016 ACS 5-Year estimates. The ACS uses sample data to estimate these figures. Only trips to work are considered in ACS survey data.



- Center Street/Downtown
- Carver Cultural Center
- Martial Arts Center
- Nelson Street Park
- Jogging path along Talton Avenue
- Maplewood Cemetery

### EXISTING SIDEWALK NETWORK

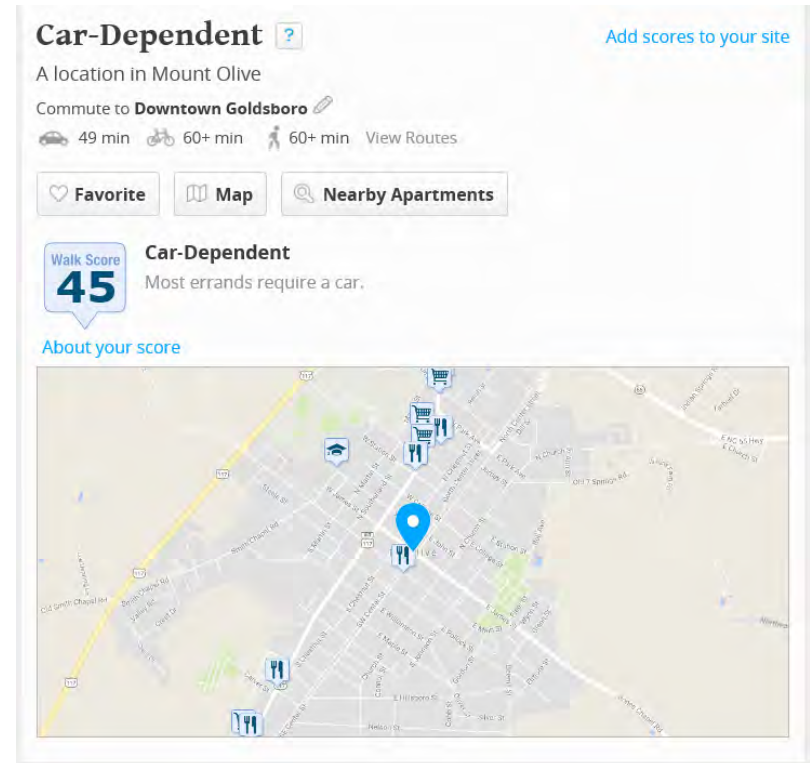
Mount Olive’s existing sidewalk network includes the majority of downtown as well as surrounding neighborhood streets, allowing residents to safely access the commercial areas in downtown. While the network is in place, there is a great need for both maintenance and expansion of the network to connect more destinations. Many safety concerns identified by the community are on streets with ineffective sidewalks.

### DENSE & WALKABLE STREET GRID

The urban form of Mount Olive is ideal for creating efficient connections between origins and destinations. The direct, dense grid pattern of streets is more conducive to bicycle and pedestrian travel than a more curvilinear street network and block design.

Walk Score is an online service that provides measures of walkability and search tools for apartments and retail businesses. Walk Score helps people find walkable places to live. Mount Olive has a Walk Score of 45 ([www.walkscore.com](http://www.walkscore.com)), with above average scores for proximity to errands and culture/entertainment venues (Figure 7). This score indicates a community that has some walkable assets, but there are opportunities to improve connectivity between destinations like parks, schools, shopping, and dining locations. While the Town is currently identified as Car-Dependent, the compact urban form provides a clear opportunity to increase the walkability and bikeability of Mount Olive.

Figure 6. Mount Olive Walk Score 2018



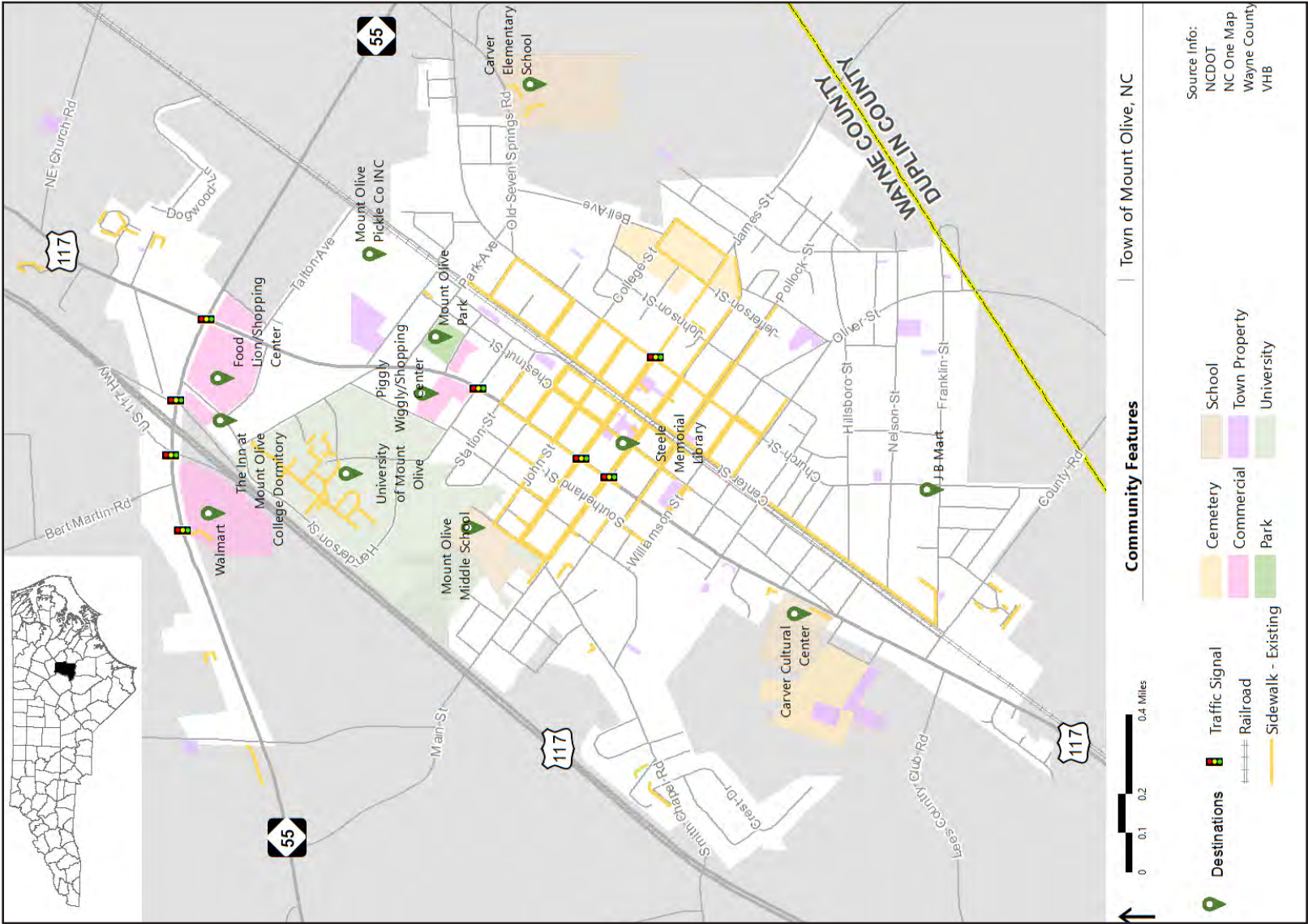


Figure 7. Community Features and Destinations

### 2.1.3 Challenges

Some of the challenges to improving the bicycle and pedestrian network in Mount Olive include:

- Automobile-oriented development along US Hwy 117 and NC Hwy 55
- A sporadic sidewalk system
- Main thoroughfares between major destinations: example being US Hwy 117 between University of Mount Olive and Walmart.
- Significant truck traffic from Mount Olive Pickle Company, Butterball, and Georgia Pacific logging.
- Land use availability, required easements, encroachments, safety concerns, manpower, and funding are major obstacles

### 2.1.4 Crash Data

The NCDOT Division of Bicycle and Pedestrian Transportation (DBPT) provides a database of Bicycle and Pedestrian crashes that have occurred between 2007 and 2015 for the entire state. These data are maintained by the University of North Carolina’s Highway Safety Research Center, which locates crashes and inputs the available data from police department crash reports and supplemental roadway information. This statewide resource is valuable to bicycle and pedestrian initiatives such as this Plan. Figure 8 indicates that 18 reported pedestrian and bicycle crashes occurred in Mount Olive between 2007 and 2015.

The police crash reports provide additional detail on the circumstances surrounding the crashes. Analyzing the data helps identify contributing factors and common trends in the crashes. These findings inform decision-makers to consider projects that will target specific contributing factors and trends with the goal to

reduce the severity and number of crashes in the future. Table 2 presents a summary of the pedestrian and bicycle crash data.

The crash data analysis resulted in the following:

- The two crashes that resulted in death were on four and five-lane roads (Country Club Road and (Breazeale Ave/Hwy 117A, respectively)
- Majority of crashes involving cyclists occurred on roads identified by stakeholders as safety concerns





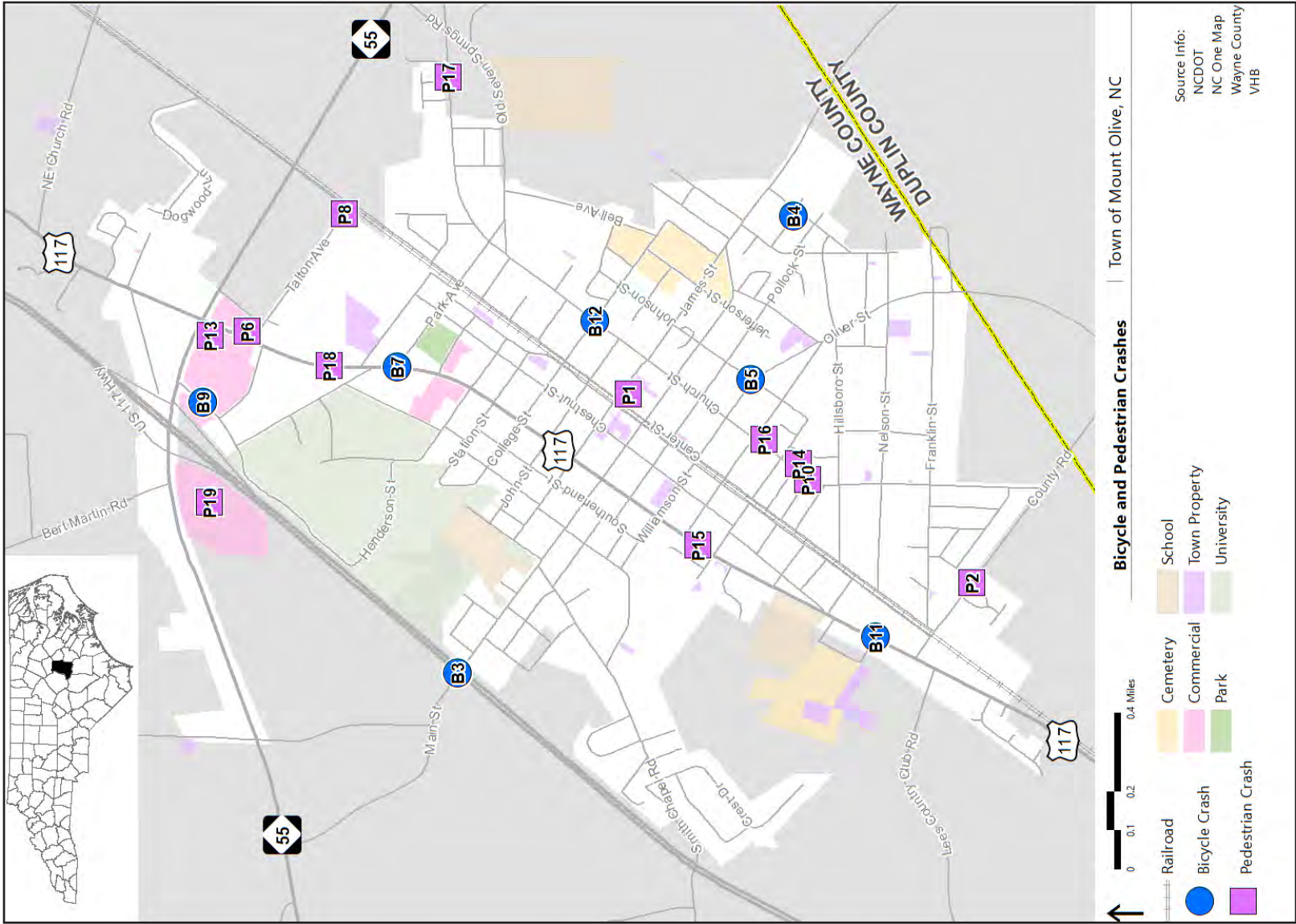


Figure 8. Pedestrian and Bicycle Crashes (2007 - 2015)



Table 2. Pedestrian Crash Data Summary (2007-2015)

ID*	Month	Year	Severity	Location	Light Conditions	Crash Type
1	April	2008	B: Evident Injury	Travel Lane	Daylight	Motorist Drive Out—Sign-Controlled Intersection
2	May	2008	C: Possible Injury	Non-Roadway	Daylight	Bicyclist Ride Out – Other Midblock
3	May	2008	C: Possible Injury	Travel Lane	Daylight	Motorist Overtaking—Other / Unknown
4	April	2011	C: Possible Injury	Travel Lane	Daylight	Bicycle Ride Out—Sign-Controlled Intersection
5	February	2012	C: Possible Injury	Travel Lane	Dark—Lighted Road	Motorist Left Turn—Opposite Direction
6	February	2012	C: Possible Injury	Bike Lane / Paved Shoulder	Daylight	Motorist Lost Control—Other/Unknown
7	April	2012	B: Evident Injury	Travel Lane	Daylight	Bicyclist Ride Through—Sign-Controlled Intersection
8	October	2007	O: No Injury	Non-Roadway	Dark—Lighted Road	Backing Vehicle—Parking Lot
9	March	2008	K: Fatality	Intersection	Dark—Lighted Road	Pedestrian Failed to Yield
10	April	2010	C: Possible Injury	Non-Roadway	Daylight	Off Roadway—Parking Lot
11	February	2012	B: Evident Injury	Intersection	Daylight	Intersection—Other/Unknown
12	December	2012	B: Evident Injury	Non-Intersection	Daylight	Assault with Vehicle
13	January	2012	A: Disabling Injury	Non-Intersection	Dark—Roadway Not Lighted	Walking Along Roadway With Traffic—From Behind
14	September	2012	B: Evident Injury	Non-Roadway	Daylight	Off Roadway—Parking Lot
15	August	2013	C: Possible Injury	Non-Intersection	Daylight	Assault with Vehicle
16	May	2013	B: Evident Injury	Non-Intersection	Dark—Roadway Not Lighted	Walking in Roadway
17	March	2014	Unknown Injury	Intersection-Related	Dark—Roadway Not Lighted	Dispute-Related
18	July	2014	K: Fatality	Non-Intersection	Dawn	Dash

\*corresponds to Figure 8 labels

## 2.2 Public Input

Public input from the residents of Mount Olive supplemented the quantitative data gathered by the project team. The public had the opportunity to provide input at two public events, as well as through the public survey. This section summarizes the findings from these comments.

### 2.2.1 Public Comments on Current Conditions

The project team asked Mount Olive residents to describe their impressions of the bicycle and pedestrian network in the community. These prompts included where they felt barriers to walking or cycling and where they saw opportunities to improve the Town’s accommodation of pedestrians and cyclists. At public events, residents showed the project team where they currently walked or cycled in the community and where they would like to go if there were fewer barriers to pedestrians and cyclists.

In March 2018, a survey was posted online and spread by the project team and steering committee members. In total, 205 responses were collected through this nine-month survey. The volume of responses and interest in the project indicate that residents in Mount Olive have a tremendous desire to actively participate in their community.

Respondents to the public survey highlighted slightly negative view of the current bicycle and pedestrian infrastructure in Mount Olive. Half of respondents found the pedestrian infrastructure to be “Very Poor” or “Poor.” While most respondents did not answer the companion question on bicycle infrastructure, respondents rated the Town’s existing bicycling infrastructure as “Fair” at 21% and “Poor” to “Very Poor” at 19% (Figure 9 and Figure 10).

The Mount Olive community expressed a strong desire to improve pedestrian safety and connectivity. Many residents are willing to be more active with the support of well-lit, maintained, and connected infrastructure that features crosswalks and signals to support crossing roadways (Figure 11). This Plan makes recommendations for facilities and programs that will enable the Town staff and the residents of Mount Olive to realize their combined vision of a more active, healthy, and social community.

### 2.2.2 Public Survey Results

The following charts summarize the results of the public survey, which was open between March and November 2018.



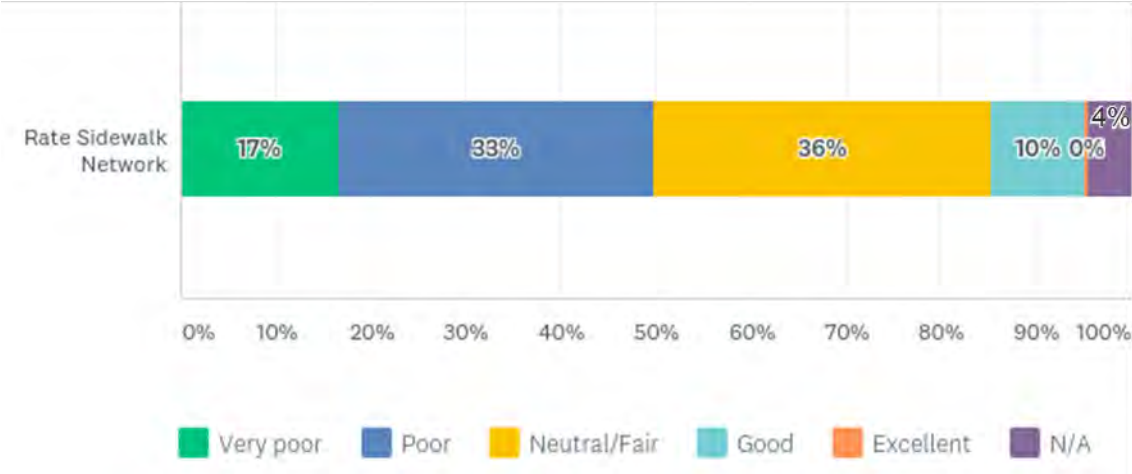


Figure 9. Public Rating of the Existing Pedestrian Network

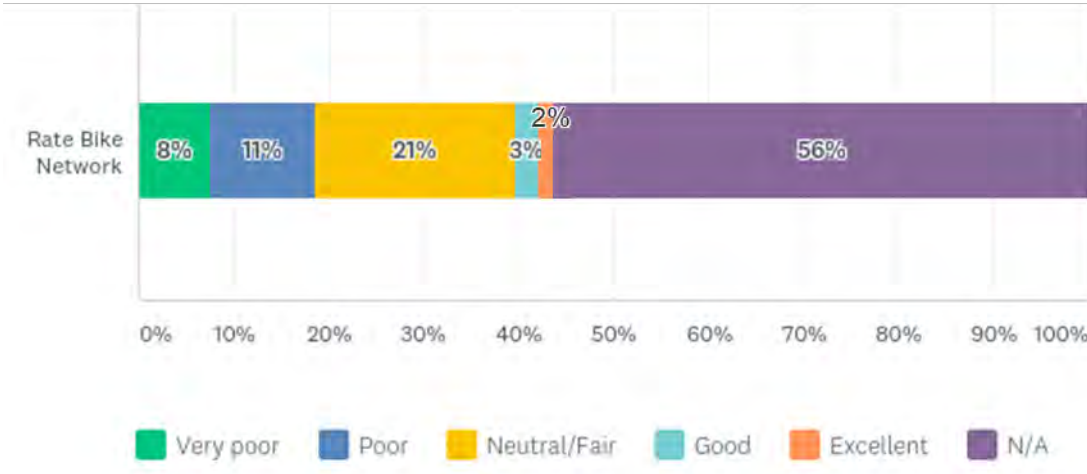
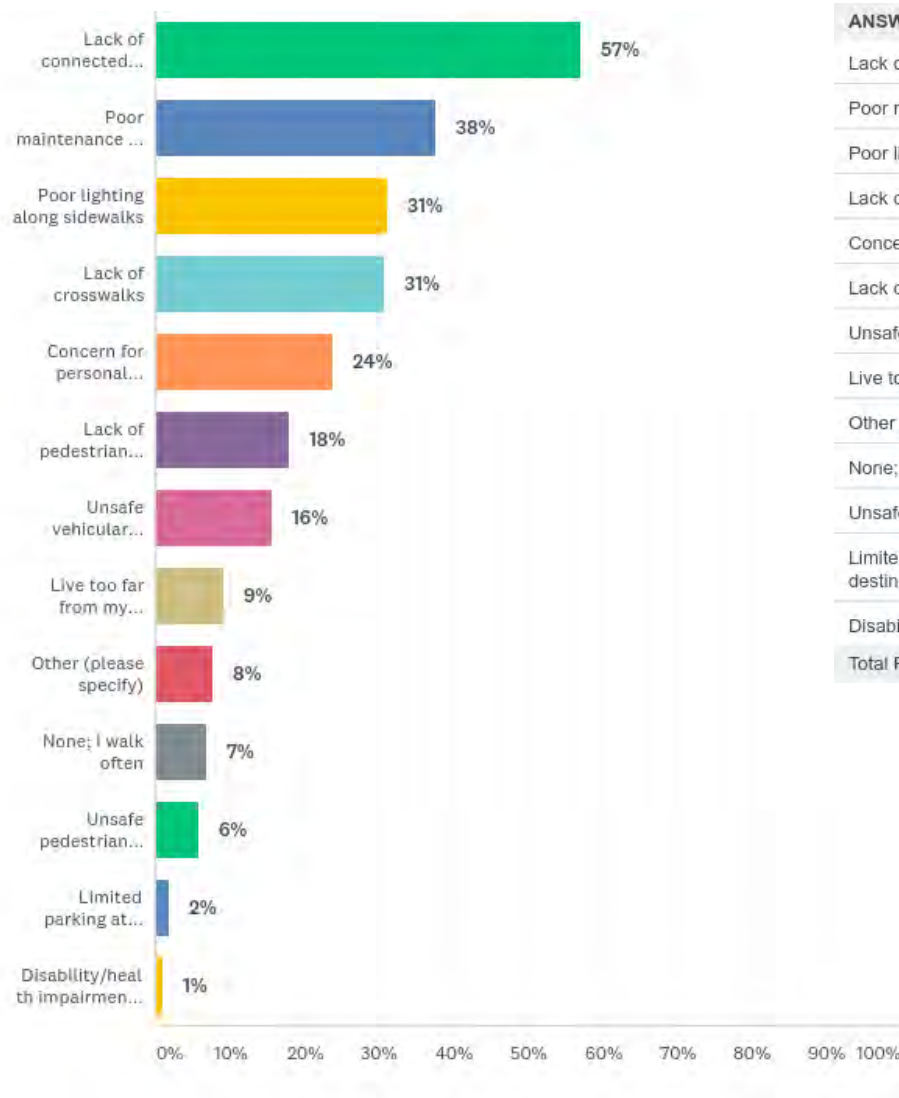


Figure 10. Public Rating of the Existing Bicycle Network



ANSWER CHOICES	RESPONSES	
Lack of connected sidewalks	57%	117
Poor maintenance of sidewalks (cracked, separated, or overgrown)	38%	77
Poor lighting along sidewalks	31%	64
Lack of crosswalks	31%	63
Concern for personal safety/security	24%	49
Lack of pedestrian signals at roadway crossings	18%	37
Unsafe vehicular traffic/speed	16%	32
Live too far from my favorite destinations	9%	19
Other (please specify)	8%	16
None; I walk often	7%	14
Unsafe pedestrian crosswalk locations	6%	12
Limited parking at convenient, centralized location (park and walk to multiple destinations)	2%	4
Disability/health impairment (too few accommodations)	1%	2
Total Respondents: 205		

Figure 11. Noted Barriers to Walking and Biking



## 2.3 Existing Institutional Framework

Mount Olive falls within Wayne County, and it is under the planning purview of the ECRPO. Many of the infrastructure projects undertaken in the Town, particularly those related to NCDOT initiatives, are planned through the inter-related Town, County, and ECRPO planning processes. Section 2.4 outlines the most recent and relevant plans guiding planning in Mount Olive.

The Town of Mount Olive Zoning Ordinance governs development within the town limits.<sup>1</sup> This document provides regulations and minimum requirements for sidewalks and other pedestrian infrastructure, including minimum dimensions, site design, and street trees. Section 4 of this Plan provides a more detailed analysis of existing policies.

## 2.4 Related Plans and Initiatives

In preparation of this Plan, the project team reviewed relevant past plans developed by the Town and other similar agencies. This section summarizes the important information in those plans.

### **NCDOT STATE TRANSPORTATION IMPROVEMENT PROGRAM (STIP) (2018)**

The NCDOT's STIP lists one roadway improvement project to the southwest of Mount Olive. STIP R-5818 is a Division-level project that involves construction of a new route and interchange from SR 1144 (Lee's Country Club Road) to SR 1147 (Old Smith Chapel Road). Right-of-way is scheduled for acquisition in 2024 with construction beginning in 2026.

### **2040 GOLDSBORO METROPOLITAN TRANSPORTATION PLAN UPDATE (2014)**

The Goldsboro Metropolitan Planning Organization (GMPO) is the agency responsible for metropolitan planning in Wayne County, and it is enveloped by ECRPO. The metropolitan transportation plan (MTP) is the federally-mandated long-range transportation plan required under the MAP-21 law. Unlike the comprehensive transportation plan, the MTP must be fiscally constrained for projects listed in the Plan to be considered in the State Transportation Improvement Plan (STIP) for federal funding. The 2040 plan proposed paved shoulders along US 117 from Old Mt. Olive Highway in southern Goldsboro to Parker Road in Mount Olive to service the bicycling population and as a pedestrian facility where none were present.<sup>2</sup>

### **MOUNT OLIVE COMPREHENSIVE TRANSPORTATION PLAN (2014)**

The Mount Olive Comprehensive Transportation Plan (CTP) is a comprehensive list of projects that the city would ideally pursue without fiscal and resource constraints.<sup>3</sup> Projects proposed within Mount Olive included construction of numerous sidewalks to the north, south, and west of the downtown core, multi-use paths, and on-road bicycle facilities. The on-road bicycle facilities are intended to reflect American Association of State Highway and Transportation Officials (AASHTO) dimensions, including:

- Curb & gutter sections require minimum 5-foot bike lanes or 14-foot wide shoulder lanes.
- Shoulder sections require a minimum of 4-foot paved shoulder.
- All bridges along the roadways where bike facilities are recommended shall be equipped with 54-inch railings.

## **WAYNE COUNTY DRAFT COMPREHENSIVE TRANSPORTATION PLAN (2016)**

The Wayne Comprehensive Draft Transportation Plan (CTP) is a comprehensive list of projects that the County would ideally pursue without fiscal and resource constraints. The projects listed in the MTP are included in the CTP, as are the pedestrian and bicycle projects from the Mount Olive CTP.<sup>4</sup> Relevant proposed projects in addition to the town’s CTP include the connection of on-road bicycle facilities (i.e. paved shoulders) on Mt. Olive Highway from the municipal boundary north to Goldsboro.

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# 3 Recommended Facilities

This section outlines the infrastructure recommendations intended to promote the development of a coherent and navigable network for a sustainable active transportation network. It also outlines the planning process and bicycle/pedestrian facilities available to the Town, as well as provides guidance for planning and implementation.



## 3.1 Overview

Input from the public and Steering Committee assisted in prioritizing the most important opportunities for the Town, and determined the most relevant projects to meet the Town’s near-term needs. These recommendations will serve to enhance an already active community that can safely and conveniently access its daily and recreational needs.

## 3.2 Key Inputs for Recommendations

The Town has many opportunities to encourage active transportation. With a variety of activities within a small downtown, Mount Olive is a natural hub of recreation and social activity, encouraging people, both residents and students alike, to go outside and interact in community spaces. A critical guiding principle in developing recommendations was the need to build an everyday network for residents, not just for students. As the Plan developed, other vital design principles were incorporated for the final recommendations, including creating:

- An aesthetically appealing network and develop a sense of Mount Olive as a community.
- Safe crossings, particularly along Breazeale Ave (US Hwy 117), Church Street, and NC Hwy 55, to encourage people to move more comfortably through the Town.
- Recommendations that target driver behavior as well as bicycle and pedestrian behavior and make drivers more aware of their responsibility to share the roadway.

Qualitative data like these observations supplemented the existing quantitative data to shape the type and location of facility recommendations. They provided the foundation for the prioritization methodology utilized by the project team when ranking potential facility recommendations.

### 3.3 Priority Corridors

Priority corridors are the framework around which individual project recommendations were developed. These serve as the trunk of the network, with secondary corridors branching out and filling in neighborhood communities. Priority corridors (purple lines on Figure 12) represent the most direct routes between residents and desired destinations and were identified as having conditions suitable for near-term facility construction. Secondary corridors (yellow lines) support the primary corridors, though they may not form a complete network. These are the corridors future iterations of the Mount Olive Bicycle and Pedestrian Plan should consider for improvement.





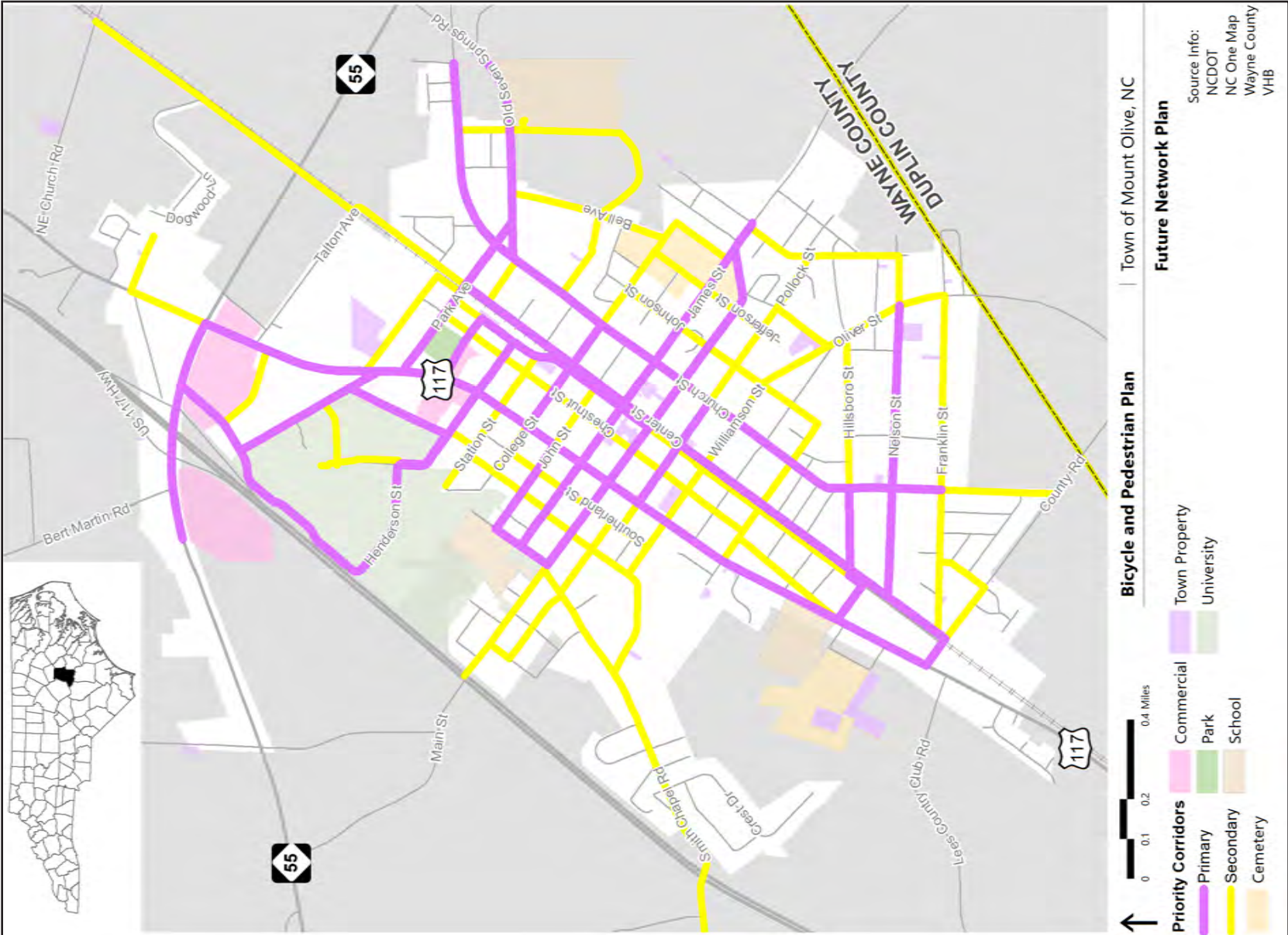


Figure 12. Priority Corridors

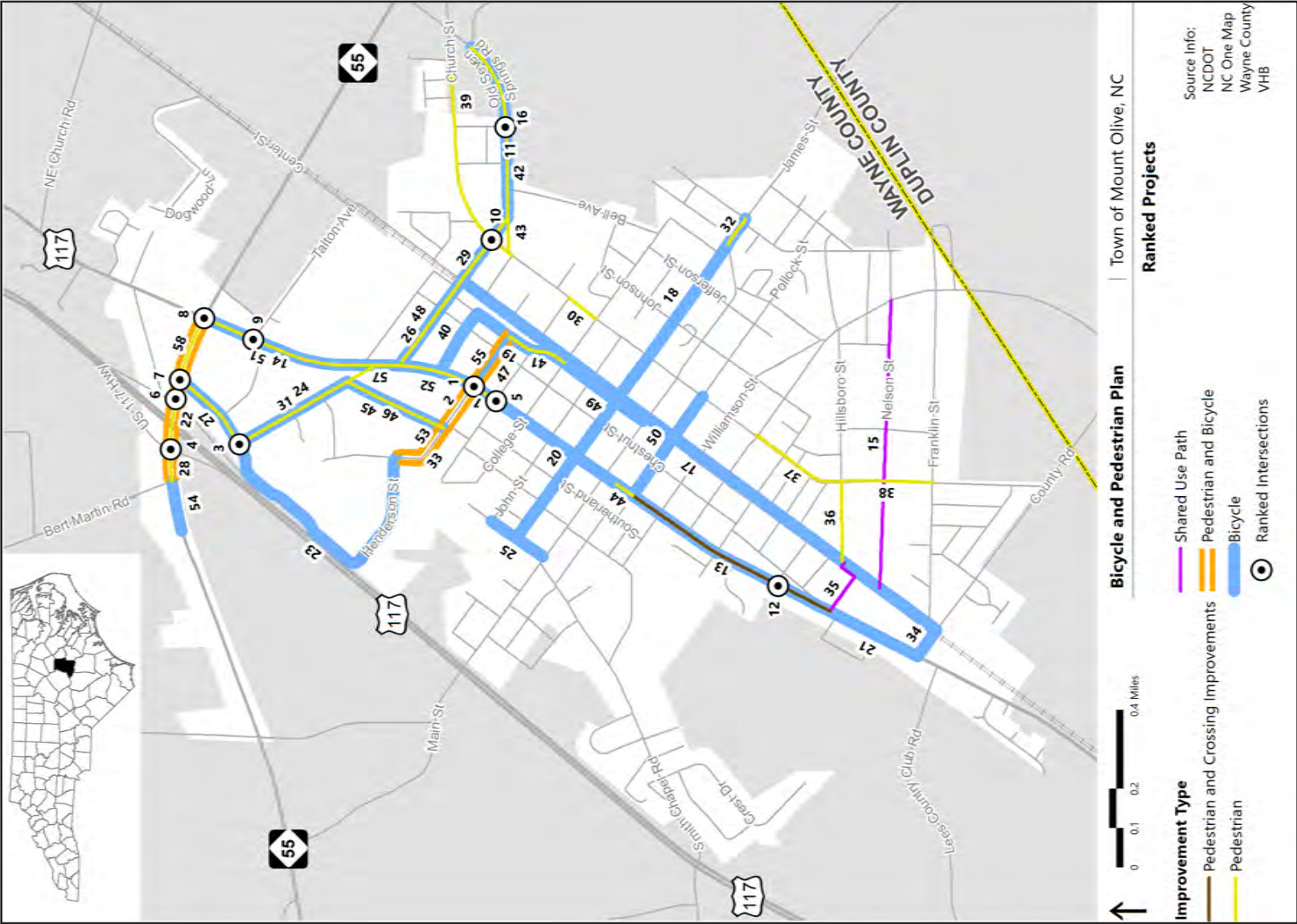


Figure 13. Facility Recommendations Map

### 3.4 Facility Recommendations

This section outlines the final list of recommended infrastructure projects. These projects have been scored and ranked according to a set of evaluation criteria described in the following section. Figure 13 maps these projects and Table 3 provides additional

project details. The project team applied an iterative process involving stakeholder direction, geographic distribution, significant destinations, the existing bicycle and pedestrian network, and priority corridors to identify these projects.

Table 3. Facility Recommendations Table

Project ID	Project Type	Project Location	From	To	Project Length (feet)	Improvement Description	Planning Level Cost
1	Intersection	US 117 ALT @ Henderson St			N/A	Crossing improvements and sidewalks	\$56,000
2	Corridor	Henderson Street	Martin St	US 117 Alt	687	Sidewalk & Bike Lanes	\$53,000
3	Intersection	Henderson St @ Bert Martin Rd			N/A	Crossing improvements	\$5,000
4	Intersection	NC 55 at US 117 southbound ramps			N/A	Crossing improvements	\$5,000
5	Intersection	US 117 ALT @ W Station St			N/A	Crossing improvements	\$19,000
6	Intersection	NC 55 at US 117 northbound ramps			N/A	Crossing improvements	\$5,000
7	Intersection	Henderson Street @ NC 55			N/A	Crossing improvements	\$26,000
8	Intersection	US 117 ALT @ NC 55			N/A	Crossing improvements	\$31,000
9	Intersection	US 117 ALT @ Talton St			N/A	Crossing improvements	\$22,000
10	Intersection	E Park St @ N Church St			N/A	Crossing improvements	\$16,000
11	Intersection	Old 7 Springs Rd @ Francis St			N/A	Crossing improvements	\$8,000
12	Intersection	RRFB at Carver Cultural Center			N/A	RRFB and Intersection improvements	\$101,000
13	Corridor	Breazeale Ave US117 Alt	Herring St	Pollock St	3,074	Sidewalk with four way intersection treatment	\$224,000
14	Corridor	Breazeale Ave US117 Alt	Witherington St	NC 55	2,263	Sidewalk	\$166,000
15	Corridor	Nelson Street	Center St	Oliver St	3,866	Shared Use Path	\$352,000



Project ID	Project Type	Project Location	From	To	Project Length (feet)	Improvement Description	Planning Level Cost
16	Corridor	E Park Avenue	Church St	Old Seven Springs Rd	368	Shared Lane Marking	\$6,000
17	Corridor	Center Street	County Rd	Park Ave	7,912	Shared Lane Marking	\$12,000
18	Corridor	E James Street	E Main St	Glenn St	412	Shared Lane Marking	\$5,000
19	Corridor	Center Street	College St	Westbrook St	1,438	Shared Lane Marking	\$2,000
20	Corridor	W James Street	Wooten St	Center St	2,344	Shared Lane Marking	\$4,000
21	Corridor	Breazeale Ave US117 Alt	County Rd	W Station St	6,627	Shared Lane Marking	\$10,000
22	Corridor	NC Hwy 55	US 117	US 117 Alt	1,474	Sidewalk & Separated Bike Lanes	\$277,000
23	Corridor	Henderson Street	Bert Martin Rd	NC 55	1,177	Shared Lane Marking	\$8,000
24	Corridor	Bert Martin Road	Martin St	Henderson St	1,678	Shared Lane Marking	\$3,000
25	Corridor	Wooten Street	Main St	John St	835	Shared Lane Marking	\$1,000
26	Corridor	W Park Avenue	Chestnut St	Center St	477	Sidewalk	\$161,000
27	Corridor	Henderson Street	Bert Martin Rd	NC 55	1,176	Sidewalk (one side)	\$68,000
28	Corridor	NC Hwy 55	Bert Martin Rd	Henderson St	1,374	Sidewalk and retaining walls under overpass	\$146,000
29	Corridor	E Park Avenue	Church St	Old Seven Springs Rd	368	Sidewalk (one side)	\$60,000
30	Corridor	N Church Street	E College St	E Station St	465	Sidewalk	\$50,000
31	Corridor	Bert Martin Road	Martin St	Henderson St	1,678	Sidewalk (one side)	\$120,000
32	Corridor	E James Street	E Main St	Glenn St	412	Sidewalk (one side)	\$26,000
33	Corridor	Henderson Street	James B Hunt Dr	Martin St	791	Sidewalk & Bike Lanes	\$62,000
34	Corridor	County Road	US 117 Alt	Center St	436	Shared Lane Marking	\$1,000
35	Corridor	Center Street	Herring St	S Center St	295	Shared Use Path	\$102,000
36	Corridor	Hillsboro Street	Center St	Church St	1,079	Sidewalk (one side)	\$38,000
37	Corridor	Church Street	Hillsboro St	Maple St	1,342	Sidewalk	\$154,000
38	Corridor	Church Street	Franklin St	Hillsboro St	1,228	Sidewalk (one side)	\$71,000
39	Corridor	N Church Street	Journey St	Cook Ln	2,888	Sidewalk (one side)	\$167,000

Project ID	Project Type	Project Location	From	To	Project Length (feet)	Improvement Description	Planning Level Cost
40	Corridor	Westbrook Street	US 117 Alt	Center St	937	Shared Lane Marking	\$1,000
41	Corridor	Center Street	College St	Henderson St	831	Sidewalk	\$58,000
42	Corridor	Old Seven Springs Road	Park Ave	Wilkins Farm Rd	2,341	Sidewalk (one side)	\$132,000
43	Corridor	Old Seven Springs Road	Church St	Park Ave	553	Sidewalk (one side)	\$32,000
44	Corridor	Breazeale Ave US117 Alt	Pollock St	Main St	270	Sidewalk (one side)	\$16,000
45	Corridor	Martin Street	Henderson St	Bert Martin Rd	1,438	Shared Lane Marking	\$2,000
46	Corridor	Martin Street	Henderson St	Bert Martin Rd	1,438	Sidewalk (one side)	\$82,000
47	Corridor	Henderson Street	US 117 Alt	Center St	820	Shared Lane Marking	\$1,000
48	Corridor	W Park Avenue	Chestnut St	Center St	477	Shared Lane Marking	\$2,000
49	Corridor	Center Street	Main St	John St	891	Shared Lane Marking	\$2,000
50	Corridor	Pollock Street	US 117 Alt	Church St	1,633	Shared Lane Marking	\$2,000
51	Corridor	Breazeale Ave US117 Alt	Witherington St	NC 55	2,244	Bike Lanes	\$18,000
52	Corridor	Breazeale Ave US117 Alt	Station St	Witherington St	1,895	Bike Lanes	\$15,000
53	Corridor	Henderson Street	James B Hunt Dr	US 117 Alt	1,594	Sidewalk & Bike Lanes	\$123,000
54	Corridor	NC Hwy 55	NC 55	Bert Martin Rd	685	Separated Bike Lanes	\$6,000
55	Corridor	Henderson Street	US 117 Alt	Center St	820	Sidewalk & Bike Lanes	\$62,000
57	Corridor	Breazeale Ave US117 Alt	Station St	Witherington St	1,875	Sidewalk	\$126,000
58	Corridor	NC Hwy 55	Henderson St	US 117 Alt	894	Sidewalk	\$60,000

### 3.4.1 Evaluation Criteria

The project team identified evaluation criteria for ranking projects during Steering Committee #3. The criteria and weighting were developed through a Steering Committee discussion of the advantages and disadvantages of various quantitative and qualitative methodologies combined with reflection on the Town’s preferred process. The project team and Steering Committee modified the methodology to include seven categories.

The project team and Steering Committee weighted each category according to the priorities and goals of the community. More important factors received a score of 10, while less important factors received 5. This allowed a maximum of 47 available points for a potential project (Table 4).



Table 4. Evaluation Criteria

Goal	Objective	Priority – Weight (Max Score)
<b>Safety</b>	Prioritize projects that address an existing safety issue, including past pedestrian and bicycle crashes and locations identified as unsafe during public engagement	High – 10 points
<b>Funding</b>	Composite score that attempts to emulate the SPOT process and weighting of variables among projects in this plan within the Town of Mount Olive only: safety, connectivity, accessibility, and population density	High – 10 points
<b>Accessibility</b>	Prioritize facilities within ¼ mile of an identified local community resource	High – 10 points
<b>Implementation</b>	Prioritize projects identified in previous plans	Medium – 5 points
<b>Connectivity</b>	Prioritize extension of an existing sidewalk/shared-use path network (within approximately 300’) to existing neighborhoods	Medium – 5 points
<b>Cost</b>	Relative project planning level cost compared to other identified projects	Medium – 5 points
<b>Bonus</b>	Provision of points for projects within corridors that are scheduled for roadway resurfacing	Low – 2 points



### 3.4.2 Project Scoring

Table 5 represents the project evaluation results ranked in descending order of highest to lowest score. It should be noted that these rankings are merely a guide for future planning considerations and not necessarily the exact sequence for implementation. The efficacy of certain projects may be contingent on the implementation of other planned recommendations. Due to the scoring criteria, some projects have tied for rankings.

Project scoring revealed the following insights

- Projects that complete or extend the existing pedestrian network scored higher
- Intersection treatments at intersections with sensitive populations and safety concerns received higher marks

Table 5. Evaluation Results

ID	Type	Name	Improvement Description	Planning Level Cost	Score	Rank
21	Corridor	Breazeale Ave US117 Alt	Shared Lane Marking	\$10,000	38.8	1
51	Corridor	Breazeale Ave US117 Alt	Bike Lanes	\$18,000	38.4	2
13	Corridor	Breazeale Ave US117 Alt	Sidewalk with four way intersection treatment	\$224,000	37.5	3
2	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$53,000	37.1	4
1	Intersection	US 117 ALT @ Henderson St	Crossing improvements and sidewalks	\$56,000	37.1	4
14	Corridor	Breazeale Ave US117 Alt	Sidewalk	\$166,000	35.9	6
12	Intersection	RRFB at Carver Cultural Center	RRFB and intersection improvements	\$101,000	35.5	7
30	Corridor	N Church Street	Sidewalk	\$50,000	35.1	8
41	Corridor	Center Street	Sidewalk	\$58,000	35.1	8
37	Corridor	Church Street	Sidewalk	\$154,000	34.7	10
22	Corridor	NC Hwy 55	Sidewalk & Separated Bike Lanes	\$277,000	34.4	11
27	Corridor	Henderson Street	Sidewalk (one side)	\$68,000	34.4	11
28	Corridor	NC Hwy 55	Sidewalk and retaining walls under overpass	\$146,000	34.4	11
5	Intersection	US 117 ALT @ W Station St	Crossing improvements	\$19,000	33.9	14
23	Corridor	Henderson Street	Shared Lane Marking	\$8,000	33.6	15

ID	Type	Name	Improvement Description	Planning Level Cost	Score	Rank
39	Corridor	N Church Street	Sidewalk (one side)	\$167,000	33.1	16
16	Corridor	E Park Avenue	Shared Lane Marking	\$6,000	31.6	17
58	Corridor	NC Hwy 55	Sidewalk	\$60,000	31.6	17
18	Corridor	E James Street	Shared Lane Marking	\$5,000	30.4	19
19	Corridor	Center Street	Shared Lane Marking	\$2,000	30.4	19
52	Corridor	Breazeale Ave US117 Alt	Bike Lanes	\$15,000	30.4	19
11	Intersection	Old 7 Springs Rd @ Francis St	Crossing improvements	\$8,000	30.4	19
26	Corridor	W Park Avenue	Sidewalk	\$161,000	29.9	23
17	Corridor	Center Street	Shared Lane Marking	\$12,000	29.6	24
55	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$62,000	29.6	24
35	Corridor	Center Street	Shared Use Path	\$102,000	29.5	26
48	Corridor	W Park Avenue	Shared Lane Marking	\$2,000	28.4	27
49	Corridor	Center Street	Shared Lane Marking	\$2,000	28.4	27
50	Corridor	Pollock Street	Shared Lane Marking	\$2,000	28.4	27
44	Corridor	Breazeale Ave US117 Alt	Sidewalk (one side)	\$16,000	28.3	30
34	Corridor	County Road	Shared Lane Marking	\$1,000	28	31
47	Corridor	Henderson Street	Shared Lane Marking	\$1,000	27.6	32
3	Intersection	Henderson St @ Bert Martin Rd	Crossing improvements	\$5,000	27.2	33
24	Corridor	Bert Martin Road	Shared Lane Marking	\$3,000	27.2	33
54	Corridor	NC Hwy 55	Separated Bike Lane	\$6,000	27.2	33
10	Intersection	E Park St @ N Church St	Crossing improvements	\$16,000	26.4	36
57	Corridor	Breazeale Ave US117 Alt	Sidewalk	\$126,000	26.4	36
29	Corridor	E Park Avenue	Sidewalk (one side)	\$60,000	25.9	38
36	Corridor	Hillsboro Street	Sidewalk (one side)	\$38,000	25.5	39
15	Corridor	Nelson Street	Shared Use Path	\$352,000	24.7	40
42	Corridor	Old Seven Springs Road	Sidewalk (one side)	\$132,000	24.4	41
40	Corridor	Westbrook Street	Shared Lane Marking	\$1,000	23.6	42

ID	Type	Name	Improvement Description	Planning Level Cost	Score	Rank
31	Corridor	Bert Martin Road	Sidewalk (one side)	\$120,000	23.2	43
53	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$123,000	23.2	43
20	Corridor	W James Street	Shared Lane Marking	\$4,000	22.8	45
25	Corridor	Wooten Street	Shared Lane Marking	\$1,000	22.8	45
9	Intersection	US 117 ALT @ Talton St	Crossing improvements	\$22,000	22.4	47
45	Corridor	Martin Street	Shared Lane Marking	\$2,000	22.4	47
43	Corridor	Old Seven Springs Road	Sidewalk (one side)	\$32,000	21.6	49
4	Intersection	NC 55 at US 117 southbound ramps	Crossing improvements	\$5,000	21.2	50
6	Intersection	NC 55 at US 117 northbound ramps	Crossing improvements	\$5,000	21.2	50
32	Corridor	E James Street	Sidewalk (one side)	\$26,000	21.1	52
7	Intersection	Henderson Street @ NC 55	Crossing improvements	\$26,000	19.2	53
8	Intersection	US 117 ALT @ NC 55	Crossing improvements	\$31,000	19.2	53
33	Corridor	Henderson Street	Sidewalk & Bike Lanes	\$62,000	18.4	55
46	Corridor	Martin Street	Sidewalk (one side)	\$82,000	18.4	55
38	Corridor	Church Street	Sidewalk (one side)	\$71,000	10.8	57

### 3.5 Pilot Projects

This section outlines six general project types recommended by this Plan. Although the specific context will change between locations, many of the design principles and planning-level guidance will remain consistent. These pilot projects are examples of potential improvements, and will require site-specific environmental, design, and engineering analysis before construction. For all six project cut-sheets, the estimated planning level cost is in 2017 dollars and does

not include design costs nor Right-of-Way (ROW) acquisition. The additional costs of design, ROW acquisition, and potential relocation of utilities and other barriers have the potential to significantly increase project costs.

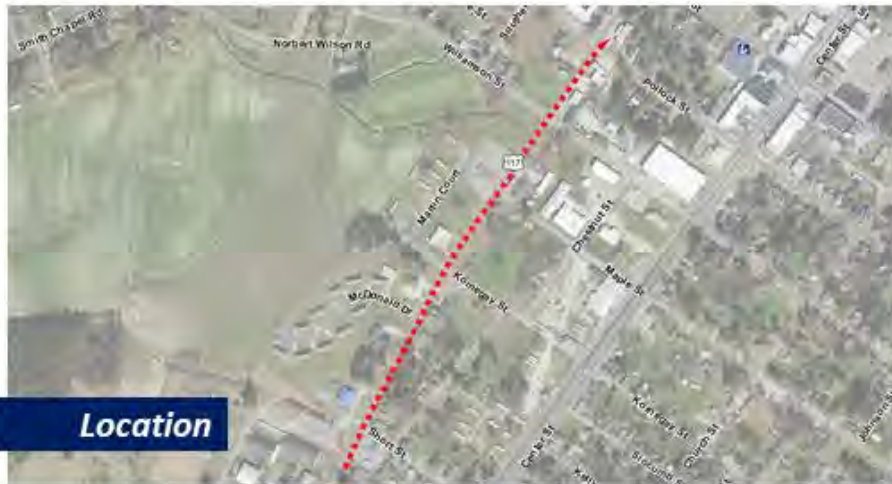


Figure 14. Pilot Project #13

**FOR CONCEPTUAL USE ONLY**

### Project #13: South Breazeale Avenue (US 117 Alt) Sidewalks

An addition of sidewalks on both sides of South Breazeale Avenue would provide a safe pedestrian connection between downtown Mount Olive and the Carver Cultural Center. Because there are no curbs along this section of Breazeale Avenue, there would have to be an installation of curb and gutters in addition to the sidewalks. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**

<b>Location:</b> South Breazeale Avenue from W Pollock Street to the Carver Cultural Center
<b>Length:</b> ~3000 feet (.5 miles)
<b>Planning-Level Cost Estimate:</b> \$224,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install 5' wide sidewalks on both sides of Breazeale Avenue with a landscaped buffer where there is room.</li> <li>• Install high-visibility crosswalks on Breazeale Avenue at intersections with W Pollock Street and W Williamson Street with yield to pedestrian signage based on engineering standards at the time of construction.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• Sidewalk @ \$34/linear foot (\$180,000/mile).</li> <li>• High Visibility Crosswalk @ \$2,700 each.</li> <li>• Signage @ \$315 each.</li> <li>• Curb Ramps @ \$850 each.</li> <li>• Curb and Gutter @ \$22/linear foot (\$120,000/mile).</li> </ul>



**Before**



**After**

Figure 15. Pilot Project #2

**FOR CONCEPTUAL USE ONLY**

### Project #2: Henderson Street Road Diet, Sidewalks, and Bike Lanes

The addition of bicycle lanes and sidewalks to Henderson Street substantially increases pedestrian and bicycle access to Mount Olive University. This project would require re-striping the pavement to change the segment into one lane and a bicycle lane in each direction. This project aligns with recommendations in the Mount Olive Comprehensive Transportation Plan. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**



**Before**

<b>Location:</b> Henderson Street between Breazeale Ave and Martin Street
<b>Length:</b> ~700 feet
<b>Planning-Level Cost Estimate:</b> \$53,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install 5' sidewalks with a landscaped buffer on both sides of Henderson Street.</li> <li>• Install 5' bike lanes in both directions of Henderson Street.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• Pavement Striping @ \$3/linear foot.</li> <li>• Bike Lane Markings @ \$190/each.</li> <li>• Sidewalk @ \$34/linear foot.</li> <li>• Signage @ \$315/each.</li> </ul>



**After**



Figure 16. Pilot Project #1

**FOR CONCEPTUAL USE ONLY**

**Project #1: Breazeale Avenue (US 117 Alt) at Henderson Street**

This project would provide a safe crossing for pedestrians along both Breazeale Avenue and Henderson Street. The 300 feet of sidewalk on both sides of Breazeale would extend the existing network to better connect to Mount Olive University (via Henderson Street) and points of interest along NC 55. This project aligns with recommendations in the Mount Olive Comprehensive Transportation Plan. Project barriers include existing electric utilities on both sides of the roadway and water and sewer on the east side of the roadway.



**Location**



**Before**

<b>Location:</b> Intersection of Breazeale Ave and Henderson St
<b>Length:</b> ~300 Feet
<b>Planning-Level Cost Estimate:</b> \$56,000 <small>(does not include ROW acquisition or design costs)</small>
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install high-visibility crosswalks and pedestrian countdown signals on all four legs of the intersection.</li> <li>• Install sidewalks on both sides of Breazeale Avenue between Henderson Street and W Station Street, including ADA compliant curb ramps at each leg of intersection.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• High Visibility Crosswalk @ \$2,700 each.</li> <li>• Pedestrian Countdown Signals @ \$1,500 each.</li> <li>• Sidewalk @ \$34/linear foot.</li> <li>• Curb Ramps @ \$850 each.</li> </ul>



**After**

Figure 17. Pilot Project #12

**FOR CONCEPTUAL USE ONLY**

### Project #12: Carver Cultural Center Pedestrian Access

In conjunction with an extension of sidewalks to the Carver Cultural Center (Project #13), this would provide pedestrian access for users of the Carver Cultural Center and nearby community facilities. Because of the speed and roadway characteristics, RRFBs are recommended for safe crossings. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**



**Before**

<b>Location:</b> Breazeale (US 117 Alt) Avenue at the Carver Cultural Center
<b>Length:</b> N/A
<b>Planning-Level Cost Estimate:</b> \$101,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install rectangular rapid flashing beacon (RRFB) on south leg of Breazeale Ave.</li> <li>• Install high-visibility crosswalks on south leg of Breazeale Ave and across the entrance to the Carver Center.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• RRFB @ \$23,500 each.</li> <li>• High Visibility Crosswalk @2,700 each.</li> <li>• Curb Ramp @ \$850 each.</li> </ul>



**After**



Figure 18. Pilot Project #30

**FOR CONCEPTUAL USE ONLY**

### Project #30: Church Street Sidewalk

In alignment with the Mount Olive Comprehensive Transportation Plan, this project connects the North Church Street sidewalks by filling in a missing leg between East College Street and East Station Street. Four high-visibility crosswalks will allow for safe pedestrian crossing in all directions at the intersection of Church Street and College Street. Project barriers include existing water and electric utilities on both sides of roadway.



**Location**



**Before**

<b>Location:</b> Church Street between E College Street and E Station Street
<b>Length:</b> ~500 feet
<b>Planning-Level Cost Estimate:</b> \$71,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>• Install 5' sidewalks with a landscaped buffer on both sides of Church Street.</li> <li>• Install high-visibility crosswalks across north and south legs of Church Street at College Street intersection with yield to pedestrian signage based on engineering standards at the time of construction.</li> <li>• Install high-visibility crosswalks across east and west legs of Church and College intersection.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>• Sidewalk @ \$34/linear foot.</li> <li>• High Visibility Crosswalk @ \$2,700 each.</li> <li>• Signage @ \$315 each.</li> <li>• Curb and gutter @ \$22/linear foot</li> </ul>



**After**

Figure 19. Pilot Project #28

**FOR CONCEPTUAL USE ONLY**

**Project #28: NC 55 Sidewalks**

The addition of a sidewalk on both sides of NC 55 from Henderson Street to Bert Martin Road provides a vital connection identified by both the Steering Committee and the community. This connection would allow students from University of Mount Olive and Town residents to safely walk to a major shopping center on the other side of US-117. This project aligns with recommendations in the Mount Olive Comprehensive Transportation Plan. Project barriers include existing electric utilities on both sides of roadway and the constrained space between the bridge pillars and embankment.



**Location**



**Before**

<b>Location:</b> NC 55 from Henderson Street to Bert Martin Road
<b>Length:</b> ~1300 feet
<b>Planning-Level Cost Estimate:</b> \$146,000 (does not include ROW acquisition or design costs)
<b>Amenities:</b> <ul style="list-style-type: none"> <li>Install 5' sidewalks outside of existing ditch and swale on both sides of NC 55 and under the US 117 overpass.</li> </ul>
<b>Estimated Unit Costs:</b> <ul style="list-style-type: none"> <li>Sidewalk @ \$34/linear foot.</li> <li>Sidewalk and retaining wall @ \$300/linear foot through underpass.</li> </ul>



**After**



# 4 Recommended Programs and Policies

In addition to engineered infrastructure (Section 3), strong programs and policies can help encourage and support pedestrians within the Town.

## 4.1 Overview

While development of facilities relates directly to engineering, bicycle and pedestrian programs tend to focus on the other four of the five E's: encouragement, education, enforcement, and evaluation. Active transportation policies can improve bicycle and pedestrian friendly design and development of both public and private sector projects. The project team encourages the Town to explore a comprehensive approach to the five E's. This requires ongoing communication and collaboration with a wide range of government agencies, organizations, the community, and individual stakeholders.

Many of the following activities represent continuations and/or enhancements of programs and policies that the Town is already administering. Recommendations in this section seek to enhance ongoing activities and enhance overall livability, walkability, and bikeability for the Town's diverse population (Table 6). Many programs and resources listed in this section are subject to the availability of grant funding. The Town should follow up directly with the organizations listed for more information on the status of these programs or newer funding resources.



## 4.2 Existing Programs

The Town annually coordinates or participates in approximately ten (10) organized public events and many more recreational leagues and programs. Common Town-sponsored events include dances, field trips, seasonal festivals, and sports competitions.

Recreational activities are spread throughout the year and are typically led by the Parks & Recreation Department. These events and their dates include: Senior pickleball (all year), Senior beanbag baseball (all year), basketball games and tournaments (December thru March), t-ball, baseball, softball and coach pitch (March thru June), fall soccer (August thru November), fall Baseball (August thru November), and Craft Camp (Summer). The largest and well known festivals include the NC Pickle Festival, Christmas Parade, Black History Parade, and the 4th of July Fireworks.

### PREVIOUS OUTREACH

The Town has engaged its citizens in walking and biking through its ongoing recreational and cultural events. While it does not have a formal program to do so, the Town's has used opportunities such as the Tour de Pickle Bicycle Race (April), Cuke Patch 5K Glow Run (April), Outlaw Foundation 5K Run Walk (March), "Get Your Bark On" Dog Walk & Family Fun Day (April), Tuna Run 200 (October), and Spook Walk through the Cemetery. The Town also held a Bicycle Helmet Initiative with a companion bicycle safety course in October 2018 that saw 80 helmets go to children aged 5 to 10.





## 4.3 Program Recommendations and Resources



### 4.3.1 Encouragement Programs

The Town can use encouragement programs to strengthen culture for walking and bicycling within the community. Local businesses and Town agencies can all play a role in encouraging pedestrian and bicycling through a variety of opportunities and incentives, some of which are presented below.

#### Lead agencies and stakeholders:

- Town staff
- County health department
- Community leaders/stakeholders

#### Elements of a good encouragement program:

- Provides residents casual introductions to bicycling and walking in a non-competitive setting.
- Uses a variety of print and electronic strategies to disseminate relevant bicycling and pedestrian information.
- Celebrates and promotes community wins through print or online media, and word of mouth.

### NON-INFRASTRUCTURE TRANSPORTATION ALTERNATIVES PROGRAM

NCDOT has transitioned the Active Routes to School program, a project under NC Safe Routes to School, to a grant-based program funded through the Non-Infrastructure Transportation Alternatives Program. Agencies may request up to three years of funding for projects that encourage children to walk and bike to school, make walking and bicycling more appealing, and facilitate the

development of projects and activities to improve transportation safety near schools. Funding may be requested to support activities for community-wide, regional or statewide programs. The Town may choose to coordinate with schools, the school district, or the county to pursue funding and recommend projects.

### WALKING AND BIKING MAPS

User maps are important tools for encouraging walking and biking. The Town can develop print and/or electronic maps and smart phone applications that identify common walking and/or biking routes, identify key destinations, and other available or planned facilities. The Town should refine and update the maps as they develop new facilities, and should seek opportunities to distribute to residents and visitors. Colorful, graphic maps should appeal to all ages and abilities and can also include educational information about the rules of the road for drivers, cyclists, and pedestrians; safety; and etiquette.

### SELF-GUIDED AND GROUP WALKING TOURS

Walking tours encourage walking and present an opportunity for residents to socialize. By developing and advertising one or more formal tour routes in association with the walking and bicycling maps previously described, the Town could identify routes to connect pedestrians to recreational, shopping, dining, and scenic destinations. Tour routes could begin with existing facilities and expand as the pedestrian network develops. Walking tours could include organized groups with Town-sponsored tour guides.

### WAYFINDING SIGNS

As the pedestrian system develops, and especially as sidewalks are installed and neighborhoods are connected, wayfinding will help contribute to the overall pedestrian environment. Items such as

mile markers, consistent themes and logos, and regular wayfinding kiosks will become important elements to encourage walking.

The Town can use services such as Walk [Your City] (<https://walkyourcity.org>) to purchase inexpensive, weather resistant signs to educate residents about the distance and direction between destinations.



### **AWARENESS DAYS AND EVENTS**

The Town can devote specific days of the year to raise awareness related to pedestrian and bicycling issues and promotion. Events can be held in parks, schools, Town facilities, or similar venues.

The Town can use national events to increase use of pedestrian and bicycle facilities, create new versions specific to local events, and add pedestrian topics to existing Town events. Examples of national events include National Walk to Work Day (April), Earth Day (April 22), National Trails Day (First Saturday in June), and National Walk Bike to School (October).

### **TOWN DESIGNATIONS**

Several national recognition programs encourage towns and cities to promote pedestrian activity. The Town can pursue or strive for progress towards one of the programs that recognize communities that are working to improve access, safety, mobility, and transportation options. Recognition programs include the following examples:

- Walk Friendly Community <http://www.walkfriendly.org/>
- Active Towns <https://www.activetowns.org/>
- Bicycle Friendly Community <https://bikeleague.org>

### **ENCOURAGEMENT PROGRAM RESOURCES**

1. Healthy Places By Design <https://healthyplacesbydesign.org/resources/>
2. Non-Infrastructure Transportation Alternatives Program <https://connect.ncdot.gov/projects/BikePed/Pages/Non-Infrastructure-Alternatives-Program.aspx>
3. Healthy Aging Research Network Archives. <http://depts.washington.edu/hprc/resources/products-tools/healthy-aging-research-network-archives/>
4. Livable Communities: Livable in Action. <http://www.aarp.org/livable-communities/livable-in-action/>
5. Move More Walking Map Guide. <http://www.eatsmartmovemorenc.com/WalkingMapGuide/WalkingMapGuide.html>
6. National Center for Safe Routes to School. <http://saferoutesinfo.org/>
7. Walk Wise, Drive Smart: A Senior Pedestrian Safety Program in Hendersonville, North Carolina. [http://www.pedbikeinfo.org/cms/downloads/WalkWise\\_Hunter.pdf](http://www.pedbikeinfo.org/cms/downloads/WalkWise_Hunter.pdf)



### 4.3.2 Education Programs

The Town can take advantage of existing educational materials from state or federal programs and tailor these to the specific needs of the community. The educational materials should promote safe behaviors, rules, and responsibilities for all roadway users including pedestrians, bicyclists, and motorists. Local businesses, Town agencies, and local advocates can all play a role in developing and distributing educational materials.

#### Lead agencies and stakeholders:

- Town staff
- County health department
- Dedicated and committed community leaders/stakeholders

#### Elements of a good education program:

- Provides the community with information on bicyclist and pedestrian laws, safe behaviors, and skills.
- Reaches people of all skill levels, physical abilities, and ages.
- Delivers information through a variety of print and electronic messages and hands-on training.
- Includes all roadway users: motorists, bicyclists, and pedestrians.

### PROJECT-RELATED EFFORTS

The Town should coordinate closely with NCDOT and other local stakeholders when elements of the Plan and other pedestrian roadway improvements are planned or implemented. Public involvement and education are essential throughout the project process. Communication with the public during the planning phase ensures the community is aware of upcoming events or potential impacts to their roadway, construction schedules, improvements, and proposed completion dates. This also provides an opportunity for community feedback, which can help inform future educational efforts on the project. Once a project is completed, education efforts should provide information on how to use the facility. Project-related coordination efforts can be distributed through local media outlets, on-site, at special events/community events, project-related meeting, local and Town websites, and in coordination with NCDOT outreach.

### DRIVER EDUCATION

Stakeholders from the community expressed the need for driver education in the community. Town staff, Steering Committee members, and community leaders can work together to identify priority educational topics, key audiences, and outreach methods (e.g., signage, workshops, print media). Potential educational campaigns, as discussed by both community stakeholders and Steering Committee members, include the following:

- RRFB awareness.
- General rules of the road conducted at day cares and churches (for young residents).
- General awareness signs for visitors entering Mount Olive.





Source: Town of Carolina Beach

### INTERNAL EDUCATION

Education is not limited to the community, but should also include all key staff involved in Plan implementation. This includes Town staff, Board members, and Steering Committee members as well as NCDOT Division staff and regional or county staff, when relevant. Opportunities for education include, but are not limited to, the following:

- Staff presentations on sessions or conference events.
- Meetings or retreats on the Plan to discuss the status of the Plan, potential funding opportunities, roadblocks to implementation, or other similar pertinent information.
- Coordination between agencies and departments, such as information or resource sharing between transportation, planning, health, facilities, parks and recreation, and other such Town or county departments.
- Training opportunities—webinars, brown bag lunch presentations—to educate staff on pedestrian guidelines and designs and best practices from across the state and nation.

### LET'S GO NC – PEDESTRIAN AND BICYCLE CURRICULUM

NCDOT sponsors this free educational program and provides instructional lesson plans, videos, and other downloadable programming to teach elementary age children how to walk and bicycle safely. Instructors do not need to receive training; however, the Active Route to School District 10 Coordinator can provide the training if desired. The Town should work with local agencies, schools, or community organizations to identify one or more individuals willing to take responsibility for conducting the training.

### EAT SMART, MOVE MORE NC

Eat Smart, Move More NC is a North Carolina movement that promotes physical activity and healthy eating. They provide free, downloadable resources to encourage communities, schools, grocery stores, and similar businesses to make the healthy choice the easier choice. Community-based tools support creating active outdoor play spaces, information on coalitions to support the movement, and handouts for distribution, among others.



## EDUCATION PROGRAM RESOURCES

1. Eat Smart, Move More NC.  
<http://www.eatsmartmovemorenc.com/index.html>
2. Guide to Creating Active Outdoor Play Spaces.  
<http://www.eatsmartmovemorenc.com/ActivePlaySpaces/ActivePlaySpaces.html>
3. Eat Smart, Move More Coalitions.  
<http://www.eatsmartmovemorenc.com/ESMMCoalitions/ESMMCoalitions.html>
4. Eat Smart, Move More Handouts.  
<http://www.eatsmartmovemorenc.com/ESMMHandouts/ESMMHandouts.html>
5. Federal Highway Administration (FHWA) Pedestrian and Bicycle Safety.  
[http://safety.fhwa.dot.gov/ped\\_bike/](http://safety.fhwa.dot.gov/ped_bike/)
6. Institute for Transportation Research and Education: Education and Training – Bicycle and Pedestrian.  
<https://itre.ncsu.edu/training/bike-ped/>
7. Let's Go, NC!  
<https://www.ncdot.gov/bikeped/safetyeducation/letsгонc/>
8. National Highway Traffic Safety Administration Pedestrian Safety.  
<https://www.nhtsa.gov/road-safety/pedestrian-safety>
9. NCDOT Bicycle and Pedestrian Division.  
<https://connect.ncdot.gov/projects/BikePed/Pages/default.aspx>
10. Pedestrian and Bicycle Information Center.  
<http://www.pedbikeinfo.org/>
11. WalkBikeNC.  
<https://www.ncdot.gov/bikeped/walkbikenc/>



## 4.3.3 Enforcement Programs

Much like education programs, the purpose of enforcement programs can be used to educate all roadway users about traffic laws and encourage safer behaviors. Programs include periodic reminders or events to obey traffic rules and ongoing monitoring of public spaces. Enforcement programs also reinforce and support the other E's.

### Lead agencies and stakeholders:

- Law enforcement agencies
- Town staff

### Elements of a good enforcement program:

- Reviews and updates State laws that impact bicycle safety.
- Ongoing enforcement of relevant laws.
- Reduces the number of bicyclist and pedestrian crashes.



### **WATCH FOR ME NC**

This statewide pedestrian and bicycle safety campaign intends to reduce pedestrian and bicycle injuries and deaths through education and enforcement. Watch for Me NC targets all roadway users and provides useful resources and tools for municipalities and residents.

### **SECLICKFIX**

Community members can use this website to report neighborhood concerns related to infrastructure, such as potholes, streetlight issues, or graffiti. The comments are routed to the local officials who can respond to the comment with information. The Town can use this resource to better track community concerns and identify areas in need of attention.

### **SPEED FEEDBACK SIGNS**

The Town can use temporary traffic calming devices at key locations. One such sign has been installed along W Main Street near the Steele Memorial Library to slow vehicles and improve awareness of pedestrians who may be crossing from the parking lot to the Library entrance.



### **MOTORIST ENFORCEMENT**

Local police should work with Town officials to use any of the programs and resources to coordinate one-time or ongoing motorist enforcement campaigns. Enforcement may include monitoring vehicle speeds, pedestrian jaywalking, or RRFB compliance.

Another approach to motorist enforcement is to incentivize or offer rewards for appropriate behavior. Local law enforcement can conduct a pedestrian enforcement campaign that commends pedestrians for using crosswalks. The Town can work with local business owners to provide gift certificates, coupons, or other small tokens as rewards. The Town should conduct these enforcement efforts at highly visible locations and publicize them in the community and via social media.

### **ENFORCEMENT PROGRAM RESOURCES**

1. FHWA Partnering with Law Enforcement. [https://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/ntpp/partner\\_law.cfm](https://www.fhwa.dot.gov/environment/bicycle_pedestrian/ntpp/partner_law.cfm).
2. NCDOT Watch for Me NC. <http://www.watchformenc.org/>.
3. NHTSA Resource Guide on Laws Related to Pedestrian and Bicycle Safety. <https://one.nhtsa.gov/people/injury/pedbimot/bike/resourceguide/index.html>.
4. Pedestrian and Bicycle Information Center Training and Events. <http://www.pedbikeinfo.org/training/index.cfm>.
5. Pedestrian and Safety Guide and Countermeasure Selection System. <http://www.pedbikesafe.org/pedsafe/>.





#### 4.3.4 Evaluation Efforts

The Town can use evaluation efforts to understand how well the strategies in the plan are working over time. Evaluation activities include setting goals, collecting baseline data (where possible), setting timetables, and collecting follow up data for all projects. Not all evaluation activities are data-driven; qualitative feedback and partnerships can assist with achieving the goal of evaluating program/strategy effectiveness and identifying improvements.

##### **Lead agencies and stakeholders:**

- Bicycle and Pedestrian Committee
- Steering Committee
- Town staff
- Public Works maintenance staff

##### **Elements of a good evaluation effort:**

- Dedicated staff or volunteer who will take responsibility of monitoring all elements of the Plan.
- Established metrics that are measurable and have associated timelines.

#### **TOWN OF MOUNT OLIVE BICYCLE AND PEDESTRIAN COMMITTEE**

The Town should establish a Bicycle and Pedestrian Committee and engage with the Steering Committee members. The Bicycle and Pedestrian Committee should be responsible for moving the Plan towards implementation and tracking success. Steering Committee members can help champion the Plan by working closely with the Bicycle and Pedestrian Committee to help measure success, work as liaisons with the greater community, and help identify solutions to barriers during implementation.

#### **ANNUAL BICYCLE AND PEDESTRIAN COUNT PROGRAM**

The Town and the Bicycle and Pedestrian Committee can work together to conduct annual bicycle and pedestrian counts to identify high-traffic locations. Volunteers from schools or community organizations can conduct manual observational counts at different times of the day and days of the week. Counts for specific locations should be done prior to implementation of a project to establish a baseline and then continue annually or on a two-year cycle. Observational qualitative data can also be used to identify locations for specific safety, enforcement, and educational efforts.

#### **CONDUCT ROAD SAFETY AUDITS (RSAs)**

Town staff and representatives can conduct Road Safety Audits on priority corridors to identify more specific engineering-related improvements. This is a formal and detailed process that involves a multidisciplinary team to identify roadway elements that present the most safety concern and formulate solutions to eliminate or mitigate the safety issues. Technical assistance may be available from Federal Highway Administration or the Town can consider hiring an outside consultant to organize and conduct Road Safety Audits. Breazeale Avenue (ALT 117) should be considered for a Road Safety Audit in coordination with NCDOT and FHWA.

#### **COMMUNITY SURVEYS**

The Town can use surveys and other similar feedback mechanisms as tools to gauge community-wide acceptance and understanding of new projects; needs and interests for other future projects; and other community concerns that may be addressed through Encouragement and Education programming. The Town should work with stakeholder groups who reach broad audiences to help disseminate survey tools and collect the feedback

## **FACILITY INSPECTION AND MAINTENANCE**

A key piece of evaluation is measuring and identifying maintenance needs, particularly after implementation. Public Works maintenance and facility staff should conduct routine maintenance checks of installed pedestrian projects to identify general wear and tear and immediate fixes—such as potholes and broken asphalt—that may impede use. The Town should establish a plan and timeline for addressing such issues. This encouragement initiative relies upon crowd-sourcing to report maintenance needs.

## **EVALUATION RESOURCES**

1. National Center for Safe Routes to School – Walkability Checklist.  
<http://archive.saferoutesinfo.org//sites/default/files/walkabilitychecklist.pdf>
2. Pedestrian and Bicycle Information Center – Counts.  
[http://www.pedbikeinfo.org/planning/tools\\_counts.cfm](http://www.pedbikeinfo.org/planning/tools_counts.cfm)
3. FHWA – Road Safety Audits.  
<https://safety.fhwa.dot.gov/rsa/>

## **4.4 Policy Recommendations**

### **4.4.1 State Pedestrian Transportation Policy**

The NCDOT Division of Bicycle and Pedestrian Transportation web page includes references and links to state and federal policies to support accommodation of pedestrians as part of the transportation system. See <https://www.ncdot.gov/divisions/bike-ped/Pages/bike-ped-laws.aspx> along with the summaries below.

#### **COMPLETE STREETS POLICY AND GUIDELINES**

This policy requires planners and designers to consider and incorporate multimodal alternatives in the design and improvement of all transportation projects within a growth area of a municipality unless certain circumstances. In July of 2012, NCDOT adopted guidelines to support the policy.

#### **BICYCLE AND PEDESTRIAN POLICY GUIDELINES**

Pursuant to this policy, NCDOT may participate with localities in the construction of sidewalks as incidental features of highway improvement projects.

Administrative Action to Include Local Adopted Greenway Plans in the NCDOT Highway Planning Process and Guidelines. These guidelines require NCDOT to consider greenways and greenway crossings during the highway planning process.

## **BRIDGE POLICY**

NCDOT's Bridge Policy includes information to address sidewalks and bicycle facilities on bridges, including minimum handrail heights and sidewalk widths.

**Recommendation: Town staff should be familiar with State pedestrian policies and laws, including best practices and ensure that NCDOT projects include pedestrian accommodations.**

**Recommendation: Coordinate with NCDOT Division 4 plans to resurface or reconstruct NCDOT-owned and maintained roadways. Ensure that plan recommendations for pedestrian facilities are included on those streets. If a compromise to the original recommendation is needed, then contact NCDOT Division of Bicycle and Pedestrian Transportation for guidance on appropriate alternatives.**

### 4.4.2 Town of Mount Olive, North Carolina Code of Ordinances

The Code of Ordinances are the current legislation adopted by the Town and available from the website ([https://library.municode.com/nc/mount\\_olive/codes/code\\_of\\_ordinances](https://library.municode.com/nc/mount_olive/codes/code_of_ordinances)). Pedestrian-specific ordinances (Part I, Section 34 and Part II, Chapter 18, Article II) primarily focus on detailing construction and maintenance of pedestrian infrastructure. Sidewalk standard are described as part of the Land Development Ordinances (Section 57).

## **SIDEWALKS**

Ordinances on sidewalks detail the permits required and process for creating a new street (Part II, Sec. 18-19 through 18.23). Additionally, the ordinances attribute maintenance and cleaning of

streets, sidewalks, and alleys to the board of commissioners (Part I, Sec. 25). Section 57 states that all new subdivision streets must have sidewalks installed by the developer on one or both sides of the street—determined by the board of commissioners. Sidewalk must have a width of at least four feet wide, and wheelchair ramps at all street curbs.

**Recommendation: The Town should include all relevant local and state ordinances and laws related to pedestrians and sidewalks in education and encouragement materials and programming. Information should be stated an appropriate reading level and should include images and graphics where appropriate, so the information is easily accessible to all community members.**

**Recommendation: The Town should establish a maintenance fund to assist with maintaining and replacing existing and new sidewalks.**

**Recommendation: The Town should establish street design standards that detail connectivity requirements for new sidewalks, curb, and gutter in all new development and redevelopment.**

## **BICYCLE FACILITIES**

Sec. 20-117 to Sec. 20-125 mention the traffic ordinances for bicycles while operating on any street or public path. Cyclists cannot ride on sidewalks within Mt. Olive's business district or in any location with a roadway sign prohibiting it (Sec. 20-122).

**Recommendation: The Town should include all relevant local and state ordinances and laws related to cyclists and bicycle facilities in education and encouragement materials and programming. Information should be stated at an**



**appropriate reading level and should include images and graphics where appropriate, so the information is easily accessible to all community members.**

**Recommendation: The Town should establish street design standards that detail connectivity requirements for new bicycle facilities in all new development and redevelopment.**

**ZONING**

Part II, Sec. 59-120 details zoning requirements for C-1 Downtown-commercial district. It outlines permitted uses, conditional uses, and special uses within the district. Additionally, it states the purpose for the district as “to provide for, enhance, and protect the shopping facilities in the downtown area.”

**Recommendation: The Town should explore form-based codes and streetscape requirements that encourage bicycle and pedestrian uses in the Downtown Commercial District.**

**4.4.3 Other Plans and Coordination**



There are several local and regional plans that detail pedestrian-related projects and improvements. However, the Town does not have a coordinating body to monitor ongoing or planned projects for coordination opportunities. There is an opportunity to work with surrounding towns and regional representatives and governing bodies to coordinate efforts, share experiences, and learn success stories that may be applicable.



**Recommendation: The Town should work with Wayne County and the ECRPO to identify opportunities to coordinate efforts for transportation on a regional level.**

**Recommendation: The Town should identify and engage community organizations and leaders to be responsible for monitoring and implementing the Plan.**



Table 6. Four E’s Recommendation Overview

<b>Strategy</b>	<b>Target Audience</b>	<b>Lead Agency/ Stakeholder</b>	<b>Partnerships for Success</b>	<b>Time Frame</b>	<b>Duration</b>	<b>Costs</b>
 <b>Encouragement</b>						
<b>Non-Infrastructure Transportation Alternatives Program</b>	Schoolchildren, Parents	Town	County Department of Public Health, School District	Immediate	Ongoing	\$
<b>Walking / Bicycling Maps</b>	General Public	Bicycle Pedestrian Committee	Town Staff, Volunteers	Near Future – Long-Range	Ongoing	\$ - \$\$
<b>Self-Guided / Group Walking Tours</b>	General Public	Bicycle Pedestrian Committee	Town Staff, Volunteers	Near Future – Long-Range	Periodic	\$
<b>Wayfinding Signs</b>	General Public	Bicycle Pedestrian Committee	Town Staff, Volunteers	Immediate	Ongoing	\$ - \$\$
<b>Awareness Days/Events</b>	General Public	Town	Bicycle Pedestrian Committee, Volunteers	Immediate – Long-Range	Ongoing	\$
<b>Town Designations</b>	General Public	Town	Bicycle Pedestrian Committee	Long-Range	Ongoing	\$
 <b>Education</b>						
<b>Project-Related Efforts</b>	General Public	Town	NCDOT	Immediate – Long-Range	Ongoing	\$
<b>Driver Education</b>	General Public	Town	NCDOT	Near Future – Long-Range	Ongoing	\$ - \$\$\$
<b>Internal Education</b>	Town staff/ Representatives	Town	NCDOT, Regional, County staff	Immediate – Long-Range	Periodic	\$
<b>Let’s Go NC</b>	General Public, schoolchildren	Town	NCDOT, Active Route to School Coordinator	Immediate	Periodic	\$

Strategy	Target Audience	Lead Agency/ Stakeholder	Partnerships for Success	Time Frame	Duration	Costs
<b>Eat Smart, Move More NC</b>	General Public	Town	NCDPH, ESMM	Immediate	Ongoing	\$
<b> Enforcement</b>						
<b>Watch for Me NC</b>	Motorists	Town	Law Enforcement, NCDOT	Immediate – Long-Range	Periodic	\$
<b>SeeClickFix</b>	General Public	Town	—	Immediate – Long-Range	Ongoing	\$
<b>Speed Feedback Signs</b>	Motorists	Town	—	Long-Range	Ongoing	\$\$ - \$\$\$
<b>Motorist Enforcement</b>	Motorists	Town	Law Enforcement	Immediate	Periodic	\$\$ - \$\$\$
<b> Evaluation</b>						
<b>Bicycle and Pedestrian Committee</b>	Town Staff / General Public	Bicycle Pedestrian Committee	Town Staff, Steering Committee	Near Future – Long-Term	Ongoing	\$
<b>Annual Pedestrian Count Program</b>	General Public	Bicycle Pedestrian Committee	Town Staff, Steering Committee	Near-Future – Long-Range	Periodic	\$ - \$\$\$
<b>Road Safety Audits</b>	Town Staff	Town	Bicycle Pedestrian Committee	Near-Future – Long-Range	Periodic	\$\$ - \$\$\$
<b>Community Surveys</b>	General Public	Bicycle Pedestrian Committee	Town Staff, Steering Committee	Near Future – Long-Range	Periodic	\$\$ - \$\$\$
<b>Facility Inspection/ Maintenance</b>	Town Staff	Town	Facilities	Near Future – Long-Range	Periodic	\$\$\$

Time Frame: Immediate = initial steps in Plan, short-term; Near Future = implementation phases; Long-Range = post-implementation, evaluation and maintenance phases

Duration: Ongoing = continual updates needed, no clear end; Periodic = occasional, non-specified milestones

Costs: \$ = Minimal costs/free; \$\$ = Moderate costs, may be available through local funds/investments; \$\$\$ = Requires investment, grants, additional funding resources





# 5 Implementation Plan

Following through on these recommendations will require persistence and leadership from the local community. Although local sources of funding can go a long way in achieving community aims, there are a variety of ways for the residents of Mount Olive to encourage walking in their community.

## 5.1 Implementation Overview

This section outlines the organizational structure and steps necessary to successfully achieve the goals set forth by this Plan. The recommendations within this section include:

- Organizational structure for administering programs.
- Action items for building a culture of active living.
- Methods for monitoring progress and continuing encouragement.
- Potential funding sources.

## 5.2 Organizational Framework for Implementation

Successful implementation of the Plan will require the cooperation of several agencies and organizations. Many of these partnerships already exist, and this Plan will build on those partnerships. Examples of these partnerships include the relationships between NCDOT, the Town, and ECRPO. Still other connections will be formed through the implementation of this Plan. These coalitions will likely be formed within the community itself, as the Town coordinates its efforts with local schools, athletic associations, and other community groups.



### **ROLE OF NCDOT**

As the administrator of the Bicycle and Pedestrian Planning Grant Initiative and the primary agency concerned with transportation planning, engineering, and construction in the State of North Carolina, NCDOT will be an important partner in the implementation of this Plan. After the adoption of this Plan, NCDOT should continue to provide technical assistance and consulting regarding pedestrian transportation planning in Mount Olive. NCDOT Division 4 is responsible for construction and maintenance of pedestrian facilities in the Town. It will be the primary partner for the design and construction of recommended projects made in Section 3 of this Plan.

The Strategic Prioritization Office of Transportation (SPOT) process prioritizes most NCDOT division projects, per the state's Strategic Transportation Investment (STI) law. SPOT is a data-driven approach to project prioritization for all transportation mode projects, including bicycle and pedestrian project improvements. STI provides three funding tiers for transportation projects: Statewide Mobility, Regional impact, or Division needs. Standalone pedestrian projects are eligible for funding as part of the Division Needs category. Bicycle and pedestrian projects compete against highway and other transportation projects in this category. Half of the score is based on data-centric methodology determined by NCDOT and the other half of the score is dependent on local input from the NCDOT Division 4 office and the ECRPO.

The NCDOT Division of Bicycle and Pedestrian Transportation (DBPT) is the primary resource for guidance on bicycle and pedestrian policies, laws, and safety education (Section 4). It is also the administrator for a wide variety of statewide initiatives aimed at promoting safety and participation in active transportation. As the Town progresses with the implementation of this Plan, it should consult the online resources available

through the DBPT for guidance on specific pedestrian treatment issues.

### **ROLE OF THE EASTERN CAROLINA RURAL PLANNING ORGANIZATION (ECRPO)**

As the rural planning organization (RPO) responsible for transportation planning within Duplin, Greene, Lenoir, and Wayne counties, the ECRPO should consider implementing the projects recommended in this Plan. For the infrastructure needs of Mount Olive to be met, ECRPO should continue to consider the multimodal transportation needs of the Town in its comprehensive transportation plan (CTP), last updated in 2015. Opportunities to improve the bicycle and pedestrian environment should be taken when roadways are scheduled for maintenance or construction. Many of the projects outlined in this report can be accomplished in unison with maintenance programs initiated by the ECRPO and funded in combination with state roadway improvement programs such as SPOT.

### **ROLE OF WAYNE COUNTY**

Planning by the Wayne County government has a very tangible effect on the Town of Mount Olive. The County is the primary organization governing land use planning, transportation planning, and public health initiatives in and around the Town. It is vital that these plans align with common goals that span municipal boundaries. While Wayne County is responsible for more than just Mount Olive, there are several crucial ways for the County to support this Plan:

- Support active transportation through regional trails and networks.
- Promote active transportation and public health through county-wide programming.
- Prioritize pedestrian safety when updating the CTP.

### **ROLE OF THE TOWN OF MOUNT OLIVE**

Mount Olive is responsible for implementing this Plan. Through its adoption, the Town will be empowered to act as a champion for bicycle and pedestrian needs. The Town should form pedestrian and bicycle advisory committees that will serve as champions for bicycle and pedestrian planning in Mount Olive. As champions of active transportation, committee members should encourage the full implementation of this Plan. This includes advocating for the project and programmatic recommendations in this Plan, as well as developing other events and programs as they work in the community. A great example of this is in practice is a wayfinding signage program. This would be functional for pedestrians and would enhance the sense of community and aesthetics in Mount Olive.

## **5.3 Implementation Action Steps**

This section outlines general steps to fully implement this Plan. Steps are assigned to three categories: policy, programming, and infrastructure. A timeline of these action items is provided in Table 7.

### 5.3.1 Policy Action Steps

#### **ADOPT THIS PLAN**

The first step for the Town of Mount Olive to build upon the existing regional plans and policies is adopting this Plan. Adoption will improve the Town’s eligibility to receive priority funding for projects.

#### **ESTABLISH THE BICYCLE & PEDESTRIAN ADVISORY COMMITTEE**

Mount Olive has a history of citizen involvement in action committees. Its citizens have come together to create a Downtown Revitalization Committee, Land Use Planning Committee, Comprehensive Transportation Committee, Veteran’s Memorial Committee, and Historical Society. The Town should take its existing Bicycle Pedestrian Planning Committee—which was established to develop this plan—and transform it to a bicycle and pedestrian advisory committee (BPAC). This committee would be the primary advocate for promoting pedestrian planning and events in Mount Olive, and oversee event programming and encouragement within the community. Local champions should represent many different interests within the Town, such as the elementary school, Town staff, police, and many others, which share the common goal of making Mount Olive a safer place to bike and walk. Other North Carolina communities, such as Mebane and Greenville, have established BPACs that can serve as a model for Mount Olive.

#### **CONTINUE TO ENFORCE STATE AND LOCAL REGULATIONS**

Ensuring that motor vehicles obey the speed limit, pedestrian signals, and other traffic regulations can improve the perception and desirability of walking Mount Olive. Additionally, ensuring that pedestrians obey traffic laws themselves can ensure that these travelers stay out of harm’s way. This creates an environment that is safe for all roadway users. The NCDOT DBPT offers helpful links to many of these regulations through its website: <https://www.ncdot.gov/bikeped/lawspolicies>.

### 5.3.2 Program Action Steps

#### **CREATE EDUCATIONAL OUTREACH PROGRAMS**

Education provides people of all ages the confidence to walk alongside motor vehicles. Educational outreach should also extend to drivers of motor vehicles as well. Awareness of pedestrians is a skill that is learned and can be improved upon with active engagement.

#### **CREATE ENCOURAGEMENT OUTREACH PROGRAMS**

Many of these encouragement programs serve to remind individuals how convenient and attainable an active lifestyle can be. Walk to work and school events can illustrate how easy it is to complete daily activities through active transportation. Open streets events bring people together, build a sense of community, and allow them to engage with the community without needing to drive and find a parking space.



#### **ESTABLISH A MONITORING AND BENCHMARKING PROGRAM**

The BPAC should devise ways of monitoring pedestrian activity, as well as preferred routes and destinations. The needs and preferences of the community will evolve over time. To ensure that

Town officials and planners can respond effectively, there should be an established methodology for tracking these changes, evaluating current programs, and generating new priorities.

#### **BECOME REGISTERED AS A WALK FRIENDLY COMMUNITY**

The Town could choose to apply for a designation as a Walk Friendly Community through the University of North Carolina's HSRC. This designation offers the opportunity for Mount Olive to assess its current conditions and receive feedback from third party perspectives. By undergoing this process, the Town may be more equipped to apply for future grant funding through organizing its existing conditions and refining its vision as a leading pedestrian friendly community. Other Walk Friendly-recognized communities in North Carolina include Charlotte, Davidson, Asheville, Cary, and Boone.

### 5.3.3 Infrastructure Action Steps

While there are several phases involved in infrastructure project implementation, the steps outlined in this section are fundamental for the Town to take as it implements the new infrastructure projects. Figure 19 identifies the steps to successful project construction, and execution of the Plan begins with Step 3.

#### **IDENTIFY FUNDING SOURCES**

Federal, state, and local funding sources will be necessary to implement this Plan. No one source should be relied upon to complete all of the proposed recommendations. It is essential that local institutions find alternative possibilities for funding to help fill gaps between official sources. Many of these initiatives are related to safety and public health.



**PERFORM A ROAD SAFETY AUDIT (RSA)**

Breazeale Ave (ALT 117) was repeatedly mentioned by study team members and public workshop attendees as a barrier to pedestrian travel with numerous intersections that made pedestrians feel unsafe. This entire corridor is an ideal candidate for a Road Safety Audit (RSA), which is a formal examination of mobility safety performance to identify potential road safety issues and identifies opportunities for improvements in safety for all road users. The FHWA works with State DOTs and local jurisdictions to encourage RSAs along existing roads and intersections. The goal of an RSA is to

- 
1. Create the plan
  2. Prioritize projects
  3. Work with partners to seek non-local funding
  4. Secure local capitol for future funding match needs
  5. Study priority projects for feasibility and property acquisition needs
  6. Develop construction plans
  7. Construct projects
  8. Re-evaluate priorities

Figure 20. Infrastructure Action Steps

identify elements of the road may present a safety concern, and recommend a standard approach to elimination or mitigation.

**PRIORITIZE PROJECTS**

This Plan includes several recommendations from previous regional and local transportation plans. These foundational plans and projects reflect community needs, such as safety along Breazeale Ave and connectivity between the Town and the university. The most highly scored projects in Section 3 should be considered for implementation in the near to mid-term.

**REVIEW THE APPLICABILITY OF FUTURE PROJECTS**

Many of the projects in this Plan, as well as others concerning transportation in Mount Olive, will need to undergo more detailed site-specific evaluation as future revisions are made. Mount Olive’s priorities will change over time, and projects should be constantly re-evaluated for future needs. Town staff and the BPAC should work jointly to this end. These priority projects should be the Town’s focus as it works worth the County and the MPO for funding and implementation through local and regional plans.

5.3.4 Action Item Timeline

Table 7 shows the action item timeline for plan implementation.

Table 7. Plan Implementation Action Item Timeline

Strategy	Contributing Stakeholders	Lead Agency/ Stakeholder	Time Frame	Duration	Related Section(s)
<b>Policy</b>					
<b>Adopt This Plan</b>	Town Council	Town Staff	Immediate	Initial	—
<b>Finalize the Bicycle and Pedestrian Committee</b>	Town Staff, Bicycle Pedestrian Advisory Committee	Town Staff	Immediate	Periodic	4.2, 4.3
<b>Continue to Enforce State and Local Regulations</b>	Town Staff, Law Enforcement, Bicycle Pedestrian Advisory Committee	Police	Near Future – Long-Range	Ongoing	4.3.3, 4.4
<b>Program</b>					
<b>Create Educational Outreach Programs</b>	Bicycle Pedestrian Advisory Committee	Town Staff	Near Future – Long-Range	Ongoing	4.3.2, 4.4
<b>Create Encouragement Outreach Programs</b>	Bicycle Pedestrian Advisory Committee	Town Staff	Near Future – Long-Range	Ongoing	4.3.1
<b>Establish a Monitoring and Benchmarking Program</b>	Town Staff, Bicycle Pedestrian Advisory Committee	Town Staff	Immediate – Long-Range	Ongoing	4.3.4
<b>Become Registered as a Bike Friendly Community</b>	Town Staff, Bicycle Pedestrian Advisory Committee	Town Staff	Near Future – Long-Range	Periodic	4.3
<b>Infrastructure</b>					
<b>Identify Funding Sources</b>	Town Staff, Bicycle Pedestrian Advisory Committee	NCDOT & Town Staff	Immediate – Long-Range	Periodic	5.5
<b>Perform a Road Safety Audit</b>	NCDOT Transportation Safety & Mobility Unit, FHWA Division Office, Town Staff	NCDOT & Town Staff	Near Future – Immediate	Once	—
<b>Build the Priority Projects Outlined in this Plan</b>	NCDOT, Wayne County, Town Staff	NCDOT	Near Future – Immediate	Ongoing	3.4
<b>Review the Applicability of Future Projects</b>	NCDOT, ECRPO, Wayne County, Town Staff, Bicycle Pedestrian Advisory Committee	NCDOT	Long-Range	Periodic	3.4

Time Frame:

- Immediate = initial steps in Plan, short-term
- Near Future = implementation phases
- Intermediate = final implementation phases
- Long-Range = post-implementation, evaluation and maintenance phases

Duration:

- Initial = preliminary action
- Once = single, stand-alone action
- Ongoing = continual updates needed, no clear end
- Periodic = occasional, non-specified milestones

## 5.4 Performance Measures

Performance measures should be developed to evaluate this Plan's action items and programs. Baseline conditions, such as pedestrian counts and event attendance, should be gathered before any of the action items are implemented. This allows the Town and the BPAC to track the progress of successful programs as they grow and mature. Determining which programs are effective and which ones are less effective within the Mount Olive context will be critical in making future decisions regarding the full implementation of this Plan.

## 5.5 Funding Sources

Funding sources to consider moving forward include, but are not limited to, the following. Refer to Appendix B for more funding source options.

- State Transportation Improvement Program (STIP).<sup>1</sup>
- Congestion Mitigation and Air Quality funding (CMAQ).<sup>2</sup>
- Surface Transportation Program-Direct Allocation funding (STP-DA).<sup>3</sup>
- State Street-Aid (Powell Bill) Program.<sup>4</sup>
- NCDOT HSIP Hazard Elimination Program<sup>5</sup>: Safety grant program utilizing federal and state funding to address safety and potential safety issues. Projects are selected based on a cost-benefit ratio with safety benefits being classified in terms of crashes reduced.
- Governor's Highway Safety Program Grant<sup>6</sup>: Safety grant program specifically related to preventing crashes on North Carolina roads.
- Eat Smart, Move More NC<sup>7</sup>: Provides a variety of links and resources, including potential funding sources for public health initiatives.
- Safe Routes to School.<sup>8</sup>
- HUD State Community Development Block Grant Program<sup>9</sup>: Provides assistance for community projects for smaller communities that benefit low to middle income households.
- American Hiking Society's National Trails Fund Grant<sup>10</sup>: Organization that offers micro-grants (\$500-\$3,000) to active members of the alliance

of hiking organizations to improve hiker access or hiker safety. Recipient organization must be a 501(c)(3) non-profit.

## REFERENCES

1. NCDOT Strategic Transportation Investments (STI) <https://www.ncdot.gov/strategictransportationinvestments/>
2. Congestion Mitigation and Air Quality Improvement (CMAQ) [https://www.fhwa.dot.gov/environment/air\\_quality/cmaq/](https://www.fhwa.dot.gov/environment/air_quality/cmaq/)
3. Surface Transportation Block Grant Program (STBG) <https://www.fhwa.dot.gov/specialfunding/stp/>
4. State Street-Aid (Powell Bill) Program <https://connect.ncdot.gov/municipalities/state-street-aid/pages/default.aspx>
5. NCDOT Highway Safety Improvement Program (HSIP) <https://connect.ncdot.gov/resources/safety/pages/nc-highway-safety-program-and-projects.aspx>
6. Governor's Highway Safety Program <https://safety.fhwa.dot.gov/hsip/>
7. Eat Smart, Move More NC <http://www.eatsmartmovemorenc.com/Funding/Funding.html>
8. Non-Infrastructure Transportation Alternatives Program <https://connect.ncdot.gov/projects/BikePed/Pages/Non-Infrastructure-Alternatives-Program.aspx>
9. NC Department of Commerce – Community Development Block Grants <https://www.nccommerce.com/grants-incentives/public-infrastructure-funds/infrastructure-federal-cdbg-economic-development>
10. American Hiking Society <https://americanhiking.org/national-trails-fund/>





# A Appendix A. Guidelines and Facilities

## A.1 Types of Bicyclists

### **ADVANCED BICYCLISTS – VERY SMALL PERCENTAGE OF POPULATION**

Advanced bicyclists are exemplified by bicyclists who are willing to ride on a variety of roadway surfaces regardless of weather conditions. Due to their experience and skill, these bicyclists can reach higher speeds than other user types, allowing them to comfortably share roadway connections with motor vehicles. Therefore, advanced bicyclists tend to prefer direct routes on roadways over separate bicycle facilities, such as greenways.

### **CONFIDENT BICYCLISTS – SMALL PERCENTAGE OF POPULATION**

Confident bicyclists are characterized by a wide variety of users, including commuters, recreationalists, racers, and utilitarian bicyclists. While these bicyclists are fairly comfortable with riding on all types of bikeways, they may choose a less direct route in favor of a preferred facility type, such as low traffic roadways or multi-use paths when available.

### **CASUAL BICYCLISTS – MAJORITY OF POPULATION**

Majority of bicyclists are casual riders, users who typically only utilize low traffic roads or multi-use trails under favorable conditions. These bicyclists often perceive traffic and other safety issues as significant barriers to their travel. While casual bicyclists maintain a concern for the safety of their interactions with the transportation network, they may become “Confident Bicyclists” as they gain experience.

### **NON-RIDERS – LARGE PERCENTAGE OF POPULATION**

Non-riders do not ride bicycles for a variety of reasons, including safety concerns, economic issues, or a lack of bicycle friendly facilities. While a portion of this group will not ride a bicycle under any circumstances, a significant number may eventually become bicyclists with time, education, and infrastructure improvements.

## **A.2 Types of Facilities**

There are a variety of infrastructure and facility types available for the Town of Mount Olive to consider. These help promote convenient and safe access to desired destinations within the Town of Mount Olive. A wide variety of bicycle, pedestrian, and shared use facilities are outlined in this section to provide options for this Plan, as well as subsequent transportation planning in Mount Olive.

### **A.2.1 Bicycle Facilities**

#### **BIKE LANES**

Dedicated bicycle lanes serve the needs of the greatest variety of bicyclists, particularly when installed on roads with higher speeds and traffic volumes. These lanes should be a minimum of 4 feet wide on a consistent surface and include standard pavement markings and signs. By visually distinguishing a bicycle-only travel lane, bike lanes allow bicyclists to travel at their preferred speed with minimal interference from surrounding traffic. Bike lanes are most effectively implemented in curb-and-gutter settings with few driveways. In terms of cost of maintenance, bike lanes are very similar to paved shoulders. Overall, bike lanes act as the central feature of a complete bicycle network, fully integrating the use of bicycles as a vehicle within the transportation network as a whole.

#### **SHARED USE PATHS (INDEPENDENT RIGHT-OF-WAY [ROW])**

Unlike bike lanes, shared use paths physically separate users from motor traffic. Shared use paths include sidepaths (within the roadway ROW), greenway trails (natural corridors), rail-trails (along an existing or former railroad ROW), and other paved facilities built specifically for bicycle and pedestrian traffic. To adequately accommodate both pedestrians and bicyclists, these pathways should be at least 10 feet wide. Existing shared use paths that are less than 10 feet wide are good candidates for widening as those paths are repaved over time. Shared use paths

provide the best protection from motor traffic, except at roadway crossings.

#### **SIDEPATHS**

While path alignments in independent ROW are generally preferred, sometimes existing roads provide the only corridors available. Sidepaths are a specific type of shared use path that run adjacent to the roadway, where ROW and other physical constraints dictate.

The American Association of State Highway and Transportation Officials (AASHTO) guidance discusses the potential conflicts associated with sidepaths, and also provides guidelines for their consideration where certain conditions exist. Among other guidelines, AASHTO recommends a minimum distance of 5 feet between paved shoulder and sidepath; along high-speed roadways, AASHTO recommends greater than 5 feet of separation. Sidepaths are most appropriate along roadway sections with relatively few intersections and driveways.

#### **SHARED LANE MARKINGS/SHARROWS**

Shared lane markings, also called sharrows, provide guidance to both motorists and bicyclists. While shared lane markings remind motorists of the presence of bicyclists, they also assist bicyclists with positioning within the lane on roads that cannot facilitate bike lanes. The arrow also serves its purpose to remind bicyclists of the correct travel direction, along with traffic, which is very important considering the frequent occurrence of bicyclists incorrectly traveling against traffic.

#### **PAVED SHOULDERS**

In rural areas, paved shoulders can be especially useful to bicyclists. Four-foot-wide paved shoulders allow bicyclists to travel adjacent to through traffic on a paved surface. Where posted speed limits are 55 mph or greater, five-foot-wide shoulders may be preferred. Although paved shoulders are the typical bike facility in rural areas, some bicyclists do not prefer these due to the accumulation of litter posing a safety hazard.



Bike Lane (Chapel Hill, NC)  
Photo: NCDOT



Shared Use Path  
Photo: VHB



Sidepath  
Photo: VHB



Shared Lane Markings/Sharrows  
Photo: VHB





Paved Shoulders  
*Photo: NCDOT*

## A.2.2 Pedestrian Facilities

### **SIDEWALKS**

Sidewalks are pedestrian facilities that should be a minimum of 5 feet wide, and where possible should include a landscaped strip between the sidewalk and roadway. Where sidewalk is provided on one side of the road only, consideration should be given to a wider facility (8 to 10 feet). All sidewalks should be accessible by curb cuts with ramps to help comply with the Americans with Disabilities Act (ADA) of 1990.

### **CROSSWALKS**

Crosswalks, whether marked or unmarked, legally exist at all intersections except in prohibited areas. Marked crosswalks emphasize the pedestrian right-of-way to motorists and are typically 10 feet wide. Crosswalk markings can be distinguished by a variety of patterns, including traditional and high-visibility. While traditional crosswalks consist of two lines perpendicular to the

direction of motorist travel, high visibility crosswalks utilize two-foot-wide longitudinal bars parallel to motorist travel, increasing pedestrian visibility to motorists.

For busier downtown locations may employ raised median refuge islands to provide safe spaces for pedestrians to rest or wait for traffic to pass before continuing to cross. Pedestrian refuges not only provide safety and visibility for crossing pedestrians, they may also calm traffic in downtown corridors and encourage pedestrians to cross at designated points rather than at unmarked locations. Since pedestrian refuges may block the turning movements of vehicles out of commercial and residential driveways, additional consideration should be taken for the effects of raised medians on traffic operations.

### **Pedestrian Refuges**

Busier downtown locations may employ raised concrete median refuge islands to provide safe spaces for pedestrians to rest or wait for traffic to pass before continuing to cross. Pedestrian refuges not only provide safety and visibility for crossing pedestrians, they may also calm traffic speeds and encourage pedestrians to cross at marked rather than at unmarked locations. Since pedestrian refuges and medians may block the turning movements of vehicles out of driveways, additional consideration should be taken for the effects of raised medians on traffic operations.

### **Raised Crosswalks**

Raised, marked crosswalks can make pedestrians more visible to oncoming traffic and provide traffic calming benefits at sensitive locations. Usually, signage accompanies these crosswalks, indicating to vehicles that a raised pedestrian crossing is ahead. A detectable, textured warning surface at the edge of the raised crosswalk alert visually impaired pedestrians that they are entering the roadway.



**Curb Ramps**

To meet ADA requirements, both ends of a crosswalk should have curb cuts with a gently sloping ramp where the crosswalk meets the adjoining sidewalk. This ramp should be covered by a textured warning surface, typically truncated domes, to alert visually impaired pedestrians that they are entering the roadway. The FHWA link at the end of this section provides more information on crosswalk design and specifications.

**CURB EXTENSIONS**

Curb extensions are extensions of sidewalks that effectively narrow the roadway and calm traffic. They prioritize pedestrian safety by reducing crossing distance, improving pedestrian visibility, and reducing the speeds of passing vehicles. Curb extensions also serve a secondary purpose of protecting on-street parking. However, curb extensions should not protrude into a bike lane.

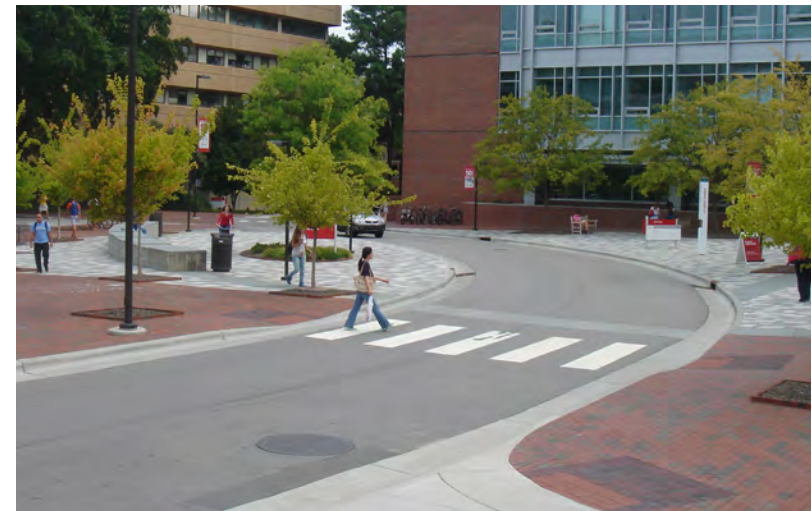
**PEDESTRIAN SIGNALS**

At signalized intersections, pedestrian countdown signals can facilitate crossings at high volume roads. At unsignalized intersections and mid-block crossings, signage and rectangular rapid flashing beacons (RRFBs) can alert drivers to the presence of pedestrians. RRFB devices work well at locations with intermittent pedestrian activity, where they will not disrupt traffic with a high volume of crossings. Locations with higher crossing volumes may consider raised pedestrian refuges instead.

For more information, the FHWA provides guides for planning active transportation in small towns and rural areas (Small Town and Rural Multimodal Networks (2016)) as well as design guidelines for sidewalks and trail networks (Designing Sidewalks and Trails for Access (1999 & 2001)).



Sidewalk  
*Photo: NCDOT*



Crosswalk  
*Photo: VHB*



Raised Crosswalk  
*Photo: VHB*



Curb Ramp  
*Photo: NCDOT*



Curb Extensions  
*Photo: NCDOT*



Pedestrian Signal- RRFB  
*Photo: VHB*



### A.3 Design Guidelines for Facilities

This section describes certain general minimum standards, but specific projects should rely on federal and state resources for specific design criteria as part of project implementation. The final section provides a list of useful online guidance by source.

#### A.3.1 National Guidelines

##### AASHTO GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES

AASHTO is a non-profit organization with the goal of supportive multimodal transportation for the entire United States. The AASHTO Pedestrian Guide provides guidance on the planning, design, and application of various types of pedestrian facilities. The project team used this guide to help develop the recommendations in this Plan, and future updates to this Plan should apply the guide.

##### FHWA GUIDANCE

FHWA provides guidance for accessibility, design, and facility operations. Often, these are in the form of standalone publications that target a specific issue in transportation, such as planning in small towns and facility design. Its resources are especially helpful for state and local governments who wish to implement best practices in transportation planning.

##### MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

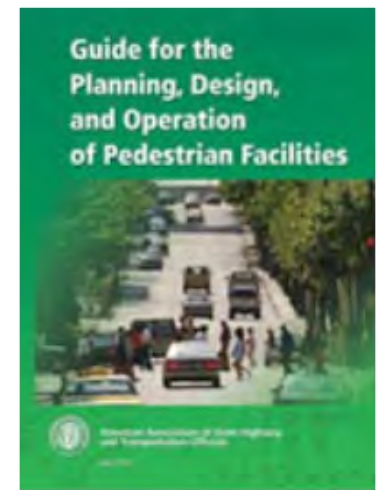
The MUTCD provides guidance on the use, design, and application of control devices such as signs, pavement markings, and signals. This manual defines the compliant design criteria for specific implementation projects. The project team consulted the MUTCD during preparation of this Plan.

MUTCD approved the current standard in 2009, with interim approvals subsequently passed to update portions of the Manual with state-of-the-practice. The next official version of the MUTCD is anticipated to be approved ~2021, however this may shift into future years.

##### UNITED STATES ACCESS BOARD

The US Access Board provides standards and guidelines for accessibility consistent with ADA. For more information about ADA accessibility requirements, the Town should consult the US Access Board's 1991 ADA Accessibility Guidelines (ADAAG) and the 2010 Standards for Accessible Design as minimum requirements for new construction or alterations.

The Town should also consult the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (proposed PROWAG) for additional best practices for accessibility. PROWAG has been published as a Notice of Proposed Rulemaking but is not standard as of 2017.



### A.3.2 North Carolina Guidelines

#### MUTCD

North Carolina has its own supplement to the MUTCD to provide additional guidance on very specific issues, such as the implementation of speed limit signage. For more general instruction on signage and traffic markings, consult the national MUTCD provided by FHWA.

#### PEDESTRIAN CROSSING GUIDELINES

This guide is designed to help local communities evaluate the existing conditions at pedestrian crossings in North Carolina. It can be used to assess potential improvements based on this evaluation. This guide is not designed to prioritize improvements, or assess the connectivity of a local pedestrian network. Additionally, this guide may not apply in special circumstances such as school crossings.

#### COMPLETE STREETS PLANNING AND DESIGN GUIDELINES

The North Carolina Department of Transportation (NCDOT) outlines guidelines for pedestrian and bicyclist facilities in its Complete Streets Planning and Design Guidelines publication. This guide is designed to help communities design streets for a variety of transportation modes. Through this multimodal approach, communities can become more active, sustainable, and connected.

#### TRAFFIC ENGINEERING POLICIES, PRACTICES AND LEGAL AUTHORITY (TEPPL)

This comprehensive resource provides a complete authority on federal and state policies and regulations regarding all transportation issues. This resource should be used as a reference for very intricate details regarding policy issues affecting active transportation.

### A..3 Useful Web Links by Source

#### FHWA

MUTCD (2009): <https://mutcd.fhwa.dot.gov/>

Bicycle and Pedestrian Program Publications:  
[https://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/](https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/)

United States Access Board and ADA:  
<https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/guidance-and-research/accessible-public-rights-of-way-planning-and-design-for-alterations/chapter-7%E2%80%94resources>

#### NCDOT

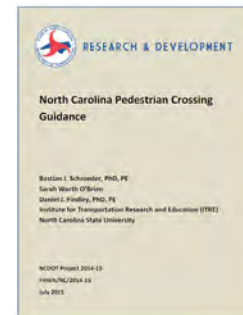
WalkBikeNC: <https://www.ncdot.gov/bikeped/walkbikenc/>

MUTCD-North Carolina Supplement (2009):  
<https://connect.ncdot.gov/resources/safety/Documents/>

Pedestrian Crossing Guidance:  
[https://connect.ncdot.gov/resources/safety/Teppl/TEPPL%20All%20Documents%20Library/Pedestrian\\_Crossing\\_Guidance.pdf](https://connect.ncdot.gov/resources/safety/Teppl/TEPPL%20All%20Documents%20Library/Pedestrian_Crossing_Guidance.pdf)

Complete Streets Planning and Design Guidelines:  
<https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>

TEPPL: <https://connect.ncdot.gov/resources/safety/Teppl/Pages/tepl.aspx>





# B Appendix B. Funding

## B.1 Federal Funding

In 2015, a five-year transportation funding authorization program was signed called the Fixing America’s Surface Transportation (FAST) Act. The FAST Act includes several funding programs that may be used for constructing bicycle and pedestrian transportation improvements. Unless otherwise noted, NCDOT is responsible for selecting which projects will receive these federal funds.

### B.1.1 Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program (HSIP) aims to reduce traffic fatalities and serious injuries on all public roads, including non-State-owned public roads. The NCDOT HSIP follows a data-driven approach to select safety projects, select design options (often referred to as “countermeasures”), and evaluate performance. NCDOT traffic engineers work with local agencies to evaluate high-crash locations as possible HSIP projects.

NCDOT reviews the past 10 years of bicycle and pedestrian crash history at potential project sites. Local agencies should contact their respective Division office to discuss bicycle and pedestrian safety concerns along local or State-owned roadways. HSIP-funded bicycle and pedestrian improvement projects often do not require

a local funding match. Common HSIP-funded project types include pedestrian hybrid beacons (PHBs), road diets, pedestrian refuge medians, and pedestrian signals at marked crosswalks.





Pedestrian Hybrid Beacon (PHB)  
*Photo: City of Charlotte*



Road Diet  
*Photo: City of Charlotte*



Pedestrian Refuge Median  
*Photo: NCDOT*



Pedestrian Signal Heads at Marked Crosswalks  
*Photo: NCDOT*

### B.1.2 Surface Transportation Block Grant (STBG) Program

The STBG program is similar to the previously existing Surface Transportation Program, and it is designed to respond to local transportation needs across all modes. Transportation Alternatives Program (TAP) funding is set aside within this program. Bicycle and pedestrian improvements are the most common type of project funded with TAP dollars. Common STBG or TAP projects include sidewalks and greenways.

Within the STBG and TAP set-aside, percentages of the State's allocation are available for areas meeting certain population thresholds. The Town Mount Olive should coordinate with the Eastern Carolina Rural Transportation Planning Organization to discuss opportunities to apply for STBG or TAP funding. TAP and STBG dollars are also programmed through the NC Strategic Transportation Investments (STI) formula discussed in later sections. STBG or TAP funds can be used for all phases of a project, including the preparation of construction design documents, environmental agency review, construction, and inspection.

Per the NC STI law, local agencies must provide a 20% non-federal (local) match to receive STBG or TAP funding for a bicycle or pedestrian project. Town staff should consult with NCDOT staff to develop cost estimates for future construction projects and discuss options for administering federally-funded projects. Local staff should plan to devote significant time to administering federally funded projects. Please consult NCDOT's Local Programs Management Office for more information on the steps involved with locally-administered bicycle and pedestrian construction projects.

### B.1.3 Congestion Mitigation and Air Quality Improvement (CMAQ) Program

CMAQ funds are available to regions of the State that do not meet the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, or particulate matter. These regions are referred to as non-attainment areas or maintenance areas (former non-attainment areas that are now in compliance). Mount Olive does not currently fall within a non-attainment area, and is therefore not eligible for these funds.



### B.1.4 Recreational Trails Program (RTP)

The FAST Act allows a set aside from TAP to be directed toward the Recreational Trails Program (RTP). In North Carolina, the Department of Natural and Cultural Resources (DNCR) manages RTP. The NC Division of Parks and Recreation (State Trails Program) provides grant funding to local groups to acquire property or build trails. Grants are usually limited to \$100,000 per community or project. RTP-funded trail projects include paved greenways and natural surface hiking trails.





### B.1.5 Better Utilizing Investment to Leverage Development (BUILD) Grants

The BUILD Transportation Discretionary Grants program replaced the Transportation Investment Generating Economic Recovery (TIGER) grant program in FY 2018. Like TIGER, the BUILD program uses a competitive, merit-based selection process to award grants to state, local, and tribal agencies for projects with exceptional benefits and significant local or regional impacts. Past grant awards have included multimodal projects that enhanced pedestrian and bicycle networks. BUILD funds are separate from the FAST Act, and may be subject to future federal budgetary adjustments. Local agencies should watch for future announcements for BUILD grants and consult with NCDOT when considering an application.

### B.1.6 Federal Transit Administration Funding

Several FTA programs exist that can support “last mile” projects, such as sidewalks connecting to bus stops or bike lanes connecting to transit stations. Local agencies should first consider they are part of a rural area (5311 funding) or urbanized area (5307 funding). Whether the bicycle or pedestrian project connects to a fixed guideway (i.e. light rail) or serves a senior population are other important considerations. Local agencies should consult with the NCDOT Public Transportation Division for more information about funding options.

## B.2 State Funding



### B.2.1 STI

In 2013, the North Carolina General Assembly passed the STI law. STI defines the overall structure and criteria for distributing NCDOT’s federal and state transportation dollars among new projects. Bicycle and pedestrian projects are eligible within the STI Division Needs funding tier, meaning it will compete for dollars, across all mods and with other communities in the same NCDOT Highway Division.

STI follows a data-driven scoring process for all transportation projects. Each mode has a separate scoring methodology, described by the Strategic Mobility Formula (sometimes referred to as “SPOT”). The SPOT 5.0 version of the formula used to score bicycle and pedestrian projects considers the following criteria:

- Safety (15%)
- Access (10%)
- Demand (10%)
- Connectivity (10%)
- Cost Effectiveness (5%)
- Local Input (50%)



Local input is the most significant part of a project’s overall score, so it is most important to coordinate with the MPO and NCDOT Division 3 office. For more information about the SPOT criteria, review online resources provided by NCDOT <https://connect.ncdot.gov/projects/planning/Pages/PrioritizationResources.aspx>

### B.2.2 NCDOT Spot Safety Program Funds

The NCDOT Spot Safety Program constructs smaller improvement projects to address safety issues. The maximum Spot Safety funds per project is \$250,000. A NCDOT committee recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. The committee considers criteria such as the frequency and severity of crashes, levels of traffic congestion, pedestrians and school access, and local support. Local agencies should contact their NCDOT Division to discuss locations that may have high crash rates and other safety concerns to see if Spot Safety is a possible funding source for their bicycle and pedestrian improvement.

### B.2.3 Contingency Funding

Contingency funding is a discretionary funding source appropriated through the annual State budget for small construction projects. Local agencies should contact their NCDOT Division Engineer or state Representative/Senator to discuss smaller scale improvements, such as sidewalks or intersection improvements. Contingency funding is approved by the NCDOT BOT throughout the calendar year.



### B.2.4 Complete Streets

Per the 2009 NCDOT Complete Streets Policy and following design guidelines describing how NCDOT will cost-share bicycle and pedestrian improvements, a local agency may request bicycle and pedestrian accommodations as part of a major highway or bridge replacement project. The various policies describing the share of the improvement costs for pedestrian accommodations are described on the website for the NCDOT Bicycle and Pedestrian Division <https://www.ncdot.gov/bikeped/lawspolicies/>. The NCDOT Pedestrian Policy is the most important resource for local agencies to review with regard to cost-share responsibilities.

Sidewalk improvements to a roadway widening or bridge replacement project may be considered if the Town has sidewalks leading to the roadway project extents. Also, NCDOT may ask the Town to pay for part of the cost of constructing the sidewalk and for acquiring additional right of way required for the sidewalk. In-road bicycle lanes, shared lane markings, or shoulders that will be maintained by NCDOT may not require a cost-share from the Town.

The Town should track NCDOT roadway and bridge projects and request bicycle and pedestrian accommodations as specified in this plan. NCDOT may also require that the Town maintain the sidewalks after construction. Ultimately, it is much more affordable

for a Town to build sidewalks and bicycle accommodations as part of the roadway or bridge replacement project than try to add these improvements later.

As with major roadway widening and bridge projects, NCDOT may consider bicycle and pedestrian improvements as part of routing resurfacing projects. NCDOT will consider whether the existing roadway right-of-way will accommodate additional pavement width, if necessary. Oftentimes, NCDOT does not own right-of-way along rural roadways, so adding shoulder width in these areas can be difficult. If the resurfacing project will impact an intersection curb with a sidewalk approach, NCDOT may be required to install ADA-compliant curb ramps. The Town should watch NCDOT's resurfacing schedule and request bicycle and pedestrian accommodations where possible.



### B.2.5 North Carolina Parks and Recreation Trust Fund (PARTF)

PARTF provides grants to local governments to assist with public park and recreation projects, including trails and greenways. PARTF is administered by the NC Division of Parks who annually solicits applications from local agencies for funding. Local governments can apply to acquire land for parks and build trails or greenways for public use. A proposed project must be located on a single site. A local agency must provide a local match of at least 50% of the total cost of the project, but the appraised value of land can be donated to the local agency can be used as part of the match.

# C Appendix C. Public Input

- Public survey summary
- Steering Committee Meeting #1 summary
- Steering Committee Meeting #2 summary
- Public Workshop #1 summary
- Steering Committee Meeting #3 summary
- Public Workshop #2 summary



## Meeting Notes

Place: Mt Olive Courtroom  
114 E. James Street, Mt Olive, NC

Date: December 13, 2018

Notes Taken by: VHB

Project #: 38600.03

Re: Mount Olive Bicycle & Pedestrian Plan –  
Public Survey Summary

---

### Purpose & Background

This memo summarizes the results of the Mount Olive Bicycle & Pedestrian Plan public survey. The online survey was open from March 1<sup>st</sup>, 2018, to November 12<sup>th</sup>, 2018, and received 205 total responses. The survey asked respondents about their attitudes and perceptions of walking and cycling in the Town of Mount Olive, as well as a set of demographic questions for the project team to better understand survey participants. VHB summarized the results for inclusion in the preliminary and final recommendations of the plan.

### Summary of Key Findings

The following findings are arranged in the order they were presented on the public survey:

#### Survey Respondent Demographics

- 54% of respondents live and work in Mount Olive (including students). An additional 11% live in Mount Olive however work elsewhere. A total of 65% of respondents were Mt Olive residents, and 4% were visitors.
- 69% of survey respondents were female, 28% were male, and 2% preferred not to answer.
- The most frequent age range of a survey respondent was between 18 and 25 years old (30%). 53% of respondents were between 18 and 35 years old, and the remaining 47% were greater than 35 years old.
- 87% of respondents lived in households with two or more persons.
  - 79% had access to two or more vehicles, compared with 48% that had access to two or more bicycles.
- 49% of respondents lived in households with three or more persons.
  - 40% had access to three or more vehicles, compared with 24% with access to three or more bicycles.
- Respondents were more likely to be living in a zero-bicycle household (30%) than a zero-car household (2%).

#### Attitudes toward Walking and Infrastructure in Mount Olive

- 86% of respondents currently walk in and around Mount Olive, with 44% indicated that they typically walk at least several times a week around town.
- Generally, respondents have an unfavorable view of pedestrian infrastructure in town, 50% rated the network as "Poor" or lower, compared with only 10% rating the network as "Good" or higher.

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Raleigh, NC 27606  
P 919.829.0328



- Infrastructure concerns tended to be the biggest barriers to walking in Mount Olive. Lack of connected sidewalks (57%), poor maintenance of sidewalks (38%), poor lighting along sidewalks (31%), and lack of crosswalks (31%) were the highest rated impediments to walking.
  - Concerns for personal safety (24%), unsafe vehicle speeds (16%), and unsafe pedestrian crosswalk locations (6%) further discouraged walking in Mount Olive.

#### **Attitudes toward Bicycling and Infrastructure in Mount Olive**

- 70% of respondents have at least one bicycle available in their household, and 24% of respondents have at least three bicycles available in their household.
- 31% of respondents currently ride a bicycle in and around Mount Olive, with 24% of respondents riding a bicycle at least a few times a month.
- A large portion of respondents (56%) chose not to rate the bicycle network ("N/A").
  - Of the remaining portion, only 5% rated the existing bicycle network in Mount Olive as "Good" or better, while 19% rated it as "Poor" or worse.
- The most common barriers to bicycling include: lack of bicycling infrastructure (bicycle lanes or shared lane markings 52%), not owning a bicycle (43%), and unsafe vehicular traffic/speed (27%).
  - 3% of respondents indicated that they are not discouraged, they bike often.

#### **Destinations and Encouragement in Mount Olive**

- The most popular destinations for bicycling and walking in town are the University of Mount Olive (75%), Downtown/Center Street (63%), and Shopping/Dining (59%).
  - Parks (20%), Library (16%), and Schools (Middle 7%, and Elementary 5%) were also identified.
- Infrastructure improvements that would encourage respondents to bicycle/walk more frequently included: Constructing new sidewalks/trails (49%), repairing existing sidewalks/trails (44%), adding crosswalks and pedestrian signals at intersections (38%), and installing bicycle lanes/markings (36%).
  - Lighting (29%), ADA curb ramps (16%), Fitness programs (13%), and street furniture such as benches (9%) were also identified.

#### **ATTACHEMNTS**

Summary of Survey Results

# Town of Mount Olive Bicycle and Pedestrian Plan

Monday, November 12, 2018

205

Total Responses

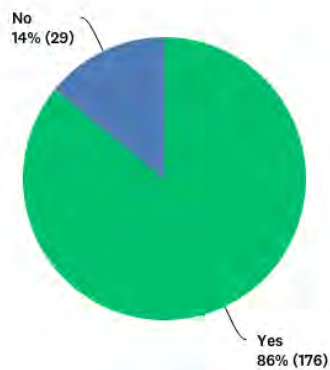
Date Created: Thursday, March 01, 2018

Complete Responses: 172

 SurveyMonkey

## Q1: Do you currently walk in/around Mount Olive?

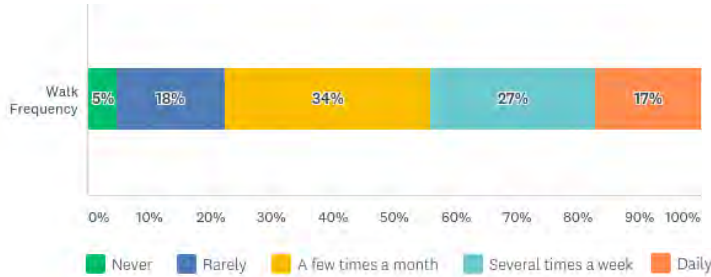
Answered: 205 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	86%	176
No	14%	29
<b>TOTAL</b>		<b>205</b>

### Q2: How often do you walk in/around Mount Olive?

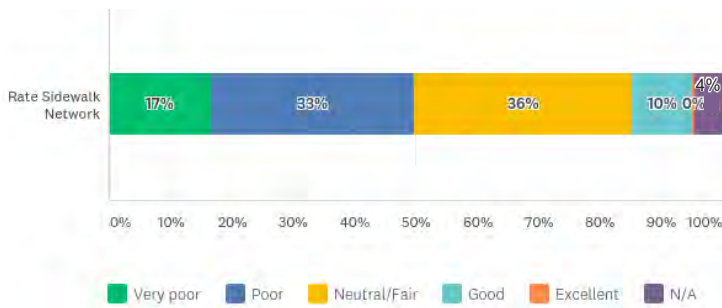
Answered: 205 Skipped: 0



	NEVER	RARELY	A FEW TIMES A MONTH	SEVERAL TIMES A WEEK	DAILY	TOTAL	WEIGHTED AVERAGE
Walk Frequency	5%	18%	34%	27%	17%	205	3.34
	10	36	69	55	35		

### Q3: How do you rate the overall network of sidewalks in Mount Olive? (i.e. Are they well connected to destinations?)

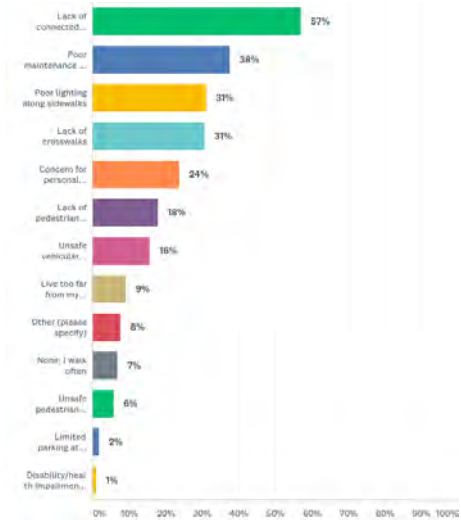
Answered: 205 Skipped: 0



	VERY POOR	POOR	NEUTRAL/FAIR	GOOD	EXCELLENT	N/A	TOTAL	WEIGHTED AVERAGE
Rate Sidewalk Network	17%	33%	36%	10%	0%	4%	205	-0.58
	34	68	73	20	1	9		

### Q4: In your opinion, which of the following discourage you from walking more frequently? (Select up to three)

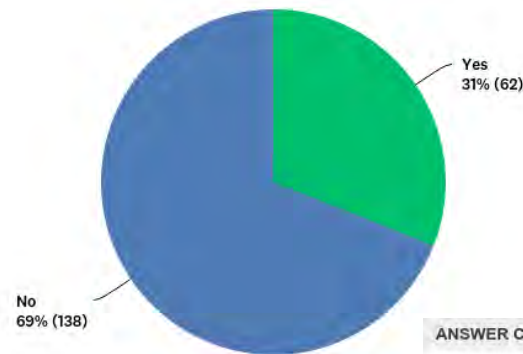
Answered: 205 Skipped: 0



ANSWER CHOICES	PERCENTAGE	RESPONSES
Lack of connected sidewalks	57%	117
Poor maintenance of sidewalks (cracked, separated, or overgrown)	38%	77
Poor lighting along sidewalks	31%	64
Lack of crosswalks	31%	63
Concern for personal safety/security	24%	49
Lack of pedestrian signals at roadway crossings	18%	37
Unsafe vehicular traffic/speed	16%	32
Live too far from my favorite destinations	9%	19
Other (please specify)	8%	16
None; I walk often	7%	14
Unsafe pedestrian crosswalk locations	6%	12
Limited parking at convenient, centralized location (park and walk to multiple destinations)	2%	4
Disability/health impairment (too few accommodations)	1%	2
<b>Total Respondents:</b>		<b>205</b>

### Q5: Do you currently ride a bicycle in/around Mount Olive?

Answered: 200 Skipped: 5

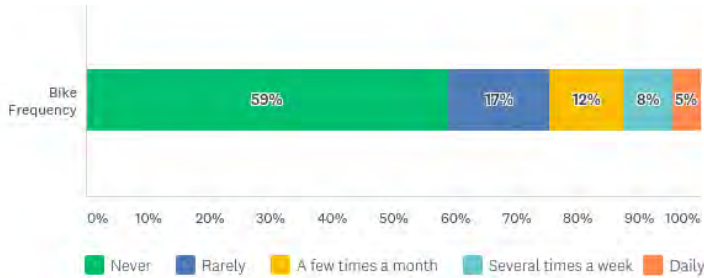


ANSWER CHOICES	PERCENTAGE	RESPONSES
Yes	31%	62
No	69%	138
<b>TOTAL</b>		<b>200</b>



### Q6: How often do you ride a bicycle in/around Mount Olive?

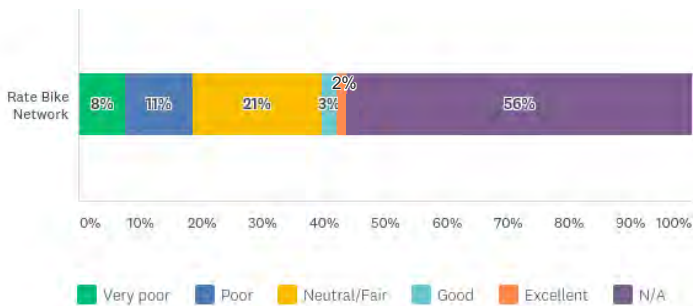
Answered: 200 Skipped: 5



	NEVER	RARELY	A FEW TIMES A MONTH	SEVERAL TIMES A WEEK	DAILY	TOTAL	WEIGHTED AVERAGE
Bike Frequency	59%	17%	12%	8%	5%	200	1.82
	118	33	24	16	9		

### Q7: How do you rate your bicycling experience(s) in Mount Olive?

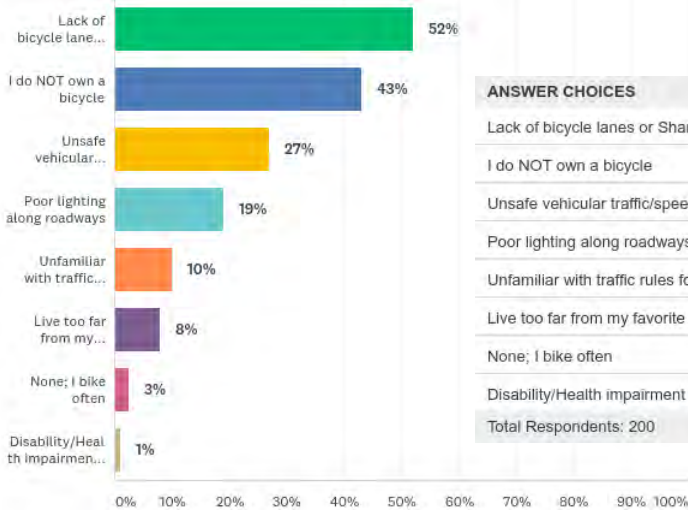
Answered: 199 Skipped: 6



	VERY POOR	POOR	NEUTRAL/FAIR	GOOD	EXCELLENT	N/A	TOTAL	WEIGHTED AVERAGE
Rate Bike Network	8%	11%	21%	3%	2%	56%	199	-0.47
	15	22	42	5	3	112		

### Q8: In your opinion, which of the following discourage you from bicycling more frequently? (Select up to three)

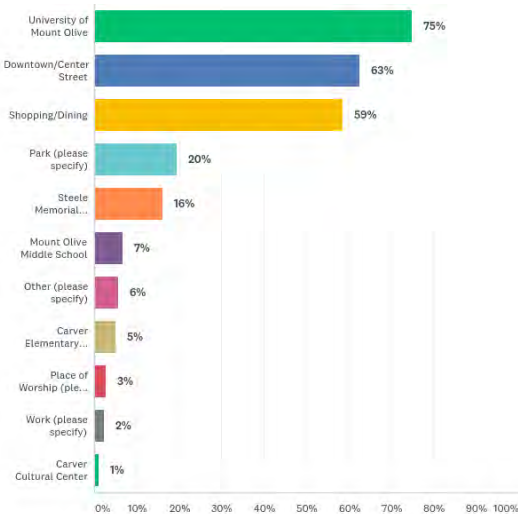
Answered: 200 Skipped: 5



ANSWER CHOICES	RESPONSES
Lack of bicycle lanes or Shared Lane Markings	52% 104
I do NOT own a bicycle	43% 86
Unsafe vehicular traffic/speed	27% 54
Poor lighting along roadways	19% 38
Unfamiliar with traffic rules for bicyclists	10% 20
Live too far from my favorite destinations	8% 16
None; I bike often	3% 5
Disability/Health impairment (too few accommodations)	1% 2
Total Respondents: 200	

### Q9: What destinations would you most like to walk/bike to? (Select up to three)

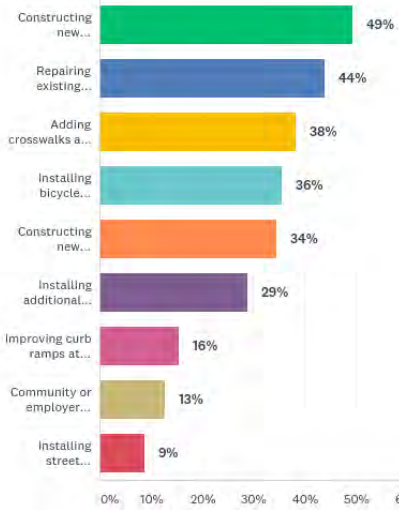
Answered: 179 Skipped: 26



ANSWER CHOICES	RESPONSES
University of Mount Olive	75% 134
Downtown/Center Street	63% 112
Shopping/Dining	59% 105
Park (please specify)	20% 35
Steele Memorial Library	16% 29
Mount Olive Middle School	7% 12
Other (please specify)	6% 10
Carver Elementary School	5% 9
Place of Worship (please specify)	3% 5
Work (please specify)	2% 4
Carver Cultural Center	1% 2
Total Respondents: 179	

### Q11: In your opinion, which of the following would encourage you to walk/bike more frequently? (Select up to three)

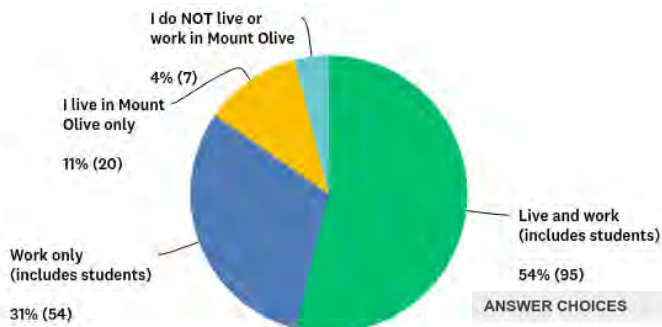
Answered: 180 Skipped: 25



ANSWER CHOICES	PERCENTAGE	RESPONSES
Constructing new sidewalks/trails (off-street)	49%	89
Repairing existing sidewalks/trails	44%	79
Adding crosswalks and pedestrian signals at intersections	38%	69
Installing bicycle lanes/markings (on-street)	36%	64
Constructing new recreational greenways and shared-use paths (off-street)	34%	62
Installing additional street lighting	29%	52
Improving curb ramps at sidewalks, crosswalks, or bus stops (Americans with Disabilities Act amenities)	16%	28
Community or employer fitness program	13%	23
Installing street furniture (e.g. benches)	9%	16
<b>Total Respondents: 180</b>		

### Q13: Describe your relationship with the Town of Mount Olive

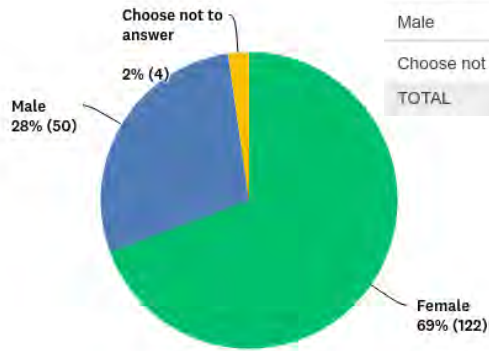
Answered: 176 Skipped: 29



ANSWER CHOICES	PERCENTAGE	RESPONSES
Live and work (includes students)	54%	95
Work only (includes students)	31%	54
I live in Mount Olive only	11%	20
I do NOT live or work in Mount Olive	4%	7
<b>TOTAL</b>		<b>176</b>

### Q14: What is your gender?

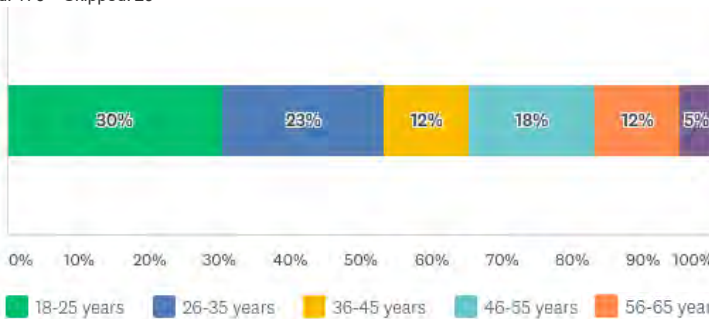
Answered: 176 Skipped: 29



ANSWER CHOICES	RESPONSES	
Female	69%	122
Male	28%	50
Choose not to answer	2%	4
<b>TOTAL</b>		<b>176</b>

### Q15: What is your age category?

Answered: 176 Skipped: 29

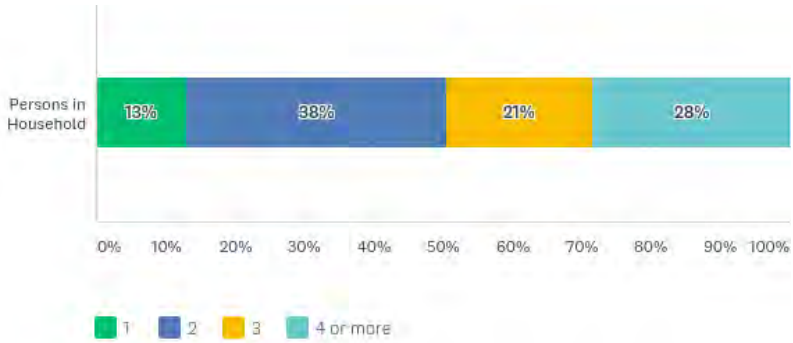


ANSWER CHOICES	RESPONSES	
18-25 years	30%	53
26-35 years	23%	40
36-45 years	12%	21
46-55 years	18%	31
56-65 years	12%	21
> 65 years	5%	8
<b>TOTAL</b>		<b>174</b>



### Q16: How many total persons live in your household?

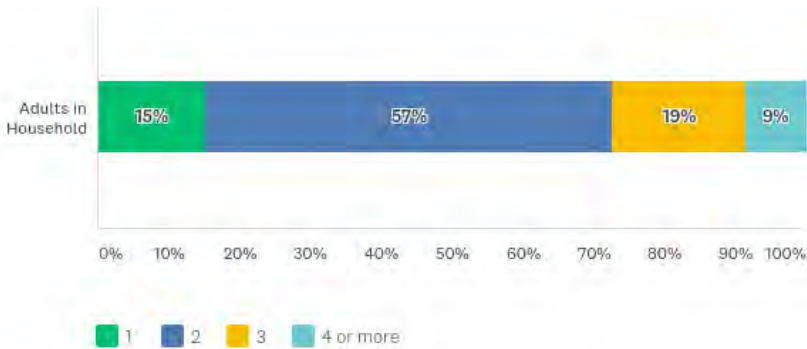
Answered: 176 Skipped: 29



	1	2	3	4 OR MORE	TOTAL	WEIGHTED AVERAGE
Persons in Household	13%	38%	21%	28%	176	2.65
	23	66	37	50		

### Q17: How many adults (18 years or older) live in your household?

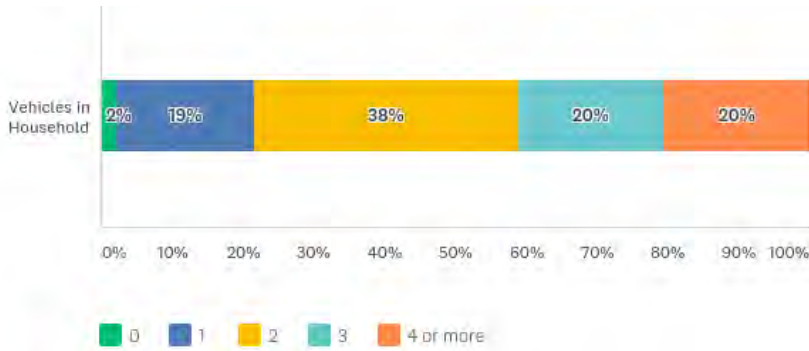
Answered: 176 Skipped: 29



	1	2	3	4 OR MORE	TOTAL	WEIGHTED AVERAGE
Adults in Household	15%	57%	19%	9%	176	2.20
	27	101	33	15		

### Q18: How many vehicles are available to your household?

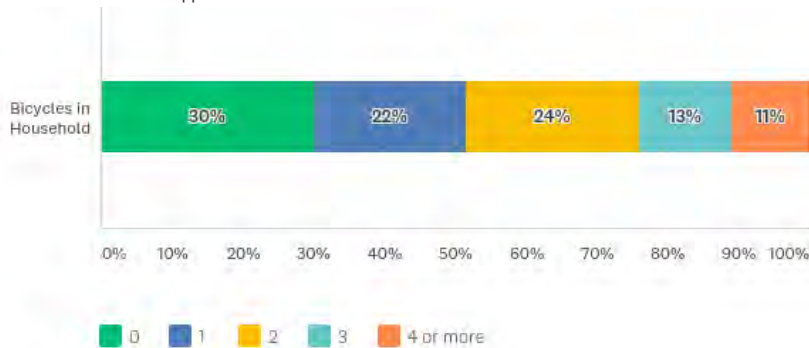
Answered: 176 Skipped: 29



	0	1	2	3	4 OR MORE	TOTAL	WEIGHTED AVERAGE
Vehicles in Household	2%	19%	38%	20%	20%	176	3.38
	4	34	66	36	36		

### Q19: How many bicycles are available to your household?

Answered: 176 Skipped: 29



	0	1	2	3	4 OR MORE	TOTAL	WEIGHTED AVERAGE
Bicycles in Household	30%	22%	24%	13%	11%	176	2.53
	53	38	43	23	19		



## Meeting Notes

Place: Mt Olive Train Depot  
110 W Main Street, Mt Olive, NC

Date: February 15, 2018

Notes Taken by: VHB

Project #: 38600.03

Re: Mt Olive Bicycle & Pedestrian Plan  
Steering Committee Meeting #1 Notes

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### ATTENDEES

See attached scan of sign in sheet

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Meeting began @ 10:05 AM; Meeting concluded @ 11:35 PM

These notes serve as meeting minutes from the project's first Steering Committee (SC) meeting, held on Thursday February 15, 2018 @ 10 AM in Mount Olive. Seventeen members of the SC were present.

Timothy Tresohlavý (VHB) serving as the transportation firm consultant opened the meeting with introductions, project background and schedule, review and discussion of vision & goals, review of NCDOT report content standards, and a mapping exercise to identify significant destinations within town.

**VHB Action Items** are displayed in yellow. **Steering Committee Action Items** are displayed in blue.

### Plan Success

SC members provided the following responses to the prompt: "This plan will be successful because..."

- Mt Olive is committed to safety, revitalization of our downtown, and collaborating with the University.
- Mt Olive has an engaged steering committee, and great leadership
- Mt Olive has demonstrated a commitment of resources, and partnership with NCDOT
- This plan will provide the means (funding mechanism) to a need (mobility improvement)
- Foot traffic has increased in the past 11 years, and we must connect to the University otherwise people will walk in the street, which is unsafe
- Mt Olive has non-vehicular mobility needs, particularly in the south end of town and near the University
- Mt Olive has existing safety hazards, especially at night
- Bicycle clubs pass through Mt Olive as a destination along a long-distance (State-wide) bicycle route; many athletes train along this route
- Citizens are more likely to walk/bike as part of an active lifestyle

VHB reviewed the three primary phases of the project: Existing conditions; Analysis & outreach; Plan development. A tentative schedule was presented, with an expected completion by Fall 2018.

### Public Engagement

This project includes two public workshop events, tentatively scheduled for April, and June, as well as an online survey to be distributed to citizens between March-May. VHB is continuing to revise survey questions. VHB will **post**

questions to Survey Monkey, and provide a link via email for the town to distribute. The survey should target residents without access to a vehicle.

SC members suggested that an event may be possible at the University of Mount Olive student center, before Spring classes end (May). The project should be careful to not exclude residents from the process however.

### Existing Town Events to Encourage Bike/Ped Activities

The following events were identified. VHB requests a brief description of each event (3-5 sentences) for the plan report

- Outlaw Foundation 5k run (March) <http://www.runtheeast.com/race-info/?id=5756>
- Get Your Bark On (April) <https://www.facebook.com/events/1372282529488467/>
- NC Pickle Festival (April)
  - Tour de Pickle bike <https://runsignup.com/Race/NC/MountOlive/TourdePickle>
  - Cuke Patch 5k run <https://runsignup.com/Race/NC/MountOlive/CukePatch5K>
- Heart Walk (October)
- Triangle Bike Group – Tuna Run (October) <http://tunarun200.com/>
  - Mt Olive section <http://www.mapmyrun.com/us/mount-olive-nc/tuna-run-200-leg-15-daughtrey-field-to-u-route-269247029>
- Active Routes to School participation in the past – years; # participants
- Other events?

### Significant corridors identified

The following locations and/or corridors were identified by SC members as significant candidates for improvement. These have been separated into priority versus secondary based on discussion with SC.

#### Priority Locations

- **S Church Street** (east side) from Franklin Street to E Maple Street
- **E Hillsboro Street** (south side) from S Center Street to S Church Street
- **N Church Street** (north side) from Journey Street to Cook Lane
- **Carver Cultural Center** – connections from near east side of town
- Foot traffic from **University of Mount Olive to Walmart**
  - Henderson Street and Bert Martin Road
  - NC 55 southside underneath US 117 overpass – possible diverging diamond
- Intersection improvements along US 117 ALT (Breazeale Ave)
  - @ Henderson Street
  - @ W Station Street

#### Secondary Locations

- N Church Street (west side) between E College Street and W Station Street (gap in existing sidewalk)



- W Park Ave from S Center Street to N Church Street
- Multi Use Path along E Nelson Street connecting S Center Street to Town Park near Oliver Street
- Multi Use Path along Herring Street connecting Carver Cultural Center to S Center Street
  - Includes safe crossing of RR tracks
- Franklin Street from S Center Street to Oliver Street
- Intersection improvements along W Station Street @ N Chestnut Street
- N Center Street from W Station Street to Henderson Street

### **Project Vision**

SC members suggested that VHB include the following elements to our project vision:

- Supporting all forms of non-automotive mobility, including end of trip transit needs
- Promote more healthy, active lifestyles
- Community that supports student needs as well as residents

### **Project Goals and Objectives**

SC members suggested that public outreach (survey) should be pushed out to civic groups, as well as through Town utility bills (need to coordinate with appropriate staff), and should target users without access to a vehicle.

Enhancing safety and connectivity was discussed in relation to the Carver Cultural Center, where elementary and middle school aged children have recreational events, and may need to walk home at dusk.

### **Content Standards**

VHB would like to learn more about Mt Olive community characteristics, and requested a recent plan/report that may have summarized population, demographics, and other socio-economic data.

### **Data Requests**

VHB requested any recent traffic counts or speed/safety studies that may have collected data. Three businesses were identified as significant generators of large truck traffic: Mt Olive Pickle Company, Butterball, and Georgia Pacific logging. VHB requested address locations for these facilities.

## **ATTACHMENTS**

Agenda

Sign In Sheet

Presentation Slides



# Meeting Agenda

**Date:** 15 February 2018

**Agenda Prepared By:** VHB

**Place:** Mt Olive Train Depot  
110 W Main Street, Mt Olive, NC

**Project No.:** 38600.03

**Project Name:** Mt Olive Bicycle & Pedestrian Plan

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## Meeting Agenda Items

- I. Introductions
  - a. *This plan will be successful because...*
- II. Project schedule
  - a. Report/data needs
  - b. Public engagement survey
- III. Vision, Goals, and Objectives
  - a. Community context
- IV. Plan content standards - NCDOT
- V. Existing conditions & mapping exercise – Interactive discussion
  - a. Origins/Destinations
  - b. Safety issues
  - c. Barriers
  - d. CTP recommendation (review)
- VI. Next Steps



Meeting Agenda

Meeting Sign-in Sheet

	Name	Dept./Office	Email
1	Sherry Davis	Town of mt. Olive	Secretary@townofmountolive.nc.gov
2	Jammie Royall	TOMO	jroyall@townofmountolive.nc.gov
3	Patrick Flanagan	Eastern Carolina FPO	pflanagan@eccog.org
4	Barbara Kornegay	Town of MO	bkornegay@umod.edu bkornegay@nc.rr.com
5	Joe Scott	Mayor	jscott@townofMountOliveNC.com
6	HARLIE CARMICHAEL	COMMISSIONER 2	HARCAR2018@YMAIL.COM
7	Josh Phillips	Parks & Recreation Director	JPhillips@townofmountOlive.nc.gov
8	Bryce Ficken	Business owner	bryceficken12@gmail.com
9	Taylor Davenport	Active Routes to School - VMC	taylor.davenport@vidanthealth.com
10	Jill Mills	UMO	jmills@umo.edu
11	Al Southerland	Retired	al.southerland@yahoo.com
12	Julie Beck	Mount Olive Chamber	president@mountolivechamber.com
13	Betsy Kane	NCDOT Bike/ped	ekane@ncdot.gov
14	Jimmy Eatmon	NCDOT - Div. 4	jeatmon@ncdot.gov
15	Bailee Henry	Intern: Chamber of Commerce	bailechenry@gmail.com



## Mount Olive Bicycle & Pedestrian Plan

Steering Committee Meeting #1

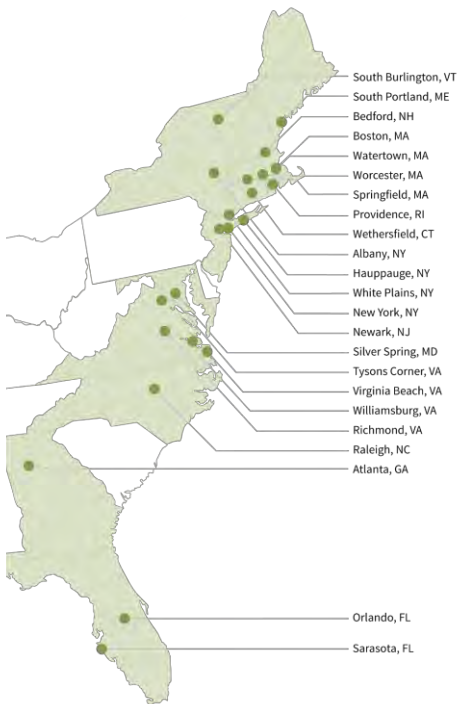
Presented by  
VHB Engineering NC, P.C.

February 15, 2018

### Today's Agenda

- Introductions *10 min*
- Project schedule *5 min*
- Vision/Goals/Objectives *15 min*
- Report Content Standards *15 min*
- Mapping Exercise *30 min*
- Next Steps *5 min*





## Meet VHB

1,350 passionate professionals including engineers, scientists, planners, and designers

Founded in 1979

23 offices on the east coast

### Core services

Transportation planning & engineering

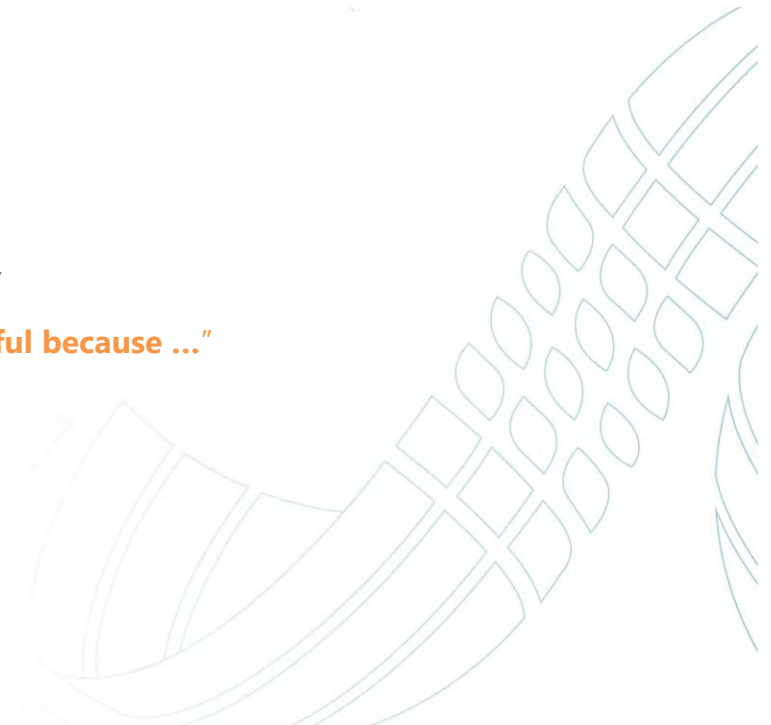
Land development

Planning & design

Environmental

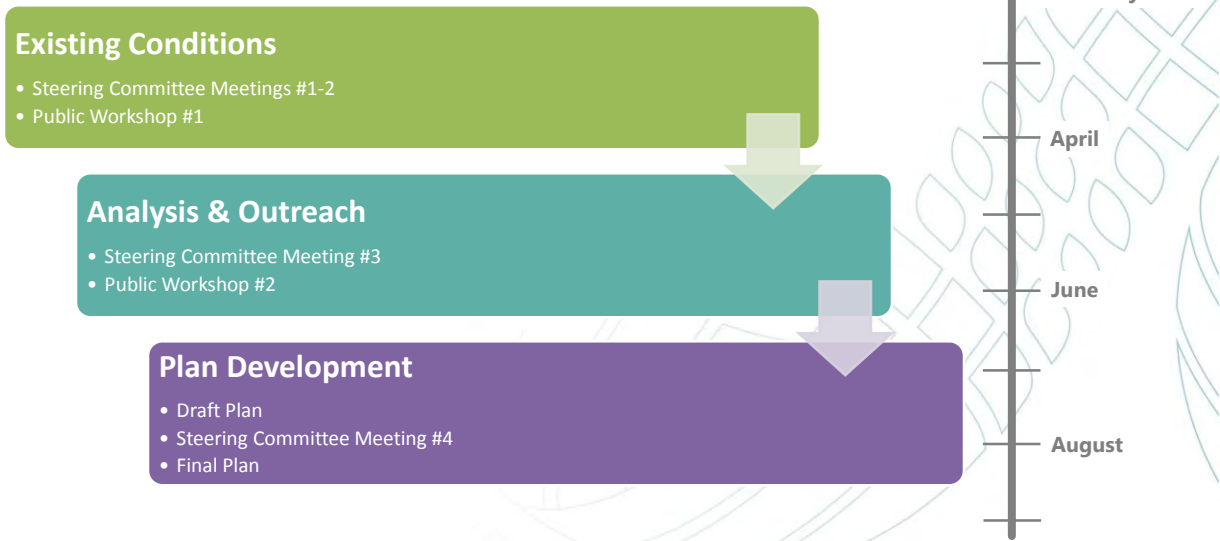
## Introductions

- Name
- Office/Department/Agency
- **"This plan will be successful because ..."**





## Project Schedule

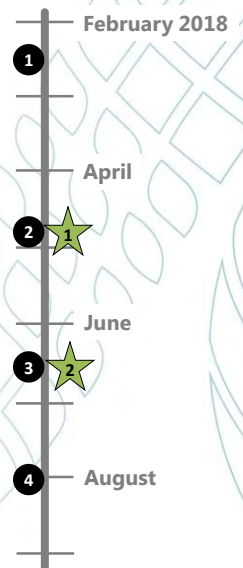


## Data Needs

- ✓ Wayne County GIS acquired
- ✓ Points of interest in Town
  - Participation in the Active Routes to School Program (report summary)
  - Key town events/festivals (list)
  - Town ordinances and zoning relating to biking/walking
  - Future land use plans/development (**University**)
  - Impending NCDOT or local repaving/improvement projects

## Public Engagement

- **Four Steering Committee Meetings** ●
  - February, April, and June 2018
  - July/August (If necessary)
- **Two Public Workshops** ★
  - April & June 2017
- **Public Survey**
  - [www.surveymonkey.com/r/BikeWalkMtOlive](http://www.surveymonkey.com/r/BikeWalkMtOlive)
  - Gauge public attitude toward current conditions
  - Identify potential opportunities and barriers

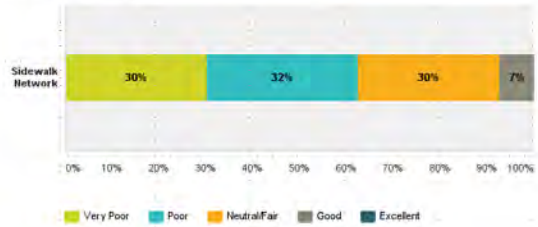


# Online Survey

- Review Questions

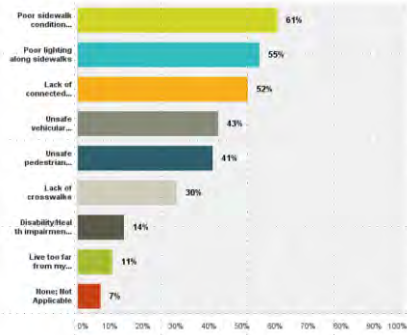
## Q3: How do you rate the overall network of sidewalks?

Answered: 56 Skipped: 0



## Q4: In your opinion, which of the following prevent you from walking more frequently? (check all that apply)

Answered: 56 Skipped: 0



Answer Choices	Responses
Poor sidewalk condition (sloped, cracked, overgrown)	61% 34
Poor lighting along sidewalks	55% 31
Lack of connected sidewalks (gaps)	52% 29
Unsafe vehicular traffic/speed	43% 24
Unsafe pedestrian crossing of roadways	41% 23
Lack of crosswalks	30% 17
Disability/Health impairment (too few accommodations)	14% 8
Live too far from my favorite destinations	11% 6
None, Not Applicable	7% 4
<b>Total Respondents: 56</b>	

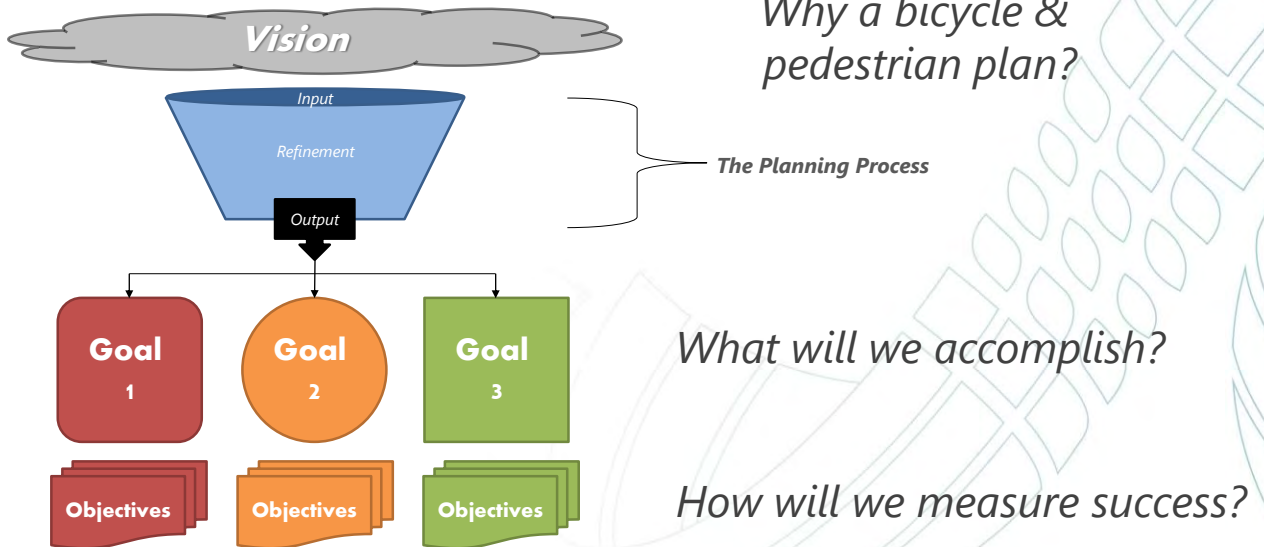
Source: Town of Fairmont, NC, Bicycle & Pedestrian Plan (2017)

# Vision/Goals/Objectives





## Vision/Goals/Objectives



## Vision Statement

## Vision Elements

- **Mobility** for those who need to walk/bike
- **Safe** for all users
- **Economic development**
  - Downtown as a destination - revitalization
- **Quality of Life**
  - Sense of community & "hometown feel"

North Carolina Department of Transportation  
Application for Bicycle and Pedestrian Planning Grant  
Form 8017 Call for Proposals

(Submit - Substantive deadline is Friday November 23, 2017)

<b>Applicant Information</b>		Bicyclist <input type="checkbox"/> Pedestrian <input type="checkbox"/> Both <input checked="" type="checkbox"/>	
Name of Municipality/Town of Mount Olive	Population: 4,000	County: Wayne	NCST Region: 12
Municipality agrees to enter into a cost-sharing agreement with NCDOT: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Municipality is member of: <input type="checkbox"/> NACT <input type="checkbox"/> NACT <input type="checkbox"/> NACT	
Department applying for grant: Town Manager: _____			
Contact Name: Perry Parks	Title: Administrator Assistant	Walk/Bike Number: 612-616-6131 ext. 433	
Work Fax Number: 919-436-1247	E-mail Address: perry.p@townofmountolive.com		
Address: 124 N.W. 1st Street Mount Olive, NC 27050	City: Mount Olive	State: NC	Zip Code: 27050

I certify that the Chairman of Mount Olive, in applying for Bicycle or Pedestrian Planning Grant funds, affirms a commitment to the plan's development, management, financing, and completion, and that the completed plan will be presented to the City/Town Council or other governing authority for adoption.

 Town Manager  
 Mayor

<b>Eligibility Criteria</b>	
Plan Category: <input type="checkbox"/> Bicycle Plan <input type="checkbox"/> Pedestrian Plan <input checked="" type="checkbox"/> Bicycle & Pedestrian Plan <input type="checkbox"/> Intermodal/Other Plan	<input type="checkbox"/> Metropolitan Area <input type="checkbox"/> Non-Metropolitan Area <input type="checkbox"/> Rural Area <input type="checkbox"/> Urban Area <input type="checkbox"/> Suburban Area <input type="checkbox"/> Other
The municipality has a current comprehensive plan or other planning document that includes bicycle and pedestrian provisions.	<input type="checkbox"/> Yes, attached <input type="checkbox"/> Pending <input type="checkbox"/> None
The municipality has a current bicycle and pedestrian plan.	<input type="checkbox"/> Yes, attached <input type="checkbox"/> Pending <input type="checkbox"/> None

North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation, page 1 of 8 - 05/04/2015

## Goals and Objectives

1. **Review relevant plans**
  - Assess existing conditions
  - Compile previous recommendations
2. **Public & stakeholder outreach**
  - Assemble stakeholder committee
  - Perform online survey outreach
  - Host two (2) public workshops
  - Identify potential barriers to walking and bicycling

## Goals and Objectives

### 3. Enhance safety and connectivity

- Identify network gaps
- Connect to downtown and other destinations
- Synthesize & refine improvement project list

### 4. Focus on implementation

- Outline program and policy recommendations
- Identify funding options for infrastructure and policy programs
- Develop a planning structure to pursue future needs

## Goals Matrix

GOALS	Report Sections				
	Current Conditions	Public Outreach	Recommended System Plan	Recommended Policies & Programs	Implementation
1. Review Plans	✓	✓			
2. Outreach	✓	✓	✓	✓	
3. Safety & Connectivity			✓	✓	
4. Implementation			✓	✓	✓

# Content Standards



## Content Standards – NCDOT Guidance

- Introduction
- Current Conditions
- Recommended System Plan
- Recommended Policies & Programs
- Implementation Plan





## Content Standards – Introduction

- Vision Statement
- History/Background
- Project Goals & Objectives
- Benefits – Why this plan is important?



*Source: Town of Duck, NC, Pedestrian Plan (2014)*

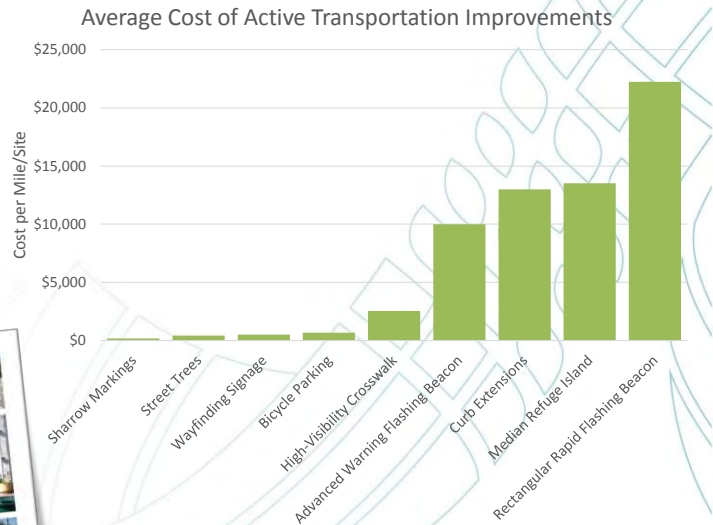
## Current Conditions

- **Data**
  - US Census Bureau, Town of Mount Olive, NCDOT, Wayne & Duplin County
- **Plans**
  - Wayne County Comprehensive Transportation Plan (2016)
  - WalkBikeNC (2015)
  - Town of Mount Olive Comprehensive Transportation Plan (2014)
  - Goldsboro Urban Area MPO Metropolitan Transportation Plan (2014)
  - Duplin County Comprehensive Transportation Plan (2007; pending 2017 draft)
- **Other resources?**

## Recommended System Plan

### Physical Improvements

- Network of facilities
- Identify cost effective strategies
- “Framework” to build upon
- Connect regionally



Source: Bushell, M. et. al, Costs of Pedestrian and Bicyclist Infrastructure Improvements. (2013)

## Recommended Programs & Policies

### Non-physical improvements

- Events/Festivals
- Education
- Encouragement initiatives
- Policy and governance
- Outreach/Advertising
- Evaluation/data collection



Source: Town of Fairmont, NC, Bicycle & Pedestrian Plan (2017)

# Implementation

- Strategies
- Stakeholders – “Champions”
- Time Frame
- Funding options

Table 7. Plan Implementation Action Item Timeline

Strategy	Contributing Stakeholders	Lead Agency/ Stakeholder	Time Frame	Duration
<b>Policy</b>				
Adopt This Plan	Town Council	Town of Carolina Beach	Immediate	Initial
Finalize the Bicycle and Pedestrian Committee	Town Staff, Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Immediate	Periodic
Continue to Enforce State and Local Regulations	Town Staff, Law Enforcement, Bicycle Pedestrian Advisory Committee	Police	Near Future – Long-Range	Periodic
<b>Program</b>				
Create Educational Outreach Programs	Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Near Future – Long-Range	Ongoing
Create Encouragement Outreach Programs	Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Near Future – Long-Range	Ongoing
Establish a Monitoring and Benchmarking Program	Town Staff, Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Immediate – Long-Range	Ongoing
Become Registered as a Bike Friendly Community	Town Staff, Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Near Future – Long-Range	Periodic
<b>Infrastructure</b>				
Identify Funding Sources	Town Staff, Bicycle Pedestrian Advisory Committee	NCDOT & Town of Carolina Beach	Immediate – Long-Range	Periodic
Perform a Road Safety Audit	NCDOT Transportation Safety & Mobility Unit, FHWA Division Office, Town Staff	NCDOT & Town of Carolina Beach	Near Future – Immediate	Once
Build the Priority Projects Outlined in this Plan	NCDOT, WMPO, New Hanover County, Town Staff	NCDOT	Near Future – Immediate	Ongoing
Review the Applicability of Future Projects	NCDOT, WMPO, New Hanover County, Town Staff, Bicycle Pedestrian Advisory Committee	NCDOT	Long-Range	Periodic

Time Frame:

- Immediate – initial steps in Plan, short-term;
- Near Future – implementation phases;
- Intermediate – Real implementation phases;
- Long-Range – post-implementation, evaluation and maintenance phases

Duration:

- Initial – preliminary action;
- Once – single, stand-alone action;
- Ongoing – continual updates needed, no clear end;
- Periodic – occasional, non-specified milestones

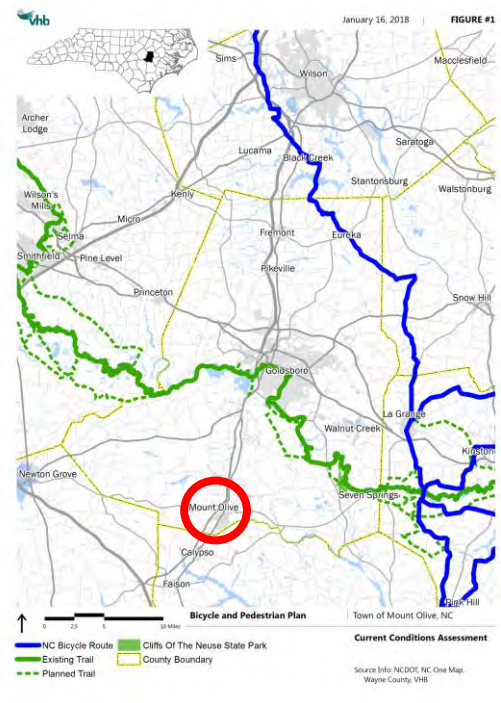
Source: Carolina Beach NC Pedestrian Plan (Draft)

## Mapping Exercise



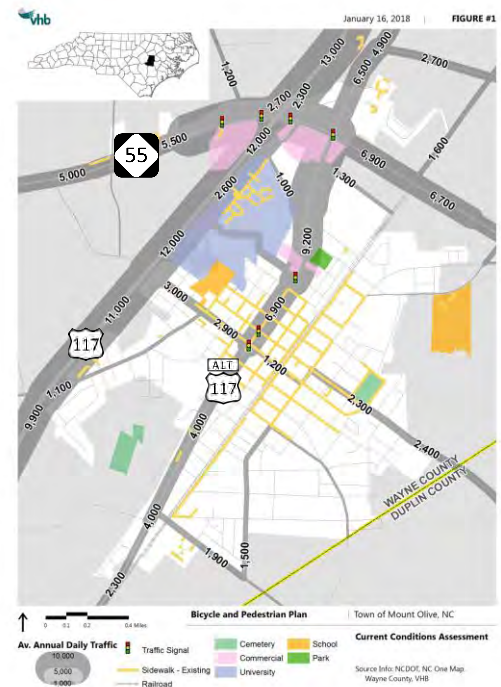
## Regional Connectivity

- █ State Bicycle Route - Ocracoke
  - Wilson to New Bern through Wayne County
- █ Mountains-to-Sea Trail
  - Goldsboro to New Bern



## Average Annual Daily Traffic (AADT)

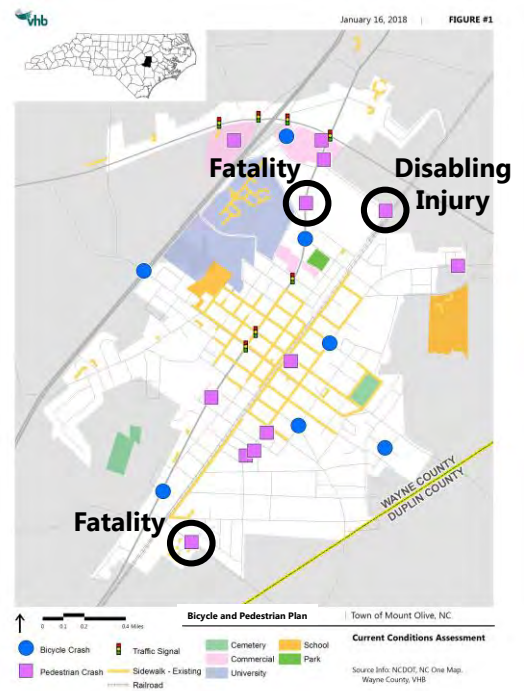
- █ Barriers:
  - NC 55
  - US 117 Breazeale Ave
  - Railroad
- █ Crossing at signalized intersections
- █ Low traffic, residential streets:
  - ideal for walking and biking





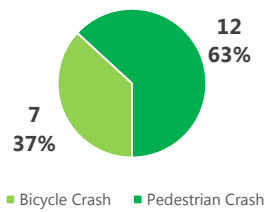
## Bike/Ped Crashes (2007-2014)

- Dark or dawn lighting:
  - Two fatalities
  - One Type-A disabling injury
- No sidewalk present:
  - 11 of 12 crashes (92%)
- Non-roadway crashes:
  - 4 of 12 (33%)

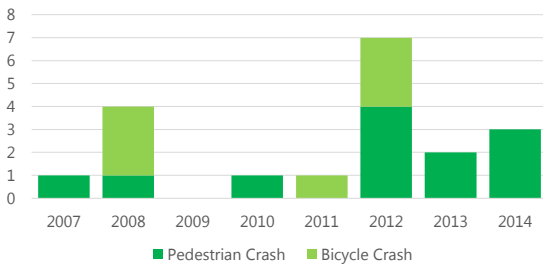


## Bike/Ped Crashes (2007-2014)

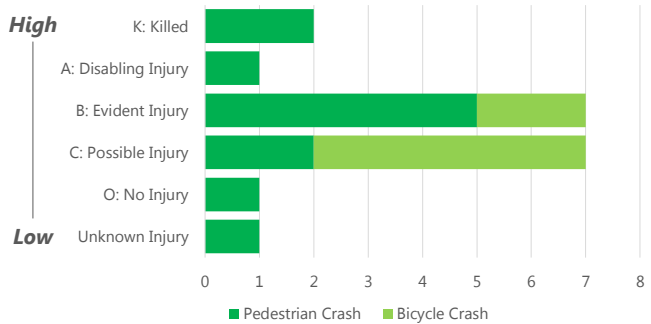
Crashes by Type



Crashes by Year



Crashes by Severity

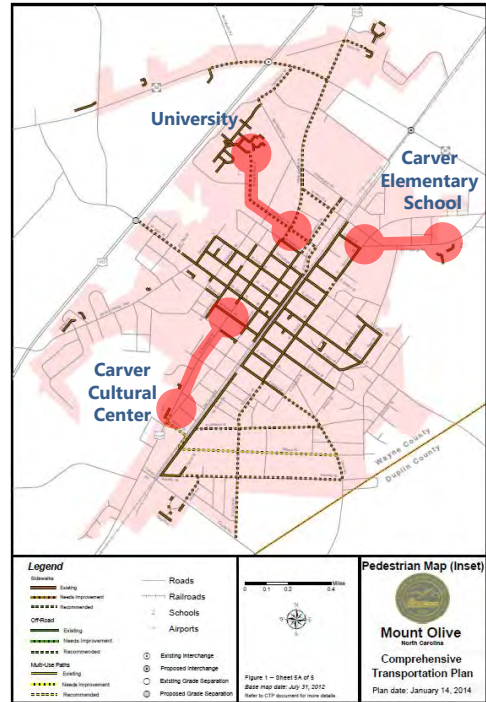


PBIC Crash Type Diagrams



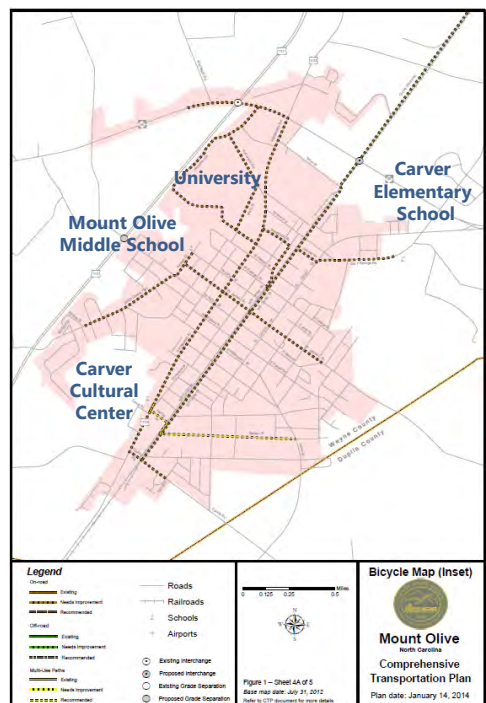
## Pedestrian Plans

- Established downtown grid
- Planned facilities extend outward
- Observed gaps:
  - Old 7 Springs Rd to Mount Olive Elem
  - Henderson St to University
  - Breazeale Ave south of downtown



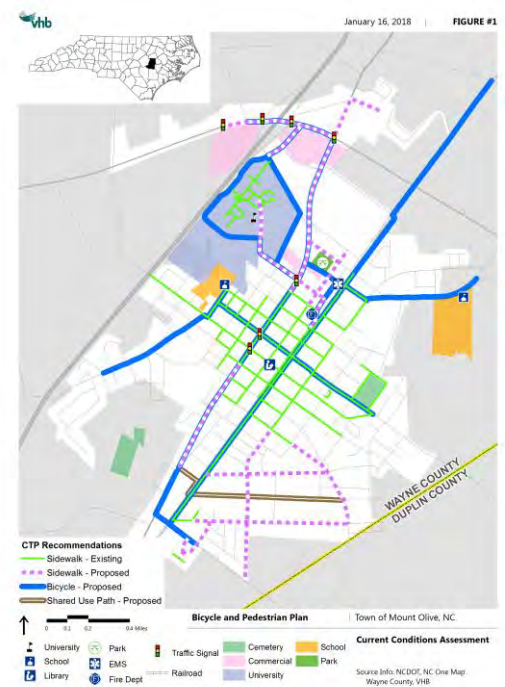
## Bicycle Plans

- No existing bicycle facilities
- On-road Bicycle Lanes (BL)
  - Center St – east of RR
  - Breazeale Ave (US 117 Alt)
  - James St
  - Smith Chapel Rd
  - Henderson Street (loop)
- Shared-use path (SUP)
  - Nelson Street



## CTP Recommendations

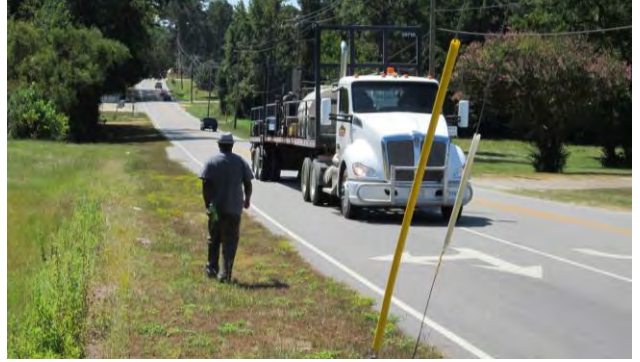
- Composite of CTP Recommendations
  - Link to neighborhoods?
  - Form a network without gaps?
    - Allow for recreation loops?
  - Connect to major destinations?
  - How to prioritize/rank?
    - Overcome barriers?



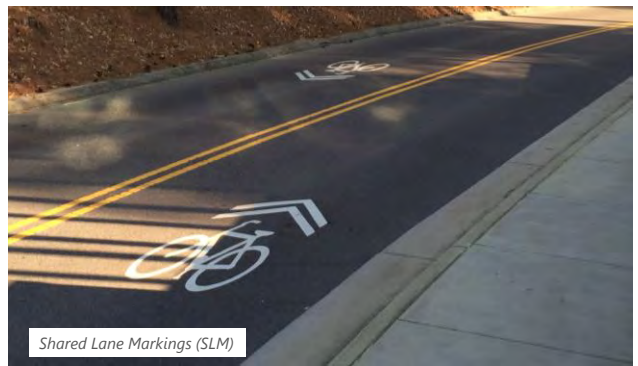
Now it's your turn!!!











## Steering Committee Input

- What are the **major destinations**?
- Where are the **sidewalk gaps/challenging areas or intersections**?
- Which **programs** would you like to see in Mount Olive?
  - Open streets – Festivals
  - Active lifestyle campaigns
  - Targeted safety campaigns
    - College students
    - Schools/children
    - Elderly



## Next Steps



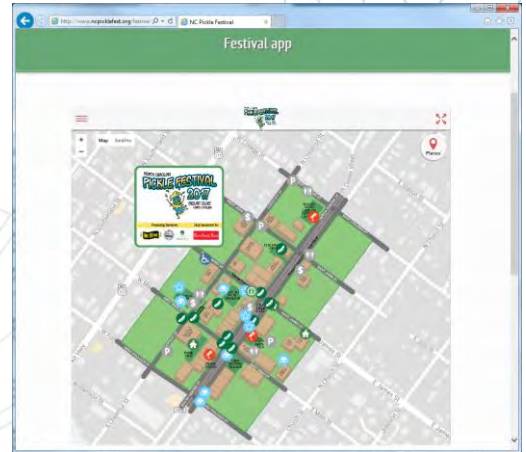
## Next Steps

### – Very Near Term

- Online survey – share the link

### – April – NC Pickle Festival

- Steering committee meeting #2
- Public workshop #1



**Sherry Davis** | [secretary@townofmountolivenc.com](mailto:secretary@townofmountolivenc.com) | 919.658.9539 ext. 106

**Betsy Kane** | [eakane@ncdot.gov](mailto:eakane@ncdot.gov) | 919.707.2603

**Timothy Tresohlavy** | [ttresohlavy@vhb.com](mailto:ttresohlavy@vhb.com) | 919.744.5516







## Meeting Notes

Place: Mt Olive Train Depot  
110 W Main Street, Mt Olive, NC

Date: May 31, 2018

Notes Taken by: VHB

Project #: 38600.03

Re: Mt Olive Bicycle & Pedestrian Plan  
Steering Committee Meeting #2 Notes

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### ATTENDEES

See attached scan of sign in sheet

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Meeting began @ 10:40 AM; Meeting concluded @ 12:15 PM. These notes serve as meeting minutes from the project's second Steering Committee (SC) meeting, held on Thursday May 31, 2018 @ 10:30 AM in Mount Olive. Fourteen members of the SC were present.

Timothy Tresohlavý (VHB) serving as the transportation firm consultant opened the meeting with introductions, project background and schedule, review and discussion of vision & goals, synthesis of previous plans, and interim update of the online survey, and next steps.

**VHB Action Items** are displayed in yellow. **Steering Committee Action Items** are displayed in blue.

### Plan Success

New SC members provided the following responses to the prompt: "This plan will be successful because..."

- This engaged Steering Committee will provide valuable feedback during plan creation, and will serve as champions moving forward toward implementation.

Returning SC members were asked: "The intersection of \_\_\_ & \_\_\_ needs improvement because..."

- Henderson Street @ US-117 Alt Breazeale Ave; crossing difficulties
- Church Street, all intersections; this is an important north-south corridor
- NC55 @ Henderson Street; existing the UMO campus and difficulties turning left
- NC55 between Walmart and N Center Street (whole corridor); truck traffic
- West of US-117, which acts as an at-grade barrier to bike/ped mobility
- All priority corridors; too many to name
- All intersections along the periphery of the UMO campus

VHB reviewed the three primary phases of the project: Existing conditions; Analysis & outreach; Plan development. Timothy stated that as of today's meeting the project will enter the second phase (Analysis & Outreach). We are anticipating completion by Fall 2018.

### Project Vision

SC members were presented with a revised project vision based on discussion from the first meeting. Timothy asked for further discussion or suggested revisions. Hearing none, the project vision and goals has been established:

Venture I  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606-5217  
P 919.829.0328



- "Improving non-automotive transportation that promotes healthy, active lifestyles for residents, university students, and visitors as part of a strategic effort to improve safety and revitalize downtown Mount Olive."
  - Plan for an interconnected, safe, pedestrian network
  - Engage the public to identify possible barriers to non-automotive travel
  - Support "downtown as a destination" for bicycling and walking
  - Contribute to the sense of community and "hometown" feel of Mount Olive

### Public Engagement

The first public engagement event took place on Saturday April 28<sup>th</sup>, during the NC Pickle Festival. The second event is tentatively scheduled for Friday July 13<sup>th</sup>, and will coincide with a bicycle helmet give-away and educational bike safety event for 3-5<sup>th</sup> graders in Mount Olive.

Timothy provided an interview review of the online survey, which has 163 respondents to date, and nearly 60% of respondents are under the age of 25 years old. SC members discussed **efforts to promote the survey to target residents >35 years of age** and seek a more representative sample. These efforts may include:

- Offering survey link business cards at the **County Library**, where computers are available to take the survey
- Coordinate with the **local Senior Center** to promote the survey to residents, encouraging staff to use an iPad or mobile device to assist residents who may be unable or uncomfortable with navigating the Internet
- Coordinating with other **local events** to share the link and promote the survey to event attendees

VHB anticipates the survey remaining open through July 2018, and will provide the **business cards with survey link**.

Other takeaways from the survey include:

- 60% of respondents *do not* regularly ride a bicycle in Town, compared with only 6% do not regularly walk
- 32% of respondent households do not own a bicycle, compared with only 3% who do not own a vehicle
- Potential barriers to walking or bicycling center on:
  - lack sidewalk infrastructure (58%), crosswalks (29%), or pedestrian crossing signals (21%)
  - poor maintenance of sidewalks (34%), and
  - concern for personal safety (23%)
- Potential efforts to encourage more walking or bicycling included:
  - new sidewalk infrastructure (48%), or new shared use paths/greenways (35%)
  - maintenance of existing sidewalks (41%)
  - lighting improvements (30%)
  - encouragement programs (16%)

### Existing Town Events to Encourage Bike/Ped Activities

VHB requested help from SC members to provide **brief descriptions of each event** (3-5 sentences) for the plan report. These descriptions will be valuable to describe how the Town has been committed to encouraging non-automotive transportation, and provide a benchmark to measure growth over time.

- Outlaw Foundation 5k run (March) <http://www.runtheeast.com/race-info/?id=5756>
- Get Your Bark On (April) <https://www.facebook.com/events/1372282529488467/>
- NC Pickle Festival (April)
  - Tour de Pickle bike <https://runsignup.com/Race/NC/MountOlive/TourdePickle>
  - Cuke Patch 5k run <https://runsignup.com/Race/NC/MountOlive/CukePatch5K>
- Heart Walk (October)
- Triangle Bike Group – Tuna Run (October) <http://tunarun200.com/>
  - Mt Olive section <http://www.mapmyrun.com/us/mount-olive-nc/tuna-run-200-leg-15-daughtrey-field-to-u-route-269247029>
- Active Routes to School participation in the past – years; # participants

### **Comprehensive Transportation Plan (CTP) 2014**

With assistance from Patrick Flanagan of the Eastern Carolina RPO, the SC discussed the 2014 Comprehensive Transportation Plan (CTP), and how these recommendations were used to generate a priority corridor network. The concept was to build upon the existing sidewalk network in the Historic District of Mount Olive, and extend to the neighborhoods to the north, south, and east.

For bicycle improvements, the CTP recommends corridors that are NCDOT-maintained for primary bicycle facilities, and local streets for shared-street conditions such as shared lane markings or bicycle boulevard treatments.

### **Priority corridor network**

Timothy presented a draft network for discussion, and made revisions based on SC input.

- Priority corridors (purple) represent the most important roadways that directly connect to destinations. These serve as the “highways” or spines for walking and bicycling, and would therefore be ranked/scored highest for near-term implementation.
- Secondary corridors (yellow) represent connections to connect residents to the primary corridor and allow for loops to form between residential areas and destinations. These would represent mid-term or longer-term implementation projects.

SC members were asked to review the primary versus secondary corridors and provide **comments by Friday 6/8**.

Local bus service will begin in July 2018, and the route/stops have been determined. The **Town will provide these locations**, and VHB will ensure that the primary corridor network coincides with these routes/stop locations.

### **Next steps**

VHB presented several draft improvement projects for sidewalks, intersection improvements, and bicycle facilities, which will serve as the next phase of the project. SC discussed and generally agreed to the following approach:

- Build upon the existing sidewalk from downtown outward, filling existing gaps in the network.
- Prioritize sidewalk improvements along primary corridors that connect to significant destinations first.

- Intersections along NC-55, US117 Alt (Breazeale Ave), Church Street, and the periphery of the UMO campus should be prioritized for improvement.
- On-road bicycle facilities should be recommended for NCDOT-maintained roadways, where feasible:
  - Bicycle boulevards – posted speed <25 MPH; AADT <2k; residential areas
  - Shared lane markings – posted speed between 20-35 MPH; AADT <6k
  - Bicycle lanes – posted speed between 35-45 MPH; AADT >6k
  - T <6k
- Off-road shared use paths, dependent upon ROW widths, were identified for these locations:
  - Nelson/Herring Streets – connecting Carver Cultural Center with Nelson Park
  - Henderson Street – connecting UMO Campus to downtown
  - Barlow Branch (sewer line) – connecting Church Street to Carver Elementary School

### **Priority projects**

The final plan will include up to five (5) cut-sheets for priority projects. These cut sheets will include a photo visualization and plan view recommendations, with accompanying description and quantitative analysis relating to length and estimated costs. SC members helped to identify the following list of these priority projects:

1. Nelson-Herring Streets – shared use path concept
2. US 117 Alt Breazeale Ave – sidewalk
3. US 117 Alt Breazeale Ave @ Henderson – intersection improvement
4. Church Street – sidewalk, with stormwater improvement
5. Henderson Street – bicycle lanes and/or shared use path concept

### **ATTACHMENTS**

Agenda

Sign in Sheet

Presentation Slides



# Meeting Agenda

**Date:** 31 May 2018

**Agenda Prepared By:** VHB

**Place:** Mt Olive Train Depot  
110 W Main Street, Mt Olive, NC

**Project No.:** 38600.03

**Project Name:** Mt Olive Bicycle & Pedestrian Plan

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## Meeting Agenda Items

- Introductions
- Project schedule
- Review of Meeting #1 & Public Event – What we learned
  - Significant destinations
  - Important corridors
- Synthesis of other plans – Prior recommendations
  - Network plan
  - Programmatic initiatives
- Public survey update
- Next steps
  - Next meeting: Friday July 13, 2018 (tentative)
  - Prioritization
  - High priority projects





Meeting Agenda

Meeting Sign-in Sheet

	Name	Dept./Office	Email
1	Sherry Davis	Town of Mount Olive	secretary@townofmountolive.com
2	Al Southerland	Community	al.southerland@yahoo.com
3	Barbara Kornegay	Town Commissioner Univ of Mt Olive	bkornegay@ncrr.com bkornegay@umo.edu
4	Bryan Lopez	NC DOT BBPT	balopez@ncdot.gov
5	Bryce Ficken	Business owner	bryce@mtoliveinsurance.com
6	Jill Mills	UMO	jmills@umo.edu
7	Jimmy Eatmon	NC DOT Div. 4	jeatmon@ncdot.gov
8	CRAIG A. MIDGETT	NC DOT DIV 4	camidgett@ncdot.gov
9	Chris York	ECRPO	cyork@eccog.org
10	Patrick Flanagan	Eastern Carolina RPO	pflanagan@eccog.org
11	Lynn Williams	Mt. Olive Pickle	lwilliams@mtolivepickle.com
12	Julie R Beck	Mount Olive Chamber	President@Mountolivechamber.com
13	Joe Scott	Town of MO - Mayor	jscott@townofmountolive.com
14			
15			



## Mount Olive Bicycle & Pedestrian Plan

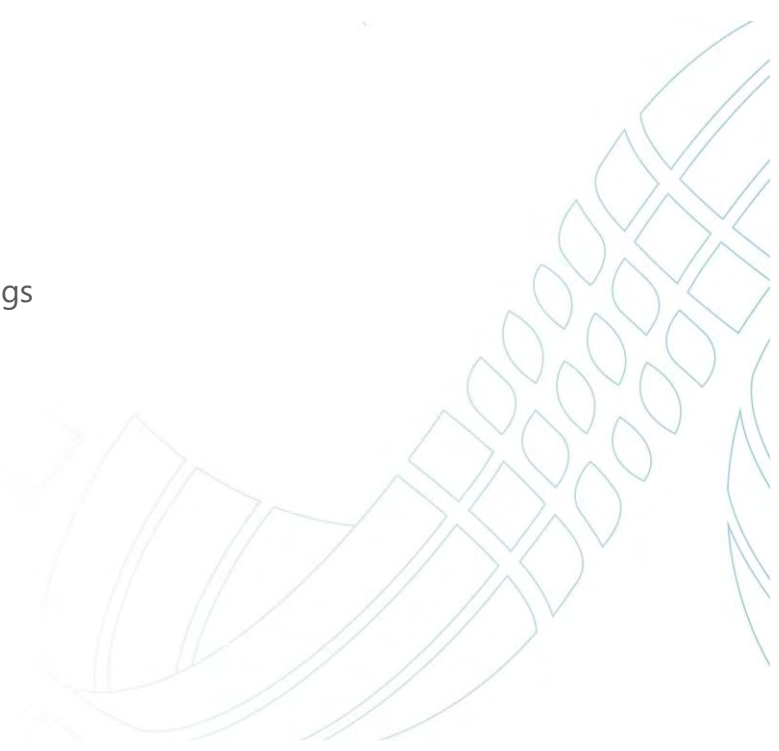
Steering Committee Meeting #2

Presented by  
VHB Engineering NC, P.C.

May 31, 2018

### Today's Agenda

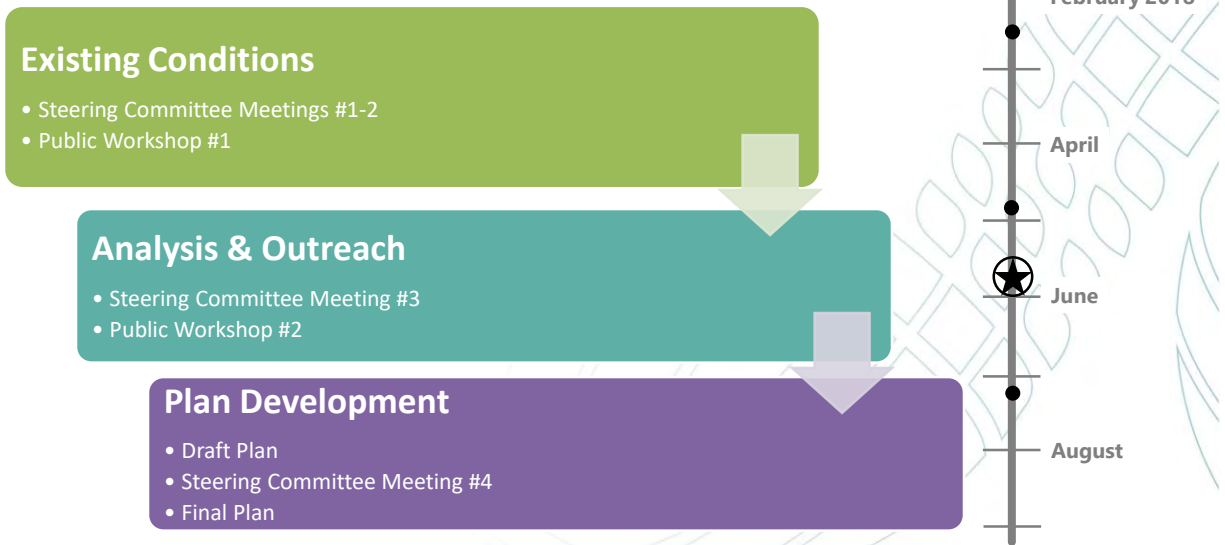
- Project schedule
- Review of previous meetings
- Synthesis of other plans
- Public survey update
- Next steps



## Introductions

- Name
- Office/Department
- New Steering Committee Members
  - “**This plan will be successful because ...**”
- Returning Steering Committee Members
  - “**The intersection of \_\_\_\_\_ @ \_\_\_\_\_ needs improvement because...**”

## Project Schedule





- Steering Committee Meeting #1
- Thursday February 15, 2018

## Vision and Goals

### Vision statement

- *"Improving **non-automotive** transportation that promotes healthy, **active lifestyles** for residents, university students, and visitors as part of a strategic effort to **improve safety** and **revitalize** downtown Mount Olive"*





## Vision and Goals

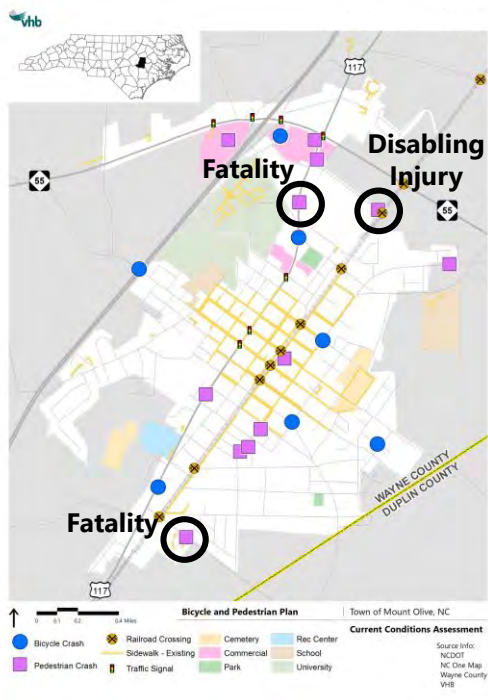
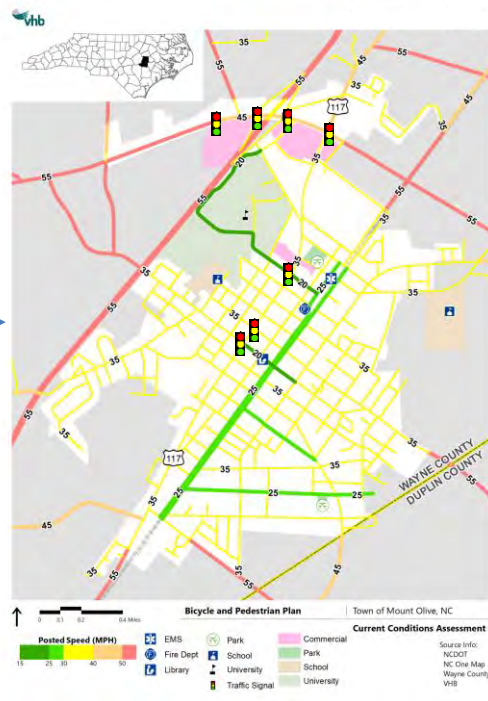
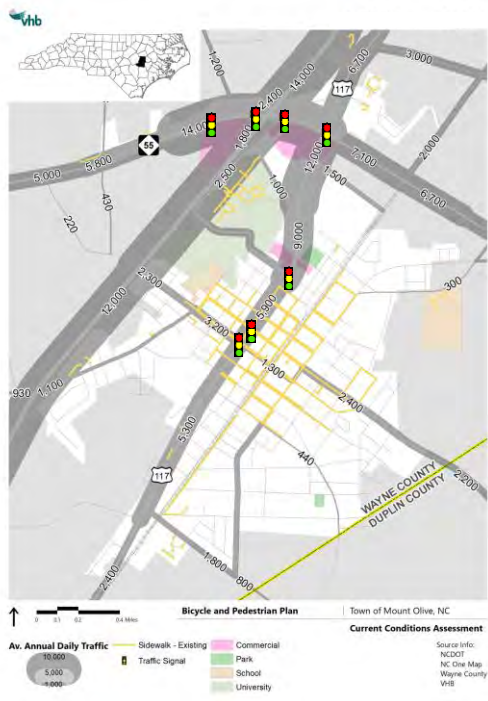
### Goals

- Plan for an **interconnected**, safe, pedestrian **network**
- **Engage the public** to identify possible barriers to non-automotive travel
- Support downtown as a destination for bicycling and walking
- Contribute to the sense of community and “hometown” feel of Mount Olive



## Key Discussion Topics from Meeting #1

- **Significant corridors identified:**
  - Breazeale Avenue (US 117 Alt)
  - Church Street
  - E. Hillsboro Street
- Improve and create **social** opportunities for residents (**Livability**)
- Identifying individuals or departments to serve as **champions of initiatives** that promote the Plan’s implementation



# Community Event NC Pickle Festival



## Community Event #1

- **Where are the...**
  - Sidewalk gaps
  - Problem intersections/crossings
  - Safety issues
- **Where are the priority areas or corridors?**
  - Significant destinations
- **Where are there opportunities for connection?**





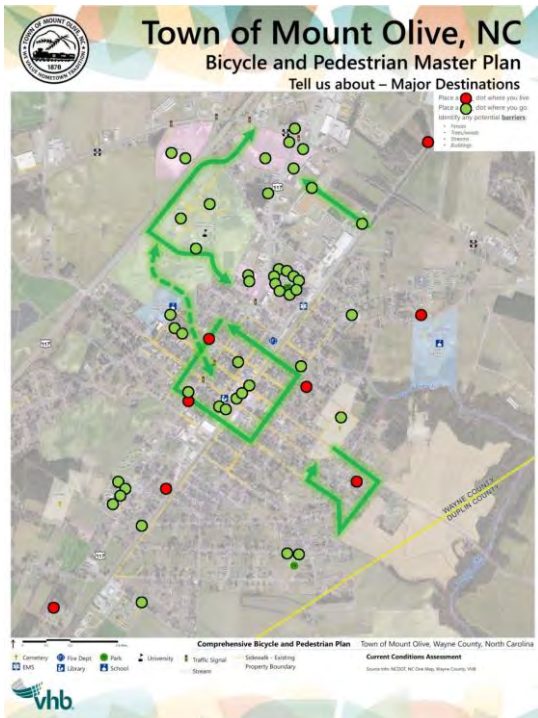
# Community Event #1

## Major Destinations

- Westbook Park
- Piggly Wiggly and Post Office
- Food Lion shopping center
- Walmart shopping center
- Center Street - Downtown
- Carver Cultural Center
- Martial Arts Center (E Park Avenue)
- Nelson Street Park
- Maplewood Cemetery between E. James Street and E College Street

## Safety Issues

- NC Hwy 55 – Walmart to Railroad Street
- Breazeale Avenue (US 117 Alt)
  - 5-lane section north of Station
- Chestnut Street
  - between James Street and Station Street (sidewalk on one-side)
- Railroad @ non-roadway crossing locations
- E James Street @ Railroad crossing
  - Speeding vehicles



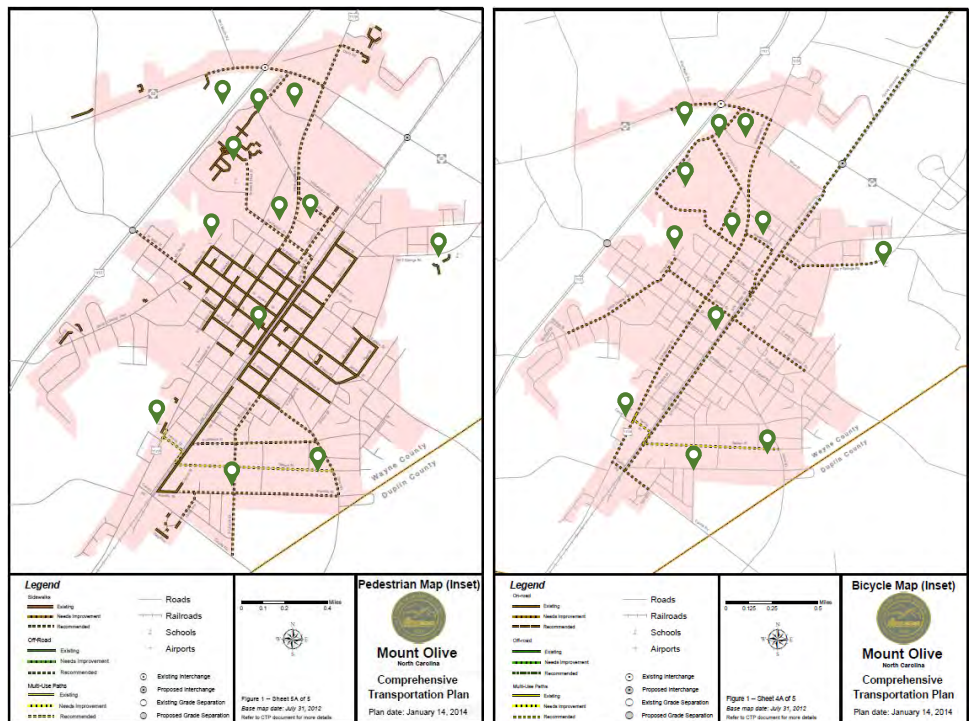


# Synthesis of Other Plans



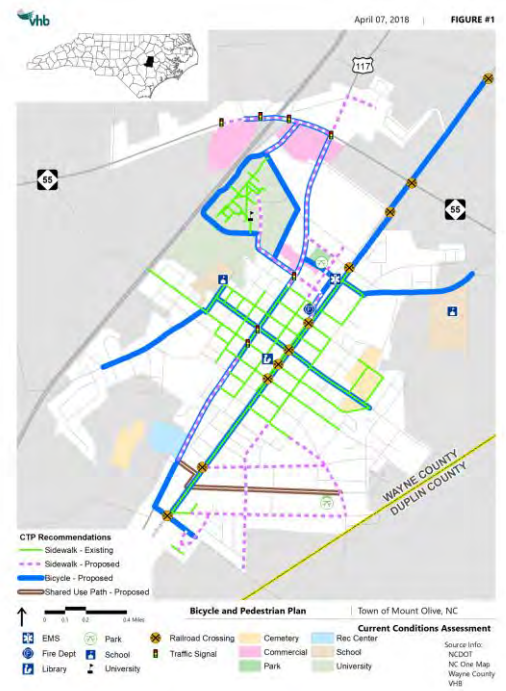
## 2014 CTP

- Destinations added for reference



## So what does this mean?

- CTP Recommendations
- 18 Bicycle facilities
- 16 Pedestrian sidewalk projects
- 4 Multi-use Path projects



## So what does this mean?

- Network plan of priority corridors
- Are these the appropriate corridors?
- Primary (purple line)
- Secondary (yellow line)
- Do they connect to identified destinations?





## Programmatic Initiatives

- **Encouragement Programs**
  - Active Routes to School
  - Walking Tours
  - Wayfinding Signage
- **Education Programs**
  - Let's Go NC
  - Eat Smart, Move More NC
- **Enforcement Programs**
  - Watch for Me NC campaign
- **Evaluation Programs**
  - Annual pedestrian/bicycle counts program
  - Safe Routes to School program
  - Community survey



## Description of Events – Need your help!

- Brief description for each event
  - Outlaw Foundation 5k run (March)
  - Get Your Bark On (April)
  - NC Pickle Festival (April)
    - Tour de Pickle ride
    - Cuke Patch 5k run
  - Bike to School (May)
  - Walk to School (October)
  - Heart Walk (October)
  - Triangle Bike Group – Tuna Run (October)
- Email to [ttresohlavy@vhb.com](mailto:ttresohlavy@vhb.com)

### **3-5 sentences for plan report**

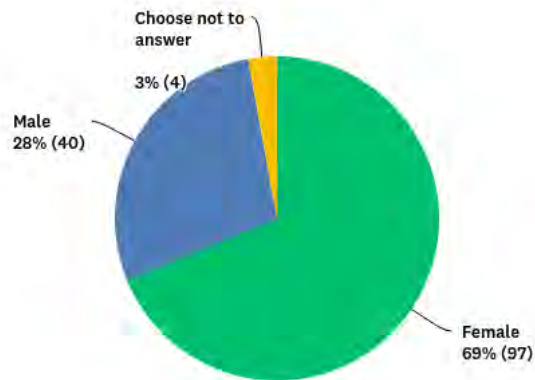
- Event Background
- Which group/organization hosts?
- When is it held?
- How many people participate?





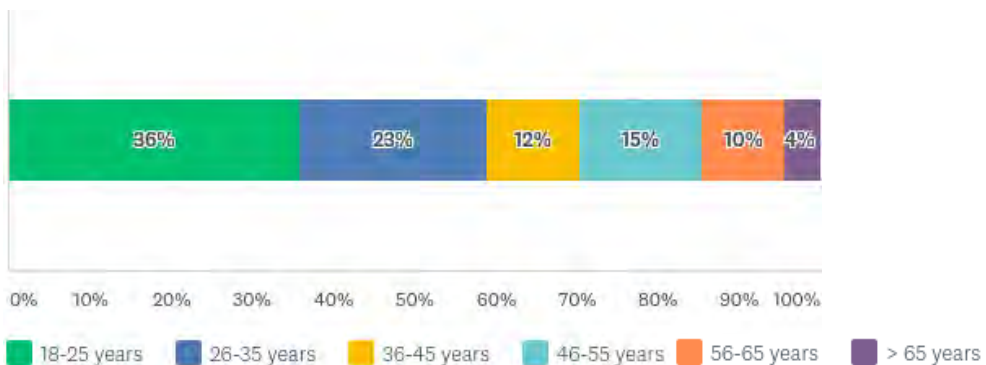
## Public Survey

- <https://www.surveymonkey.com/r/WalkBikeMtOlive>
- Respondents: 163 (May 25<sup>th</sup>)



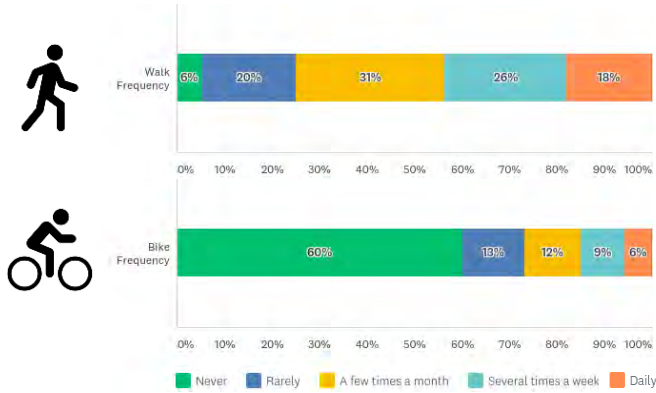
## Q15: What is your age category?

- Answered: 141 Skipped: 22



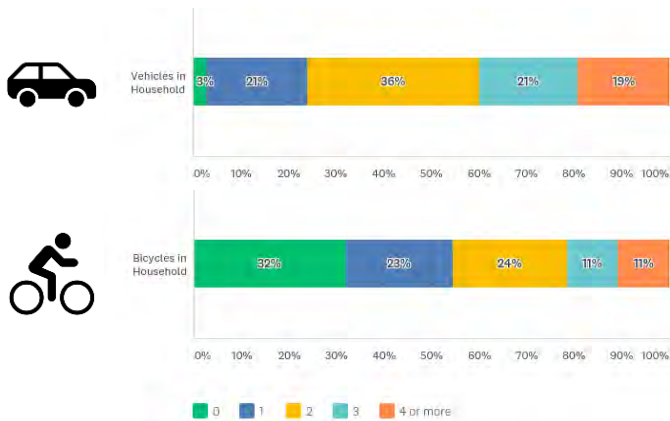
## Q2: How often do you \_\_\_\_\_ in/around Mount Olive?

■ Answered: 161 Skipped: 2



## Q18: How many \_\_\_\_\_ are available to your household?

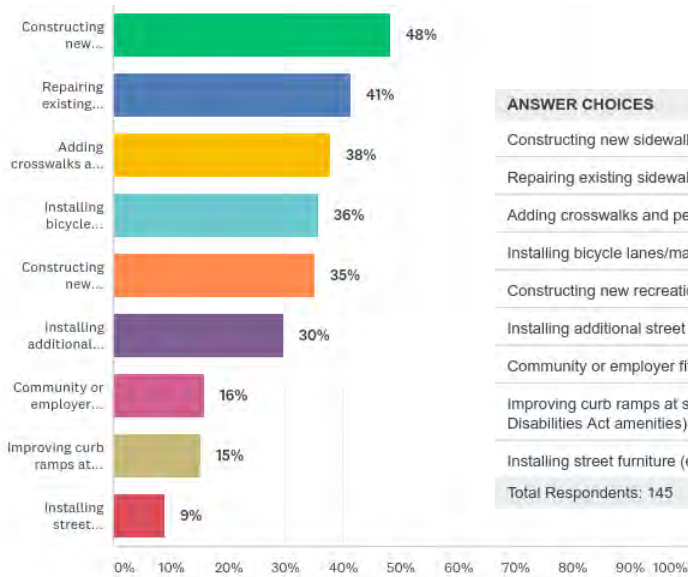
■ Answered: 141 Skipped: 22



## Q11: Which of the following would encourage you to walk/bike?

■ Answered: 145 Skipped: 18

(Select up to three)



ANSWER CHOICES	RESPONSES
Constructing new sidewalks/trails (off-street) <i>Infrastructure</i>	48% 70
Repairing existing sidewalks/trails <i>Maintenance</i>	41% 60
Adding crosswalks and pedestrian signals at intersections <i>Infrastructure</i>	38% 55
Installing bicycle lanes/markings (on-street) <i>Infrastructure</i>	36% 52
Constructing new recreational greenways and shared-use paths <i>Infrastructure</i>	35% 51
Installing additional street lighting <i>Lighting</i>	30% 43
Community or employer fitness program <i>Programs</i>	16% 23
Improving curb ramps at sidewalks, crosswalks, or bus stops (Americans with Disabilities Act amenities) <i>Accessibility</i>	15% 22
Installing street furniture (e.g. benches) <i>Infrastructure</i>	9% 13
Total Respondents: 145	

## Next Steps

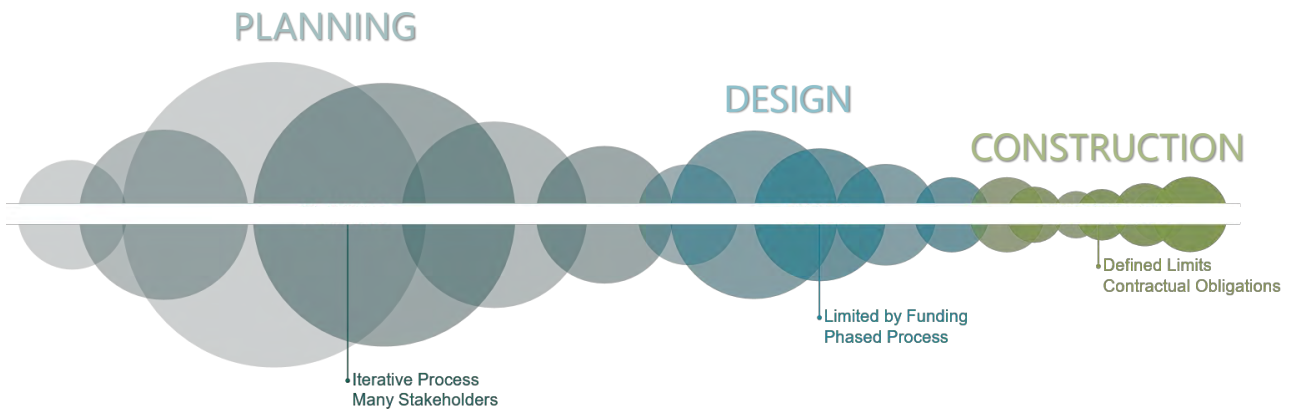


## Next Steps

- Continue to promote survey
- **Analysis & Outreach Phase – Development of Network & Recommendations**
  - Next Meeting *tentatively scheduled* for July 13th
    - Public event #2
    - Steering committee meeting #3



## What is Planning?





## Prioritizing Future Projects

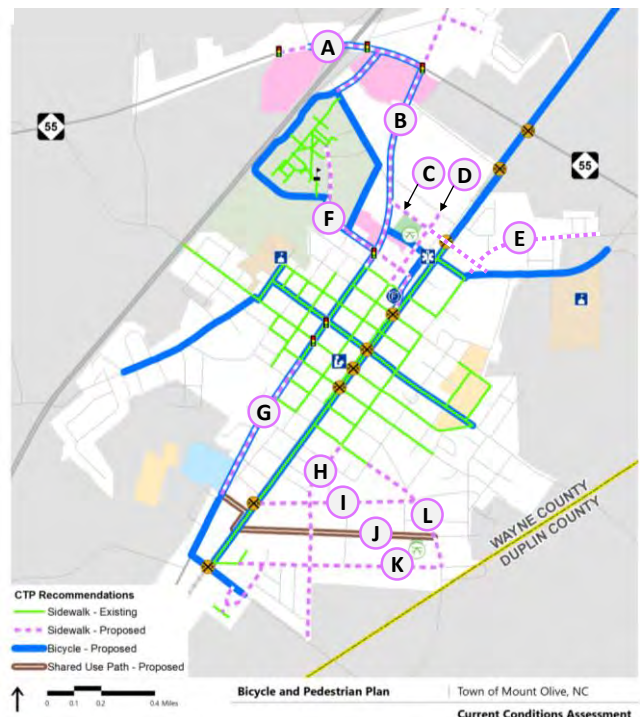
- Evaluation criteria for ranking projects (0-5 points)

- Community priority
- Conflict/safety minimization
- Directness/connectivity
- Funding availability
- Health & wellness
- Time frame of implementation

Improvement Type(s)	Length (miles)	Cost Category	Evaluation Criteria					SCORE	Rank	
			Priority	Conflict	Directness	Funding	Health & Wellness			
Corridor Improvement Shared Lane Markings	0.50	\$\$\$	4	4	5	2	4	4	23	1
Corridor Improvement Shared Lane Markings	0.39	\$\$\$	5	4	4	2	3	4	22	2
Sidewalk Shared Lane Markings	0.27	\$\$\$	5	4	3	1	5	3	21	3
Signage Improvement	-	\$	5	5	1	4	0	5	20	4
Sidewalk	0.40	\$\$\$	3	4	4	4	2	2	19	5
Intersection Improvement	-	\$	4	3	2	3	3	4	19	5
Intersection Improvement	-	\$	3	2	3	4	3	3	18	7
Sidewalk Shared Lane Markings	0.32	\$\$	5	3	5	1	2	2	18	7
Sidewalk	0.09	\$	3	4	4	3	2	2	18	7
Intersection Improvement	-	\$	3	3	3	3	2	3	17	10

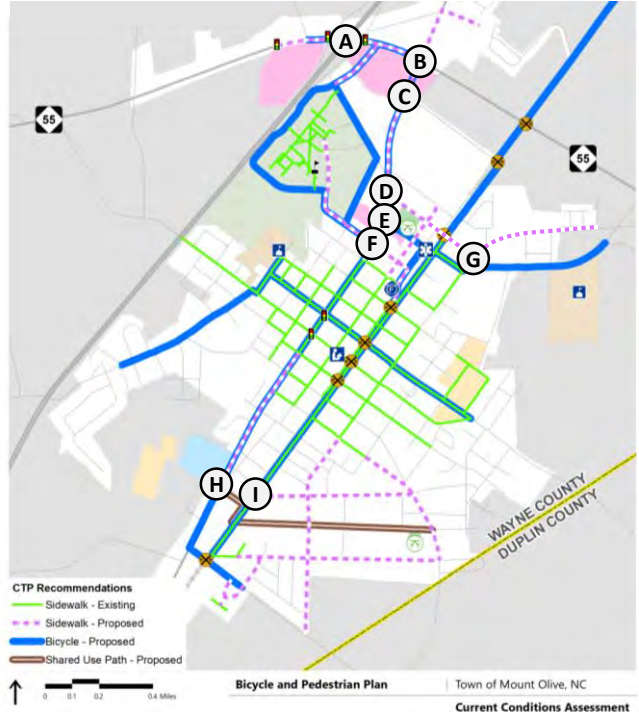
## DRAFT Improvements

- Pedestrian Improvements .....
  - A. NC-55 Hwy
  - B. US-117 Alt Breazeale Ave – north
  - C. Park Avenue
  - D. Chestnut Street
  - E. Church Street – north
  - F. Henderson Street
  - G. US-117 Alt Breazeale Ave – south
  - H. Church Street
  - I. Hillsboro Street
  - J. Nelson Street (*SUP*)
  - K. Franklin Street
  - L. Oliver Street















## DRAFT Improvements

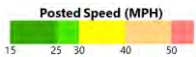
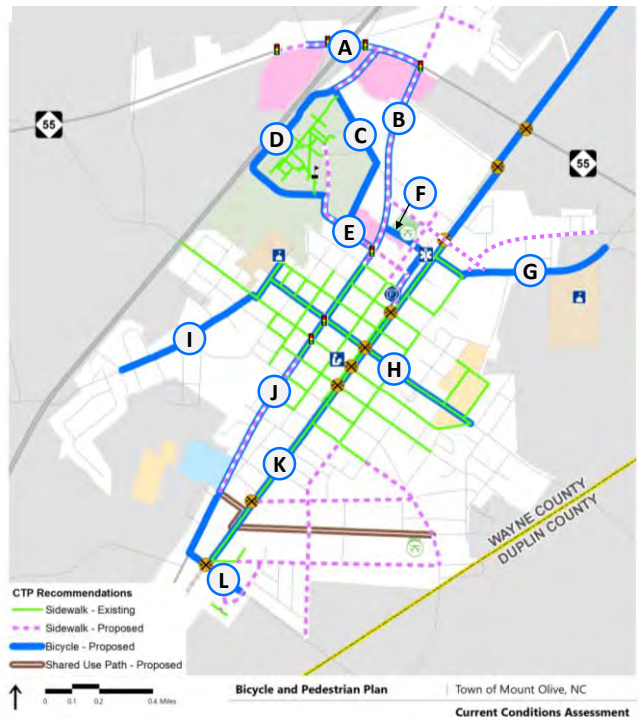
- Intersection Improvements ○
-  A. NC-55 Hwy @ US-117
-  B. NC-55 Hwy @ US-117 Alt
- C. US-117 Alt @ Talton Avenue
- D. US-117 Alt @ Park Avenue
- E. US-117 Alt @ Westbrook Street
-  F. US-117 Alt @ Henderson Street
- G. Park Avenue @ Church Street
- H. US-117 Alt @ Herring Street
- I. Center Street @ Hillsboro Street (Railroad)



## DRAFT Improvements

# Lanes

- Bicycle Improvements —
-  A. NC-55 Hwy
-  B. US-117 Alt Breazeale Ave – north
-  C. Bert Martin Road / Martin Street
-  D. Henderson Street – UMO
-  E. Henderson Street – east
-  F. Westbrook Street – *should this be Park Ave?*
-  G. Old Seven Springs Road
-  H. James Street
-  I. Smith Chapel Road
-  J. US-117 Alt Breazeale Ave – south
-  K. Center Street
-  L. County Road

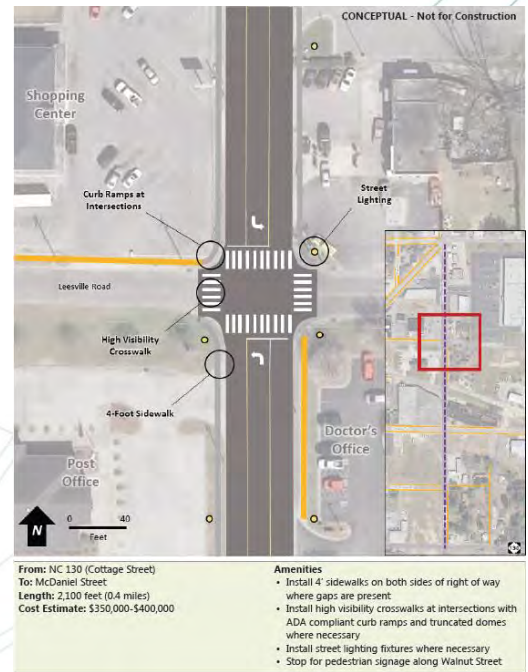


## Project Visuals

- Five (5) high-priority projects:
  - Visual examples of recommendations
  - Planning-level costs

### Locations discussed:

1. Nelson/Herring St – SUP
2. US117 Breazeale Ave – Sidewalks
3. US117 Breazeale Ave crossing @ Park/Westbrook/Henderson
4. Church St – sidewalks
5. Henderson St – Bicycle lanes & SUP/sidewalks



## Sidewalk and Crosswalk Improvements





## Sidewalk and Bicycle Improvements



## Sidewalk and Bicycle Improvements



**Sherry Davis** | [secretary@townofmountolivenc.com](mailto:secretary@townofmountolivenc.com) | 919.658.9539 ext. 106

**John Vine-Hodge** | [javinehodge@ncdot.gov](mailto:javinehodge@ncdot.gov) | 919.707.2607

**Timothy Tresohlavy** | [ttresohlavy@vhb.com](mailto:ttresohlavy@vhb.com) | 919.744.5516



Place: NC Pickle Festival, Mt Olive, NC

Date: April 28, 2018

Notes Taken by: VHB

Project #: 38600.03

Re: Mt Olive Bicycle & Pedestrian Plan  
Community Event #1 Notes

---

## ATTENDEES

A meeting sign in sheet was generated, however festival attendees chose not to spend the time providing this information. VHB staff spoke with community event attendees and attempted to engage them in conversation and provide an online survey card with the website link and requested they share with neighbors.

---

VHB staff participated at the NC Pickle Festival held on Saturday April 28, 2018 between in Mount Olive between at 10 AM and 2 PM, speaking with more than 150 attendees, approximately 54 residents and distributing more than 90 online survey cards. These notes serve as meeting notes from this event.

Most festival attendees lived outside of Mount Olive, and were therefore unable to contribute information to the study. Local residents and Town employees contributed content by marking up the displayed maps. Figure 1 and Figure 2 are a representation of the information received, scaled to fit on this summary.

VHB presented the project vision and goals, as revised by the project steering committee. Two map posters were available for comment and markup: (1) Major Destinations, and (2) Safety Issues.

VHB provided coloring books for families with children, to allow parents to contribute to the planning process.

### Major Destinations

Festival attendees were asked whether they walk or bike within Mount Olive, and if so, where they usually go. Red dots were used to identify places of residence, and green dots were used to mark common destinations. Notable destinations include the following:

- Westbook Park – featuring an existing asphalt walking path of 0.3 miles;
- Piggly Wiggly and Post Office along US 117 Alt (Breazeale Avenue)
- Food Lion shopping center and Walgreens along US 117 Alt (Breazeale Avenue), near NC Hwy 55
- Walmart shopping center
- Jogging path along Talton Avenue, used by high schoolers and UMO students
- CresCom Bank (213 N Chestnut Street, at W John Street)
- Center Street - Downtown
- Carver Cultural Center
- Martial Arts Center (E Park Avenue, at N Church Street)
- Nelson Street Park (354 Nelson Street)
- Maplewood Cemetery between E James Street and E College Street

### Safety Issues

VHB presented a poster of roadway speed limits and common points of interest in Mount Olive. Festival attendees were asked to identify locations where they avoid, or feel unsafe. Several intersections or corridors were identified, some of which include:

- NC Hwy 55 near the Walmart shopping center, extending eastward to Breazeale Avenue
- NC Hwy 55 east of Hinson Street
- Breazeale Avenue (US 117 Alt) – 5-lane section north of Station Street
- Chestnut Street between James Street and Station Street (sidewalk on one-side)
- Railroad at non-roadway crossing locations
- E James Street at Railroad crossing (speeding)

### **Additional feedback**

One festival attendee remarked that “heat and insects prevent me from walking more often.” Others noted that a pedestrian bridge over US Hwy 117 had previously been proposed to connect the University of Mount Olive with the Walmart shopping center.

Flooding within the roadway near Elmore Street, E Pollock Street, and Silver Street (southeast corner of town) was identified by one resident as a potential barrier to walking.

A local jogging loop was identified, following Southerland Street southbound to Pollock Street eastbound, and Church Street northbound to College Street westbound and forming a square of approximately 1.5 miles. This would be in addition to the jogging path identified along Talton Avenue (north of downtown).

More recreational paths, like the one around Westbrook Park, were frequently mentioned as a local favorite.

An existing sewer easement along Barlow Branch, near Elementary School and Bell Avenue, was identified as a potential shared use path (greenway). **Has this sewer easement been digitized into GIS format**, and if so, could VHB obtain these files?

**Action Items:** Obtain physical or digital version of path and/or sewer easement

1. Has the Westbrook Park walking path been digitized into GIS, or are these available as CAD design files?
2. Has the sewer easement near Bell Avenue / Barlow Branch been digitized into GIS, or is this recorded on a plat or CAD design file with the Public Works department?

### **ATTACHMENTS**

Figure 1 - Major Destinations Map

Figure 2 – Safety Issues Map

NC Pickle Festival Event Photos

Figure 1 – Major Destinations

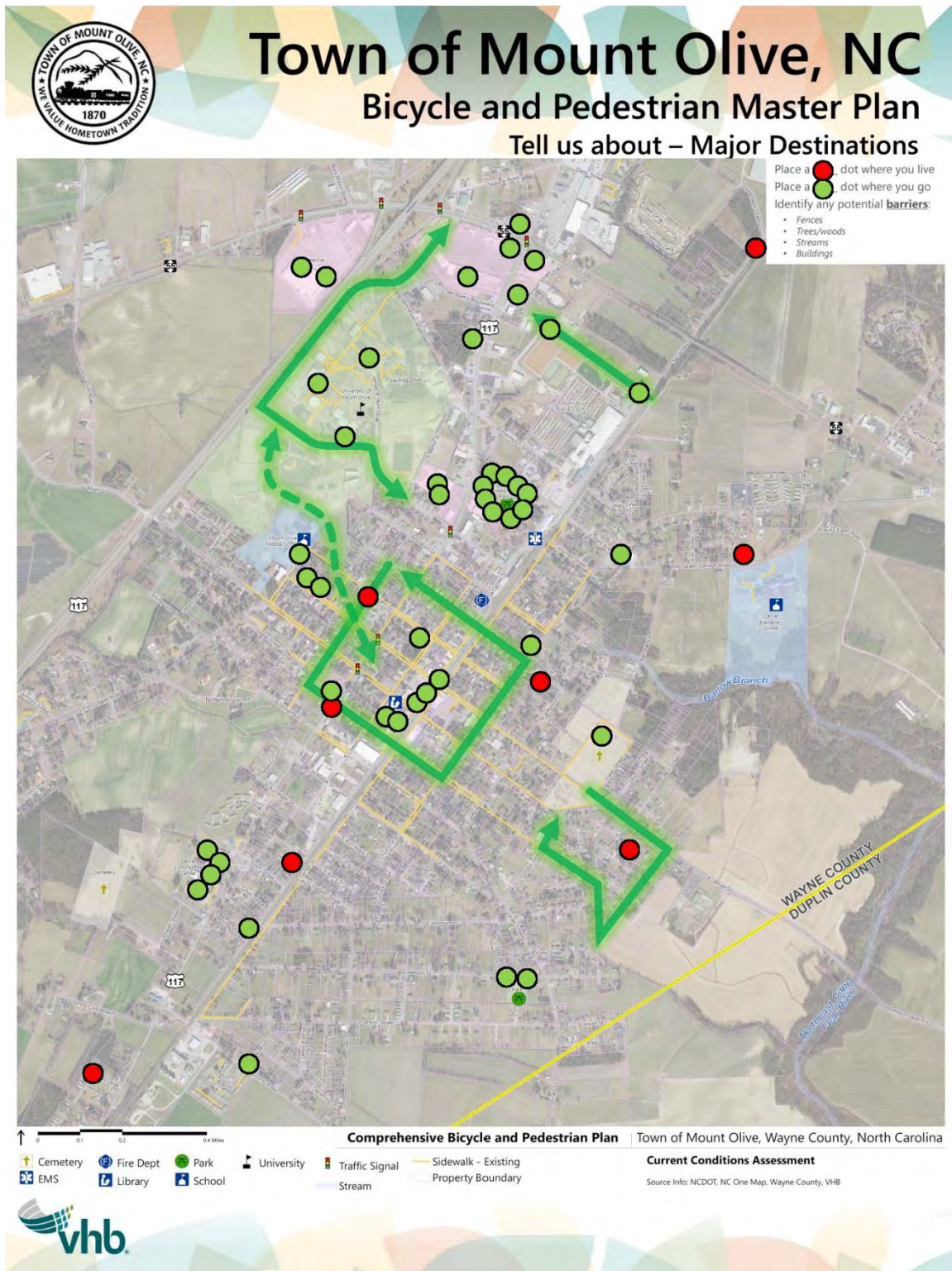
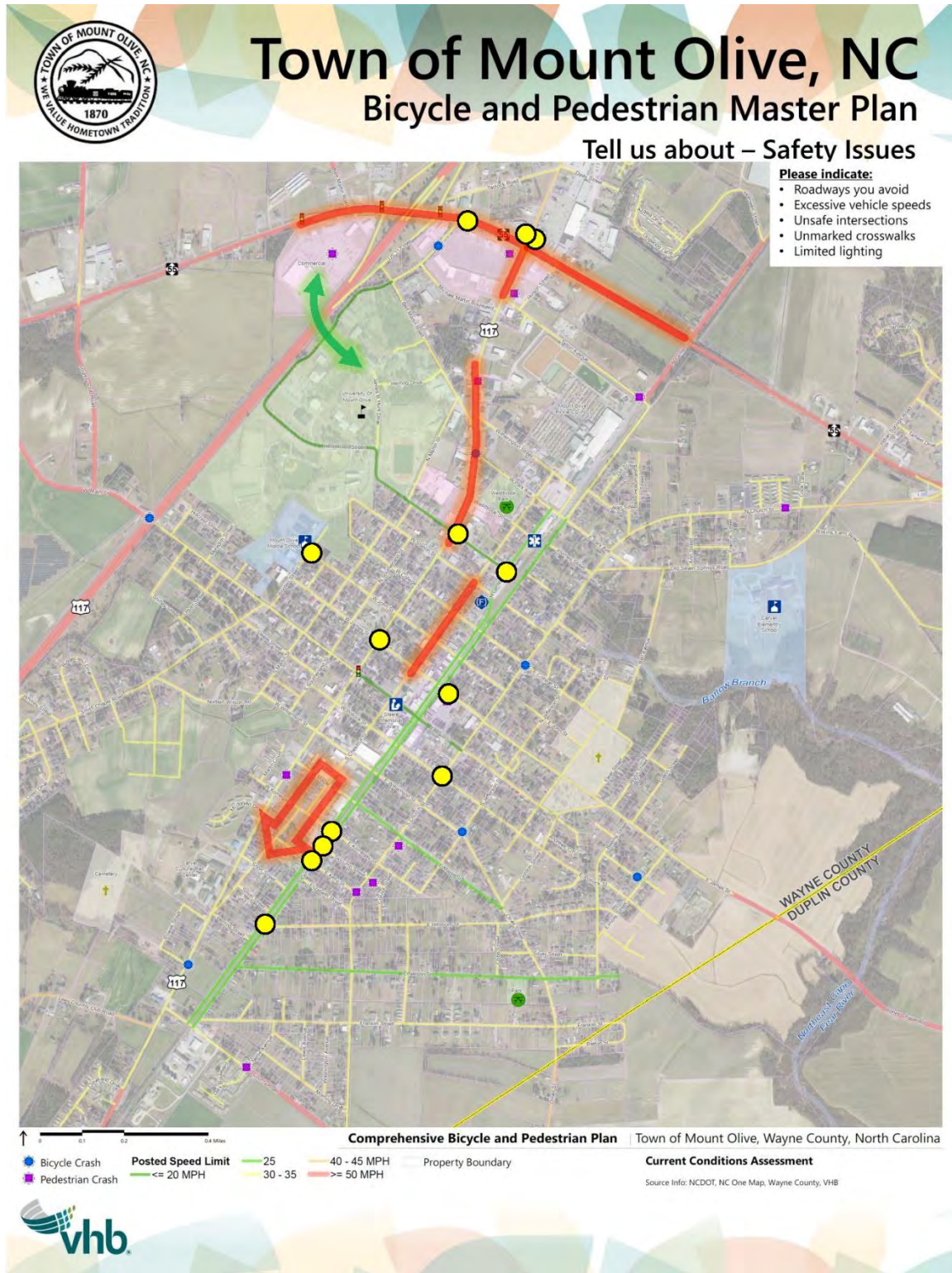


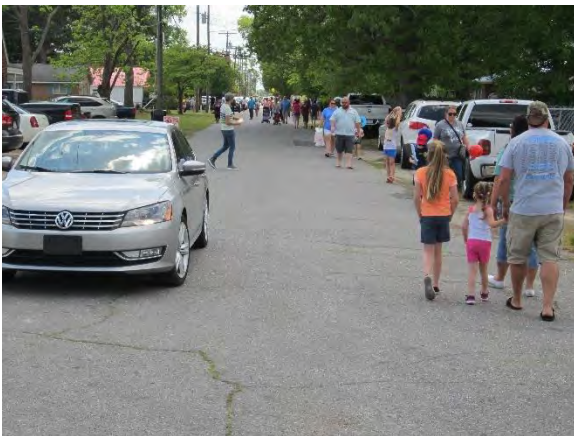
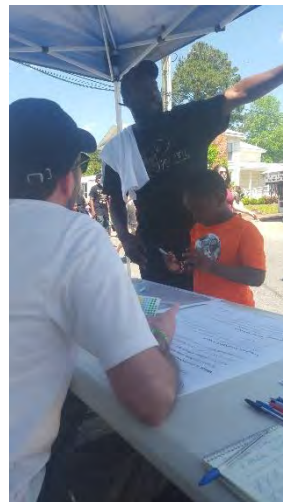


Figure 2 – Safety Issues





### NC Pickle Festival Event Photos





## Meeting Notes

Place: Mt Olive Courtroom  
114 E. James Street, Mt Olive, NC

Date: November 12, 2018

Notes Taken by: VHB

Project #: 38600.03

Re: Mt Olive Bicycle & Pedestrian Plan –  
Steering Committee Meeting #3

---

### ATTENDEES

See sign-in sheet - attached

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*The meeting began at 1:15PM ET, and ended at approximately 2:45PM ET.*

- Project schedule
  - VHB reviewed the project schedule with the Steering Committee. The final steering committee meeting will be held virtually (conference call), and is anticipated to be scheduled for December.
- Preliminary non-motorized network plan(s)
  - **Priority corridors**
    - VHB reviewed how the Priority Corridors were created through a combination of surveys, review of previous plans, and consultation with the Steering Committee.
      - Barbara asked for the definition of a shared use path. VHB described the distinctions between sidewalks and shared use paths.
      - Other pedestrian improvements were presented, their relative costs, and potential placement in the town of Mount Olive.
  - **Pedestrian network**
    - VHB introduced the pedestrian network plan, followed by the bicycle network plan, and their relative importance in the (long-range) planning process.
    - Barbara asked about the cost of the planning program, potential for funding from state and federal sources, and the role of this plan in the funding process.
    - Bryce asked about how the prioritization process is to be completed. VHB explained that the prioritization process would be reviewed later in the agenda.
    - Sherry asked whether sidewalk maintenance is considered in the network plan. VHB responded that sidewalk maintenance would be included in the policy and evaluation section.
    - Harlie mentioned that roadway maintenance is a problem, as riding on some town roads is uncomfortable due to cracks and potholes, and the pavement type is rough.
  - **Bicycle network**
    - Barbara asked about what types of improvements could be incorporated into a bicycle boulevard; VHB responded that there are numerous things that can be done: incorporate medians, chicanes, plantings, etc. The bicycle boulevard designation is very broad.
    - Josh shared that the Town has three bike repair stations, two at parks and one at the gym.
    - VHB asked the Steering Committee for feedback on priority corridors
      - Charles said that Henderson Street is a natural choice for a bicycle improvement, particularly the two blocks near UMO that is three lanes wide; Bryce added that it would be connect well to Center Street (downtown). The Town now owns & maintains

Venture I  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606-5217  
P 919.829.0328

Henderson Street. Charles added that it has always been a goal of the Town's to get students from the University to downtown Mt Olive, and vice-versa.

- Barbara said that pedestrian and bicycle improvements should be applied to both sides of town. The discussion included a concept of a NW-SE connection (spine) from the University of Mount Olive, along Henderson Street to Center Street, continuing south to Hillsboro Street, S Church Street, and Franklin Street to the east.
- On funding, Charles said that Powell Bill funds could be used for pedestrian improvements along this conceptual route of Franklin-Church-Nelson-Hillsboro to Center Street, because there is no current sidewalk infrastructure.
- Powell Bill funds may not, however, be used to maintain or replace existing sidewalks.
- Evaluation criteria for prioritization
  - VHB described two evaluation criteria approaches, and asked for the steering committee to select the most appropriate method: Option A is relatively subjective based on community values and need; Option B is more objective, relying on proximity to special features like schools, intersections, transit stops, or other physical infrastructure.
    - Charles shared that financial feasibility should be a central component of the prioritization process. Community Development Block Grant have been used to support improvements in the lower income neighborhoods.
    - Charles added that tying together communities, such as Henderson St at Breazeale, with a signalized intersection would be beneficial, too. He mentioned that NCDOT may be amenable to supporting an intersection improvement.
  - Members of the Steering Committee supported Option A for the prioritization process. VHB will assign scores 0-5 for each criteria according to input received from the Steering Committee, online survey, and public outreach events.
    - Projects along Primary Corridors (purple) would be near-term (5 points)
    - Secondary Corridor (yellow) projects would be mid-term (3 points), and long-term (1 point)
- Funding and Implementation
  - VHB discussed potential funding sources from the Federal and State level.
    - Charles added that the Town has three members on the RPO Board to advocate and share improvement recommendations for future STIP consideration.
  - Charles discussed the potential for NCDOT and Mount Olive Pickle Company to provide a new roadway connection from NC-55 to Talton Avenue, which could divert trucks from using Breazeale Avenue (US-117 Alt), saving NCDOT funding for a proposed interchange (NC-55 @ N Center Street).
    - The 4 E's (Education, Encouragement, Enforcement, and Evaluation) will be packaged in a report table with identified champions.
- Next steps
  - The next meeting will be held virtually, and the date is anticipated for December
  - Steering Committee members were encouraged to attend the public meeting at 4 PM this evening.

**ATTACHMENTS** – Sign in sheet; Presentation slides





Meeting Agenda

Meeting Sign-in Sheet

	Name	Dept./Office	Email
1	HARLIE CARMICHAEL	DIST. 2 COMMISSIONER	HARCAR2018@GMAIL.COM
2	Barbara Kornegay	Dist 3 Commissioner	bkornegay@umo.edu
3	Sherry Davis	Town manager Admin Asst	secretary@townofmountolive.nc.com
4	Josh Phillips	Park & Recreation	JPhillips@townofmountolive.nc.com
5	Bryce Ficken	<del>Public</del> Public	bryce@mtoliveinsurance.com
6	Charles Brown	TOWN MGR	managere@townofmountolive.nc.com
7	Linda Tyson	Mount Olive P.D	Ltyson@TownofMountOlive.nc.com
8			
9			
10			
11			
12			
13			
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## Mount Olive Bicycle & Pedestrian Plan

Steering Committee Meeting #3

Presented by  
VHB Engineering NC, P.C.

October 26, 2018

### Today's Agenda

- Project schedule
- Preliminary non-motorized network
  - Priority corridors
  - Pedestrian network
  - Bicycle network
- Evaluation criteria for prioritization
- Funding and Implementation
- Next steps

## Project Schedule

### Existing Conditions

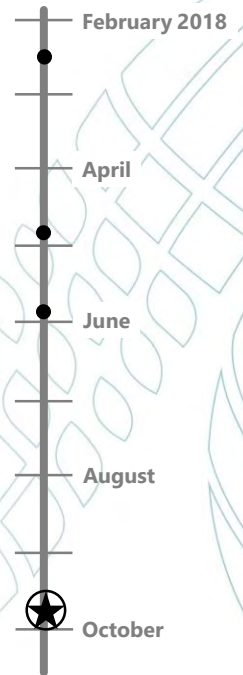
- Steering Committee Meetings #1-2
- Public Workshop #1

### Analysis & Outreach

- Steering Committee Meeting #3
- Public Workshop #2

### Plan Development

- Draft Plan
- Steering Committee Meeting #4 – *Virtual Meeting*
- Final Plan

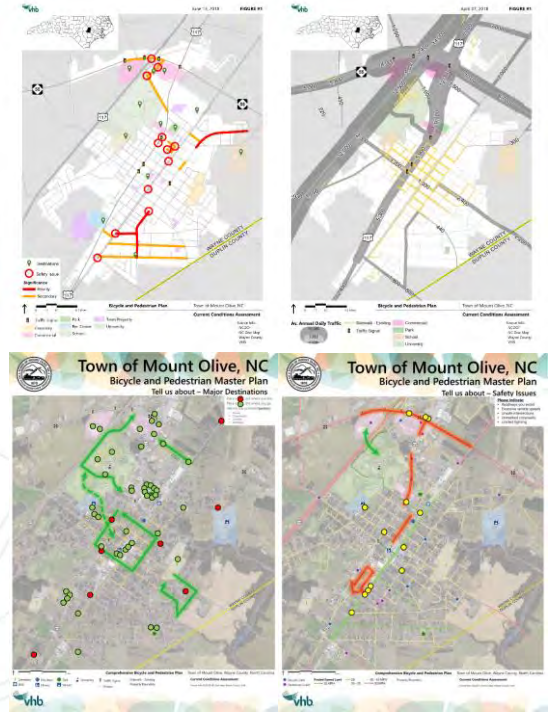


# PRELIMINARY Non-Motorized Network Plan



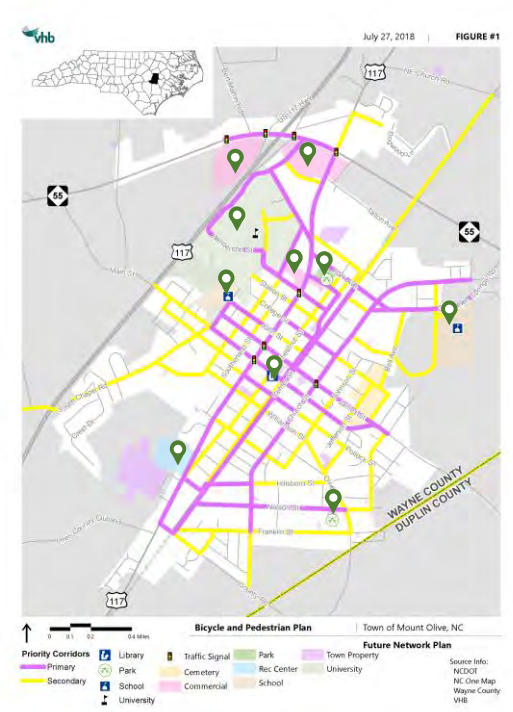
## Network Plan Inputs

- 2014 Comprehensive Transportation Plan (CTP)
- 2016 Grant Application to NCDOT DBPT
- Steering Committee discussions
  - Destinations / Safety issues / Priorities
- Public outreach
- Existing conditions assessment



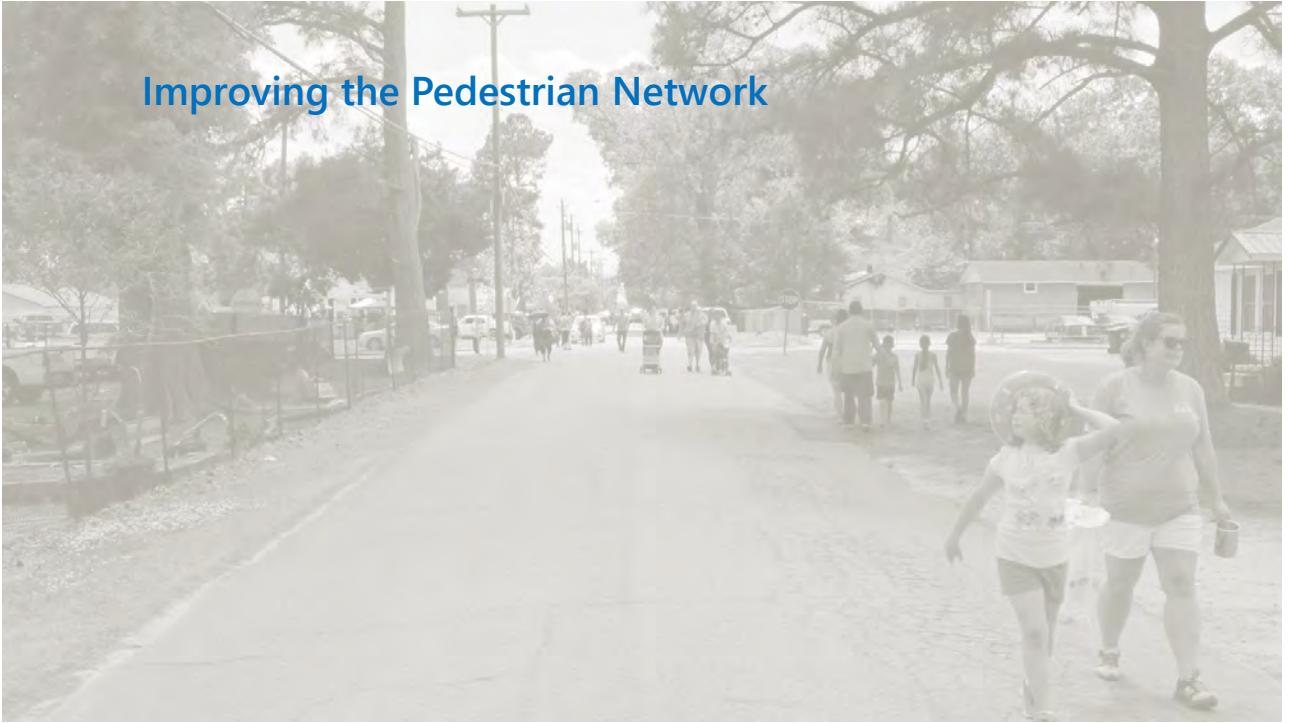
## Priority Corridors

- **Primary corridors** – form the “spine” network; directly connect to major destinations.
- **Secondary corridors** – supplement the spine; allow for recreational loops.
- Steering Committee vetted





## Improving the Pedestrian Network



### Design



## Sidewalk

Separated space adjacent to the vehicle travel lane and within the public right-of-way. The sidewalk should meet design minimums (i.e., 5 feet wide for sidewalks) and be fully accessible to pedestrians with mobility limitations.



## Shared Use Paths

Separated space for both pedestrians and bicyclists, adjacent to the vehicle travel lane and within the public right-of-way. The shared use path should meet design minimums (i.e., 10 feet wide for SUP) and be fully accessible to pedestrians with mobility limitations.

Local Roads



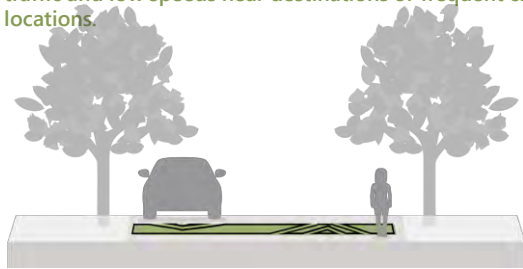
### In-Roadway Yield Sign

Best use is on roads with speeds lower than 30 mph in conjunction with a raised crosswalk or pedestrian refuge island.



### Speed Humps

Best use is on neighborhood roads with little automobile traffic and low speeds near destinations or frequent crossing locations.

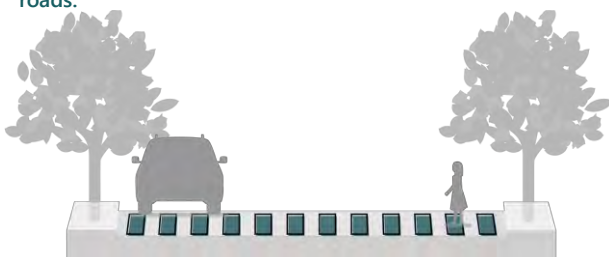


Collector Roads



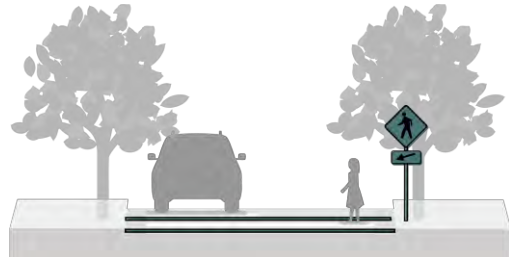
### High-Visibility Crosswalk

Best use is at mid-block crossings in conjunction with other countermeasures or at a controlled intersection on collector roads.



### Standard Crosswalk

Best use is at controlled intersections on local roads with low speeds.

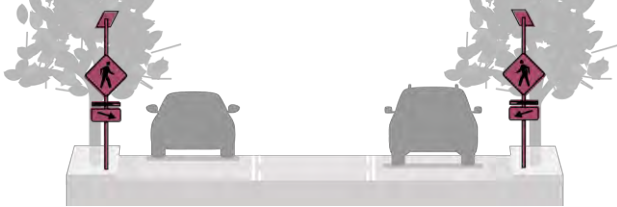


Arterial Roads



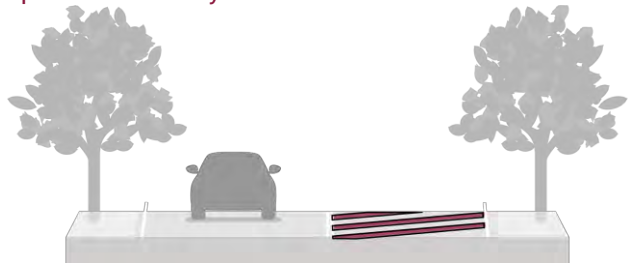
### Rectangular Rapid Flashing Beacon (RRFB)

Best use is at uncontrolled or mid-block crossings on roads with high speeds and/or high automobile traffic.



### Transverse Rumble Strips

Best use is on rural roads entering town or areas with more pedestrians and bicyclist.



	Traffic Context	Best Use	Unit Cost
<b>In-Roadway Yield Sign</b>	Speeds <35 mph	Informal crossing locations	
<b>Speed Humps</b>	Neighborhood streets	Traffic calming	
<b>High-Visibility Crosswalk</b>	> 10,000 vehicles per day	Non-signalized intersections or mid-block crossings	\$2,500/each
<b>Standard Crosswalk</b>	Local roads	Stop-controlled intersections	
<b>RRFB</b>	Speeds ≥35 mph and/or 4+ lanes	Non-signalized or mid-block crossings	\$22,000/each
<b>Transverse Rumble Strips</b>	Entering town limits	Speed reduction	

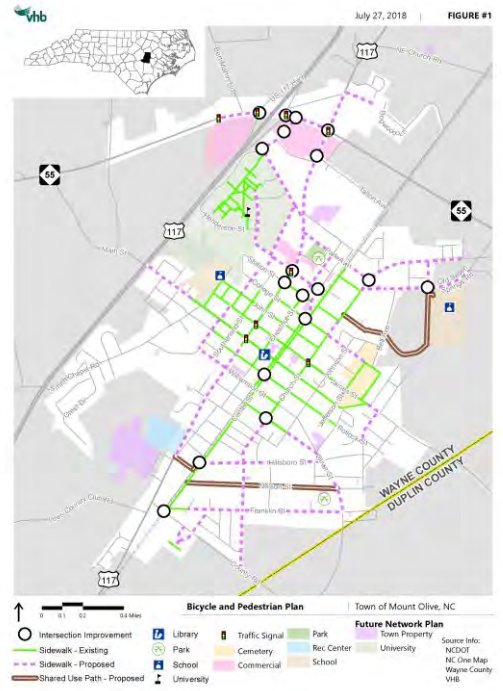
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<b>Sidewalk</b>	≥ 5' wide	\$150,000/mile
<b>Shared Use Path</b>	≥ 10' wide	> \$500,000/mile



# Pedestrian Network

- Sidewalks -----
- Shared Use Paths =====
- Intersection Improvements



# Improving the Bicycle Network



## Bicyclist Comfort levels

- Not all bicyclists are the same!
- Flexibility is needed

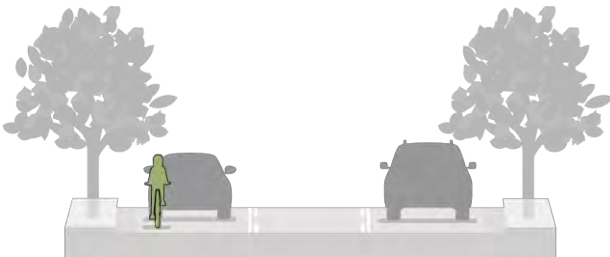


### Local Roads



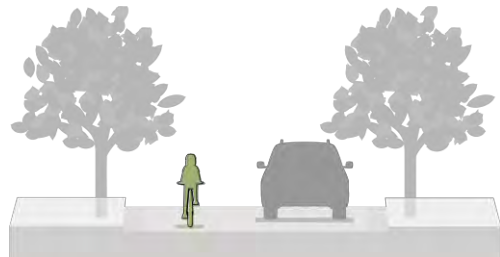
### Shared Lane Markings

Best use is on local roads with speeds no higher than 25 mph and lane widths between 11 and 13 feet.

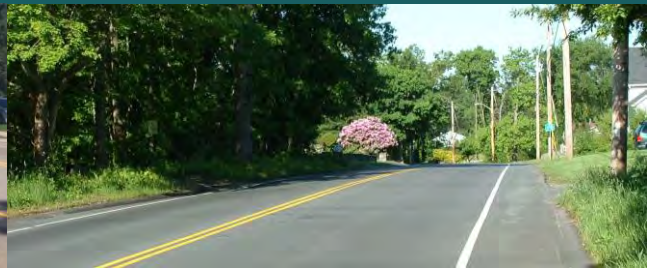


### Bicycle Boulevards

Best use is on unmarked (narrow) neighborhood roads with little automobile traffic and <= 25 mph speeds.

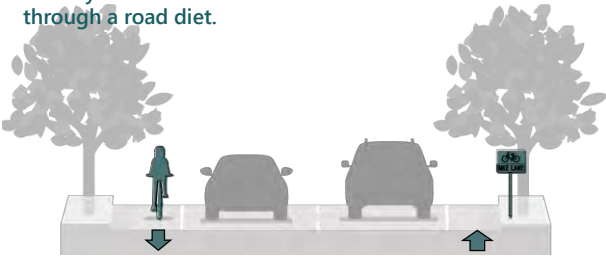


Collector Roads



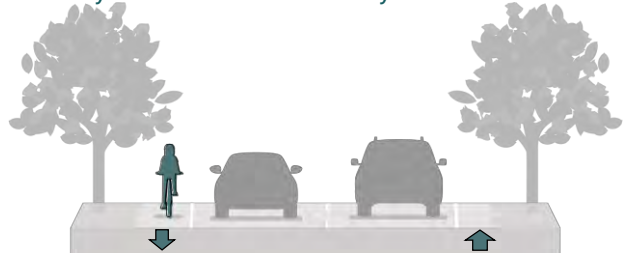
### Bicycle Lanes

Best use is on arterial or collector roads with speeds between 25 and 45 mph and at least 5 feet for the bicycle lanes. Space for bicycle lanes can be from lanes wider than 16 feet or through a road diet.



### Paved Shoulder

Best use is on arterial or collector roads with speeds between 25 and 45 mph and at least 5 feet of paved shoulder. Used mainly on rural roads maintained by DOT.



Arterial Roads



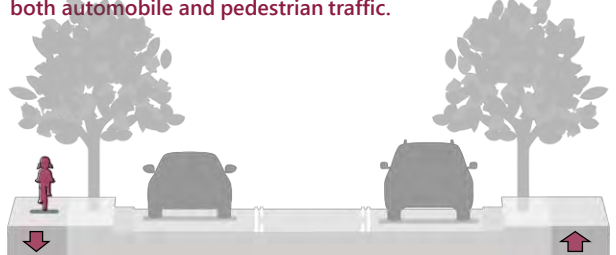
### Shared Use Path

Best use is to connect parks and recreation facilities, along stream corridors or along arterial roads with speeds greater than 45 mph.



### Separated Bicycle Lanes

Best use is on arterial roads with speeds greater than 45 mph with enough right of way for a bicycle lane separated from both automobile and pedestrian traffic.



Amenities



### Bicycle Parking

Major destinations should have ample bicycle parking, located proximate to a building entrance. Theft deterrence should be considered by providing adequate lighting and visibility. Preferred rack type is the “Inverted U” style, shown above.

### Bicycle Repair Station

Free-standing equipment for pumping tires or tightening bolts. Best locations may include Town Parks, recreation centers, heavily traveled commuter corridors, or strategically placed in downtown.

	Estimated Width	Location	Unit Cost
<b>Shared Lane Markings</b>	11' – 13' vehicle lanes	Shared-Road	\$180/marking
<b>Bicycle Boulevards</b>	< 11' vehicle lanes	Shared-Road	varies
<b>Bicycle Lanes</b>	At least 5' each	On-Road	\$130,000/mile
<b>Paved Shoulder</b>	At least 6'	On-Road	Varies
<b>Shared Use Path</b>	At least 10'	Off-Road	\$600,000/mile
<b>Separated Bicycle Lanes</b>	5' each	Off-Road; Above the curb or otherwise separated from vehicles	\$300,000/mile

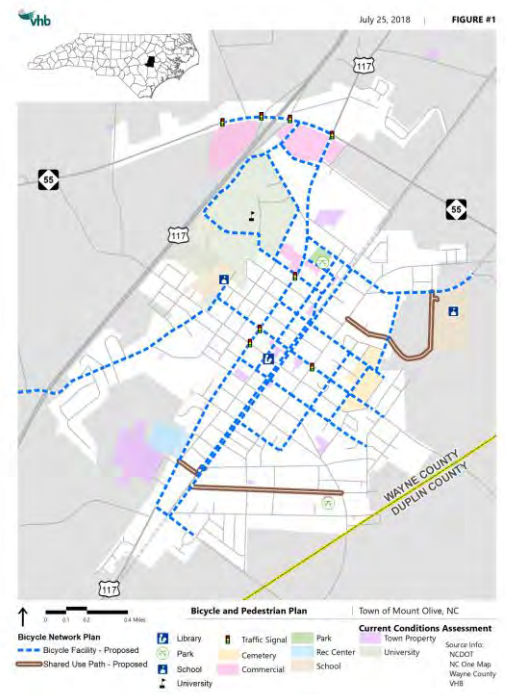
### Bicycle Parking Bicycle Repair Stations

Destinations (schools, library, parks, transit stops, etc.)	\$600/each
Major destinations or commuter corridors (parks, transit stops, downtown)	\$1,000/each



## Bicycle Network

- Shared Use Paths ══
  - Bicycle Facilities ══
  - Shared Lane Markings ←
  - Bicycle Boulevards ←
  - Bicycle Lanes ←
  - Paved Shoulders ←
- *Which streets would you recommend?*



# Evaluation Criteria



## Evaluation Criteria

- What are they?
- Why are they important to this process?
- How do we proceed?

## Prioritizing Future Projects

### Option A

- Evaluation criteria for ranking projects (0-5 points)
  - Community priority
  - Conflict/safety minimization
  - Directness/connectivity
  - Funding availability
  - Health & wellness
  - Time frame of implementation

Improvement Type(s)	Length (miles)	Cost Category	Evaluation Criteria						SCORE	Rank
			Priority	Conflict	Directness	Funding	Health & Wellness	Time Frame		
Corridor Improvement Shared Lane Markings	0.50	\$\$\$	4	4	5	2	4	4	23	1
Corridor Improvement Shared Lane Markings	0.39	\$\$\$	5	4	4	2	3	4	22	2
Sidewalk Shared Lane Markings	0.27	\$\$\$	5	4	3	1	5	3	21	3
Signage Improvement	-	\$	5	5	1	4	0	5	20	4
Sidewalk	0.40	\$\$\$	3	4	4	4	2	2	19	5
Intersection Improvement	-	\$	4	3	2	3	3	4	19	5
Intersection Improvement	-	\$	3	2	3	4	3	3	18	7
Sidewalk Shared Lane Markings	0.32	\$\$	5	3	5	1	2	2	18	7
Sidewalk	0.09	\$	3	4	4	3	2	2	18	7
Intersection Improvement	-	\$	3	3	3	3	2	3	17	10

## Prioritizing Future Projects

### Option B

- Evaluation criteria for ranking projects

Goal	What should be prioritized?	Priority – Weight (Max Score)
Safety	Proximity of existing signalized intersections (within 400')	High – 10 points
Community Resource	Facilities within 0.25 mile of an identified local community resource	High – 10 points
Implementation	Projects identified in previous plans	High – 10 points
Neighborhood Connectivity	Connectivity between residential neighborhoods and commercial district	Medium – 5 points
Existing Facility Connectivity	Extension of an existing sidewalk/shared-use path network (within 400')	Medium – 5 points
Cost	Projects that are cost efficient	Medium – 5 points
Connectivity	Facilities within 0.25 miles of schools	Low – 3 points
Transportation Choice	Facilities within 0.25 miles of transit stop	Low – 3 points

ID	Name	Safety	Transportation Choice	School Connectivity	Local Community Resource Connectivity	Community Resource Connectivity	Pedestrian Facilities Connectivity	Implementation Cost	Score	
<b>Corridor Projects</b>										
1	Pelican Lane	10	3	0	5	10	5	10	5	48
2	Dow Road	10	3	0	5	10	5	10	0	43
3	Harper Avenue	10	3	0	5	10	5	10	0	43
4	St. Joseph Street	10	3	0	5	10	5	10	0	43
5	Lake Park Boulevard - North	10	3	0	5	10	5	10	0	43
7	Lake Park Boulevard - Central	0	0	3	5	10	5	10	5	38
10	Alabama Avenue	0	0	0	5	10	5	10	5	35
11	Tennessee Avenue	0	0	0	5	10	5	10	5	35
14	Canal Drive	10	3	0	5	10	5	0	0	33
15	7th Street - North	0	3	0	0	10	5	10	5	33
16	Bridge Barrier Road	0	0	0	0	10	5	10	5	30
17	Ocean Boulevard	0	0	0	5	10	5	10	0	30
18	Lake Park Boulevard - South	0	0	0	5	10	5	10	0	30
19	Clarendon Avenue	0	0	3	0	10	5	10	0	28
21	7th Street - South	0	0	3	0	10	0	10	5	28
23	Carolina Beach Avenue	0	0	0	0	10	5	10	0	25
24	9th Street	0	0	3	0	10	5	0	5	23
26	Spartanburg Avenue	0	0	3	5	10	5	0	0	23
27	Florida Ave. & Virginia Ave.	0	0	0	0	10	5	0	5	20
29	Bonito Lane	0	0	0	0	10	0	10	0	20
35	Spencer Farrow Drive	0	0	0	0	10	5	0	0	15
37	Carolina Sands Connection	0	0	0	0	0	5	0	5	10

## Funding and Implementation



## Federal Funding

Funding Source	Main Criteria	Possible Project
Highway Safety Improvement Program ( <b>HSIP</b> )	Roads with significant bicycle and pedestrian <b>safety concerns</b> . Can be either local or State-owned roadways.	Bicycle lanes on S. Breazeale Avenue, Sidewalks on S. Church Street
Recreational Trails Program ( <b>RTP</b> )	Grants must be used for the development of trails, including <b>shared use paths</b> , greenways, and natural surface hiking trails.	Henderson Street towards downtown, Nelson Street towards park
Better Utilizing Investment to Leverage Development ( <b>BUILD</b> )		Bicycle lanes on Henderson Street, Sidewalks on N. Church Street
Federal Transit Administration ( <b>FTA</b> ) Rural Funding	Last mile projects, <b>connecting bus stops or transit stations</b> to residential areas by way of pedestrian or bicycle infrastructure.	All bicycle and pedestrian projects in Mt. Olive would qualify for this funding

## State Funding

Funding Source	Main Criteria	Possible Project
Strategic Transportation Investments ( <b>STI</b> )	Projects are scored based on the following criteria: <b>Safety, Access, Demand, Connectivity, and Cost Effectiveness</b> .	All bicycle and pedestrian projects in Mt. Olive would address at least one of the STI criteria.
NCDOT Spot Safety Program	Smaller projects with maximum funds per project at \$250,000. Must address <b>safety concerns</b> .	Crossing Breazeale Ave of Church Street, where pedestrian crashes have occurred.
Contingency Funding	Discretionary funding source that can be used from <b>small scale improvements</b> such as sidewalks or intersection improvements.	All bicycle and pedestrian projects in Mt. Olive are eligible for this funding source.
Complete Streets	Improvements that follow NCDOT's Complete Streets <b>design guidelines along NCDOT roadways</b> .	Projects along NCDOT roadways are eligible for this funding.
North Carolina Parks and Recreation Trust Fund ( <b>PARTF</b> )	Assists with public parks and recreation projects, including <b>trails and greenways</b> .	Barlow Branch SUP, connection to Nelson Park, or University of Mount Olive SUP

## Implementation

- Phasing
  - Near-term: Priority Corridors with high evaluation criteria scores
  - Mid-term: Priority Corridors
  - Long-term: Secondary Corridors
- Complement programmatic initiatives
  - Education
  - Encouragement
  - Enforcement
  - Evaluation



## Programmatic Initiatives

- **Encouragement Programs**
  - Active Routes to School
  - Walking Tours
  - Wayfinding Signage
- **Education Programs**
  - Let's Go NC
  - Eat Smart, Move More NC
- **Enforcement Programs**
  - Watch for Me NC campaign
- **Evaluation Programs**
  - Annual pedestrian/bicycle counts program
  - Safe Routes to School program
  - Community survey





Table 7. Plan Implementation Action Item Timeline

Strategy	Contributing Stakeholders	Lead Agency/ Stakeholder	Time Frame	Duration	Related Section(s)
<b>Policy</b>					
Adopt This Plan	Town Council	Town of Carolina Beach	Immediate	Initial	—
Finalize the Bicycle and Pedestrian Committee	Town Staff, Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Immediate	Periodic	4.2, 4.3
Continue to Enforce State and Local Regulations	Town Staff, Law Enforcement, Bicycle Pedestrian Advisory Committee	Police	Near Future – Long-Range	Periodic	4.3.3, 4.4
<b>Program</b>					
Create Educational Outreach Programs	Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Near Future – Long-Range	Ongoing	4.3.2, 4.4
Create Encouragement Outreach Programs	Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Near Future – Long-Range	Ongoing	4.3.1
Establish a Monitoring and Benchmarking Program	Town Staff, Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Immediate – Long-Range	Ongoing	4.3.4
Become Registered as a Bike Friendly Community	Town Staff, Bicycle Pedestrian Advisory Committee	Town of Carolina Beach	Near Future – Long-Range	Periodic	4.3
<b>Infrastructure</b>					
Identify Funding Sources	Town Staff, Bicycle Pedestrian Advisory Committee	NCDOT & Town of Carolina Beach	Immediate – Long-Range	Periodic	5.5
Perform a Road Safety Audit	NCDOT Transportation Safety & Mobility Unit, FHWA Division Office, Town Staff	NCDOT & Town of Carolina Beach	Near Future – Immediate	Once	—
Build the Priority Projects Outlined in this Plan	NCDOT, WMPO, New Hanover County, Town Staff	NCDOT	Near Future – Immediate	Ongoing	3.4
Review the Applicability of Future Projects	NCDOT, WMPO, New Hanover County, Town Staff, Bicycle Pedestrian Advisory Committee	NCDOT	Long-Range	Periodic	3.4

Time Frame:

- Immediate = initial steps in Plan, short-term
- Near Future = implementation phases
- Intermediate = final implementation phases
- Long-Range = post-implementation, evaluation and maintenance phases

Duration:

- Initial = preliminary action
- Once = single, stand-alone action
- Ongoing = continual updates needed, no clear end
- Periodic = occasional, non-specified milestones

## Next Steps



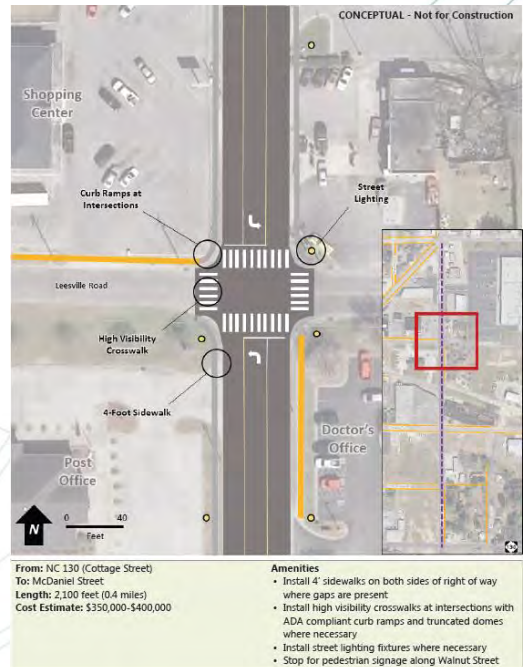
## Next Steps

- Survey to close very soon
- **Plan Development & Recommendations**
  - Next Meeting *virtual*



## Project Visuals

- Five (5) high-priority projects:
  - Visual examples of recommendations
  - Planning-level costs





## Carver Center (US 117 Alt)

Sidewalks, Crosswalk, and Bioretention



## Breazeale Ave US-117 Alt

Sidewalks and Crosswalk Improvements





# Breazeale Ave @ Henderson St

Intersection Improvement



# Church Street

Sidewalks





# Henderson Street

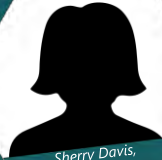
Sidewalks and Bicycle Lanes



# Henderson Street – Road Diet

Shared Use Path and Shared Lane Markings

# THANK YOU



Sherry Davis,  
Project Manager



Steering Committee



Joseph Scott,  
Town Mayor

**Sherry Davis** | [secretary@townofmountolivenc.com](mailto:secretary@townofmountolivenc.com) | 919.658.9539 ext. 106

**Bryan Lopez** | [balopez@ncdot.gov](mailto:balopez@ncdot.gov) | 919.707.2606

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[www.vhb.com](http://www.vhb.com)



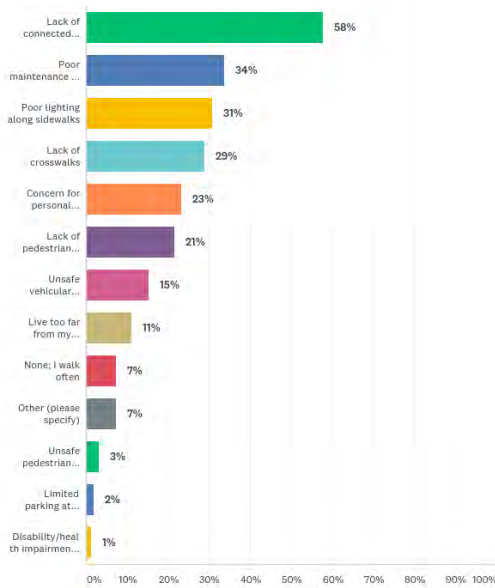
Offices located throughout the east coast



### Q4: Which of the following discourage you from walking?

■ Answered: 163 Skipped: 0

(Select up to three)

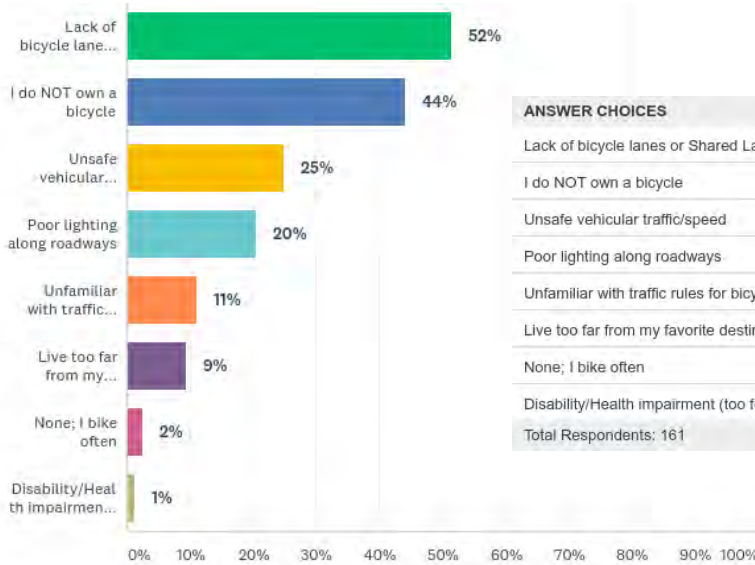


ANSWER CHOICES	RESPONSES
Lack of connected sidewalks	<b>Infrastructure</b> 58% 94
Poor maintenance of sidewalks (cracked, separated, or overgrown)	<b>Maintenance</b> 34% 55
Poor lighting along sidewalks	<b>Lighting</b> 31% 50
Lack of crosswalks	<b>Infrastructure/Safety</b> 29% 47
Concern for personal safety/security	<b>Safety</b> 23% 38
Lack of pedestrian signals at roadway crossings	<b>Infrastructure/Safety</b> 21% 35
Unsafe vehicular traffic/speed	<b>Safety</b> 15% 25
Live too far from my favorite destinations	11% 18
None; I walk often	7% 12
Other (please specify)	7% 12
Unsafe pedestrian crosswalk locations	<b>Infrastructure/Safety</b> 3% 5
Limited parking at convenient, centralized location (park and walk to multiple destinations)	2% 3
Disability/health impairment (too few accommodations)	<b>Accessibility</b> 1% 2
Total Respondents: 163	

### Q8: Which of the following discourage you from bicycling?

■ Answered: 161 Skipped: 2

(Select up to three)

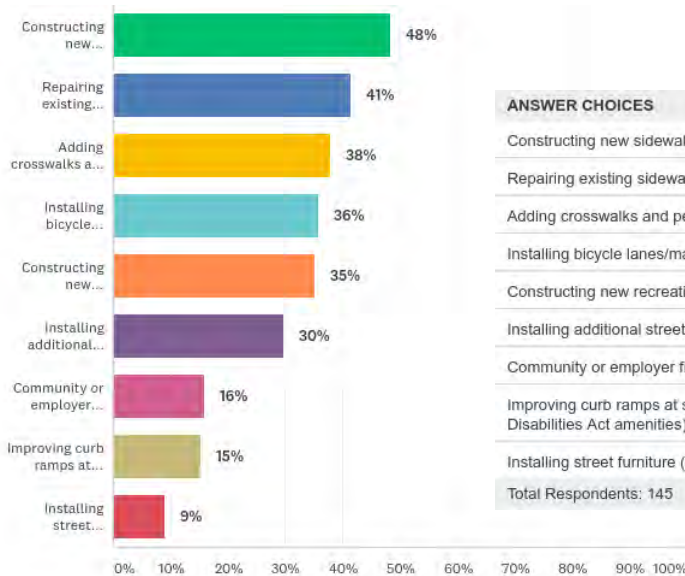


ANSWER CHOICES	RESPONSES
Lack of bicycle lanes or Shared Lane Markings <b>Infrastructure</b>	52% 83
I do NOT own a bicycle	44% 71
Unsafe vehicular traffic/speed <b>Safety</b>	25% 40
Poor lighting along roadways <b>Lighting</b>	20% 33
Unfamiliar with traffic rules for bicyclists <b>Unfamiliarity</b>	11% 18
Live too far from my favorite destinations	9% 15
None; I bike often	2% 4
Disability/Health impairment (too few accommodations) <b>Accessibility</b>	1% 2
Total Respondents: 161	

### Q11: Which of the following would encourage you to walk/bike?

■ Answered: 145 Skipped: 18

(Select up to three)



ANSWER CHOICES	RESPONSES
Constructing new sidewalks/trails (off-street) <b>Infrastructure</b>	48% 70
Repairing existing sidewalks/trails <b>Maintenance</b>	41% 60
Adding crosswalks and pedestrian signals at intersections <b>Infrastructure</b>	38% 55
Installing bicycle lanes/markings (on-street) <b>Infrastructure</b>	36% 52
Constructing new recreational greenways and shared-use p <b>Infrastructure</b>	35% 51
Installing additional street lighting <b>Lighting</b>	30% 43
Community or employer fitness program <b>Programs</b>	16% 23
Improving curb ramps at sidewalks, crosswalks, or bus stops (Americans with Disabilities Act amenities) <b>Accessibility</b>	15% 22
Installing street furniture (e.g. benches) <b>Infrastructure</b>	9% 13
Total Respondents: 145	



Place: Mt Olive Courtroom  
114 E. James Street, Mt Olive, NC

Date: October 26, 2018

Notes Taken by: VHB

Project #: 38600.03

Re: Mt Olive Bicycle & Pedestrian Plan  
Public Event #2 Notes

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## ATTENDEES

See sign-in sheets (total of four).

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VHB staff presented materials at a Public Meeting held on Friday October 26, 2018 between 4 PM and 6 PM. These notes serve as meeting notes from this event.

VHB presented the agenda to the meeting, including expectations of attendees. VHB described the planning process and how it relates to design and construction (future projects). Elements of a bicycle and pedestrian plan was presented, referencing that this is a living document to be updated every 5-10 years.

VHB described comments received to date relating to major destinations, safety issues, and survey responses. Attendees were asked to validate or augment these comments. Priority corridors were described, highlighting that primary routes connect to major destinations, and secondary corridors support the network and allow for loops/trails to be established.

Typical pedestrian facilities (sidewalk, shared use paths) were described during the presentation, as well as marked crosswalks and pedestrian refuge islands. Meeting attendees were reminded of how they could contribute to this planning process by identifying streets or intersections in town that they believe would be most improved by each of these pedestrian facility types.

Four posters were available for comment and markup: (1) Survey interim results; (2) Draft Ped-Bike network plans; (3) Posted speed limits; and (4) Draft facility recommendations (included at the end, as Posters 1-4). VHB described each poster with attendees, and documented feedback on post-it notes and directly on posters.

### Safety Issues Poster

Attendees marked several intersection locations with perceived safety issues, listed below and included as Poster 3:

- NC Hwy 55 @ Henderson Street (near US 117 interchange and Food Lion shopping center)
  - High Visibility crosswalk needed for Henderson Street
- Breazeale Avenue @ the following intersections:
  - Westbrook Street (near Park and Piggly Wiggly shopping center)
  - James Street (traffic signal without crosswalk)
  - Main Street (traffic signal without crosswalk)
- Railroad crossing @ Pollock Street
- Church Street between intersection with Main Street and James Street (traffic signal), the existing sidewalk is in poor condition

**Facility Type(s) Poster**

VHB presented three typical pedestrian network improvements (sidewalks, shared use paths, crossing improvements), and asked attendees to a) vote for the suggested roadways that most-benefit from each type, and b) write-in additional streets. Results have been aggregated into Table 1 below, and included as Poster 4.

Attendees were similarly presented with three typical bicycle improvements (bicycle boulevards, shared lane markings, and bicycle lanes), and asked to vote for suggested roadways or write-in additional streets. Results are below, and included as Figure 1.

**Table 1. Number of Attendee Votes Received by Street**

Street Name	Pedestrian			Bicycle		
	Sidewalks	Shared Use Path	Crossing Improvements	Bicycle Boulevard	Shared Lane Markings	Bicycle Lanes
Breazeale Avenue (US 117 Alt)		4	7			1
Center Street			1			
Chestnut Street				2		
Church Street (north)	3	1				
Church Street (south)	2	1				
Franklin Street	3			3		
Henderson Street			7			3
Hillsboro Street	1					
James Street					1	
John Street				1		
Main Street		1		1	1	
Martin Street			2			
Nelson Street		2				1
Park Avenue	2					
Pollock Street					1	1
Southerland Street				1		
Westbrook Street	1		2			

**Feedback Forms**

Feedback forms were provided so that attendees could provide written (in addition to verbal) feedback to the project team. A total of 11 forms were completed, and a summary of feedback forms revealed the following:

**Specific intersections or roadways that you feel unsafe?**

- Henderson and Breazeale (x3)
  - Students walk this area to downtown
- Church St (x2) – lack of crosswalks
- Breazeale (US 117 Alt) at:
  - Park Ave (x2)

- Pollock
- NC HWY 55
- Main St
- Church St
- Westbrook Ave
- Sidewalk gap between Main St and James St
- Norbert Wilson Street, the road is not wide enough
- Park Ave, lack of sidewalks
- Traffic flow from pickle plant is heavy

**What programs or events would encourage you to walk more frequently?**

- Bike trails along streets (x2)
  - Designated walking path and trail
- NC Pickle Festival or similar
  - Get you Bark On event
- Family-oriented walks or runs
- Workout programs (outdoors)
- More sidewalks and crosswalks – Park Avenue specifically
- New brewery (R&R) is a point of interest for staff and students
- More (targeted) enforcement at intersections to make drivers respect the crossing intersections
- Park activities and walking trail in park causes or creates a danger when arriving or leaving; there needs to be a marked walking area

**This plan will be successful because...**

- Safety will be included in this plan (x3)
  - Improving safety for walking and bicycling (x2)
  - Improving pedestrian crossing locations
- Our community needs this and will make it happen through their support and determination!
- It may encourage residents to get out and be active in the community
- It may help residents walk to work (and around town) more easily

**Action Items:**

- VHB to incorporate these summary comments into the draft plan
- VHB to use these comments as community priorities for evaluation criteria of recommended projects

**ATTACHMENTS**

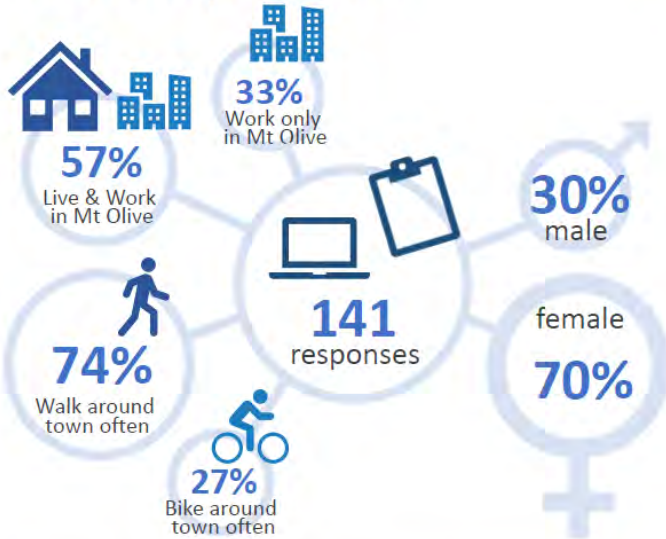
Sign in sheet

Presentation slides

Poster 1 – Survey Interim Results

 **Town of Mount Olive, NC**  
 Bicycle and Pedestrian Master Plan – Online Survey Results

Who responded?



What we heard from you:



Top 3

(respondents selected the top three answers)



Deterrents to walking:

1. Lack of connected sidewalks (58%)
2. Poor maintenance (34%)
3. Poor lighting (31%)



Deterrents to bicycling:

1. Lack of (on-road) bicycle lanes (52%)
2. I do not own a bicycle (44%)
3. Unsafe vehicular speed (25%)



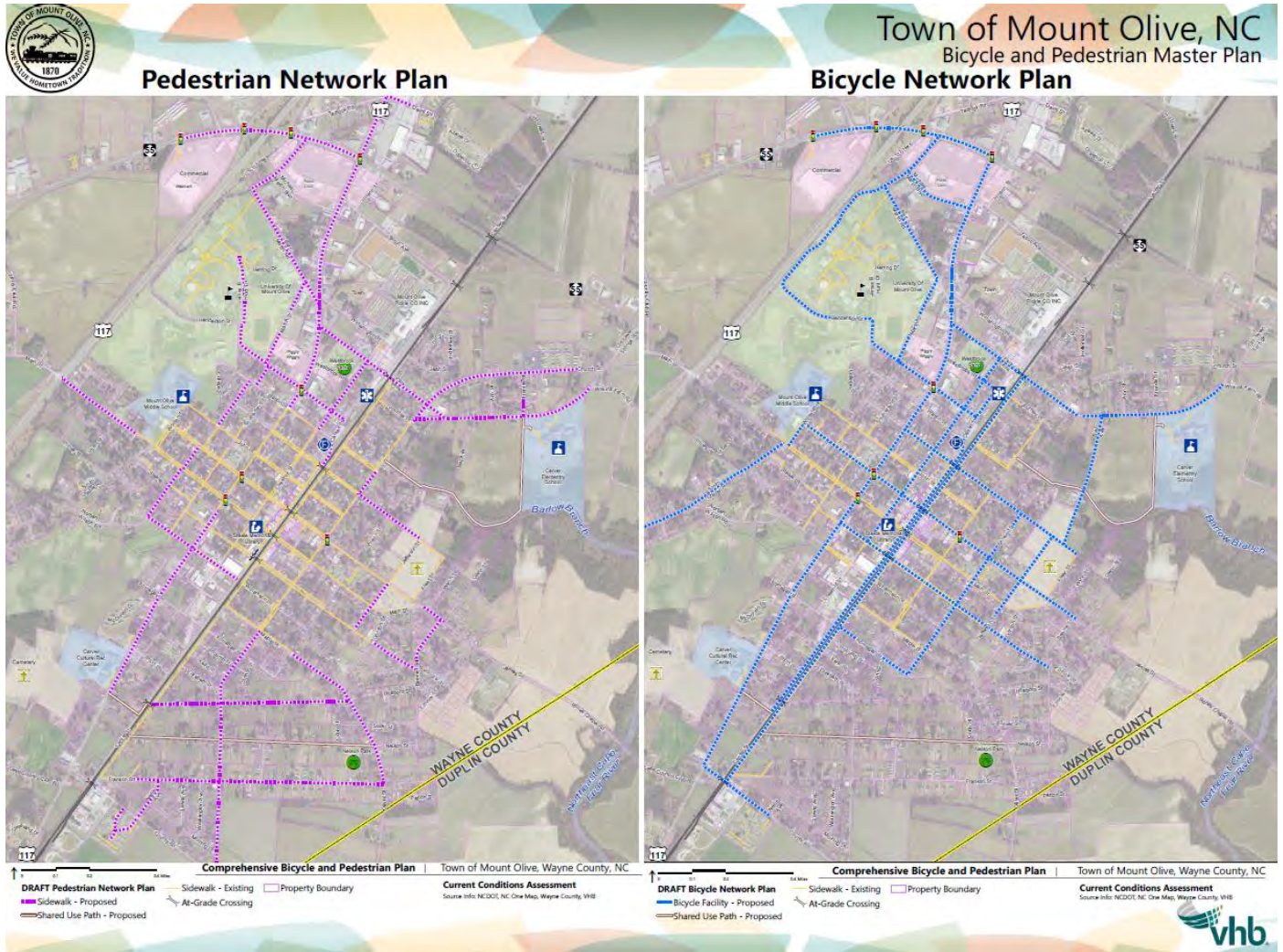
Infrastructure improvements that would encourage

1. Constructing new sidewalks (48%)
2. Repairing existing sidewalks (41%)
3. Adding crosswalks (38%)



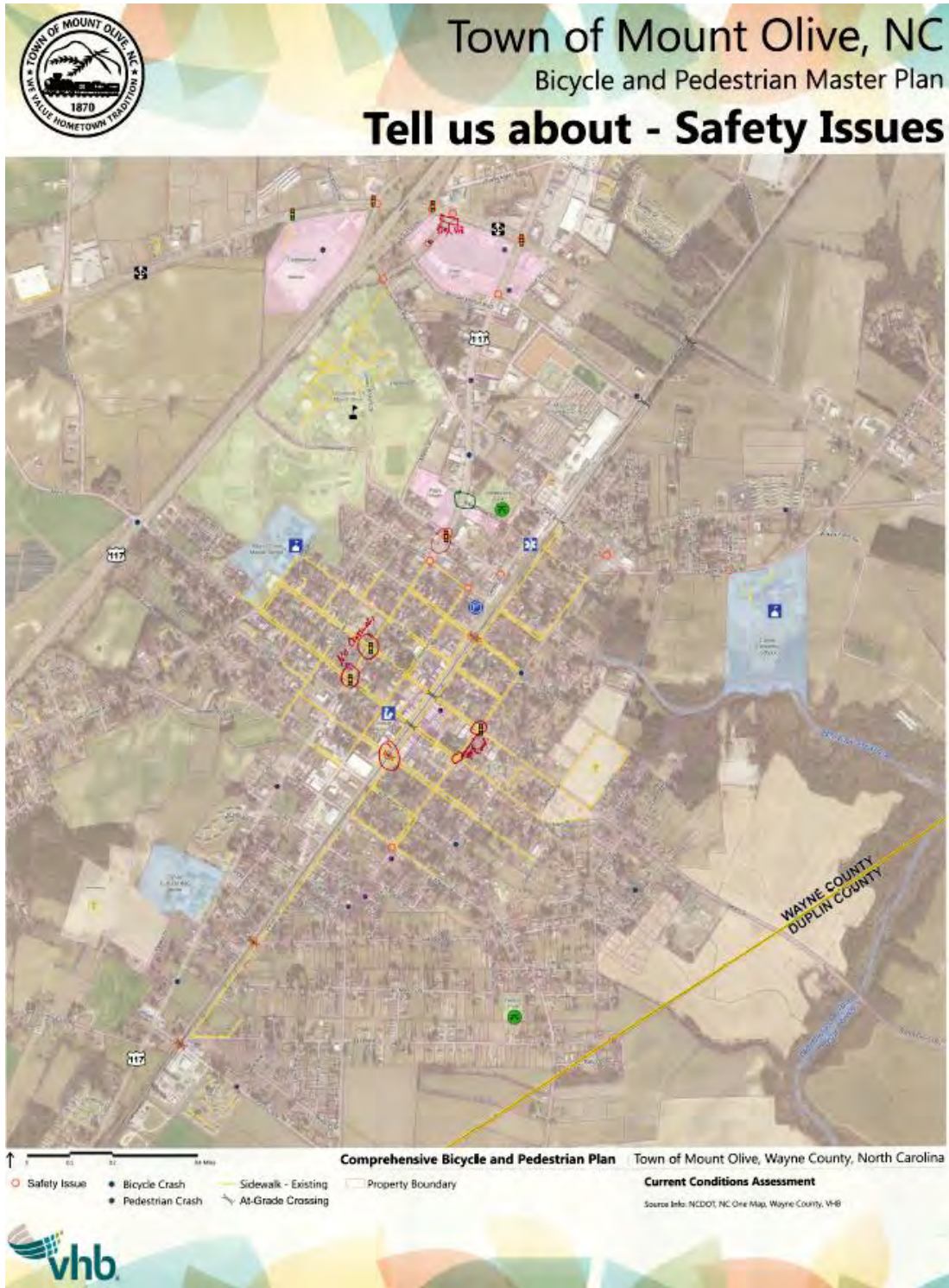


**Poster 2 – Draft Network Plans**





**Poster 3 - Safety Issues - Markup**





**Poster 4 – Draft Facility Recommendations - Markup**

## Pedestrian Network

### Sidewalks

Best use is on roads that connect destinations or on roads with significant automobile traffic.

**I want sidewalks on...**

Church Street  
North of Old Salem Springs Road

Church Street  
South of Franklin Street



Park Avenue  
North of Old Salem Springs Road

NC-55  
Between Hillsboro

Hillsboro Street  
Between Franklin Street and Washburn Street

### Shared Use Paths

Best use is to connect parks and recreation facilities, along stream corridors or along arterial roads with speeds greater than 45 mph.

**I want a shared use path on...**

Breazeale Avenue  
South of Main Street

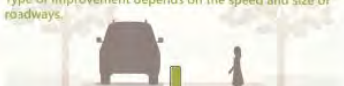

Henderson Street  
Between Breazeale

Nelson Street  
Between Park

*Franklin Street  
Washburn Street*

### Crossing Improvements

Best use is to connect the existing pedestrian network. Type of improvement depends on the speed and size of roadways.

**I want crossing improvements at...**

Breazeale @ Henderson

Breazeale @ Station

Henderson @ Martin



Please write in other notes:

*Henderson @ NC 55  
Speed humps on Cafe St  
Washburn + Breazeale*

## Bicycle Network

### Bicycle Boulevard

Best use is on narrow neighborhood roads with little automobile traffic and low speeds.

**I want a bicycle blvd on...**

Johnson Street

Hillsboro Street

Southerland Street

Chestnut Street



John Street

Please write in other notes:

*Franklin St  
Franklin St*

### Shared Lane Markings

Best use is on local roads with speeds no higher than 25 mph and lane widths between 11 and 13 feet.

**I want shared lane markings (sharrows) on...**

Center Street

Main Street



James Street

Please write in other notes:

*Hillsboro Street*

### Bicycle Lanes

Best use is on arterial or collector roads with speeds between 25 and 45 mph and at least 5 feet for the bicycle lane.

**I want bicycle lanes on...**

Henderson Street  
Between Center

Breazeale Avenue  
North of Old Salem Street

Please write in other notes:

*Breazeale Ave is too narrow to bike on Cambridge  
Hillsboro  
Nelson*



**Photos from Public Event**





**Public Workshop #2**

	Name	Tell Us About Yourself	Which street/intersection in Mount Olive should be improved first?
example	John Doe	Mount Olive Resident	Intersection of N Church St @ E College St
1	Bryce Ficken	Business owner	Henderson to UMO
2	Linda Tyson		
3	Josh Phillips	Parks & Recreation Director	
4	Rick McCoy	crew leader	Pollock St
5	Steven Whitted	Town Employee	
6	Brian Kohls	town employee	pollock st Breazeale
7	DAVID OSORIO	TOWN OF MO.	main st and Center St
8	Elias Candido	TOWN OF MO	main st and Breazeale
9	Brooke Bitzenhfer	UMO employee	Henderson to nmo
10	Melinda Holland	UMO employee	Henderson Drive @ UMO
11	James B. Highsmith	town OF Mt. Olive	Church & Millsboro
12	Wayne Broadhurst	TOWN OF Mt Olive	Finish Center St
13	Terriel Troustfield	Town of Mt. Olive	Henderson st + UMO (Westbrook Park)
14	Betty Best		
15	Cathy Dicks	Employee	



Public Workshop #2 (continued)

	Name	Tell Us About Yourself	Which street/intersection in Mount Olive should be improved first?
16	HARLE CARANter	Town WORKER	319 FRANKLIN ST.
17	Kelle Carmichael	mt Olive	319 Franklin St.
18	Chris Cremples	Town employ	All
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

**Public Workshop #2**

	<b>Name</b>	<b>Tell Us About Yourself</b>	<b>Which street/intersection in Mount Olive should be improved first?</b>
example	John Doe	Mount Olive Resident	Intersection of N Church St @ E College St
1	Jeremy King	Town Employee	Pollock St.
2	Edward Davidson	Town Employee	Side walk inbetween Jones <sup>st</sup> and main st
3	Tammy Brown	Police chief	side walk on S. Church St.
4	Mitchell Davis	Town Employee	Main Street + Breazeale
5	Sherry Davis	Town Employee	Breazeale + Henderson
6	Chris Davis	Town Employee	Pollock + Breazeale
7			
8			
9			
10			
11			
12			
13			
14			
15			

**Public Workshop #2** (continued)

	<b>Name</b>	<b>Tell Us About Yourself</b>	<b>Which street/intersection in Mount Olive should be improved first?</b>
16	Erin Lambert	Code Enforcer	Breezeale / Henderson
17	Johnny Evans	Public Works Assit	College / Center
18	Joe Scott	Mayor	Breezeale / Henderson
19	Kaye Anderson	Town Clerk	Breezeale / Henderson
20	Steve Herring	News-Argus reporter	
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			





## Mount Olive Bicycle & Pedestrian Plan

Public Event #2

Presented by  
VHB Engineering NC, P.C.

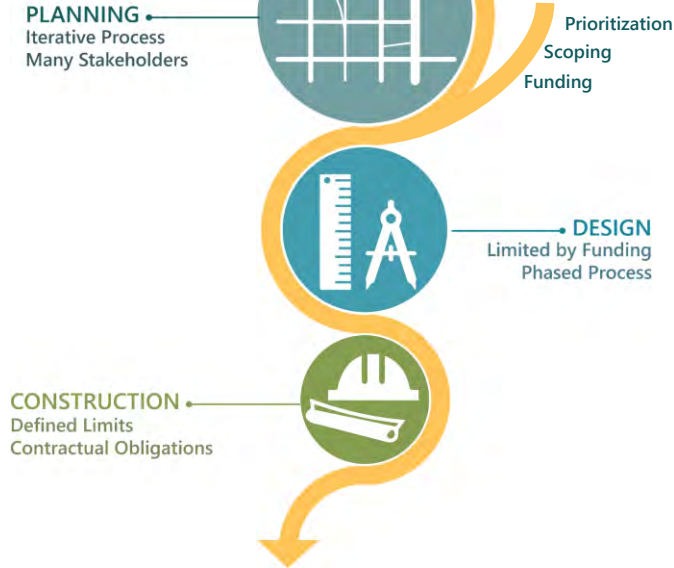
October 26, 2018

### Today's Agenda

- **What** is a bicycle & pedestrian plan?
- **What** we've heard?
- **Why** are we here tonight?
- **How** can you help?
- **What** are the next steps?



## What is planning?



## What is a bicycle and pedestrian plan?



- Living document, updated 5-10 years
- Represents community vision & goals
- Local, regional, and state involvement
- Identifies MANY projects to be ranked
- Includes programmatic initiatives

## What we've heard?

### Comments

- Major destinations
  - Westbrook Park
  - Carver Cultural Center
- Safety issues – significant barrier(s)
  - Breazeale Ave (US 117 Alt)
  - NC Hwy 55 towards Walmart
  - Railroad
- Extending sidewalks further
- **Survey**
  - Need for more connected sidewalks
  - Lack of bicycle facilities (lanes or sharrows)



## Why are we here tonight?

### Draft recommendations

- Connect destinations
- Intersection improvements – crossing Breazeale Ave
- Building a connected network – Gaps
- Non-physical improvements – Programs to encourage physical activity

### Physical Improvements



### Non-Physical Initiatives



## Why are we here tonight?

- Confirm our preliminary findings

— **Are** survey results representative?

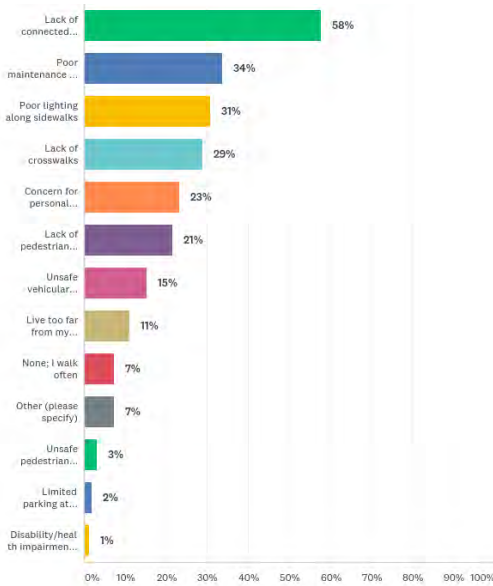
— **Where** are the priority corridors?

— **What** pedestrian improvements would you recommend?

## Q4: Which of the following discourage you from walking?

- Answered: 163 Skipped: 0

(Select up to three)



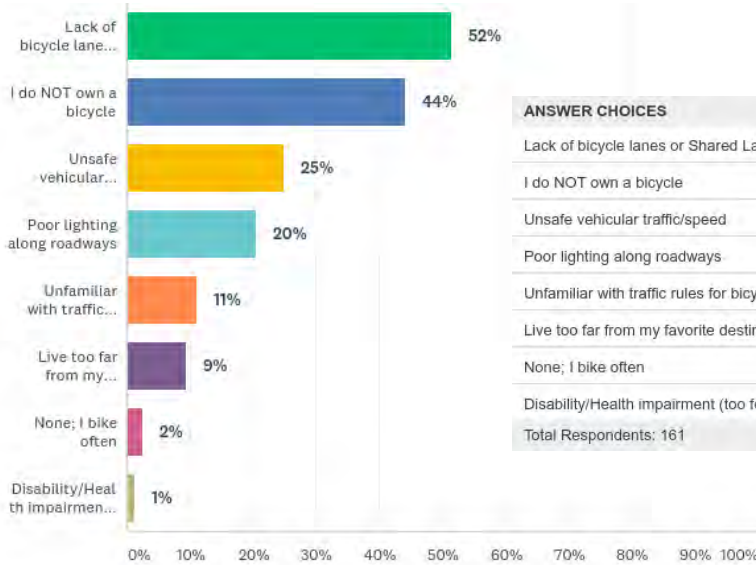
ANSWER CHOICES	RESPONSES
Lack of connected sidewalks	<b>Infrastructure</b> 58% 94
Poor maintenance of sidewalks (cracked, separated, or overgrown)	<b>Maintenance</b> 34% 55
Poor lighting along sidewalks	<b>Lighting</b> 31% 50
Lack of crosswalks	<b>Infrastructure/Safety</b> 29% 47
Concern for personal safety/security	<b>Safety</b> 23% 38
Lack of pedestrian signals at roadway crossings	<b>Infrastructure/Safety</b> 21% 35
Unsafe vehicular traffic/speed	<b>Safety</b> 15% 25
Live too far from my favorite destinations	11% 18
None; I walk often	7% 12
Other (please specify)	7% 12
Unsafe pedestrian crosswalk locations	<b>Infrastructure/Safety</b> 3% 5
Limited parking at convenient, centralized location (park and walk to multiple destinations)	<b>Infrastructure</b> 2% 3
Disability/health impairment (too few accommodations)	<b>Accessibility</b> 1% 2
Total Respondents: 163	



### Q8: Which of the following discourage you from bicycling?

■ Answered: 161 Skipped: 2

(Select up to three)

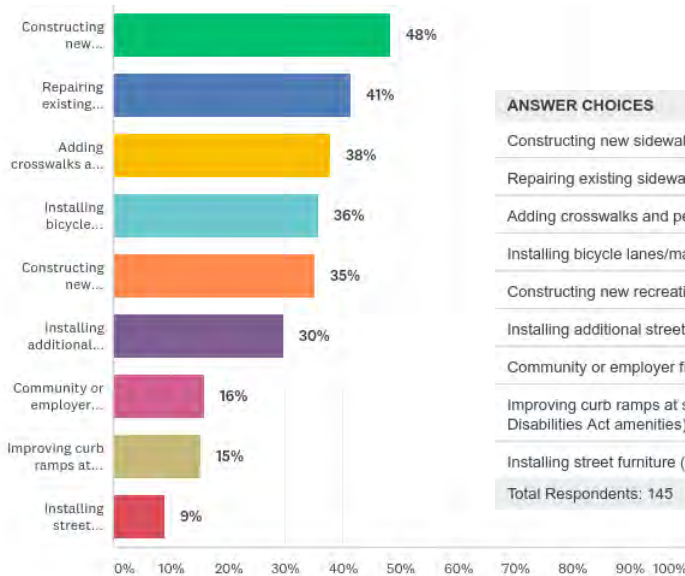


ANSWER CHOICES		RESPONSES
Lack of bicycle lanes or Shared Lane Markings	<b>Infrastructure</b>	52% 83
I do NOT own a bicycle		44% 71
Unsafe vehicular traffic/speed	<b>Safety</b>	25% 40
Poor lighting along roadways	<b>Lighting</b>	20% 33
Unfamiliar with traffic rules for bicyclists	<b>Unfamiliarity</b>	11% 18
Live too far from my favorite destinations		9% 15
None; I bike often		2% 4
Disability/Health impairment (too few accommodations)	<b>Accessibility</b>	1% 2
Total Respondents: 161		

### Q11: Which of the following would encourage you to walk/bike?

■ Answered: 145 Skipped: 18

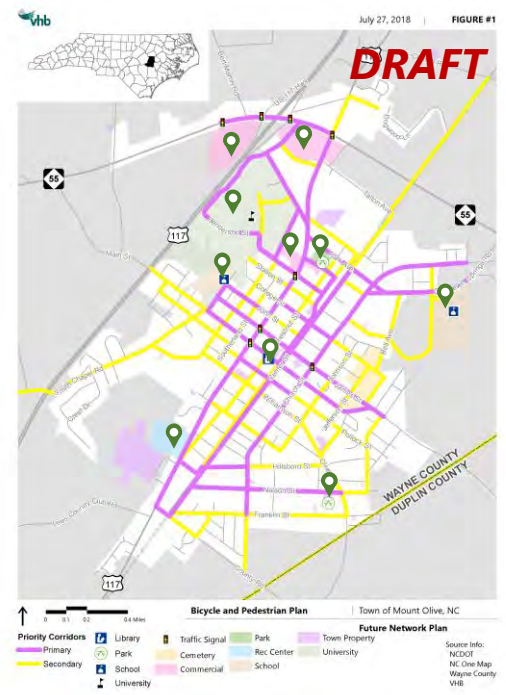
(Select up to three)



ANSWER CHOICES		RESPONSES
Constructing new sidewalks/trails (off-street)	<b>Infrastructure</b>	48% 70
Repairing existing sidewalks/trails	<b>Maintenance</b>	41% 60
Adding crosswalks and pedestrian signals at intersections	<b>Infrastructure</b>	38% 55
Installing bicycle lanes/markings (on-street)	<b>Infrastructure</b>	36% 52
Constructing new recreational greenways and shared-use p	<b>Infrastructure</b>	35% 51
Installing additional street lighting	<b>Lighting</b>	30% 43
Community or employer fitness program	<b>Programs</b>	16% 23
Improving curb ramps at sidewalks, crosswalks, or bus stops (Americans with Disabilities Act amenities)	<b>Accessibility</b>	15% 22
Installing street furniture (e.g. benches)	<b>Infrastructure</b>	9% 13
Total Respondents: 145		

# Priority Corridors

- **Primary**
  - Highest priority; forms the network “spine”
  - Connects to significant destinations
  - Short-term needs
  
- **Secondary**
  - Moderate priority; connects to primary spine and allows for loops/trails
  - Medium to Long-term needs



## Pedestrian Facilities



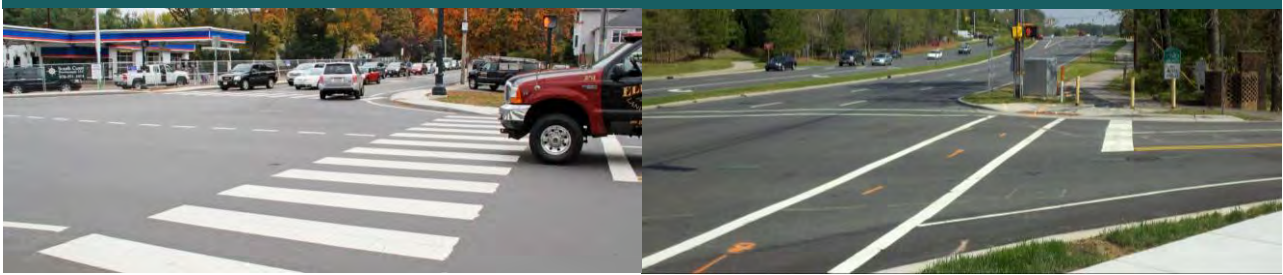
**Sidewalk**



**Shared Use Paths**

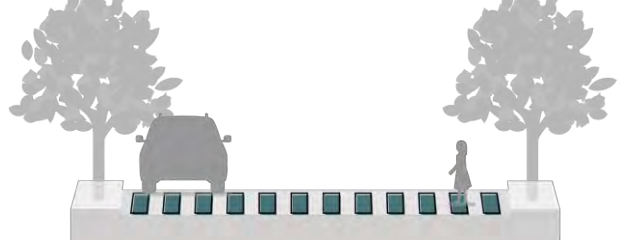
Where would you recommend? **Pedestrian Crossing Signage**

Intersection Improvements



High-Visibility Crosswalk

Standard Crosswalk



Where would you recommend?

Marked Crosswalks



Where would you recommend?



Pedestrian Refuge Island



## How can you help?

### Pedestrian Network



**Sidewalks**  
Best use is on roads that connect destinations or on roads with significant automobile traffic.

**I want sidewalks on...**

Church Street
Church Street
Park Avenue
NC-55
Hillsboro Street



**Shared Use Paths**  
Best use is to connect parks and recreation facilities, along stream corridors or along arterial roads with speeds greater than 45 mph.

**I want a shared use path on...**

Breazeale Avenue
Henderson Street
Nelson Street

**Crossing Improvements**  
Best use is to connect the existing pedestrian network. Type of improvement depends on the speed and size of roadway.






**I want crossing improvements at...**

Breazeale @ Henderson
Breazeale @ Station
Henderson @ Martin

### Bicycle Network



**Bicycle Boulevard**  
Best use is on narrow neighborhood roads with little automobile traffic and low speeds.

**I want a bicycle blvd on...**

Johnson Street
Hillsboro Street
Southerland Street
Chestnut Street
John Street



**Shared Lane Markings**  
Best use is on local roads with speeds no higher than 25 mph and lane widths between 11 and 13 feet.

**I want shared lane markings (sharrows) on...**

Center Street
Main Street
James Street

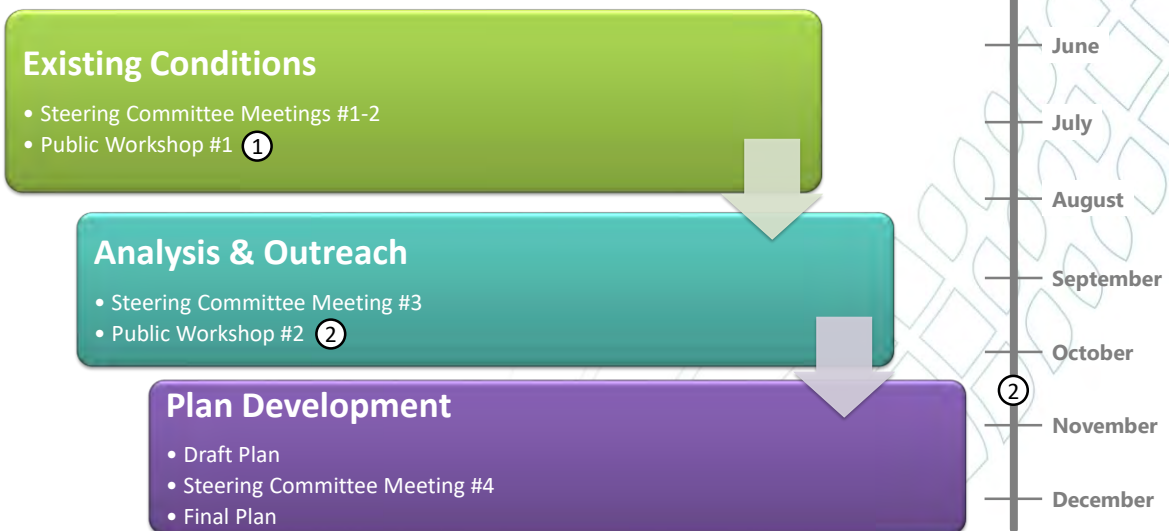
**Bicycle Lanes**  
Best use is on arterial or collector roads with speeds between 25 and 45 mph and at least 5 feet for the bicycle lane.

**I want bicycle lanes on...**

Henderson Street
Breazeale Avenue

## What are the next steps? – Overall Schedule





Now it's your turn!!!



## How can you help?

- Engage in conversation
- **Are survey results representative?**
- **Are these the priority corridors?**
- **What improvements would you recommend?**
- **What would encourage you to walk more frequently?**
  - School programs/field trips?
  - Safety campaigns?

Prepared for:



Prepared by:

