

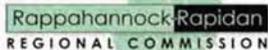
Fauquier-Warrenton

Destinations Plan

Bicycle and Pedestrian Plan

May 29, 2009
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FINAL



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Executive Summary

The 2009 Fauquier-Warrenton Destinations Plan provides detailed recommendations for pedestrian, bicycle and equestrian routes to connect important destinations throughout the community. Using the Warrenton Branch Greenway as a centerpiece for this effort, this Plan provides walking and bicycling routes to and between the Warrenton Aquatic and Recreation Facility (WARF), the future Central Sports Complex, downtown Warrenton and other destinations such as parks and schools. The plan identifies connections along roadway corridors, as well as in independent rights of way such as stream corridors, abandoned railroad lines, and other linear corridors.



Caboose Park in Warrenton

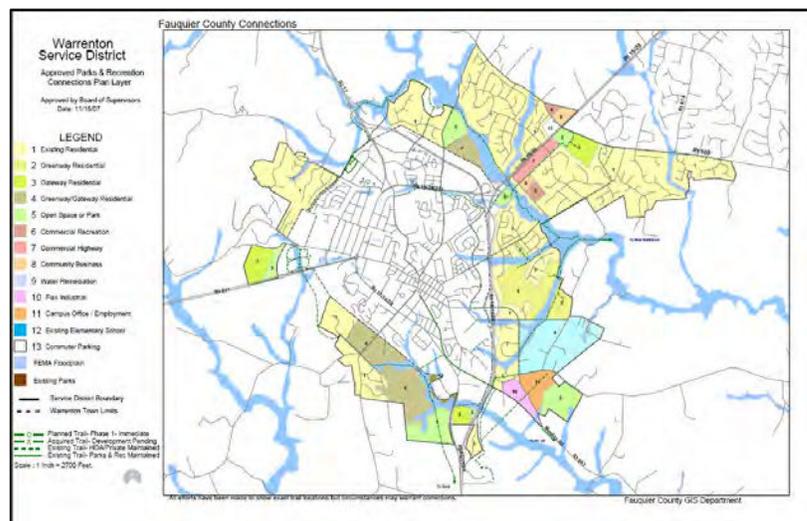
Walking and bicycling provides health, economic and environmental benefits, while improving the quality of life for all members of the community. Walking is the most broadly accessible form of transportation and recreation, requiring no fare, fuel, or license. For those who cannot use other modes of transportation, the ability to walk and bicycle safely is essential. Walking and bicycling affords a sense of independence for the more than 1,800 elementary school students, more than 1,300 middle school students, and more than 1,400 high school students in the Fauquier County Public School System in Warrenton. There are also around 550 students at Highland School and more than 1,800 students at Lord Fairfax Community College. For senior citizens, walking is an effective means to stay active both physically and socially.

The purpose of this Plan is to envision pedestrian and bicycle connections between selected destinations in the Town of Warrenton and Fauquier County.

The benefits of walking and bicycling extend to the entire community. The demand for walking and bicycling options in Warrenton and Fauquier County is strong, as demonstrated by the popularity of the Warrenton Branch Greenway. This Plan meets this demand by promoting walking and bicycling as viable transportation alternatives. It does this by identifying important destinations throughout the community and highlighting opportunities to link them together through a network of connected pedestrian and bicycle facilities.

Figure 1: Fauquier County Connections Plan, Warrenton Service District Map

The 2007 Fauquier County Connections Plan provided a general vision for a walkable and bikeable community. It envisioned a place “Where trails and greenways serve a dual purpose as recreation and transportation corridors and serve to preserve open space.” One goal of the plan states that the “County will develop a county-wide walkway, bikeway and greenway network among residential neighborhoods, towns, workplaces, shopping



centers, historic districts, schools, libraries, recreation centers, parks, etc. and provide opportunities for County residents to walk and bicycle for recreation and to improve their health.” The plan was adopted by the Fauquier County Board of Supervisors on November 15, 2007.

This Plan supports the Connections Plan by providing specific recommendations for improving access to destinations. In order to make the development of these routes practical and implementable, it builds on existing trail and sidewalk systems and utilizes the full range of options available, from shared-use trails to sidewalks. It highlights opportunities for shared-use trail connections that will eventually form a trail system around the Town and into Fauquier County. This strategy ensures connected pedestrian and bicycle routes, while accounting for narrow roads and other constraints that exist in historic towns such as Warrenton.

Routes are identified to enhance access to important destinations. The recommended facility on each route was selected based on stakeholder input, field analysis and the characteristics of the roadway environment. A map outlining proposed recommendations throughout the study area is included in Chapter 4. Detailed enlargements of each segment of the proposed network are also provided in Chapter 4. Each segment has a priority route which should be implemented in the short-term as well as recommendations that are envisioned in the long-term. The priority route represents the most important connection, while accounting for unique circumstances such as property ownership, existing facilities, and the complexity of retrofitting the existing environment.

Priority Route Connections

- Warrenton Aquatic and Recreation Facility to the Central Sports Complex
- Warrenton Aquatic and Recreation Facility to C.M. Bradley Elementary School
- Lord Fairfax Community College to Warrenton Chase and White’s Mill Trails
- White’s Mill Trails to Blackwell Road
- Academy Hill Road to Warrenton Branch Greenway

The recommended pedestrian, bicycle and equestrian routes provide connections between destinations in the Town and County. Depending on the character of the road, presence of existing sidewalks and trails, and other factors, the proposed connections are made through off-road facilities like sidewalks and trails, as well as on-road bicycle facilities such as bicycle lanes. Shared and parallel-use trails are the only instance where bicyclists and pedestrians would be sharing the same space. Bridle paths provide dedicated equestrian paths for horse riders, mountain bikers and hikers. In addition to linear improvements such as sidewalks, bike lanes, and shared use paths, spot improvements will be needed in order to connect destinations. Recommended spot improvements are detailed in Chapter 4, including measures to improve crossing conditions and strategies to improve transitions between trails and roads.



Rural land in Fauquier County

This Plan builds on existing trail and sidewalk networks.

Recommended spot improvements

- Pedestrian and bicycle crossing improvements
- Trail and road intersection improvements
- Pedestrian and bicycle connectivity projects, including Route 29/211 intersection improvements, Academy Hill Extension bridge improvements, trail connection projects around Fauquier Hospital, and a proposed underpass under Route 29

This Plan also describes how the recommendations will be accomplished. It breaks the phasing of recommendations into Immediate Action, Short-Term and Long-Term Recommendations. The phasing strategy is based on the importance of the recommendations, estimated cost and relative difficulty of implementation. Immediate action projects will improve pedestrian and bicycle conditions in specific areas, creating early successes for decision-makers to highlight and for residents and visitors to enjoy. These immediate action projects will also build momentum for the other recommendations.

Immediate Action Recommendations

- Complete a new shared use path connection from the existing Warrenton Branch Greenway southeast along the former railroad line (see Figure 17 on page 50)
- Complete a new shared use path connecting Old Auburn Road and the existing trails in the vicinity of Warrenton Chase (see Figure 17 on page 50)
- Complete recommended sidewalk projects on Waterloo Street
- Continue to investigate the feasibility of a shared-use path under the Route 29 bridge
- Develop a full conceptual design plan for the intersection of Route 29/211
- Provide a shared-use path connection leading to Fauquier Hospital
- Evaluate the possibility of a traffic signal along Meetze Road near the entrance to the future Central Sports Complex and at the intersection of Broadview Avenue and Gold Cup Drive
- Implement initial on-road bicycle facility recommendations
- Provide bicycle parking/storage at important destinations

The estimated costs of implementing the recommendations are included. The estimated cost to implement the priority route connections between the WARF, downtown Warrenton and the future Central Sports Complex (shown as Segment 1 in Chapter 4) is approximately \$256,000 (based on 2008 dollars). The estimated cost of implementing the priority route recommendations for all five priority route segments shown in Chapter 4 is approximately \$1,162,000.

The recommended trail system would likely be developed through a combination of funding sources, including the Town of Warrenton, Fauquier County, the Commonwealth of Virginia and by the private sector. The long-term shared use path recommendations represent much of the proposed trail network around the Town of Warrenton and into Fauquier County. Because around 70% of proposed trails are located on undeveloped privately-owned land, many of these trails likely will be financed by private-sector development.

By presenting practical near-term recommendations and a long-term vision, this Plan proposes to increase access to destinations, making walking and bicycling realistic and comfortable transportation choices and improving quality of life for all residents.

Chapter 1: Introduction

The 2009 Fauquier-Warrenton Destinations Plan builds on the goals and principles of the Fauquier County Connections Plan (2007), providing detailed recommendations to connect important destinations in the Town of Warrenton and the immediate surrounding areas of Fauquier County. The 2007 Connections Plan provided the general vision for walkable and bikeable communities countywide; this Plan provides specific recommendations for improving access to destinations in and around Warrenton.



Warrenton Branch Greenway in Warrenton

In order to make the development of these routes practical and implementable, this Plan builds on existing trail and sidewalk systems and utilizes the full range of options available from off-road shared-use trails to on-road bicycle lanes and sidewalks. It also highlights opportunities for shared-use trail connections that can be made as part of future development, eventually completing a network throughout the Town and within Fauquier County.

This Plan provides detailed recommendations for on and off-road bicycle and pedestrian improvements.

A. Project Goals

The following goals build on the strengths of the study area and are designed to help achieve the vision for improving pedestrian and bicycle connections.

- Connect pedestrian and bicycle facilities to provide recreational opportunities and enhance access to destinations
- Encourage tourism and economic development
- Make walking and bicycling viable transportation choices
- Increase pedestrian and bicycle safety and mobility
- Provide facilities for all user types including bicyclists, pedestrians and horse riders
- Coordinate town, county, and private-sector strategies
- Protect the environment by providing opportunities for non-motorized transportation and recreation, reducing the environmental impact of motor vehicle emissions, and preserving greenways and trails when development occurs
- Fully utilize the existing pavement width and, where possible, retrofit existing facilities
- Guide local, regional and state efforts
- Improve quality of life

B. Why Plan for Pedestrian and Bicycle Connections?

There are many benefits to be gained from walking and bicycling, including environmentally-sound transportation, safer and more vibrant communities and improvements in health and fitness. As cities across the country grow, walking and bicycling is becoming an important quality of life factor residents consider in choosing where to live. Being able to walk from one place to another safely and

conveniently often defines the quality of a person's experience, as the walking environment is the base from which all residents, employees and visitors experience the community. The health benefits of regular physical activity are far-reaching, including reduced risk of coronary heart disease, stroke and other chronic diseases, lower health care costs and improved quality of life for people of all ages.

Walkable and bikable cities include vibrant and active streets that promote commercial and social exchange. A high quality pedestrian and bicycle environment will become increasingly important in the future given a range of trends from fluctuating gas prices and rising obesity rates to the increasing prominence of global climate change issues. For these reasons, it is in the Town and County's interest to increase the number of people walking and riding bicycles for recreation and transportation.

The demand for walking and bicycling options in Warrenton and Fauquier County is demonstrated by the more than 70,000 use trips on the Warrenton Branch Greenway every year. Additional reasons to plan for pedestrian and bicycle connections in Warrenton and Fauquier County are noted below.

- Greenways can provide a significant boost to the local economy. According to a 1998 study, the direct economic impacts of the Great Allegheny Passage trail in Maryland and Pennsylvania exceeded \$14 million a year, even though the trail was only half finished at that time.¹ Other economic impact studies of trails in the Mid-Atlantic have shown that multi-use trails bring significant revenue to local small businesses and Towns. A 2004 study of the Northern Central Rail Trail (a 21-mile unpaved trail in Maryland) found that the annual revenues from the purchase of hard goods, soft goods and accommodations was approximately \$10.3 million. A trail user count conducted by the Maryland Department of Natural Resources estimated a total of 867,725 user visits to the Northern Central Rail Trail in 2004.
- Studies have shown that proximity to greenways and trails can have a positive effect on property values. A study by the Center for Urban Policy and the Environment focusing on the Indianapolis, IN housing market found that "Proximity to greenways generally has positive, statistically significant effects on property values and that, when summed across the city, these effects may be in the millions of dollars."² A 1998 study of property values along the Mountain Bay Trail in Brown County, Wisconsin shows that lots adjacent to the trail sold faster and for an average of 9 percent more than similar property not located next to the trail.³ Additionally, in a 2002 survey of recent home buyers sponsored by the National Association of Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices.⁴
- For young people, walking and bicycling afford a sense of independence, and for seniors, walking is an effective means to stay active both physically and socially. According to the 2000 U.S. Census, in Warrenton more than 17% of the population is 65 years or older, and in Fauquier County more than 10% are 65 years or older. This proportion is likely to rise with the aging of the "baby boomer" generation.
- While some residents choose not to own a motor vehicle, others cannot afford one. In many cases, this is because the average family must work for more than six weeks to pay a year's car expenses. Walking is a more affordable option. Students, such as the more than 1,800 enrolled

¹ Stephen Farber, *An Economic Impact Study for the Allegheny Trail Alliance*, University of Pittsburgh and Pennsylvania Economic League, Inc., January 1999, i-ii.

² Greg Lindsey, *Public Choices and Property Values: Evidence from Greenways in Indianapolis*, Center for Urban Policy and the Environment, December 2003, 1.

³ *Recreation Trails, Crime, and Property Values: Brown County's Mountain Bay Trail and the Proposed Fox River Trail*. Brown County Planning Commission, Green Bay, WI, July 6, 1998.

⁴ *Consumer's Survey on Smart Choices for Home Buyers*, National Association of Realtors and the National Association of Home Builders, April 2002.

at Lord Fairfax Community College, may also be less likely to be able to afford to drive, so walking and bicycling options are especially important.

- Traffic has a direct effect on walking and bicycling conditions, pedestrian safety, and quality of life for local residents. Converting motor vehicle trips into walking and bicycling trips (or walking/transit trips) can reduce the use of the personal automobile, reduce congestion on the Town and County's streets, and improve climate and population health. This is especially important given recent growth projections for the Town of Warrenton and surrounding Warrenton Service District, which estimate that the cumulative population will reach 18,000 residents.
- Bicycling and walking are important for the health of Warrenton and Fauquier County's youth. According to a report by the U.S. Centers for Disease Control and Prevention, in 2001, 16 percent of children 5 to 18 years of age walked or bicycled to school.⁵ There are around 4,500 elementary, middle, and high school students in the Fauquier County Public School System in Warrenton. As noted, there are also around 550 students at Highland School and more than 1,800 students at Lord Fairfax Community College. Providing safe, convenient and comfortable pedestrian and bicycle routes is important for this population.

As they utilize these options, the entire community can realize other benefits such as reduced congestion and lower health care costs.

- Enhanced walking and bicycling routes also provide extended recreational opportunities and encourage tourism. According to one study, visitors to Ohio's Little Miami Scenic Trail spend an average of \$13.54 per visit just on food, beverage, and transportation to the trail. In addition, they spend \$277 per person each year on clothing, equipment, and accessories to use during these trail trips.⁶ These economic benefits have also been demonstrated closer to home. For example, the economic impacts of the Virginia Creeper Trail in two southwest Virginia



Academy Hill Park in Warrenton

The planning process involved field analysis, stakeholder engagement and public feedback.

⁵ *Kids Walk-to-School: Then and Now—Barrier and Solutions*. U.S. Centers for Disease Control and Prevention, accessed May 12, 2009.

⁶ *Trail Users Study, Little Miami Scenic Trail*. Ohio, Kentucky, Indiana Regional Council of Governments, 1999, 15-32.

counties are \$1.59 million annually. In addition, the visitors to the trail support approximately 27.4 new full time jobs.⁷

C. Planning Process

The planning process for this study involved a number of different activities and outreach efforts. The process is briefly outlined below.

- *Background Data Collection and Field Analysis:* Information was gathered from previous plans and studies, existing GIS data and maps, interviews with local, county, and regional government staff and field work. Existing GIS data was provided by Fauquier County. Potential roadway improvement projects and pedestrian and bicycle crash data were obtained from the Virginia Department of Transportation (VDOT). Field work was conducted throughout the study area to document existing conditions for walking and bicycling and to identify opportunities to improve pedestrian and bicycle facilities.
- *Public Input:* Input was gathered from residents and key stakeholders from all parts of the study area. As part of this effort, public meetings were held on June 12 and June 26, 2008. At these meetings, citizens commented on draft recommendations, and made recommendations for additional improvements.
- *Stakeholder Input:* A stakeholder group provided guidance and input throughout the planning process. This group included representatives from the Town of Warrenton, Fauquier County, Rappahannock-Rapidan Regional Commission and VDOT. A kick-off meeting and van tour with the project team was held on January 25, 2008 and team meetings were held throughout the planning process. In addition, a Stakeholder Meeting was held on March 25, 2008 to engage a larger group of stakeholders, including representatives from the Fauquier County Pedestrian, Bicycle & Greenway Advisory Committee.
- *Stakeholder Interviews:* As part of the analysis for this study, interviews were conducted to gain additional information on specific routes and locations. Interviews were conducted, for example, with representatives of upcoming development projects and with local stakeholders that had previously studied a neighborhood connection to Fauquier Hospital.
- *Draft and Final Plan and Route Network:* The draft version of the document was developed based on work completed to date and feedback received from the stakeholder team and at the public meetings.

D. Plan Overview

- Chapter 2 outlines existing conditions for walking and bicycling in the study area.
- Chapter 3 discusses the methods and analysis undertaken as part of the study process, as well as an overview of the pedestrian and bicycle facility types that are being recommended.
- Chapter 4 includes recommendations to improve pedestrian and bicycle connections throughout the study area.
- Chapter 5 includes a detailed implementation plan including the identification of immediate action, short-term and long-term recommendations, as well as cost estimates for implementing the recommendations.
- Chapter 6 summarizes the information that has been provided and offers concluding remarks. Additional information such as typical cross-sections and detailed cost estimates are included in the Appendix.

⁷ J.M. Bowker, *The Virginia Creeper Trail: An Assessment of User Demographics, Preferences, and Economics*. Virginia Department of Conservation, December 2004, 28.

Chapter 2: Existing Conditions

The Town of Warrenton and Fauquier County have important resources to build on in their efforts to provide pedestrian and bicycle connections between destinations. These include a history of planning efforts that support walking and bicycling, existing sidewalk and trail systems and upcoming development and other projects that can incorporate recommendations from this Plan.



Existing path near Fauquier High School in Warrenton

A. Existing Facilities

Existing facilities and other resources in the Town and County will serve as the foundation for efforts to enhance pedestrian and bicycle connections.

Foremost amongst these is the

Warrenton Branch Greenway, a 1.5-mile shared-use trail with more than 70,000 use trips counted in 2007. There are also approximately 18 miles of existing shared-use trails, many of which were developed as part of the subdivision development process. Existing sidewalks and trails are shown in Figure 2 on page 8. Existing trails are ones that are currently available for use. Acquired trails are ones that have been secured as part of development or through other planning processes and that will be developed in the future.

Existing sidewalk and trail systems serve as the foundation for the network identified in this Plan.

Destinations

In the Town of Warrenton, there is a historic grid network of streets, with smaller properties and a relatively connected sidewalk system. This combination of features makes it comfortable to access downtown destinations on foot. These destinations include Academy Hill and Eva Walker Parks, retail establishments along Main Street, and the Fauquier County Public Library.

A listing of destinations throughout the study area is included below. Strategies for connecting these destinations are presented in Chapter 4.

- Academy Hill Park
- 4th Street Park
- C.M. Bradley Elementary School
- Downtown Warrenton
- Eva Walker Park
- Existing and acquired neighborhood trails
- Fauquier County Fair Grounds
- Fauquier County Government
- Fauquier County Public Library
- Fauquier High School
- Fauquier Hospital
- Future Central Sports Complex
- Highland School (private school)
- James G. Brumfield Elementary School

- Lord Fairfax Community College
- Mosby Museum
- PB Smith Elementary School
- Rady Park
- Raymond Farm
- Retail Center on West Lee Highway (Warrenton Town Center)
- Taylor Middle School
- Town of Warrenton Town Hall
- Warrenton Aquatic and Recreation Facility (WARF)
- Warrenton Branch Greenway
- Warrenton Community Center
- Warrenton Farmers' Markets
- Warrenton-Fauquier Visitor's Center
- Warrenton Middle School



White's Mill Trail Bridge

There are around 18 miles of existing and acquired trails in the study area, many of which were developed as part of private-sector development.

Several unique characteristics will impact the provision of pedestrian and bicycle facilities in the study area. Many properties on the periphery of Town are owned by the Town of Warrenton, Fauquier County or the Commonwealth of Virginia. These government-owned properties could potentially provide important trail connections. There are existing easements in the study area, such as a 30-foot easement along Old Auburn Road, negotiated by the County as part of a development project. There are also many large privately-owned properties on the outskirts of town. Some of these could be developed in the future and where appropriate, public trails could be added.

Upcoming Transportation Projects

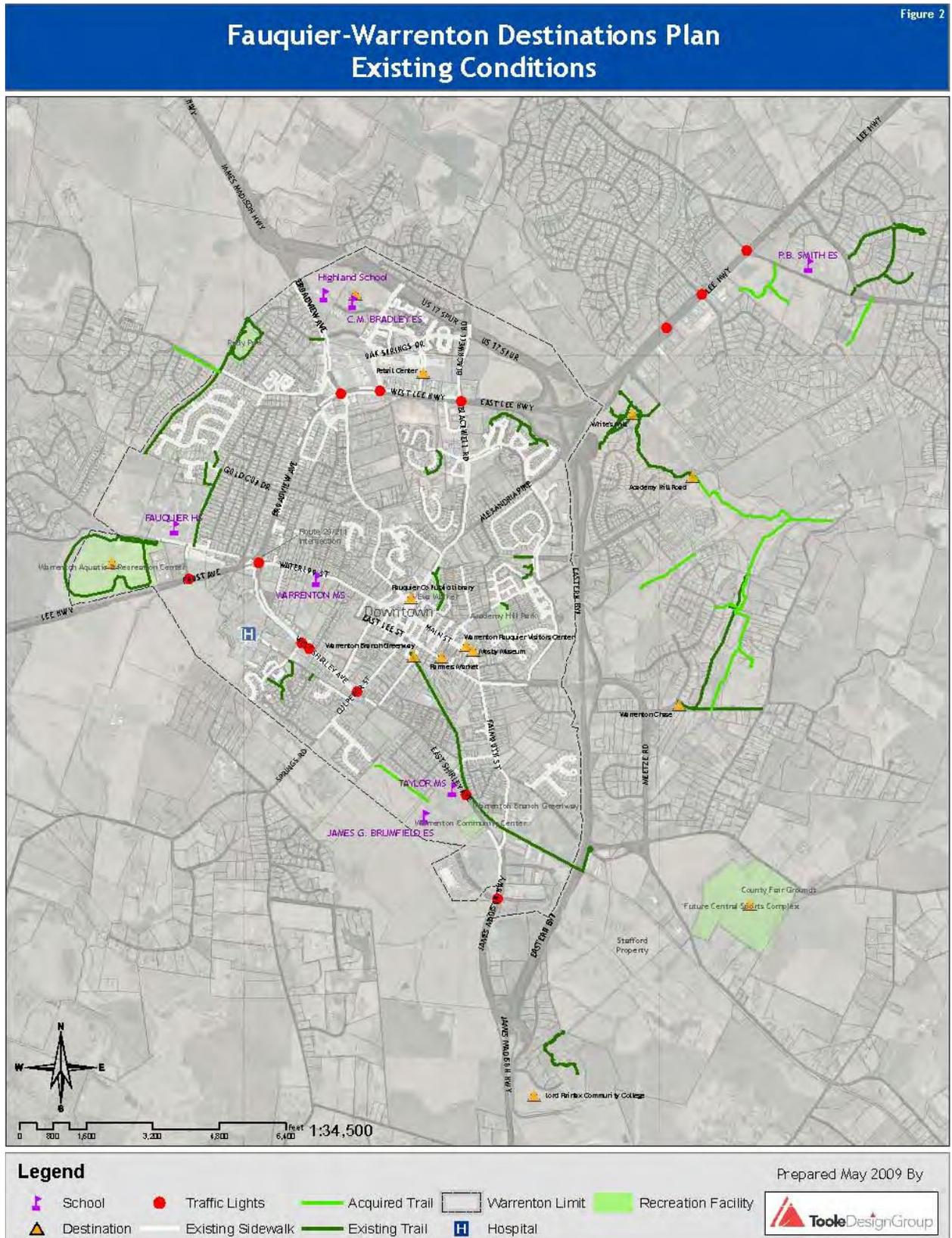
Upcoming transportation projects could be a source of pedestrian and bicycle facility improvements in the study area. A listing of upcoming transportation projects is included below.

- Broadview Avenue 211 Access Management study to analyze access maintenance, driveway consolidation, and roundabouts
- Planned new traffic light and other improvements near the intersection of Winchester Street and Lee Highway
- Planned sidewalk improvements along Broadview Avenue and Lee Highway from Waterloo Street to Blackwell Road
- Planned traffic signal at Blackwell Road and Walker Drive
- Two current projects on Route 605 south of Route 15, 29, 211 (Note that while these projects are outside of the immediate project area, they could potentially impact pedestrian and bicycle conditions for local stakeholders.)

Planning Context

Plans and policies have been adopted at all levels of government in order to ensure that communities are designed to support walking and bicycling. A detailed list and discussion of relevant plans and policies is included in Appendix M.

Figure 2: Existing Conditions Map



B. Barriers and Challenges

Significant planning efforts have been undertaken that support pedestrian and bicycle networks. These efforts are responsible for the existing sidewalk and trail systems in the study area. However, there are also significant barriers and challenges to walking and bicycling.

Access and connectivity to certain destinations is limited, in some cases because large arterial roads such as Broadview Avenue, the Eastern Bypass, Lee Highway, and James Madison Highway serve as barriers. Some roads are inhospitable to pedestrians and bicyclists due to heavy traffic volumes and few facilities such as bike lanes and sidewalks.

Certain locations also are barriers such as the intersection of Route 211 and Route 29. Many people feel unsafe walking along and crossing roads, and riding their bicycles around Town. In the previous three years, VDOT has a record of two reported bicycle accidents and twenty-six reported pedestrian crashes in and around the Town of Warrenton. In neighborhoods where trails were built, some have maintenance issues. In addition, connectivity is often dependent on large adjacent properties whose future is in some cases uncertain.



Intersection of Frost Avenue, Broadview Avenue, Waterloo Street, and West Shirley Avenue in Warrenton

Large arterial roads such as Broadview Avenue can serve as barriers to comfortable pedestrian and bicycle travel.

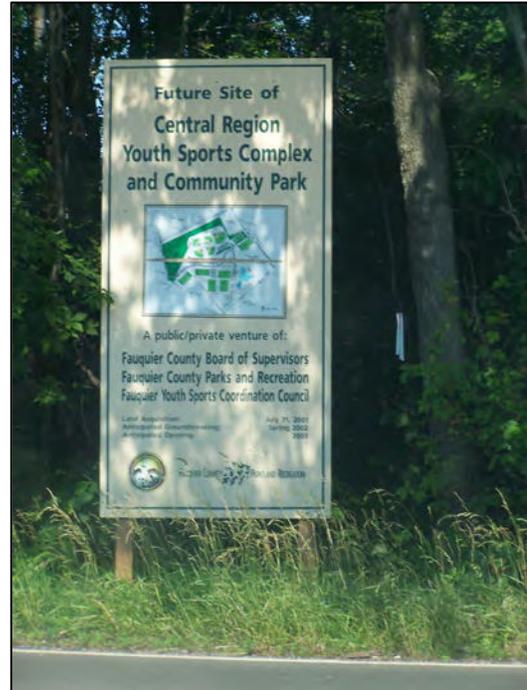
Chapter 3: Methods, Analysis and Proposed Facilities

This Plan provides pedestrian and bicycle connections between destinations such as the Warrenton Aquatic and Recreation Facility and the future Central Sports Complex. Potential routes between these and other destinations were identified and evaluated, and the best one was selected based on a combination of factors.

A. Project Selection Considerations

The selection criteria below outlines the methodology used to identify important destinations and evaluate various options for linking them together. The criteria represent critical elements of the non-vehicular system and address issues such as continuity, access, and circulation. This process was used to develop the routes and recommendations discussed in the following chapter.

- *Does the route provide a connection between important destinations in the community?* The destinations that were identified by the project team as being critical, and that are connected through the recommendations in this Plan, include the following: Academy Hill Park, 4th Street Park, C.M. Bradley Elementary School, Downtown Warrenton, Eva Walker Park, existing and acquired neighborhood trails, Fauquier County Fair Grounds, Fauquier County Government, Fauquier County Public Library, Fauquier High School, Fauquier Hospital, future Central Sports Complex, Highland School (private school), James G. Brumfield Elementary School, Lord Fairfax Community College, Mosby Museum, PB Smith Elementary School, Rady Park, Raymond Farm, retail center on West Lee Highway (Warrenton Town Center), Taylor Middle School, Town of Warrenton Town Hall, Warrenton Aquatic and Recreation Facility (WARF), Warrenton Branch Greenway, Warrenton Community Center, Warrenton Farmers' Markets, Warrenton-Fauquier Visitor's Center, and the Warrenton Middle School.
- *Are there existing resources such as multi-use trails, sidewalks and traffic lights already in place between the destinations that can serve as a foundation to build upon?* This Plan seeks to build on existing resources, and where practical, routes were selected to encompass existing trails and sidewalks. The Warrenton Branch Greenway and existing and acquired multi-use trails developed as part of the subdivision development process were used as the foundation for efforts to improve connections. Existing sidewalks were also considered when determining the location of routes, as they currently provide pedestrian connections.



Sign for the future Central Sports Complex in Fauquier County

This Plan provides pedestrian and bicycle connections to destinations such as the future Central Sports Complex.

- *Are there other existing assets, such as an easement, already in place that would make the implementation of a specific facility more practical and realistic?* Opportunities to provide multi-use trails were evaluated, such as whether property was available and whether easements could be utilized. An example is a 30-foot easement running along Old Auburn Road, which was a factor in choosing this location for a future trail because implementation will be easier.



Warrenton Branch Greenway

The Warrenton Branch Greenway is a 1.5-mile shared-use trail with more than 70,000 use trips counted in 2007.

- *What are the characteristics of the existing road and sidewalk system (e.g. width, traffic, crossing conditions, etc.) that will impact pedestrians and bicyclists? What are the limitations for building a facility along the specified route?* The character of the existing road and sidewalk system were evaluated to determine whether conditions such as narrow roads and historic structures would make a separate multi-use trail inappropriate. Where such a facility was not practical, a range of other options was considered, and the best one was selected based in large part on the characteristics of the road. Road characteristics that were evaluated included the number of travel lanes, travel lane width, road width, traffic volume, traffic speed, presence of on-street parking, and pavement surface condition.
- *Taking into account everything we know (e.g. existing conditions, limitations, the relative cost of providing different types of facilities, etc.), which combination of facilities is the most realistic and implementable, providing a comfortable connection between destinations for those on foot and on bicycles, and in the most cost efficient manner?* A range of options to improve walking and biking was considered. These included sidewalks for pedestrians and bicycle lanes, shared lane markings (discussed below) and other features to improve a bicyclist’s experience riding on roads. Multi-use trails, which would be shared by walkers and bicyclists, were also considered.
- *Of all the destinations that are being connected in a specific area, what are the most important connections that need to be made?* The most critical connections were identified through field work and through information gathered at the public meetings and from the project team. This was guided by available information on existing travel patterns and preferences. The most important routes were highlighted as “priority routes” that should be implemented in the short-term.

The priority routes include the most direct and practical routes of travel. For example, while enhanced pedestrian and bicycle connections to Fauquier Hospital were envisioned in the long-term, it was determined that a connection between downtown and the WARF along Waterloo Street was a priority route for short-term implementation. As this example shows, this Plan strives to provide practical connections between the most important destinations, while also envisioning longer-term pedestrian and bicycle connections.

B. Facility Descriptions

All non-motorized transportation and recreation facilities in the study area should be designed according to national standards, as defined by the American Association of State Highway Transportation Officials (AASHTO) and the *Manual on Uniform Traffic Control Devices (MUTCD)*. The facilities should also be designed to meet the Americans with Disabilities Act. If the national standards are revised in the future, the new national standards should be followed. A brief description of the different pedestrian and bicycle accommodations recommended in this Plan is included below. For more in-depth information and design development standards, the publications listed in Appendix K below should be consulted.

Bicycle Only Facilities

Shared Neighborhood Roadways

Shared neighborhood roadways are roads where bicyclists can be served by sharing the travel lanes with motor vehicles. Usually, these are streets with relatively low traffic volumes and/or relatively low motor vehicle speeds, and which do not need special bicycle accommodations in order to be bicycle-friendly. Shared roadways can include rural roadways that may carry higher speeds, but have extremely low traffic volumes. Shared roadways can also include streets with wide outside lanes (13 to 14 feet). Increasing the outside lane width increases comfort for bicyclists, but can also encourage increased vehicular speeds. Example of roads that can be shared between bicycles and motor-vehicles without additional improvements include Warrenton Chase Drive, Fisher Lane and Black Sweep Road.



Shared Lane Markings

Motor vehicle/bicycle sharing of the travel space can be emphasized by using special shared roadway pavement markings. Shared lane markings can be helpful on shared lane streets where there is insufficient space to add bicycle lanes, and where the speed limit is not above 35 miles per hour. The shared lane marking assists with wayfinding and can be used in conjunction with signs to delineate specific bicycle routes. Examples of roads that would be appropriate for shared lane markings include Winchester Street and Branch Drive.



Bicycle Lanes

A bicycle lane is a portion of the roadway that has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists. Bicycle lanes should be located on both sides of the road (except one way streets), and carry bicyclists in the same direction as adjacent motor vehicle traffic. The standard width for a bicycle lane is 5 feet. Examples of roads that could be improved by adding bicycle lanes include Oak Springs Drive, Culpeper Street and Brookshire Drive. These roads are wide enough to accommodate bicycle lanes without reducing vehicle capacity, widening the roads or eliminating on-street parking.



Climbing Lanes

Climbing lanes are a hybrid on-road bicycle facility that includes a five-foot bicycle lane on one side of the roadway (in the uphill direction) and a shared lane marking on the other side of the roadway. This allows slower-moving, uphill bicyclists to have a designated bicycle lane space and allows motor vehicles to pass more easily. It also allows faster-moving, downhill bicyclists to have a shared-lane marking, which alerts motorists to expect faster-moving bicyclists in the travel lane, further from parked cars. The bicyclists have their own facility outside of the vehicle lane when they are climbing uphill, and they share the road with cars on the way downhill. The bicycle lane and shared lane markings also indicate the proper direction for bicyclists to travel on either side of the street. The only locations where climbing lanes are proposed are along Waterloo Street and select portions of Hospital Drive in the vicinity of Fauquier Hospital.



Shared Bicycle and Pedestrian Facilities

Shared-Use Paths

Shared-use paths provide a high-quality walking and bicycling experience in an environment that is separated from traffic. Shared-use paths should be a minimum of ten-feet wide and should be paved. These types of paths can be constructed within a roadway corridor, in their own corridor (such as a greenway trail or rail-trail), or be a combination of both. On high-speed boulevards, there may be a need for shared-use paths in addition to bicycle lanes. Shared-use paths should not be used to preclude on-road bicycling but rather to supplement a system of on-road bicycle facilities for less experienced bicyclists. Shared-use paths are proposed for much of the long-term trail network because many of the areas outside of Warrenton and in Fauquier County are large undeveloped parcels with few available road connections. Shared-use



Warrenton Branch Greenway in Warrenton

paths are also recommended in short-term locations such as between Lord Fairfax Community College and the Warrenton Branch Greenway, and between Fauquier Hospital and Frost Avenue.

The clear zone of trees, signs and other objects near trails is an important issue to consider in trail design. Information on clear zone requirements from the 1999 AASHTO Guide for the Development of Bicycle Facilities is included below. Additional information on trail design is provided in the appendix and in the Fauquier County Trail Design Guidelines (under development).

A minimum five-foot wide graded area with a maximum 1:6 slope should be maintained adjacent to both sides of the path; however, three feet or more is desirable to provide clearance from trees, poles, walls, fences, guardrails or other lateral obstructions. Where the path is adjacent to canals, ditches or slopes down steeper than 1:3, a wider separation should be considered. A minimum five-foot separation from the edge of the path pavement to the top of the slope is desirable. Depending on the height of embankment and condition at the bottom, a physical barrier, such as dense shrubbery, railing or chain link fence, may need to be provided.

Parallel-Use Paths

Parallel-use paths are pathways located alongside roadways that meet all of the design guidelines described above. Ideally, they are provided on both sides of the roadway and bicyclists use the paths as one-way facilities (traveling in the same direction as adjacent motor vehicle traffic). Due to right-of-way and budget constraints, they are often provided only on one side of the roadway. They should be designed to reduce conflicts between pedestrians and bicyclists. They can function well if the following key design features are achieved:



Existing sidepath near the Warrenton Chase subdivision

- A minimum five-foot buffer between the outside travel lane and edge of pathway can be built (a 42-inch vertical barrier is also acceptable).
- Conflicts with crossing roadways and driveways (which may or may not be signalized) should be minimized. Paths work particularly well where they are parallel to expressways and railroad rights-of-way because they are limited access in nature. However, paths parallel to expressways must be designed carefully, and grade separation is preferred at freeway interchanges.
- Street trees are recommended where possible (30-60' on center)
- Crossings of free flow ramps should be avoided, minimized or made sufficiently safe.
- Conflicts between pedestrians and bicyclists are minimized by having adequate width, clear space at the side of the path, and sight distance at locations where pedestrians cross or enter the facility.
- Berms and/or vegetation can be used to separate paths from adjacent areas. Although it is not desirable to place the pathway in a narrow corridor in between two barriers (such as fences, bollards, or a knee-wall) for long distances. This prevents path users from leaving the path in the event of an emergency, and creates an uncomfortable experience for the user.

Bridle Paths

Bridle paths are pathways created to provide facilities for horses, but which also serves a wide range of users including hikers, walkers, mountain bikers, and equestrians. Bridle paths are typically designed for a horse and rider to travel in single file and should consist of a minimum 18-inch width treadway, and 10-foot minimum vertical clearance. Consideration should be given to the type of surface used

depending on location, cost, expected volume of use, and type of users. In general natural or unpaved surfaces should be provided.

Existing Versus Acquired Trails

As noted, one of the goals of this plan is to create an interconnected network of facilities. The maps include proposed Shared-Use Paths and Parallel-Use Paths, and also note the location of existing and acquired trails. Existing trails are ones that are currently available for use. Acquired trails are ones that have been secured as part of development or through other planning processes and that will be developed in the future. The existing and acquired trail designation on the maps is a general category that includes both shared-use paths and parallel-use paths.

Pedestrian - Only Facilities

Sidewalks

Sidewalks are the central element of the pedestrian transportation system. It is important to ensure that sidewalks and other pedestrian pathways are paved and of a sufficient width. It is important that they are separated from motor vehicle traffic by a buffer. Elements of good sidewalk design are described below. The sidewalk specifications from the Warrenton Public Facilities Manual are included in Appendix G.

- **Width:** Sidewalks should be wide enough to accommodate expected levels of pedestrian traffic. Narrow sidewalks that cannot accommodate the volume of foot traffic may encourage pedestrians to walk in the roadway increasing the potential for conflict with motor vehicles. At a minimum, it is desirable to provide 5 feet of clear width (i.e., lateral space available for pedestrian travel for the length of a corridor) wide enough to accommodate two people walking side-by-side. In areas with high pedestrian volumes, such as near bus stops and/or where street furniture, pay phones, trash cans, utilities and street trees may function as obstacles, additional sidewalk width is necessary to provide this minimum clear width.



Existing sidewalk on Walker Road in Warrenton

Sidewalks are the central element of the pedestrian transportation system.

- **Surface:** The full clear width of a sidewalk should be paved with a smooth, stable and slip-resistant material to accommodate wheelchairs, bicycles, and strollers. Additional detail can be found in guidelines noted in Appendix K.
- **Buffer:** For the safety and comfort of pedestrians, it is desirable to provide a buffer area between the sidewalk and roadway (i.e., sidewalks should not be located against the curb, directly adjacent to the lanes of moving traffic). Some form of buffer should be included to protect pedestrians from noise, pollution, wind, and errant vehicles. Landscaping, such as a

grass strip, shrubs, and/or trees can be used. A tree-lined buffer has the added benefits of improving roadway aesthetics, providing shade, and improving pedestrians' perceptions of safety with respect to motor vehicle traffic. On-street parking can also serve as a buffer between moving vehicles and pedestrians while simultaneously slowing vehicular traffic. At intersections and crosswalks, a vegetative buffer should still give adequate site distance to pedestrian and motor vehicles to prevent crashes.

- *Lighting and Directional Signage:* Lighting is required to ensure the safety and security of pedestrians. In addition, directional signage and wayfinding should be installed around major pedestrian attractors (e.g. heavily-used transit stops, major parks, tourist destinations, commercial corridors) to direct pedestrians to local points of interest. This signage should be sized and oriented appropriately for pedestrians.

Spot Improvements

This plan also includes recommendations for spot improvements throughout the study area. These spot improvements include measures to improve crossing conditions and strategies to improve transitions between different types of facilities. Additional information on the different spot improvements is included in the following chapter. The locations of recommended spot improvements are indicated by blue triangles on each of the connection maps beginning on page 21. The number next to the triangle on the maps references a table included in Appendix E, which documents the type of improvement that is needed. Additional detail on these improvements is provided beginning on page 34.

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Chapter 4: Recommendations

This chapter recommends pedestrian and bicycle connections between select destinations in the Town of Warrenton and Fauquier County.

Primary connections link to existing trails such as the Warrenton Branch Greenway. Routes are chosen to provide access to destinations such as the WARF, the future Central Sports Complex, Fauquier High School and Rady Park.

A combination of shared use paths, parallel paths, sidewalks, and on-road bicycle facilities such as bicycle lanes and shared lane markings are recommended because the connections between destinations vary significantly. The recommended facility on each road was selected based on stakeholder input, field analysis, and the characteristics of the roadway environment. Figure 3 on page 18 shows this proposed network of pedestrian and bicycle facilities.

A. Recommended Connections

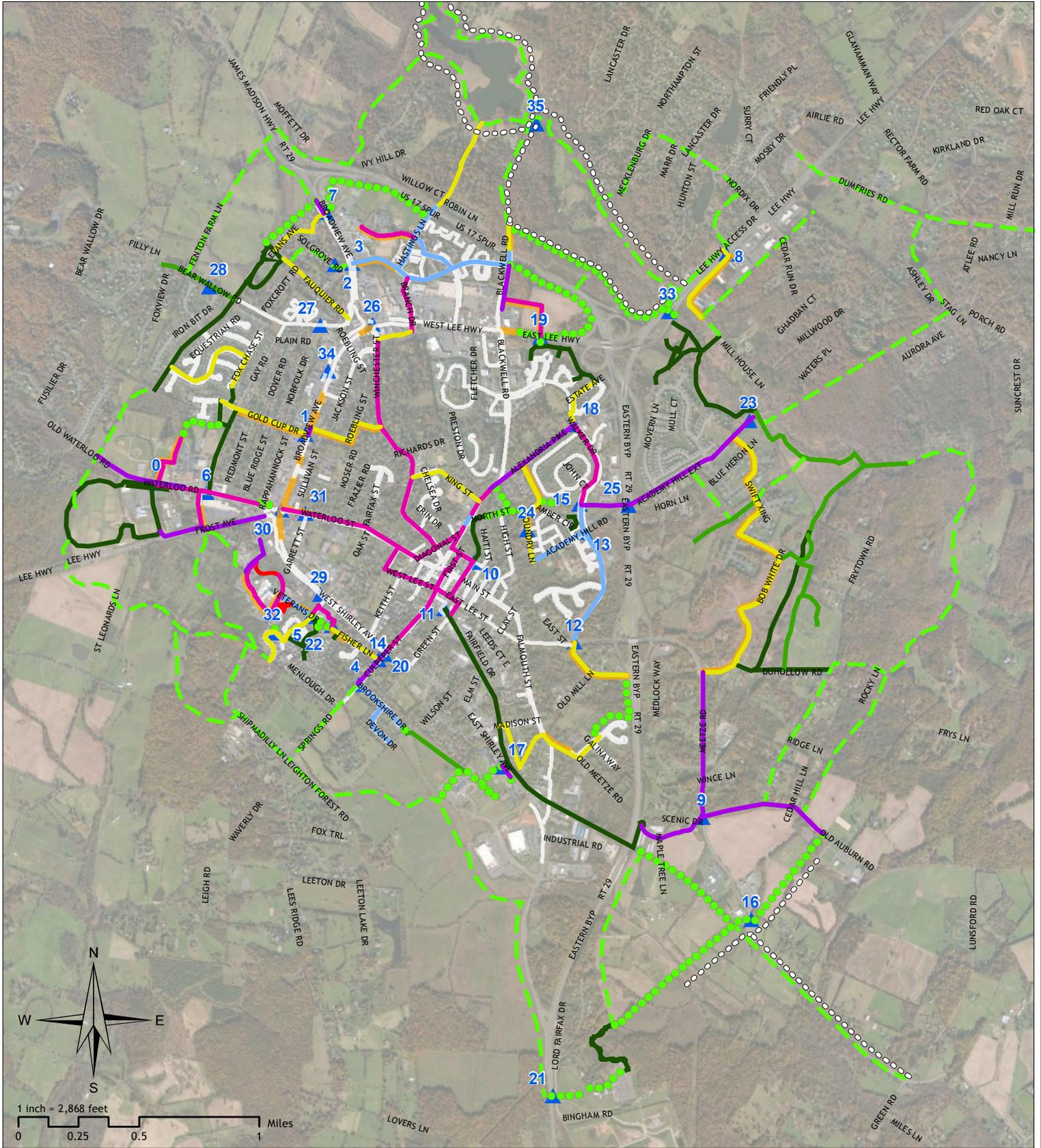
This Plan breaks the study area into five segments. Figure 4 on page 19 shows the limits of each segment. Detailed enlargements of each segment are provided on the pages that follow. The priority route (or short-term recommendation) is indicated by a dashed line on the maps. The segments also show routes that are long-term objectives. Due to the circumstances along the route (ownership, facilities already present, ease of retrofit), one main route is designated as the priority route. Other trail pieces completed later would offer alternative detours, more access onto the priority route, and longer extensions for recreational walking and bicycling. Priority segments were identified as segments of the plan which present the greatest opportunity/need for providing a connected cohesive bicycle/pedestrian network. The maps on the following pages also indicate locations of recommended spot improvements, which are discussed in more detail beginning on page 34 and in Appendix E.



Fauquier High School in Warrenton

Walking and bicycling routes enhance access to destinations such as Fauquier High School.

Fauquier-Warrenton Destinations Plan Recommendation Map

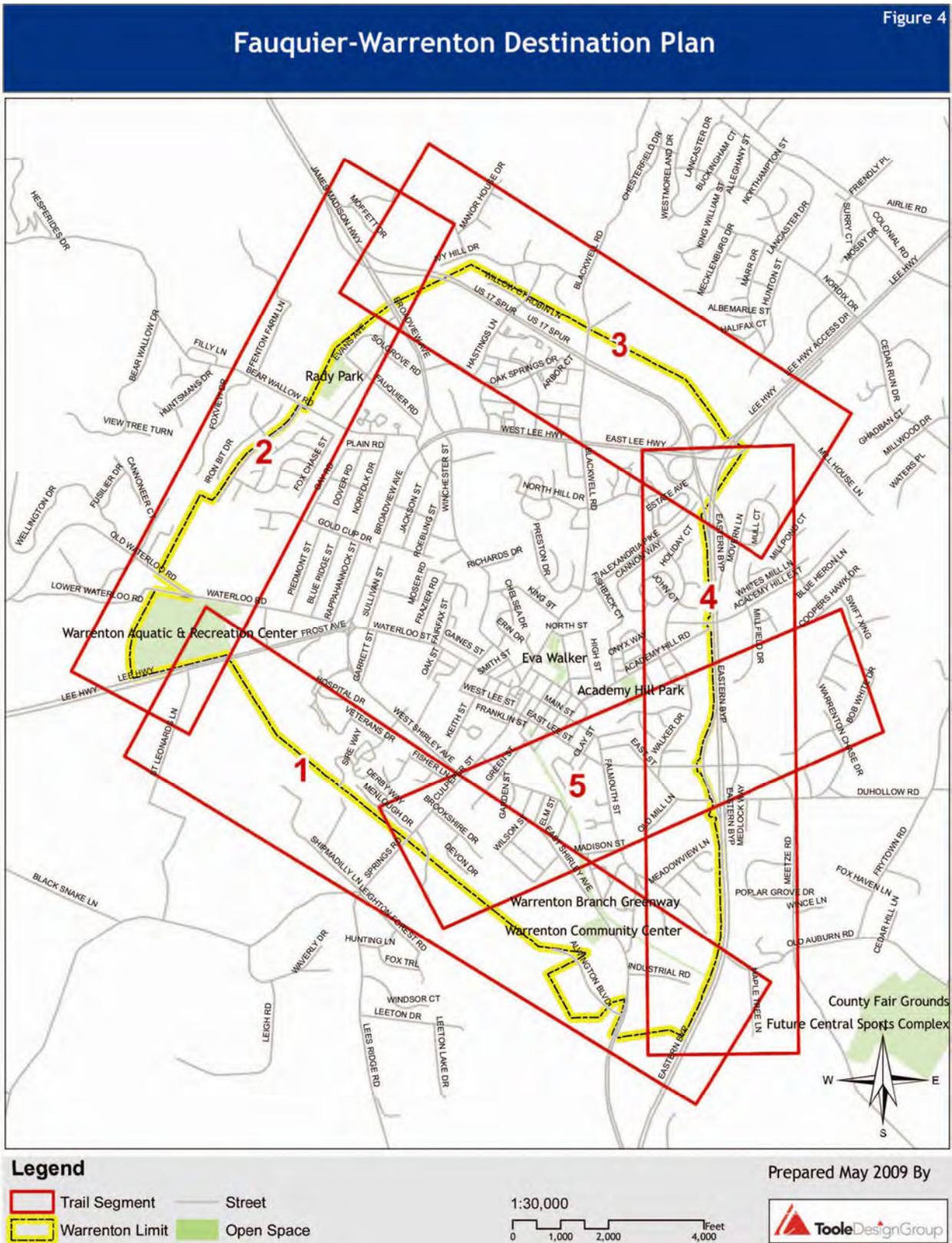


1 inch = 2,868 feet
0 0.25 0.5 1 Miles

Bicycle Facilities	Pedestrian Facilities	Shared Bicycle and Pedestrian Facilities	Other
Bike Lane	Existing Sidewalks	Side Path	Spot Improvement
Climbing Lane	Proposed Sidewalks	Multi-Use Path	Proposed Bridle Path
Shared Lane Marking		Existing Trail	
Shared Neighborhood Roadway		Long Term Trail	

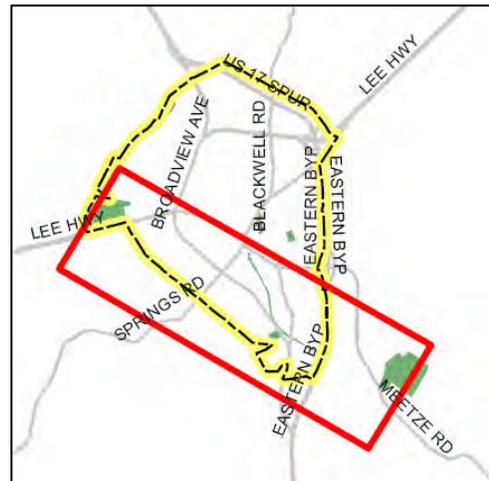
Prepared May 2009
(Updated March 2012)

Figure 4: Segment Identification Map



Segment 1: Warrenton Aquatic and Recreation Facility to the future Central Sports Complex

The goal of Segment 1 is to provide pedestrian and bicycle connections between the Warrenton Aquatic and Recreation Facility (WARF), Downtown Warrenton, the future Central Sports Complex and Lord Fairfax Community College via downtown Warrenton and the Warrenton Branch Greenway. While several routes are shown in Figure 5 on page 21, the primary connection, or priority route, between these destinations is indicated by a dashed line. The priority route within this segment consists of existing and proposed shared-use trails. A large portion of the priority route for Segment 1 either already exists or is proposed on land that was previously acquired.



The biggest challenges in making this connection are as follows: providing targeted sidewalk improvement projects to ensure connected sidewalk networks, providing wayfinding through Downtown Warrenton, improving conditions on Old Meetze Road and Old Auburn Road, and improving crossing conditions on Meetze Road. The priority route described above and shown on page 21 is detailed in Table 1 below.

Table 1: Segment 1 Connections

Facility Type	Total Miles within Priority Route	Other Recommendations within Segment	Total
Existing shared-use trails	1.832	1.774	3.606
Acquired trails	-	0.293	0.293
Proposed shared-use path	.332	1.175	1.507
Proposed long-term shared-use path	.822	5.057	5.879
Proposed parallel use path	-	0.412	0.412
Proposed bicycles lanes	-	0.623	0.623
Proposed climbing lanes	-	0.199	0.199
Proposed shared lane markings	-	0.908	0.908
Proposed shared roadways	-	1.109	1.109
Proposed new sidewalks	.100	1.452	1.552
Total Miles Existing/Acquired			3.899
Total Miles Proposed			12.189
Total Miles (Existing + Proposed)			16.088

Figure 5: Segment 1 Map

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Segment 2: Aquatic and Recreation Center to C.M. Bradley Elementary School

The goal of Segment 2 is to provide pedestrian and bicycle connections on the northwest side of town between the WARF, downtown Warrenton, and C.M. Bradley Elementary School and Highland School and to enhance access to Rady Park. The priority route takes advantage of existing facilities and areas that have been acquired for trail development. Additional improvements that are proposed will complement the priority route by offering alternative routes and more access points for the priority route.



From the WARF, the priority route splits in three directions. The first alignment crosses Frost Ave/ Lee Highway to the Fauquier Hospital Connection in the vicinity of Carriage House Lane. The second alignment follows Old Waterloo Road and Waterloo Street. It connects to the Warrenton Branch Greenway via South Chestnut Street, West Lee Street, and Green Street (Segment 5). The third alignment begins at the WARF and extends along the existing shared-use trail along the Timber Fence Parkway through Rady Park. At Rady Park users have two options for a priority route either continue south along Fauquier Road and north along Broadview to Oak Spring Drive intersection or east along a proposed shared-use trail Broadview/ Route 29. Once crossing Broadview, pedestrians and bicyclists will travel east on sidewalks and bicycle lanes on Oak Springs Drive and sidewalks and shared lane markings on Hastings Lane to reach C.M. Bradley Elementary School and the Highland School. A second priority route consists of continuing from the shared-use trail along and over Rt. 29 to the proposed trail network connecting to the reservoir area. The biggest challenges in this segment are improving intersection crossing conditions along Old Waterloo Road near the WARF and Routes 29/211, improving the crossing of Broadview Avenue and Oak Springs Drive, and providing targeted sidewalk improvements on Oak Springs Drive. The priority route described above and shown on page 24 is detailed in Table 2 below.

Table 2: Segment 2 Connections

Facility Type	Total Miles within Priority Route	Other Recommendations within Segment	Total
Existing shared-use trails	0.911	0.800	1.711
Acquired trails	-	-	-
Proposed shared-use path	0.317	0.222	0.539
Proposed long-term shared-use path	1.625	0.375	2.000
Proposed parallel use path	0.265	0.476	0.741
Proposed bicycles lanes	0.355	-	1.078
Proposed shared lane markings	1.201	1.626	2.827
Proposed shared roadways	0.368	1.739	2.107
Proposed new sidewalks	-	0.870	.870
Total Miles Existing/Acquired			1.711
Total Miles Proposed			10.162
Total Miles (Existing + Proposed)			11.873

Figure 6: Segment 2 Map

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Segment 3 White's Mill to Blackwell Road

The goal of Segment 3 is to provide pedestrian and bicycle connections between the trails at White's Mill and Blackwell Road. From the trail connection at Rady Park, the priority route follows a proposed shared-use trail to the reservoir near Blackwell Road, and eventually along an existing utility easement to Lee Highway. The proposed shared-use trail would then continue under Lee Highway to the existing trail network near Academy Hill Road. Additional crossing improvements could also be considered as part of the development of properties northeast of the intersection of East Lee Highway and Blackwell Road and south of US 17. Developers could also potentially assist in the Route 29 crossing discussed above. Along this priority route, pedestrians and bicyclists would be accommodated along existing and proposed shared-use trails. This segment includes a loop network bridle path for equestrian riders, mountain bikers, and hikers around the reservoir.



The biggest challenges in making this connection are as follows: developing a trail connection over Route 29 north of the Highland School, beneath Lee Highway near White's Mill, providing targeted sidewalk improvement projects on Blackwell Road to ensure connected sidewalk networks, and providing wayfinding. The feasibility of the proposed shared-use trail underpass under Lee Highway is currently being investigated. Preliminary findings indicate that it may be feasible, and details can be addressed closer to implementation.

The elements of the priority route described above and shown on page 27 are detailed in Table 4 below.

Table 3: Segment 3 Connections

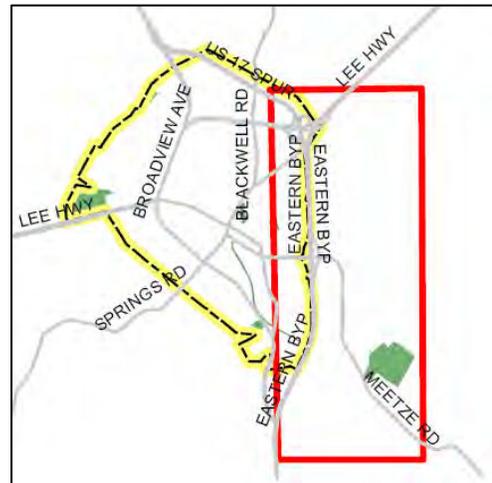
Facility Type	Total Miles within Priority Route	Other Recommendations within Segment	Total
Existing shared-use trails	0.705	0.310	1.015
Acquired trails	0.988	0.770	1.758
Proposed shared-use path	1.218	0.528	1.746
Proposed long-term shared-use path	-	4.858	4.858
Proposed parallel use path	1.458	-	1.458
Proposed bicycles lanes	-	-	-
Proposed shared lane markings	-	-	-
Proposed shared roadways	0.156	1.232	1.388
Proposed new sidewalks	0.133	1.243	1.375
Proposed bridle path	-	1.644	1.644
Total Miles Existing/Acquired			2.773
Total Miles Proposed			12.470
Total Miles (Existing + Proposed)			15.243

Figure 7: Segment 3 Map

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Segment 4: Lord Fairfax Community College to Warrenton Chase and White’s Mill Trails

The goal of Segment 4 is to provide pedestrian and bicycle connections between Academy Hill and downtown Warrenton, as well as to Warrenton Chase and Lord Fairfax Community College. Priority connections within this segment include a proposed and existing shared-use trail network from Academy Hill Road to Warrenton Chase, a short shared neighborhood roadway and sidewalk segment continues to a proposed parallel-use path along an existing 30 foot easement owned by the County from Meetze Road and Old Auburn Road to the Warrenton Branch Greenway. The priority alignment continues to the future Central Sports Complex, County Fairgrounds, and eventually to Lord Fairfax Community College. This priority route takes advantage of facilities that exist and areas that are acquired for future development.



The biggest challenges in making this connection are as follows: improving crossing conditions at Meetze Road at the entrance of the Sports Complex and providing targeted sidewalk improvements on Old Meetze Road. Other key challenges will be crossing Lee Highway and implementing the proposed trail from Lord Fairfax Community College to the future Sports Complex. The elements of the priority route described above and shown on page 30 are detailed in Table 4 below.

Table 4: Segment 4 Connections

Facility Type	Total Miles within Priority Route	Other Recommendations within Segment	Total
Existing shared-use trails	0.624	0.837	1.461
Acquired trails	-	-	-
Proposed shared-use path	0.660	1.703	2.363
Proposed long-term shared-use path	2.583	5.402	7.985
Proposed parallel use path	-	-	-
Proposed bicycle lanes	-	0.245	0.245
Proposed shared lane marking	-	0.286	0.286
Proposed shared roadways	-	0.860	0.860
Proposed new sidewalks	0.420	0.763	1.183
Proposed bridle path	-	3.703	3.703
Total Miles Existing/Acquired			1.461
Total Miles Proposed			16.625
Total Miles (Existing + Proposed)			18.086

Figure 8: Segment 4 Map

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Segment 5: Academy Hill Road to Warrenton Branch Greenway

The goal of Segment 5 is to provide pedestrian and bicycle connections between Academy Hill Road, Downtown Warrenton and the Warrenton Branch Greenway. From Academy Hill Road Extended pedestrians and bicyclists will share a parallel-use trail along one side of the road. When crossing the bridge, bicyclists will be on a striped shoulder as discussed on page 45. Users will have two possible routes at the intersection with Walker Drive. One route will head south on Walker Road, pedestrians will be on sidewalks and bicyclists will be in bicycle lanes. The priority route will turn onto sidewalks and proposed bicycle lanes along Academy Hill Road. From North Street, pedestrians and bicyclists will access Eva Walker Park via a proposed shared use trail. From Eva Walker Park, pedestrians will access the greenway using existing sidewalks, and bicyclists will access the trail via roadways with shared lane markings. Along this priority route, pedestrians will be accommodated on sidewalks and shared-use paths, while bicycles will be accommodated on existing roads through shared-lane markings, bicycle lanes, and parallel-use and shared-use trails.



The biggest challenge in making this connection is improving crossing conditions at several points, including the bridge over the Eastern Bypass along Academy Hill Road. Additional challenges are as follows: improving the experience of people walking and biking through the intersection near Eva Walker Park and Horner Street, providing targeted sidewalk improvement projects to ensure connected sidewalk networks, improving crossing conditions at Walker Drive, and improving conditions on Boundary Lane and Benner Drive by paving at least part of these roads. The elements of the priority route described above and shown on page 33 are detailed in Table 5 below.

Table 5: Segment 5 Connections

Facility Type	Total Miles within Priority Route	Other Recommendations within Segment	Total
Existing shared-use trails	-	-	-
Acquired trails	0.306	-	0.306
Proposed shared-use path	0.293	0.122	0.415
Proposed long-term shared-use path	-	1.603	1.603
Proposed parallel use path	0.835	0.439	1.274
Proposed bicycles lanes	0.359	0.573	0.932
Proposed shared lane markings	0.938	1.000	1.938
Proposed shared roadways	0.938	1.000	1.938
Proposed new sidewalks	0.079	0.232	0.311
Total Miles Existing/Acquired			0.306
Total Miles Proposed			7.777
Total Miles (Existing + Proposed)			8.083

Figure 9: Segment 5 Map

B. Spot Improvements

The recommended pedestrian and bicycle routes provide connections between destinations in the Town and County. Depending on the character of the road, presence of existing sidewalks and trails, and other factors, the proposed connections are made through off-road facilities like sidewalks and trails, and on-road bicycle facilities such as bicycle lanes. Shared and parallel-use trails are the only instances where those on bicycles and those on foot would be sharing the same space. The recommended facilities will make it more comfortable for pedestrians and bicyclists to travel; however, for the routes to be fully accessible, spot improvements will be needed. Spot improvements include measures to improve crossing conditions and strategies to improve transitions between facilities. The spot improvement treatments vary from site to site. Additional information on the recommended spot improvements is included below. General cost estimates for each type of spot improvement are included on page 57. Appendix E includes a list of all spot improvements and their locations are noted in Figures 5 through 9 and on the map, Figure 10, on page 35.

Improving Pedestrian and Bicycle Crossing Conditions

In addition to continuous pedestrian and bicycle routes, comfortable street crossings are critical to a safe and accessible pedestrian and bicycle system. Important factors in determining a pedestrian's experience crossing a roadway include intersection geometry and the character of the road that a pedestrian is attempting to cross. Important elements that impact crossing conditions are discussed briefly below.

Pedestrian crossings should be designed to maximize pedestrian safety. The Manual on Uniform Traffic Control Devices (MUTCD) states that: "Crosswalk lines should not be used indiscriminately. An engineering study should be performed before they are installed at locations away from traffic signals or STOP signs." A recent national research project completed by the Federal Highway Administration provides specific guidance on the installation of crosswalks and other safety measures at uncontrolled locations⁸.

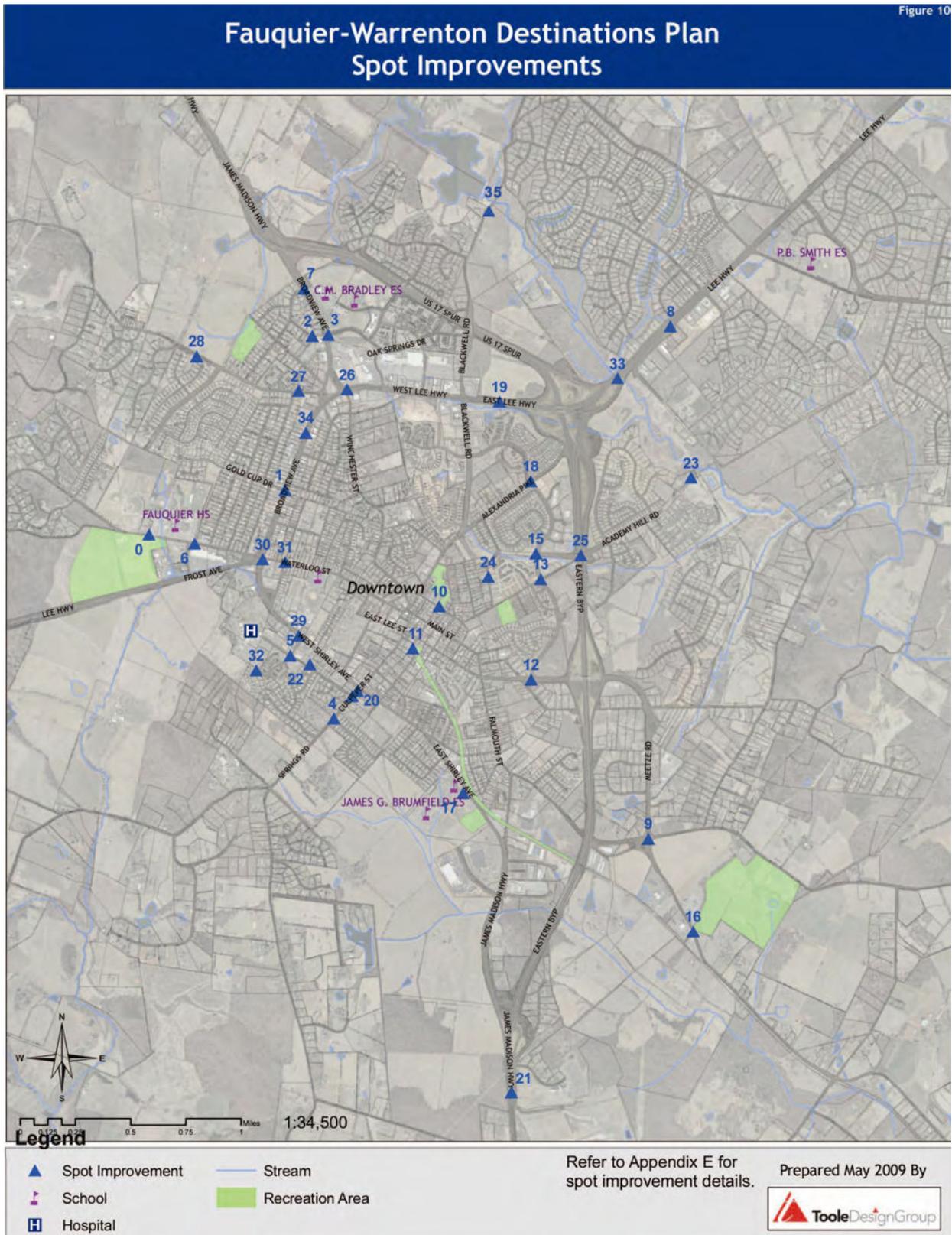


High-visibility crosswalks show preferred crossing locations and alert motorists to locations where they should expect pedestrians.

The results of this study clearly indicate the safety value of enhanced pedestrian crossing measures at midblock crossings and other uncontrolled locations. Safety measures that are recommended include crossing islands, raised crossings, and other traffic calming techniques, as well as additional warning signs and signal treatments in some locations. It is important to consider additional pedestrian crossing treatments that may be needed to supplement the crosswalk. Marked crosswalks alone (i.e., without traffic-calming treatments, traffic signals and pedestrian signals when warranted, or other substantial crossing improvement) are insufficient and should not be used under the following conditions:

⁸ Zegeer, C. V., J. R. Stewart, H. H. Huang, and P. A. Lagerwey. Safety Effects of Marked Versus Unmarked Crosswalks, Federal Highway Administration, FHWA-RD-01-075, February 2002.

Figure 10: Spot Improvements Map



- Where the speed limit exceeds 40 miles per hour,
- On a roadway with four or more lanes without a raised median or crossing island that has (or will soon have) an Average Daily Traffic count (ADT) of 12,000 or greater, or
- On a roadway with four or more lanes with a raised median or crossing island that has (or soon will have) an ADT of 15,000 or greater.

A decision tree based on the results of the study discussed above is included in Appendix D to determine appropriate safety treatments based on vehicular speeds, volumes, and number of travel lanes.

Marked Crosswalks

Legally, crosswalks exist where two streets intersect whether or not they are denoted with permanent markings⁹. Drivers are required by law to yield to pedestrians at intersections regardless if they are striped or otherwise marked. High-visibility crosswalks are recommended at many of the spot improvement locations to alert motorists to crossing pedestrians, and to show pedestrians preferred crossing locations. This may involve striping new crosswalks where they do not currently exist, restriping crosswalks that have worn away, or shifting crosswalks to a more appropriate location. The high-visibility crosswalks are similar to standard crosswalks, but they also have thick white bars parallel to the direction of travel. This may help make drivers more aware of pedestrians crossing in critical locations. A majority of the key locations for pedestrian crossing improvements are controlled intersections (intersections with stop signs or traffic signals). Crosswalks should be marked across most street approaches at these intersections.



Approaching vehicles must slow down to go over raised pedestrian crossings comfortably.

Raised pedestrian crossings

Raised pedestrian crossings (raised crosswalks) provide a continuous route for pedestrians at the same level as the sidewalk. Raised crossings eliminate the grade separation between the sidewalk and road surface, making the crossing more comfortable. Approaching vehicles must slow down to go over raised pedestrian crossings comfortably. This encourages motorists to yield.

Pedestrians are also positioned slightly higher than the road surface, which makes them more visible to approaching motorists. Pavement markings on the slope of the raised crosswalk can improve the visibility of the raised crosswalk to motorists. However, pedestrians should continue to cross with caution at these locations. An example of where this treatment is recommended is the southeast corner of the Route 29/211 intersection, to slow vehicles turning right onto Waterloo Street from West Shirley Avenue.

⁹ The Code of Virginia, 46.2-100 states: “‘Crosswalk’ means that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the traversable roadway; or any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.”

Curb extensions

Curb extensions shorten pedestrian crossing distances and increase the visibility of pedestrians at roadway crossings. By narrowing the curb-to-curb width of a roadway, curb extensions may also help reduce motor vehicle speeds, thereby improving pedestrian safety. Curb extensions are appropriate for locations that have on-street parking. They may be complemented by in-roadway pedestrian crossing signs, high-visibility pedestrian warning signs, and improved lighting. Space for additional on-street parking and new curb extensions can also be created by removing travel lanes. Curb extensions at the intersection of Routes 29 and 211 could potentially reduce pedestrian crossing distances, likely without diminishing motor vehicle capacity at the intersection.



Median islands allow pedestrians to cross one direction of motor vehicle traffic at a time.

Curb radius reduction

Wide curb radii allow motorists to make high-speed turning movements. Reducing the curb radii at the corners of an intersection helps slow turning vehicles, improves sight distance between pedestrians and motorists, and shortens the crossing distance for pedestrians. Surrounding land uses and the traffic composition on the roadway are important to evaluate when considering this treatment. If a curb radius is too small, trucks and buses may drive over the curb and endanger pedestrians. The Town and County should also look for opportunities to reduce curb radii as a part of all roadway projects that involve geometric improvements at intersections.

Median islands

Median islands (or pedestrian crossing islands) allow pedestrians to cross one direction of motor vehicle traffic at a time. Studies show that they can help reduce pedestrian crashes. Median islands should be installed as part of the roadway corridor to help improve pedestrian safety and comfort at some of the locations recommended for crossing improvements. They are likely to be a long-term improvement on roadways where significant geometric changes are needed to provide enough space for the median island. Space for median islands can be created by removing existing travel lanes on roadways that have excess vehicle capacity. This may involve removing through-travel lanes or replacing a center-turn lane with median islands or a median strip. In some corridors, removing travel lanes can also create extra roadway space for bicycle lanes. Removing travel lanes often requires tradeoffs between travel modes within a roadway corridor. Engineering analysis should be conducted to evaluate the impact of removing travel lanes on all modes, including transit, motor vehicle, bicycle, and pedestrian transportation before lanes are removed. An example of a location where a median island could be helpful for pedestrians is the intersection of East Lee Street and Oliver City Road.

Curb ramps

Accessible curb ramps should be provided at every marked crosswalk. Two types of curb ramp improvements are recommended: 1) constructing new curb ramps at crosswalks where they do not exist and 2) retrofitting existing curb ramps to ensure they comply with the Americans with Disabilities Act (ADA). All curb ramps should meet the requirements of the *Americans with Disabilities Act - Architectural Barriers Act Accessibility Guidelines*. Accessible curb ramps should be provided when roads are resurfaced or reconstructed. It is recommended that curb ramps be provided for each

crosswalk extending from a corner rather than a single curb ramp pointing into the center of the intersection.

Traffic signals

Signalized intersections stop opposing traffic, allowing pedestrians to cross busy roadways. Fast-turning traffic increases pedestrian discomfort at intersections, so it is important to make other geometric improvements (such as reducing turning radii or adding median islands) when signalized intersections are installed or upgraded. Traffic signal improvements include installing pedestrian countdown signals, providing leading pedestrian interval phasing, restricting right-turn-on-red and installing pedestrian activated traffic signals. These are discussed in more detail below.

- *Pedestrian countdown signal heads*
Pedestrian countdown signal heads are beneficial at intersections with high pedestrian crossing volumes and/or long crossing distances, because they indicate the number of seconds remaining for pedestrians to complete crossing the street. The Town and County should provide Accessible Pedestrian Signals (APS) at such locations as they may be necessary to meet the mobility needs of persons with disabilities. APS are traffic signals that provide information in non-visual format (such as audible tones, verbal messages, and/or vibrating surfaces). The primary purpose of these signals is to assist pedestrians who are visually impaired in safely crossing streets at busy and complex locations.

- *Leading pedestrian interval*
At signalized intersections with high pedestrian crossing volumes, signals can be programmed to allow pedestrians to begin crossing 2 to 4 seconds before the vehicle traffic on the parallel street is given a green light. This low-cost treatment, called leading Pedestrian Interval (LPI), gives pedestrians enough time to cross to the middle of the street so that turning vehicles can see them, be aware of them, and yield to them before they receive a green light. It is also possible to use the LPI only during certain times of the day, such as between 7 a.m. and 7 p.m., or whenever the highest numbers of pedestrians are typically present. A study of a three-second LPI found that the LPI decreased conflicts between turning motor vehicles and increased the percentage of motorists that yielded to pedestrians in the crosswalk¹⁰. Traffic signals with LPI have a longer “all red” phase, which may tempt drivers to take advantage of the extra time and run red lights. This type of behavior should be prevented through education and strict enforcement. The signals at the intersection of Routes 29 and 211 may be potential candidates for the addition of LPI’s, given the distance pedestrians must cross.



Pedestrian countdown signal heads indicate the number of seconds remaining for pedestrians to complete crossing the street.

¹⁰ Van Houten, R., R. A. Retting, C. M. Farmer, J. Van Houten, and J. E. L. Malenfant. “Field Evaluation of a Leading Pedestrian Interval Signal Phase at Three Urban Intersections,” Transportation Research Record 1734, 2000.

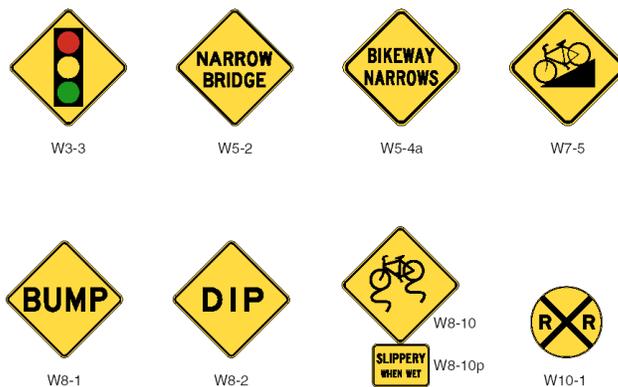
- *Pedestrian-activated traffic signal (mid-block)*

At busy mid-block pedestrian crossings, pedestrian-activated traffic signals should be considered for regulating vehicular traffic. Extensive guidance and standards for pedestrian signal warrants are provided in Section 4C of the Manual on Uniform Traffic Control Devices (MUTCD). These signals are appropriate in locations with heavy pedestrian crossing activity and police-reported crashes. A High-Intensity Activated Crosswalk (HAWK) Signal is a type of traffic signal that should be considered at the intersection of Gold Cup Drive and Broadview Avenue. These signals allow the traffic light to stay green for roadway traffic until a pedestrian pushes the button. When the button is pushed, the traffic light turns to yellow and red like a typical traffic signal. When traffic receives the red light, the pedestrian signal provides the WALK indication to the pedestrian. After the pedestrian begins to cross and the flashing DON'T WALK indication starts, drivers are given a flashing red signal that allows the drivers to proceed as soon as the pedestrian clears the crosswalk and conditions are safe.



HAWK signals allow the traffic light to stay green for roadway traffic until a pedestrian pushes the button.

Figure 11: Warning Signs for Multi-Use Trails



Signage

Signs create awareness, establish rules for specific areas, and can help with way finding. The MUTCD provides a number of warning signs that must be used when a trail hazard is unavoidable. These signs should be placed to provide adequate advanced warning of the upcoming hazard. All signs shown below should be reflectorized (per the MUTCD) and should be 18" x 18" in size (except for the RR crossing sign, which should be 15" diameter).

Source: Manual on Uniform Traffic Control Devices.

Additional requirements for trail signs and pavement markings are provided in Part 9 of the MUTCD, which can be accessed online at <http://mutcd.fhwa.dot.gov/>. Further guidance is provided in the Fauquier County Trail Design Guidelines (under development). Driver awareness of pedestrians at crossings can be enhanced by pedestrian warning signs and by clear sight lines to pedestrians in and approaching crosswalks. Crosswalks can be enhanced by new, high-visibility pedestrian warning signs and in-roadway pedestrian crossing warning signs. Sight-distance improvements for pedestrians should also be made as a part of all roadway reconstruction projects. These treatments are described below.



Existing trail sign near Highland Towne Lane in Warrenton

High-visibility pedestrian warning signs

These signs can increase driver awareness of pedestrians, especially in areas where pedestrians may not be expected. A fluorescent yellow/green color is approved in the MUTCD and can be used on these signs (the W11-2 Pedestrian Crossing Sign). According to the MUTCD, these signs “should only be used at locations where the crossing activity is unexpected or at locations not readily apparent.” These signs are most effective when combined with other treatments, such as marked crosswalks, curb extensions, and median islands. Flashing lights can be used, to grab the attention of drivers. The Town and County can also experiment with using pedestrian and bicycle crossing warning signs at shared-use path crossings. Signs should be used judiciously, as too many signs can cause visual clutter. These signs can be applied to bicyclist awareness as well. Signs that remind drivers to share the road help to make drivers aware of the presence of bicyclists. These signs send a clear message to bicyclists that they are welcome on these roads. They are important where shared neighborhood roadways are recommended where there are no delineated lines or other road markings to establish a bicyclist’s right to ride alongside cars.

Rapid flashing beacons

The Rapid Flash Beacon (RFB) is a device using Light Emitting Diode (LED) technology (instead of the traditional incandescent bulbs) in combination with crosswalk warning signs. The RFB design differs from the flashing beacon by utilizing a rapid flashing frequency (60 times per second vs. 1 per second), brighter light intensity and the ability to aim the LED lighting. Additionally, pauses can be incorporated at chosen intervals to create patterns and increase motorist recognition of accompanying information. To simplify installation, the RFB can be designed to use solar power. RFBs are currently not included in the MUTCD.

RFBs have been used on crosswalk signs in a number of locations around the US, including Boulder, Colorado and St. Petersburg, Florida. Many jurisdictions have tested the effectiveness of the device, and the results indicate that it increases motorist compliance to a much higher degree than the standard flashing beacon. An example of a location where an RFB should be considered is along the longer, isolated slip



RFBs have been used on crosswalk signs in a number of locations around the U.S., including Boulder, Colorado and St. Petersburg, Florida.

ramp used by motor vehicles traveling from Broadview Avenue right onto Frost Avenue.

Improving Trail and Road Intersections

A common challenge with trail design is ensuring comfortable and safe conditions at intersections between trails and roads. When trails and roads intersect, two different user types interact; drivers and non-motorized travelers. The two user types need advanced warning of the intersection. Both also need adequate sightlines and a clear indication of the appropriate traffic pattern for the intersection. Suggestions for spot improvements for these types of intersections are provided below.

In Warrenton, many trails are flanked by trees on either side for nearly the entire length of the trail. To provide users with an opportunity to see and react to the unexpected, a shared use path should be designed with adequate stopping sight distances. The distance required to bring a path user to a full controlled stop is a function of the user's perception and braking reaction time, the initial speed, the coefficient of friction between the wheels and the pavement, the braking ability of the user's equipment, and grade.

Some trails have narrow bollards located at the very end of the trail. This can be problematic for several reasons. Due to the design of the bollards, bicyclists sometimes may not see them until it is too late. Bollards are used to remind bicyclists that they need to slow down before the intersection and are also used to keep out unauthorized vehicles. If the bicyclists cannot see the bollards in time to react and slow down, they risk running into an intersection unprepared. Also, if bicyclists cannot see the bollards, they may run into them, causing injuries.

Another concern with the existing trail/road intersections is the lack of visual separation between the trail end and the roadway. In some cases there is no curb or apron to show that the trail is entering vehicle territory; instead, the trail forms a seam with the road. This can be addressed with a change in texture, material or color that visually separates the two paths. A wider apron at the end of the trail would also help accommodate any congestion at the end of the trail. Additional recommended treatments that could significantly improve trail and road intersections in the study area are noted below.

- A 15-foot (4.5 m) minimum sight triangle should be provided at the intersection of shared use paths with adjoining sidewalks or other pedestrian access points. The clear sight line will enable pedestrians approaching the pathway to see and react to oncoming bicyclists to avoid potential conflicts. For additional information and graphics on sight triangles, see the Fauquier County Trail Design Guidelines (under development).
- If bollards are installed, they should be painted a bright color (yellow is recommended) and be reflective on all sides. Striping an envelope around the post is recommended.
- Use of one bollard in the center of the trail is preferred. Where more than one bollard is necessary, place one in the center of path, and one on either side of the trail placed a minimum of 6 feet (1.5 m) apart.
- Set bollards back from roadway edge a minimum of 30 feet (10 m). Path users need to focus on intersection conditions independently from trying to avoid bollards on or near the path.
- Contrasting color can be used to create a visual distinction between shared use paths and roadways at locations where the roadway and shared use path are constructed with the same material (typically asphalt). Right-of-way assignment should be based upon the standard MUTCD practice of using the least control that is effective. Assigning incorrect priority or being



Contrasting color pavement, signs and other design features highlight the transition from the trail to the road.

overly restrictive in an attempt to protect path users can lead to confusion and unsafe practices by both path users and motorists, increasing the potential for a collision.

- For locations where queuing at an intersection results in crowding at the roadway edge, consideration should be given to widening the trail approach. This can increase the crossing capacity and help reduce conflicts at the path entrance.
- Signs and markings at crossings should provide clear messages to motorists and path users, and direct path users to cross at a clearly defined location when the crossing location is not intuitively apparent.

Bicycle Parking and Storage

Improved facilities will be unused if there is a lack of adequate storage facilities. Some people bicycle for recreational purposes only, looping back to their starting location. However, some people ride their bicycles for transportation purposes. Bicyclists will not stop to shop or eat if they do not feel that their bicycle can be stored safely. If there is nowhere to store a bike people may not opt to use their bicycles at all. To encourage bicycle use, it is necessary to provide areas for bicyclists to park conveniently and securely. Bicycle racks are used for short term (less than one day), and bicycle lockers are used for long term (one day-indefinite). Due to variations in design, racks work well in almost any location. Storage lockers work well to satisfy commuter or residential needs, as the bikes are more securely locked and are shielded from the elements.

Bike racks should be made available at all of the destinations along and around the priority routes, as well as at all schools and public buildings. As a long-term goal, bicycle racks should be provided at all of the destinations listed on pages 6 and 7. Storage lockers are encouraged for commuter parking sites such as park and ride lots, near transit areas and also on site at the Lord Fairfax Community College Campus. For detailed information on the appropriate placement of bicycle racks on a site, see Appendix F. A cost estimate for inverted U bicycle racks is provided in table 9 on page 57.



Intersection of Routes 29 and 211 in Warrenton

Realigned slip lanes and other design retrofits can slow turning vehicles and improve pedestrian crossing conditions.

C. Recommended Pedestrian and Bicycle Connectivity Projects

Improving road crossing conditions along the proposed routes will make them more comfortable and connected, increasing the likelihood that people will choose to use them. Likewise, ensuring that the transitions between trails and roads are well-marked will benefit all users of the routes. This ensures that pedestrians and bicyclists understand when they are about to meet the road and need to be more cautious. The facilities and design considerations discussed above should be used along the routes connecting destinations, and they can be implemented throughout the Town and County. There is also a need for specific spot improvement projects along these routes. Examples of the types of spot improvements that are needed are discussed below.

Route 29/211 Intersection

The intersection of Routes 29 and 211 presents a barrier to pedestrian and bicycle connectivity in the study area. At this location, Waterloo Street, West Shirley Avenue, Frost Avenue, and Broadview Avenue intersect (note the location is shown as number 30 in Figure 10 on page 35). The intersection provides a direct link between the WARF, Fauquier High School and the residential neighborhoods west of downtown. The intersection also provides access to numerous locations such as parks, the historic downtown, and the Warrenton Branch Greenway. A detailed engineering study of this intersection is needed that accounts for geometric dimensions, traffic volumes, and survey data. This more detailed study is recommended as an early action item in Chapter 5. Potential design solutions to retrofit the intersection so that it better serves all users are included below and noted in Figure 12. These ideas should be examined further as part of the recommended intersection study.



Intersection of Routes 29 and 211 in Warrenton

Potential Retrofit Strategies

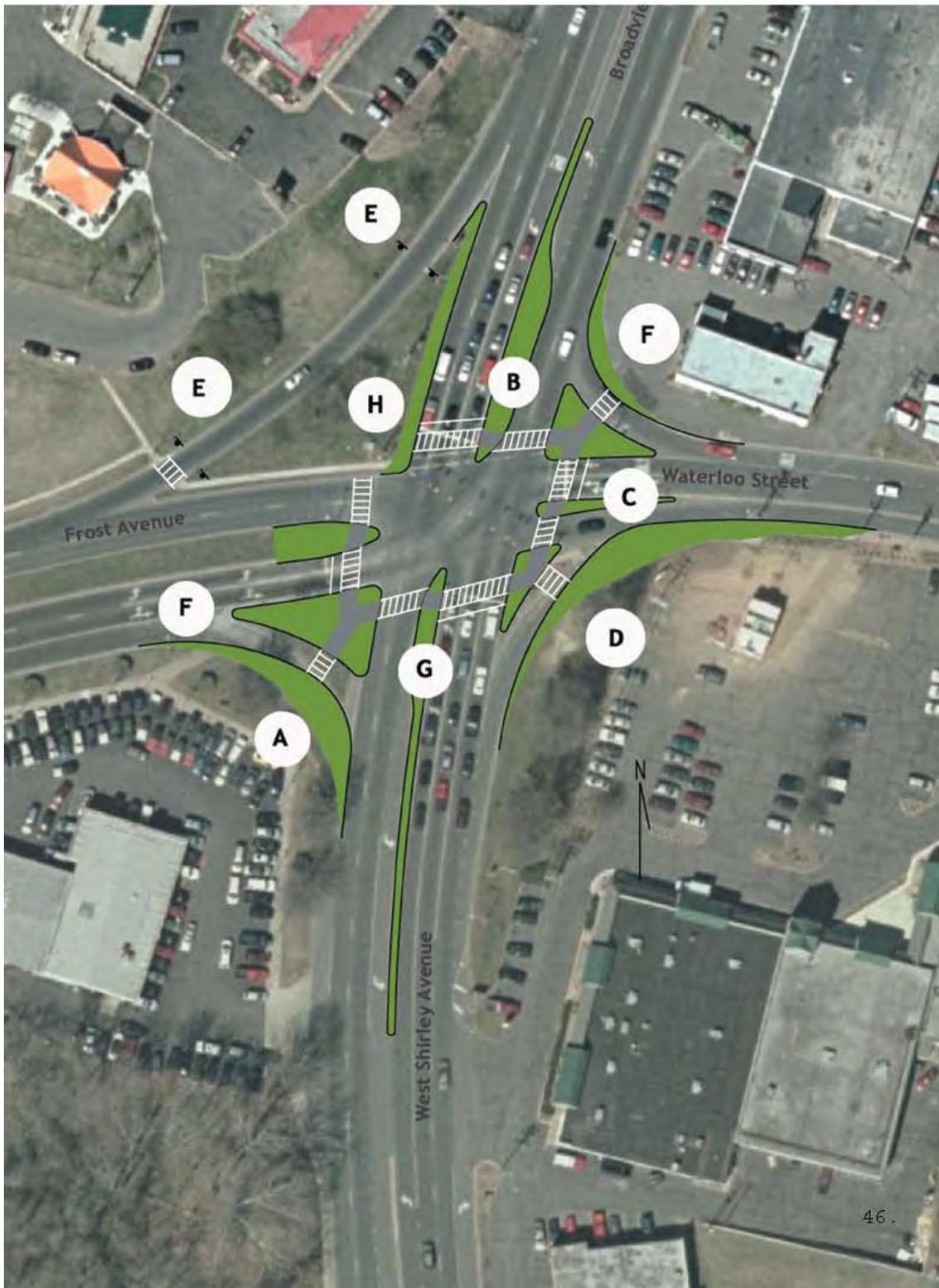
- A. Consider slip ramp realignments to reduce the distance that pedestrians have to cross and to slow turning vehicles.
- B. Investigate the possibility of narrowing the existing travel lanes and widening the medians on Broadview Avenue and West Shirley Avenue, so that the medians can function as pedestrian refuge islands.
- C. Improve crossing conditions to provide better access to the sidewalk on the south side of Waterloo Street.
- D. Consider a raised table crosswalk to slow motor vehicles turning onto Waterloo Street from West Shirley Avenue. Raised table crosswalks could also be considered on the other slip ramps at the intersection.
- E. Consider a Rapid Flash Beacon that alerts motorists to pedestrians crossing the crosswalk at the end of the slip ramp accessing Frost Avenue.
- F. Consider realigned slip lanes and other design retrofits to tighten the area where vehicles access the slip ramp, in order to slow them down.
- G. Replace the striped median with a raised median and investigate whether it is possible to provide a crosswalk on the south side of the intersection by realigning the slip lanes, narrowing the existing travel lanes, and widening the existing median.
- H. Install motor vehicle stop lines to increase the distance between motor vehicles and pedestrians in the crosswalk.

Center medians should be expanded, if possible, to serve as pedestrian refuge islands.

While not shown graphically in Figure 12, the following strategies could also be considered.

- I. Provide a shared-use trail connection to allow comfortable and direct access to Old Waterloo Street.
- J. Consider increasing the crossing time for pedestrians crossing Broadview Avenue, to ensure that they have enough time to comfortably negotiate the intersection.
- K. Leading Pedestrian Intervals at the traffic signal could reduce potential conflicts with turning vehicles.
- L. Complete an ongoing Town of Warrenton sidewalk project, funded by VDOT, on the north side of Waterloo Street.

Figure 12: Route 29/211 Graphic



Academy Hill Extension Bridge over the Eastern Bypass

A second spot improvement that could provide an important connection in the pedestrian and bicycle network is in the vicinity of the White’s Mill subdivision in Fauquier County, on the east side of Warrenton. A parallel-use trail along one side of Academy Hill Extended is recommended to enable current and future residents to walk and bicycle into the downtown area.

An important barrier along this route is the bridge across the Eastern Bypass (note the location is shown as number 25 in Figure 10 on page 35). Because the bridge is constrained, and the parallel-use trail will only be approaching the bridge from one side, a design that maximizes the side of the striped shoulder on one side is recommended in the short-term. Narrowing the motor vehicle travel lanes crossing the bridge to approximately 10.5 feet each and shifting them over to one side of the bridge would enable a striped shoulder on the same side as the parallel-use trail, which is around seven feet wide. The recommended short-term spot improvement is shown in Figure 13 below.



Existing bridge on Academy Hill Road Extended

Narrowing travel lanes and shifting them over to one side of the bridge could enable a larger striped shoulder on the same side as the proposed shared-use trail.

National standards allow for travel lanes that are 10 feet wide; however, local VDOT stakeholders prefer a minimum of 11-foot lanes, so additional discussion may be needed. In the longer-term, opportunities to extend the width of the bridge to better accommodate pedestrians and bicyclists should be considered; however, it should be noted that any extension would have to be placed on the south side of the bridge to accommodate vehicle clearances below. If and when the bridge is replaced, pedestrian and bicycle access should be provided.

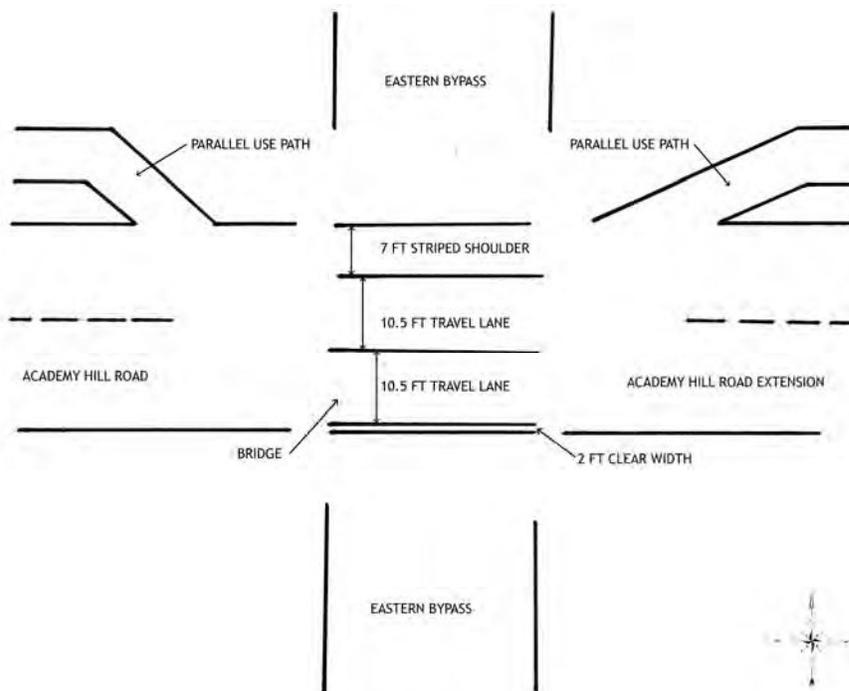


Figure 13: Academy Hill Road Extended Bridge Concept

Fauquier Hospital Connection

A third recommended spot improvement is to provide pedestrian and bicycle access between Fauquier Hospital and neighborhoods to the south and east (note the location is shown as number 32 in Figure 10 on page 35). Currently, residents wishing to access the hospital often have to drive down Carriage House Lane and then turn onto Veteran’s Drive and back into the hospital, despite the fact that for many, it is not more than a few hundred feet away from their homes.



Example of a small trail connection

To improve this access a small trail connection could be built to provide pedestrian and bicycle access, while still restricting car access. This trail would provide access to the existing sidewalks and roads around the hospital campus. Due to the fact that placing trails between adjacent homes is almost always opposed, it may be necessary to acquire property.

Removing a fence and providing a small shared-use trail connection could provide pedestrian and bicycle access to the existing sidewalks and roads around the Fauquier Hospital campus.

Route 29 Underpass

The Town, County, and State should continue to investigate the feasibility of a shared-use path under the Route 29 Bridge on the northeast side of Warrenton (note the location is shown as number 33 in Figure 10 on page 35). A shared-use trail that connects the existing trails around the White’s Mill subdivision under Route 29 and eventually over to Blackwell Road would provide an important connection to trail users by extending the existing trails over to the schools, retail, and other destinations on the northeast side of town.



Accotink Trail under the Little River Turnpike in Fairfax County

It appears that the width and conditions of the area under the road are amenable to the development of a trail, roughly following the existing creek. To move forward, the Town and County would need to get approval from the Commonwealth Transportation Board. An example of a trail that has been developed beneath a VDOT road under similar conditions is the Accotink Trail under the Little River Turnpike in Fairfax County. Preliminary findings indicate that it may be feasible, however further study would be needed.

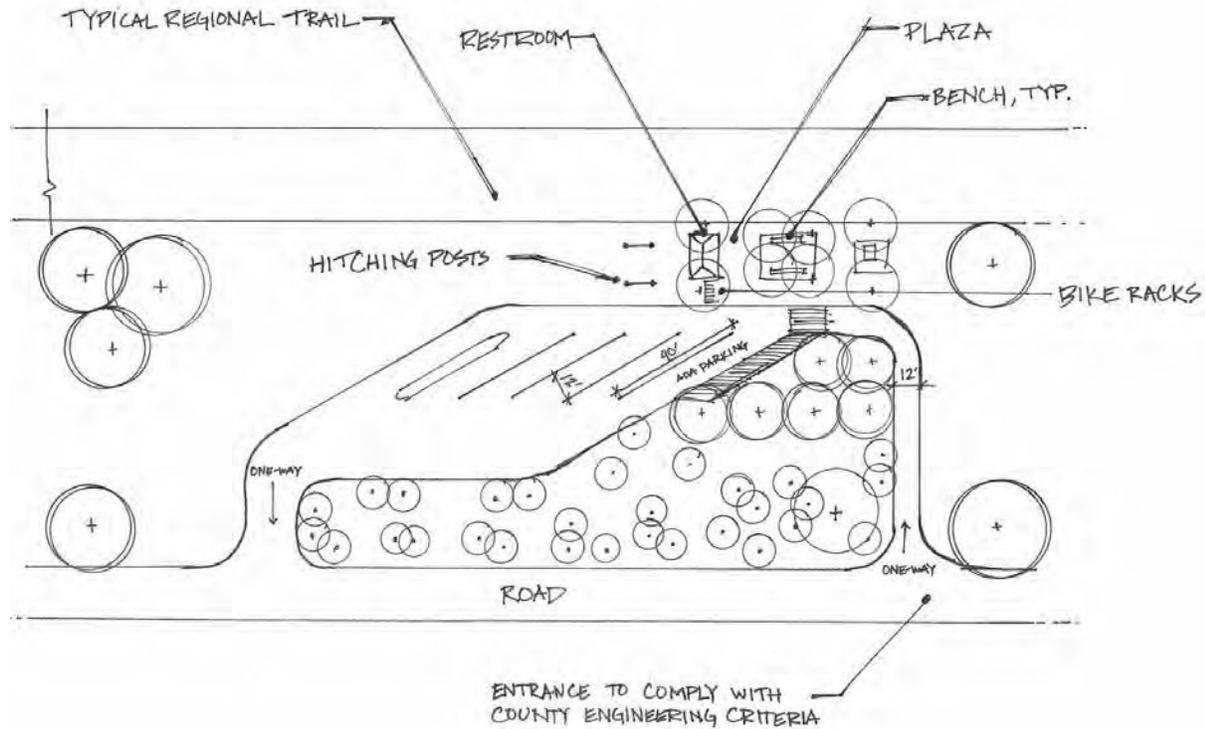
Pedestrian and bicycle trail connections have been successfully developed under state roads in Virginia.

An additional connection that could be considered in the vicinity is one that would provide pedestrian and bicycle access across US 17. This crossing improvement could be considered as part of the development of properties northeast of the intersection of East Lee Highway and Blackwell Road and south of US 17.

Blackwell Road Trailhead

The feasibility of an equestrian trailhead along Blackwell Road near the Warrenton reservoir should be investigated (note the location is shown as number 35 in Figure 10 on page 35). An equestrian trailhead would provide trailer parking, amenities and public access for equestrian riders to the proposed shared-use trail and bridle path network around the reservoir and adjacent areas.

Figure 15: Potential Equestrian Trailhead along Blackwell Road near the Warrenton Reservoir.



Broadview Avenue

The Town of Warrenton, Rappahannock-Rapidan Regional Planning Commission, and Virginia Department of Transportation's Broadview Avenue 211 Access Management Study analyzed access maintenance, driveway consolidation, roundabouts, and other issues along Broadview Avenue in Warrenton (note the location is shown as number 34 in Figure 10 on page 35). The study identified short-and long-term improvements that could be made to Broadview Avenue in Warrenton to improve access to local businesses, traffic operations and safety for all users. The study identified five alternatives for Broadview Avenue, which are listed below.

- Alternative 1: No Build
- Alternative 2: Widen to six lanes, add a median
- Alternative 3: Maintain four lanes, add a median
- Alternative 4: Maintain four lanes, add a median, consolidate driveways
- Alternative 5: Maintain four lanes, add a median, consolidate driveways, and build service roads

As part of the planning process, the project team reviewed the Broadview Avenue 211 Access Management Study and would have the following recommendations. Non-motorized travel across and along Broadview was identified as a critical need. It is particularly difficult to cross the road, and conditions traveling along the road are also challenging. It was determined that Alternative 1 is not preferable. Options to build a median, as shown in Figure 16 below, would benefit pedestrians and bicyclists by improving crossing conditions. The design of the median and intersections should fully accommodate pedestrians and bicyclists. A HAWK signal should also be considered at the intersection of Broadview Avenue and Gold Cup Drive as discussed on page 39. New sidewalks and buffers between the sidewalk and the road are also necessary to improve pedestrian conditions along Broadview Avenue.

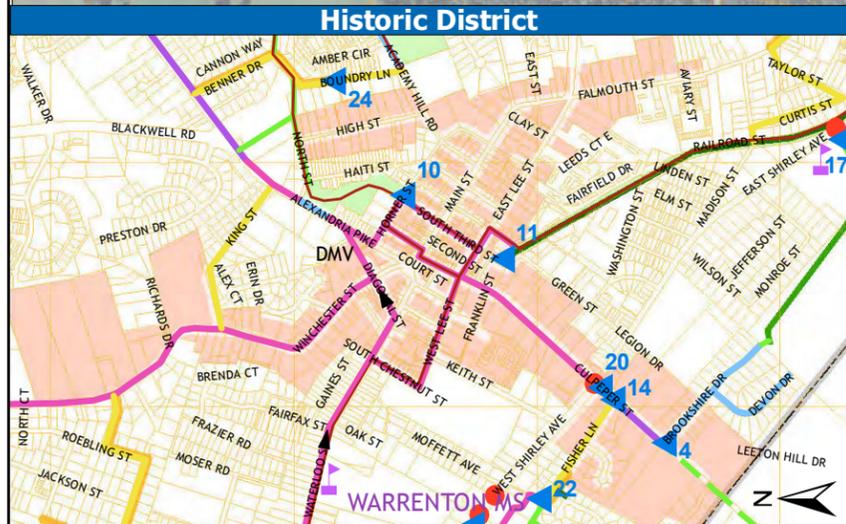
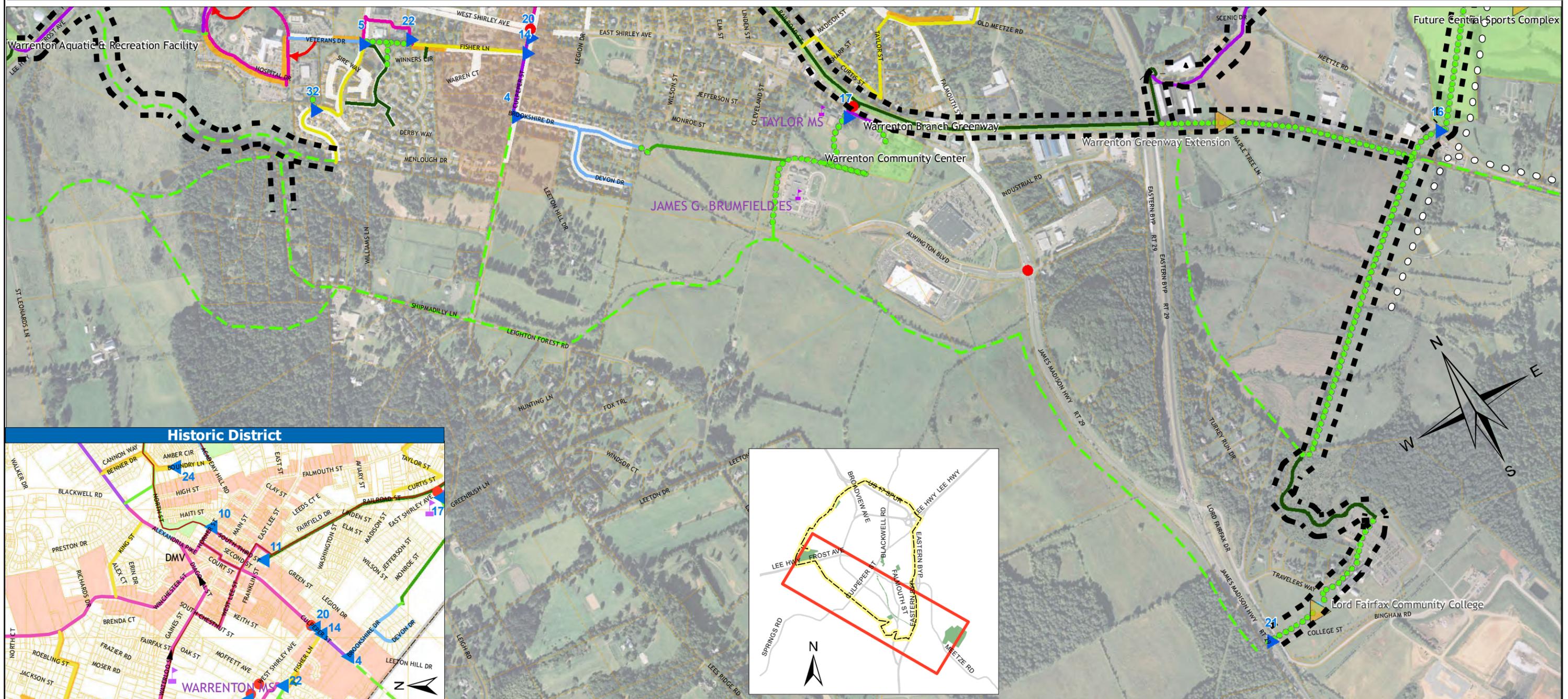
Figure 16: Photo simulation of Broadview Avenue with a center median from the Warrenton Broadview Avenue Access Management Study



Source: Broadview Avenue 211 Access Management Study, HNTB Corporation, 2008.

Fauquier-Warrenton Destinations Plan

Segment 1: Warrenton Aquatic and Recreation Facility to Central Sports Complex



<p>Bicycle Facilities</p> <ul style="list-style-type: none"> — Proposed Bike Lane ← Proposed Climbing Lane — Proposed Shared Lane Marking — Proposed Shared Neighborhood Roadway 	<p>Pedestrian Facilities</p> <ul style="list-style-type: none"> — Existing Sidewalks — Proposed Sidewalks 	<p>Shared Bicycle and Pedestrian Facilities</p> <ul style="list-style-type: none"> — Proposed Parallel Use Path ●●●● Proposed Shared Use Path - - - Proposed Long Term Shared Use Path ○ Proposed Bridle Path — Acquired Trail — Existing Trail 	<p>Other</p> <ul style="list-style-type: none"> ▲ Destination ▲ Spot Improvement ● Traffic Lights ■ Recreation Area □ Priority Route
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Prepared May 2009
Revised July 2011

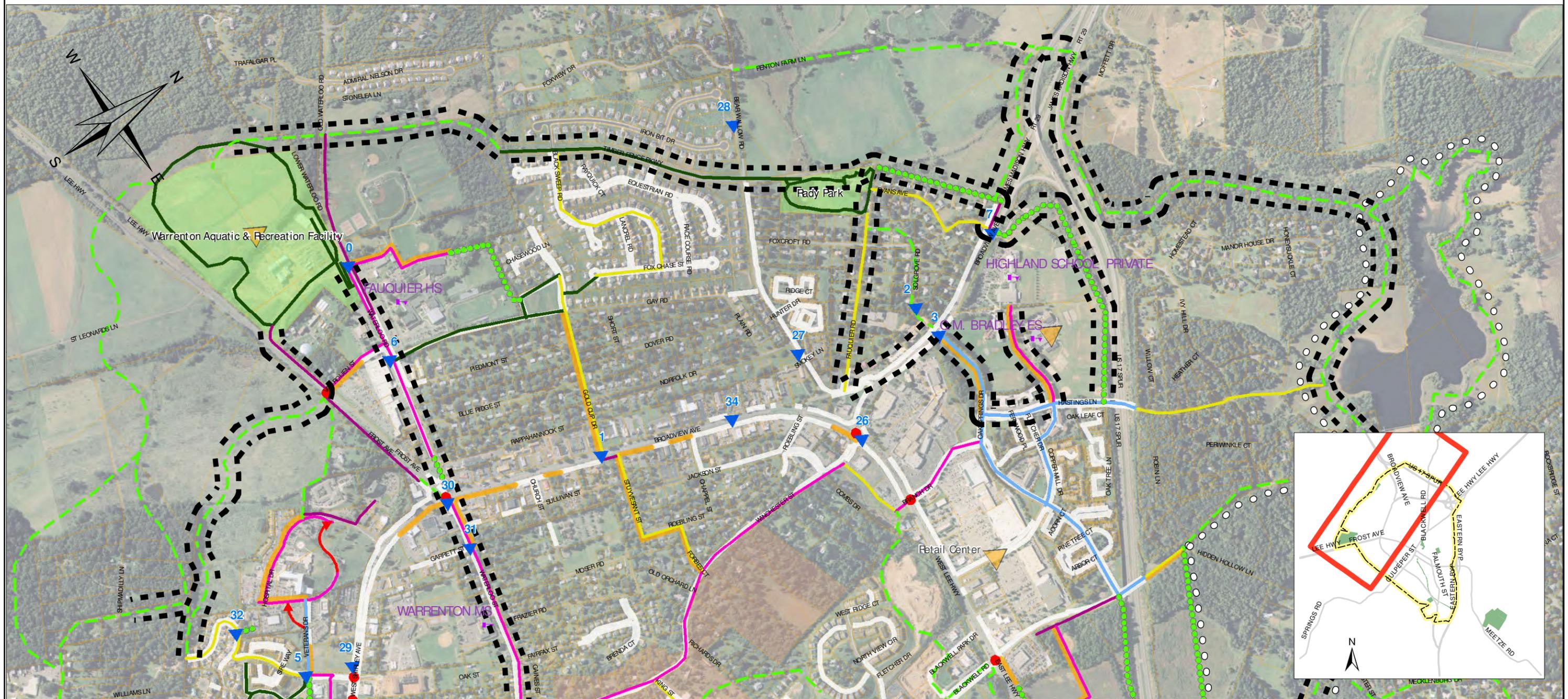
Scale: 1:12,500

0 385 770 1,540 Feet

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Fauquier-Warrenton Destinations Plan

Segment 2: Aquatic and Recreation Facility to C. M. Bradley Elementary School



Bicycle Facilities

- Proposed Bike Lane
- ← Proposed Climbing Lane
- Proposed Shared Lane Marking
- Proposed Shared Neighborhood Roadway

Pedestrian Facilities

- Existing Sidewalks
- Proposed Sidewalks

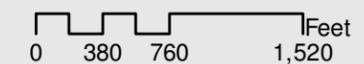
Shared Bicycle and Pedestrian Facilities

- Proposed Parallel Use Path
- Proposed Shared Use Path
- - - - Proposed Long Term Shared Use Path
- ○ Proposed Bridle Path
- Acquired Trail
- Existing Trail

Other

- ▲ Destination
- ▲ Spot Improvement
- Traffic Lights
- Recreation Area
- Priority Route

Scale: 1:12,500



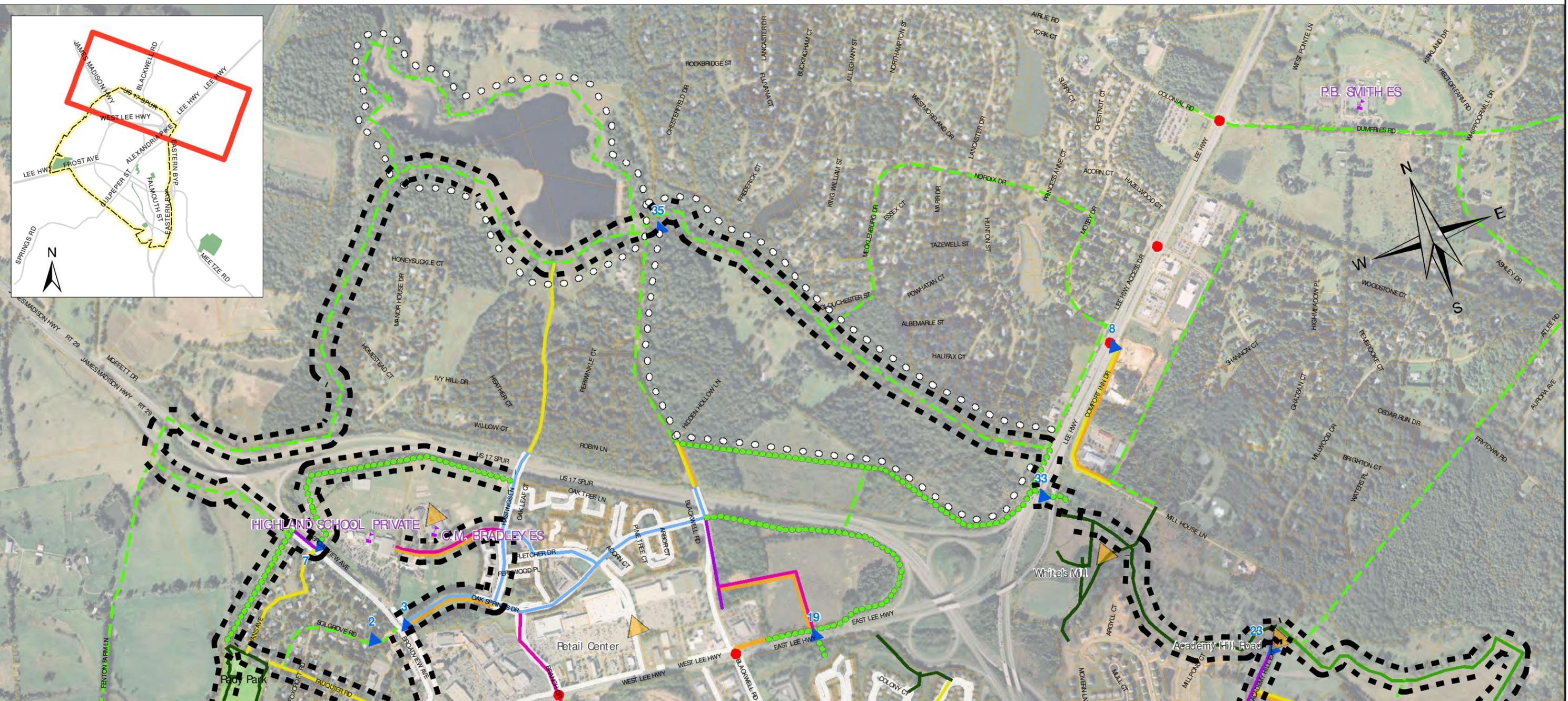
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Fauquier-Warrenton Destinations Plan

Segment 3: White's Mill Trails to Blackwell Road



Bicycle Facilities

- Proposed Bike Lane
- ← Proposed Climbing Lane
- Proposed Shared Lane Marking
- Proposed Shared Neighborhood Roadway

Pedestrian Facilities

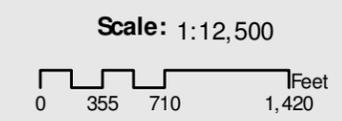
- Existing Sidewalks
- Proposed Sidewalks

Shared Bicycle and Pedestrian Facilities

- Proposed Parallel Use Path
- Proposed Shared Use Path
- - - - Proposed Long Term Shared Use Path
- Acquired Trail
- Existing Trail
- ○ Proposed Bridle Path

Other

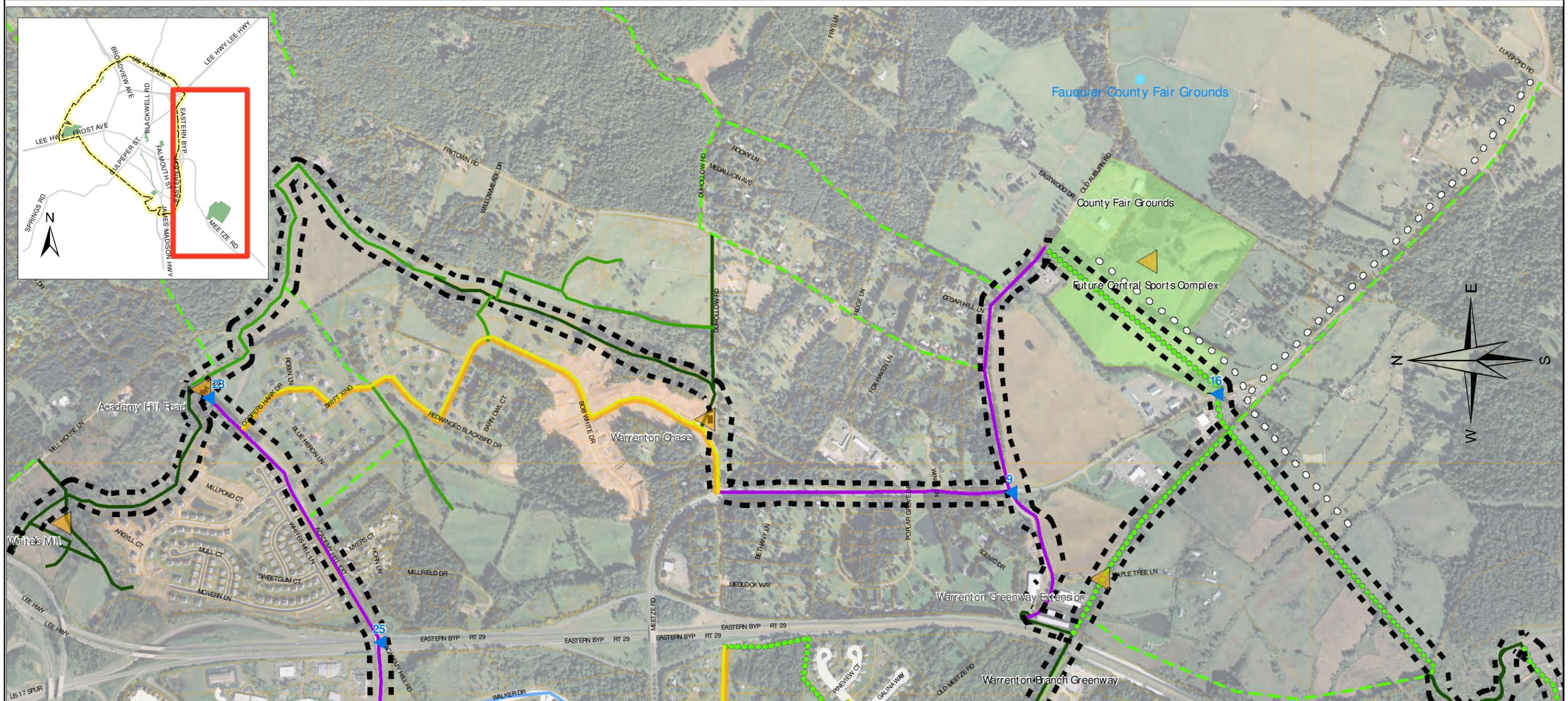
- ▲ Destination
- ▲ Spot Improvement
- Traffic Lights
- Recreation Area
- - - - Priority Route



Prepared May 2009
Revised April 2011

Fauquier-Warrenton Destinations Plan

Segment 4: Lord Fairfax Community College to Warrenton Chase and White's Mill Trails



Bicycle Facilities

- Proposed Bike Lane
- ← Proposed Climbing Lane
- Proposed Shared Lane Marking
- Proposed Shared Neighborhood Roadway

Pedestrian Facilities

- Existing Sidewalks
- Proposed Sidewalks

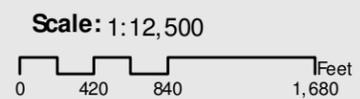
Shared Bicycle and Pedestrian Facilities

- Proposed Parallel Use Path
- Proposed Shared Use Path
- - - Proposed Long Term Shared Use Path
- ○ Proposed Bridle Path
- Acquired Trail
- Existing Trail

Other

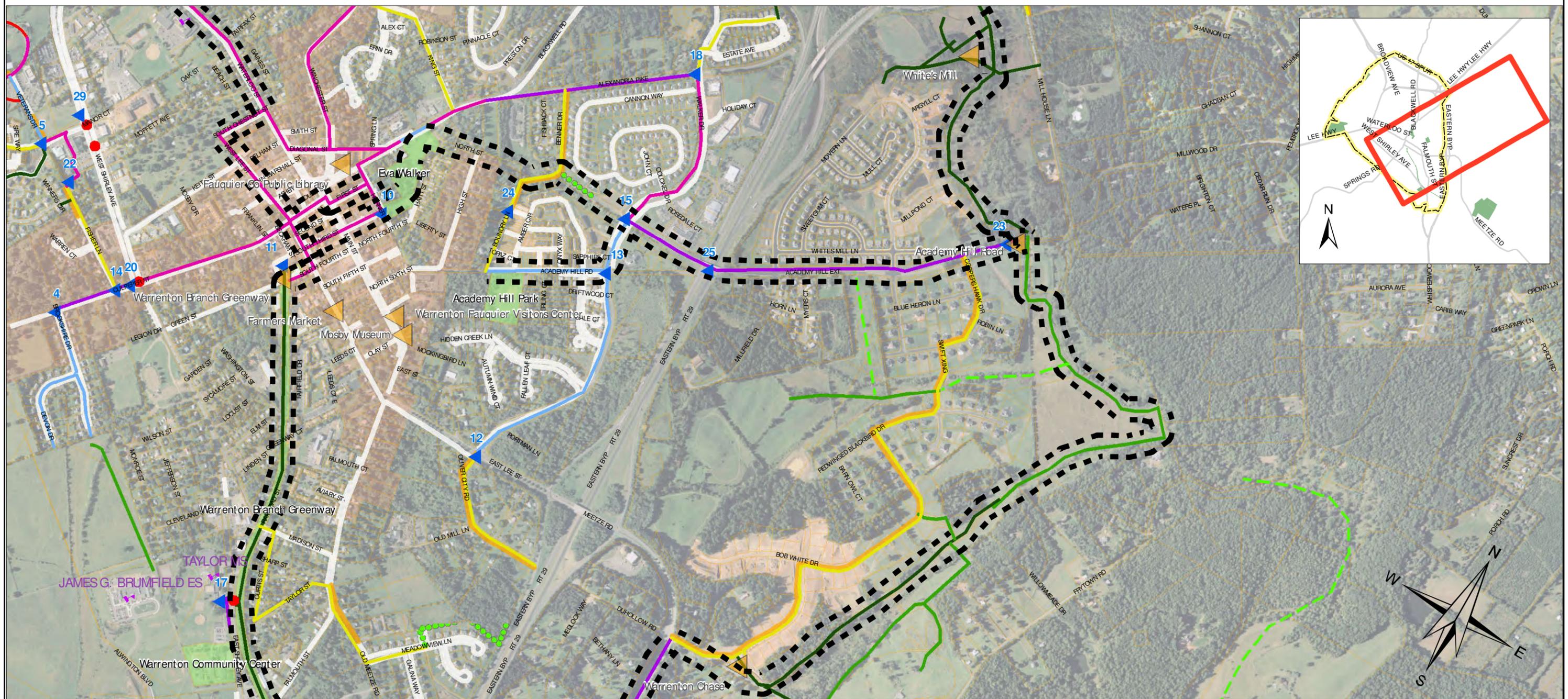
- ▲ Destination
- ▲ Spot Improvement
- Traffic Lights
- Recreation Area
- Priority Route

Prepared May 2009
Revised April 2011



Fauquier-Warrenton Destinations Plan

Segment 5: Academy Hill Road to Warrenton Branch Greenway



Bicycle Facilities

- Proposed Bike Lane
- ← Proposed Climbing Lane
- Proposed Shared Lane Marking
- Proposed Shared Neighborhood Roadway

Pedestrian Facilities

- Existing Sidewalks
- Proposed Sidewalks

Shared Bicycle and Pedestrian Facilities

- Proposed Parallel Use Path
- Proposed Shared Use Path
- - - Proposed Long Term Shared Use Path
- Proposed Bridle Path
- Acquired Trail
- Existing Trail

Other

- ▲ Destination
- ▲ Spot Improvement
- Traffic Lights
- Recreation Area
- Priority Route

Scale: 1:12,500



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Chapter 5: Implementation

This chapter describes how the recommendations for improving the safety and convenience of walking and bicycling will be achieved. The first section of this chapter breaks the phasing of recommendations into Immediate Action Items (1-5 years), Short-Term Recommendations (5-10 years), and Long-Term Recommendations (10-15 years). These distinctions are based on the importance of the recommendations, estimated cost and relative difficulty of implementation.

A. Project Phasing

The Town and County's pedestrian and bicycle projects and programs should be developed over the next 15 years. Phasing of the recommendations is discussed over the next few pages. Immediate action items are listed below.

Immediate Action Recommendations (1-5 years)

Several of the project and program recommendations in this Plan should be implemented soon after it is adopted. These immediate action projects will improve pedestrian and bicycle conditions in specific areas, creating early successes. These immediate action projects will also build momentum for the other recommendations. Immediate action recommendations are outlined below.

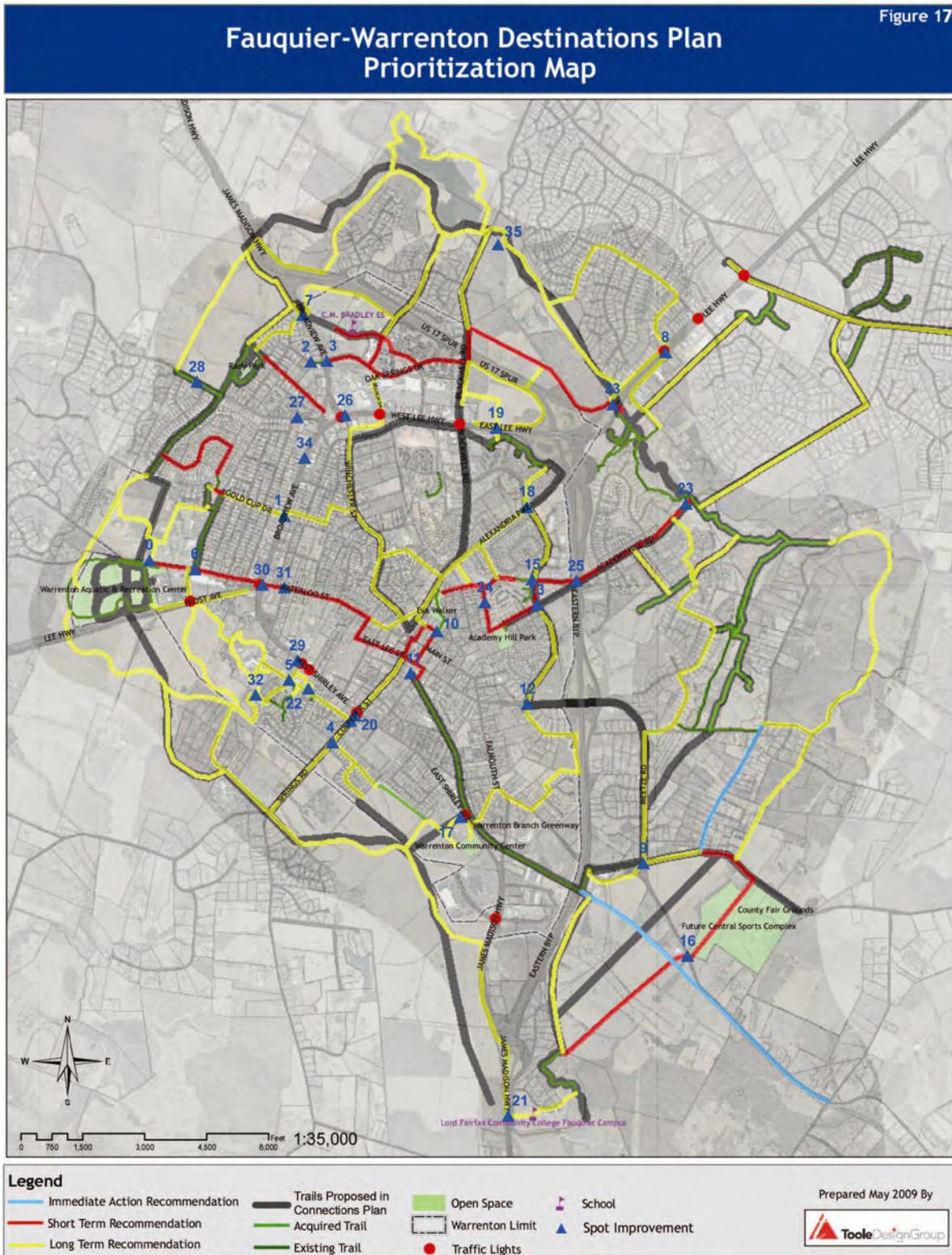
- *Complete selected multi-use trail connections:* Two critical multi-use trail connections should be pursued soon after this Plan is adopted. One would extend the existing Warrenton Branch Greenway south along the former railroad line. The second would provide a connection between Old Auburn Road and existing trails at White's Mill. These trail segments are shown as Immediate Action Recommendations in Figure 17.
- *Complete the recommended sidewalk projects on Waterloo Street:* One of the most important connections discussed in this Plan is the walking and bicycling route between Downtown Warrenton and the WARF. To improve this connection for those on foot, new sidewalks should be constructed on the north side of Waterloo Street immediately to the east of the Route 29/211 intersection. This would enable pedestrians crossing at the crosswalk to continue on a sidewalk as they head into town.
- *Investigate the feasibility of a shared-use path under the Route 29 bridge on the northeast side of Warrenton:* A shared-use trail that connects the existing trails around the White's Mill subdivision under Route 29 and eventually over to Blackwell Road would provide an important connection by extending the existing trails over to the schools, retail, and other destinations on the northeast side of town. It appears that the width and conditions of the area under the road are amenable to the development of a trail, roughly following the existing creek. To proceed, the Town and County would need to get approval from the Commonwealth Transportation Board, and a feasibility study would be needed.



White's Mill Subdivision Trail

Immediate action projects can improve conditions in specific areas, creating early successes for decision-makers to highlight and users to enjoy.

Figure 16: Project Prioritization Map



- *Develop a design plan for the intersection of Route 29/211:* The intersection of Routes 29 and 211 is a significant barrier to pedestrian and bicycle connectivity in the study area. The intersection is critical because it provides a direct link between the WARF, Fauquier High School and the residential neighborhoods to the west of downtown. The intersection also links to retail opportunities, schools, parks and other destinations such as the Warrenton Branch Greenway. A detailed engineering study of this intersection is needed that accounts for geometric dimensions, traffic volumes, and pedestrian desire lines. Initial ideas for retrofitting the intersection are provided on pages 43-44, which should be examined further as part of a more detailed study.
- *Provide a shared-use path connecting Fauquier Hospital and abutting residential neighborhoods:* Enhanced pedestrian and bicycle access between Fauquier Hospital and neighborhoods to the south and east are needed. Currently, residents wishing to access the hospital must ride or walk down Carriage House Lane and then turn onto Veteran’s Drive and back into the hospital, despite the fact that for many it is not more than a few hundred a feet away from their homes. To improve this access a small trail connection could be built to provide pedestrian and bicycle access, while still restricting car access. This trail would provide access to the existing sidewalks and roads around the hospital campus.
- *Evaluate the possibility of traffic lights along Meetze Road near the entrance to the future Central Sports Complex, and at the intersection of Broadview Avenue and Gold Cup Drive:* The Town and County should evaluate the possibility of installing a new traffic signal along Meetze Road near the entrance of the future Central Sports Complex. Crossing conditions at this location will be difficult for those on bicycles and on foot. A traffic signal could potentially make this crossing more comfortable. If a traffic light was added, the priority route may be shifted to a route that crosses at this location, rather than at the intersection of Old Auburn Road.

A second location that should be evaluated for a potential new traffic signal is the intersection of Broadview Avenue and Gold Cup Road. A High-Intensity Activated Crosswalk (HAWK) signal may be appropriate at this location to improve pedestrian and bicycle crossing conditions, while reducing motor vehicle delay. The HAWK signal is described in more detail on page 39.



Existing intersection of Broadview Avenue and Gold Cup Lane in Warrenton

- *Implement initial on-road bicycle facility recommendations:* The Town and County should consider implementing on-road bicycle recommendations in the immediate-term to improve bicycle conditions in specific areas. These immediate action projects will also build momentum for the other recommendations. Shared lane markings should be provided connecting the Warrenton Branch Greenway to Waterloo

A HAWK signal (discussed on page 39) should be considered at the intersection of Broadview Avenue and Gold Cup Road.

Street. Shared lane markings should also be provided on Winchester Street and Branch Drive. By utilizing these streets and the access road north of Combs Drive, bicyclists can access Oak Springs Drive and destinations in the vicinity without having to ride on Broadview Avenue and West Lee Highway (as shown in Figure 6 on page 24). Additionally, bicycle lanes could be provided within the existing pavement width on Oak Springs Drive.

- *Provide bicycle parking/storage at important destinations:* Improved travel facilities will be unused if there is a lack of adequate storage facilities. To encourage bicycle use it is necessary to provide areas for bicyclists to park their bicycles conveniently and securely. Bike racks should be provided at as many of the locations listed on pages 6 and 7 as possible. Storage lockers are encouraged near transit areas and also at Lord Fairfax Community College.



Culpeper Street in Warrenton

Shared lane markings can be provided without widening the road or eliminating travel lanes and on-street parking.

Short-Term Recommendations (5-10 years)

In the short-term, the Town and County should seek to enhance pedestrian and bicycle connections along the priority routes highlighted in Chapter 4. The recommended improvements for these connections are shown in Figures 5 through 9 beginning on page 21. The quantity of each facility type within each priority route is listed in the table below.

Table 6: Total miles of each recommended facility type within each designated Priority Route

FACILITY	Short- Term Recommendations Measured in Miles					Totals
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	
Existing Shared Use Trails	1.479	1.195	-	1.03	0.283	3.987
Acquired Trails	-	-	-	-	-	-
Proposed Shared Use Paths	.045	-	.884	1.218	.293	2.44
Proposed Long-Term Shared Use Path	-	-	-	-	-	-
Proposed Parallel Use Path	.859	-	-	.599	.721	2.179
Proposed Bicycle Lanes	-	.355	.073	-	.359	.787
Proposed Climbing Lanes	-	-	-	-	-	-
Proposed Shared Lane Markings	1.244	.229	-	-	.429	1.902
Proposed Shared Roadways	-	.959	.092	.156	.396	1.603
Proposed New Sidewalks	.1001	-	.0926	-	.1372	.3299
Total Miles Existing/Acquired	1.479	1.195	-	1.03	.283	3.987
Total Miles Proposed:	2.2481	1.543	1.1416	1.973	2.3352	9.2409
Total Miles (Existing + Proposed):	3.7271	2.738	1.1416	3.003	2.6182	13.2279

To enhance the connection between these destinations, the Town and County should seek to provide the combination of facilities noted above within ten years of the Plan's adoption. They will help build momentum for implementing the medium to long-term recommendations. Rough cost estimates are discussed on page 55, and detailed cost estimates are included in Appendix C. Additional Short-Term Recommendations are discussed below.

- *Signage System:* This Plan identifies a series of routes connecting important destinations throughout the Town and County. As critical linkages are completed in the bicycle and pedestrian network, wayfinding signs should be used to direct people along the routes. This destination-based signage system can also serve a functional purpose, for example directing bicyclists to avoid difficult intersections and connect with on-road bicycle facilities heading out of Town.
- *Private-sector development:* The Town and County should pursue opportunities to encourage and/or require developers to provide the pedestrian and bicycle facilities recommended in this Plan (including immediate action, short and long-term connections) as part of planned and proposed development projects.
- *Trail Network:* The Town and County should capitalize on all opportunities to develop sections of the proposed trail network around the perimeter of the Town, as they become available. Private-sector residential developments should be encouraged to include segments of the Trail where possible. In addition, the Town and County should actively pursue property acquisition and trail development efforts for segments that are less likely to be developed by the private-sector.
- *Partnership between agencies:* For these recommendations to be successful, it is necessary for agencies to coordinate their efforts much in the same way that this plan was coordinated. VDOT, Warrenton, and Fauquier County should work together to ensure that streets are designed with all users in mind. The Town and County should ensure that developers consider trail development issues during the earliest stages of design. This will not only ensure that opportunities for trail development will not be missed, but that future Home Owner Associations (HOA) will partner with the Town and County to ensure that trails are well-maintained and can be accessed by all residents and users. The historic district should also be included in early discussions of trail development. Trails can compliment goals for historic preservation and historic interpretation. The Architectural Review Board will need to review trails that could possibly impact sites that have been historically designated to ensure that future development will be appropriate.
- *Pedestrian and bicycle counts:* Counts should be taken at key locations to benchmark the amount of walking and bicycling. Count locations could include downtown entry points, locations on major trails, arterial roadways with bicycle lanes or shared lane markings, and intersections of arterial roadways with existing or planned bicycle facilities. The counts should be taken around the same date each year, on the same day of the week, and under similar weather conditions to eliminate conditional biases.

Additional bicycle counts may be obtained by requiring bicycles to be included in current, manual traffic counts. This data set would not represent all bicycle activity throughout the area, but would begin to provide some basic data on the use of pedestrian and bicycle facilities. Counts may also include observations of important bicyclist behaviors, such as wearing helmets, riding on the correct side of the street, obeying traffic controls, and using lights at night.

Long-Term Recommendations
(10-15 years)

Long-term projects are shown in Figures 5 through 9 beginning on page 21. These recommendations include internal connections that enhance access between destinations and a shared-use trail network that loops around the Town and into the County.

The quantity of each facility type within each segment is listed in the table below. Although these recommendations are designed for a longer timeframe, the Town and County should take advantage of opportunities that arise to implement the projects sooner.

Table 7: Total miles of each recommended facility type outside of a designated Priority Route



Meetze Road in Fauquier County

While some recommendations are designed for a longer timeframe, the Town and County should take advantage of opportunities that arise to implement the projects sooner.

FACILITY	Long-Term Recommendations Measured in Miles					Totals
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	
Existing Shared Use Trails	1.768	0.601	0.778	1.761	1.432	6.34
Acquired Trails	0.224	0.229	0.406	2.067	0.529	3.455
Proposed Shared Use Paths	1.588	1.394	.901	-	.569	4.452
Proposed Long-Term Shared Use Path	7.607	2.945	8.086	2.87	.53	22.038
Proposed Parallel Use Path	.643	.095	.184	-	.5	1.422
Proposed Bridle Path	-	-	1.644	3.703	-	5.347
Proposed Bicycle Lanes	.623	.231	.664	-	.573	2.091
Proposed Climbing Lanes	.199	-	-	-	-	.199
Proposed Shared Lane Markings	1.154	1.767	.286	-	.85	4.057
Proposed Shared Roadways	.618	1.148	.768	1.232	1.539	5.305
Proposed New Sidewalks	.882	1.1193	.4785	1.9868	.4937	4.9603
Total Miles Existing/Acquired	1.992	.83	1.184	3.828	1.961	9.795
Total Miles Proposed:	13.314	8.6993	13.011	9.791	5.0547	49.8713
Total Miles (Existing + Proposed):	15.306	9.5293	14.1955	13.619	7.0157	59.6663

B. Cost Estimates

General cost estimates were developed for the main components of this Plan. The estimated cost to implement the priority route connection between the WARF, Downtown Warrenton and the future Central Sports Complex (shown as Segment 1) is approximately \$256,000 (based on 2008 dollars). The cost of implementing the priority route recommendations for all five priority route segments shown in Chapter 4 is approximately \$1,162,000, and the total cost of implementing the long-term recommendations shown on the segment maps in Chapter 4 is approximately \$7,275,000. The costs of implementing the priority routes for each of the segments are noted in Table 8 below. The recommended trail system would likely be developed through a combination of different sources, including the Town of Warrenton, Fauquier County, and VDOT. The Town and County share is anticipated to be far lower than the numbers shown in Table 8 due to the fact that developer contributions will account for a large amount of the system. The long-term shared use path recommendations represent most of the proposed trail network around the Town of Warrenton and into Fauquier County. These recommendations account for much of the costs included in the “Cost of Implementing Medium to Long-Term Recommendations” column below. Because more than 70% of these proposed trails are located on privately-owned land, many of these trails are likely to be developed as part of private-sector development.

Table 8: Total estimated construction costs (inclusive of anticipated developer participation) for recommended Priority Routes and Other Routes

Segment Number	Cost of Implementing Short-Term Recommendations	Cost of Implementing Long-Term Recommendations	Total Cost
Segment 1	\$255,894	\$2,306,256	\$2,562,150
Segment 2	\$20,225	\$1,255,763	\$1,275,988
Segment 3	\$207,946	\$2,017,288	\$2,225,235
Segment 4	\$385,016	\$1,171,259	\$1,556,275
Segment 5	\$293,245	\$524,270	\$817,515
Total Cost	\$1,162,325	\$7,274,837	\$8,437,162

Note: The costs above do not include existing facilities and are inclusive of anticipated developer participation.

The general costs were developed by calculating approximate quantities and applying unit costs. The costs above only represent the construction cost estimates for the recommendations. Unit costs are based on 2008 dollars and were assigned based on historical cost data from state departments of transportation and other sources. The costs are intended to be general and used for planning purposes. The construction estimates **do not** include costs for planning, surveying, engineering design or future maintenance. They are inclusive of developer contributions. In addition, the costs **do not** account for easements and right-of-way acquisition. Construction costs will vary based on the ultimate project scope (i.e. potential combination of projects) and economic conditions at the time of construction. In addition, the figures above do not include the cost of completing the spot improvements discussed on page 57.

Property Issues

More than 70% (or around 21 miles) of the proposed shared-use trails are located on privately-owned land. These trails would comprise much of a future pedestrian and bicycle network around Warrenton and into Fauquier County. Many of these trails could be constructed by the developer through the subdivision and site plan process. Developer proffers will also be entertained with rezoning cases. The Town and County should look for opportunities to complete segments of the network when reviewing future subdivision plans.

However, not all segments of the trail system will be able to be provided as part of private-sector development. In some cases, the Town and County will need to purchase right-of-way or pursue easements to provide important trail connections across privately owned property. Information on conservation easements, a statewide tool that can potentially allow for recreational uses in the Virginia Code, is included below.

- Virginia's Conservation Easement Act states that a "Conservation easement means a non-possessory interest of a holder in real property, whether easement appurtenant or in gross, acquired through gift, purchase, devise, or bequest imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural or open-space values of real property, assuring its availability for agricultural, forestal, recreational, or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural or archaeological aspects of real property."(Virginia Code Annotated § 10.1-1009)

A property owner can agree to transfer certain rights to someone else through an easement. The rights that they choose to transfer are specifically set out in a deed of easement, which permits the holder certain rights regarding the land for specified purposes while the ownership of the land remains with the private property owner. Easements could address construction and maintenance issues. Generally, easement transfer is a voluntary action and the property owner is the only person who can decide to place an easement on their property.

Note that because they are site specific, every easement and deed is different. An easement depends on the characteristics of the property and the provisions set forth in the deed by the owner. An individual easement only applies to a specific site and does not necessarily provide access for recreational purposes.

In relation to the goals of this Plan, private property owners entering into an easement agreement with the Town or County would agree to allow a trail through their property. In return, the property owner would be eligible to receive benefits such as Federal Income Tax Credits, State Income Tax Credits, Estate Tax Benefits, and County Real Estate Tax Benefits. Cost of easements are highly variable, based on the characteristics of each property, the status of the housing market, and other factors. Costs will be determined on a case-by-case basis, based on detailed property appraisals. Because the factors are so variable, the costs of easement acquisition are not included in the cost estimates outlined on the previous page.

Additional information on easements is available through the following sources:

- Virginia Outdoors Foundation (VOF) at <http://www.virginiaoutdoorsfoundation.org>
- Town of Staunton, VA at <http://www.staunton.va.us/default.asp?pageID=2462E417-AA67-4BAA-A34F-4E60B5B42016>
- Fairfax County, VA at <http://www.fairfaxcounty.gov/dpz/historic/easementsfaq.htm>
- Rails-to-Trails Conservancy at <http://www.railtrails.org>
- American Hiking Society at <http://www.americanhiking.org>

Cost Estimates for Spot Improvements

General cost estimates for the spot improvement recommendations are provided on the following page. These are not detailed cost estimates and are to be used for estimation purposes only. The actual costs will vary depending on site-specific conditions and inflation.

Table 9: General cost estimates for spot improvements

Spot Improvement Recommendation	General Cost
Marked Crosswalk	\$300 for 2 lane crosswalk, \$600 for 4 lane
Raised Crosswalk	\$4,000 per location (includes milling, asphalt and markings)
Median Island	\$550,000 per mile (includes pavement demo and concrete median, does not include striping, signing, drainage, landscaping, etc.)
Curb Extension	\$10,000 per corner (assumes some drainage work)
Curb Ramps	\$3,000 per location (includes existing sidewalk demo)
Traffic Signal	\$165,000 per full signalized intersection
Pedestrian Countdown Signal Head	\$5,000 per pedestrian signal head
H.A.W.K. Signal	\$100,000 per signalized location
Signage	\$250 per sign location (includes post and panel)
Rapid Flashing Beacon	\$15,000 per crossing location
Sidewalk Extension	\$180,000 per mile (5' wide sidewalk, includes some grading)
Inverted U Bicycle Rack	\$700 (includes rack, hardware, shipping, and installation)

C. Funding

Funding is essential for implementing the recommendations of this Plan. New greenway trails, on-road bikeways, and sidewalk projects, programs, and maintenance activities will need to be funded through various sources. It will be important for the Town and County to:

- Identify specific funding sources in Warrenton and Fauquier County to use as matching funds for federal, state, and other grants. These funds can be generated through donations from community groups, through developer proffers and through the capital budget, if necessary.
- Partner with local governments and adjacent jurisdictions to develop funding sources.
- Look for additional funding opportunities from the public and private sectors.
- Implement impact fees to fund roadway improvements.

Part of the construction cost will be covered by developers as part of the private-sector development process. Fauquier County has the authority, if adopted by the Board of Supervisors, to collect transportation impact fees to help pay for roadway improvements including necessary accommodations for pedestrians. The fees could apply to all new commercial, industrial, residential development. Impact fees can help fund projects that directly benefit new residents. The following sections describe available public funding sources for pedestrian and bicycle facilities (within roadway rights-of-way) and greenway facilities. These sources would provide accommodations in addition to those provided as part of residential or commercial development, for which the developer is expected to construct.

Open Space Funding Programs

The Virginia Outdoors Plan provides helpful information regarding funding opportunities at http://www.dcr.virginia.gov/recreational_planning/documents/vopall.pdf. One of the funding sources noted in the plan is the Land and Water Conservation Fund (LWCF), which provides grant funds to help offset the cost of community projects. The General Assembly established the Virginia Outdoors Fund (consisting of LWCF and state appropriated funds) in order to provide grant and loan funds to help meet local government needs for park and recreational funding.

The Land Conservation Fund is another source of funding noted in the plan. It is governed by the Virginia Land Conservation Foundation and administered by the Department of Conservation and Recreation (DCR). The fund was established to encourage the protection of historic, conservation, forestal, agricultural and recreation values. The program is an important part of the Virginia's efforts to meet commitments included in the Chesapeake Bay 2000 Agreement. Another grant program administered by the DCR is the Recreational Trails Program, which is a reimbursement grant program that provides for the creation and maintenance of trails and trail facilities. Note that while funds from these sources are limited, they are often awarded in cases where a small link is needed to complete a trail or provide an important connection.

Pedestrian and Bicycle Development Programs

Two of the most common programs for developing pedestrian and bicycle facilities in the study area are VDOT's Secondary Six-Year Improvement Program (S-SYIP) and the Rappahannock Rapidan Metropolitan Planning Organization (MPO) four-year Transportation Improvement Program (TIP).

- The S-SYIP is developed by the County Board of Supervisors, with assistance from the VDOT District Office.
- The TIP is developed by members of the MPO.

The VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations* applies to all projects in the S-SYIP and to all projects in the TIP that involve VDOT right-of-way or use funds that flow through VDOT. This policy requires that projects address pedestrians and bicyclists. However, it will still be important to make specific requests to include pedestrian and bicycle facilities in the S-SYIP and TIP project descriptions.

In addition, the County should monitor the planning, design, and construction of these projects to ensure that they accommodate pedestrians and bicyclists adequately. There are several other sources of VDOT funding that can be used to develop pedestrian and bicycle facilities (see Appendix L). Most of the funding sources outlined in Appendix L require a local match - up to 20% of the project cost in some cases (with the exception of the Safe Routes to Schools Program, which is 100% Federal funding). Fortunately, in-kind donations of materials, labor, and land can be used as matching funds. Through a creative strategy of volunteer assistance and land donation, other Virginia counties have been able to generate matching funds with very little capital outlay.

Chapter 6: Conclusion

This Plan provides recommendations for improving access to important destinations throughout Warrenton and Fauquier County. It builds on existing resources, while accounting for opportunities and constraints such as the existing road width and cost of providing different types of pedestrian and bicycle facilities.

In the short-term, the recommendations will enhance pedestrian and bicycle access to important destinations. When the long-term recommendations are realized, the community will have a complete trail network around the perimeter of Town, as well as connect to the downtown area. The completed network will facilitate non-motorized transportation as well as opportunities for recreation. The majority of the proposed network is located on private lands that are slated for future development. When these areas develop, it will be important for Town and County staff to emphasize the need for pedestrian and bicycle facilities. If these areas are not included in the early stages of development review, it will be difficult to retrofit them to connect to the proposed routes. Town and County staff, along with the public, should champion these facilities.

By presenting practical near-term recommendations and a long-term vision, this Plan promotes access to destinations, making walking and bicycling realistic and comfortable transportation choices and improving quality of life for all residents. In doing so, it fully supports goals and objectives outlined in the *Fauquier County Connections Plan* and *Comprehensive Plan*, the *Town of Warrenton Comprehensive Plan*, the *Rappahannock-Rapidan Region Bicycle and Pedestrian Plan* and the *VDOT Policy for Integrating Bicycle and Pedestrian Accommodations*.



Warrenton Branch Greenway

The Warrenton Branch Greenway is the centerpiece of the pedestrian and bicycle network

Appendix A: Existing Conditions Memorandum

MEMORANDUM

Fauquier-Warrenton Bicycle and Pedestrian Loop Completion Master Plan
Existing Conditions Memorandum
April 17, 2008

1. PROJECT BACKGROUND

Planning Process

- A kick-off meeting and van tour with the project team was held on January 25, 2008
- A project team meeting was held on February 21, 2008
- A Stakeholder Meeting was held on March 25, 2008
- The consultant team conducted field work on April 16, 2008
- Members of the consultant team have made four visits to Warrenton and Fauquier County for meetings and field work

Project Goals

- Complete a bicycle and pedestrian loop around the Town of Warrenton, as well as internal connections through Town and between key destinations
- Encourage tourism and economic development
- Make walking and bicycling a viable transportation choice
- Increase pedestrian and bicycle safety and mobility
- Improve pedestrian and bicycle facilities for all types of users
- Coordinate town, county, and private-sector efforts
- Prioritize improvements based on current and projected need
- Fully utilize the existing pavement width and, where possible, retrofit existing facilities
- Guide local, regional and state efforts
- Improve quality of life
- Develop cost estimates and an implementation strategy

2. PLANNING CONTEXT

Existing Bicycle Regulations and Laws

Commonwealth of Virginia laws impact walking and bicycling in the Town of Warrenton and Fauquier County. For example, Virginia laws for bicycling cover the following areas:

- Rights and Duties
- Traffic Controls
- Where to Ride
- Changing Directions
- Passing
- Safety Considerations
- Helmet Use
- Equipment
- Registration
- Accidents
- Electric Power-assisted Bicycles

Table 1: Sample State-Level Pedestrian and Bicycle Programs and Resources

PROGRAMS	LEAD AGENCY
State Bicycle and Pedestrian Program	VDOT
Internal Bicycle and Pedestrian Task Force	VDOT
Bicycle Accommodations Review Team	VDOT
Bicycle Advisory Committee	VDOT
Healthy Communities	VDOT, Virginia Department of Health's Division of Chronic Disease, and Virginia Department of Conservation and Recreation
Safety Education	VDOT, Virginia Department of Education, Virginia Department of Health's Center for Injury Prevention and, Virginia Department of Motor Vehicles

Table 2: Selected Local and Regional Planning Documents

TITLE	COORDINATING AGENCY	YEAR
Town of Warrenton Comprehensive Plan 2000-2025	Town of Warrenton	2002
Fauquier County Connections Plan	Fauquier County	2007
Fauquier County Comprehensive Plan	Fauquier County	2007
Rappahannock-Rapidan Region Bicycle and Pedestrian Plan	Rappahannock-Rapidan Regional Commission	2007
VDOT 2020 Plan	Virginia Department of Transportation	2002

Table 3: Pedestrian and Bicycle-Related Elements in the Fauquier County Zoning and Subdivision Regulations

SECTION AND TITLE	ZONING TEXT
<p>ARTICLE IV. SPECIAL AND OVERLAY DISTRICT REGULATIONS, Sec. 4-713. Architectural Controls and Design Standards, (6)</p>	<p>A coordinated transportation system with a hierarchy of approximately designed facilities for pedestrians, bicycles, public transit, and automotive vehicles;</p>
<p>ARTICLE V. ADMINISTRATIVE PERMITS, SPECIAL PERMITS AND SPECIAL EXCEPTIONS, Sec. 5-011 Additional Submission Requirements, II. Special Requirements, (3)(l)</p>	<p>Where applicable seating capacity, usable outdoor recreation area, emergency access, bicycle parking, fencing, limits of clearing, landscaping and screening, outside lighting, loud speaker, required and/or proposed improvements to public right(s)-of-way.</p>
<p>ARTICLE VII. OFF-STREET PARKING AND LOADING, STREETS, WATER AND SEWER, TREE CANOPY, LANDSCAPE AND BUFFER REQUIREMENTS, Sec. 7-101. General Requirements, (4)</p>	<p>In those instances where a proposed neighborhood retail commercial use is located with an orientation toward pedestrian or bicycle traffic, the Board may reduce the number of off-street parking spaces by up to twenty (20) percent of the number otherwise required by the strict application of the provisions of this Part.</p>
<p>SECTION 8 - SPECIAL AREA REQUIREMENTS FOR USE OF STREET STANDARDS: 8-1 Curb, Gutter and Sidewalk.</p>	<p>Curb, gutter and sidewalk in Service Districts, Residential Districts and Villages shall be required as followed: A) Combination curb, gutter and sidewalk shall be required along all public and private streets, accessways or service drives in subdivisions having lots containing 20,000 square feet or less in area, either conventional or cluster. B) Combination of curb and gutter shall be required along all public and private streets, accessways or service drives in subdivisions having lots containing 20,000 square feet in area, either conventional or cluster. In addition, sidewalks shall be required on streets, accessways, or service drives qualifying as local collectors or major collectors. C) Pedestrian trails shall be required along all public and private streets, accessways, or service drives qualifying as local collectors or major collectors in subdivisions having lots of 25,000 square feet, but less than two acres in area, either conventional or cluster. Trails shall be at least four feet in width and constructed of asphalt or other material acceptable to the County. D) Or as shown in the Comprehensive Plan: All improvements required above shall be installed in accordance with typical sections as shown in standards 1A, 2A, 3A or 4A in the Fauquier County construction specifications. Easements for future sidewalks and trails may be required by the Board of</p>

	Supervisors. Where the Planning Commission, following public comment as provided for in Section 4-27, determines the above requirements are not in keeping with the character of the area, do not serve the public interest, or that no pedestrian and vehicular traffic hazards will be created, the Planning Commission may waive or modify the above requirements. (Amended by Board of Supervisors on September 9, 1999.)
Section 12-613 Sites for Public Facilities	1. Site development plans shall consider the provisions of suitable areas for parks, schools, open space and other public or private recreational uses, recognizing proposals for same in the Comprehensive Plan. 2. The developer shall confer with the Director and/or other appropriate public officials of the County to ascertain if and when and in what manner such areas will be reserved for and/or acquired by the Board. 3. This provision shall not be construed to preclude the dedication of any property for public use which is not included in the Comprehensive Plan, provided such property is acceptable to the County for dedication and maintenance. 4. Facilities offering services to patrons in their cars (e.g., drive-in restaurants, banks, car washes) shall include adequate provisions for queuing on-site so as not to impede other traffic.
12-615 Pedestrian Walk-Ways	1. Provision shall be made for sidewalks and pedestrian walk-ways which will enable patrons and/or tenants to walk safely and conveniently from one building to another within the site and to buildings and/or uses on adjacent sites as well. 2. Where feasible, pedestrian underpasses or overpasses are to be encouraged in conjunction with major vehicle routes. 3. Provision shall be made where appropriate for pedestrian walk-ways and equestrian ways in relation to private and public areas of recreation and open space, e.g., schools, parks, gardens, and areas of similar nature. XII - 14 4. Connections shall be made whenever possible of all walk-ways and equestrian ways with similar facilities on adjacent development.

Table 4: Pedestrian and Bicycle-Related Elements in the Town of Warrenton Zoning Regulations

SECTION AND TITLE	ZONING TEXT
ARTICLE III. ZONING DISTRICTS AND MAP, Sec. 3-5.2.10.0. Traditional Neighborhood Development Option (TND)	Provide a transportation system that provides safe and convenient movement for all forms of traffic, including motor vehicles, pedestrians and bicycles.

<p>ARTICLE III. ZONING DISTRICTS AND MAP, Sec. 3-5.2.10.5, Streets, Alleys, Paths, Blocks and Parking (3) Street Design</p>	<p>Street sections in Traditional Neighborhoods shall be designed to serve multiple purposes, including movement of motor vehicle traffic, safe and convenient pedestrian and bicycle movement, areas for public gathering and interaction, and areas for placement of street trees, street furniture and landscaping. Streets shall be designed to balance the needs of all users and promote efficient and safe movement of all modes of transportation.</p>
<p>ARTICLE III. ZONING DISTRICTS AND MAP, Sec. 3-5.2.10.5, Streets, Alleys, Paths, Blocks and Parking (6) Pedestrian and/or Bicycle Routes</p>	<p>Pedestrian and bicycle routes shall be provided to connect all uses, so that pedestrians and bicyclists can move comfortably and safely from any site within the TND to any other site with the TND. Pedestrian traffic shall be accommodated through the provision of sidewalks and paths. Bicycle traffic shall be accommodated through the provision of designated, well marked bicycle lanes and/or paths suitable for bicycle traffic.</p>
<p>ARTICLE IX. Supplemental Use Regulations, Sec. 9-20.1, Traditional Neighborhood Development Option Purpose</p>	<p>Provide a transportation system that provides safe and convenient movement for all forms of traffic, including motor vehicles, pedestrians and bicycles.</p>
<p>ARTICLE X. SITE DEVELOPMENT PLANS Sec.10-8.1, Required Bonds and Surety (1)</p>	<p>The acceptance of dedication for public use of any right-of-way located within any subdivision or section thereof, which has constructed or proposed to be constructed within the subdivision or section thereof, any street, curb, gutter, sidewalk, bicycle trail, drainage or sewerage system, waterline as part of a public system, or other improvement dedicated for public use;</p>
<p>10-6.10. Minimum Standards and Improvements Required</p>	<p>Sidewalks and curb and gutter shall be provided along both sides of all public streets, private streets, and public access areas; however, these requirements may be waived in sites with a density of less than four (4) dwelling units per acre. A written request for such waiver is required for Town Council consideration and action.</p>
<p>Sec. 10-122. Skating, skateboarding and riding of bicycles prohibited on certain sidewalks and crosswalks.</p>	<p>The use of roller skates or skateboards and/or the riding of bicycles on any designated sidewalks or crosswalks, located in a commercial or industrial zoning district, including those of any church, school, recreational facility or any business property open to the public where such activity is prohibited by the owner, is hereby prohibited. The town manager shall designate the sidewalks and/or crosswalks where skating, skateboarding and/or bicycle riding shall be prohibited. Signs indicating such prohibition shall be conspicuously posted in the general area where skating, skateboarding and/or bicycle riding is prohibited. A violation of this section shall be punishable by a civil penalty of not more than fifty dollars (\$50.00) per occurrence. (Ord. No.</p>

	1988-6, 10-11-88; Ord. No. 1999-6, 7-13-99)
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3. EXISTING CONDITIONS

Overview

- Grid network and smaller parcels in Town
- Sidewalks are primarily in Town
- Larger properties and more rural character outside of Town
- Selected properties could potentially be developed in the future
- Barriers such as roads and topography
- Limits on development due to water and sewage treatment capacity

Table 5: Existing Bicycle and Pedestrian Resources

Resources	Linear Miles
Greenway multi-use trails	Warrenton Branch Greenway (1.5 miles)
Subdivision trails (existing)	14 miles
Subdivision trails (acquired)	4 miles
Sidewalks	Throughout Warrenton
Existing conservation and other easements	Saint Leonard’s Farm conservation easement, Old Auburn Road easement, etc.
Government-owned land	Throughout Warrenton and Fauquier County
Existing bike lanes, shared lane markings, signed bike routes, etc.	None

Existing Pedestrian and Bicycle-Related Programs and Resources in Fauquier County and the Town of Warrenton

- Town of Warrenton government resources such as the Planning Department, Public Works, Parks and Recreation, Planning Commission, Town Council, etc.
- Fauquier Trails Coalition, Inc., a 501(3c) non-profit organization
- Fauquier County government resources such as the Planning Department, Public Works, Parks and Recreation, Planning Commission, Parks Board Service District, Board of Supervisors, etc.
- Fauquier County Pedestrian, Bicycle & Greenway Advisory Committee (PBGAC)
- Warrenton Cycling (A community of cyclists committed to promoting bicycle riding at all levels in Fauquier County)
- Town of Warrenton Bicycle Rodeos (An officer from the police department will talk to participants about bicycle laws and safety)

- Virginia Outdoors Foundation
- Rappahannock-Rapidan Regional Commission
- Rails to Trails Conservancy
- Additional resources (e.g. VDOT Bicycling Guide, Virginia Bicycling Map, etc.)

Upcoming Transportation Projects

- Ongoing study of Broadview Avenue (results anticipated in April-May 2008; study to analyze access maintenance, driveway consolidation, roundabouts, etc.)
- Winchester/Lee (Intersection improvements)
- Planned VDOT projects (e.g. sidewalk from Waterloo Road to Blackwell Road, roundabout versus signalized intersection Walker Drive and Blackwell Road, Winchester and Old Broadview Avenue, two current projects on Route 605 south of Route 15, 29, 211)

Key Destinations

- Schools such as CM Bradley Elementary School, Fauquier High School, Highland School, Lord Fairfax Community College, etc.
- Parks and recreational facilities such as Academy Hill Park, Eva Walker Park and Rady Park
- Downtown Warrenton
- Retail destinations such as Main Street and along Lee Highway
- Aquatic and Recreation Facility
- Central Sports Complex
- Health facilities such as Fauquier Hospital
- Warrenton Branch Greenway

Table 6: Warrenton Branch Greenway Users

Year	2003	2004	2005	2006	2007
Annual Users	84, 000	73,000	89,000	73,000	73,000

Unique Assets

Fauquier County and the Town of Warrenton have many unique assets, including the following:

- Diverse range of bicycle riders including families, children, and beginning riders that utilize multi-use trails and residential streets
- Appealing destinations in the Town and region
- Warrenton Branch Greenway

Key Problem Areas

- Access and connectivity
- Wide arterial roads such as Broadview Avenue
- Dangerous intersections and roads
- Lack of shoulders
- Disconnected areas and key destinations
- Maintenance practices
- Road widths too large
- Lack of maps and trail guides
- Lack of bicycle facilities

Barriers and challenges to bicycle access and mobility

A list of important barriers and challenges is included below.

- The existing road network includes inhospitable roads with heavy traffic volumes, high speeds and few facilities.
- Key areas of Town and important destinations are not well-connected.
- Large suburban arterial roads are problematic; however, they provide critical connections throughout Town.
- Certain roads are too wide and others are too narrow for comfortable bicycle travel.
- There are particularly uncomfortable intersections in the Town of Warrenton where traffic volume, turning movements, and limited directional information present serious concerns for pedestrians and bicyclists.
- Popular destinations such as the Aquatic Center and the Recreation Complex are difficult to access using non-motorized transportation.
- Connections between different areas of town are in many cases difficult. For example, there are limited options for traveling between neighborhoods and Downtown.
- Ensuring that new development preserves and enhances the walking and bicycling environment.
- Many of the existing neighborhoods have disconnected trails or no trails at all.
- Developing systems and policies to ensure that pedestrian and bike facilities are considered on all widening or repaving projects.
- Coordination with Home Owners Associations (HOA's) on access and maintenance
- Topography

Potential Future Development Sites

- Property behind the Chevy dealership
- Winery
- Arrington Farm and future church site
- Saint Leonard's Farm
- Moriah Farm

General activities that will likely impact pedestrian and bicycle access and mobility

- Ongoing, planned and programmed road improvement projects such as resurfacing, widening and traffic calming
- Private-sector development
- Major transportation planning projects

Additional Challenges/Focus Areas for Improvement

- Eastern Bypass

- James Madison Highway
- Lee Highway
- Broadview Avenue

VDOT Crash Statistics

In the previous three years, VDOT has a record of two (2) bicycle and twenty-six (26) pedestrian (reported) crashes in and around the Town of Warrenton.

Table 7: Commuting to Work (Fauquier County)

	Estimated Total Population*	Percent
Workers 16 years and over	28,224	100.0
Car, truck, or van -- drove alone	21,915	77.6
Car, truck, or van -- carpooled	3,554	12.6
Public transportation (including taxicab)	278	1.0
Walked	843	3.0
Other means	205	0.7
Worked at home	1,429	5.1

* Includes margin of error - not shown

Source: Source: U.S. Census Bureau, Census 2000 (Fauquier County)

Table 8: Means of Transportation and Carpooling (Fauquier County)

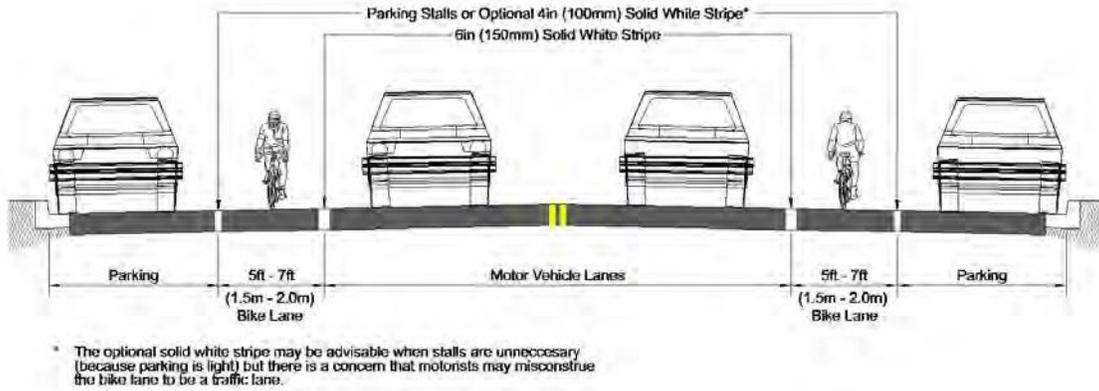
	Total Population	Percent
MEANS OF TRANSPORTATION AND CARPOOLING		
Workers 16 and over	28,224	100.0
Car, truck, or van	25,469	90.2
Drove alone	21,915	77.6
Carpooled	3,554	12.6
In 2-person carpool	2,822	10.0
In 3-person carpool	466	1.7
In 4-person carpool	91	0.3
In 5- or 6-person carpool	61	0.2
In 7-or-more-person carpool	114	0.4
Workers per car, truck, or van	1.08	(X)
Public transportation	278	1.0

Bus or trolley bus	69	0.2
Subway or elevated	26	0.1
Railroad	143	0.5
Ferryboat	0	0.0
Taxicab	40	0.1
Motorcycle	21	0.1
Bicycle	0	0.0
Walked	843	3.0
Other means	184	0.7
Worked at home	1,429	5.1

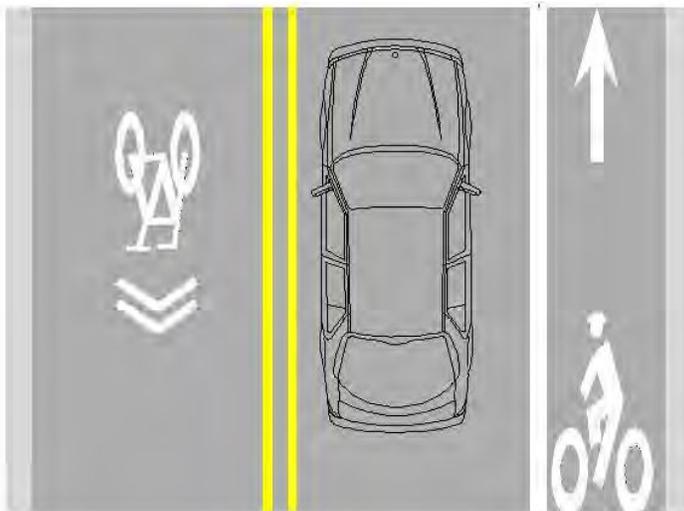
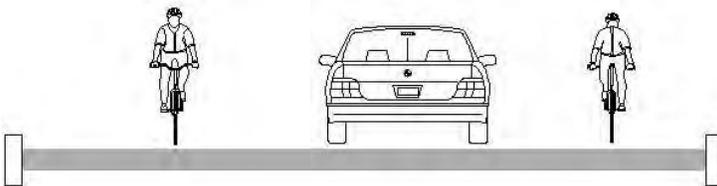
Source: 2000 Journey to Work, US Census (Fauquier County, Virginia)

Appendix B: Typical Cross Sections

Bicycle Lanes: A bicycle lane is a portion of the roadway that has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

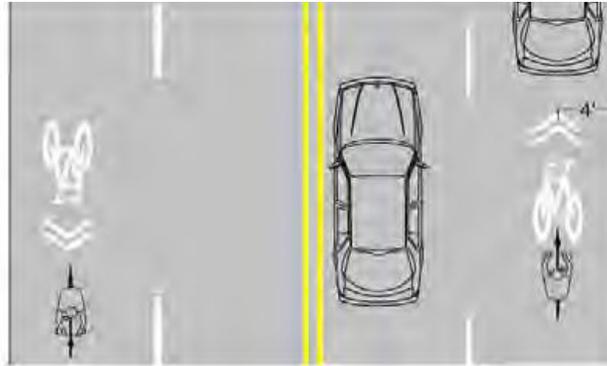


Climbing Lanes: Climbing lanes are a hybrid on-road bicycle facility that includes a five-foot bicycle lane on one side of the roadway (typically in the uphill direction) and a shared lane marking on the other side of the roadway. This allows slower-moving, uphill bicyclists to have a designated bicycle lane space and allows motor vehicles to pass more easily. It also allows faster-moving, downhill bicyclists to have a shared-lane marking, which alerts motorists to expect faster-moving bicyclists in the travel lane, further from parked cars.

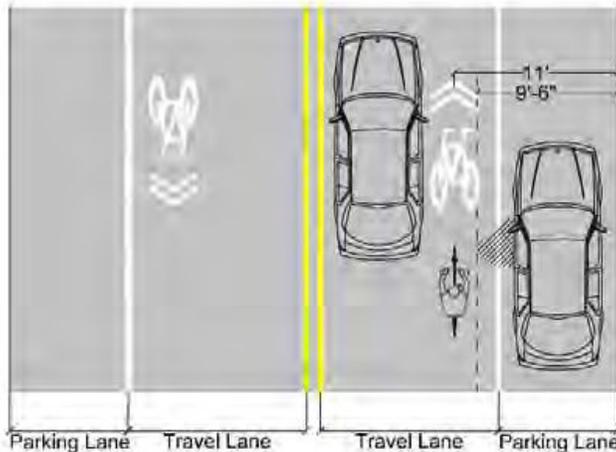


Shared Lane Markings: Motor vehicle/bicycle sharing of the travel space can be emphasized by using special shared roadway pavement markings, or *sharrows*. Shared lane markings can be helpful on shared lane streets where there is insufficient space to add bicycle lanes, and where the speed limit is not above 35 miles per hour.

SYMBOL PLACEMENT - NO PARKING:



SYMBOL PLACEMENT - PARKING:



SUITABLE LOCATIONS FOR SHARED LANE MARKING:

- Symbols may be used on roadways that are too narrow for bicycle lanes.
- Symbols may be used on narrow roadways to connect disconnected bicycle facilities such as bicycle lanes, designated routes, and shared use paths.
- Symbols should only be used on roadways with posted speeds less than 40 mph.

DESIGN OF SHARED LANE MARKINGS:

- Symbols shall be placed after each intersection. Symbols shall be placed no closer than every 250' thereafter.
- If used on roadways with on-street parking, symbols shall be placed so that their centers are a minimum of 11' from the adjacent curb face.
- Symbols placed in a shared lane without parking shall be placed so that their centers are a minimum of 4' from the adjacent curbface.
- Do not place symbols on lane lines.

Shared Use Path: Shared-use paths provide a high-quality walking and bicycling experience in an environment that is separated from traffic.

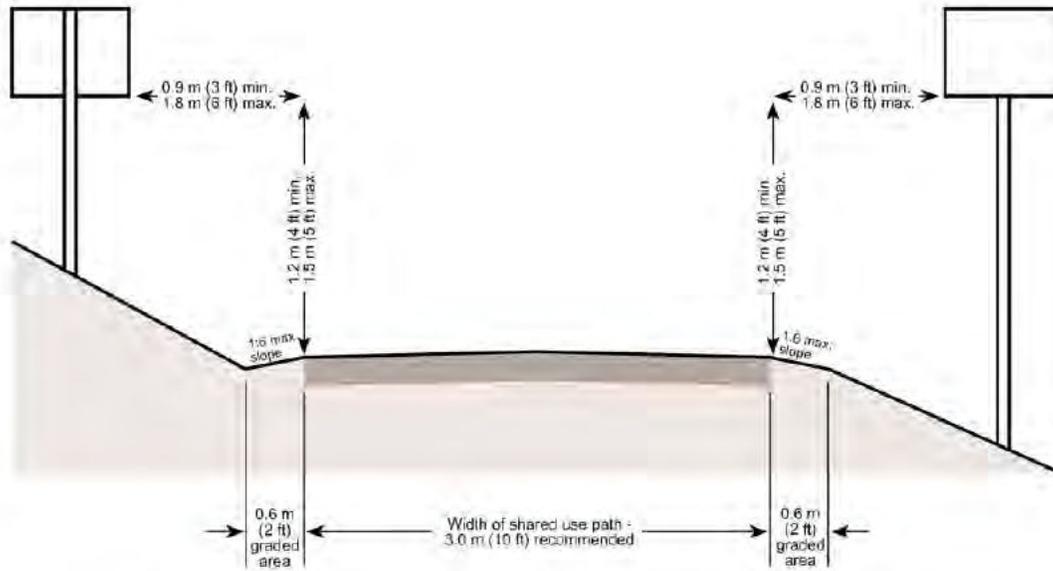


Figure 17. Cross Section of Two-Way Shared Use Path on Separated Right-of-Way

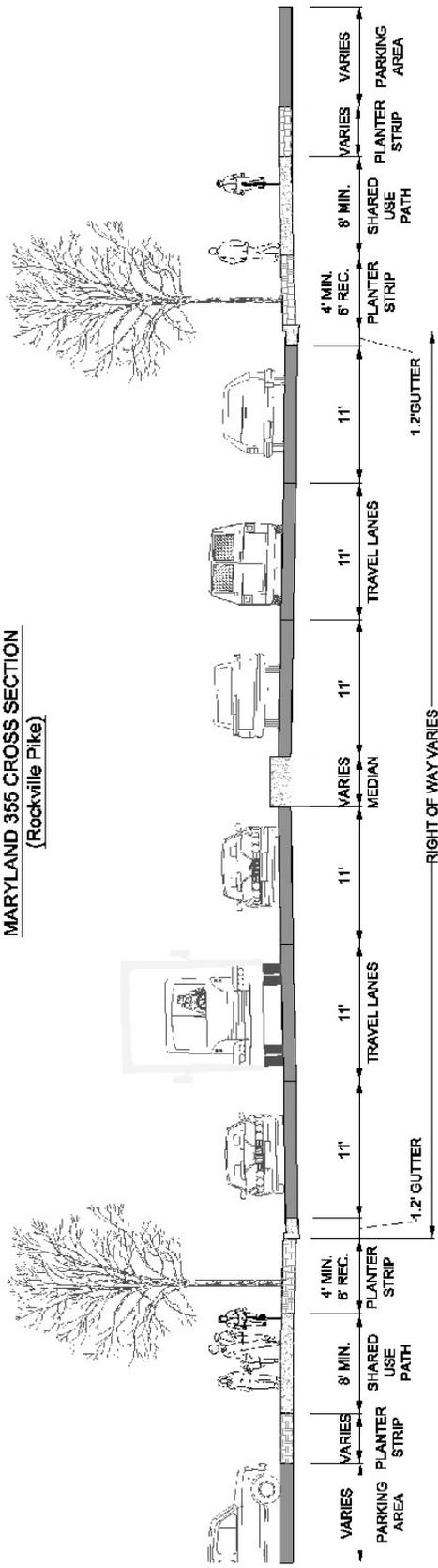
Source: American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, 1999.

Parallel Use Paths

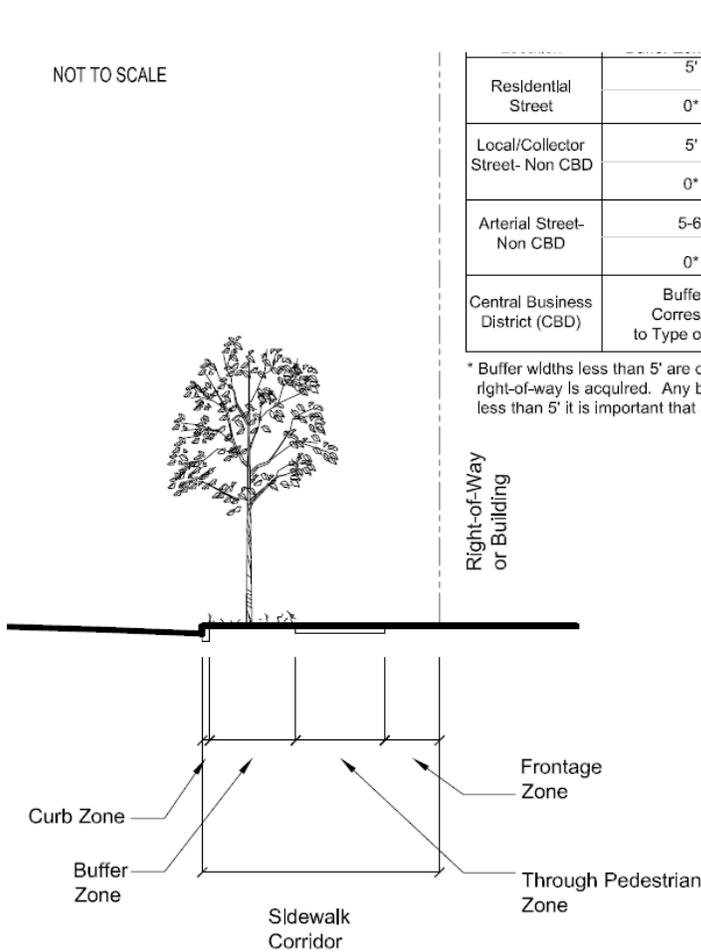
Parallel-use paths are essentially wide sidewalks intended for shared pedestrian and bicycle use. Ideally, they are provided on both sides of the roadway and bicyclists use the paths as one-way facilities (traveling in the same direction as adjacent motor vehicle traffic). Due to right-of-way and budget constraints, they are often provided only on one side of the roadway. They should be designed to reduce conflicts between pedestrians and bicyclists. They can function well if some of the following key design features are achieved:

- A minimum five-foot buffer between the outside travel lane and edge of pathway can be built (a 42-inch vertical barrier is also acceptable).
- Conflicts with crossing roadways and driveways (which may or may not be signalized) can be minimized. Paths work particularly well where they are parallel to expressways and railroad rights-of-way because they are limited access in nature. However, paths parallel to expressways must be designed carefully, and grade separation is preferred at freeway interchanges.
- Street trees are recommended where possible (30'-60' on center)
- Crossings of free flow ramps can be avoided, minimized or made sufficiently safe.
- Conflicts between pedestrians and bicyclists are minimized by having adequate width, clear space at the side of the path and sight distance at locations where pedestrians cross or enter the facility.
- Berms and/or vegetation can be used to separate paths from adjacent areas. Although it is not desirable to place the pathway in a narrow corridor in between two barriers (such as fences, bollards, or a knee-wall) for long distances. This prevents path users from leaving the path in the event of an emergency, and creates an uncomfortable experience for the user.

MARYLAND 355 CROSS SECTION
(Rockville Pike)



Sidewalk Design



SIDEWALK WIDTHS

	Width	Through Pedestrian Zone Width
Residential Street	5'	Min. 5'
	0*	Min. 6'
Local/Collector Street- Non CBD	5'	Min. 5'
	0*	Min. 7'
Arterial Street- Non CBD	5-6'	6-8'
	0*	8-10'
Central Business District (CBD)	Buffer to Correspond to Type of Street	Min. 10'

* Buffer widths less than 5' are only acceptable in retrofit situations where no new right-of-way is acquired. Any buffer width is better than none. Where buffer width is less than 5' it is important that additional sidewalk width be provided.

DEFINITIONS:

Curb Zone - The horizontal surface of the curb

Buffer Zone - The area between the through pedestrian zone and the street. May contain street trees, newspaper boxes, street signs, etc.

Through Pedestrian Zone - The area where pedestrians walk

Frontage Zone - The area between the through pedestrian zone and the right-of-way line. In downtown areas, this is the **shy area** next to a building where pedestrians tend not to walk. It is typically 2' in width.

DESIGN OF THE THROUGH PEDESTRIAN ZONE:

- Minimum clear width of 5' (Width measurement should not include curb)
- It is undesirable for the through pedestrian zone to be located immediately adjacent to the roadway
- Shall be completely free of protruding objects
- Ground surface shall be firm, stable, and slip resistant
- 2% max. cross slope
- Running slope must be equal or less than that of the adjacent roadway

DESIGN OF THE BUFFER ZONE:

- Width is measured from the face of curb to the nearest edge of the sidewalk
- Street trees are recommended where possible (30-60' on center)
- On-street parking and bike lanes can act as a buffer
- Utilities should not be placed directly beneath the buffer zone if trees are present

Appendix C: Detailed Cost Estimates

Segment 1										
Facility Type	Total Miles within Priority Route	Other Rec within Segment	Total		Cost Per Mile	Totals	Priority Route Cost	Other Rec Within Segment Cost	Total Cost	Totals
Bike Lane	0	0.623	0.623		\$50,160.00		\$0.00	\$31,249.68	\$31,249.68	
Climbing Lane	0	0.199	0.199		\$50,160.00		\$0.00	\$9,981.84	\$9,981.84	
Long Term Trail	0.822	5.057	5.879		\$199,530.22		\$164,013.84	\$1,009,024.32	\$1,173,038.16	
Shared Use Path	0.332	1.175	1.507		\$199,530.22		\$66,244.03	\$234,448.01	\$300,692.04	
Shared Lane Marking	0	0.908	0.908		\$10,560.00		\$0.00	\$9,588.48	\$9,588.48	
Shared Neighborhood Roadway	0	1.109	1.109		\$0.00		\$0.00	\$0.00	\$0.00	
Shared Neighborhood Roadway Pave	0	0			\$199,530.22		\$0.00	\$0.00	\$0.00	
Parallel Use Path	0	0.412	0.412		\$237,041.90		\$0.00	\$97,661.26	\$97,661.26	
Sidewalk	0.1	1.452	1.552		\$301,292.13		\$30,129.21	\$437,476.17	\$467,605.39	
Existing/Acquired Trail	1.832	2.067	3.899		\$0.00		\$0.00	\$0.00	\$0.00	
Total							\$260,387.09	\$1,829,429.77		\$2,089,816.85

Segment 2										
Facility Type	Total Miles within Priority Route	Other Rec within Segment	Total		Cost Per Mile	Totals	Priority Route Cost	Other Rec Within Segment Cost	Total Cost	Totals
Bike Lane	0.355	0	0.355		\$50,160.00		\$17,806.80	\$0.00	\$17,806.80	
Climbing Lane	0	0	0		\$50,160.00		\$0.00	\$0.00	\$0.00	
Long Term Trail	1.625	0.375	2		\$199,530.22		\$324,236.61	\$74,823.83	\$399,060.44	
Shared Use Path	0.317	0.222	0.539		\$199,530.22		\$63,251.08	\$44,295.71	\$107,546.79	
Shared Lane Marking	1.201	1.626	2.827		\$10,560.00		\$12,682.56	\$17,170.56	\$29,853.12	
Shared Neighborhood Roadway	0.368	1.739	2.107		\$0.00		\$0.00	\$0.00	\$0.00	
Shared Neighborhood Roadway Pave	0	0	0		\$199,530.22		\$0.00	\$0.00	\$0.00	
Parallel Use Path	0.265	0.476	0.741		\$237,041.90		\$62,816.10	\$112,831.94	\$175,648.05	
Sidewalk	0	0.87	0.87		\$301,292.13		\$0.00	\$262,124.15	\$262,124.15	
Existing/Acquired Trail	0.911	0.8	1.711		\$0.00		\$0.00	\$0.00	\$0.00	
Total							\$480,793.15	\$511,246.20		\$992,039.35

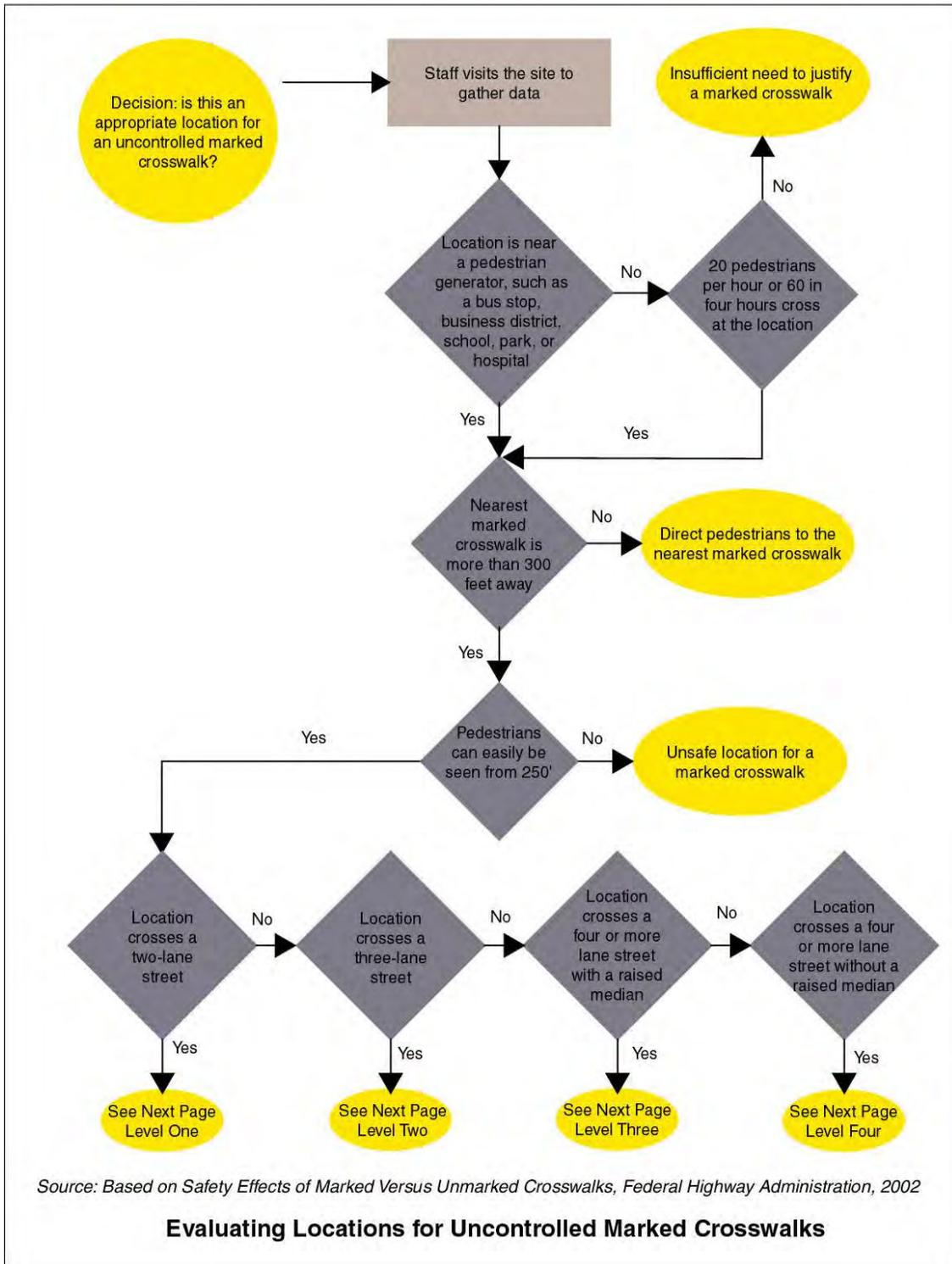
Segment 3										
Facility Type	Total Miles within Priority Route	Other Rec within Segment	Total		Cost Per Mile	Totals	Priority Route Cost	Other Rec Within Segment Cost	Total Cost	Totals
Bike Lane	0	0	0		\$50,160.00		\$0.00	\$0.00	\$0.00	
Climbing Lane	0	0	0		\$50,160.00		\$0.00	\$0.00	\$0.00	
Long Term Trail	0	4.858	4.858		\$199,530.22		\$0.00	\$969,317.81	\$969,317.81	
Shared Use Path	1.218	0.528	1.746		\$199,530.22		\$243,027.81	\$105,351.96	\$348,379.76	
Shared Lane Marking	0	0	0		\$10,560.00		\$0.00	\$0.00	\$0.00	
Shared Neighborhood Roadway	0.156	1.232	1.388		\$0.00		\$0.00	\$0.00	\$0.00	
Shared Neighborhood Roadway Pave	0	0	0		\$199,530.22		\$0.00	\$0.00	\$0.00	
Parallel Use Path	1.458	0	1.458		\$237,041.90		\$345,607.09	\$0.00	\$345,607.09	
Sidewalk	0.133	1.243	1.375		\$301,292.13		\$40,071.85	\$374,506.12	\$414,276.68	
Existing/Acquired Trail	1.693	1.08	2.773		\$0.00		\$0.00	\$0.00	\$0.00	
Bridle Path	0	1.644	1.644		\$199,530.22		\$0.00	\$328,027.68	\$328,027.68	
Total							\$628,706.75	\$1,449,175.88		\$2,077,581.34

Segment 4										
Facility Type	Total Miles within Priority Route	Other Rec within Segment	Total		Cost Per Mile	Totals	Priority Route Cost	Other Rec Within Segment Cost	Total Cost	Totals
Bike Lane	0	0.245	0.245		\$50,160.00		\$0.00	\$12,289.20	\$12,289.20	
Climbing Lane	0	0	0		\$50,160.00		\$0.00	\$0.00	\$0.00	
Long Term Trail	2.583	5.402	7.985		\$199,530.22		\$515,386.56	\$1,077,862.25	\$1,593,248.81	
Shared Use Path	0.66	1.703	2.363		\$199,530.22		\$131,689.95	\$339,799.96	\$471,489.91	
Shared Lane Marking	0	0.286	0.286		\$10,560.00		\$0.00	\$3,020.16	\$3,020.16	
Shared Neighborhood Roadway	0	0.86	0.86		\$0.00		\$0.00	\$0.00	\$0.00	
Shared Neighborhood Roadway Pave	0	0	0		\$199,530.22		\$0.00	\$0.00	\$0.00	
Parallel Use Path	0	0	0		\$237,041.90		\$0.00	\$0.00	\$0.00	
Sidewalk	0.42	0.763	1.183		\$301,292.13		\$126,542.69	\$229,885.90	\$356,428.59	
Existing/Acquired Trail	0.624	0.837	1.461		\$0.00		\$0.00	\$0.00	\$0.00	
Bridle Path	0	3.703	3.703		\$199,530.22		\$0.00	\$738,860.40	\$738,860.40	
Total							\$773,619.20	\$1,662,857.47		\$2,436,476.67

Segment 5										
Facility Type	Total Miles within Priority Route	Other Rec within Segment	Total		Cost Per Mile	Totals	Priority Route Cost	Other Rec Within Segment Cost	Total Cost	Totals
Bike Lane	0.359	0.573	0.932		\$50,160.00		\$18,007.44	\$28,741.68	\$46,749.12	
Climbing Lane	0	0	0		\$50,160.00		\$0.00	\$0.00	\$0.00	
Long Term Trail	0	1.603	1.603		\$199,530.22		\$0.00	\$319,846.94	\$319,846.94	
Shared Use Path	0.293	0.122	0.415		\$199,530.22		\$58,462.35	\$24,342.69	\$82,805.04	
Shared Lane Marking	0.938	1	1.938		\$10,560.00		\$9,905.28	\$10,560.00	\$20,465.28	
Shared Neighborhood Roadway	0.938	1	1.938		\$0.00		\$0.00	\$0.00	\$0.00	
Shared Neighborhood Roadway Pave	0	0	0		\$199,530.22		\$0.00	\$0.00	\$0.00	
Parallel Use Path	0.835	0.439	1.274		\$237,041.90		\$197,929.99	\$104,061.39	\$301,991.38	
Sidewalk	0.079	0.232	0.311		\$301,292.13		\$23,802.08	\$69,899.77	\$93,701.85	
Existing/Acquired Trail	0.306	0	0.306		\$0.00		\$0.00	\$0.00	\$0.00	
Total							\$308,107.14	\$557,452.48		\$865,559.62
Grand Total									\$9,528,361.91	\$ 8,461,473.83

Segment Number	Cost of Implementing Priority Route Recommendations	Cost of Projects Outside of the Priority Route	Total Cost
Segment 1	\$260,387.09	\$1,829,429.77	\$2,089,816.85
Segment 2	\$480,793.15	\$511,246.20	\$992,039.35
Segment 3	\$628,706.75	\$1,449,175.88	\$2,077,882.63
Segment 4	\$773,619.20	\$1,662,857.47	\$2,436,476.67
Segment 5	\$308,107.14	\$557,452.48	\$865,559.62
Total Cost	\$2,451,613.33	\$ 6,010,161.79	\$8,461,775.12

Appendix D: Evaluating Locations for Uncontrolled (crossings without a traffic signal or stop sign to regulate motor vehicle movements) Marked Crosswalks Matrix and Table



Engineering Treatments for Uncontrolled Marked Crosswalks

Level 1: 2 Lane Street

NUMBER OF CARS (ADT)	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
Up to 12,000 cars per day	High visibility crosswalk markings	High visibility crosswalk markings	High visibility crosswalk markings plus an engineering treatment (see below)
12,000-15,000	High visibility crosswalk markings	High visibility crosswalk markings	Pedestrian signal or grade separated crossing
15,000 cars or more per day	High visibility crosswalk markings	High visibility crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing

Level 3: 4 or more Lanes with a Raised Median

NUMBER OF CARS (ADT)	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
9,000 cars or fewer per day	High visibility crosswalk markings	High visibility crosswalk markings	High visibility crosswalk markings plus an engineering treatment (see below)
9,000-12,000	High visibility crosswalk markings	High visibility crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
12,000-15,000	High visibility crosswalk markings plus an engineering treatment (see below)	High visibility crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
15,000 or more	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing

Level 2: 3 Lane Street

NUMBER OF CARS (ADT)	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
9,000 cars or fewer per day	High visibility crosswalk markings	High visibility crosswalk markings	High visibility crosswalk markings plus an engineering treatment (see below)
9,000-12,000	High visibility crosswalk markings	High visibility crosswalk markings plus an engineering treatment (see below)	High visibility crosswalk markings plus an engineering treatment (see below)
12,000-15,000	High visibility crosswalk markings plus an engineering treatment (see below)	High visibility crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
15,000 or more	High visibility crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing

Level 4: 4 or more Lanes without a Raised Median

NUMBER OF CARS (ADT)	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
9,000 cars or fewer per day	High visibility crosswalk markings	High visibility crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
9,000-12,000	High visibility crosswalk markings plus an engineering treatment (see below)	High visibility crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
12,000-15,000	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing
15,000 or more	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing

Engineering Treatments

Road Diet (removal of one or more motor vehicle travel lanes)

Median Crossing Islands

Curb Extensions

Advance Stop Lines

In-Roadway Warning Lights

Pedestrian Signals

Grade Separated Crossing (should not be used in conjunction with high visibility crosswalk markings)

Engineering Treatments for Uncontrolled Marked Crosswalks

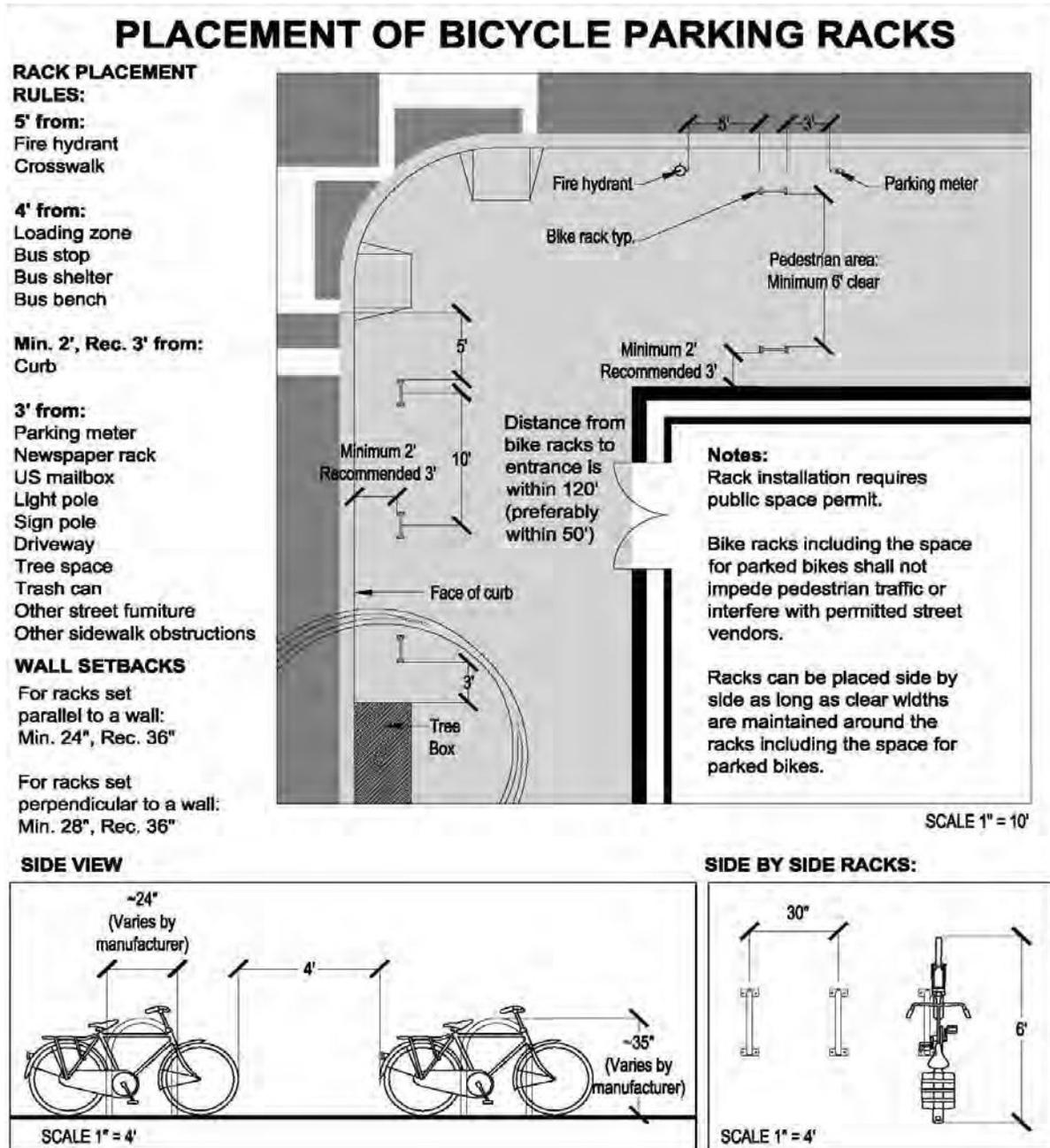
Appendix E: Proposed Spot Improvements Table

ID Number	Location	Recommendation	Segment	Report Reference
0	Lower Waterloo Road	Improve crossing conditions by adding signage and striping and possibly a pedestrian signal	1,2	p. 34-40
1	Broadview Avenue	Install a HAWK signal and build a shared use path connection	2	p. 39
2	Sullivan Street	Build connector through parking lot	2,4	Similar to as on page 46
3	Broadview Avenue and Oak Springs Road	Improve crossing conditions and install median island	2,4	p. 34-40
4	Culpepper Street and Brookshire Drive	Improve crossing conditions	1	p. 34-40
5	Carriage House Lane	Improve trail/road connection	1	p. 41-42
6	Waterloo Road	Enhance trail/road connection and improve crossing conditions	1,2	p. 34-40
7	Broadview Avenue and Highland School	Improve crossing conditions	2,4	p. 34-40
8	Lee Highway and Comfort Inn Drive	Time signals to enable comfortable bicycle and pedestrian crossing	4	p. 38
9	Meetze Road and Old Auburn Road	Improve crossing conditions through signage, slowing vehicle speed and increasing sight distance	1,3	p. 34-40
10	Horner Street and South Third Street	Design trail/road connection and improve crossing conditions	5	p. 34-40
11	South Third Street and Franklin Street	Explore direct bicycle access to Warrenton Branch Greenway	1,5	N/A
12	Walker Drive and East Lee Street	Improve crossing conditions and explore creating a median island	3,5	p. 37
13	Academy Hill Road and Walker Drive	Improve crossing conditions by slowing down traffic and improving sight lines	3,5	p. 34-40
14	Culpepper Street and Fisher Lane	Design shared use path crossing to increase visibility and awareness of non-motorized traffic by incorporating signage and striping	1,5	p. 41-42

ID Number	Location	Recommendation	Segment	Report Reference
15	Academy Hill Extension and Walker Drive	Design for trail/road crossing	3,5	p. 41-42
16	Meetze Road near future Central Sports Complex	Consider traffic signal at entrance to sports complex	1,3	p. 38
17	Warrenton Branch Greenway and East Shirley Avenue	Enhance crossing conditions and design for trail/road crossing	1,5	p. 41-42
18	Walker Drive and Old Alexandria Pike	Create throughway for bicycles and pedestrians only (Currently road end is closed)	3,5	Similar to as on page 46
19	East Lee Highway, East of Blackwell Road	Create bicycle and pedestrian facility connecting the existing trail south of East Lee Highway and the proposed trail north of East Lee Highway	4	N/A
20	Culpepper Street and West Shirley Avenue	Improve crossing conditions at intersection and design for connection between shared use path and bicycle lane	1,5	p. 34-40
21	Lord Fairfax Drive and Lord Fairfax Community College Fauquier Campus	Ensure bicycle and pedestrian access along with any future road improvements	1	N/A
22	Veterans Drive	Pave gravel part of the road	1	N/A
23	Academy Hill Extended, north of bridge	Consider paving gravel part of the road	3,4,5	N/A
24	Boundary Lane North of Topaz Court	Provide bicycle and pedestrian access through existing fence and consider paving road	5	Similar to as on page 46
25	Eastern Bypass and Academy Hill Extended (On Bridge)	Lane diet for bicycles and pedestrians on bridge; one side only	3,5	p. 45
26	West Lee Highway and Winchester Street	Signal timing for pedestrian crossing should be increased	2	p. 38
27	Bear Wallow Road and Norfolk Road	Trees need to be trimmed for proper sight distance from Norfolk Road	2	N/A
28	Bear Wallow Road near Timber Fence Parkway	Consider rapid flashing beacon, advanced warning signs and increased enforcement to slow incoming speeds and increase awareness of pedestrians crossing	2	p. 40

ID Number	Location	Recommendation	Segment	Report Reference
29	Manor Court/Carriage House Chase signal at West Shirley Avenue	Signal needs to give pedestrians more crossing time	1	p. 38
30	Broadview Avenue and Waterloo Road	Pursue a series of design improvements to improve pedestrian and bicycle access	1,2	p. 43-44
31	Waterloo Road and Garrett Street	Improve crossing conditions	1,2	p. 34-40
32	Fauquier Hospital Connection	Provide pedestrian and bicycle access between Fauquier Hospital and neighborhoods to the south and east.	1	p. 46
33	Route 29 Trail Underpass	Investigate the feasibility of a shared use path under the Route 29 bridge on the northeast side of Warrenton	4	p. 47
34	Broadview Avenue pedestrian and bicycle improvements	Improve non-motorized travel across and along Broadview Avenue	2	p. 48
35	Blackwell Road Trailhead	Provide trailhead for bicycle, pedestrian, and equestrian access	3	p. 47

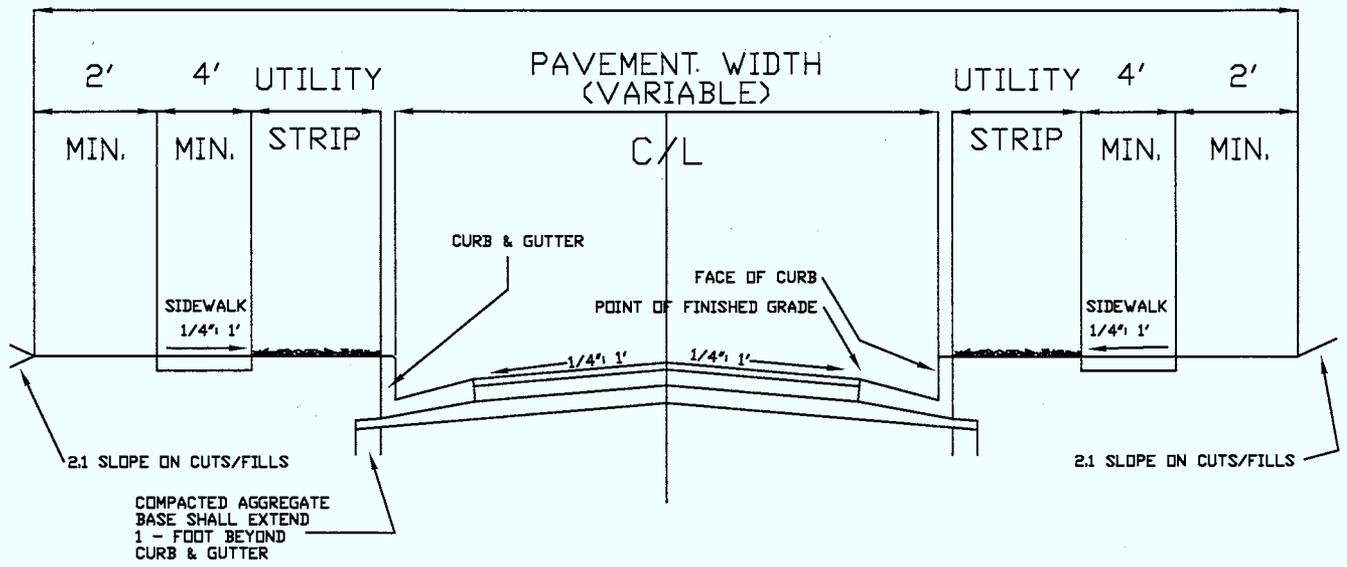
Appendix F: Strategies for Placement of Bicycle Rack



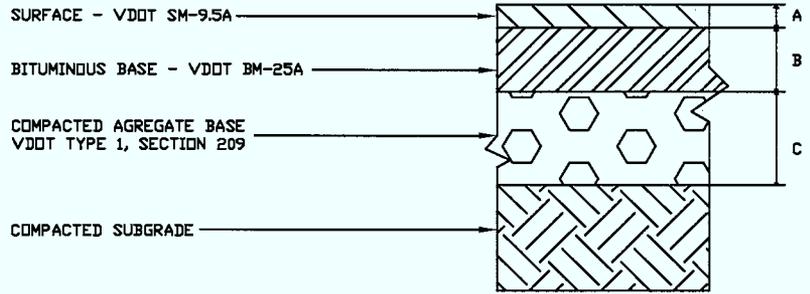
Source: City of Baltimore Bicycle Facility Design Guidelines

Appendix G: Sidewalk specification in the Warrenton Public Facilities Manual

RIGHT OF WAY



TYPICAL SECTION FOR STREETS WITH CURB & GUTTER



PAVEMENT DETAIL

CLASS OF STREET	VEHICLE TRAFFIC (ADT)	RIGHT OF WAY	PAVEMENT WIDTH	UTILITY STRIP	MIN. PAVEMENT DESIGN		
					A	B	C
PRIVATE ROADS	N/A	34'	26'	N/A	1 1/2"	2 1/2"	6"
LOCAL	<400	50'	28'	2	2"	2 1/2"	6"
MINOR COLLECTOR	400-800	55'	36'	2	2"	2 1/2"	8"
COLLECTOR	801-1500	60'	36'	2	2"	2 1/2"	8"
MAJOR COLLECTOR	1501-4000	80'	48'	2	2"	3"	12"
ARTERIAL	>4000	NOTE(3) R-1 STD.	48'	2	2"	6"	12"

NOTES:

1. SLOPE EASEMENTS MAY BE REQUIRED IN ADDITION TO THE RIGHT OF WAY AS SHOWN.
2. UTILITY STRIPS SHALL BE OMITTED AT STREET INTERSECTIONS AND THE WALK EXTENDED TO BACK OF CURB.
3. PRIVATE ROADS SHALL BE DESIGNED, CONSTRUCTED, AND TESTED TO TOWN AND VDOT LOCAL ROADWAY STANDARDS.
4. PARKING LOT DESIGN TO BE A MINIMUM A=2 INCHES AND C=8 INCHES EXCEPT THOROUGHFARES WHICH WILL BE TO LOCAL ROAD STANDARDS.
5. PRIVATE ROAD TURNAROUND REQUIREMENTS TO BE DESIGNED AND CONSTRUCTED TO THE MOST CURRENT VDOT SUBDIVISION DESIGN STANDARDS.
6. PAVEMENT THICKNESS DESIGN MUST BE PERFORMED FOR ALL ROADWAYS, THESE STANDARDS ARE MINIMUMS AND ACTUAL DESIGN MAY INCREASE THICKNESSES.

TOWN OF WARRENTON VIRGINIA	APPROVED: <u>4/19/05</u> DIRECTOR OF PUBLIC WORKS UTILITIES	STREET WITH CURB & GUTTER	DRAWING NO: R-2
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Appendix H: Stakeholder Interview Memorandum

MEMORANDUM

Fauquier-Warrenton 2008 Destinations Plan
Stakeholder Interviews Memorandum
September 8, 2008

The consultant team identified and interviewed a series of local stakeholders regarding pedestrian and bicycle issues in the project area. The interviews guided the development of the 2008 Destinations Plan and the recommended implementation strategy. Stakeholders were identified in consultation with members of the advisory team representing Fauquier County, Town of Warrenton, the Rappahannock-Rapidan Regional Commission and the Virginia Department of Transportation.

Interviewees included property owners, local bicyclists, easement specialists and people with knowledge of previous bicycle and pedestrian planning efforts in Warrenton and Fauquier County. Interviews were held at various locations throughout Fauquier County and the Town of Warrenton. Additional information on the interview process and the discussion points from each interview is provided below.

I. Interview Process

The consultant team asked each interviewee a series of questions regarding existing walking and bicycling conditions in Warrenton and Fauquier County, problem areas, critical connections and implementation strategies. A list of the questions that were asked, as applicable, is provided below.

Questions

1. Describe the physical characteristics of the property?
 - General characteristics (size, topography, etc.)
 - Constraints (utility easements, buffer requirements, storm water requirements, etc.)
2. What are the plans for development, if any?
3. How will greenways and trails be incorporated (central feature, off to the side, secondary street, etc.) in the current design
4. What is the general feeling about serving as part of the loop
5. Are there concerns about providing bike and pedestrian facilities and trails (privacy, liability, maintenance, etc.)?
6. What is the relationship (current, planned, future) between this property and the property across Route 17 to the South
7. Are there trail design elements that could address some concerns (visibility, lighting, signage, elevations, etc.)?
8. What do you think are the best opportunities to accomplish your objectives on the site and the Town and County's bike and pedestrian transportation goals at the same time?
9. Are there other things we should consider?

II. Interviews

Interview 1: Bob Lee

Date: April 7, 2008

Location: Via telephone

Present: Bob Lee (Virginia Outdoors Foundation), Dan Goodman (TDG)

Bob Lee provided information on conservation easements in Virginia. Mr. Lee discussed the different types of conservation easements and the activities that are allowed within each category.

Next Steps

Mr. Lee provided information on the conservation easement process and about specific properties in the study area. This information was incorporated in the recommendations in the Plan.

Interview 2: Sam Tarr

Date: April 16, 2008

Location: Town of Warrenton Department of Planning and Community Development, 18 Court Street, Warrenton, Virginia

Present: Sam Tarr, Chris Mothershead (Town of Warrenton), Dan Goodman (TDG), Katie Mencarini (TDG)

Sam Tarr provided information on pedestrian and bicycle issues throughout the Town of Warrenton and Fauquier County based on his extensive experience walking and bicycling in the study area. Mr. Tarr is also a Councilmember in Warrenton and so he was able to provide information on previous and ongoing planning efforts undertaken by the Town and community.

Next Steps

Mr. Tarr provided critical information on local issues, past planning efforts and key connections that enabled the project team to build on its understanding of pedestrian and bicycle conditions in the study area. This information provided a baseline for analysis and informed all aspects of the Plan including the existing conditions discussion, the recommended routing choices and barriers and challenges to walking and bicycling in the study area.

Interview 3: Tony Sharkey

Date: April 16, 2008

Location: Warren Green Building, 10 Hotel Street, Warrenton, Virginia

Present: Tony Sharkey, Dan Goodman (TDG), Katie Mencarini (TDG)

Tony Sharkey provided important background information on pedestrian and bicycle planning efforts in the study area. The interview focused on connections around Fauquier Hospital. The neighborhood connection to Dr. Maroni's office was discussed in detail. This connection would

provide an important connection between the residential neighborhoods around the Hospital and the goods and services offered in the vicinity of the Hospital.

Next Steps

The neighborhood connection near the Hospital is discussed in detail in the plan. A graphic is provided to show how the connection could be formalized so that people know that it exists and are more likely to use it. This connection is an important functional improvement in the study area and could enable people to choose to walk and bike for certain trips, which is an important goal of this Plan.

Interview 4: Al Slay

Date: May 2, 2008

Location: Crescendo Bistro, Warrenton, Virginia

Present: Al Slay, Matthew Cribetz (R-RRC), Dan Goodman (TDG), Katie Mencarini (TDG)

Al Slay is a retired resident of the Town of Warrenton. Mr. Slay bicycles recreationally with a group of 10-15 other riders throughout Warrenton and the surrounding area. Mr. Slay was chosen because of his experience in bicycling in the study area. Mr. Slay provided guidance on where routes are desired and what facilities would be comfortable and convenient along these routes. Mr. Slay also provided the team with maps of popular routes in the Town and surrounding area. These routes were considered in the development of the Plan. Efforts were made to provide bicycle routes out of Town that would connect with popular regional rides.

Next Steps

The Town and County should implement bicycle and pedestrian projects that provide connections through Town and that connect to popular regional routes. Educational and awareness programs should be undertaken to ensure that people are aware of good routes so that they can make educated decisions regarding trip and route planning.

Interview 5: Alice G. Haase and Matt Fitch

Date: June 12, 2008

Location: Bohler Engineering, 28 Blackwell Park Lane, Suite 201, Warrenton, VA 20186

Present: Alice G. Haase (Holland + Knight), Matt Fitch (Bohler Engineering), Dan Goodman (TDG), Katie Mencarini (TDG)

The consultant team interviewed Ms. Haase and Mr. Fitch regarding a property located on the northeast side of the Town of Warrenton. The property is currently unimproved and is buffered with trees. Development plans have been submitted and were under review at the time of the meeting. The meeting allowed the project team to learn about the details of the proposed plan and to envision how it would impact overall pedestrian and bicycle connectivity in the project area. This information is incorporated in the recommendations in the Plan.

Next Steps

The 2008 Destinations Plan incorporates planned improvements on the site. It proposes connections between the site and other on and off-road pedestrian and bicycle facilities in the vicinity. It also proposes connections between the site and the existing trails on the other side of East Lee Highway. As the development review process for this property continues, the Town should evaluate how this site will contribute to the routes proposed in this Plan. Opportunities to incorporate the development of this property into the pedestrian and bicycle connections in the area should be pursued.

Interview 6: Dale D. Dick

Date: July 24, 2008

Location: Mr. Dick's farm

Present: Dale D. Dick, Dan Goodman (TDG), Katie Mencarini (TDG)

Dale D. Dick is a property owner in Fauquier County. His family owns land in the area between the Warrenton Branch Greenway and Lord Fairfax Community College. The Plan proposes a long-term shared-use path, shown in Segment One, crossing the property. The consultant team met with Mr. Dick to discuss the possibility of incorporating parts of the proposed route through the property.

Next Steps

The property in between the Warrenton Branch Greenway and Lord Fairfax Community College provides a critical connection in the study area. If plans for development of the site are submitted the Town and County should indicate to the developer that this connection is desired. The Town and County should identify ways, for example by clustering, to provide trail connections through the property that would not necessarily diminish development potential.

Interview 7: Spencer Dejarnette

Date: August 21, 2008

Location: Via telephone

Present: Spencer Dejarnette (VDOT), Dan Goodman (TDG)

Spencer Dejarnette works with the Virginia Department of Transportation and is responsible for easement analysis and acquisition in the study area on behalf of VDOT. Mr. Dejarnette provided information on VDOT's easement process, including steps for obtaining an easement, challenges and local examples. He also discussed cost estimating procedures and other resources to explore regarding the easement process.

Next Steps

The information from this interview was incorporated in the easement discussion in the Plan. The interview provided information on the process for obtaining easements and for calculating costs. It also provided helpful information on additional resources that the Town and County can use as it pursues easements on a site specific basis.

Appendix I: Town of Warrenton and Fauquier County Project List

Project List by Town and County

Jurisdiction	Recommendation	Project Name	From Street	To Street	Total Length	Cost Per Mile	Total Cost	Total Cost for Projects in the Town/County
Town	Bike Lane	Academy Hill Rd Bike Lane	Boundry Ln	Walker Dr	0.249	50160	\$ 12,489.84	
		Alexandria Pike Bike Lane	Near Diagonal	North St	0.068	50160	\$ 3,410.88	
		Blackwell Rd Bike Lane	Oak Springs Dr	Crossing US 17 Spur	0.073	50160	\$ 3,661.68	
		Brookshire Dr Bike Lane	Culpeper St	End	0.267	50160	\$ 13,392.72	
		Devon Dr Bike Lane	Brookshire Dr	End	0.202	50160	\$ 10,132.32	
		Fletcher Dr Bike Lanes Bike Lane	Oak Springs Dr	Hastings Ln	0.228	50160	\$ 11,436.48	
		Hastings Ln Bike Lanes Bike Lane	Oak Springs Dr	US 17 Spur	0.323	50160	\$ 16,201.68	
		Oak Springs Bike Lane Bike Lane	Broadview	Blackwell	0.699	50160	\$ 35,061.84	
		Veterans Dr Bike Lane	Hospital Dr	Carriage House Ln	0.154	50160	\$ 7,724.64	
		Walker Dr Bike Lane	Meetze Rd	Academy Hill Ext	0.615	50160	\$ 30,848.40	
	Climbing Lane	Hospital Dr Climbing Lane	(blank)	(blank)	0.128	50160	\$ 6,420.48	
		Vetrans Dr Climbing Lane	Vetrans Dr	Hospital Dr	0.071	50160	\$ 3,561.36	
	Long Term Trail	Frost-Carriage House Long Term Trail	Frost Ave	Carriage House Ln	0.708	199530.22	\$ 141,267.40	
		Hospital-Frost Long Term Trail	Hospital Dr	Frost Ave	0.278	199530.22	\$ 55,469.40	
		Lees Ridge - Bingham Rd Long Term Trail	Lees Ridge Rd	Bingham Rd	0.02	199530.22	\$ 3,990.60	
		Springs Rd Long Term Trail	Shipmandilly Ln	Leeton Hill Dr	0.152	199530.22	\$ 30,328.59	
		Taylor St Area Link Long Term Trail	Town Limit	North East	0.017	199530.22	\$ 3,392.01	
		US 17 Trail Link Long Term Trail	US 17	Trail	0.14	199530.22	\$ 27,934.23	
	Multi-Use Path	Benner Multi-Use Path	Benner Dr	East	0.083	199530.22	\$ 16,561.01	
		Brookshire Spur Multi-Use Path	Brookshire	East	0.018	199530.22	\$ 3,591.54	
		Carriage House Spur Multi-Use Path	Carriage House St	North	0.031	199530.22	\$ 6,185.44	
		Hastings-Broadview Multi-Use Path	Hastings	Broadview	0.415	199530.22	\$ 82,805.04	
		Meadowview - Walker Multi-Use Path	Meadowview Ln	Walker Dr	0.4	199530.22	\$ 79,812.09	
		North-Boundry-Alexandria Link Multi-Use Path	Boundry	Alexandria	0.332	199530.22	\$ 66,244.03	
		Taylor St Area Multi-Use Path	Town Limit	North East	0.58	199530.22	\$ 115,727.53	
		US 17 - West Lee Hwy Multi-Use Path	Blackwell	Blackwell	0.819	199530.22	\$ 163,415.25	
		Vetrans-Fisher Multi-Use Path	Vetrans	Fisher	0.146	199530.22	\$ 29,131.41	
		Waterloo Connector Multi-Use Path	Waterloo	Waterloo	0.045	199530.22	\$ 8,978.86	
		Waterloo Connectors Multi-Use Path	(blank)	(blank)	0.544	199530.22	\$ 108,544.44	
	Shared Lane Marking	Alexandria Pike Shared Lane Marking Section 2	North St	Blackwell Rd	0.129	10560	\$ 1,362.24	
		Alexandria Pk Shared Lane Marking Section 1	Horner	Near Diagonal St	0.098	10560	\$ 1,034.88	
		Blackwell-East Lee Trail Connector Shared Lane Marking	Blacwell	East Lee Hwy	0.286	10560	\$ 3,020.16	
		Branch Dr Shared Lane Marking	Oak Springs Rd	unknown	0.233	10560	\$ 2,460.48	
		Culpeper St Shared Lane Marking	West Shirley Ave	Main Street	0.42	10560	\$ 4,435.20	
		Diagonal St Shared Lane Marking	Waterloo St	Alexandria Pk	0.202	10560	\$ 2,133.12	
		First St Shared Lane Marking	Hornter St	Culpeper St	0.104	10560	\$ 1,098.24	
		Fisher - Carriage House Ln Shared Lane Marking	Fisher Ln	Vetrans Dr	0.182	10560	\$ 1,921.92	
		Fletcher Dr Shared Lane Marking	Oak Springs Dr	Hastings Ln	0.229	10560	\$ 2,418.24	
		Horner St Shared Lane Marking	Alexandria Pike	South Third St	0.104	10560	\$ 1,098.24	
		Hospital Dr Shared Lane Marking	Hospital Dr	Hospital Dr	0.356	10560	\$ 3,759.36	
			(blank)	(blank)	0.092	10560	\$ 971.52	
		South Chesnut St Shared Lane Marking	Waterloo St	West Lee St	0.109	10560	\$ 1,151.04	
		South Fourth St Shared Lane Marking	East Lee St	End	0.058	10560	\$ 612.48	
		South-North Third St Shared Lane Marking	East Lee St	Horner St	0.177	10560	\$ 1,869.12	
		Van Roijen St Shared Lane Marking	Waterloo Rd	Frost Ave	0.154	10560	\$ 1,626.24	
		Walker Dr Shared Lane Marking	Academy Hill Ext	Alexandria Pike	0.378	10560	\$ 3,991.68	
		Waterloo Rd Shared Lane Marking Section 1	(blank)	(blank)	0.46	10560	\$ 4,857.60	

		Waterloo St Shared Lane Marking Section 2	Broadview	Diagonal	0.607	10560	\$ 6,409.92	
		Waterloo -Trail Connection Shared Lane Marking	Waterloo Rd	Trail	0.252	10560	\$ 2,661.12	
		West Lee St Shared Lane Marking	South Chestnut St	North Fourth St	0.342	10560	\$ 3,611.52	
		Winchester St Shared Lane Marking	Combs Dr	Diagonal Street	0.987	10560	\$ 10,422.72	
	Shared Neighborhood Roadway	Backsweep Rd Shared Neighborhood Roadway	Timber Fence Pkwy	Fox Chase St	0.42	0	\$ -	
		Benner Dr-Boundry Ln Shared Neighborhood Roadway	Alexandria Pike	Academy Hill Rd	0.45	0	\$ -	
		Blackwell Rd Shared Neighborhood Roadway	US 17 Spur	Hidden Hollow Ln	0.092	0	\$ -	
		Carrage House Ln Shared Neighborhood Roadway	Veterans Dr	End	0.383	0	\$ -	
		Estate - Waler Dr Shared Neighborhood Roadway	Alexandria Pike	Estate Ave	0.227	0	\$ -	
		Evans-Foxcroft Shared Neighborhood Roadway Shared Neighborhood Roadway	Fauquier Rd	Broadview Ave	0.298	0	\$ -	
		Fauquier-Foxcroft-Solgrove Shared Neighborhood Roadway	Evans Ave	End Solgrove	0.368	0	\$ -	
		Fisher Ln Shared Neighborhood Roadway	Culpeper St	Horseshoe Ln	0.235	0	\$ -	
		Fox Chase St Shared Neighborhood Roadway	Black Sweep Rd	End	0.138	0	\$ -	
		Gold Cup Dr Shared Neighborhood Roadway	Near Gay Rd	Broadview Ave	0.379	0	\$ -	
		Hastings Ln Shared Neighborhood Roadway	US 17	Town Line	0.066	0	\$ -	
		King St Shared Neighborhood Roadway	Alexandria Pike	Winchester St	0.323	0	\$ -	
		Robes-Stuyvesant-Forbes Shared Neighborhood Roadway	Broadview Ave	Forbes Ct	0.366	0	\$ -	
		Taylor-Old Meetze-Meadowview Shared Neighborhood Roadway	East Shirley Ave	Meadowview Trail	1.008	0	\$ -	
		Walker-Oliver City Shared Neighborhood Roadway	East Lee St	Eastern Byp	0.304	0	\$ -	
		Winchester St-Branch Dr Shared Neighborhood Roadway	Winchester St	Branch Dr	0.138	0	\$ -	
	Side Path	Academy Hill Ext Side Path	Eastern Byp	Coopers Hawk Dr	0.045	237041.9	\$ 10,666.89	
			Walker Dr	Eastern Byp	0.161	237041.9	\$ 38,163.75	
		Alexandria Pike Side Path	Walker Dr	Blackwell Rd	0.439	237041.9	\$ 104,061.39	
		Blackwell Rd Side Path	Unknown	Oak Springs Dr	0.184	237041.9	\$ 43,615.71	
		Broadview Ave Side Path	Gold Cup Dr	Stuyvesant St	0.034	237041.9	\$ 8,059.42	
			Evans Ave	Town Line	0.061	237041.9	\$ 14,459.56	
		Culpeper St Side Path	Brookshire Dr	East Shirley Av	0.181	237041.9	\$ 42,904.58	
		East Shirley Ave Side Path	trail	Trail	0.061	237041.9	\$ 14,459.56	
		Frost Ave Side Path	Broadway Ave	Town Edge	0.462	237041.9	\$ 109,513.36	

	Sidewalk	Various Locations (Note: unable to establish precise location due to data limitations)	NA	NA	3.5774	301292.13	\$ 1,077,842.47	
Total Cost for Projects in the Town								\$ 2,624,394.92
County	Long Term Trail	Academy Hill Ext Long Term Trail	Academy Hill	South East	0.257	199530.22	\$ 51,279.27	
		Blackwell - James Madison Long Term Trail	Blackwell Rd	James Madison Hwy	2.823	199530.22	\$ 563,273.81	
		Dumfries - Academy Hill Long Term Trail	Dumfries Rd	Academy Hill Ext	1.346	199530.22	\$ 268,567.68	
		Dumfries Rd Long Term Trail	Colonial Rd	Grays Mill Rd	1.411	199530.22	\$ 281,537.14	
		Frytown Rd Region Long Term Trail	Old Auburn Rd	Frytown Rd	2.87	199530.22	\$ 572,651.73	
		Hidden Hollow Long Term Trail	Hidden Hollow	Trail	0.481	199530.22	\$ 95,974.04	
		James Madison - Bear Wallow Long Term Trail	James Madison Hwy	Bear Wallow Rd	0.711	199530.22	\$ 141,865.99	
		James Madison Long Term Trail	trail	Near Evans Ave	0.343	199530.22	\$ 68,438.87	
		Lee Hwy - Blackwell Long Term Trail	Lee Hwy	Blackwell Rd	0.995	199530.22	\$ 198,532.57	
		Lee Hwy - Carrige House Long Term Trail	Lee Hwy	Carrige House Ln	1.061	199530.22	\$ 211,701.56	
		Lees Ridge - Bingham Rd Long Term Trail	Lees Ridge Rd	Bingham Rd	2.152	199530.22	\$ 429,389.03	
		Meetze Rd Long Term Trail	Green Rd	Trails	0.968	199530.22	\$ 193,145.25	
		Mill House Long Term Trail	Mill House Ln	Past Cedar Run Dr	0.749	199530.22	\$ 149,448.13	

		Nordix Dr Area Long Term Trail	Lee Hwy Access	Trail	1.386	199530.22	\$ 276,548.88	
		Shipmadilly Ln Long Term Trail	trail	(blank)	1.222	199530.22	\$ 243,825.93	
		South East Trail Link Long Term Trail	trail	Trail	0.747	199530.22	\$ 149,049.07	
		Springs Rd Long Term Trail	Shipmandilly Ln	Leeton Hill Dr	0.282	199530.22	\$ 56,267.52	
		Swift Xing Long Term Trail	Swift Xing	East	0.273	199530.22	\$ 54,471.75	
		Timberfence Long Term Trail	Timberfence Rd	South	1.102	199530.22	\$ 219,882.30	
	Multi-Use Path	Blackwell Rd Multi-Use Path	Blackwell Rd	Lee Hwy Access	0.966	199530.22	\$ 192,746.19	
		Evans Ave Multi-Use Path	James Madison	(blank)	0.272	199530.22	\$ 54,272.22	
		Hastings-Broadview Link Multi-Use Path	Hastings	Broadview	0.163	199530.22	\$ 32,523.43	
		James Madison Hwy Multi-Use Path	James Madison Hwy	East	0.332	199530.22	\$ 66,244.03	
		Meetze Multi-Use Path	trail	Eastern Byp	0.528	199530.22	\$ 105,351.96	
		Meetze Rd Area Multi-Use Path	Old Auburn Rd	South	1.218	199530.22	\$ 243,027.81	
	Bridle Path	Around Reservoir	Lee Hwy	Reservoir	1.869	199530.22	\$ 372,921.98	
		Warrenton Branch Greenway 1			0.7631	199530.22	\$ 152,261.51	
		Warrenton Branch Greenway 2			0.8813	199530.22	\$ 175,845.98	
	Shared Neighborhood Roadway	Academy Hill Ext Shared Neighborhood Roadway	Coopers Hawk Dr	End	0.114	0	\$ -	
		Hastings Ln Shared Neighborhood Roadway	Town Line	Trail	0.326	0	\$ -	
		Mill House-Comfort Inn Shared Neighborhood Roadway	Mill House Ln	Lee Hwy	0.376	0	\$ -	
		Old Dunhollow - Academy Hill Connector Shared Neighborhood Roadway	Old Dunhollow Rd	Academy Hill Ext	1.388	0	\$ -	
	Side Path	Academy Hill Ext Side Path	Eastern Byp	Coopers Hawk Dr	0.515	237041.9	\$ 122,076.58	
		Meetze Rd Side Path	Old Auburn Rd	Old Duhollow Rd	0.599	237041.9	\$ 141,988.10	
		Old Auburn Rd Side Path	Meetze Rd	Trail	0.859	237041.9	\$ 203,618.99	
	Sidewalk	Various Locations (Note: unable to establish precise location due to data limitations)	NA	NA	1.7128	301292.13	\$ 516,053.16	
Total Costs for Projects in the County								\$ 6,604,782.47
Total Combined Estimated Cost							\$ 9,229,177.39	

Appendix J: Existing Programs and Resources

Existing pedestrian and bicycle-related programs and resources are important elements of the study area. A selection of these resources is included below.

- Town of Warrenton Planning Department, Parks and Recreation, Planning Commission, Town Council, Public Works, etc.
- Fauquier Trails Coalition, Inc., a 501(3c) non-profit organization
- Fauquier County Planning Department, Parks and Recreation, Planning Commission, Board of Supervisors, etc.
- Fauquier County Trails Committee
- Warrenton Cycling (A community of cyclists committed to promoting bicycle riding at all levels in Fauquier County)
- Virginia Outdoors Foundation
- Virginia Department of Conservation and Recreation
- Rappahannock-Rapidan Regional Commission
- Rails to Trails Conservancy

Appendix K: Pedestrian and Bicycle Facility References

- *Guide to the Development of Bicycle Facilities*. Updated in 1999 by the American Association of State Highway Transportation Officials (AASHTO). Available at www.aashto.org/bookstore/abs.html
- *Manual on Uniform Traffic Control Devices (MUTCD)*. Published by the U. S. Department of Transportation, Washington, DC, 2001. Available at <http://mutcd.fhwa.dot.gov>
- *Draft Public Rights-of-Way Accessibility Guidelines*. U.S. Access Board, Washington, DC, November, 2005. Available at www.access-board.gov
- *Americans with Disabilities Act - Architectural Barriers Act Accessibility Guidelines*. U.S. Access Board, Washington, DC, 2004.
- *Transportation for Individuals with Disabilities; Adoption of New Accessibility Standards*. 49 CFR, Part 37, Federal Register: October 30, 2006, Volume 71, Number 209. Effective November 29, 2006. Available at www.access-board.gov/ada-aba/ada-standards-dot.cfm and www.fta.dot.gov/civilrights/ada/civil_rights_5936.html
- *Greenways: A Guide to Planning, Design and Development*. Published by Island Press, 1993. Authors: Charles A. Flink and Robert Searns. Available at www.greenways.com
- *Trails for the Twenty-First Century*. Published by Island Press, 2001. Authors: Charles A. Flink, Robert Searns, and Kristine Olka. Available at www.greenways.com

Appendix L: VDOT Funding Sources

Rural Transportation Planning Program

<i>Purpose</i>	Provides funds to planning district commissions to carry out transportation planning for rural areas.
<i>Funding</i>	<ul style="list-style-type: none"> ▪ Federal funds finance 80% of program activities and grants ▪ A match of at least 20% from a planning district commission or locality is required
<i>Eligible projects</i>	<ul style="list-style-type: none"> ▪ Pedestrian and bicycle planning, greenway planning
<i>Eligible applicants</i>	<ul style="list-style-type: none"> ▪ Planning district commissions

Highway Construction Program

<i>Purpose</i>	Provides funding for the preliminary engineering, right-of-way acquisition, and construction of highway projects.
<i>Funding</i>	<p>No local match is needed for projects on primary and secondary system roads.</p> <p>A 2% local match is required for projects on urban system roads</p>
<i>Eligible projects</i>	<ul style="list-style-type: none"> ▪ Pedestrian and bicycle accommodations can be built as part of highway projects ▪ Pedestrian and bicycle accommodations can be built as individual projects, separate from the construction of highways, either on highway or independent right-of-way

Pedestrian and Bicycle Safety Program

<i>Purpose</i>	Developed to implement safety projects addressing pedestrian and bicycle crashes or the potential for such crashes, with evaluations based on risk and applications competing with like projects.
<i>Funding</i>	<ul style="list-style-type: none"> ▪ Up to 90% of a project can be financed with federal funds ▪ A project must have a minimum 10% match
<i>Eligible projects</i>	<ul style="list-style-type: none"> ▪ Construction of on-street facilities and shared use paths ▪ Development of treatments for intersections ▪ Installation of signs and pavement markings
<i>Eligible applicants</i>	<ul style="list-style-type: none"> ▪ State and local agencies may apply to the program

Transportation Enhancement Program

<i>Purpose</i>	Initiative to focus on enhancing the travel experience and fostering improvement in the quality of life in American communities
<i>Funding</i>	<ul style="list-style-type: none"> ▪ Up to 80% of a project can be financed with federal funds. A local match of at least 20%, from other public or private sources, is required. ▪ Local matches may be in-kind contributions including tangible property, professional services and volunteer labor ▪ This is a reimbursable program
<i>Eligible projects</i>	<ul style="list-style-type: none"> ▪ Pedestrian and bicycle facilities such as sidewalks, bicycle lanes and shared use paths ▪ Pedestrian and bicycle safety and educational activities, such as classroom projects, safety handouts and directional signage for trails ▪ Preservation of abandoned railway corridors, such as the development of

	a rails-to-trails facility
<i>Eligible applicants</i>	<ul style="list-style-type: none"> Any local government, state agency, group or individual may apply to the program. All projects need to be formally endorsed by a local jurisdiction or public agency.

Safe Routes to Schools Program

<i>Purpose</i>	Provides funding for engineering, education, enforcement, encouragement, and evaluation activities that are aimed at making it safer and more appealing for children to walk and bicycle to school.
<i>Funding</i>	<ul style="list-style-type: none"> 100% of the cost of the program can be financed with Federal funds No match is required. This is a reimbursable program
<i>Eligible projects</i>	<ul style="list-style-type: none"> Engineering projects such as traffic calming, sidewalk installation, intersection improvements, warning signage and crosswalks markings, among others Education programs such as pedestrian and bicycle safety classes, bicycle rodeos, and motorist education programs Encouragement programs such as Walking School Buses, Bike Trains, Walk to School Day, and other incentives to encourage children and their parents to walk and bicycle to school.
<i>Eligible applicants</i>	<ul style="list-style-type: none"> Any local government, state agency, or non-profit may apply to the program.

Recreation Access Program

<i>Purpose</i>	Provides bicycle access to public recreational facilities or historic sites operated by a state agency, a locality, or a local authority, either with an access road or on a separate bicycle facility.
<i>Funding</i>	<ul style="list-style-type: none"> This program uses state funds only. Up to \$75,000 may be awarded for bicycle access to a facility operated by a state agency. Up to \$60,000 may be awarded for bicycle access to a facility operated by a locality or local authority, with a \$15,000 match.
<i>Eligible projects</i>	Construction, reconstruction, maintenance, or improvement of bikeways.
<i>Eligible applicants</i>	A governing body of a county, city or town may make an application to this program

National Scenic Byways Program

<i>Purpose</i>	Supports projects to improve the quality and continuity of the traveler's experience on highways designated as National Scenic Byways, All American Roads, or a state scenic byway.
<i>Funding</i>	<ul style="list-style-type: none"> Up to 80% of a project can be financed with federal funds A project must have a minimum 20% match This is a reimbursable program
<i>Eligible projects</i>	<ul style="list-style-type: none"> Construction of a facility for pedestrian and bicyclists along a scenic byway Safety improvements that reduce or eliminate the incidence or likelihood of crashes or conflicts with pedestrians and bicyclists
<i>Eligible applicants</i>	Any local government, state agency, group or individual may apply to the program.

Source: Information in the tables above was derived from a VDOT brochure entitled *VDOT Funding for Bicycling and Walking Accommodations*.

Appendix M: Planning Context

A. Planning Context

Policies have been adopted at all levels of government in order to ensure that communities are designed to support walking and bicycling. Below is a description of selected policies that are most relevant to this Plan.

Federal and Commonwealth of Virginia Policies

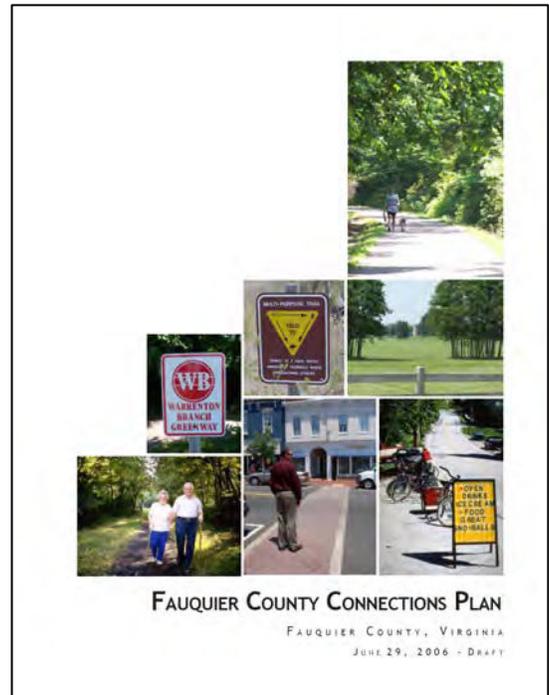
- [*Americans with Disabilities Act*](#): The U.S. Government established the Americans with Disabilities Act (ADA) in 1990. Its implementing regulations, issued by the Department of Justice in 1991, require that all new and altered publicly funded facilities - including sidewalks, street crossings and related pedestrian facilities in the public right-of-way - be accessible to and usable by people with disabilities. The Americans with Disabilities Act Accessibility Guidelines (ADAAG) provide the necessary guidance for the design and construction of pedestrian facilities.
- [*Federal Highway Administration \(FHWA\) Virginia Division Office Bicycle and Pedestrian Policy*](#): Federal transportation policies strongly support the inclusion of pedestrian and bicycle facilities in transportation projects, and have supplied a consistent source of funding for these activities. The Federal Highway Administration (FHWA) Virginia Division Office established a Bicycle and Pedestrian Policy in 2001. This policy supports including pedestrian and bicycle facilities in all new and reconstructed federal-aid transportation projects, except under specific circumstances. This policy states that it will assist VDOT by sharing technologies, helping with planning activities and promoting the safety aspects of walking and bicycling. The FHWA Division policy also states: “Bicycle and pedestrian facilities should be funded at the same federal-state ratio as the typical highway improvement,” and “Federal participation will be withdrawn on any major project that severs an existing bicycle or pedestrian route, unless an alternate route exists or is provided.”
- [*VDOT Policy for Integrating Bicycle and Pedestrian Accommodations*](#): While local jurisdictions play a large role in establishing transportation priorities in Virginia, VDOT is the agency responsible for constructing and maintaining many of the primary and secondary roads throughout the Commonwealth. On March 18, 2004 the Commonwealth Transportation Board adopted a new policy for integrating pedestrian and bicycle accommodations into roadway projects. Often termed “incidental” improvements, these are bikeways and sidewalks that are built as part of new roadway construction or roadway reconstruction. This policy essentially reverses previous VDOT policies that required a great deal of public and political support in order for bikeways and sidewalks to be *considered* for inclusion in transportation projects. The new policy states that “VDOT will initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking.” The policy provides a number of conditions under which additional emphasis will be placed on the need for such facilities, requiring bikeways and sidewalks whenever a roadway project occurs in an urban or suburban area. The policy also applies to operations and maintenance, including hazard elimination projects and signal installation. The policy provides several exemptions under which facilities are not required. The complete version of VDOT’s *Policy for Integrating Bicycle and Pedestrian Accommodations* can be found at www.virginiadot.org.

- [VDOT Roadway Design Manual](#): Establishes standards for the physical layout of roadways. The 2005 version of this manual has incorporated VDOT's *Policy for Integrating Bicycle and Pedestrian Accommodations*. Several sections of the manual describe in detail how pedestrians and bicyclists should be included in roadway projects. It describes various methods for accommodating bicyclists, such as bicycle lanes, paved shoulders, and wide outside lanes, as well as specifications for shared use paths and for sidewalks, buffers between sidewalks and roadways, curb ramps, and pedestrian tunnels.
- [Virginia Outdoors Plan](#): Created as a guide for identifying the Commonwealth's needs for outdoor recreation, conservation, and open space. It identifies resources and programs available to acquire and protect public open spaces. It offers recommendations for creating and maintaining trails and calls for the inclusion of both recreational and transportation trails in local comprehensive plans. The guide also recommends that state, local, and regional governments provide funds for trail development, management, and maintenance in annual capital and operating budgets.

Regional, County and Local Plans and Policies

In addition to the federal and state-level support for pedestrian and bicycle planning outlined above, regional, county and local plans exist that provide support for this Plan. Selected pedestrian and bicycle-related elements from these Plans are noted below.

- [Warrenton 2020 Transportation Plan](#): Developed as a joint effort between VDOT and the Town of Warrenton. Adopted on May 14, 2002 it outlines needs and recommendations based upon capacity, roadway safety, geometric conditions and land use. VDOT uses this plan when evaluating requests from Warrenton for specific transportation projects and for implementing projects that it initiates. The plan consists of three phases: Base Year Roadway Recommendations, Interim Year (2010) Roadway Recommendations and Study Year (2020) Roadway Recommendations. The plan is being updated using the regional planning process and will include pedestrian and bicycle elements.
- [Town of Warrenton Comprehensive Plan 2000-2025, Town of Warrenton, 2002](#): Encourages "The development of a safe, efficient and multi-modal transportation system for the movement of people, goods and services, in and around the Town that is consistent with the historic fabric, land use pattern, and expected future fiscal needs of the Town." It also includes as objectives "To promote a system which safely and efficiently serves both vehicular, pedestrian and bicycle traffic for residents and visitors with inter-parcel access between existing neighborhoods and new development sites to disperse and balance traffic loads and create a "connected" community." An additional objective is "to promote the integration and improvement of vehicular, pedestrian and bicycle travelways, which will allow for walkable areas throughout the Town." The Greenway Plan is an element of the Comprehensive Plan. It provides the graphic documentation of proposed walks and trails for the Town.



This Plan builds off of the success of the 2007 Fauquier County Connections Plan

- *Warrenton Public Facilities Manual, Town of Warrenton*: Includes design guidance for infrastructure in the Town. Design specifications in the manual impact the pedestrian environment, as demonstrated by the sidewalk specification included in Appendix G of this Plan.
- *Fauquier County Comprehensive Plan, Fauquier County, 2007*: Promotes a “Proactive countywide transportation planning approach (that) will ensure that the existing service districts and villages can actually achieve more compact and pedestrian-scaled communities, a better quality of life, and continued economic achievement.”

The *Fauquier County Connections Plan* is an element of the Comprehensive Plan. It envisions Fauquier County as a place “Where trails and greenways serve a dual purpose as recreation and transportation corridors and serve to preserve open space.” Goals of the Plan include that the “County will develop a county-wide walkway, bikeway and greenway network among residential neighborhoods, towns, work places, shopping centers, historic districts, schools, libraries, recreation centers, parks, etc. and provide opportunities for County residents to walk and bicycle for recreation and to improve their health.” An additional significant element of the Comprehensive Plan is the Fauquier County Greenway Plan, which identifies paths and facilities relevant to this report.

- *Rappahannock-Rapidan Region Bicycle and Pedestrian Plan, Rappahannock-Rapidan Regional Commission, 2006*: Notes that “The region’s rural and urban areas are attractive for bicycling, walking, running, and hiking, and the creation of a regional bike and pedestrian plan is an important step in developing a region-wide system of bikeways and greenways that can be used to support localized economic, tourism, recreation and preservation goals.” Goals and objectives noted in the plan include that the region “Create (a) region-wide bicycle route network, encourage and assist localities in developing bicycle plans, help ensure connections between jurisdictions and surrounding localities, (and) assist in safety education for area residents.”

The plans listed above provide planning-level guidance for the community. There are also important State, County and local laws and regulations that are applicable to this Plan. Commonwealth of Virginia laws impact walking and bicycling in many ways, for example by providing rules on where to ride a bicycle, and regulations requiring helmet use. A listing of pedestrian and bicycle-related laws is available at <http://www.vdot.virginia.gov/PROGRAMS/bk-laws.asp>.

Fauquier County and the Town of Warrenton also have regulations in their respective zoning ordinances that impact walking and biking. The Fauquier County Zoning Regulations are available at <http://www.fauquiercounty.gov/Government/departments/CommDev/index.cfm?action=zoningordinance>. The Town of Warrenton Zoning Ordinance is available at <http://www.townofwarrenton.com/Government/PlanningDevelopment/ZoningOrdinance/tabid/162/Default.aspx>.

Fauquier County Zoning Regulations

- ARTICLE IV. SPECIAL AND OVERLAY DISTRICT REGULATIONS, Sec. 4-713. Architectural Controls and Design Standards, (6): A coordinated transportation system with a hierarchy of approximately designed facilities for pedestrians, bicycles, public transit, and automotive vehicles
- ARTICLE V. ADMINISTRATIVE PERMITS, SPECIAL PERMITS AND SPECIAL EXCEPTIONS, Sec. 5-011 Additional Submission Requirements, II. Special Requirements, (3)(l): Where

- applicable seating capacity, usable outdoor recreation area, emergency access, bicycle parking, fencing, limits of clearing, landscaping and screening, outside lighting, loud speaker, required and/or proposed improvements to public right(s)-of-way.
- ARTICLE VII. OFF-STREET PARKING AND LOADING, STREETS, WATER AND SEWER, TREE CANOPY, LANDSCAPE AND BUFFER REQUIREMENTS, Sec. 7-101. General Requirements, (4): In those instances where a proposed neighborhood retail commercial use is located with an orientation toward pedestrian or bicycle traffic, the Board may reduce the number of off-street parking spaces by up to twenty (20) percent of the number otherwise required by the strict application of the provisions of this Part.
 - Section 12-613 Sites for Public Facilities. 1. Site development plans shall consider the provisions of suitable areas for parks, schools, open space and other public or private recreational uses, recognizing proposals for same in the Comprehensive Plan. 2. The developer shall confer with the Director and/or other appropriate public officials of the County to ascertain if and when and in what manner such areas will be reserved for and/or acquired by the Board. 3. This provision shall not be construed to preclude the dedication of any property for public use which is not included in the Comprehensive Plan, provided such property is acceptable to the County for dedication and maintenance. 4. Facilities offering services to patrons in their cars (e.g., drive-in restaurants, banks, car washes) shall include adequate provisions for queuing on-site so as not to impede other traffic.
 - 12-615 Pedestrian Walk-Ways. 1. Provision shall be made for sidewalks and pedestrian walk-ways which will enable patrons and/or tenants to walk safely and conveniently from one building to another within the site and to buildings and/or uses on adjacent sites as well. 2. Where feasible, pedestrian underpasses or overpasses are to be encouraged in conjunction with major vehicle routes. 3. Provision shall be made where appropriate for pedestrian walk-ways and equestrian ways in relation to private and public areas of recreation and open space, e.g., schools, parks, gardens, and areas of similar nature. XII - 14 4. Connections shall be made whenever possible of all walk-ways and equestrian ways with similar facilities on adjacent development.

Fauquier County Subdivision Ordinance

- SECTION 8 - SPECIAL AREA REQUIREMENTS FOR USE OF STREET STANDARDS: 8-1 Curb, Gutter and Sidewalk. Curb, gutter and sidewalk in Service Districts, Residential Districts and Villages shall be required as followed: A) Combination curb, gutter and sidewalk shall be required along all public and private streets, accessways or service drives in subdivisions having lots containing 20,000 square feet or less in area, either conventional or cluster. B) Combination of curb and gutter shall be required along all public and private streets, accessways or service drives in subdivisions having lots containing 20,000 square feet in area, either conventional or cluster. In addition, sidewalks shall be required on streets, accessways, or service drives qualifying as local collectors or major collectors. C) Pedestrian trails shall be required along all public and private streets, accessways, or service drives qualifying as local collectors or major collectors in subdivisions having lots of 25,000 square feet, but less than two acres in area, either conventional or cluster. Trails shall be at least four feet in width and constructed of asphalt or other material acceptable to the County. D) Or as shown in the Comprehensive Plan: All improvements required above shall be installed in accordance with typical sections as shown in standards 1A, 2A, 3A or 4A in the Fauquier County construction specifications. Easements for future sidewalks and trails may be required by the Board of Supervisors. Where the Planning Commission, following public comment as provided for in Section 4-27, determines the above requirements are not

in keeping with the character of the area, do not serve the public interest, or that no pedestrian and vehicular traffic hazards will be created, the Planning Commission may waive or modify the above requirements. (Amended by Board of Supervisors on September 9, 1999.)

Town of Warrenton Zoning Regulations

- ARTICLE III. ZONING DISTRICTS AND MAP, Sec. 3-5.2.10.5, Traditional Neighborhood Design, Streets, Alleys, Paths, Blocks and Parking (6) Pedestrian and/or Bicycle Routes: Pedestrian and bicycle routes shall be provided to connect all uses, so that pedestrians and bicyclists can move comfortably and safely from any site within the TND to any other site with the TND. Pedestrian traffic shall be accommodated through the provision of sidewalks and paths. Bicycle traffic shall be accommodated through the provision of designated, well marked bicycle lanes and/or paths suitable for bicycle traffic.
- 10-6.10. Minimum Standards and Improvements Required: Sidewalks and curb and gutter shall be provided along both sides of all public streets, private streets, and public access areas; however, these requirements may be waived in sites with a density of less than four (4) dwelling units per acre. A written request for such waiver is required for Town Council consideration and action.
- Sec. 10-122. Skating, skateboarding and riding of bicycles prohibited on certain sidewalks and crosswalks: The use of roller skates or skateboards and/or the riding of bicycles on any designated sidewalks or crosswalks, located in a commercial or industrial zoning district, including those of any church, school, recreational facility or any business property open to the public where such activity is prohibited by the owner, is hereby prohibited. The town manager shall designate the sidewalks and/or crosswalks where skating, skateboarding and/or bicycle riding shall be prohibited. Signs indicating such prohibition shall be conspicuously posted in the general area where skating, skateboarding and/or bicycle riding is prohibited. A violation of this section shall be punishable by a civil penalty of not more than fifty dollars (\$50.00) per occurrence. (Ord. No. 1988-6, 10-11-88; Ord. No. 1999-6, 7-13-99)
- ARTICLE III. ZONING DISTRICTS AND MAP, Sec. 3-5.2.10.5, Streets, Alleys, Paths, Blocks and Parking (3) Street Design: Street sections in Traditional Neighborhoods shall be designed to serve multiple purposes, including movement of motor vehicle traffic, safe and convenient pedestrian and bicycle movement, areas for public gathering and interaction, and areas for placement of street trees, street furniture and landscaping. Streets shall be designed to balance the needs of all users and promote efficient and safe movement of all modes of transportation.
- ARTICLE X. SITE DEVELOPMENT PLANS Sec.10-8.1, Required Bonds and Surety (1): The acceptance of dedication for public use of any right-of-way located within any subdivision or section thereof, which has constructed or proposed to be constructed within the subdivision or section thereof, any street, curb, gutter, sidewalk, bicycle trail, drainage or sewerage system, waterline as part of a public system, or other improvement dedicated for public use.

Appendix N: Destinations Plan Brochure

The Fauquier-Warrenton Destinations Plan provides detailed recommendations for on and off-road pedestrian and bicycle routes to connect important destinations throughout the community.

Using the Warrenton Branch Greenway as a centerpiece for this effort, the plan provides walking and bicycling routes to and between the Warrenton Aquatic and Recreation Facility (WARF), the future Central Sports Complex, Downtown Warrenton, and other destinations such as parks and schools.



The recommended pedestrian and bicycle routes in this plan are meant to provide connections between destinations in the Town and County. Depending on the character of the road, presence of existing sidewalks and trails and other factors, the proposed connections are made through off-road facilities like sidewalks and trails, and on-road bicycle facilities such as bicycle lanes.

By presenting practical near-term recommendations and a long-term vision, the Fauquier-Warrenton Destinations Plan seeks to increase access to destinations, making walking and bicycling realistic and comfortable transportation choices and improving the quality of life for all residents.



The purpose of the Fauquier-Warrenton Destinations Plan is to envision pedestrian and bicycle connections between selected destinations in the Town of Warrenton and Fauquier County.



To view the full plan, please visit:
<http://www.fauquiercounty.gov>
<http://www.warrentonva.gov>
Or
<http://www.rregion.org>

This plan was prepared under the guidance of the Town of Warrenton, Fauquier County, the Rappahannock-Rapidan Regional Commission and the Virginia Department of Transportation (VDOT). For more information, please contact:

Fauquier County
Department of
Community
Development
Planning Division
10 Hotel Street,
Third Floor
Warrenton, Virginia
20186
Phone:
540-347-8660

Or

Town of Warrenton
Department of
Planning &
Community
Development
18 Court Street
Warrenton, Virginia
20186
Phone:
540-347-2407

Planning for Bicycles and Pedestrians in Warrenton and Fauquier County, Virginia

Fauquier-Warrenton Destinations Plan

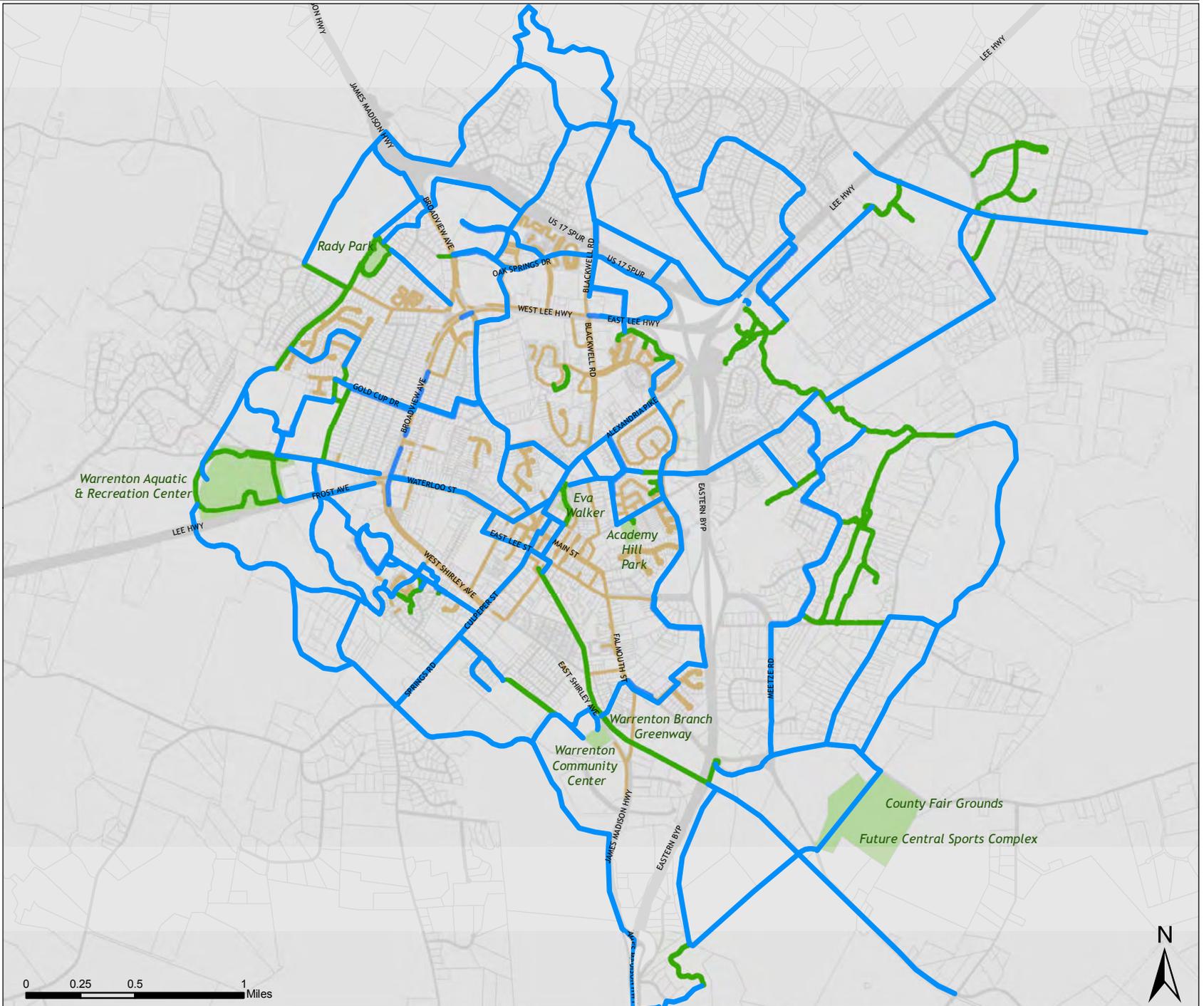


Fauquier-Warrenton Destinations Plan

The Fauquier - Warrenton Destinations Plan provides recommendations for a variety of pedestrian and bicycle facilities, including sidewalks, bike lanes, and multi-use paths. This map shows the locations of existing sidewalks and trails (as of 2009) and the locations of recommended facilities. For additional detail on the specific type of facility that is being proposed, please see the full plan. Note that funding will be required to build the facilities recommended in this plan.

Legend

-  Recommended Facility (As of 2009)
-  Existing Trail (As of 2009)
-  Existing Sidewalk



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