

# Town of Farmville

## Comprehensive Bicycle Plan



Town of Farmville

Mid-East Commission

February 2015

# ACKNOWLEDGEMENTS

## TOWN OF FARMVILLE COMPREHENSIVE BICYCLE PLAN – ADOPTED FEBRUARY 3, 2015

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The North Carolina Department of Transportation (NCDOT)

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## EXECUTIVE SUMMARY

The Town of Farmville Comprehensive Bicycle Plan is the first plan of its kind for the Town and was funded by a Grant from the Pitt County Health Department as a part of their Communities Putting Prevention to Work (CPPW) grant. The development of the Bike Plan will compliment the development of a Comprehensive Pedestrian Plan, funded through the North Carolina Department of Transportation's Bicycle and Pedestrian Planning Grant Initiative. The plan will support the Town's ongoing efforts to promote sustainable growth and development as well as healthy living habits. It will also attract individuals, both tourist and potential residents, to the area while making it more convenient and safer for people who enjoy bicycling or depend on it for everyday transportation. The Town of Farmville desires to improve transportation throughout the Town in order to link residential neighborhoods to parks & recreation facilities, schools, health care facilities and shopping/retail areas.

Upon receipt of the grant from Pitt County, the Town of Farmville acquired the services of the Mid-East Commission to assist with the development of a Comprehensive Bicycle Plan. The Town will use the Bicycle Plan as a guide for developing a bicycle-friendly community and will assist when making budget decisions and applying for grant funds from regional, state, federal, and private funding sources.

The Town of Farmville local government, Pitt County Health Department, Pitt County Board of Commissioners, Elementary, Middle, and High Schools in Farmville, the Friends of Greenville Greenways (FROGGS), and several Farmville Citizens have all expressed their support for improving Farmville's Bicycle and Pedestrian transportation to provide a multi-modal transportation system.

The existing Pitt County Comprehensive Greenway Plan, Pitt County Comprehensive Transportation Plan, and the Farmville Comprehensive Pedestrian Plan all support the vision of developing a comprehensive bicycle transportation planning document that will provide direction in achieving safe transportation and connectivity in Farmville.

### **Town of Farmville Comprehensive Pedestrian Plan Vision Statement:**

*Farmville is recognized as a bicycle-friendly community where bicycling is a safe, viable, healthy, and popular transportation and recreation choice for all citizens, students, workers, and visitors.*

Identified themes that came out of Steering Committee discussion include:

*Improved Safety*

*Education*

*Connectivity and Accessibility*

*Amenities*

*Enforcement*

These themes led to the development of the plan's goals and objectives to achieve the vision. These are discussed in further in **Section 1**.

The current conditions within the Town of Farmville have been inventoried and evaluated as part of the development of the Comprehensive Bicycle Plan. **Section 2** includes an overview of the Town, current usage/user demographics, an inventory and assessment of existing pedestrian facilities and walking compatibility of the local transportation system. The information obtained regarding Farmville's current conditions provides the framework for planning bicycle facilities, programs, and policies based on the community's wants and needs. In addition to analyzing existing conditions, existing plans, programs, and policies at the Local, Regional, and State level were reviewed.

Plans and policies determine the type of development that is encouraged and allowed in a community. Programs offer methods to promote, encourage, and educate the public on bicycling. These tools (plans, policies, and programs) are key components to ensuring an environment that supports bicycling. Existing plans, programs, and policies are highlighted in **Section 3**.

During plan development, several potential projects were identified that would develop a bicycle network in the town. These potential bicycle and multi-use facilities projects have been broken down into two categories: On-Road Projects, and Multi-Use Facility Additions and Improvements. **Section 4** describes the Strategic Bicycle Plan, which includes many potential project opportunities that were based on the following:

- Steering Committee Meetings
- Public Survey & Open Houses
- Bicycle Crash Data
- Field Inventory and Assessment
- Connectivity & Improved Safety

**Section 5** will provide guidance to the Town on design standards and guidelines for bicycle facilities. These standards and guidelines are a critical component of this Plan and for all facility construction and development. The design standards and guidelines mentioned in this section are derived from North Carolina Department of Transportation (NCDOT) *Bicycle Facilities Planning and Design*

*Guidelines*, the American Association of State Highway and Transportation Officials (AASHTO), and the Federal Highway Association (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD).

**Section 6** outlines recommendations for ancillary facilities, programs, and policies aimed at making Farmville a bicycle-friendly community. By addressing engineering, education, encouragement, enforcement, and evaluation and planning, recommendations will encourage the transformation of the bicycle transportation network in Farmville. The implementation of programs discussed in the plan will not only encourage bicycle transportation, but provide education, enforcement, and maintenance opportunities. This will ensure Farmville has a comprehensive bicycle network in which citizens will feel comfortable and safe utilizing.

**Section 7** contains the Recommended Projects. This list of potential project locations was developed based upon input from the Steering Committee, Town Staff, and the Public (via Open Houses, Public Survey, and letters of support). Projects were also developed through observations taken during field visits conducted by the consultant. All projects should be evaluated to determine whether it is possible to provide the facility recommended in this Plan as part of those projects. Bicycle and Pedestrian considerations should be included as part of all, Local and NCDOT, scheduled road maintenance and improvement processes.

The table on the following page outlines all recommended projects included in the plan.

Type of Project	Project/Improvement Name	At/On	From	To
Bicycle Boulevard	Contentnea Bike Boulevard	Contentnea	Main St.	Pine St.
Bicycle Boulevard	Grimmersburg Bike Boulevard	Grimmersburg	Main St.	Wilson St.
Bicycle Boulevard	Pitt Bike Boulevard	Pitt	Horne Ave.	Main St.
Bicycle Boulevard	Horne Bike Boulevard	Horne	May Blvd.	Davis Dr.
Bicycle Boulevard	Pine Bike Boulevard	Pine	Fields St.	Pitt St.
Bicycle Boulevard	Fields Bike Boulevard	Fields	Horne Ave.	Pine St.
Bike Lane	May Boulevard Bike Lane	May Blvd.	Horne Ave.	Park Dr.
Greenway	North Farmville Greenway	New Location	FC High School	May Blvd.
Greenway	Pitt County Greenway	New Location	May Blvd.	FC High School
Signage	Main Street Share the Road	Main St.	NC 121	Marlboro Rd.
Signage	Marlboro Share the Road	Marlboro Rd.	Ratley Rd.	Dr. Jones Rd.
Signage	Moye-Turnage Share the Road	Moye-Turnage Rd.	Wilson St.	Wesley Church Rd.
Signage	Fields Share the Road	Fields St.	Pine St.	Marlboro Rd.
Signage	NC 121 Share the Road	NC 121	Stantonsburg Rd.	Contentnea St.
Signage	Wilson Share the Road	Wilson St.	Grimmersburg St.	Thorne Dr.
Railroad Crossing	Main Street Railroad Crossing	Main Street	NA	NA
Railroad Crossing	Fields Street Railroad Crossing	Fields Street	NA	NA

**Section 8** describes how the recommendations for improving Farmville's bicycling conditions will be implemented. This section outlines priorities for projects, programs, and policies as well as potential partners and funding sources. Implementation of this Plan will be a collaborative effort between a variety of Town departments and external agencies. The Towns various departments should be aware of the Plan recommendations and seek to implement them as part of their regular work. The NCDOT Division of Bicycle and Pedestrian Transportation may provide technical expertise on issues related to bicycle transportation and financial assistance to ensure that implementation of the Plan moves forward. Progress on improving the Plan should be monitored on no less than an annual basis. Almost every transportation project offers an opportunity to implement a piece of this Plan.

## SECTION 1 — INTRODUCTION

The Town of Farmville Comprehensive Bicycle Plan is the first plan of its kind for the Town and was funded by the CPPW Grant through the Pitt County Health Department. The Town of Farmville desires to improve transportation throughout the Town in order to link residential neighborhoods to parks & recreation facilities, schools, health care facilities and shopping/retail areas. The development of a Comprehensive Bicycle Plan will support the Town's ongoing efforts to promote sustainable growth and development. It will also promote healthy living habits and attract both tourist and potential residents to the area, all while making it more convenient and safer for people who bike recreationally and out of necessity.

The Town of Farmville, in cooperation with the Mid-East Commission and Mid-East RPO, work began on the Bike Plan upon receipt of the grant from Pitt County. The Town acquired the services of the Mid-East Commission to assist with the development of the Comprehensive Bicycle Plan, as well as a Comprehensive Pedestrian Plan which was funded through NCDOT. The Town will use the Plan as a guide for developing a bicycle and pedestrian-friendly community which will assist when making budget decisions and applying for grant funds from regional, state, federal, and private funding sources.

The Town of Farmville local government, Pitt County Health Department, Pitt County Board of Commissioners, Elementary, Middle, and High Schools in Farmville, the Friends of Greenville Greenways (FROGGS), and several Farmville Citizens have all expressed their support for improving Farmville's Bicycle and Pedestrian transportation to provide a multi-modal transportation-system.

The Town, which is also currently in the process of developing an accompanying Comprehensive Pedestrian Plan, was also included in the development of the Pitt County Comprehensive Transportation Plan. Both documents support the vision of developing comprehensive bicycle as well as pedestrian transportation planning documents that will provide direction in achieving safe transportation and connectivity in Farmville.

### PUBLIC INVOLVEMENT

Public input was a driving force behind the development of Farmville's Comprehensive Bicycle Plan. The public involvement strategy involved several components including Steering Committee meetings, Public Open House, and public hearings at the Town's Planning Board and Town Council. Media outreach was utilized with press releases, public notices, and invitations to open houses to announce the project.



A 14 Member Steering Committee, comprised of citizens, Town staff, and Mid-East Commission staff met four times throughout the planning process to discuss goals and objectives, priorities, existing conditions, identify potential bicycle corridors and destinations, identify recommendations for projects and programs, and to identify project prioritization. In addition to these four meetings, bicycle elements were also discussed during Steering Committee meetings for the Pedestrian Plan in an effort to integrate the plans into one another. See Appendix A for further information regarding Steering Committee meetings.

In addition to the Steering Committee, public input was solicited through online and hard copy surveys. The survey was available on the Town website and hardcopies of the survey were available at Town Hall, Farmville Public Library, Piggly Wiggly Supermarket, Offices of Drs. Warren and Hardee, and Farmville Internal Medicine, PA. Citizens in Farmville were notified of the survey through local media outlets and the Town's website.

A Public Open House exhibit was held during the development of the Comprehensive Bicycle Plan. The event was held on April 27th, 2013 as a part of the annual Farmville Dogwood Festival. During the event, participants were presented information on the Bike Plan, given the opportunity to mark on maps, take the public input survey, and were provided the opportunity to ask questions and provide additional feedback. Information regarding these Public Open Houses can be found in Appendix A.

### VISION STATEMENT

During the Steering Committee Meetings, members discussed their vision for the Bicycle Plan. That discussion, along with additional fine tuning at Steering Committee Meetings, formulated the final vision for the plan:

***Farmville is recognized as a bicycle-friendly community where bicycling is a safe, viable, healthy, and popular transportation and recreation choice for all citizens, students, workers, and visitors.***

## THEMES, GOALS, & OBJECTIVES

The Steering Committee identified several overall themes that the plan needs to address. The identified themes are as follows:

- *Improved Safety*
- *Education*
- *Connectivity and Accessibility*
- *Bicycle Amenities*
- *Enforcement*
- *Health Promotion*

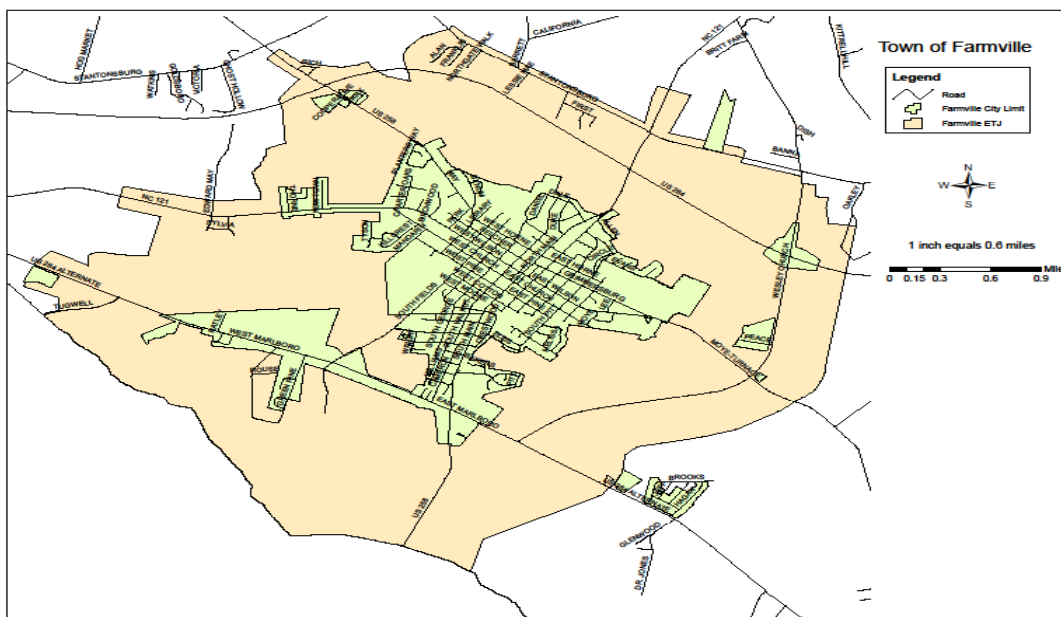
Based on these themes, goals and objectives were developed for the Town of Farmville Comprehensive Bicycle Plan.

## PURPOSE OF THE COMPREHENSIVE BICYCLE PLAN

The Comprehensive Bicycle Plan provides a comprehensive approach to bicycle planning that maximizes Farmville's existing infrastructure, identifies new opportunities, and creates an opportunity to develop and foster a more bicycle-friendly community through planning, design, and regulations, while also addressing bicycle safety and encouragement.

The Comprehensive Bicycle Plan Study Area includes Farmville's town limits and extra-territorial jurisdiction (ETJ). Map 1 illustrates the project study area:

Map 1



## PLANNING PROCESS

The process used for plan development involved four phases: 1) Data Collection, Research and Inventory; 2) Preliminary Recommendation Development; 3) Development and Review of Draft Bicycle Plan; and 4) Final Plan Development and Approval.

### **PHASE I - DATA COLLECTION, RESEARCH AND INVENTORY**

This phase involved data collection, research, and inventory of existing infrastructure and data. Phase 1 contained the following tasks or steps:

- Developed a Public Involvement Strategy
- Surveyed citizens by way of an on-line survey available on the Town website and hardcopies of the survey available at Town Hall, Farmville Public Library, Piggly Wiggly Supermarket, Offices of Drs. Warren and Hardee, and Farmville Internal Medicine, PA
- Analyzed survey results
- Compiled existing data (relevant plans and ordinances, Census Data, and crash data)
- Conducted interviews with stakeholders to discuss issues, plans and goals as they related to stakeholder groups and to identify existing plans for infrastructure improvement
- Analyzed demographics within the Town
- Conducted on-site assessments of current conditions and constraints
- Summarized existing ordinances, programs, and initiatives
- Held Steering Committee Meetings

### **PHASE 2 - PRELIMINARY RECOMMENDATION DEVELOPMENT**

Based on Phase 1, preliminary recommendations were developed. Phase 2 contained the following tasks or steps:

- Developed preliminary recommendations for bicycle projects, programs, and policies
- Conducted an inventory for the roadways where bicycle facilities are recommended
- Met with NCDOT representatives to discuss preliminary recommendations
- Held Steering Committee meeting to present preliminary improvements recommendations and to discuss project prioritization

### **PHASE 3 - DEVELOPMENT AND REVIEW OF DRAFT BICYCLE PLAN**

Based upon Phase 1 and Phase 2, a draft plan was developed. Phase 3 contained the following tasks or steps:

- Developed a draft Comprehensive Bicycle Plan
- Presented the draft Comprehensive Bicycle Plan to the Steering Committee for committee feedback and to discuss implementation
- Submitted a draft Comprehensive Bicycle Plan to the Town and NCDOT for review

### **PHASE 4 – FINAL PLAN DEVELOPMENT AND APPROVAL**

Based upon comments from the NCDOT and Farmville Planning Board review, the Plan was revised and resubmitted to the NCDOT for approval and to the Town Council for review and approval. Phase 4 contained the following tasks or steps:

- Developed a revised draft Comprehensive Bicycle Plan based upon the feedback from the NCDOT and Farmville Planning Board
- Final plan with NCDOT and Planning Board revisions submitted to Town for Planning Board and Town Council's review
- Developed a revised final Comprehensive Bicycle Plan based upon feedback from the Town's Planning Board and Town Council
- Submitted final plan to Town for approval and adoption by the town council

### **BENEFITS OF CYCLING**

Bicycling provides numerous benefits capable of promoting a healthy, livable, and thriving community. These benefits include, but are not limited to, health, transportation, environmental and economic, all of which contribute to a high quality of life.

### **HEALTH BENEFITS**

Pitt County Health Department's release of the 2013 State of the County Health (SOTCH) Report listed cancer, heart disease and stroke as the top 3 causes of death in the county. In this report, high blood pressure, elevated cholesterol, diabetes, smoking, overweight/obesity and limited physical activity were recognized as the most prevalent risk factors contributing to the chances of an individual developing several of the leading causes of death were recognized. A questionnaire administered to Pitt County residents through the 2011 Pitt

County Community Health Assessment found that only 36% of the adults who reported engaging in physical activity outside of their job got the recommended amount of physical activity. A study completed by Lauren Whetstone, PhD with the Department of Family Medicine at East Carolina University found that in 2011, 65% of Pitt County middle school students and 75.9% of Pitt County high school students did not get 60 minutes of physical activity in the past 7 days.

The health benefits of active design are well described in the 2013 Guidebook on Local Planning for Healthy Communities. It is noted that "Active Living" can be defined as a way of life that integrates physical activity into daily routines (ICMA 2005). Though unintentional, we have effectively engineered physical activity out of our daily lives. The Guidebook recognizes that to decrease cancer, heart disease and other chronic diseases, communities need convenient opportunities for physical activity. It also states that the built environment can positively influence physical activity for children, adolescents and adults if the following are addressed: presence of bike lanes, trails and parks; access to play areas (neighborhood or school); other destinations to walk to; low traffic density; enjoyable scenery and safe neighborhoods.

The Pitt County SOTCH Report outlines goals set by the Health Department to improve risk factors associated with chronic disease. Based on the above statistics and data supporting physical activity, the Pitt County Health Department recognizes the importance of physical activity. The goal to increase the percentage of adults getting the recommended amount of physical activity to 50% is among the goals outlined in the SOTCH Report. The Town of Farmville Bicycle and Pedestrian Plans are highlighted in this section of the Pitt County SOTCH Report due to the plans' roles in supporting physical activity and ultimately reducing chronic disease.

### **TRANSPORTATION BENEFITS**

Given its prominent location just outside of Greenville, Farmville is an attractive choice for professionals and families looking to get away from the hustle and bustle of the city. Farmville is an attractive community because of its geographical proximity to Greenville. It is also highly suited for bicycle and pedestrian travel due to the roadway layout, conditions, and the relatively low traffic volumes its residential neighborhoods offer. There are several locations in Farmville that are of importance to its citizens. These identified areas are located along stretches that experience higher traffic volume, relatively dangerous roadway conditions, and lack bicycle-friendly facilities. Of particular concern is the location of prominent destinations in the community, such as shopping

center, restaurants, grocery stores, and medical facilities that currently have no infrastructure connecting them to residents.

The development of a bicycle-friendly community may alleviate roadway congestion and reduce the number of accidents, both vehicular related and bicyclist/motorist. A number of Farmville's goods and services are located on the edge of town, and no existing designated bicycle facilities to connect them to residential areas. The goal of the bicycle plan is to assist in providing bicycle infrastructure by providing linkages to the town's destination points as well as increase the number of bicycle trips.

### ***ENVIRONMENTAL BENEFITS***

Biking is an easy way to reduce energy needs and pollution emissions. With traffic volumes likely to continue to grow, the overall air quality in communities will deteriorate from the additional motor vehicles polluting the air. Providing a safe, alternative method of transportation will increase the number of bicyclist; therefore reducing the number of motor vehicles leading to a decrease in emissions.

### ***ECONOMIC BENEFITS***

Biking is an affordable mode of transportation. Implementation of the plan will lead to increased opportunities for further economic development within the Town. Promotion of a more bikeable Farmville will attract potential residents to locate in the Town. Providing well connected bicycle facilities in Farmville may increase visits to local businesses and recreation facilities. Other economic benefits of biking include reduced health care costs and reduced dependency on auto ownership.

## SECTION 2 — CURRENT CONDITIONS



### TOWN OF FARMVILLE OVERVIEW

The current conditions of the Town of Farmville have been inventoried and evaluated as part of the development of the Comprehensive Bicycle Plan. This section includes an overview of the town, current usage/user demographics, an inventory & assessment of existing facilities and the bicycle compatibility of the local transportation system. The information obtained about the town's current conditions provides the framework for planning bicycle facilities and programs based on the community's wants and needs.

The area surrounding the current Town of Farmville was first settled in the mid 1760s. These early settlers were few in numbers and were almost exclusively farmers by trade. The first recorded structure inside the current town limits was a log cabin erected in about 1840. In the 1850's a church and a school were built, however, growth was quite slow up through the end of the 1860s. In 1872 the populace petitioned the North Carolina legislature to create a town named Farmville. Prior to this time the community had no formal name and was generally referred to as New Town. The Town of Farmville was formally incorporated on February 12, 1872. During the last quarter of the 19th century, the town developed as a small commercial center supporting the agricultural expansion of the region brought about by the boom in Brightleaf Tobacco cultivation.

The first quarter of the 20th century was a period of incredible growth for Farmville. The period 1901 to 1907 saw the arrival of two railroads, providing cost

effective transportation outlets and bringing about an expansion of agribusiness support services. The period 1905 to 1929 saw the establishment of a number of large tobacco sales, processing and warehousing operations. Along with this commercial growth came the growth of residential areas, accommodating persons of virtually every economic class.

Tobacco sales, processing and warehousing, as well as, agribusiness support services continued to be of primary importance to Farmville's growth and stability up through the late 1960s. With the decline of the tobacco industry beginning in the early 1970s, Farmville began an aggressive campaign to diversify its commercial and industrial base. Although agribusiness support continues to be an important part of Farmville, industrial, commercial and residential diversification continues to be the course on which this community of approximately 4800 residents is proceeding.

### **CURRENT USAGE / USER DEMOGRAPHICS**

When developing a Bicycle network, knowing the demographic makeup of a community is essential in determining the preferences and travel behaviors of residents. Information regarding the current usage and user demographics was obtained from the US Census Bureau, the NCDOT Bicycle and Pedestrian Division, and a public bicycle survey. Analysis of the data received is described in this sub-section.

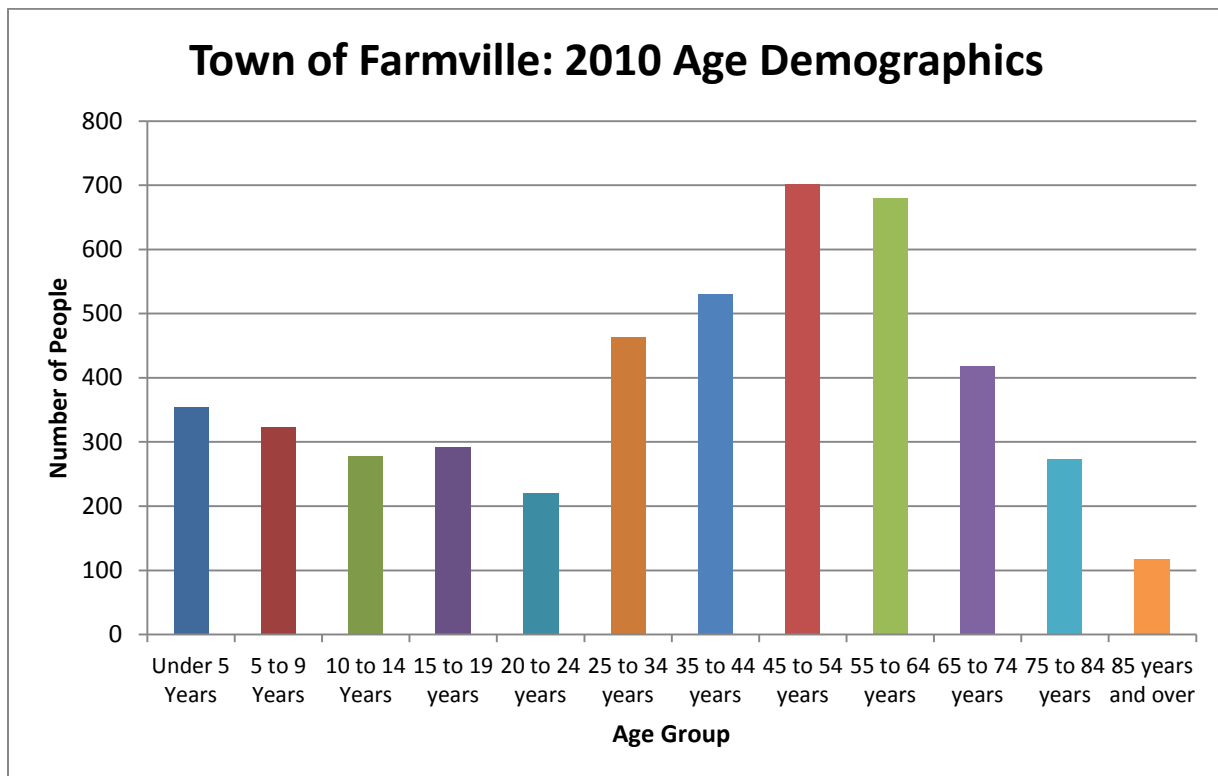


## DEMOGRAPHIC ANALYSIS

A demographic analysis was completed based on data obtained from the US Census Bureau. As of the year 2010, the total population for the Town of Farmville was 4,654, of which 44.8% were males and 55.2% were females with a median age of 42.5 years. In the same census year, the estimated North Carolina population was 9,535,483 and the U.S. population was 308,745,538. The median age was 37.4 years for North Carolina and 37.2 for the United States.

In the year 2010, the town's population was distributed with 77.9% over the age of 15 of which 17.4% were 65 years of age or older. In 2010, the population 65 years of age or older was 12.9% in North Carolina and was 13% in the U.S. In comparison, Farmville's population is older than the state and national averages. Figure 2.0 reflects the age demographics for the Town of Farmville in the year 2010.

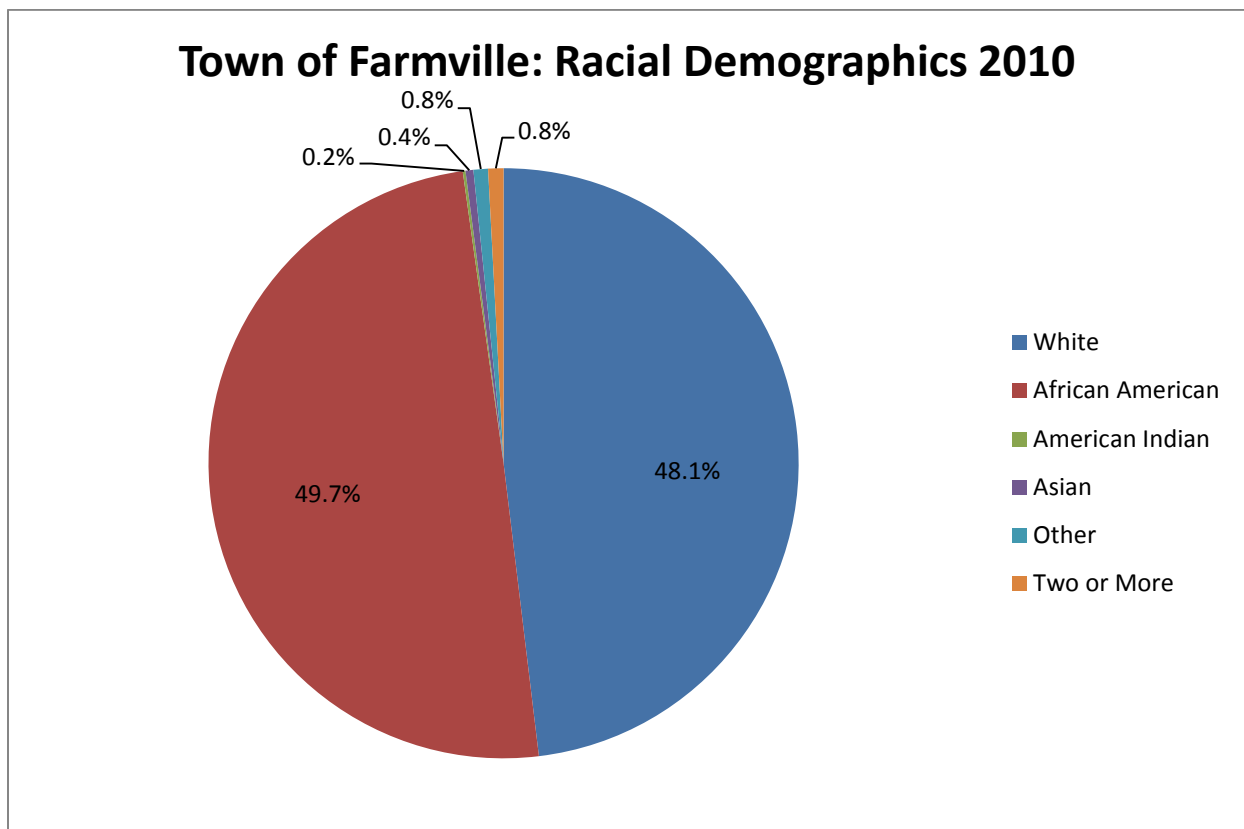
**Figure 2.0 : Town of Farmville: Age Demographics**



Source: U.S. Census Data

The racial breakdown of the population of the Town of Farmville in 2010 was as follows: 49.7% African American, 48.1% Caucasian, 0.2% American Indian, 0.4% Asian, and 0.8% from other races and 0.8% from two or more races. The racial breakdown of North Carolina's population in 2010 included 21.5% African American and 68.5% Caucasian. The racial breakdown of the U.S. population in 2010 included 12.6% African American and 72.4% Caucasian, which indicates that the Town of Farmville has a greater African-American population than the state and national average. Figure 2.1 reflects the racial breakdown of the population of the Town of Farmville.

**Figure 2.1 : Town of Farmville: Racial Demographics 2010**

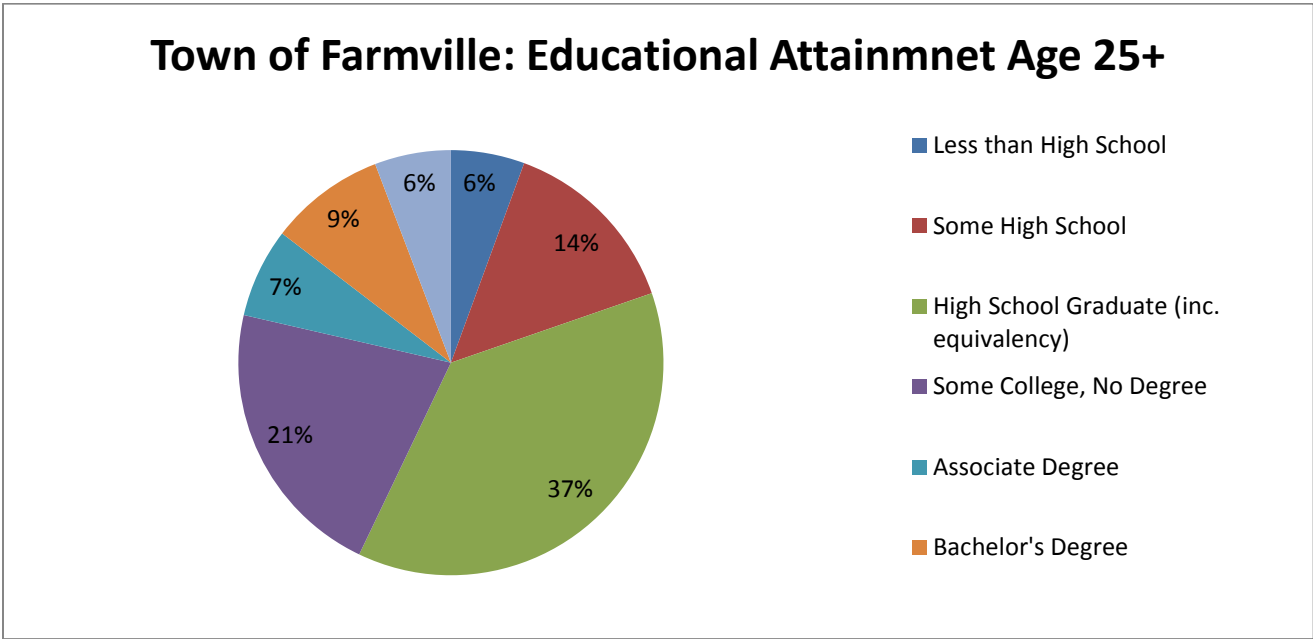


Source: U.S. Census Data

**EDUCATION**

American Community Survey 5-year estimates provide data regarding education levels in the Town of Farmville. In Farmville, the educational attainment for residents 25 years and over in 2010 was as follows: 5.6% with less than 9th grade; 14.1% with some high school; 37.4% were high school graduates (includes equivalency); 21.5% with some college, no degree; 6.8% with an associate degree; 8.8% with a bachelor's degree; and 5.8% with a graduate or professional degree. Therefore, 80.3% of the population earned an education of high school graduate or higher. Figure 2.2 reflects the educational attainment for Farmville's residents 25-years and over.

**Figure 2.2 : Town of Farmville: Educational Attainment**



**Source: 2007-2011 American Community Survey 5-year Estimates**

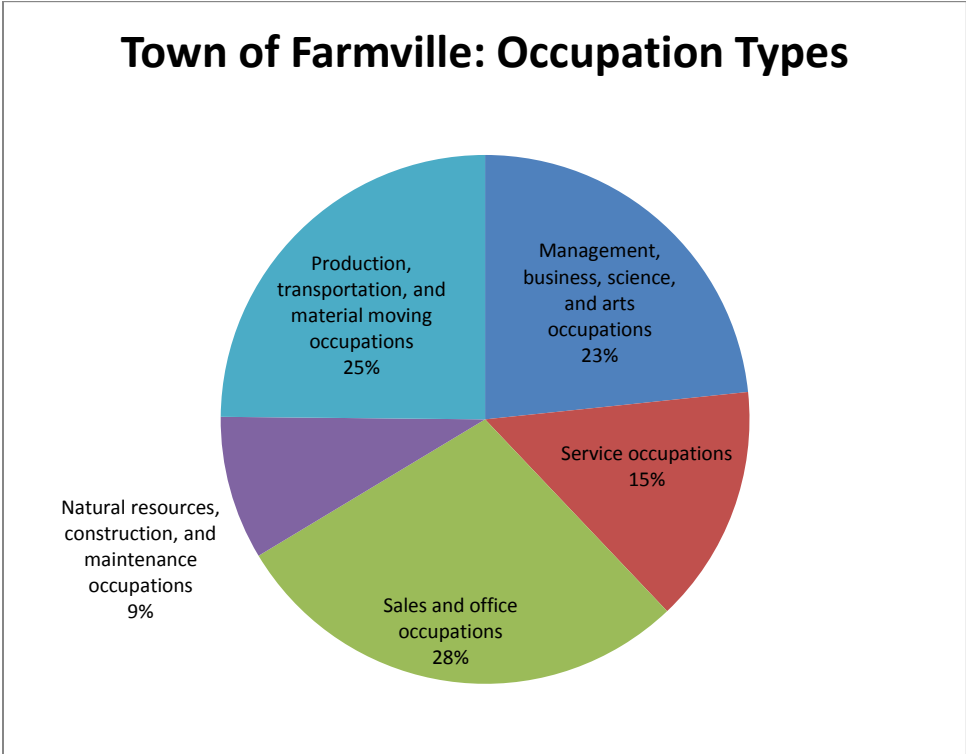
The educational attainment of Farmville's population reflects the state and national levels. 27.7% of North Carolina's population and 28.6% of the U.S. population of 25 years and over are high school graduates (including equivalency) without further education. 84.1% of the state's population and 85.4% of the country's population attained at least high school graduation or higher. Comparatively, Farmville has a higher proportion of high school graduates (including equivalency) without further education compared to the state of North Carolina, but a slightly lower proportion of people with high school graduation or higher.

**EMPLOYMENT**

An economic analysis was completed using 2007-2011 American Community Survey 5-year estimates. Farmville's population ages 16 years and over was estimated to be 3,588 people. 2,157 people are in the civilian labor force (60.1% of possible labor force), of which 1,936 (54.0%) are employed and 221 (6.2%) are unemployed. 15 people are in the armed forces.

Employment can be broken down into occupations based on the employed civilian population 16 years and over. Figure 2.3 illustrates Farmville's occupation types.

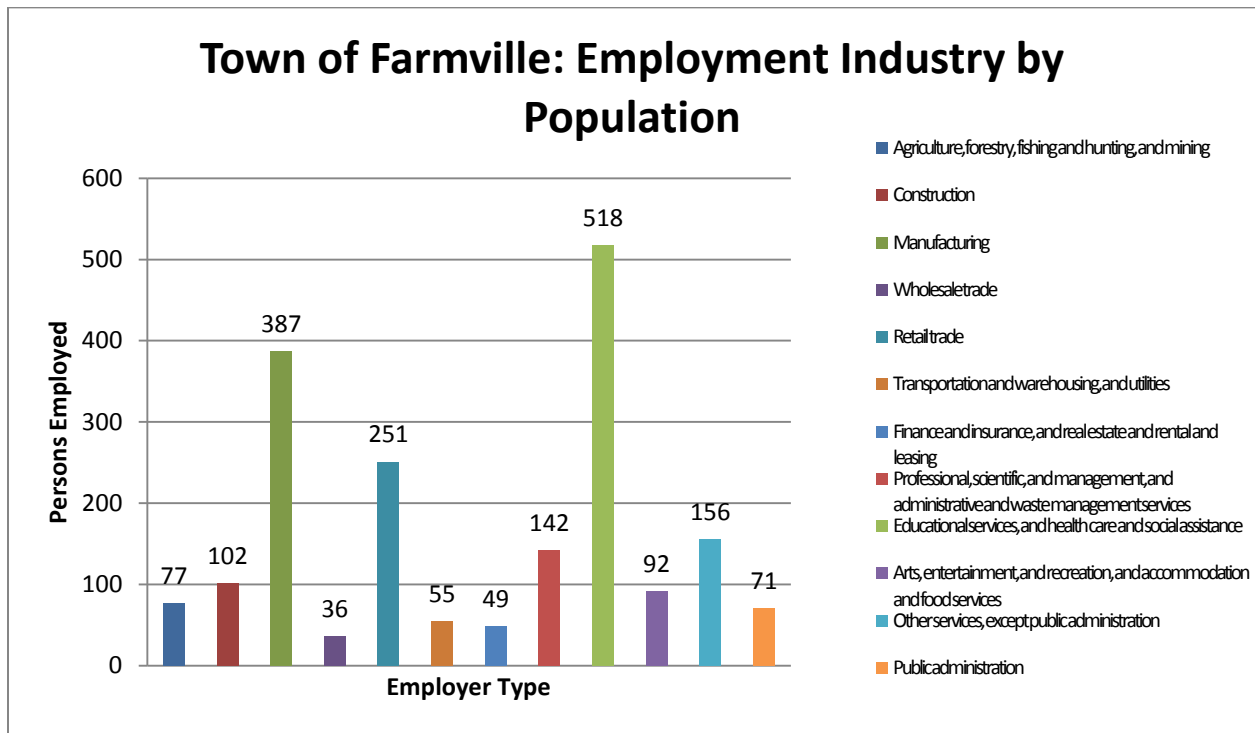
**Figure 2.3 : Town of Farmville: Occupation Types**



**Source: 2007-2011 American Community Survey 5-year Estimates**

Figure 2.4 illustrates Farmville's employment industries by population. In Farmville, the Education Services, Health Care, and Social Assistance industry had the largest number of employees at 518, followed by Manufacturing at 387 and Retail Trade at 251. In Farmville, 59.7% of the employed population worked in one of these three industries.

**Figure 2.4 : Town of Farmville: Employment Industry by Population**

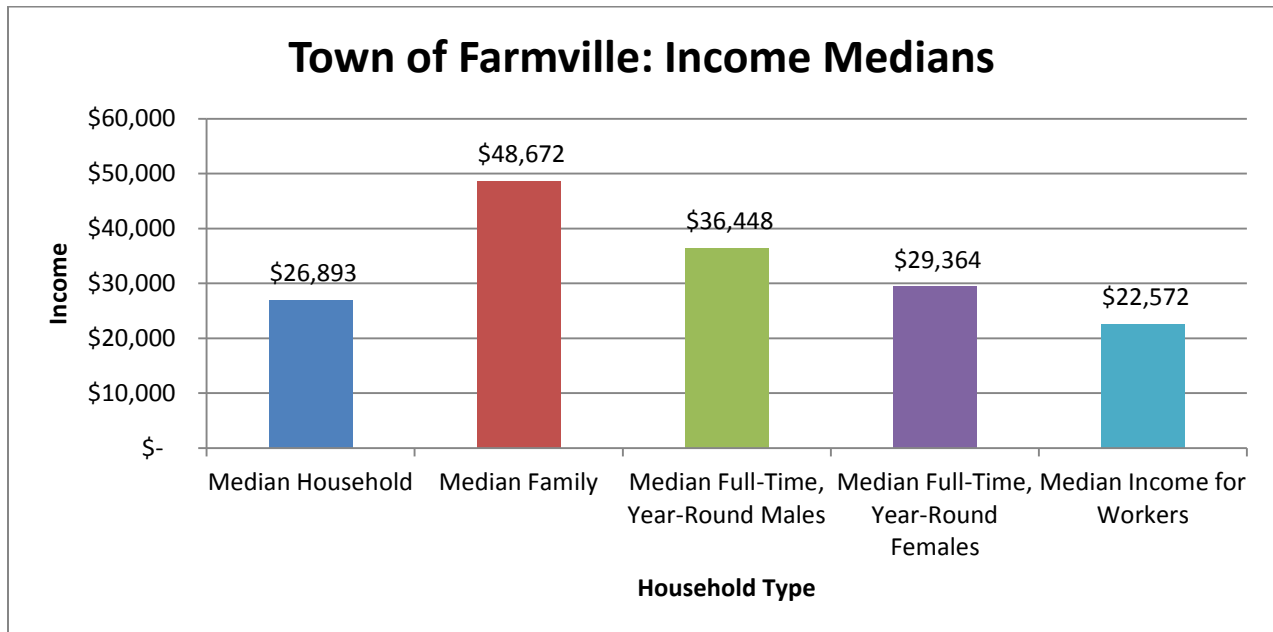


Source: 2007-2011 American Community Survey 5-year Estimates

**INCOME**

According to the 2007-2011 American Community Survey 5-year estimates, 2,036 households were listed in the Town of Farmville. Farmville's median household income was \$26,893 and the median family income was \$48,672. Farmville's median incomes are significantly less than the state and national averages. The North Carolina median household income was \$46,291 and the median family income was \$57,171. The U.S. median household income was \$52,762 and the median family income was \$64,293. Figure 2.5 illustrates income medians in Farmville.

**Figure 2.5 : Town of Farmville: Income Medians**



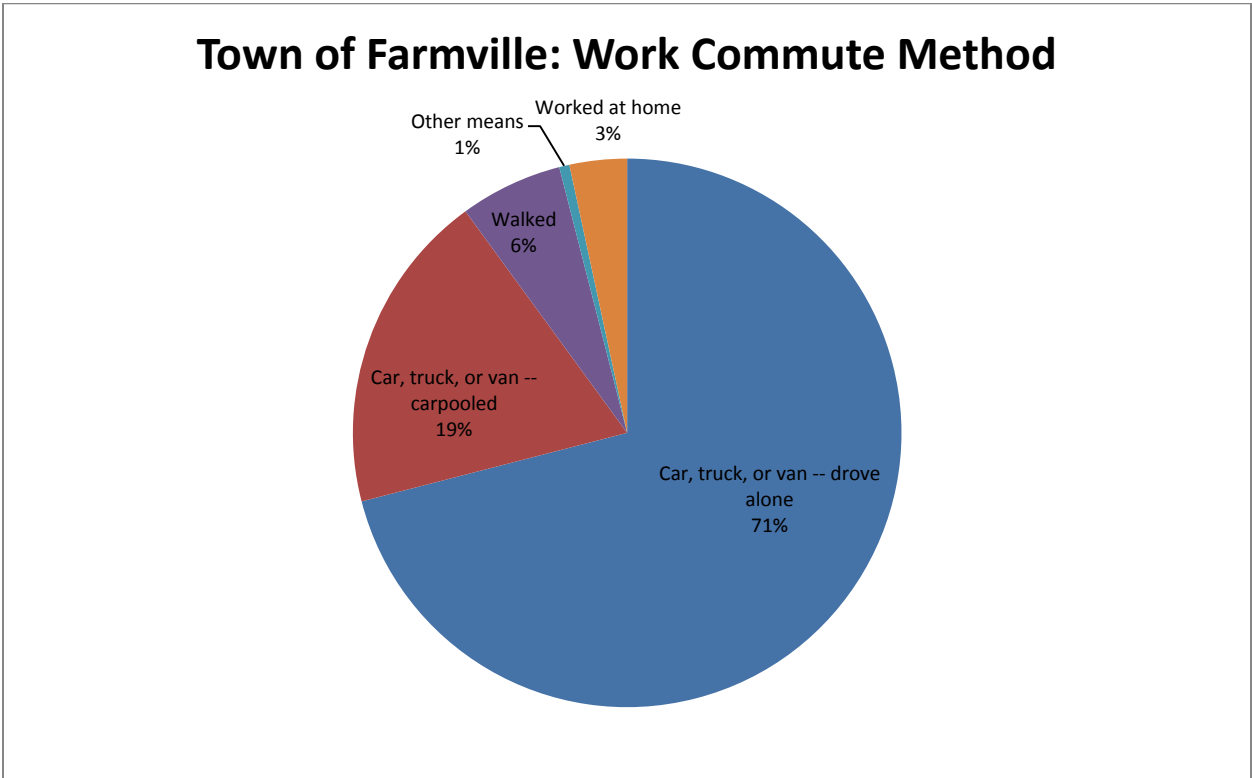
**Source: 2007-2011 American Community Survey 5-year Estimates**

Farmville's full-time, year-round workers earned \$36,448 for males and \$29,364 for females. The per capita income for Farmville was \$22,572. Farmville's per capita income was less than that of the state and the nation with \$25,256 in North Carolina and \$27,915 in the United States. 25.5% of Farmville's families were below the poverty line, including 45.7% of those with related children under 18 years and 55.2% with related children under 5 years. The population below the poverty line of the state and nation is significantly less than that of Farmville with 11.8% in North Carolina and 10.5% in the United States.

**VEHICLES**

More than eighty percent (84.6%) of Farmville's households have at least one motor vehicle. Of the occupied housing units (total 2,036), 15.2% have no vehicle, 41.7% have one vehicle, 29.2% have two vehicles, and 14.0% have three or more vehicles. Farmville does not have access to mass public transportation, only access to the Pitt Area Transit System, a rural transit system serving Pitt County. Therefore, citizens do not use public transportation within the Town.

**Figure 2.6 : Town of Farmville: Work Commute Method**



**Source: 2007-2011 American Community Survey 5-year Estimates**

Figure 2.6 illustrates the methods of transportation for working residents (16 years and over) of Farmville. A large majority of employed residents (71%) drive alone to work in their own vehicle. 90% drove a car, truck, or van to work. 6% walked to work. The mean travel time to work was 19.4 minutes. Considering the gap between the 9% that walk to work from home and the 15.2% of households without vehicles, employment opportunities may depend on vehicle ownership.

## PUBLIC SURVEY SUMMARY

Public input for the Bicycle Plan was solicited through online and hard copy surveys. The survey was made available through the Town's website. Hard copies of the survey were made available at numerous locations throughout Farmville, including Town Hall, Farmville Public Library, Piggly Wiggly, Farmville Internal Medicine, and Offices of Drs. Warren & Hardee. Citizens in Farmville were notified of the survey through the local newspaper, the Town's website, and a display at a local event.

Respondents were split in their feelings regarding bike travel conditions. While many felt that current biking conditions in Farmville were fair, there were several respondents that felt that current conditions were dangerous. Overwhelmingly, respondents felt that improvements to bicycling conditions are important for the community. Most respondents reported biking in Farmville for recreation, and reported doing so at least a few times a month. Results also showed that if more bicycle facilities (lanes, shared use paths, trails, greenways, corridors) were available, citizens would be more likely to bike more often than they currently do.

Respondents said they would support public funds being used for bicycle improvements. The majority of these respondents preferred to see existing local taxes, State and Federal funds, as well as NCDOT Maintenance funds used to fund improvements. The lack of bike lanes and wide shoulders, accompanied with automobile traffic, speeding, and aggressive motorist were all reasons listed by respondents that discouraged them from biking. This most likely led respondents to prioritize funding for projects which keep bicyclist out of motorist travel lanes, including Greenways, Side Use Paths, and Bike Lanes,

Among the top corridors respondents would like to see improvements for bicycling were May Boulevard, Main Street, Wilson Street, Grimmersburg Street, and Marlboro Avenue. Locations that lead to shopping centers, surround the schools, or recreation facilities were also reported as areas needing facilities or improvements. The desire to connect to these recreation facilities are likely due in part to the public's top reasons for biking, which were recreation and increased health benefit.

Survey responses were the highest among those aged 20 to 39 and those age 50 and above, with each group making up roughly 45% of the respondents.



## LOCAL BICYCLE CRASH DATA

The Town of Farmville bicycle crash data was analyzed using the NCDOT's web-based Bicycle crash database. This data was created by the UNC Highway Safety Research Center from all reported bicycle-motor vehicle crashes within Farmville from 1997-2010. The data was analyzed to determine trends and to identify the high-risk areas of Farmville.

During the fourteen-year period, The Town of Farmville experienced fourteen (14) reported bicycle-motor vehicle crashes. 1 bicycle-motor vehicle crash occurred per year on average. Figure 2.7 shows the distribution of crashes by year from 1997 to 2010.

**Figure 2.7: Town of Farmville Bicycle Crashes by Year**

Crashes	Crash Year								Total
	1997	1998	1999	2002	2005	2006	2007	2010	
<b>Total</b>	1	2	3	2	1	1	2	2	14

Source: NC DOT Division of Bicycle and Pedestrian Transportation, Bicycle Crash Data

Characteristics of crash data were reviewed to determine locations and results of the crashes.

84% or sixteen (16) out of nineteen (19) of the reported bicycle-motor vehicle crashes occurred on a local street. The crash data indicates the need for additional safety measures such as pedestrian visibility, enforcement, additional signage, and driveway improvements on local streets.

The majority of Bicycle crashes (10 out of 14) occurred on two-lane roads within the Town of Farmville. Two (2) out of fourteen (14) crashes occurred at Sidewalk, Crosswalk, or Driveway Crossings, one (1) occurred off-road, and one (1) was unknown. The number of crashes on-road indicates a possible need for road narrowing, off-road trails, vehicle speed reduction, enforcement /compliance of traffic laws, access management, and lighting.

### Riding in Roadway

The likelihood of bicyclist injury increases with higher speed limits. According to a report (BIKESAFE) by the NC Highway Safety Research Center, "...faster speeds increase the likelihood of bicyclists being struck and seriously injured. At higher speeds, motorists are not likely to stop in time to avoid a crash." The report

indicated a driver traveling at 31 miles per hour needs approximately 200 feet to stop, which usually exceeds the available distance to avoid collision. A driver traveling at 19 miles per hour is able to stop completely within 100 feet. The Town of Farmville should consider traffic-calming measures and speed reductions on streets. Figure 2.8 indicates the need for both motorist and bicycle education regarding safety.

**Figure 2.8: Town of Farmville: Bicycle Crashes by Fault**

Fault	Crash Year								Total
	1997	1998	1999	2002	2005	2006	2007	2010	
<b>Bicyclist at Fault</b>	1	1	2	2	0	0	2	0	8
<b>Both at Fault</b>	0	0	1	0	1	1	0	0	3
<b>Fault not Coded</b>	0	0	0	0	0	0	0	2	2
<b>Motorist at Fault</b>	0	1	0	0	0	0	0	0	1
<b>Total</b>	1	2	3	2	1	1	2	2	14

Source: NC DOT Division of Bicycle and Pedestrian Transportation, Bicycle Crash Data

According to crash data, of fourteen (14) bicycle-motor vehicle crashes, twelve (12) involved male cyclist, one (1) involved a female cyclist, and one (1) was unknown.

A significant majority of bicycle-motor vehicle crashes involved Black cyclist. Of fourteen (14) crashes, 85% or twelve (12) involved Blacks, with one (1) involving a White cyclist, and one (1) unknown. Figure 2.9 shows the distribution of bicycle-motor vehicle crashes by the race of the cyclist.

**Figure 2.9: Town of Farmville: Bicycle Crashes by Race**

Bicyclist Race	Crash Year								Total
	1997	1998	1999	2002	2005	2006	2007	2010	
<b>White</b>	0	0	1	0	0	0	0	0	1
<b>Black</b>	1	2	1	2	1	1	2	2	12
<b>Unknown/Missing</b>	0	0	1	0	0	0	0	0	1
<b>Total</b>	1	2	3	2	1	1	2	2	14

Source: NC DOT Division of Bicycle and Pedestrian Transportation, Bicycle Crash Data

Figure 2.10 shows that bicycle-motor vehicle crashes in Farmville involved a higher percentage (64%) of school-aged children than adults from all age groups. The number of school-aged children in bicycle crashes indicates a need for bicycle education in local schools. Adults also need bicycle education, both as motorist and bike users.

**Figure 2.10: Town of Farmville: Bicycle Crashes by Age**

Bicyclist Age	Crash Year								Total
	1997	1998	1999	2002	2005	2006	2007	2010	
Age 6-10	1	0	0	1	0	1	1	0	4
Age 11-15	0	1	2	1	0	0	0	0	4
Age 16-19	0	0	0	0	0	0	1	0	1
Age 25-29	0	0	0	0	1	0	0	0	1
Age 30-39	0	1	0	0	0	0	0	1	2
Age 50-59	0	0	0	0	0	0	0	1	1
Age 60+	0	0	1	0	0	0	0	0	1
<b>Total</b>	1	2	3	2	1	1	2	2	14

Source: NC DOT Division of Bicycle and Pedestrian Transportation, Bicycle Crash Data

Analysis of Farmville's crash data indicates a need for bicycle-friendly development standards, improved bicycle visibility along roadways and intersections, traffic and cyclist enforcement, and additional motorist and cyclist safety education. The Town of Farmville had nineteen (14) pedestrian-motor vehicle crashes from 1998-2010.

## SECTION 3 – EXISTING PLANS, PROGRAMS, AND POLICIES

In addition to analyzing existing conditions, reviewing existing plans, programs, and policies at the Local, Regional, and State level is also important. Plans and policies determine the type of development that is encouraged and allowed in a community while programs offer methods to promote, encourage, and educate the public on biking. Therefore, these tools (plans, policies, and programs) are key components to ensuring an environment that is supportive of biking.

The following plans, programs, and policies were reviewed in preparation of the Farmville Comprehensive Bicycle Plan:

- Town of Farmville Land Use Plan (2006)
- Pitt County Greenway Plan 2025 (2006)
- Town of Farmville Code of Ordinances
- Walk Bike NC – Statewide Pedestrian and Bicycle Plan (2013)
- 2013-2019 State Transportation Improvement Program (TIP)
- State Programs and Initiatives

### RELEVANT PLANS

#### LOCAL PLANS

##### TOWN OF FARMVILLE LAND USE PLAN (2006)

The Town of Farmville's Land Use Plan serves as a guide to making short-term and long-term land use decisions. Farmville has two types of roadways: primary roads and secondary roads. While there is no interstate highway, Farmville contains two US Highways (258 & 264) and one North Carolina Highway (121).

The plan is a data-rich document, providing numerous details on the Town's population, economy, land use patterns, and environmental conditions. The Plan also documents key growth related issues that were identified through a robust public planning process.

##### PITT COUNTY GREENWAY PLAN 2025 (2006)

The Pitt County Greenway Plan is intended to serve as a guide for the establishment of a countywide network of greenways and trails. It will also support County efforts to achieve other goals in maintaining the natural

environment, wetland preservation, and floodplain protection in the county. This proposed plan will also help to link people to the County's natural, recreational, cultural and commercial resources by connecting the waterways, open spaces and sensitive areas of the county with the existing recreation and greenway plans of regional and local governments and organizations. The Pitt County Comprehensive Land Use Plan of 2002 included a goal for the establishment of greenways in the County and provided the impetus for the development of this Plan. This Plan also serves to expand the City of Greenville's existing greenway system and proposes extensions from the corridors cited in the 2004 Greenville Greenway Plan.

## **STATE PLANS**

The State of North Carolina has many planning documents that support bicycling. One of the most important is the newly developed Walk Bike NC - Statewide Pedestrian and Bicycle Plan. Currently, there are no planned improvements in Farmville.

### WALK BIKE NC - STATEWIDE PEDESTRIAN AND BICYCLE PLAN (2013)

NCDOT launched this project to improve walking and bicycling conditions statewide and develop a vision for the future of bicycling and walking in North Carolina. Planning for walking and bicycling – whether for recreation, exercise, or transportation – helps to create a safer, more efficient network everyone can use. Important tasks included reviewing the current status of bicycling and walking in this state, researching appropriate strategies for improvement, and identifying the most efficient avenues to apply those strategies.

### 2013-2019 STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

This program funds transportation projects including new construction, maintenance, and safety of existing infrastructure. Each transportation project is described and its status is listed in this report.

## *RELEVANT PROGRAMS & INITIATIVES*

### **STATE PROGRAMS AND INITIATIVES**

The State of North Carolina has many programs and initiatives that support biking throughout the state. These programs include:

- Bicycle and Pedestrian Grant Initiative

- Safe Routes to School
- Share the Road Initiative
- Active Routes to School

### MID-EAST RURAL TRANSPORTATION PLANNING ORGANIZATION

The Mid-East Rural Transportation Planning Organization (RPO) currently does not have any projects identified within the Bicycle Plan project area. The Mid-East RPO does support Farmville's desire to develop a bicycle-friendly community.

## **LOCAL PROGRAMS AND INITIATIVES**

### LAW ENFORCEMENT

Bicyclist safety education is an important part in the development of Farmville's Comprehensive Bicycle Plan, a part that the Farmville Police Department can play a big role in. Given the limited number of current programs that help promote safety and awareness of bicyclist in the community, it is recommended that additional safety and promotional programs be created.

One of the biggest concerns that police officers have voiced in Farmville in regards to bicyclist is cyclist behavior in the roadway. Individuals who ride at night with no reflective lighting are the biggest concern. The Police Department desires to increase encouragement of cyclist to obey traffic rules set both locally and at the state level.

There are a few streets within Farmville that are identified as higher potential hazard areas, including:

- Marlboro Road/264
- May Boulevard
- Grimmersburg Street
- Wilson Street
- Main Street

### PARKS AND RECREATION DEPARTMENT

The Town of Farmville's Parks and Recreation Department manages the Town's public parks and recreation facilities and provides programming for citizens of all ages. The department strives to offer the people of Farmville the opportunity to develop their leisure time and interests through diverse activities and programs, promoting the enrichment of life and creating outlets for developing physical fitness, sportsmanship, leadership and cultural arts. The interaction of people

participating in a common interest enables them to grow and prosper in unity of family and community spirit.

It is for these reasons that it is a goal of the Parks and Recreation Department through this Bicycle Plan to provide safe routes to connect neighborhoods and schools to recreation facilities. Although the department does not offer biking programs, the Town's public facilities are a destination of cyclist. Many of the department's program users are youth who often depend on motor vehicle transportation to attend practices, games, and after-school activities. The Recreation Department would like to see routes developed that would provide "across town" connections within Farmville.

## *RELEVANT POLICIES & INSTITUTIONAL FRAMEWORK*

### **FEDERAL AND STATE POLICIES**

There are numerous State and Federal policies for the development of bicycle and pedestrian facilities. Through their guidelines, NCDOT has shown their commitment to improving bicycling and pedestrian conditions. This commitment is all the more important as these facilities have become a critical element of the overall transportation system.

### USDOT POLICY ON BICYCLE AND PEDESTRIAN ACCOMMODATION REGULATIONS AND RECOMMENDATIONS

The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

### COMPLETE STREETS POLICY OF 2009

The North Carolina Board of Transportation adopted a Complete Streets policy in July 2009. The policy directs the North Carolina Department of Transportation (NCDOT) to consider and incorporate all modes of transportation when building new projects or making improvements to existing infrastructure. Under the new policy, NCDOT will collaborate with cities, towns, and communities during the planning and design phases of new streets or improvement projects. Together,

they will decide how to provide the transportation options needed to serve the community and complement the context of the area.

The policy adopted by the Board of Transportation directed NCDOT to develop planning and design guidelines. Complete Streets elements in projects include ADA-compliant curb cuts, sidewalk improvements, new bicycle lanes, roadside improvements for public transportation, landscape-features, and other elements that improve transportation for all users.

#### NCDOT RESOLUTION ON BICYCLING AND WALKING

On September 8, 2000, the N.C. Board of Transportation adopted a Resolution for Bicycling and Walking to make bicycling and walking a critical part in the state's long-range transportation system.

#### **LOCAL POLICIES**

There are very few policies or ordinances regarding bicyclist safety or facilities in Farmville. The Town has acknowledged the need for policies and ordinances to ensure bicycle or multi-use trail facilities when new development occurs. While these types of recreational facilities can be recommended during the planning and permit approval phases, the Town should consider an ordinance to require such facilities. This would likely increase sidewalk, trail, or route connectivity. It is recommended that installation of facilities during development will provide greater opportunities for more facilities. The Town should consider a fee-in-lieu of dedication as an installation.

#### *RELEVANT BICYCLE STATUTES & ORDINANCES*

There are a few existing policies related to bicyclist at the local, state, and federal levels.

#### **STATE STATUTES & LAWS**

State of North Carolina laws regulate a range of safety and operational issues, including the following areas pertaining to bicyclist:

- Compliance with signs and signals
- One-way streets
- Crashes



## **LOCAL ORDINANCES**

As was previously mentioned, the Town of Farmville has very few ordinances regarding bicycle safety or facilities. Sections of the Town of Farmville's ordinances related to bicyclist are outlined below.

TOWN OF FARMVILLE  
CODE OF ORDINANCES  
**CHAPTER 24 - TRAFFIC CONTROL AND PARKING**

### Section 6 BICYCLES

#### **6.1 Definition**

A bicycle is a vehicle and its rider is a driver within the meaning of the Motor Vehicle Law.

#### **6.2 Registration**

6.2.1 It shall be unlawful for any person to operate or ride upon any bicycle propelled wholly or in part by muscular power upon any of the streets, alleys, or public ways of the city without obtaining annually a certificate of registration from the Town Manger's office of the city and having attached to such bicycle a registration marker (may be tag, decal, or other marker) as issued by the Town Manager's office in accordance with the provisions of this Chapter.

6.2.2 The city shall provide registration markers, together with certificates of registration. Each registration marker shall bear a number and the year for which it is issued. Each certificate of registration shall bear the same number and the year of the registration plate issued with such certificate. It shall be the duty of the Chief of Police of the Town to attach one registration marker to the frame of each bicycle and to issue a corresponding certificate of registration to the owner of such bicycle upon the payment of the registration fee required by this Chapter.

6.2.3 Such registration marker shall remain attached to the bicycle for which it was issued at all times during the year for which it was issued.

6.2.4 The Chief of Police shall keep a permanent register in which shall be entered the name, address, and age of the owner, the number and date of registration and other information sufficient to identify such bicycle.

6.2.5 Upon the registration of any bicycle in accordance with the provisions of this Chapter, and upon the payment of the registration fee, the owner of such

bicycle or other person with the owner's consent shall be entitled to operate such bicycle during the calendar year for which such registration is made.

6.2.6 All bicycles registered during the month of December of any year shall carry registration markers and registration certificates for the next ensuing calendar year.

### **6.3 Removal, Mutilation, Alteration of Registration**

It shall be unlawful for any person to willfully or maliciously remove, destroy, mutilate, or alter the number or registration plate issued for any bicycle or the registration card issued with each registration plate, without first re-registering such bicycle under the provisions of this Chapter.

### **6.4 Registration and Transfer Fees**

6.4.1 Upon the registration of any bicycle under the provisions of this Chapter, the owner shall pay the Town Manager fifty cents (\$.50).

6.4.2 A fee of fifty cents (\$.50) shall be paid for the transfer of ownership of any bicycle from one registered owner to another person.

6.4.3 Such fees shall be deemed license fees and shall cover all charges incidental to the registration and the issuance of registration plates and registration cards.

### **6.5 Sale or Transfer**

It shall be unlawful for any person to sell or transfer the ownership of any registered bicycle without reporting such sale or transfer to the Town Manager within forty-eight hours after such sale or transfer and the purchaser or transferee of any such bicycle shall, within five days thereafter, apply to the Chief of Police for a transfer of such bicycle.

### **6.6 Reports Required of Secondhand Dealers**

6.6.1 All persons who shall deal in secondhand bicycles or parts for secondhand bicycles shall report to the Chief of Police of the Town within forty-eight hours after acquiring any secondhand bicycle, or parts thereof.

6.6.2 Such reports shall include the registration number of such bicycle, a description of each bicycle acquired, together with the name and address of the person from whom such bicycle was acquired. In event of the purchase of

any parts of bicycles, the report shall describe each part and give the name and address of the person from whom the parts were acquired.

### **6.7 Prohibited on Sidewalks and Walkways**

It shall be unlawful for any person to operate any bicycle upon any sidewalk or pedestrian walkway in the business district of the Town of Farmville.

### **6.8 Operator to Keep hands on Handlebars**

It shall be unlawful for any person to operate any bicycle without having his hands upon the handlebars at all times.

### **6.9 Passengers**

It shall be unlawful for any person while riding any bicycle to carry any other person thereon unless such bicycle is designed and equipped to carry more than one person.

### **6.10 Observance of Traffic Signals**

All persons operating bicycles shall observe all traffic signals as required of motor vehicles.

### **6.11 Entering Arterial Highway or Street**

All persons operating bicycles shall have such bicycles under complete control before entering any arterial highway or street within the city.

### **6.12 Lights and Reflector Required After Dark**

It shall be unlawful for any person to operate any bicycle upon the public streets, alleys, and ways of the city after dark unless the same shall carry a light attached to the front of such bicycle and a red reflector attached to the rear of such bicycle so that the same may be clearly visible both from the front and rear thereof.

### **6.13 Penalty for Violation of Chapter; Impounding Bicycle Involved in Violation**

Any person violating any of the provisions of this Chapter shall be guilty of a misdemeanor and upon conviction by the Court, shall be punished in the discretion of the Court, and the bicycle involved may be impounded by the Court for a period not exceeding thirty days.

## SECTION 4 – STRATEGIC BICYCLE PLAN

In order to develop a strategic bicycle plan to make Farmville a bicycle-friendly community, there were a number of issues that will need to be addressed in the development of the plan.

Developing bicycle facilities for Farmville will require considerations for:

- Safety
- Barriers
- Direct and convenient alignment to serve origins and destinations
- Crash Reduction
- Traffic volumes and speed
- Intersection conditions
- Adequate maintenance commitment
- Costs
- Policies

This section identifies the overall transportation system, desired corridors of bicycle travel, special focus areas, and potential projects.

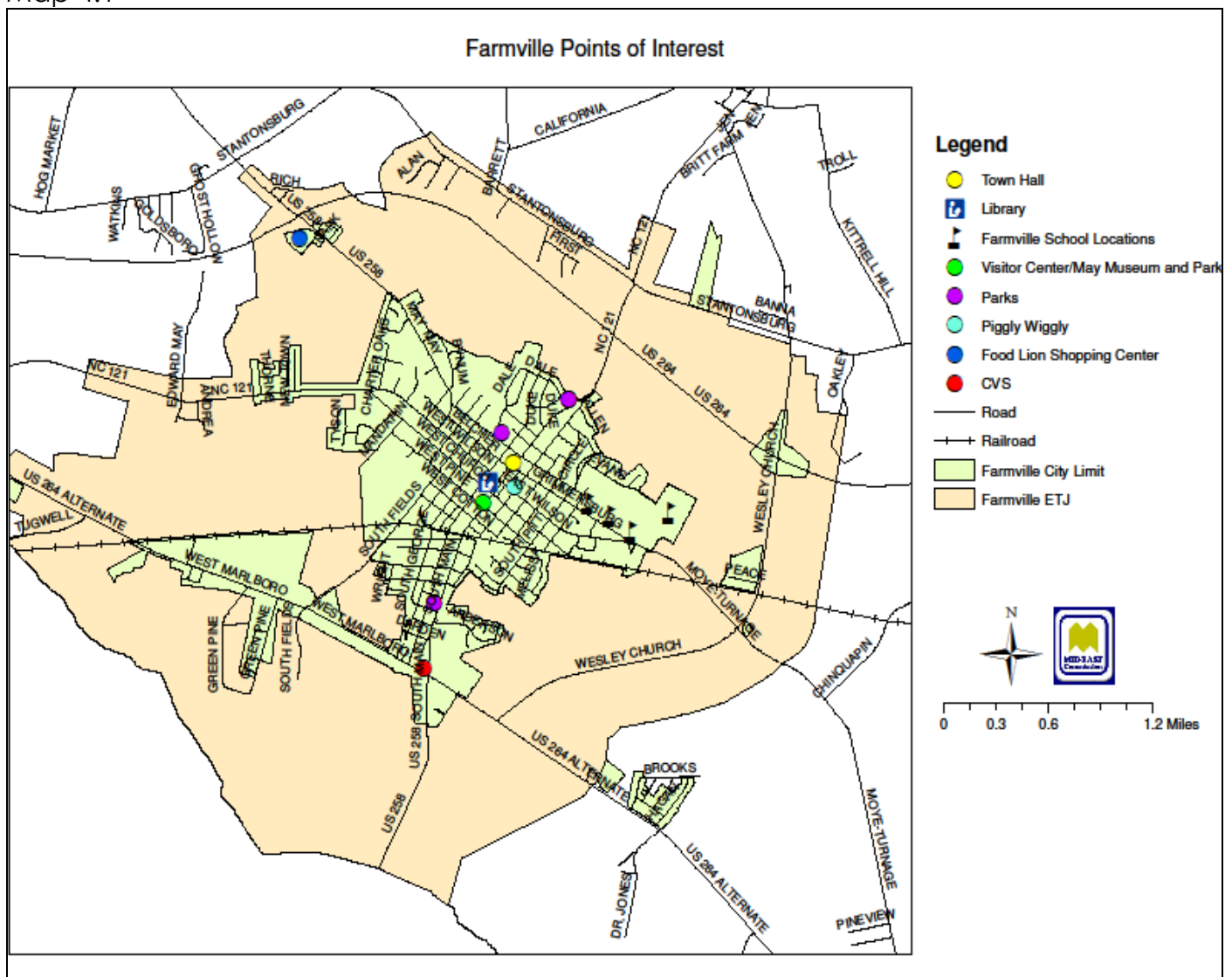
### SYSTEM OVERVIEW

The overall transportation system in Farmville is automobile dependent. As a result, intersections and thoroughfares were designed to accommodate automobile travel only. Farmville's more recent commercial growth has evolved around the US Highway 264 and May Boulevard corridors that include shopping centers with grocery stores, restaurants, and a service station. While "urban sprawl" is limited, the pattern of commercial development along the existing thoroughfares can be intimidating for cyclist due to many commercial driveways, intersections that are unsafe to cross, limited access and lack of provisions to accommodate bicycle travel. Due to low traffic speeds and short blocks, the residential areas of Farmville are the most accessible to bicycle and pedestrians.

### CORRIDOR IDENTIFICATION

The identification of corridors, origins, and destination points provides an idea of available access to desired routes and bicycle facilities. Assessment of the conditions of existing bicycle corridors and desired routes assisted in developing recommendations for bicycle facilities and improvements. This subsection discusses the analysis of the existing conditions for the following in Farmville: destinations, origins, and desired corridors of bicycle travel. Map 4.1 illustrates all identified destinations and points of interest throughout the Town of Farmville project area.

Map 4.1



## OPPORTUNITIES/POTENTIAL PROJECTS

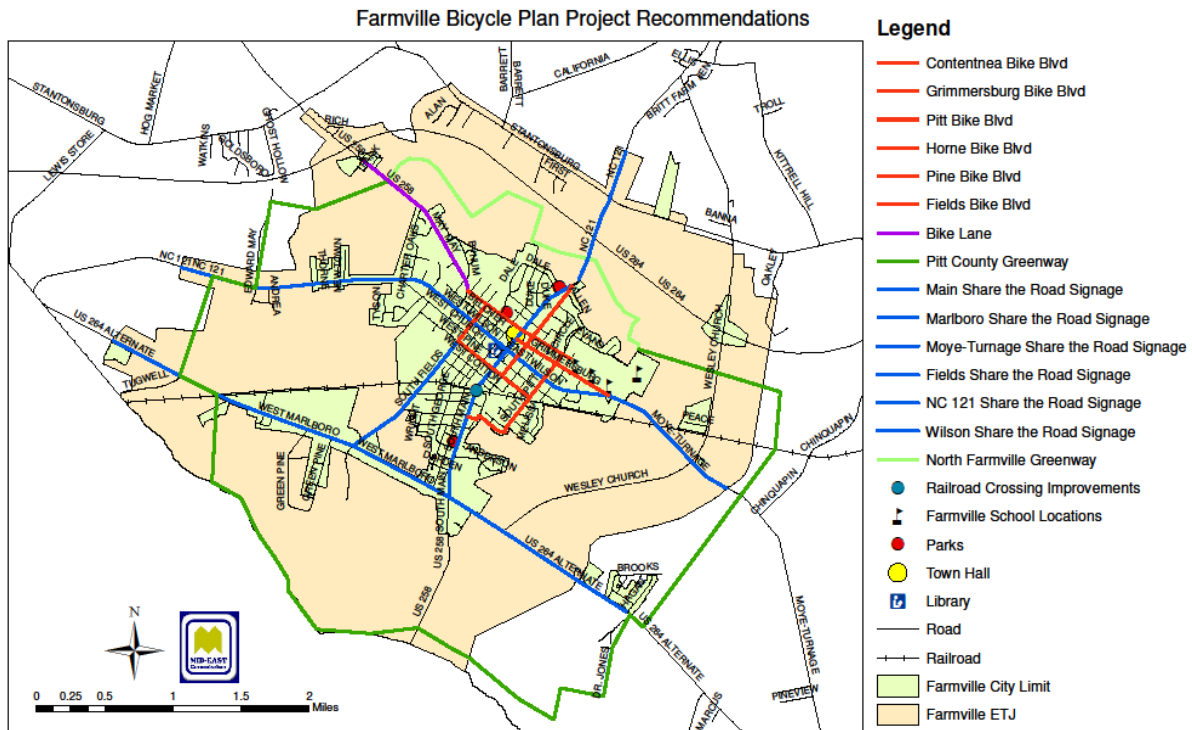
Potential projects to improve the bicycle network in Farmville were developed from public input activities, Steering Committee meetings, and community evaluation. Fifteen (15) preliminary recommendations or potential projects have been identified.

These potential bicycle facilities projects have been broken down into three categories: On-Road Facilities, Multi-Use Facilities, and Signage. Some projects may require further review and approval by the NCDOT Division 2 Office located in Greenville, NC. The potential projects were based on the following.

- Steering Committee Meetings
- Public Survey & Open House Comments
- Bicycle-Motor Vehicle Crash Data
- Field inventory and Assessment
- Ability to provide connectivity & improve safety

The Town should consider its utility easements as opportunities for bicycle corridors. Opportunities to provide connector routes to regional greenway routes, parks, residential areas, and other bicycling destinations were recommended during plan development. Map 4.2 illustrates proposed projects recommended in the plan.

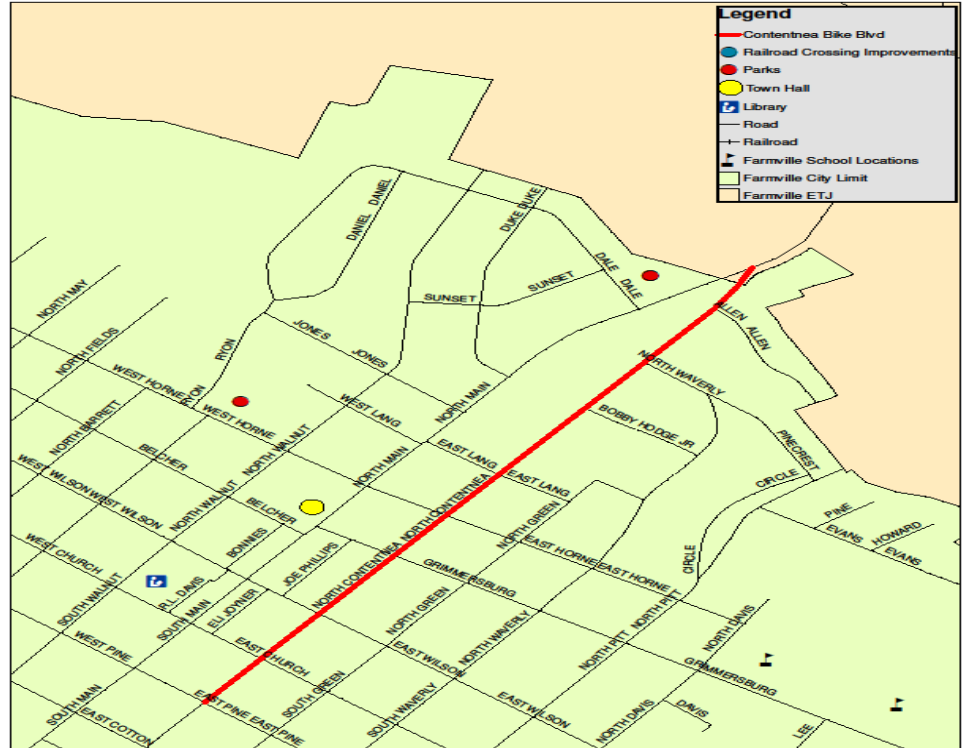
Map 4.2



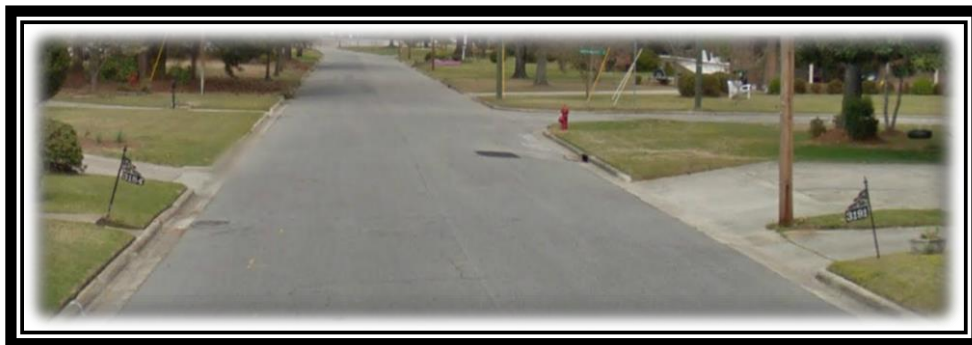
**BICYCLE FACILITY ADDITIONS AND IMPROVEMENTS**

**Contentnea Street Bicycle Boulevard**

Running from NC 121/Main Street to Pine Street, Contentnea Street is a more bicycle suitable roadway that parallels Main Street, stretching through a low traffic volume residential area. This stretch of roadway intersects numerous proposed recommendations in this plan. It allows less experienced riders and citizens in residential areas a safer connection to points of interest



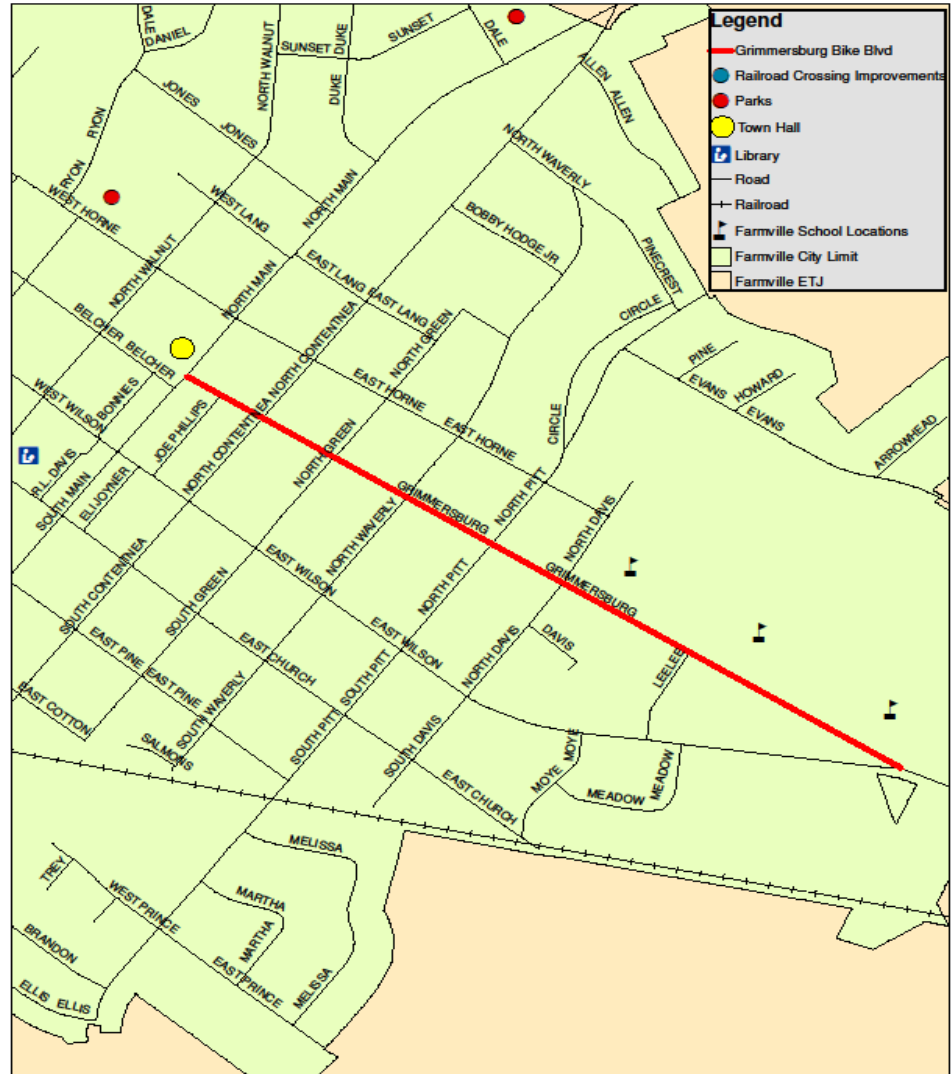
such as Oliver Murphy Park, Dental Facilities, and Medial Facilities than using Main Street. It also allows access to shops and restaurants along Main Street. Due to the low traffic volume and speed limits along this stretch, it is recommended that Contentnea be designated as a Bicycle Boulevard. Signage designating the corridor as a Bike Boulevard, Pavement Markings, and Stop/Yield signage at intersections along the route (if not currently there), according to NCDOT and FHWA standard, are recommended.



Contentnea (toward Main)

## Grimmersburg Street Bicycle Boulevard

Running from Main Street to Moye-Turnage Road, Grimmersburg Street runs through residential neighborhoods from Main Street to the K-12 school campuses. This stretch is heavily used by students and parents walking to school, and recently received pedestrian improvements and crossing walk upgrades. Given the make up of users, the location of schools along Grimmersburg, lower traffic volume, and lower speeds, it is recommended that Grimmersburg be designated as a Bicycle Boulevard.



Signage designating the corridor as a Bike Boulevard, Pavement Markings, and Stop/Yield signage at intersections along the route (if not currently there), according to NCDOT and FHWA standard, are recommended.



Grimmersburg (toward Main)

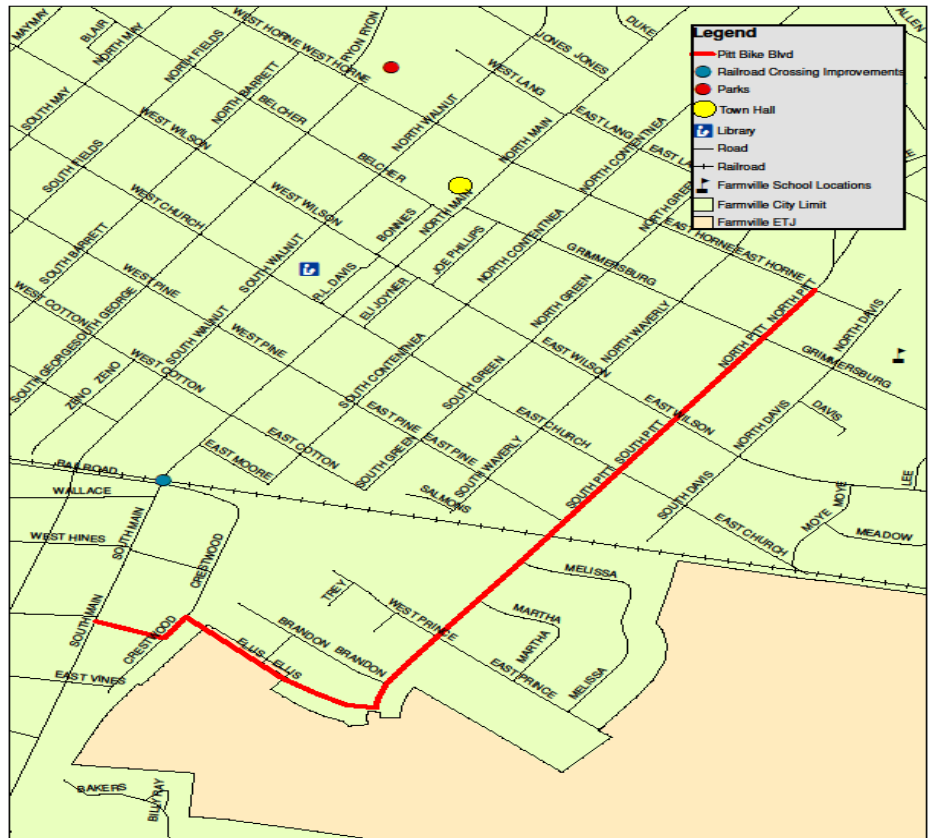


Grimmersburg (toward Wilson)



## Pitt Street Bicycle Boulevard

Running from Horne Avenue to Main Street (via Ellis Avenue and Crestwood Road), Pitt Street runs entirely through residential areas of Town. This project would serve as the eastern most north-south project in the plan. Intersecting several additional proposed projects, including Grimmersburg Street, this stretch would allow children who live in and around the Farmville Housing Authority in the southern part of Farmville to more safely reach the schools. This would also serve as a safe connector to Horne Street and the Farmville Athletic Complex. Due to the low traffic volume and speed limit along this stretch, it is recommended that Pitt Street be designated as a Bicycle Boulevard. Signage designating the corridor as a Bike Boulevard, Pavement Markings, and Stop/Yield signage at intersections along the route (if not currently there), according to NCDOT and FHWA standard, are recommended.



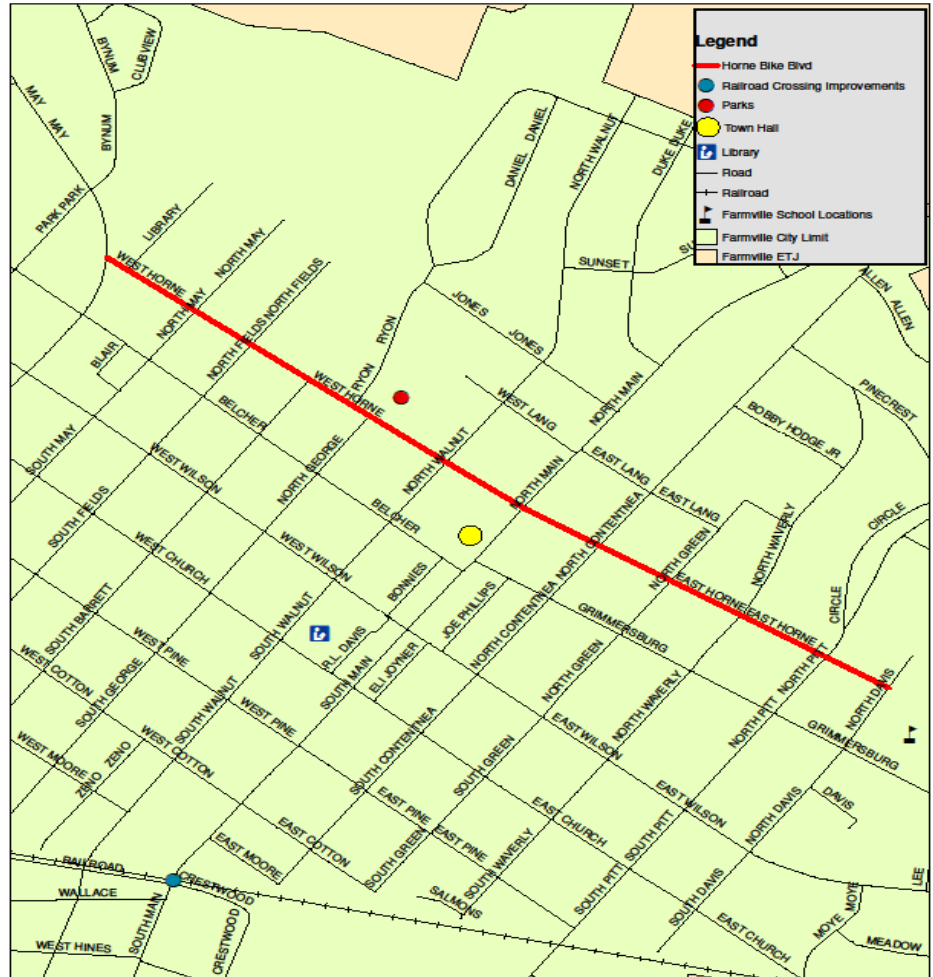
Pitt (toward Horne)



Pitt (at Wilson)

# Horne Avenue Bicycle Boulevard

Running from May Boulevard to the K-12 school campuses in Farmville, Horne Avenue is a lengthy stretch of roadway that allows access to multiple points of interest, while maintaining a relatively low volume of traffic. Running alongside Farmville Athletic Park, Town Hall, Town Common, and through residential areas east of Main Street, Horne Avenue provides citizens a stretch of roadway that connects them to these points of interest, as well connecting them to May Boulevard and



the proposed future facilities that will connect them to the Food Lion Shopping Center. Due to the low traffic volume and speed limit along this stretch, it is recommended that Horne be designated as a Bicycle Boulevard. Signage designating the corridor as a Bike Boulevard, Pavement Markings, and Stop/Yield signage at intersections along the route (if not currently there), according to NCDOT and FHWA standard, are recommended.



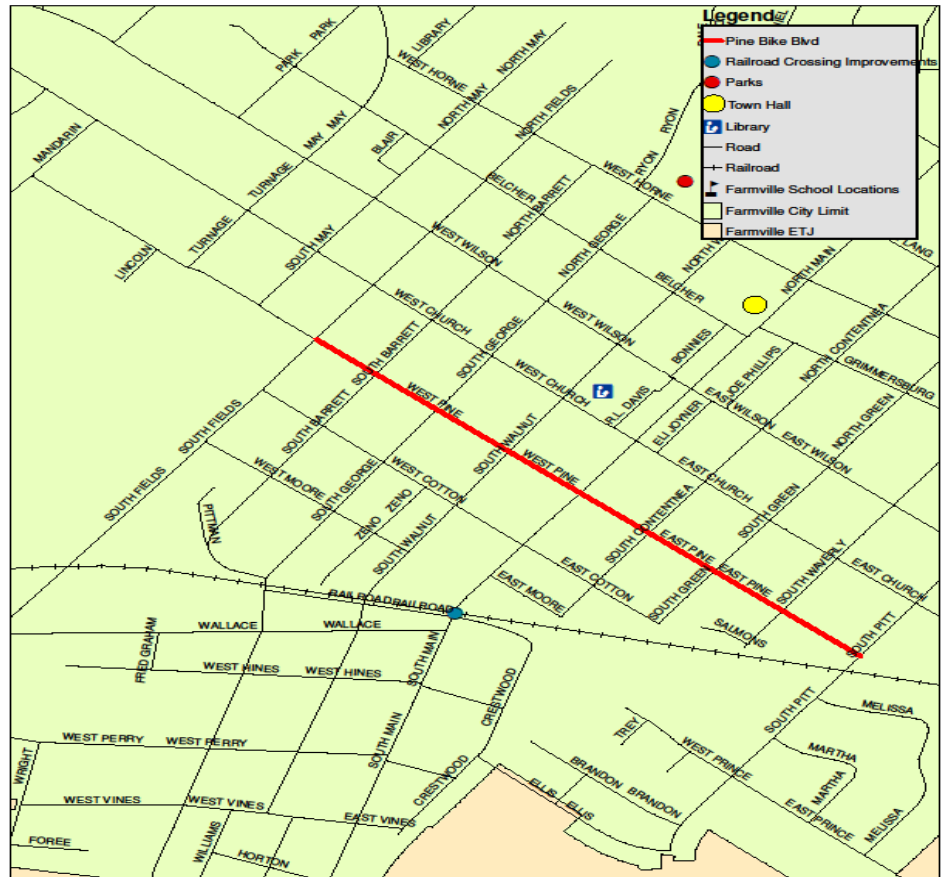
Horne (toward Main)



Horne (toward Davis)

## Pine Street Bicycle Boulevard

Running from Fields Street to Pitt Street, Pine Street is a more bicycle suitable roadway that parallels Wilson Street, which serves as the primary east-west thoroughfare near downtown Farmville. This stretch would allow cyclist in residential areas east and west of Main Street to safely access downtown. This project would also serve as a connector to the proposed Pitt Street project, allowing those trying to reach the schools another



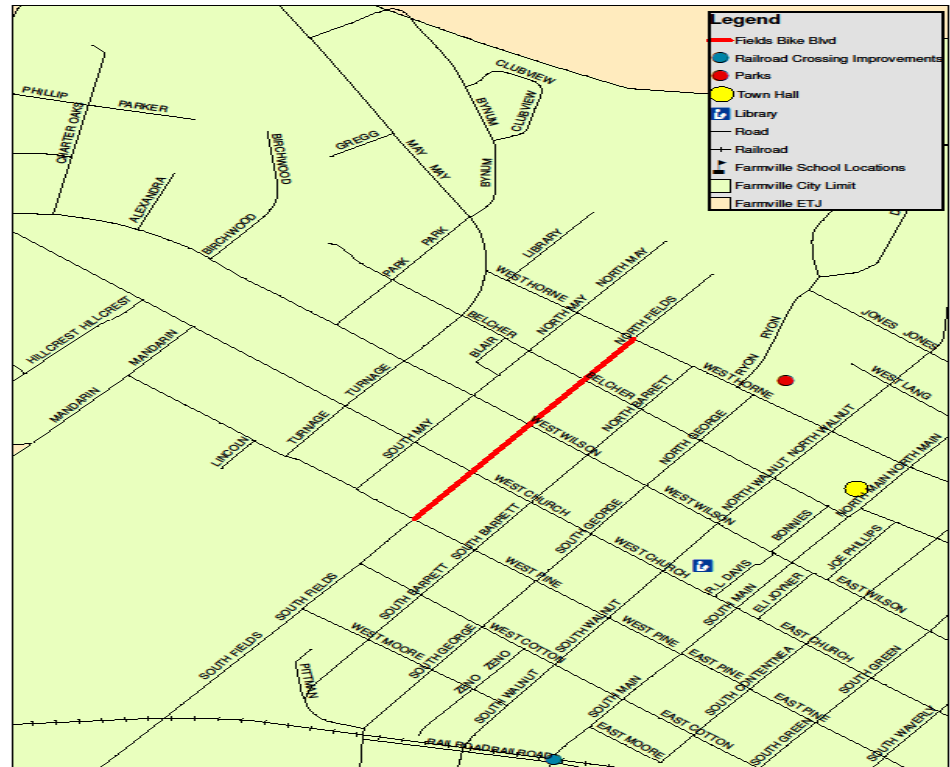
safe route to take. Due to the low traffic volume and speed limit along this stretch, it is recommended that Pine be designated as a Bicycle Boulevard. Signage designating the corridor as a Bike Boulevard, Pavement Markings, and Stop/Yield signage at intersections along the route (if not currently there), according to NCDOT and FHWA standard, are recommended.



Pine (toward Main)

## Fields Street Bicycle Boulevard

Running from Pine Street to Horne Street, this portion of Fields Street is a more bicycle suitable roadway that parallels May Boulevard (between Horne and Pine). The remainder of Fields Street south of Pine Street sees higher speed limits and more truck traffic, and therefore would not be suitable for Bike Boulevard designation. This does not mean cyclist riding through



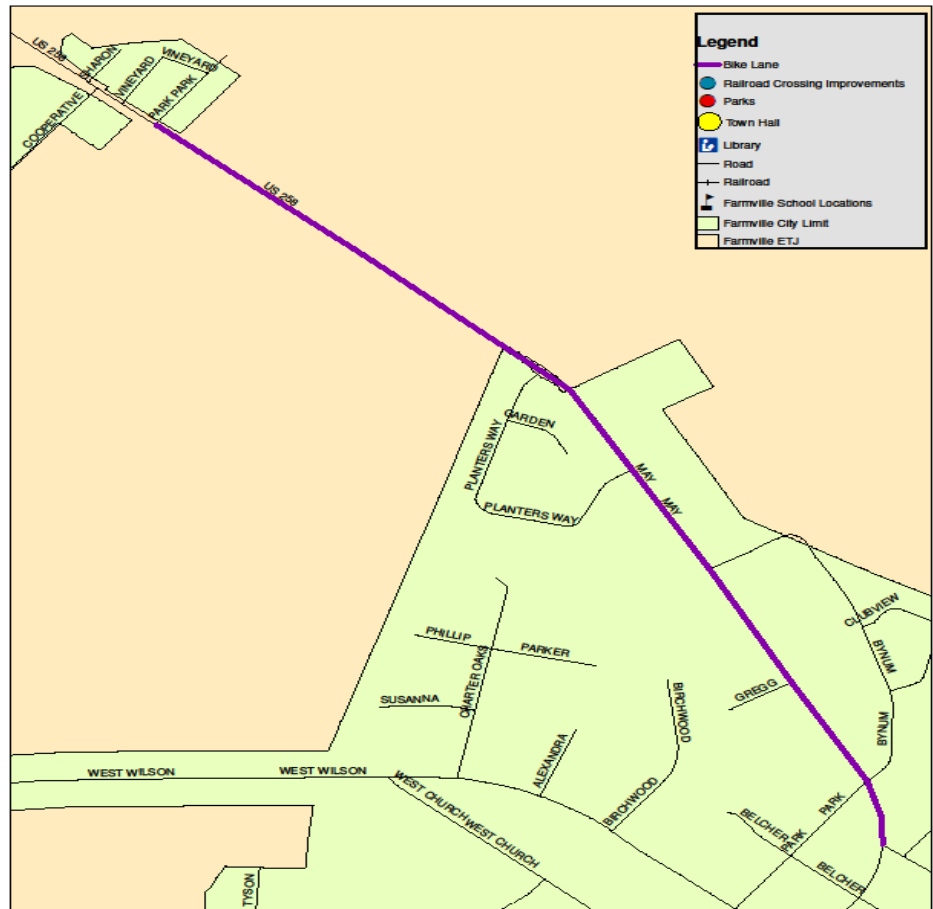
Farmville, especially those looking to get from May Boulevard to Marlboro Road, do not take this stretch. In an effort to improve the entire stretch along Fields, Bicycle Boulevard designation is recommended between Pine and Horne as this stretch contains lower traffic volume and speed limits. The remaining stretch of Fields (from Pine to Marlboro) has been recommended to contain Share the Road Signage, and is discussed later in this section. Signage designating the corridor as a Bike Boulevard, Pavement Markings, and Stop/Yield signage at intersections along the route (if not currently there), according to NCDOT and FHWA standard, are recommended.



Fields (toward Horne)

## May Boulevard Bicycle Lanes

As part of a proposed Complete Street improvement to this stretch of roadway, bike lanes are recommended to allow cyclist safe movement along May Boulevard. This roadway, serving as the western gateway into town, leads citizens to the Food Lion Shopping Center, which was among the most popular destinations citizens said they would like to have access. This roadway is also used by more advanced cyclists that take longer, recreational rides to neighboring communities. As a part of the complete street improvement, it is recommended that traffic lanes be reduced from four to two, with bike lanes added. In addition to bicycle facilities, pedestrian sidewalks are recommended as a part of this project, and are included in the Town's Comprehensive Pedestrian Plan. Pavement striping, according to NCDOT and FHWA standard, is recommended.



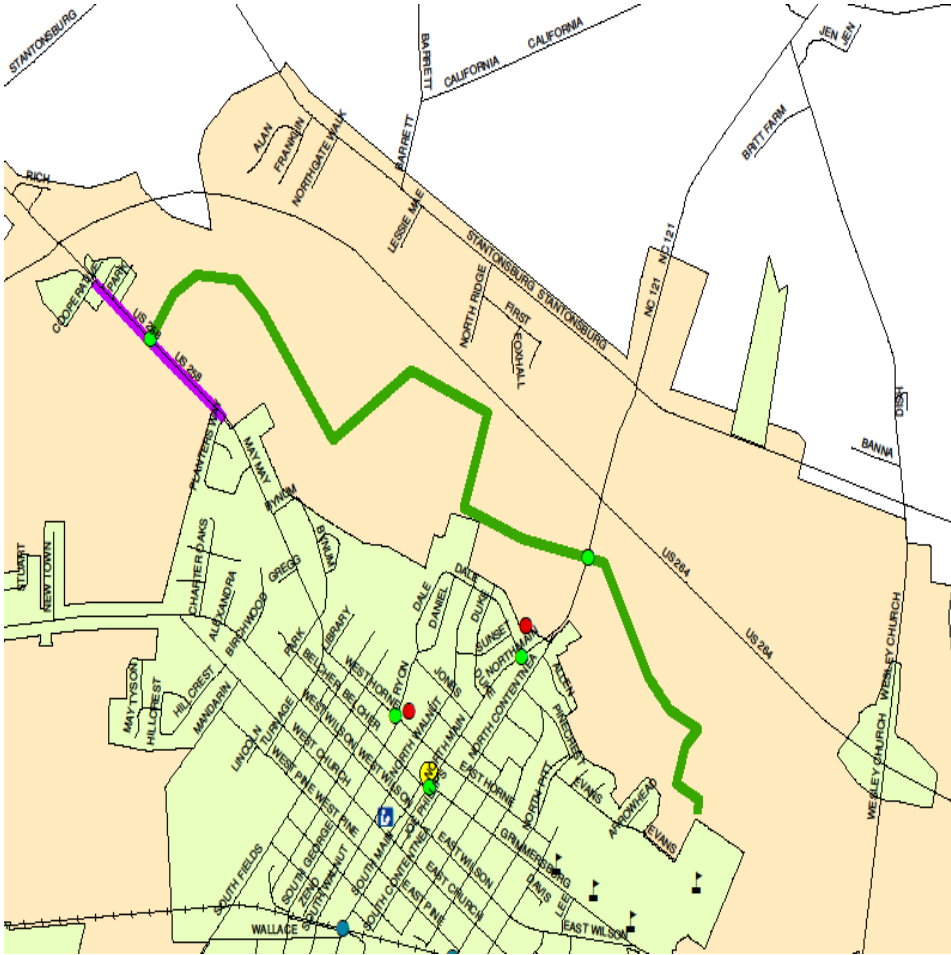
May (toward Home)



May (toward Shopping Center)

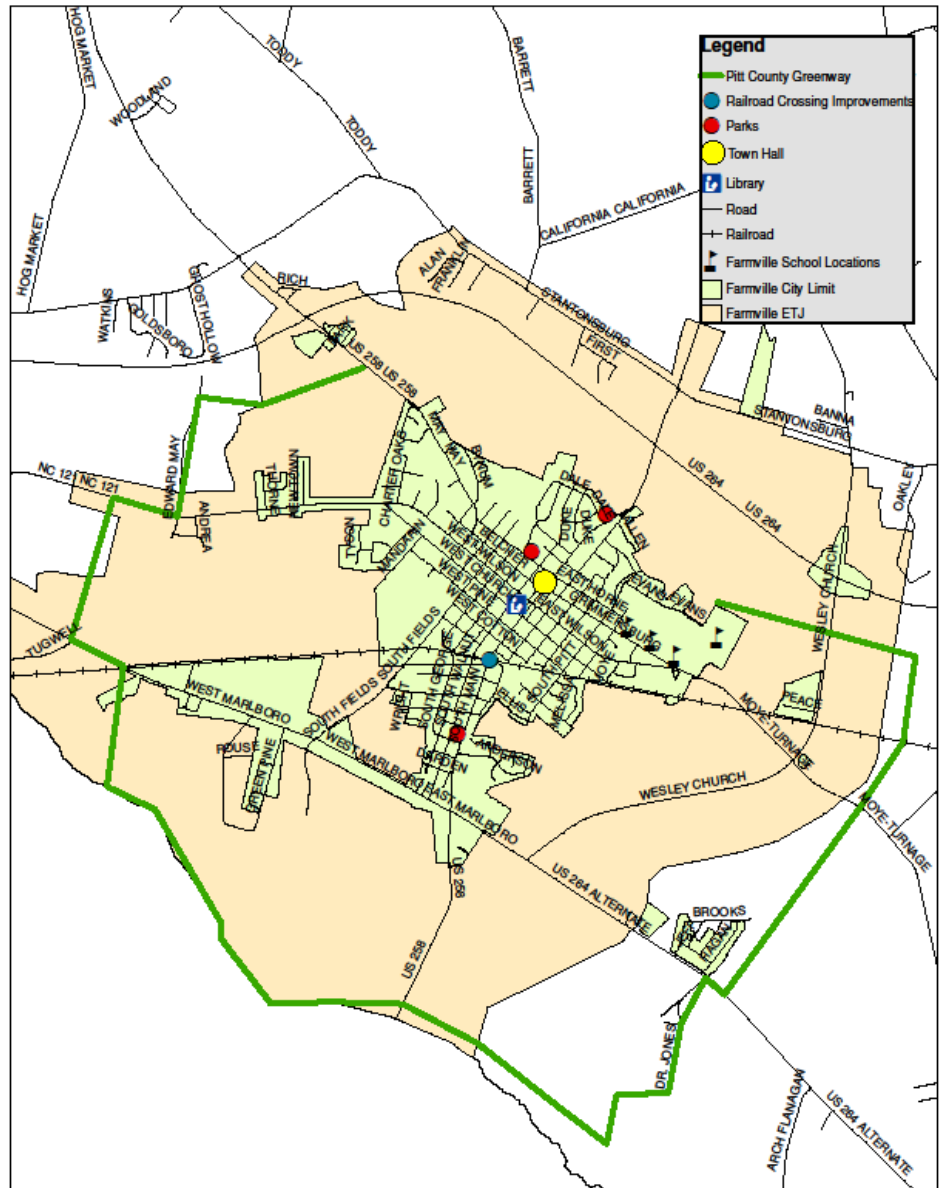
# North Farmville Greenway

The proposed new Greenway will run behind Farmville Central High School to May Boulevard. The Greenway will provide both pedestrians and bicyclists with an off-road facility, suitable for recreation. Once developed, the greenway could serve as a part of the proposed Pitt County Greenway. Additionally, several schools could be connected using existing easements to link several schools to the scenic Little Contentnea Creek, walking trails, an arboretum, and the Farmville Golf Course.



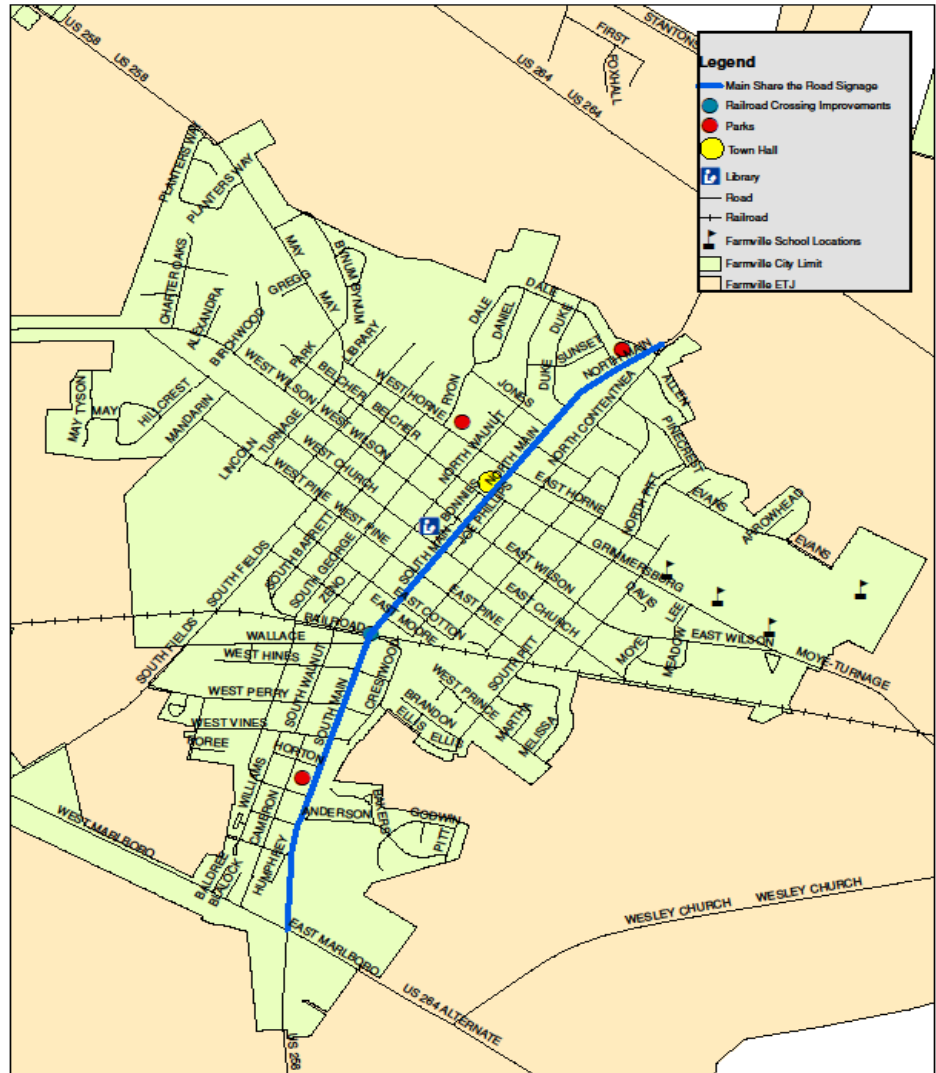
## Pitt County Greenway

The proposed Pitt County Greenway, which was introduced as a recommendation in the Pitt County Greenways Plan 2025, would connect with the proposed North Farmville Greenway, providing a greenway loop that would fully encompass the town. Several schools could be connected using existing easements that would link them to the scenic Little Contentnea Creek, walking trails, an arboretum, and the Farmville Golf Course. If developed, this segment, in coordination with additional recommendations in the Pitt County 2025 Plan, could eventually lead to an outer loop.



## Main Street Share the Road

Running from Contentnea Street to Marlboro Road, Main Street services the heart of Farmville, and is one of the busiest thoroughfares in town. With shops, restaurants, municipal offices, parks, and the community center located along Main Street, there is heavy use of the roadway at any given time during the day. While adjacent roadways have been recommended to be designated as Bike Boulevards for less experienced riders looking for a safer alternative to bicycle travel along Main Street, it is recommended that



“Share the Road” signage be placed along Main Street. This signage will not only alert motorists to cyclist using Main Street, but will promote awareness for those cyclist who may be crossing using the proposed Bike Boulevards.



Main (at Horne)



Main (from Marlboro)

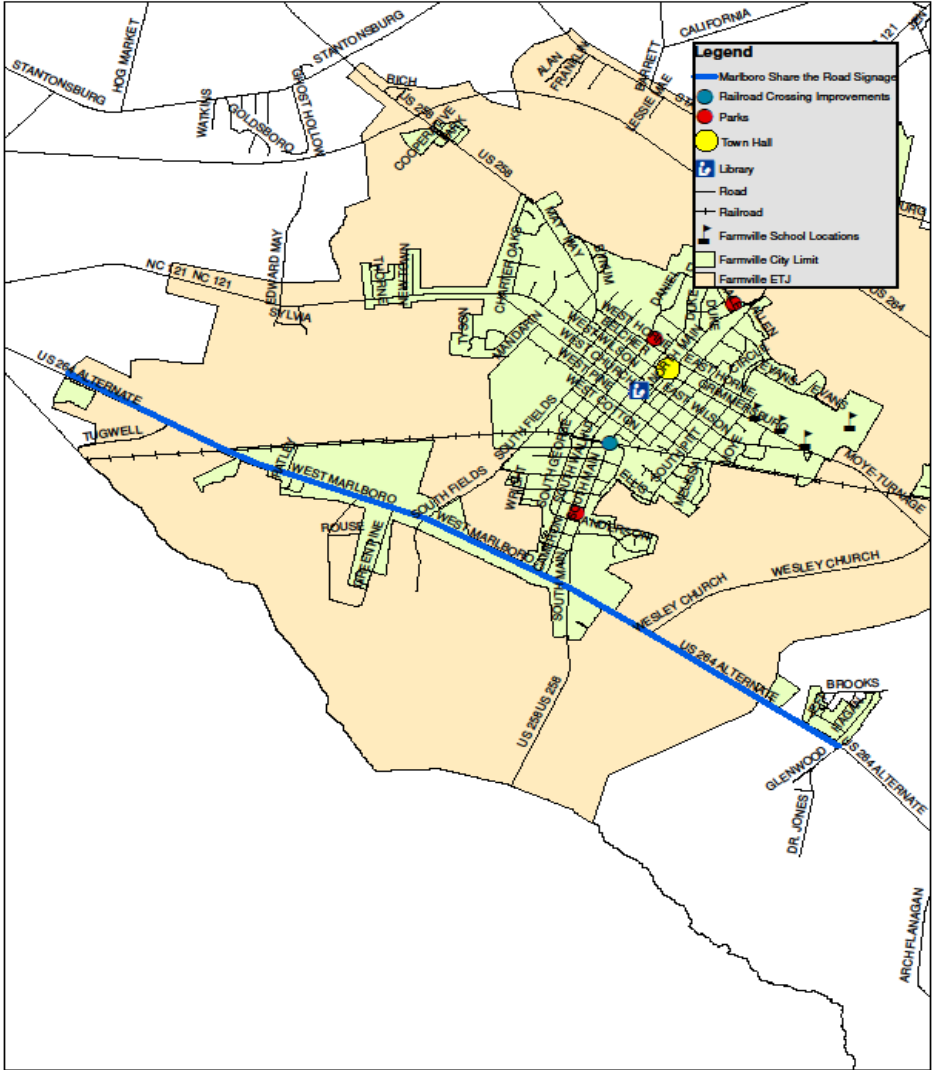


Main (at Bennett)



# Marlboro Share the Road

Running from Ratley Road to Dr. Jones Road, Marlboro Road (US 264 ALT) is perhaps the most dangerous roadway in town for cyclist to navigate. Five lanes wide with a posted speed limit of 45 MPH (often exceeded by drivers), cycling conditions can be very dangerous, especially for young, inexperienced, or casual cyclist. It is recommended that "Share the Road" signage be placed along Marlboro Road. This signage will alert motorist to cyclist using Marlboro Road, and encouraging courteous motorist behavior, including lower rates of speed and more room between themselves and cyclist.



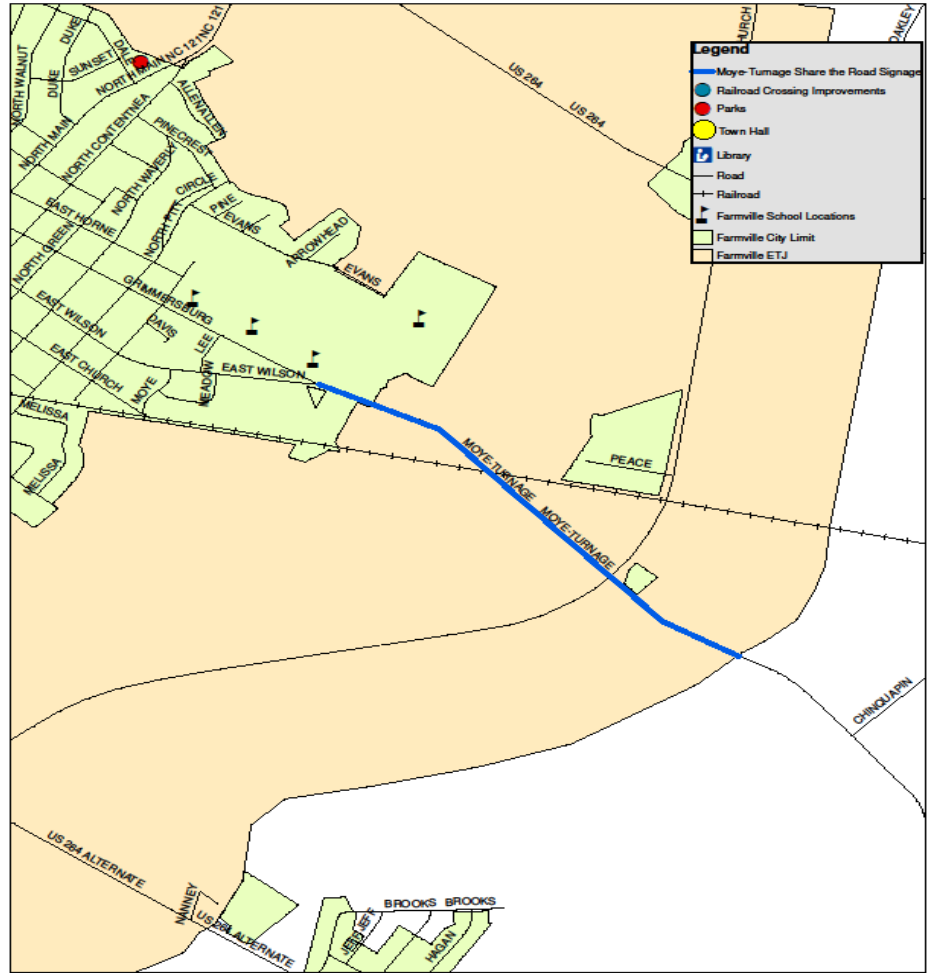
Marlboro (Toward Main)



Marlboro (at Main)

## Moye-Turnage Share the Road

Running from Wilson Street to Wesley Church Road, Moye-Turnage Road is a busy, two lane thoroughfare, serving as the eastern gateway point into and out of Farmville off of US 258 and US 264. With the location of the Elementary, Middle, and High School in Farmville, much of the school traffic also uses Moye-Turnage Road, increasing traffic volume along this stretch. It is recommended that “Share the Road” signage be placed along Moye-Turnage Road. This signage will alert motorist to cyclist using Moye-Turnage Road, and encouraging courteous motorist behavior, including lower rates of speed and more room between themselves and cyclist.



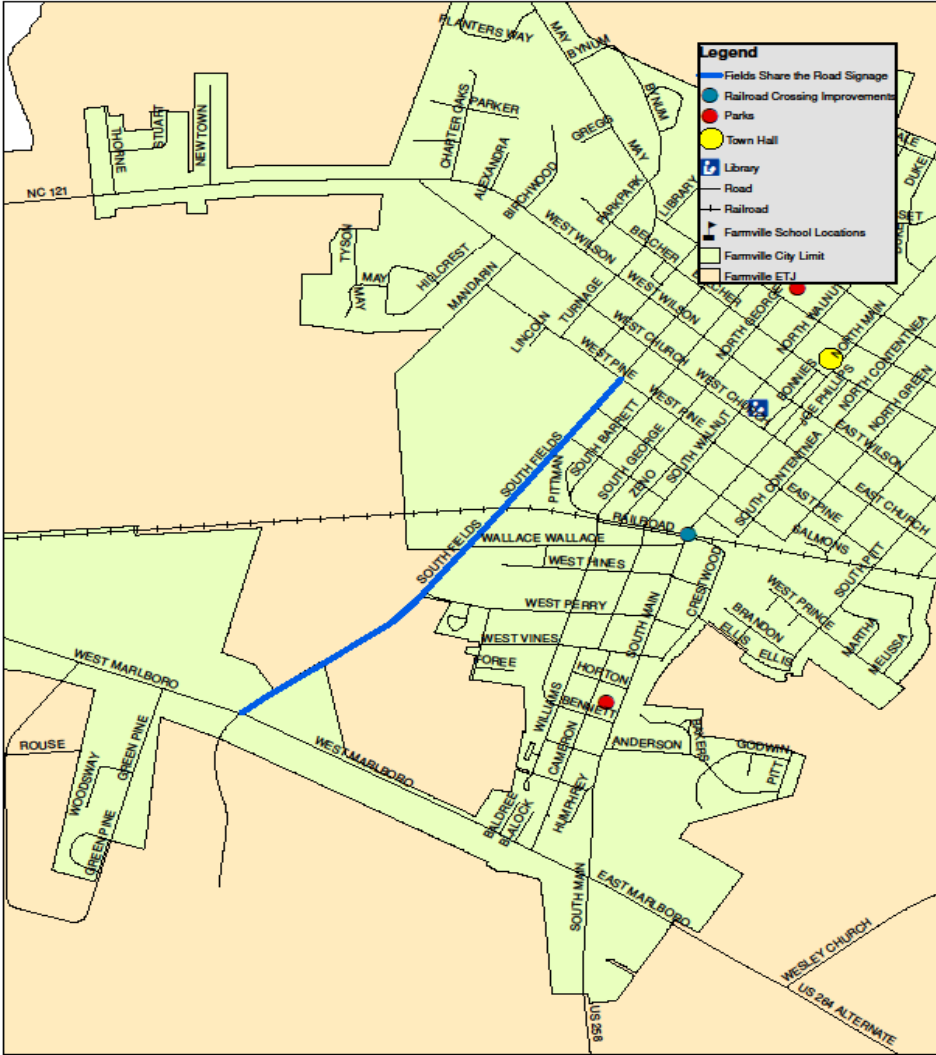
Moye-Turnage (toward Grimmersburg)



Narrow Shoulder Hazard (Moye-Turnage)

# Fields Share the Road

Running from Pine Street to Marlboro Road, this portion of Fields Street is located in the industrial portion of town. Due to the surrounding property uses, larger profile vehicles such as transfer trucks frequent this stretch. With a Bicycle Boulevard proposed for North Fields Street, safety along South Fields Street also needs to be addressed. With its connection to Marlboro Road, it is recommended that "Share the Road" signage be placed along Fields Street. This signage will alert motorist to cyclist using Fields Street,



and encouraging courteous motorist behavior, including lower rates of speed and more room between themselves and cyclist.



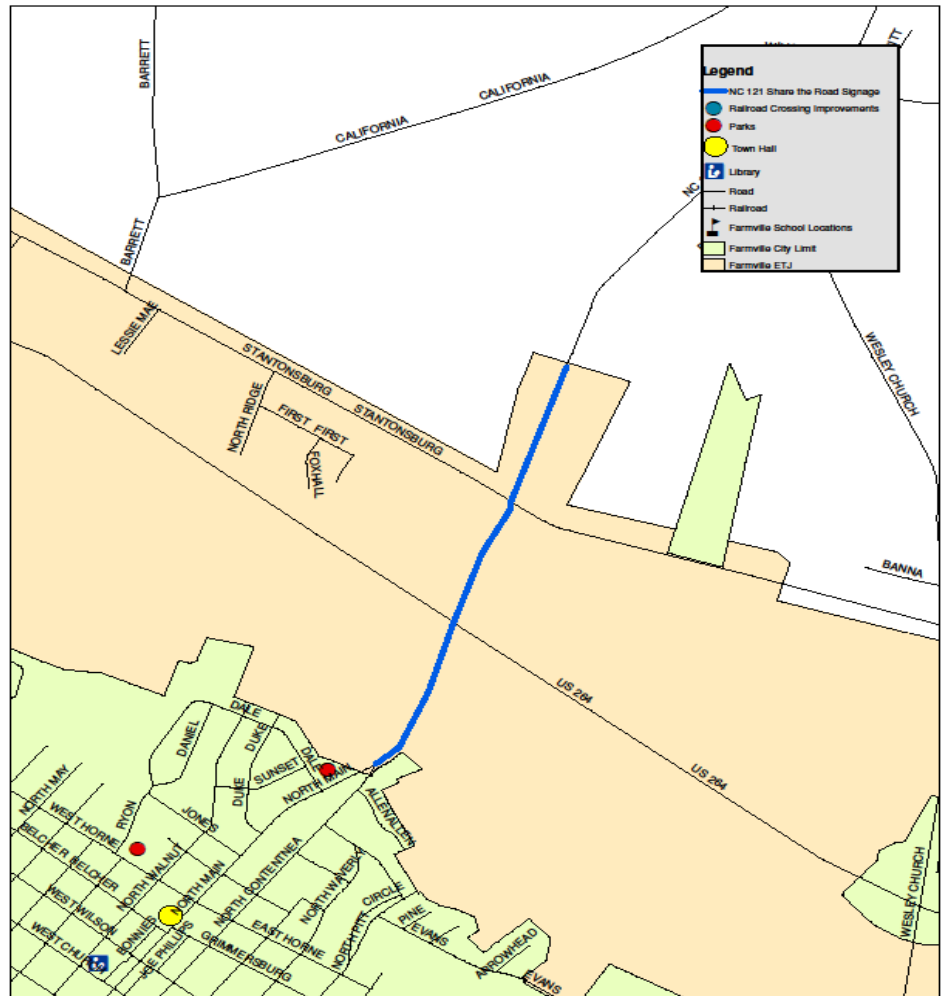
Fields (toward Marlboro)



Railroad Crossing Hazard (On Fields)

## NC 121 Share the Road

Running from Contentnea Street to Stantonsburg Road, NC 121 serves as the northern gateway into Farmville, turning into Main Street when reaching the town limits. This stretch can be dangerous for cyclist due to limited sightlines created by the curve near the town limits line at Contentnea Street. It is recommended that "Share the Road" signage be placed along NC 121. This signage will alert motorist to cyclist using NC 121, as well as Main Street, and encouraging



courteous motorist behavior, including lower rates of speed and more room between themselves and cyclist. This signage would assist in addressing current concerns with speeding as motorist enter town.



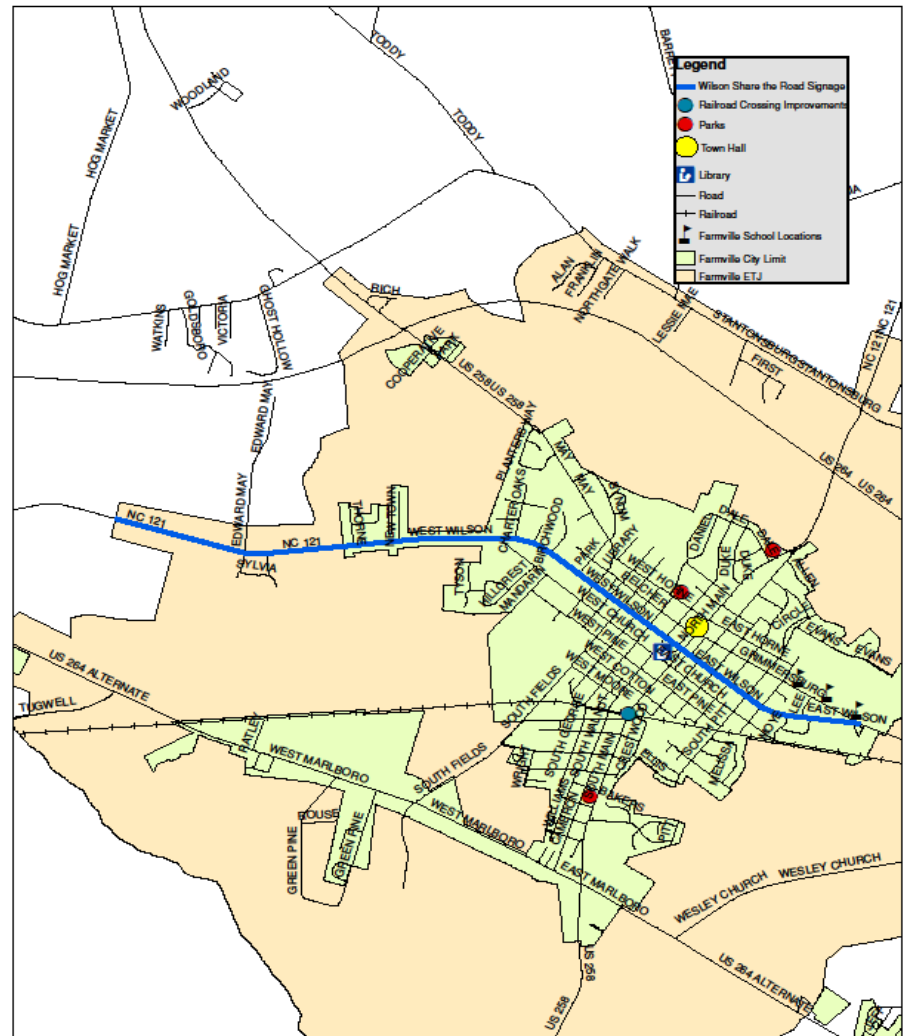
NC 121 (toward Main)



NC 121 (toward Stantonsburg)

## Wilson Share the Road

Running from Grimmersburg Street to Thorne Drive, Wilson Street is a busy, two lane thoroughfare which serves as the primary east-west thoroughfare in town. With its ability to connect citizens to a variety of interest points including the Public Library, Piggly Wiggly grocery store, downtown shops and restaurants, and Elementary, Middle, and High Schools in Farmville, traffic volume along this stretch is dangerous given the current lack of facilities or signage. It is recommended that "Share the Road" signage be placed along Wilson Street. This signage will alert motorist to cyclist using Wilson Street, and encouraging courteous motorist behavior, including lower rates of speed and more room between themselves and cyclist.



Wilson (toward Main)



Wilson (at Grimmersburg)

## SECTION 5 – BICYCLE FACILITY STANDARDS AND GUIDELINES

This section will provide guidance to the Town of Farmville on design standards and guidelines for new bicycle facilities. These standards and guidelines are a critical component of this bicycle plan and for all facility construction and development.

### *GENERAL BICYCLE PLANNING & DESIGN GUIDELINES*

The design standards and guidelines mentioned in this section are derived from North Carolina Department of Transportation (NCDOT) Bicycle Facilities Planning and Design Guidelines, the American Association of State Highway and Transportation Officials (AASHTO) Guidelines for the Development of Bicycle Facilities, and the Federal Highway Association (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), Part 9- Traffic Controls for Bicycle Facilities. Guidelines can be found at [http://www.completestreetsnc.org/wp-content/themes/CompleteStreets\\_Custom/pdfs/NCDOT-Complete-Streets-Planning-Design-Guidelines.pdf](http://www.completestreetsnc.org/wp-content/themes/CompleteStreets_Custom/pdfs/NCDOT-Complete-Streets-Planning-Design-Guidelines.pdf)

### *ROADWAY IMPROVEMENTS*

All roadways that allow bicyclists should be designed and constructed for safe use by cyclists; therefore, bicycle-safe design practices should be implemented to avoid costly retrofit improvements in the future. Roadway improvements include safe drainage grates, railroad crossings, bridges, smooth and level pavement surfaces, and traffic signals responsive to bicycles.

#### **DRAINAGE GRATES**

Drainage grates and utility covers can be a serious safety hazard for bicyclists. Unsafe grates, as well as a raised or depressed utility covers, can cause a crash by diverting or catching a bicyclist's front wheel.

According to the above mentioned guides, parallel bar drainage grates are the most hazardous because they can trap a bike's front wheel causing loss of steering control and the bar spacing can allow narrow wheels to drop into the grates, resulting in not just property damage but possible injury to the bicyclist.

Unsafe drainage grate covers should be replaced with either "Type E, F, or G standard grate covers" as shown in the image below. Due to their high risk of

property and personal injury, parallel grate covers should be replaced immediately.

Due to bicyclists' being more sensitive to a roadway surface and projections along it, roadway-resurfacing projects should not leave appurtenances projecting above the pavement surface. Repeated resurfacing a roadway without adjusting drainage grates or utility covers can result in these features being below the road surface, a hazardous tripping condition to bicycle traffic. Therefore, when a roadway is being resurfaced, all manholes, inlets, lampholes, and water valve boxes should be either raised or lowered to be level with the new roadway surface.

## RAILROAD CROSSINGS

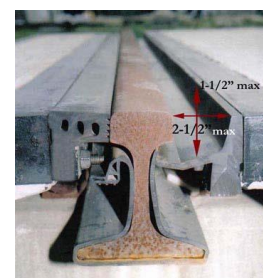
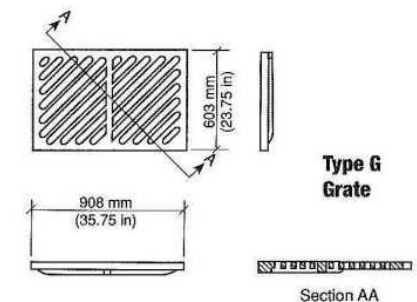
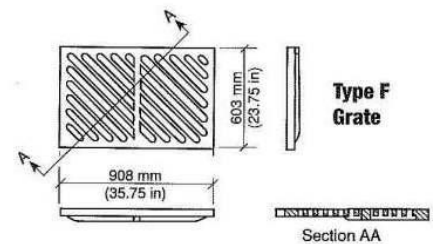
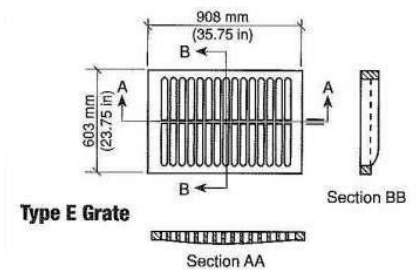
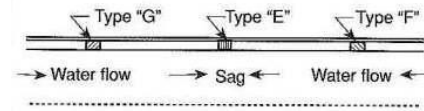
Railroad crossings can pose a problem for bicyclist at at-grade railroad crossings. Uneven or rough crossings can cause property and possible personal injury for bicyclists. Regular maintenance and replacement of railroad crossings should be done to avoid any potential problems.

In locations where railroad tracks cross a roadway at less than 45 degrees, the front wheel may be diverted by the rail or trapped in the flangeway, resulting in a loss of steering control. In addition, regardless of the angle, if the transition surface between the roadway and the tracks is rough wheel damage and physical injury is possible.

Railroad tracks that cross roadways and/or bikeways at-grade should do so "as close-to a right angle as possible." If not feasible, design and construction consideration should be given as follows:

- Widening the approach of roadway, bike lane, or shoulder to allow cyclists to cross at approximately 90 degrees without veering into traffic. The minimum widening should be 6-feet; however, 8-feet is desirable, depending on the amount of available right-of-way.

Detail showing types of grates to be used according to water flow.



- On low-speed, lightly traveled railroad tracks, commercially available flangeway fillers can be applied to eliminate the gap next to the rail.

## **BRIDGES**

According to North Carolina's Bicycle Facilities Planning and Design Guidelines, improving a bridge to accommodate bicycle traffic involves analyzing four major areas of concern:

- **Static Obstructions**  
Bicycle-safe bridge railings need to be used on bridges designed for bicycle traffic and on bridges where bicycle protection is warranted. Bicycle rails on bridges should conform to the latest AASHTO Standards and Specifications for Highway Bridges Guidelines. The minimum height of the rail should be 54-inches from the top of riding surface to top of rail. On certain bridges a height railing of 42-inches may be permissible.

Guardrails on bridge approaches should also be designed for bicycles. A roadside barrier should be placed as far from the travel way as conditions permit. The minimum offset from the traffic lane or paved shoulder edge is 4-feet. However, when the slope on the exterior side of the guardrail is excessive or the hazard is severe, or the outside lanes are narrow, a bicycle-safe railing should be installed on top of the guardrail to provide additional protection, increasing the total height to 54 inches.

- **Surface Conditions**  
The bridge surface should have smooth expansion joints and the deck should be clear of potential hazards for bicyclists. The bridge should use bicycle-safe drainage grates and drains. Due to potential steering problems, draw bridges and swing bridges with steel decking should not be designated as bicycle routes without determining the deck's effect on bicycle handling.

A bridge's surface should be clear of debris that could cause problems for bicyclists, forcing them to maneuver into traffic lanes or closer to the bridge edge.

- **Bridge Deck Width**  
To accommodate bicycles on bridges a minimum of a 4-foot shoulder should be applied in shoulder sections and 4 to 6 foot bike lanes should be applied in curb and gutter sections. Determining the best option is dependent on traffic speed and volume.



- **Bridge Approaches**  
Either paved shoulders or wide outside lanes should be continued for at least 100-feet on either side of a bridge in order to ensure a safe transition for bicycles. Additional bridge approach treatments can be found in the *North Carolina Bicycle Facilities Planning and Design Guidelines*.

## **BOARDWALKS**

If a boardwalk is used as a portion of the multi-use segment (for instance, in an environmentally sensitive area), it should be designed to be bicycle and pedestrian friendly. The width of the boardwalk should be a minimum of 10-feet wide or 12-feet wide for bi-directional. If the boardwalk height exceeds 30-



inches, railings are required. If required, the railings should be bicycle-safe and a minimum of 54-inches in height, to provide protection along the boardwalk.

The boardwalk surface should be clear of debris and have a smooth and level riding surface. When a boardwalk has to cross a large open area, thus becoming a bridge, AASHTO Standard Specifications for Highway Bridges should be reviewed to ensure appropriate load bearing capacity.

## **PAVEMENT QUALITY**

The pavement quality of a roadway can cause an unpleasant bicycling experience. Pavement irregularities, potholes and depressions from heavy traffic may not be as noticeable or a concern to motorists, but bicycles with their narrow wheels and lack of suspension cannot handle these hazardous spots. Therefore, whenever practical, pavement surfaces on all roadways, especially those with bicycle facilities should be free of these hazards.

The paving over gutter pans to achieve the minimum requirements for a bicycle facility (i.e., bike lane) is not generally supported. However, if other treatment options are limited then this treatment may occur as long as continuous and consistent maintenance is conducted to prevent the potential break-up of the asphalt applied over the top of the gutter pan.

## ON-STREET VEHICLE PARKING

In some instances, the removal, narrowing or reconfiguration of on-street parking will have to be conducted in order to accommodate and/or improve safety for bike lanes or shared lane markings along a particular roadway. Generally, when on-street parking is removed, in whole or in part, the safety of motorists, pedestrians, and bicyclists is improved. However, there are alternatives to complete removal of on-street parking.

To reduce potential conflicts and public and private outcry, careful research is needed prior to making a proposal to change on-street parking in a community. A community needs to compile and analyze the following information before proceeding with on-street parking changes for a particular section of roadway:



- Types of land uses along section of roadway in question
- Availability of both on- and off-street parking
- Whether both or one side of roadway will be modified
- Supporting regulations
- Alternatives (narrowing existing parallel parking spaces, back-in/head out diagonal parking verses head-in/back out diagonal parking, parking garage or lot, shared parking spaces, etc.)

### Parallel Parking

The use of parallel parking is the standard amongst communities along narrow roadways. A typical parking space is 8 to 10-feet wide and 22-feet long. However, spaces can be narrowed to 7-feet on local streets to allow the necessary room for bike facilities. In some instances, parallel parking may be applied to one side of roadway to accommodate the existing land uses in order to free up roadway space for bike facilities.

Parallel parking advantages include: 1) provides a buffer between travel lanes and sidewalks and 2) requires less pavement width than diagonal parking. However, some motorists tend to have difficulty maneuvering into the space, it is an inefficient use of street space since it accommodates fewer parking spaces than diagonal, and can pose a safety hazard for bicyclists riding along the roadway and for the pedestrian exiting the vehicle.

## Diagonal Parking

Diagonal parking has been an alternative to parallel parking in communities to gain additional spaces in areas of high parking demand. However diagonal parking spaces typically require a length of 17.5 feet and a width of 8.5 feet of space on a road and can cause conflicts with safe bicycle travel, such as poor visibility of on-coming bicyclists.

There are two types of diagonal parking: pull-in/back-out and back-in/head-out. Both types have the same dimensions of 17.5 feet in length and 8.5 feet in width. Their advantages and disadvantages are discussed below. Diagonal backing, when possible, should be placed on one-way roads, preferably on the left side to avoid conflict with bicycles. However, if diagonal parking is planned for a two-way road with existing or planned bike lanes or other-on-road bike facilities, the following suggestions should be taken into consideration to decrease potential conflicts:

- Parking spaces should be long enough to accommodate large vehicles
- A 8-inch stripe should be placed between parking area and bike lane to increase a visible separation
- Possible enforcement of vehicles encroaching on bike lane
- A possible median to reduce the ability of motorists to pull into a diagonal parking space opposite the designed direction
- Appropriate warning and informational signs to inform motorists of bicycle presence

## Pull In/Back Out Diagonal Parking

The more traditional diagonal parking method, this type requires the motorist to drive head-first into the parking space. Advantages of pull-in diagonal parking are: 1) provides a buffer between travel lanes and sidewalks, 2) is a traffic calming measures (reduces traffic speed, 3) makes it easier to park a vehicle, and 4) accommodates more vehicles along a section of roadway than parallel parking.

The disadvantages of this type of on-street parking are: 1) preferred on one-way roads, 2) preferred on roadway with lower posted speeds and traffic volumes, 3) obstructs sidewalks, 4) decreases visibility when backing out of space, and 5) not compatible with bike routes.

## Back In/Head Out Diagonal Parking

An alternative diagonal parking method is back-in or head-out diagonal parking. This type requires the motorist to back into the parking space. The use of back-in diagonal parking provides better visibility when the driver is leaving a parking space, thus improving safety for the motorists, pedestrians exiting vehicles, and bicyclists traveling along the roadway as compared to standard diagonal parking.



Back-in parking advantages include: 1) better loading and unloading of materials into back of vehicle, 2) improves visibility when pulling out of space (actually safer than pull-in parking), 3) provides buffers between streets and sidewalks, 4) is a traffic calming measure (reduces traffic speeds), 5) accommodates more vehicles along a roadway, and 6) can be used along bike routes.

Disadvantages to this type of parking are: 1) preferred on one-way roads, 2) preferred with medians on two-way streets, 3) preferred on roads with lower traffic and post speed limits, and 4) additional educational signage is necessary.

## *ON-ROAD BICYCLE FACILITIES*

On-road bicycle facilities are treatments applied to the existing roadway system, which offers a variety of opportunities for bicycle travel and provides many connections to key destinations needed to support a successful bicycle network. Experienced riders who travel at a speed of 15-30 mph and are comfortable riding with vehicular traffic typically utilize these types of facilities. Selecting the appropriate facility for a given roadway is important and depends on numerous factors such as, traffic volumes, travel speeds, outside lane width, total pavement width, and percentage of heavy vehicle traffic. The following are various types of on-road applications for bicycle facilities.

### **BIKE LANES**

Bike lanes are incorporated into a roadway that has available space where delineation is desirable for bicyclists and motorists, in order to provide a designated space for each and provide more predictable movements by each. Bike lanes can increase a bicyclist's confidence in safety by knowing motorists will not pass them too closely and motorists know they do not have to swerve out of their lane to pass a bicyclist.



Two-lane and four-lane divided roadways are the best environment for bike lanes. Bike lanes along roadways with numerous commercial driveways should be avoided. Bike lanes are meant to be one-way facilities, which carry bike traffic in the same direction as adjacent motor vehicle traffic. Therefore, two-way bike lanes on one side of the roadway are not recommended. On some one-way roads, two-way buffered bike lanes or cycle tracks may

be an option in order to achieve greater connectivity. On one-way streets, bike lanes should be placed on the right side of the street in the direction of travel.

According to AASHTO, there are four different width standards for bike lanes depending on the types of roadway it will be installed on. For roadways with no curb and gutter, the minimum width is 4 feet. On streets with curb and gutter, NCDOT supports 4-foot bike lanes measured from the edge of the gutter pan. It is typical of bicyclists to ride approximately 32-40 inches from curb face; therefore, it is important that the pavement surface is smooth and free of obstructions. If a roadway has a wider gutter pan with storm drains or utility covers within them, additional space should be given for the bike lane to avoid bicyclists from swerving.

Where on-street parking is permitted and the parking stall is marked, the distance between the curb face and outer marking of the bike lane must be 13 to 15 feet to allow a 5 foot minimum width for a bike lane and 8 to 10 feet for the parking stall.

If on-street parking is permitted but the parking stall or area is not marked, the shared area should be a minimum of 11 feet without a curb face and 12 feet adjacent to a curb face. If the parking area has a high turnover rate, an additional 1-2 feet is preferred. To avoid obstacles, poor visibility, and hazards, bike lanes should never be placed between parking area and curb line.

Bike lanes should be marked with a 6-inch solid white line, and an additional 4-inch solid white line can be placed between the parking area and the bike lane for more clarification. As mentioned previously, improper drainage grates can pose a hazard for bicyclists; therefore, immediate replacement or retrofitting is necessary to provide a safe riding area for bicyclists.

On rural roadways without curb and gutter and infrequent parking, bike lanes should be located within the limits of the paved shoulder at the outside edge. These bike lanes should have a minimum width of 4 feet, where the area

beyond the paved shoulder can provide additional maneuvering room. If heavy truck traffic is present or the speed limit is over 50 mph, a width of 5 feet or more should be provided.



### **CYCLE TRACKS**

A cycle track is an exclusive bicycle facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. Cycle tracks provide space that is separated from vehicle travel lanes, parking lanes and sidewalk by pavement markings or coloring, bollards, curbs/medians or a combination of these elements.

### **WIDE OUTSIDE LANES**

The desirable width of a travel lane is 12 feet, but on roadways with bicycle traffic, widening the outside lane can benefit both bicyclists and motorists. A wide outside lane refers to a wider, outside travel lane shared by bicyclists and motorists. Wide outside lanes have no stripes to delineate a separate lane for bicyclists. However, there is a potential concern for increased speed by motor vehicles with widened outside lanes, which creates a safety concern for bicyclists.

The minimum width for an outside lane is 14 feet of usable and clear (from obstructions) riding area. Generally, an extra 1-foot is added for flush or depressed obstructions, such as a joint or soft shoulder. An additional 2 feet should be added to accommodate raised obstructions like curb and gutter. On existing roadways where extending the pavement to widen the outside lane is not feasible, the lane striping can be shifted to narrow the inside lane(s) while widening the outside lane. If this is done, the inside lane(s) should not be narrower than 14-feet; however, the volume of truck traffic should be taken into account and if truck volumes are greater than 5% of the total traffic volume narrow lanes of 11-feet should not be used.

Due to no defining markings, wide outside lanes require bicyclists and motorists to be more aware of and attentive to each other. This on-road treatment is not recommended in this Plan.

## **WIDE PAVED SHOULDERS**

Wide paved shoulders are often used in rural areas or on roads with relatively few driveways and intersections. Smoothly paved shoulders are a preferred bicycle facility by cyclists and motorists. Paved shoulders can also provide an emergency pull-off area for vehicles, eliminate rutting and drop-off adjacent to travel lane edge, provide adequate cross slope for drainage, reduce maintenance, and provide lateral support for roadway base and surface course.

For a paved shoulder to accommodate bicyclist, the paved shoulder must be a minimum of 4-feet wide and be a smooth and level surface. Additional width is desirable if the speed limit exceeds 35 mph, if the vehicular traffic percentage for truck, bus and recreation vehicles is high, or if static obstructions exist at the right side.

A minimum 2-foot clearance should be provided from the edge of pavement to the top of the foreslope of a ditch; however, if the slope is greater than 2:1, the clearance should be 3-feet. If a guardrail is provided adjacent to the paved shoulder, a 4-foot clearance is preferred. All road signs and other vertical obstructions should be offset a minimum of 6-feet from pavement edge.

## **UNSIGNED SHARED ROADWAY (NO BIKEWAY DESIGNATION OR TREATMENT)**

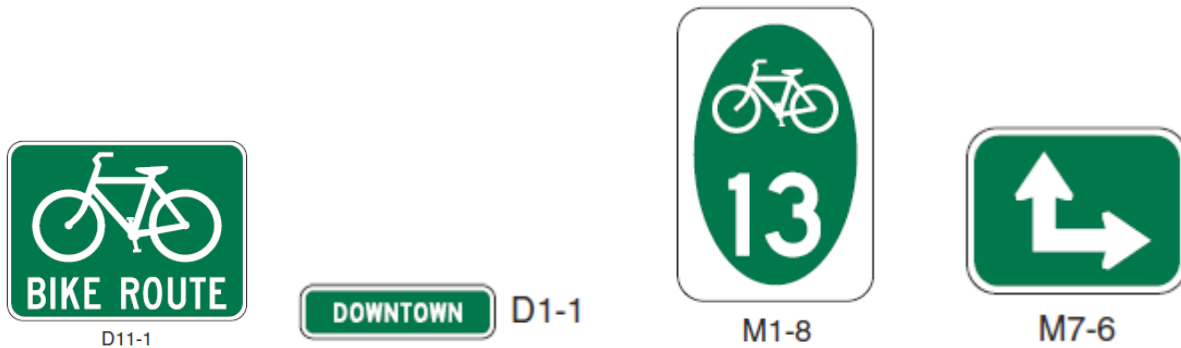
The majority of bicyclists travel on streets without bikeway designation or signage. This trend will probably continue to happen since portions of a community's existing roadway system has low traffic volumes and additional treatments are not necessary (i.e., minor residential streets). In addition, some roadways in a community may be unsafe or unsuitable for bicycle travel; therefore, it would be inappropriate to encourage bicycle traffic by designating them as bicycle routes with signage or on-street treatments.

## **SIGNED SHARED ROADWAY (DESIGNATED BIKE ROUTES)**

A signed shared roadway is a designated bike route with appropriate signage. Signed shared roadways serve either to provide continuity to other bicycle facilities or designate preferred routes through high-demand corridors.

By designating a roadway as a bike route, a community is stating there are advantages to using these routes compared to alternative routes (i.e., wider travel lanes, smoother road surface, avoidance of high vehicular traffic, ease of use by bicyclists, low speed limits, etc.).

A signed shared roadway should be maintained in a manner consistent with the needs of bicyclists and have appropriate signage along the designated route. The placement and spacing of signs should be based on Part 9 of the MUTCD (Traffic Controls for Bicycle Facilities). For signed bike routes to be functional and successful, supplemental signs should be placed beneath the main sign when located along routes leading to high demand destinations (Downtown, Schools, Parks, etc.).



All directional changes should be signed with appropriate arrow signs and signage should not end at a barrier, instead information directing a bicyclist around the barrier is preferred. Just as placement of signs is important, care should be given to avoid installing too many signs. The overuse of signs can result in loss of effectiveness to bicyclists and motorists; therefore, a community should be conservative on the use of regulatory and warning signs along bike routes.



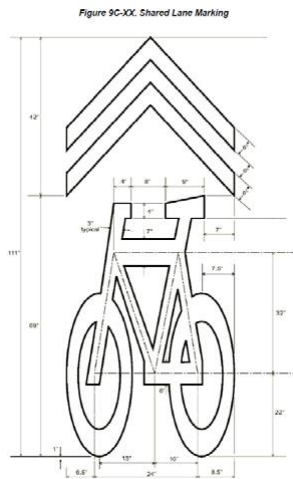
## SHARROWS

Recommended by the North Carolina Committee on Uniform Traffic Control Devices (NCUTCD) in January 2007, the use of shared lane markings (bike-with-chevron) to identify where on roadway bicyclists should ride has provided



another option for improving awareness of bicycles on shared roadways. The benefits of using the 'bike-with chevron', sharrow, or shared lane marking are:

- Assists bicyclists on identifying the appropriate and legal line of travel;
- Encourages motorists to pass bicyclists safely and with adequate clearance;
- Reduces the likelihood of a cyclist getting hit by a parked car door;
- Alert motorist of the lateral location bicyclist may occupy; and
- Reduces wrong-way bicycling



On roadways with on-street parking, the shared lane marking must be placed a minimum of 11-feet from curb face, or from pavement edge when there is no curb. Roadways with no on-street parking, the marking must be placed 4-feet from curb face or edge of pavement. This marking should not be used on shoulders or in designated bicycle lanes, and on roadways with speed limits above 35 mph. When used along a roadway, the shared lane marking should be placed immediately after an intersection and spaced at intervals no greater than 250-feet.

## OFF-ROAD FACILITIES

Off-road facilities provide an alternative for those less experienced bicyclists, children, and a variety of other non-motorized users, such as pedestrians, skaters, and joggers, with a safe and potentially scenic travel route. These types of facilities appeal to families with children of varying skills and abilities and have been successful in reintroducing the public and communities to bicycling as a form of recreation and transportation. Long stretches of continuous roadway right-of-way, utility easements, railroad easements, shorelines, and parks are excellent locations for these facilities.

Depending on facility location, additional safety measures may be needed due to their potentially secluded nature or terrain.

## SIDE PATHS/BICYCLE PATHS

Side Paths or Bicycle Paths are trails alongside a roadway and should not be mistaken for sidewalks or multi-use trails. Unlike sidewalks, side paths are a non-motorized extension of the road intended for the exclusive or preferential use of

bicycles. A designating feature of side paths compared to multi-use trails is that they do not have their own right-of-way; instead, they share the roadway right-of-way. However, this closeness to the roadway and their intended purpose results in diligence with planning and design of these facilities to reduce conflicts with driveways, side streets, and turning traffic. Side paths should only be used where there are few or no conflicts to connect other bicycle system components, when there is a demand for various users, and not at the expense of on-road bicycle facilities.

Per AASHTO, side paths should be designed as a two-way facility with a minimum of ten (10) feet (prefer 12 feet for high bicycle use areas or for probable shared use by pedestrians or joggers) to allow for the necessary operating and maneuvering of multiple bicycles with a minimum 5 feet (prefer 6 feet) of acceptable separation between it and the roadway to demonstrate its use is for bicycles not motor vehicles. If a five (5) feet buffer is not available due to space constraints, a suitable barrier must be provided, such as vegetation and/or a 54-inch high fence or railing. The path should also have a two (2) foot graded buffer along both sides of the pavement to allow clearance between it and any obstructions.

In some instances and upon further study, engineering, and additional signage, side paths may be narrower due to limited space, such as passing between buildings or utility poles that cannot be moved or across bridges that cannot be modified. These narrow segments of a path may be acceptable or necessary for a short distance, but should be handled on a case-by-case basis and should not be given a blank approval by a community.

Side paths should be adequately signed and all intersections or road crosses should be handled according to AASHTO and MUTCD standards.

### **MULTI-USE TRAILS**



Multi-use trails and greenways are developed to serve bicyclists, runners, walkers, and wheelchairs. Multi-use trails are installed in many locations, such as a connection through residential neighborhoods, along rivers, on abandoned railroad beds, in parks to provide additional recreation, and along utility rights-of-way or within their own right-of-way. Pavement for multi-use trails can range from various

conventional pavements to pervious pavements to compacted screenings. AASHTO and FHWA recommend multi-use trails meet the following:

- A minimum width of ten (10) feet and encourages twelve (12) feet or more where heavy user traffic is anticipated for bi-directional trails
- A minimum width of six (6) feet for single direction trails
- A two (2) foot graded area adjacent to both sides of the trail with a maximum 1:6 slope
- Cleared of vertical obstructions, such as tree limbs lower than eight (8) feet to allow for safe under-passage
- On sloped landscapes, have grades that do not exceed 5% with a graduated scale up to 11% or more for short distances
- A cross slope of less than 2%
- Ninety (90) degree angles should be avoided for safety reasons
- A separation of at least five (5) feet from roadways or a forty-two (42) inch high-physical barrier
- Additional horizontal clearance width is needed for curved trails, trails with steep slopes, and trails with high posted speeds to ensure user safety

Accessibility should be a top consideration for developing these trails; therefore, as many barriers as possible need to be removed.



Informational signs at trail access points indicating steep grades, excessive cross slopes, uneven surfaces, and narrow widths will help users determine if the trail is appropriate for their use. Trails should be built within the land contour and be designed with environmental sensitivity.

When adjacent to canals, ditches or slopes steeper than 1:3, a separation of five (5) feet from the edge of the path pavement to the top of slope is desirable. The vertical clearance should be a minimum of 8 feet; it may be greater (10 feet) if needed to provide for maintenance and access of emergency vehicles.

The trail design needs to take into consideration user experience, bicyclist speeds and environmental conditions; however, the design minimum speed should be 20 mph.

For further guidance on multi-use trails, see North Carolina Division of Bicycle and Pedestrian Transportation website at the following:

<https://connect.ncdot.gov/projects/BikePed/Documents/Shared%20Use%20Pathways.pdf>

## *BICYCLE SIGNAGE*

The use of bicycle signage is an important and basic treatment for improving a community's bicycle network. The installation of informational, regulatory, and warning signs must comply with the Federal Highway Administration Manual for Uniform Traffic Control Devices (MUTCD), Part 9 (Traffic Controls for Bicycle Facilities). However, overuse of signs not only provides visual clutter to motorists, they can foster noncompliance and disregard that could lead to crashes.

Regulatory and warning signs provide helpful information to motorists and bicyclists unfamiliar with an area, notify motorists of the presence of bicyclists, and give bicyclists the ability to use a roadway safely. The use of regulatory and warning signs within school zones can be extremely useful for bicyclist and pedestrian safety, in addition to slowing traffic speeds. There are several different regulatory and warning signs to assist in warning or prohibiting actions by motorists and bicyclists, and they all must comply with MUTCD.

The installation of signage on shared roadways is beneficial to bicyclists and motorists by raising awareness of the potential presence of bicyclists on a road, and by informing or identifying a designated route for bicyclists. The most common bicycle sign seen on roadways is the "Share the Road" sign; however, as mentioned earlier the overuse of this sign can reduce the effectiveness. Additional information on "Share the Road" initiative can be found at: <http://www.ncdot.gov/bikeped/safetyeducation/>

All available signs assist with ensuring traffic flows safely and efficiently whether you are driving or riding a bicycle.



R9-7



W7-5



R7-9



W11-1



W16-1



R5-1b



R9-3c



W8-10



W8-10p



R5-6



M1-9



R3-17



M4-11



R4-11



W11-15\*



W11-15P\*

## BICYCLE PARKING FACILITIES

The selection and placement of appropriate bicycle racks are an important component to a comprehensive bicycle plan. The lack of parking facilities for bicycles tends to keep people from using their bikes for basic transportation due to the risk of theft or possible damage. Therefore, the following guidelines should be considered when selecting and placing bicycle parking facilities in Farmville to promote bicycling and discourage the use of trees, railings, sign posts, and other appurtenances.

When deciding on the type of bicycle parking device to use, the following components should be considered:

1. Level of Security Needed

The level of bicycle security is dependent upon the type of parking needed, short-term or long-term. Short-term parking is generally located in the front of a store or destination, which does not need as much security as long-term parking (i.e., employee parking). The use of racks can be used for short-term parking; whereas, bicycle lockers, locked enclosures, or locked rooms within buildings would provide better security-for-long-term parking needs. All parking facilities should be permanently anchored to prevent moving by bicycle users or vandals.

2. The Type of Rack or Device and How it Works

A rack should support a bicycle upright by its frame in two places, prevent the bicycle wheel from tipping over, enable the frame and either one or two wheels to be locked to the rack, support all types of bicycles, and allow front-in and back-in parking. Racks that do not support the bicycle frame should not be used, since rims can easily become bent if a rack only supports one wheel. Examples of racks not recommended are Comb, Toast, School-Yard, and other Wheel-bending racks.

3. Number of Spaces Needed

Assessing the appropriate number of bicycle parking spaces for different destinations can be done by rough estimates of current users and potential users. Generally, allow roughly 2' by 6' for each bicycle space to allow accessibility. It is recommended that a few racks or parking units be available at first and when demand increases, expand.

## Types of Parking Devices



**INVERTED "U"**

One rack element supports two bikes.



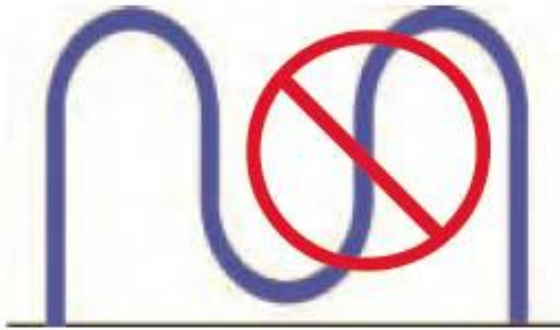
**"A"**

One rack element supports two bikes.



**POST AND LOOP**

One rack element supports two bikes.



**WAVE**

One rack element is a vertical segment of the rack.



**COMB**

One rack element is a vertical segment of the rack.



**TOAST**

One rack element holds one wheel of a bike.

The placement of bicycle parking can be as important to the potential user as any other factor. For instance, a rack placed in the wrong location will not be used. Therefore, the following elements should be used to determine the best possible location:

1. Long-Term and Short-Term Parking Needs.

As mentioned previously, long-term and short-term parking needs differ in the type of parking facility needed in addition to location of those facilities. Short-term parking is needed at popular destinations such as retail stores, libraries, parks, banks, post offices, and other places where there is a high turnover rate of users during the day. Short-term parking should be conveniently located, near building entrances. If a bicyclist has to walk out of their way to use the facility, they will find somewhere closer to park. The best location for a rack is immediately adjacent (within 50' of main entrance) to the building entrance it serves. If more than one building will be served by the facility or a building has more than one main entrance, the parking facility should be distributed to serve all buildings or main entrances. The rack should not impede the pedestrian flow into and out of that entrance.

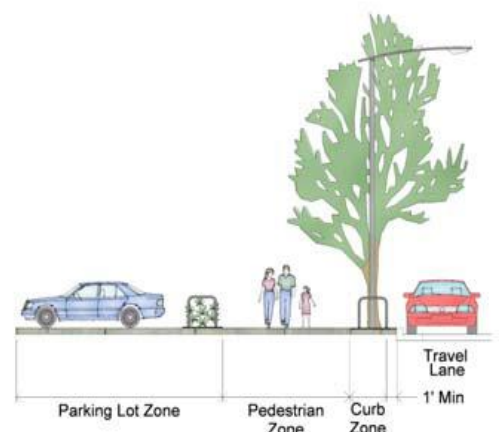


D4-3

Long-term parking is needed at schools, employment centers, and other places where daily user turnover rates are low. Unlike short-term parking, convenience is slightly less important than security for long-term parking.

2. Relationship to Automobile Parking and Traffic Lanes.

If a bicycle facility is placed near a parking lot or traffic lanes, a protection barrier is needed to mitigate potential damage to the bicycle and rack.





3. Relationship to Pedestrian Space

Bicycle parking facilities should not impede into the pedestrian space. It is very easy for pedestrians to become distracted and walk into a rack or parked bicycle potentially resulting in personal injury. Therefore, parking facilities should have a minimum clearance of 48" from a parked bicycle to the edge of the pedestrian path. If this distance is not available, the parking facility should be very noticeable and free of projections.

4. Visibility and Protection.

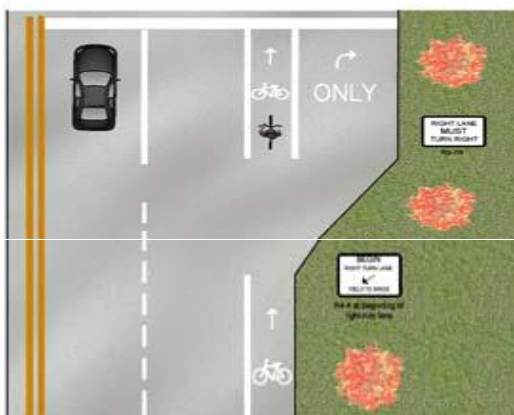
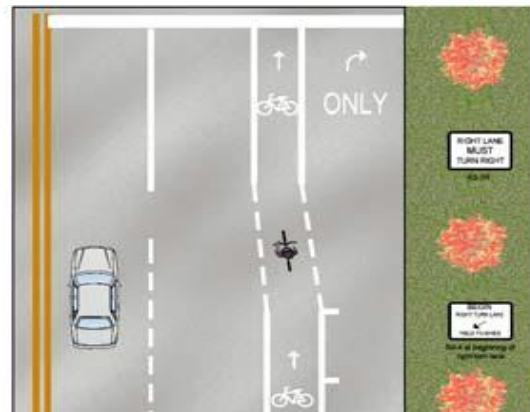
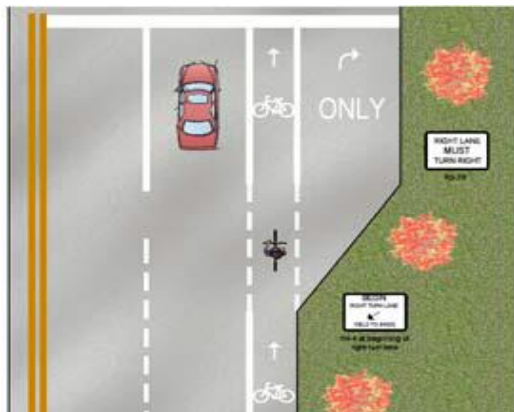
A parking facility should be placed in a location that is highly visible to the surrounding buildings and pedestrian areas, such locations will mitigate possible vandalism, theft, and reduce fears of bike users. All parking facilities should have a bicycle parking guide sign to inform potential users of the parking areas. The placement of parking facilities under roof overhangs (not under the drip line) or other elements will shelter bikes from the weather.

## INTERSECTION TREATMENTS

Designing a smooth transition at intersections for bicyclists and motorists can be difficult, especially handling right-turn lanes. However, there are many different methods to improve intersection conditions for bicyclists and motorists at various intersections. To provide a safe environment for easy turning movements for both bicycles and motor vehicles, on-road applications should be made to ensure: 1) Motorists make right turns as close to the right-hand curb as possible, 2) Bicyclists going straight should be to the left of right turning traffic, and 3) Bicyclists turning left should turn from the left lane or as close to the centerline or the left side lane as possible

### INTERSECTIONS WITH RIGHT-TURN LANES

Intersections with bicycle lanes tend to confuse both cyclists and motorists when it comes to turning movements. Bike-lanes are designed to keep bicyclists to the right side of the roadway; however, without additional signage or markings bicyclists and motorists have a hard time determining how to conduct right-hand turns.



The best option to clarify how bicyclists and motorists should handle a right-turn lane is shown in the illustration on the previous page for streets that do not have on-street parking.

### **SIGNALIZED INTERSECTIONS**

Detection of bicyclists at traffic-actuated signals is crucial for bicyclists' safety and encourages proper crossings of the intersection. Improving an existing signalized intersection with bicycle-activated detector loops can make them friendlier to bicyclists. The purpose of these loops is to allow the bicyclist to trigger change in the traffic signal, since the majority of vehicular detector loops are too large or do not carry the small area a bicycle would occupy in a travel lane.

The loop should be located in the bicyclist's expected path, including left-turn lanes and shoulders. It is also helpful to provide a pavement marking to identify the location where a bicyclist has to be to activate the signal.

However, in some situations, the use of pedestrian or bicyclist-activated buttons may be an acceptable alternative to the use of detectors provided a bicyclist does not have to demount or make unsafe leaning movements to use them.

### **PATH-ROADWAY INTERSECTIONS**

The intersection of a path or trail and a roadway should be at a logical and visible location. Motorists should be warned ahead of time of the approaching trail crossing and the potential trail users should be alerted of the upcoming intersection. Maintaining visibility between trail users and motorists is extremely important for the safety of trail users.



The path-roadway intersection approach should be made at a relatively flat grade so bicyclists are not traveling downhill into the oncoming traffic at the intersection. If the intersection is more than 75-feet from curb to curb, it is desirable for a center median refuge area to be provided for safe crossing of travel lanes.

Bollards and signage are typically placed at the path-roadway intersection to limit entrance onto the trail to pedestrians and bicyclists.

Use of signage and traffic calming features such as speed tables or crosswalks will aid to alert motoring traffic of the potential existence of crossing pedestrian or bike traffic.

Considerations for carefully planned path-roadway intersections should include the following:

- Crossings should be a safe-enough distance from neighboring intersections to not interfere (or be interfered) with traffic flow
- A roadway with flat topography is desirable to increase motorist visibility of the path crossing
- Motorists and trail users should be warned, such as with signage (including trail stop signs), changes in pavement texture, flashing beacons, raised crossings, striping, etc.
- A refuge is needed where crossing distance is excessive and in conditions exhibiting high volumes/speeds and where the primary user group crossing the roadway requires additional time, such as school children and the elderly.
- The crossing should occur as close to perpendicular (90 degrees) to the roadway as possible.
- If possible, it may be desirable to bring the path crossing up to a nearby signalized crossing in situations with high speeds/Average Daily Traffic count and design and/or physical constraints.
- Signalized crossings may be necessary on trails with significant usage when intersecting with demanding roadways, but MUTCD warrants must be met for the installation of a signalized crossing.

## INNOVATIVE DESIGN TREATMENTS

There are several situations or transition areas where innovative design treatments may be used to provide accommodations for bicyclists. The following paragraphs briefly describe those transition areas and offer design and construction guidance.

### COLORED BIKE LANES

The color bike lane treatment involves using colored pavement or paint within the boundaries of a bike lane to help visually elevate the prominence of the bike lane on the road; thus, increasing safety, comfort, and awareness of bicyclists.



### BICYCLE BOULEVARDS

A bicycle boulevard is a shared roadway that has been optimized for bicycle traffic on low-traffic streets that are too narrow to install a bike lane or have a low level of vehicular traffic making a bike lane unnecessary. Bicycle boulevards are generally adjacent to a nearby arterial road with high or potentially high bicycle traffic, and provide a direct, cross-town route. However, in contrast with other shared roadways, bicycle boulevards discourage cut-through motor vehicle traffic with various traffic calming devices, but typically allow local motor vehicle traffic. They are designed to give priority to bicyclists for through-going traffic rather than vehicular.

Stop signs and traffic signals are limited on bicycle boulevards to make the route more attractive to cyclists. Based on site visits, six locations in the Town were found to be potential bicycle boulevard locations, including Contentnea Street, Grimmersburg Street, Pitt Street, Horne Avenue, Pine Street, and Fields Street. These locations are located near proposed facilities (May Boulevard Bike Lanes, Proposed Greenways, Shared Use Path), or adjacent to busy thoroughfares (Main Street).

## **BIKE BOXES**

Bike boxes or advanced stop lines are generally used on busy streets to bring bicyclists to the front of traffic at intersections with priority crossing and turning. The box reduces the possibility of right-hook conflict with motorists. A bike box can be filled with color to provide increased visibility or just striped.

## **BICYCLE ACCOMODATIONS DURING CONSTRUCTION**

Bicycle and pedestrian accommodations should be provided during roadway construction regardless of the project scale. To assist in identifying the appropriate accommodations, AASHTO, MUTCD (Chapter 6) and NCDOT Work Zone Traffic Control Unit have published guidelines and procedures. Some accommodations for bicyclists during roadway construction projects include:

- Advance signage to alert bicyclists of approaching restrictions or closures of bicyclist facilities. Signs usually include "Bike Lane Closed Ahead" or "Bikes Seek Alternative Routes."
- Detour routes as alternatives to the main bicycle route. Providing a detour route with adequate signage will assist a bicyclist in maneuvering around a construction project.

## **SCHOOL ZONES**

According to the Safe Routes to School Guide, "ideally, the school zone starts at the front door and encompasses the campus and as many blocks as possible that surround the school and has a high concentration of school-generated traffic". Normally, the school zone includes the school campus, the streets along the campus, and two blocks around the campus perimeter. The school zone should be well marked with signage (school crossing signs, speed limit signs, etc.), pavement markings, and other traffic calming devices to alert drivers of the high concentration of children.

The MUTCD, Part 7 sets forth principles and standards for controlling traffic in school zones. The manual provides information on appropriate design, application, and maintenance of traffic control devices (signage, pavement markings, signals) and other controls (crossing guards, student patrols, crossings, etc.) required for the special conditions in school areas. Therefore, Part 7 of the MUTCD should be reviewed and followed when improving school zones.

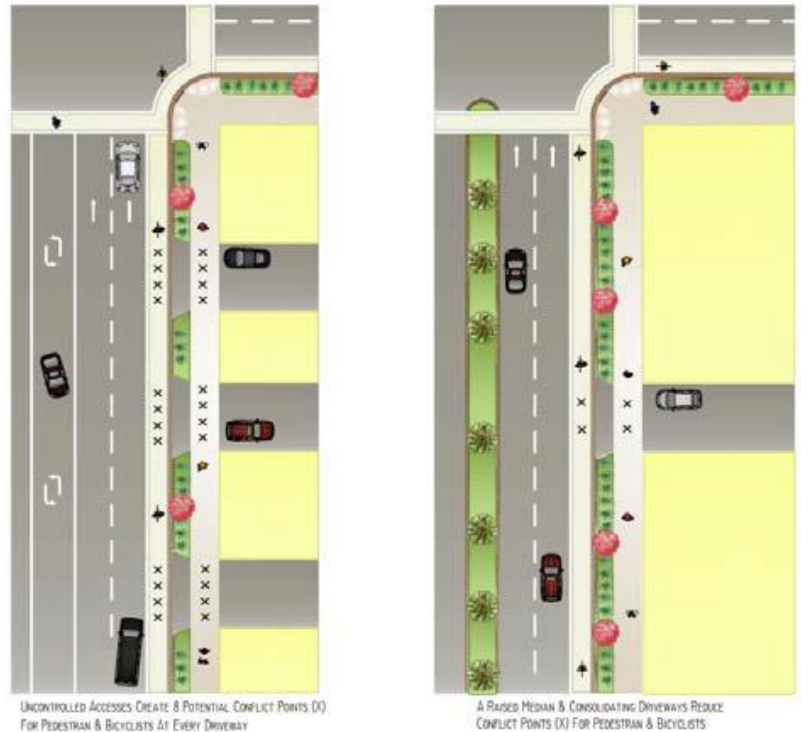
## COMMERCIAL DEVELOPMENT

Commercial establishments generate a high volume of vehicle traffic, which in turn can generate opportunities for pedestrian and vehicle crashes. Uncontrolled access points from the roadways into the parking area of a commercial building or parking lots can all be potential accident areas. It is important that the Town maintain a policy of access management to limit the number of commercial and residential crossings of any sidepath and on roadways with bike lanes.

The driveway ramp design for commercial land uses, the number of vehicle access points, and the distance between existing driveways all have a direct effect on the overall bicycle and pedestrian environment.

Limiting and consolidating vehicle driveways into a commercial site reduces conflict points. This illustration on the right shows how access

management can be done. This method can also reduce the number of vehicle-vehicle crashes if the driveways are located near traffic control devices.



## RESIDENTIAL DEVELOPMENT

Since an overwhelming number of bicycle trips are generated from residential development, applying the above driveway design components will assist in reducing possible conflict points within newer residential areas. In addition, existing or future cul-de-sacs should be connected to the closest local collector street or to other cul-de-sacs in adjoining subdivisions via multi-use paths. This connection will improve connectivity and accessibility to surrounding land uses.

## STREETSCAPE IMPROVEMENTS

The use of street lighting, landscaping, and pedestrian furniture enhances a street environment and provides increased comfort and safety for bicyclists and pedestrians. These elements also turn the street into a pedestrian designation.

### **STREET LIGHTING**

Good placement and quality of lighting can enhance an environment, as well as provide increased bicyclist and pedestrian comfort and safety. Street lighting also improves the motorist ability to see bicyclists and pedestrians at night. Streetlights and building lights within commercial areas can enhance the ambiance of the area, in addition to increased visibility of bicyclists and pedestrians by motorists within parking lots. All intersections should be provided with street lighting to ensure safety of all users. For further guidance on street design lighting, refer to the *AASHTO Informational Guide for Roadway Lighting*. Street level lighting in downtown and along bicycle corridors will improve the atmosphere by providing comfort, security, and safety. The use of uniform lighting levels along all bicycle corridors should be considered in all bicycle facility improvements.

The typical cost of installing street lighting varies by type of fixture used and the utility providers.

### **STREET TREES AND VEGETATION**

The use of landscaping along a street can provide several benefits, such as providing a separation between motorists and pedestrians, reducing the visual width of the roadway and thus producing a traffic calming effect, and providing a more pleasant street environment. Landscaping can include a variety of trees, bushes, and flower beds that can be planted in the buffer area between the sidewalk and roadway or in the street median.

Choosing appropriate plants for the local climate and surrounding area, providing adequate space for growth, and preparing the ground can help ensure they survive with minimal maintenance and do not buckle the sidewalks as they mature. The use of rain gardens and other plant alternatives should also be considered to reduce installation and continuous cost of irrigation. All shrubs should be low-growing and trees should be kept trimmed to at least eight (8) to ten (10) feet to ensure sight distance, vertical clearance, and security.

Landscaping costs vary depending upon the size of planting, plant selection, and additional elements (irrigation and maintenance). However, multiple



entities, such as neighborhoods, businesses, Town, and Non Profits can share the costs.

### *ROAD DIET TREATMENTS*

A road diet is an effective method of improving bicycle-friendliness, safety, and calming traffic along streets. The street is physically narrowed or the street is given the perception of being narrowed. There are several different methods of physically narrowing the roadway:



- Lane widths can be reduced and excess asphalt striped with a bicycle lane or paved shoulders
- Travel lanes are removed
- Sidewalks and landscaped areas are extended or on-street parking is added within the former curb lines

The physical reduction of street widths is usually done along residential streets; however, if a traffic analysis is conducted and lane reduction is determined to be appropriate then the use can be applied on any street. A nonphysical method of street narrowing is planting trees along the street, resulting in a sense of spatial enclosure what will promote reduced vehicle speeds. The use of curb extensions, on-street parking, separated walkways with planting strips, and bike lanes also make the street appear narrower.

## SECTION 6 – RECOMMENDATIONS FOR ANCILLARY FACILITIES, PROGRAMS & POLICIES

This section outlines recommendations for ancillary facilities, programs, and policies to assist in making the Town of Farmville a bicycle-friendly community. These recommendations satisfy Education, Encouragement, and Enforcement categories of a bicycle-friendly community.

The recommendations for programs and policies have been prioritized based on ease with which they can be implemented. The lower cost programs, such as Bicycle Registration and Bicycle Rodeos are prioritized for the short-term, or within five years of the Plan's completion. Mid-term priorities are those that should be addressed within 6 - 10 years and long-term priorities are those that should be addressed beyond ten years from the completion of the Plan. Table 6.0 includes the implementation phases of all recommended programs and policies. Implementation phases of projects are discussed in Section 7.

The implementation of various programs not only encourages bicycling, but also provides education, enforcement, and maintenance opportunities to ensure Farmville has a comprehensive bicycle network where its users feel comfortable to bike in the community.

### *ANCILLARY FACILITIES*

Ancillary facilities are those supporting amenities located at specific destinations and intermediate points throughout the bicycle network. They are an important component to encouraging biking in Farmville. Ancillary facilities include:

- Mapping & Signage
- Traffic Calming Initiatives
- Multi-Use Trailheads and Support Facilities
- Bicycle Repair Stations

### **MAPPING & SIGNAGE**

The Town should consider developing a Bicycle Network Map that identifies the types of road features, destinations, bicycle facilities, and identified routes. The map should be posted in destination areas and available to the public. A Bicycle Network Map would benefit the citizens of Farmville by providing a tool that could be used to promote bicycle routes and education.

The Town should consider signing identified new routes with informative, way-finding signage that can help visitors and residents alike to determine appropriate bicycle routes to various destinations.

## TRAFFIC CALMING INITIATIVES

### Reduce Speeds

While many areas in Farmville already have relatively low posted speed limits, the thoroughfare roads should be examined to see if any biking areas would benefit from reduced speeds. Calming the arterial streets and the connector streets, such as May Boulevard, Marlboro Road, Wilson Street, Grimmsburg Street, and Main Street may improve bicycling routes by increasing bicycling awareness and security.

If the Town determines the need to lower speed limits, then they should contact NCDOT. The authority to lower speeds is set out in NC General Statute 20-141 (f) and states that *"Whenever local authorities within their respective jurisdictions determine upon the basis of an engineering and traffic investigation that a higher maximum speed than those set forth in subsection (b) is reasonable and safe, or that any speed hereinbefore set forth is greater than is reasonable and safe, under the conditions found to exist upon any part of a street within the corporate limits of a municipality and which street is a part of the State highway system (except those highways designated as part of the interstate highway system or other controlled-access highway) said local authorities shall determine and declare a safe and reasonable speed limit. A speed limit set pursuant to this subsection may not exceed 55 miles per hour. Limits set pursuant to this subsection shall become effective when the Department of Transportation has passed a concurring ordinance and signs are erected giving notice of the authorized speed limit."*

### Use Bicycle Friendly Devices

Traffic calming devices are intended to create safer roadway conditions for bicyclists and slow motor vehicle speeds. The following bicycle-friendly devices will aid in calming traffic and provide bicycling facilities:

- **Raised crosswalks and curb extensions.** Raised crosswalks are flat-topped speed humps placed in intersections or specific pedestrian crossing areas to slow motor vehicle speed and raise awareness of pedestrians in the roadway. Curb extensions may slow motor vehicle speed by creating shape to a roadway. Installation of curb extensions works well when placed on alternating sides of the road to form S-shaped curves.
- **Speed cushions with wheel cut-outs, or gaps, for bicyclists.** Speed humps and cushions change the level of the road to slow the speed of motor vehicles, yet they can be inconvenient and potentially

dangerous for cyclists. Installation of wheel cut-outs, or gaps, in the speed cushions provides a bike-friendly element to the roadway to avoid the full impact of the traffic calming device.

- **Bypass lanes for bicyclists at narrow parts of the road.** When roadways narrow, motorists tend to slow their speed as they travel. However, when cyclists are traveling along a narrow roadway, motorists drive closer to cyclists in order to pass them. Installation of bypass lanes for bicyclists at narrow parts of the roadway will provide a safer condition for cyclists to travel.

For new or reconstructed streets, implement guidelines that call for traffic calming:

- **Lane Diet:** reduce the width of traffic lanes and lower the speed. Since motorists tend to slow their speed on narrow roads, reducing the width of traffic lanes and lowering the speed limit will aid in traffic calming. During planning phases, a roadway should be evaluated to consider the addition of bike lanes as a result of reducing the width of traffic lanes.
- **Add or widen medians,** which will limit turning locations. The addition of medians along the centerline of the roadways will limit cross traffic to designated intersections, or breaks in the medians.
- **Stripe marked bicycle lanes** to improve bicycle access. Bike lanes provide an area of exclusive-use for cyclists and when appropriately striped and signed they increase motorist awareness of bicyclists in the roadway

## **BICYCLE PARKING FACILITIES**

Providing bicycling facilities in Farmville will encourage bicycling, thus increasing bicycling trips and reducing vehicular traffic. Parking racks should be located in popular destinations such as downtown, shopping centers, parks, schools, and public buildings to facilitate the parking needs of cyclists. See Section 5 for bicycle parking guidelines and standards.



## **MULTI-USE TRAILHEADS AND SUPPORT FACILITIES**

Entrances into multi-use trails are excellent locations for posting safety and general bicycle education material, as well as information on the trail route. The trailhead could also include various support facilities such as vehicular parking, restrooms, drinking fountains, picnic shelters, benches,

bicycle racks, trash receptacles and other types of amenities to ensure the trail is an inviting and pleasurable destination. An example of a Trailhead can be seen on the left from nearby Williamston, North Carolina.

## **BICYCLE REPAIR STATIONS**

Bicycle service stations are beneficial to the bicycling network because of the variety of services that may be incorporated into the facility. Bicycle service stations may include air pumps for tire repair, tools, parking racks, water fountains, benches and more. While the services may vary, the facility may become a place to meet or be incorporated into existing destinations.

## **PROGRAMS**

### **'SPOT' IMPROVEMENT PROGRAM**

The Town should consider implementing a 'Spot Improvement Program' to identify, report, and correct potential issues on the roadways. The potential issues may include pothole repair, grate repair/replacement, bridge rails, or cracked pavements. The Town should consider an online notification form on the Bicycle and Pedestrian page which would allow residents to report needed repairs online (see Encouragement Programs & Initiatives sub-section for discussion of web page).

### **INFRASTRUCTURE MAINTENANCE PROGRAM**

Infrastructure maintenance of bicycle facilities may include involvement of the community through creative programs such as "Adopt-a-Trail" or donation of bicycle parking racks. Involving the community would increase awareness of the bicycling network in Farmville and promote local businesses and vendors. An infrastructure maintenance program is recommended as a short-term priority to

maintain existing bicycle facilities. As new bicycle projects are implemented, the program will need to be expanded to maintain additional bicycle facilities.

## **EDUCATION PROGRAM**

The importance of educational programs must be addressed with the issue of bicycle safety. Bicycle crash data indicate that collisions involve improper actions on the part of bicyclists, motorists, or both. Efforts to reduce bicycle-motor vehicle crashes need to include educational programs to increase awareness of improper actions and promote correct actions. Safety education programs must include components for bicyclists and motorists. Education programs are a short-term and ongoing priority to provide instruction to bicyclists, pedestrians, and motorists.

### Bicycle Rodeo Program

It is recommended that the Town of Farmville offer Bicycle Rodeo programs to educate children and parents about safe bicycling skills. This could be accomplished through potential partnerships among the Police Department, Parks and Recreation Department, and local shops and businesses. The Town should continue those programs including activities such as an obstacle course, hand signal instruction, bike safety prizes (helmets, lights, vests) and bike maintenance courses. This program is recommended as a short-term priority.

### Bike Law Education for Police

Partnering with law enforcement is an essential component of bicycle programs that seek to enable all users to share roadways safely. These partnerships help to provide information about and ensure consistent enforcement of bicycle safety laws. They also address motorist as well as cyclist behavior. The Town and the Police Department should partner in this effort, with components of this collaboration including:

- Development of courses for law enforcement officers about bicycle safety and laws, and Safe Routes to School
- Development of Bicycle Safety Enforcement Plans
- Development of easy reference materials for officers, such as brochures
- Development of bicycle safety videos
- Joint education and enforcement activities conducted by law enforcement officers and volunteers

### Smart Cycling Program

The American League of Bicyclists offers courses to adults and children to teach bicyclist and motorists how to ride safely and share the road. The American League of Bicyclists offers rider education based on curricula set forth in the Smart Cycling Program. Smart Cycling courses are taught throughout the United

States by certified instructors. The Smart Cycling Program is recommended as a mid-term priority in order to allow the Town time to implement additional bicycle facilities in an effort to create a more bike-friendly environment.

## **ENFORCEMENT PROGRAM**

### Public Relations & Awareness Program

A Public Relations & Awareness program is recommended as a short-term priority and should be evaluated and expanded as bicycle facilities are implemented throughout Farmville. The Town should consider developing pamphlets to educate motorists and bicyclists of the rules of the road, as well as include information on various biking routes around Farmville. The pamphlets could be distributed by the Town's Recreation Department, Police Department during enforcement patrol, Visitors Center, and local businesses. Farmville should consider installing bicycle friendly signs, or "Share the Road" signs, at "gateways" to raise awareness that Farmville is bicycle-friendly. It is also recommended that this signage be included along major thoroughfares and at locations of high traffic volume. Signage helps to create an understanding that bicyclists and motorists shall share the road.

### Bicycle Registration Program

A Bicycle Registration program is recommended as a short-term priority. Bicycle registration programs have been effective in returning lost or stolen bikes to their owners by matching serial numbers. Serial numbers are a set of characters that uniquely identify an object and can be used for traceability and warranty purposes. Bike serial numbers can be used in national record systems and increase the chances of returning a bicycle to its registered owner. When bikes are registered, the owner submits, to the police department, the serial number and identifying features, such as color and size, in addition to the owner's contact information. An identification stamp will be applied to the bike. While this program already exists, the Town should consider increasing awareness of this program by providing a mobile registration unit at local schools, community and neighborhood events to actively register bicycles instead of requiring the bike to be brought to the Department. The police department may consider a nominal processing fee for bike registration.

### Bicycle Helmet Give-Away Program

To enforce bicycling rules and encourage safety and compliance, the Town should consider promotional programs that include donating helmets and/or night-lights to cyclists that lack proper equipment. The Police Department, in conjunction with Pitt County Schools for younger riders, should consider conducting helmet giveaways and also consider providing night-lights and other safety equipment. In its enforcement program, vouchers for helmets may be provided when riders without helmets are noticed. To assist in providing

helmets and funding for helmets and other safety equipment, the Town should look at opportunities such as the NCDOT Bicycle Helmet Initiative and the Wal-Mart Foundation. The bicycle helmet giveaway program is recommended as a short-term priority to increase the safety of bicyclists in Farmville.

#### Police-on-Bikes Program

A program that can have a positive affect on multiple fronts, Police-on-Bikes would provide a positive example of cycling for the public, encouraging civilians to try bicycle transportation. Riding bikes would assist in keeping police more active and fit and help connect them to the community, making them less hidden and isolated from neighborhoods than police driving in cars. As officers begin experiencing the streets from the cyclist's point of view, they will be less inclined to tolerate motor vehicle speeding and red-light running — the major causes of accidents for cyclists and for everyone else. Bike patrols can also save money, as the total cost of purchasing, outfitting, and maintaining a police bicycle, for the life of the bike, is a tiny fraction of the cost of patrol cars.

### **ENCOURAGEMENT PROGRAMS & INITIATIVES**

General promotion of bicycling in Farmville can be accomplished by enhancing the town's website: (<http://www.farmville-nc.com/>). Currently, bicycling is not addressed on Farmville's website. It is recommended that bicycle safety and promotion be included. It is recommended that a Bicycle and Pedestrian webpage be created on the Recreation portion of the Town's website. On this page, the Town can post proposed bicycle routes, maps, safety tips, promotional brochure and promotional events involving bicycling. The proposed SPOT Improvement Page could also be linked to this page. The Police Department's webpage could be improved to include a link to Bicycle Safety Tips, as well as the proposed brochure. This program is recommended as a short-term priority and the Town should continue to use its website for general promotion of safe bicycling. Additionally, the Town should consider posting on its website the benefits of bicycling, rules, bicycle routes, recommendations, and project updates.

#### Bicycle Parking Rack Installation Program

With an increase in bicycle transportation, adequate parking facilities will be needed. It is recommended that the Town develop a bicycle parking rack installation program. This would benefit the community by providing bicycle parking at major private and public destinations in Farmville. Bicycle parking racks encourage bicycling by providing a secure location for cyclists to store their bikes while visiting a destination. Destinations recommended include Town Hall, Piggly Wiggly, and the Food Lion Shopping Center. The Town should consider a bicycle parking rack installation program as a short-term priority due to the current lack of bicycle parking facilities.



### Bicycle and Pedestrian Advisory Committee

As a short-term priority, the Town should consider establishing a standing Bicycle and Pedestrian Advisory Committee to advocate for bicycle and pedestrian-friendly Town policies and actions. Citizens currently serving on the Bicycle and Pedestrian Plan Steering Committees, as well as any additional interested citizens, would serve as committee members and Town staff would facilitate committee meetings. A Bicycle and Pedestrian Advisory Committee would meet regularly to discuss issues; provide recommendations and/or advise Town staff regarding bicycle and pedestrian related concerns and actions. Additionally, the committee may consider coordinating an annual event, generating brochures or marketing materials, and/or reviewing development plans for bicycle and pedestrian friendliness.

### *POLICIES*

Bicycle friendly policies are an efficient way to improve bicycling in Farmville because they require bicycle facilities at the onset of development rather than a retroactive approach. The Town should consider modifying its local ordinances and policies to provide a balanced approach to both on and off-street bicycling and support facilities; including a more detailed guideline for bicycle parking and amenities.

### **ZONING ORDINANCE & SUBDIVISION REGULATIONS**

Currently, the Town can recommend that bicycle facilities be incorporated into new development projects, but there is no Town policy to require such facilities. Farmville acknowledges the need for regulations requiring bicycle facilities as development occurs. Farmville should consider revising its Zoning Ordinance and Subdivision regulations to set a standard for the Town and require bicycle facilities with certain development requests. Farmville should consider an ordinance requiring bike facilities on all arterial and connector roads as development occurs as well as providing connections to neighboring roads and bike facilities. Additionally, the Town should include greenway set-asides to promote future development through conservation of recreational land. Local policies and ordinances related to bicycling were discussed in Section 3 of this Plan.

### **COMPLETE STREETS ORDINANCE**

As a short-term priority recommendation, Farmville should develop and implement a Complete Streets Ordinance to ensure all new and reconstruction of roadways have "complete street" elements (components for all types of

transportation) incorporated into the design and construction as appropriate. These elements include:

- ADA-complaint curb cuts
- ADA-compliant sidewalk improvements
- New bicycle lanes
- Pedestrian medians
- Roadside improvements for public transportation; including bus shelters and bus priority traffic signals (as appropriate)
- Traffic calming measures, such as chicanes, curb extensions, and speed humps/tables
- Improved landscaping and streetscape features, such as benches, trees, and street/pedestrian lighting
- Intersection and crosswalk improvements for all non-motorized users
- Other improvements to ensure safety, accessibility, and quality of the roadway

### **MAINTENANCE SCHEDULE**

The Town should consider implementing bicycle facilities into the regular maintenance schedule to maintain safety and usability of facilities. Maintenance activities may include repairing bicycle-parking racks, cracks/potholes in pavement, restriping of lanes, and removal of debris from the roadways/shoulders. Including bicycle facilities in the established maintenance schedule will place a priority on and establish a standard for adequate facilities. A maintenance policy is a mid-term and ongoing priority to maintain new and existing bicycle facilities.

### **TOWN FUNDING**

The Town should consider allocating resources on an annual basis to establish a bicycle network, maintain existing facilities, and fund programs and on-going activities directed towards encouragement, enforcement, and education. The allocation of Town funding for bicycle facilities will be an ongoing need.

### **BICYCLE PARKING ORDINANCE**

The Town should consider including bicycle parking in permitted uses or districts to ensure that alternative transportation is adequately served. The bicycle parking ordinance should define the number of expected parking spaces rather than the number of expected racks as racks can be constructed to hold a wide range of spaces for bikes. The downtown and commercial areas of Farmville would benefit from this type of ordinance because cyclists would have a place to safely secure their bicycles. The requirement to provide bicycle parking to

certain land uses will encourage bicycling and reduce vehicular congestion. The bicycle parking ordinance should also recommend that bicycle parking racks be placed in identifiable locations to promote convenient access. A bicycle parking ordinance is recommended as a short-term priority.

### **NEW BRIDGE CONSTRUCTION PROJECTS – BICYCLE AND PEDESTRIAN FACILITY DESIGN ORDINANCE**

As a mid-term priority, Farmville should consider an ordinance requiring bicycle accommodations on all new bridge projects. Currently, there are no identified bridge replacement projects. However, when projects are planned, bicycle facilities should be implemented to provide safe crossings to bicyclists, pedestrians, and motor vehicles.

### **STREET IMPROVEMENTS ORDINANCE**

The Town should consider an ordinance requiring bikeway construction on all streets that would provide for continuation and enhancement of existing bikeways, provide access to current or future school sites, or that would conform to the adopted bicycle plan. A Streets Improvements Ordinance is recommended as a short-term priority to enhance connections and expansions to the Town's proposed bike routes.

### **COMMERCIAL DEVELOPMENT DESIGN ORDINANCE**

It is important that the Town maintain a policy of access management to limit the number of commercial and residential crossings of any sidepath and on roadways with bike lanes. Uncontrolled access points from the roadways into the parking area of a commercial building, parking lots, and access from parking lot to the building can all be potential accident areas. Limiting and consolidating vehicle driveways into a commercial site reduces conflict points.

### **BIKEWAYS AND BIKE FACILITIES ORDINANCE**

The Town should consider adopting an ordinance that would define the various types of bikeways and bicycle facilities and set forth a set of criteria for development of such facilities. All criteria should be consistent with minimum approved measures set forth by the NCDOT. The Town should consider developing an inventory of bike routes and facilities as they are developed or installed. A Bikeways and Bike Facilities Ordinance is recommended as a short-term priority to establish criteria for the design and implementation of future bicycle facilities.

<b>Table 6.0: Implementation Table</b>	
<b><i>Program Name</i></b>	<b><i>Implementation Phase</i></b>
SPOT Improvement Program	Mid-Term
Infrastructure Maintenance Program	Short-Term
Bicycle Rodeo Program	Short-Term
Bike Law Education for Police	Short-Term
Smart Cycling Program	Mid-Term
Public Relations & Awareness Program	Short-Term
Bicycle Registration Program	Short-Term (Conjunction with Bicycle Rodeo and other Town Events)
Bicycle Helmet Give-Away Program	Short-Term
Police-on-Bikes Program	Short-Term
Bicycle Parking Rack Installation Program	Short-Term
Bicycle and Pedestrian Advisory Committee	Short-Term
<b><i>Policy Name</i></b>	<b><i>Implementation Phase</i></b>
Zoning Ordinance & Subdivision Regulations	Short-Term
Complete Streets Ordinance	Short-Term
Maintenance Schedule	Mid-Term
Town Funding	Mid to Long-Term
Bicycle Parking Ordinance	Short-Term
New Bridge Construction Projects - Bicycle and Pedestrian Facility Design Ordinance	Mid-Term
Street Improvements Ordinance	Short-Term
Commercial Development Design Ordinance	Mid-Term
Bikeways and Bike Facilities Ordinance	Short-Term

## SECTION 7 – PROJECT RECOMMENDATIONS

### CONSTRUCTION PROJECTS

The initial list of potential project locations was developed based on input from the Steering Committee meetings, Town staff, the public survey, and the results of the field inventory. Bicycle considerations should be included as part of all new road/street construction and maintenance improvement processes.

A wide range of projects have been identified to make Farmville more bicycle-friendly. Physical improvements including adding bike lanes, greenways, and bicycle boulevard striping and signage are recommended. Fifteen (15) construction projects are recommended including six (6) Bike Boulevards, two (2) greenways, one (1) bike lane, and six (6) "Share the Road" signage corridors. Additionally, two (2) railroad crossing improvements have been recommended. A description of all construction projects are found in Table 7.0.

Table 7.0 is the recommended listing of bicycle improvement construction projects. Refer to Map 7.1 for locations of the projects. The following definitions apply to the terms as utilized in Table 7.0:

- *Type of Project* - Identifies project type (sidewalk, greenway, shared use path, crosswalks improvements, railroad cushions)
- *Project / Improvement Name* - Identified project name
- *At/On* - Identifies location of project (street, intersection, etc)
- *From* - Identifies starting point of construction project
- *To* - Identifies ending point of construction project
- *Approximate Length (ft)* – Identifies approximate length of project in feet
- *Preferred Treatment* – Identifies recommended project improvement(s)
- *Preliminary Opinion of Probable Costs* - These costs are rough estimates and should not be considered final. Surveying, engineering design, environmental considerations, rights-of-way considerations and coordination among interested parties need to be completed to determine costs to be utilized for specific project budgeting.

- *Estimated Cost Range* – Magnitude of estimated cost calculated using various sources.
  - *Minimal*: Cost estimate for project is \$10,000 or less based on existing conditions, proposed treatment, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.).
  - *Low*: Cost estimate for project range from \$10,001- \$99,999 based on existing conditions; proposed treatment, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.).
  - *Moderate*: Cost estimate for project range from \$100,000 - \$299,999 based on existing conditions, proposed treatment, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.).
  - *High*: Cost estimate for project range is \$300,000 or higher based on existing conditions, proposed treatment, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.).
- *Implementation Phase* - Phasing schedule category based upon their preliminary estimated cost, priority ranking, and constructability.

Greenway	Bicycle Lane	Bicycle Boulevard	Bicycle Boulevard	Bicycle Boulevard	Bicycle Boulevard	Bicycle Boulevard	Bicycle Boulevard	Project Type
North Farmville Greenway	May Boulevard Bike Lane	Fields Bike Boulevard	Pine Bike Boulevard	Horne Bike Boulevard	Pitt Bike Boulevard	Grimmersburg Bike Boulevard	Contentnea Bike Boulevard	Project Name
New Location	May Blvd.	Fields	Pine	Horne	Pitt	Grimmersburg	Contentnea	At/On
FC High School	Horne Ave.	Horne Ave.	Fields St.	May Blvd.	Horne Ave.	Main St.	Main St.	From
May Blvd.	Park Dr.	Pine St.	Pitt St	Davis Dr.	Main St.	Wilson St.	Pine St.	To
16,000	4,100	1,800	3,500	4,800	5,800	4,200	4,400	Length (Ft.)
Signage/ Pavement Markings	Signage/ Pavement Markings	Signage/ Pavement Markings	Signage/ Pavement Markings	Signage/ Pavement Markings	Signage/ Pavement Markings	Signage/ Pavement Markings	Signage/ Pavement Markings	Treatment
\$2,112,000	\$18,825	\$3,850	\$7,425	\$10,200	\$12,350	\$8,950	\$9,400	Probable Cost
NA	60'	25'	30'	50'	50'	50'	60'	Road Width
NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Curb and Gutter
NA	60'	50'	45'	50'	50'	50'	50'	ROW
NA	45	35	35	35	35	25- 35-	35	Speed Limit

Signage	Signage	Signage	Signage	Signage	Signage	Signage	Signage	Signage	Signage	Greenway	Project Type
Wilson Share the Road	NC 121 Share the Road	Fields Share the Road	Moye-Turnage Share the Road	Marlboro Share the Road	Main Street Share the Road	Pitt County Greenway	Wilson St.	NC 121	Greenway	Project Name	
Wilson St.	NC 121	Fields St.	Moye-Turnage Rd.	Marlboro Rd.	Main St.	New Location	Wilson St.	NC 121	At/On		
Grimmersburg St.	Stantonsburg Rd.	Pine St.	Wilson St.	Ratley Rd.	NC 121	May Blvd.	Grimmersburg St.	Stantonsburg Rd.	From		
Thorne Dr.	Contentnea St.	Marlboro Rd.	Wesley Church Rd.	Dr. Jones Rd.	Marlboro Rd.	FC High School	Thorne Dr.	Contentnea St.	To		
12,700	3,700	5,800	4,100	16,400	9,800		12,700	3,700	Length (Ft.)		
Signage	Signage	Signage	Signage	Signage	Signage	Signage/Pavement Markings	Signage	Signage	Treatment		
\$4,800	\$1,400	\$2,200	\$1,150	\$6,200	\$3,700	\$7,560,000	\$4,800	\$1,400	Probable Cost		
50	25'	25'	20'	65'	60'	NA	50	25'	Road Width		
Yes	No	No	No	Yes (Town Limits)	Yes	NA	Yes	Yes	Curb and Gutter		
50' – 60'	50' – 60'	50'	100'	150'	50' – 60'	NA	50' – 60'	50' – 60'	ROW		
35	50	35	45'	45	35	NA	35	35	Speed Limit		



Project Type	Project Name	At/On	From	To	Length (Ft.)	Treatment	Probable Cost	Road Width	Curb and Gutter	ROW	Speed Limit
Railroad Crossing	Main Street Railroad Crossing	Main Street	NA	NA	NA	RR Crossing Cushion/ Flangeway Filler	\$5,000	60'	Yes	60'	35
Railroad Crossing	Fields Street Railroad Crossing	Fields Street	NA	NA	NA	RR Crossing Cushion/ Flangeway Filler	\$5,000	25'	No	50'	35

<b>Project Name</b>	<b>Implementation Phase</b>
Contentnea Bike Boulevard	Short Term
Grimmersburg Bike Boulevard	Short Term
Pitt Bike Boulevard	Short Term
Horne Bike Boulevard	Mid-Term
Pine Bike Boulevard	Short Term
Fields Bike Boulevard	Short Term
May Boulevard Bike Lane	Mid-Term
North Farmville Greenway	Long Term
Pitt County Greenway	Long Term
Main Street Share the Road	Short Term
Marlboro Share the Road	Short Term
Moye-Turnage Share the Road	Short Term
Fields Share the Road	Short Term
NC 121 Share the Road	Short Term
Wilson Share the Road	Short Term
Main Street Railroad Crossing	Long Term
Fields Street Railroad Crossing	<b>Long Term</b>

### *PRIORITIZED PROJECTS*

Project development and prioritization was a multi-step process which included the identification of locations for potential projects, determining the appropriate treatments for projects, and prioritizing those projects. Following project development, projects were then prioritized based on the following factors:

- **Public Input:** information from Steering Committee, comments from participants in Public Open Houses and public survey.
- **Project Characteristics:** During the fourth Steering Committee Meeting, members were asked to select priority criteria based on factors that include safety, connectivity to major destinations, immediate need, and other factors. These results were used to identify top priorities.
- **Constructability and Cost:** Including site preparation, engineering services, easement purchases, preliminary design, and ease of construction.

Project prioritization involved a process which included all of the above factors. Appendix D contains details concerning the methodology of project prioritization. Projects were rated on key characteristics and received one point for having any of the project characteristics listed above. A project cost analysis was compared to the list of projects organized by project rating. Projects which were estimated to be low cost and also received high ratings were placed in the short term project category. Projects with high costs and low ratings were

placed in the long term project category. Mid-term projects included those projects with low costs and low ratings as well as projects with high costs and high ratings.

All construction projects are listed by priority ranking in Table 7.1.

#### *SHORT-TERM PROJECTS*

Short-term opportunities are those that may be completed or implemented in a timeframe of zero to five years (0-5 yrs.). The following projects should be considered in the short-term of implementation of the Pedestrian Plan (Table 7.2).

#### *LONG-TERM PROJECTS*

Long-term opportunities are those that may be completed or implemented in a timeframe beyond ten years. The following opportunities should be considered in the long-term of implementation of the Pedestrian Plan (Table 7.3).

## SECTION 8 – IMPLEMENTATION PLAN



### IMPLEMENTATION STRATEGY

This chapter describes how the recommendations for improving Farmville's bicycle conditions will be implemented. Priorities are outlined for projects, plans, and policies as well as potential partners and funding sources. Implementation of this plan will require a collaborative effort between a variety of Town departments and agencies. The Town's staff should be aware of the plan recommendations and seek to implement them as part of other regular work efforts. The NCDOT Division of Bicycle and Pedestrian Transportation may provide technical expertise on issues related to bicyclist and ensure that implementation of the plan moves forward. Progress on improving the plan should be monitored on at least an annual basis. Almost every project involving street or transportation improvements offers an opportunity to implement a component of this plan. Implementation priorities of recommended programs and policies are listed in Table 6.0 Implementation Table.

## INITIATING ACTIONS

The following initiating actions will ensure implementation of the Comprehensive Bicycle Plan and help the Town to meet the goals and objectives of it.

### **Action: Establish a Standing Bicycle and Pedestrian Advisory Committee**

- Establish an on-going committee to monitor progress of the plans implementation. Section 7 of this document includes a comprehensive list of all recommended projects. Projects are listed according to priority rank by project type.
- Review development plans to identify opportunities for bicycle and pedestrian facilities.

### **Action: Providing Bicycle Facilities as parts of all existing/proposed roadways**

- Accommodate bicycles as part of all new roadway projects. Seek opportunities to provide lanes, sharrows, and signage as part of road projects in an effort to provide the Town additional bicycle facilities.
- Incorporate requirements for bicycle facilities into the Town's policies and ordinances.

### **Action: All Town departments should consult the Comprehensive Bicycle Plan when implementing projects and conducting plan reviews.**

- Farmville's development review process should be modified to include requirements for on and off- site bicycle connections, paths, greenways, and other amenities.
- Establish a Bicycle Committee to review development plans.

### **Action: Develop a Bicycle Education Program and Enforce Traffic Laws.**

See Section 6 for recommended programs, such as Safe Routes to School and other encouragement programs.

- Develop a bicycle education program as part of the Town's overall communication and education programs.
- Use the Town's website, newsletter, and local newspaper as information and educational tools

- Use Local Public Access Channel to advertise Bicycle Safety Education Public Service Announcements as well as any events

**Action: Plan and Construct Bicycle Amenities.**

- Develop and provide maps of bike routes, and popular destinations. See Section 6 for discussion related to route designation, mapping, route signage, and other facilities.

**Action: Reduce Speed Limits and Use Bicycle-Friendly Devices.**

The Town should consider traffic calming measures and/or speed reductions on roads designated as Bicycle Boulevards or those with high levels of bicycle activity.

**Action: Update the Comprehensive Bicycle Plan every 5 - 10 years.**

Updates to the plan are essential in aiming to address the changing needs and priorities in Farmville. The plan should be reviewed on no less than an annual basis, with public input serving as an essential piece for future plan updates and reviews.

**Action: Evaluate new bicycle facility treatments.**

New bicycle treatments should be evaluated to determine their effectiveness. The results of the evaluations will be used to refine, adjust, and guide future use of these treatments. Cyclist usage, motorist response, safety, and maintenance needs should be addressed during evaluation of new bicycle facilities. This includes the evaluation of the following facilities:

- Roadway markings/treatments
- Signage

**Action: Establish partnerships based on their potential interest or involvement in a project.**

The Town should look to local agencies, businesses, organizations and governmental departments to provide partnership opportunities to assist them in meeting the goals of the Bicycle Plan. These partnerships may be utilized to develop bicycle education, enforcement, and encouragement programs.

Farmville should consider establishing or strengthening partnerships with the following to achieve the completion of the Plan's projects and recommendations:

- North Carolina Department of Transportation
- Mid-East RPO
- Mid-East Commission Local Government Services Department
- Pitt County Health Department
- Pitt County Schools
- Farmville Chamber of Commerce
- Local Businesses
- Local Developers
- Local Pedestrian Clubs
- Neighborhood Associations
- Elected Officials

## PERFORMANCE MEASURES

The Town of Farmville should continue to monitor performance measures following the adoption of the plan. In doing so, the Town can determine the amount of progress being made toward the eventual goal of achieving the plans vision. These measures should be reviewed and updated every few years to ensure that goals which require the Town's resources are being met when the resources are available.

## EVALUATION/MONITORING PROCESS

The Town, in partnership with the Mid-East Rural Planning Organization, should provide an ongoing evaluation of bicycle facilities in Farmville to determine that the goals and objectives of the Bicycle Plan are being met. These organizations must also continue to monitor it. The goals and objectives should continually be modified to reflect changing circumstances or attitudes in Farmville. It is recommended that the evaluation be conducted biannually with concern towards the goals of the plan. Performance monitoring should be led by the Town's Planning Department with support of a Bicycle/Pedestrian Advisory Committee and the Mid-East RPO staff. Performance measures are used to monitor progress towards the vision of the plan. Based on the recommendations made in the plan, Farmville can measure success a number of ways, including

- Miles of on-street facilities and other bicycle routes created
- Changes in the number of people using bicycle programs
- Creation/Adoption of multi-modal policies that improve the quality of cycling experience
- Connections to surrounding communities/multi-modal facilities
- New linear feet of multi-modal accommodation



## APPENDIX A – PUBLIC INVOLVEMENT STRATEGY

During the development of the Bicycle Plan, public input from a range of community members was sought through a variety of means. During the planning process, a public input survey, Steering Committee meetings, and public open house informational booth at the Farmville Dogwood Festival provided the public insight into the planning process, as well as give them an opportunity to provide input.

A Public Input Survey was conducted at the start of the planning process to learn more about bicycling habits, users, points of interest, areas of concerns, and other relevant information that would assist in the development of the plan. An overview of survey results can be found in Section 2 of this document, with the full results as follows:

A Steering Committee comprised of members from a variety of backgrounds and areas in Farmville met on four occasions to assist in guiding the development of the plan. This group was responsible for deciding the projects that have been included, as well as deciding the priority of each project included in this document.



In addition to Steering Committee meetings, a Public Open House was held at the Farmville Dogwood Festival to provide insight into the plan, as well as allow citizens to provide their ideas and thoughts, as well as give input on areas they would like to have access to and areas they avoid due to safety concerns. Additional input was received through Open Houses at the Farmville Community center in December 2013 and May 2014.



## **Town of Farmville - Comprehensive Bicycle Plan**

PLAN STEERING COMMITTEE

September 10, 2012 - 5:30 p.m.

### **MEETING AGENDA**

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- I.     **Introductions**
- II.    **Purpose of the Plan**
- III.   **Scope of Work**
- IV.    **Vision Statement**
- V.     **Roles in the Planning Process**
- VI.    **Meeting Dates/Attendance**
  - Best Days to Meet
  - Notification of Meetings/Attendance
- VII.   **Staff Contact**



## **Town of Farmville - Comprehensive Bicycle Plan**

PLAN STEERING COMMITTEE

November 12, 2012 - 5:30 p.m.

### **MEETING AGENDA**

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- I. **Welcome/Introductions**
- II. **Public Input Surveys**
  - Finalize Survey Questions
  - Discuss Distribution Method/Locations
- III. **Vision Statement Development**
  - Finalize Statement
- IV. **Site Visit Discussion/Map Mark-Up**
  - Areas of Focus
  - Committee Input
- V. **Stakeholder Interviews**
  - Suggested Stakeholders?
- VI. **Bike Plan Open House Planning**
  - Discuss potential dates/times in January
    - Monday January 14, 4-7 PM???
  - Potential Locations
- VII. **Next Meeting Date**
  - Monday February 11, 2013, 5:30 PM



## **Town of Farmville - Comprehensive Bicycle Plan**

### **PLAN STEERING COMMITTEE**

April 17, 2013 - 2:00 p.m.

### **MEETING AGENDA**

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- I. **Welcome/Introductions**
- II. **Discuss Meeting Format**
- III. **Community Assessment**
  - Corridors safe for cyclist
  - Corridors to avoid for cyclist
  - Special Events/Rides through Farmville
  - Safety/Education Events
- IV. **Safety/Education Program Recommendations**
  - Discuss establishment of Bicycle and Pedestrian Advisory Board
  - Discuss recommended safety programs
    - Offered by:
      - Town of Farmville (Recreation, Police)
      - Schools (NCDOT, Wal-Mart, League of Cyclist)
    - Programs:
      - Bicycle Safety Rodeo
      - Bike Equipment Safety Demonstrations
- V. **Review of Ordinances**
  - Current ordinance language regarding Bicycling
  - Potential language recommendations
- VI. **Bike Plan Open House Planning**
  - Hold Bicycle and Pedestrian Open House Together? (June/July)
- VII. **Next Meeting Date**
  - Wednesday May 22, 2013, 2:00 PM





## **Town of Farmville - Comprehensive Bicycle Plan**

### **PLAN STEERING COMMITTEE**

June 13, 2013 - 4:00 p.m.

### **MEETING AGENDA**

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- I. **Welcome/Introductions**
- II. **Overview of Survey Results**
- III. **Mapping Activity**
  - Review of Public Input Maps
  - Identify Points of Interest/ Areas of Concern
  - Discuss potential improvements or connections between these points
  - Discuss potential routes around town
- IV. **Review/Discussion of Town Ordinances**
- V. **Propose Next Meeting Date**

## APPENDIX B – COST ESTIMATES

### SAMPLE COST ESTIMATES

Below are approximate unit costs for the types of projects proposed in this Plan, based on some example project costs that have been recently implemented, along with costs of other projects. Project cost estimations included in this Plan are based on these figures, and do not necessarily include extra costs involved in the project such as advanced grading issues, land acquisition, land clearing, etc.

#### Shared-Use Paths

- Floodplain paths, such as creek or sewer paths may require more site preparation. Floodplain costs usually involve drainage issues (i.e., need for culverts and bridges, or geotextiles), permitting issues, and boardwalk. Greenways are typically constructed on creek corridors or sewer easements, and whose greenways therefore provide good cost examples for Washington's rail-trail project.
- Rail Trails and sidepaths that have the advantage of being on a relatively cleared alignment with some existing grading and base work already complete can be constructed more economically.

#### Typical Costs Associated with Floodplain Shared - Use Paths on Waterways or Sewer Lines

- \$120 per linear asphalt foot (installation including grading, clearing, construction, and a sub-base with 18" on either side of asphalt for shoulder stabilization) 633,600 per mile +10% administration and design = approximately \$700,000 per mile = \$132 per linear foot
- 10' Concrete walkway: \$300,000 - \$500,000 per mile (with design and administration – add 10%)
- 10' wide prefabricated "Steadfast" type Pedestrian Bridge: \$1,200 per linear foot with design, engineering, installation and administration costs. An 8' wide clearance can reduce this cost.

- 10' paved asphalt path (with two-foot margins and associated improvements): \$100 - \$125 per foot (\$528,000 - \$660,000 per mile.) Add 10% for design and administration.
- Boardwalk: Historically \$200 / linear foot (\$1,056,000 / mile), lately has increased to \$225 - \$250 per linear foot. Unit prices on bids can see boardwalks come in anywhere from \$150 - 350/LF. Boardwalk is 8' clear.
- Converted Culverts and Underpasses: \$60,000 - \$100,000. Varies according to width, lighting needs, if stream restoration is involved, and other circumstances.
- Typical estimate of \$120 per linear foot for construction of path (clearing, grading, subbase -- 14' wide, asphalt trail 10' wide).
- Estimates of \$1,000,000/mile for the design and construction of greenway paths (10' wide asphalt trail). This cost takes into account various factors including need for culverts, drainage and flood studies.

### **Costs Typical with Upland Multi-Use Paths on Rail Beds, Road Corridors, Gas, or Electric Lines.**

- Construction is less expensive in upland areas, especially where grading is already complete or where a subbase is not needed.
- Rail Trail construction can be estimated at \$510,000 per mile, based on other North Carolina Rail Trail projects plus an additional 10% for design and administration. This plan uses \$106 per linear foot to calculate all costs estimations for paths built on roadway and other upland corridors.
- 10' Crushed Rock walkway: \$80,000 - \$120,000 per mile (with design and administration – add 10%). These greenways have high maintenance costs.
- Parking lot: \$18 per square yard. (Parking lots for greenways can typically be shared with shopping areas, parks, or other public destinations and more typically are not needed at all because they are neighborhood access points.)

## Intersections

- Crosswalk/Countdown signal: \$5,000 per intersection (this includes installation and an additional installed post). This cost can be up to \$15,000 per intersection if a retrofit is done with APS devices.
- Curb extensions: \$5,000 - \$25,000
- Simple neighborhood crosswalks with signs and markings: \$500 - \$1,500
- Enhanced crosswalk with special stencils, raised platforms, or special signage: \$5,000
- Raised crosswalks: \$2,000 – \$15,000
- Refuge island: \$10,000 – \$40,000
- In pavement illumination: \$25,000 – \$40,000 per crossing
- Hawk signal: \$40,000
- Mid Block Flashing Crosswalk: \$20,000 for equipment and \$20,000 to install

## Lane Marking

- Bicycle or vehicle lane striping (thermoplastic): \$15,000/mile with design and administration for both sides of the road.
- \$1.20 per linear foot of thermoplastic for line striping
- \$350.00 for each set of performed thermoplastic bike symbols with arrows

## Lighting, Landscaping, and Signage

- Lighting: Varies widely depending on type of light and location. Lighting an underpass could be \$2,000 - \$5,000 for 3 to 4 lights.
- Landscaping: Contractor installed foliage costs around \$400 - \$500 per tree and \$25 - \$50 per shrub.

- Marking a route with signs: \$2,000 per mile with design and administration
- Signs: \$250 – \$350 each

Table B.1 – Recommended Project Cost Estimates

<b>Pedestrian Plan Preliminary Project Recommendations</b>					
<b>Type of Project</b>	<b>Project/Improvement Name</b>	<b>At/On</b>	<b>From</b>	<b>To</b>	<b>Cost</b>
Bicycle Boulevard	Contentnea Bike Boulevard	Contentnea	Main St.	Pine St.	\$9,400
Bicycle Boulevard	Grimmersburg Bike Boulevard	Grimmersburg	Main St.	Wilson St.	\$8,950
Bicycle Boulevard	Pitt Bike Boulevard	Pitt	Horne Ave.	Main St.	\$12,350
Bicycle Boulevard	Horne Bike Boulevard	Horne	May Blvd.	Davis Dr.	\$10,200
Bicycle Boulevard	Pine Bike Boulevard	Pine	Fields St.	Pitt St	\$7,425
Bicycle Boulevard	Fields Bike Boulevard	Fields	Horne Ave.	Pine St.	\$3,850
Bike Lane	May Boulevard Bike Lane	May Blvd.	Horne Ave.	Park Dr.	\$18,825
Greenway	North Farmville Greenway	New Location	FC High School	May Blvd.	\$2,112,000
Greenway	Pitt County Greenway	New Location	May Blvd.	FC High School	\$7,560,000
Signage	Main Street Share the Road	Main St.	NC 121	Marlboro Rd.	\$3,700
Signage	Marlboro Share the Road	Marlboro Rd.	Ratley Rd.	Dr. Jones Rd.	\$6,200
Signage	Moye-Turnage Share the Road	Moye-Turnage Rd.	Wilson St.	Wesley Church Rd.	\$1,150
Signage	Fields Share the Road	Fields St.	Pine St.	Marlboro Rd.	\$2,200
Signage	NC 121 Share the Road	NC 121	Stantonsburg Rd.	Contentnea St.	\$1,400
Signage	Wilson Share the Road	Wilson St.	Grimmersburg St.	Thorne Dr.	\$4,800
Railroad Crossing	Main Street Railroad Crossing	Main Street	NA	NA	\$5,000
Railroad Crossing	Fields Street Railroad Crossing	Fields Street	NA	NA	\$5,000

## APPENDIX C – EXISTING CONDITIONS INVENTORY

Before considering the possible bicycle improvements in Farmville, it was essential to know the current conditions which existed at each project location. These conditions, inventoried in the table below, allowed Consultants, Town Staff, and Steering Committee members to make decisions regarding treatments that were most suitable for the given location. While automobile dependent, it was found upon field visits that Farmville, thanks in part to relatively low speeds and traffic counts on most roadways, is suitable for bicycle development.

Project/Improvement Name	At/On	App. Length (ft.)	Preferred Treatment	Probable Cost Estimate	Road Width	Curb and Gutter	ROW	Speed Limit
Contentnea Bike Boulevard	Contentnea	4,400	Signage/ Pavement Markings	\$9,400	30'	Yes	50'	35
Grimmersburg Bike Boulevard	Grimmersburg	4,200	Signage/ Pavement Markings	\$8,950	30'	Yes	50'	25– 35– 25
Pitt Bike Boulevard	Pitt	5,800	Signage/ Pavement Markings	\$12,350	25'	Yes	50'	35
Horne Bike Boulevard	Horne	4,800	Signage/ Pavement Markings	\$10,200	25'	Yes	50'	35
Pine Bike Boulevard	Pine	3,500	Signage/ Pavement Markings	\$7,425	30'	Yes	45'	35
Fields Bike Boulevard	Fields	1,800	Signage/ Pavement Markings	\$3,850	25'	Yes	50'	35
May Boulevard Bike Lane	May Blvd.	4,100	Signage/ Pavement Markings	\$18,825	50'	Yes	60'	45
North Farmville Greenway	New Location	16,000	Signage/ Pavement Markings	\$2,112,000	NA	NA	NA	NA
Pitt County Greenway	New Location	63,000	Signage/ Pavement Markings	\$7,560,000	NA	NA	NA	NA
Main Street Share the Road	Main St.	9,800	Signage	\$3,700	35'	Yes	50' – 60'	35

Project/Improvement Name	At/On	App. Length (ft.)	Preferred Treatment	Probable Cost Estimate	Road Width	Curb and Gutter	ROW	Speed Limit
Marlboro Share the Road	Marlboro Rd.	16,400	Signage	\$6,200	65'	Yes (Inside Town Limits)	150'	45
Moye-Turnage Share the Road	Moye-Turnage Rd.	4,100	Signage	\$1,150	20'	No	100'	45
Fields Share the Road	Fields St.	5,800	Signage	\$2,200	25'	No	50'	35
NC 121 Share the Road	NC 121	3,700	Signage	\$1,400	25'	No	50' – 60'	50
Wilson Share the Road	Wilson St.	12,700	Signage	\$4,800	30	Yes	50' – 60'	35
Main Street Railroad Crossing	Main Street	NA	Railroad Crossing Cushion/ Flangeway Filler	\$5,000	35'	Yes	60'	35
Fields Street Railroad Crossing	Fields Street	NA	Railroad Crossing Cushion/ Flangeway Filler	\$5,000	25'	No	50'	35

## APPENDIX D – FUNDING SOURCES

When considering possible funding sources for the Town of Farmville's bicycle projects, it is important to consider that it is highly unlikely that all construction activities will be accomplished from a single funding source since these projects are expected to be in the millions of dollars. It will be necessary to consider several sources of funding, that when combined, would support full project construction. This paper outlines the most likely sources of funding for the projects at the federal, state, local government level and from the private sector.

### STATE AND FEDERAL

Federal funding is typically directed through State agencies to local governments either in the form of grants or direct appropriations. State budget shortfalls may make it extremely difficult to accurately forecast available funding for future project development. The following is a list of possible Federal and State funding sources that could be used to support construction of the many bicycle and pedestrian projects. Since these funding categories are difficult to forecast, it is recommended that the Town continue to work with the Mid-East RPO on getting bicycle projects listed in the TIP (Transportation Improvement Program), as discussed below.

#### DEPARTMENT OF ENERGY (DOE)

The Department of Energy's Energy Efficiency and Conservation Block Grants (EECBG) grants may be used to reduce energy use and fossil fuel emissions and for improvements in energy efficiency. Section 7 of the funding announcement states that these grants provide opportunities for the development and implementation of transportation programs to conserve energy used in transportation including development of infrastructure such as bike lanes and pathways and pedestrian walkways.

#### NC DEPARTMENT OF TRANSPORTATION AND SAFETEA-LU

The most likely source of funding for the bicycle and pedestrian projects would come from the North Carolina Department of Transportation and the federal funding program MAP-21. Some of the sub-programs within MAP-21 and within NCDOT are listed below:



- State Transportation Improvement Program (STIP): The STIP contains funding for various transportation divisions of NCDOT including: highways, aviation, enhancements, public transportation, rail, bicycle and pedestrians, and the Governor's Highway Safety Program. STIP is the largest single source of funding within SAFETEA-LU and NCDOT.
- NCDOT Discretionary Funds: The Statewide Discretionary Fund consists of \$10 million and is administered by the Secretary of the Department of Transportation. This fund can be used on any project at any location within the State. Primary, urban, secondary, industrial access, and spot safety projects are eligible for this funding. The Town would have to make a direct appeal to the Secretary of NCDOT to access these funds.
- NCDOT Contingency Fund: The Statewide Contingency Fund is a \$10 million fund administered by the Secretary of Transportation. Again, the Town would have to appeal directly to the Secretary.
- NCDOT Enhancement Funding: Federal Transportation Enhancement funding is administered by NCDOT and serves to strengthen the cultural, aesthetic, and environmental aspects of the State's intermodal transportation system. Transportation Enhancement (TE) funding is awarded through NCDOT. The State typically will make a Call for Projects, and each project must benefit the traveling public and help communities increase transportation choices and access, enhance the built or natural environment and create a sense of place.
- NCDOT Bicycle and Pedestrian Project: Funds for bicycle and pedestrian projects come from several different sources. Allocation of funds depends on the type of project/program and other criteria. Projects can include independent and incidental projects.

#### NC DEPARTMENT OF ENVIRONMENT – RECREATIONAL TRAILS; AND ADOPT-A-TRAIL GRANTS

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

## POWELL BILL FUNDS

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.4. Powell Bill funds shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways.

## COMMUNITY DEVELOPMENT BLOCK GRANT FUNDS

Community Development Block Grant (CDBG) funds are available to local municipal or county governments for projects that enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low- and moderate-income. State CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) to the state of North Carolina. Some urban counties and cities in North Carolina receive CDBG funding directly from HUD. Each year, CDBG provides funding to local governments for hundreds of critically-needed community improvement projects throughout the state. These community improvement projects are administered by the Division of Community Assistance and the Commerce Finance Center under eight grant categories. Two categories might be of support to the Town of Farmville Bicycle Projects: infrastructure and community revitalization.

## LAND AND WATER CONSERVATION TRUST FUND

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and [and acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources.

## N.C. PARKS AND RECREATION TRUST FUND (PARTF)

The Parks and Recreation Trust Fund (PARTF) provide dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities and public authorities, as defined by G.S. 159-7, are eligible applicants.

A local government can request a maximum of \$500,000 with each application. An applicant must match the grant dollar-for-dollar, 50% of the total cost of the project, and may contribute more than 50%. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match.

## SAFE ROUTES TO SCHOOL PROGRAM

(MANAGED BY NCDOT, DBPT)

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding.

The state of North Carolina was allocated \$15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. In 2009, more than \$3.6 million went to 22 municipalities and local agencies for infrastructure and non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. Under the new MAP-21 legislation, it is important to note that this fund is not directly funded in MAP-21 and can only be accessed through the TIP process.

## LOCAL GOVERNMENT

Local funding sources that would support bicycle and pedestrian project construction will most likely be limited but should be explored.

### LOCAL RURAL PLANNING ORGANIZATION

The Mid-East Rural Planning Organization (RPO) manages the transportation planning process required by Federal law. The RPO plans for the area's surface transportation needs, including highways, transit, bicycle, and pedestrian facilities. There are two subcommittees of the RPO: the Technical Advisory Committee and the Technical Coordinating Committee. An important part of the transportation planning process is to identify transportation needs and to explore feasible alternatives to meet those needs. Plans and programs are often conducted in partnership with the NC Department of Transportation to identify needs and projects to enhance Washington's transportation infrastructure.

It is suggested that the Town work closely with the RPO on getting these projects listed on the TIP since this may be the primary source of funding for the project. Typically, projects on this list require a 20% local match.

### TOWN OF FARMVILLE CAPITAL IMPROVEMENT PROGRAMMING

The Town of Farmville may have funding available to support some elements of construction or repair. It will be important to meet with Town Commissioners and the Town Manager to judge the availability of this funding.

### OTHER LOCAL FUNDING OPTIONS

- Bonds/Loans
- Taxes
- Impact fees
- Exactions
- Tax increment financing
- Partnerships

## PRIVATE SECTOR

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

### LAND FOR TOMORROW CAMPAIGN

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals and community groups committed to securing support from the public and General Assembly for protecting land, water and historic places. The campaign is asking the North Carolina General Assembly to support issuance of a bond for \$200 million a year for five years to preserve and protect its special land and water resources. Land for Tomorrow will enable North Carolina to reach a goal of ensuring that working farms and forests; sanctuaries for wildlife; land bordering streams, parks and greenways; land that helps strengthen communities and promotes job growth; historic downtowns and neighborhoods; and more, will be there to enhance the quality of life for generations to come. Website: <http://www.landfortomorrow.org/>

### THE ROBERT WOOD JOHNSON FOUNDATION

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To assure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

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

### NORTH CAROLINA COMMUNITY FOUNDATION

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other

foundations to build endowments and ensure financial security for nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, the foundation also manages a number of community affiliates throughout North Carolina, that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. The foundation also manages various scholarship programs statewide. Web site: <http://nccommunityfoundation.org/>

#### AMERICAN GREEN WAYS EASTMAN KODAK AWARDS

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying or political activities. For more information visit The Conservation Fund's website at: [www.conservationfund.org](http://www.conservationfund.org).

#### NATIONAL TRAILS FUND

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a \$200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than \$240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from \$500 to \$10,000 per project.

- Projects the American Hiking Society will consider include:
- Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements.

- Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage.
- Constituency building surrounding specific trail projects including volunteer recruitment and support.

Web site: [www.americanhiking.org/alliance/fund.html](http://www.americanhiking.org/alliance/fund.html).

#### BLUECROSS BLUESHIELD OF NORTH CAROLINA FOUNDATION (BCBS)

Blue Cross Blue Shield (BCBS) focuses on programs that use an outcome approach to improve the health and well-being of residents. The Health of Vulnerable Populations grants program focuses on improving health outcomes for at-risk populations. The Healthy Active Communities grant concentrates on increased physical activity and healthy eating habits. Eligible grant applicants must be located in North Carolina, be able to provide recent tax forms and, depending on the size of the nonprofit, provide an audit.

<http://www.bcbsncfoundation.org/>

#### LOCAL TRAIL SPONSORS

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

#### VOLUNTEER WORK

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.