BIKEWAY AND PEDESTRIAN TRAIL SYSTEM MASTER PLAN

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RESOLUTION

RESOLUTION #R-2008-44
REGULAR COUNCIL MEETING
November 26, 2007

RE: CPA#2007-01, The Bikeway and Pedestrian Master Plan

WHEREAS, the Manassas City Council adopted the City’s existing Comprehensive Plan in March of 2003; and

WHEREAS, the Planning Commission, the Citizen’s Bike Trail Committee and City staff identified a need to update the Bike Trail Master Plan and Bike Trail Map and to adopt the revised plan and map as an amendment to the Transportation Chapter of the Comprehensive Plan; and

WHEREAS, the Comprehensive Plan recognizes the need to provide a well-designed system of sidewalks, bike routes and trails and to update the trail system to accommodate increased user needs and population growth; and

WHEREAS, the Planning Commission initiated CPA#2007-01 on October 18, 2006 to review the City’s Bike Trail Master Plan, holding a public hearing on October 17, 2007 and November 7, 2007, after full compliance with all state code public hearing notice and posting requirements; and

WHEREAS, the City Council held a public hearing on CPA #2007-01 on November 19, 2007, after full compliance with all state code public hearing notice and posting requirements; and

WHEREAS, the City Council pursuant to Section 15.2-2229 of the Virginia Code may amend the Comprehensive Plan; and

WHEREAS, the Comprehensive Plan shall be made with the purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the land within the territory of a jurisdiction.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Manassas meeting in regular session this 26th day of November 2007, that CPA#2007-01 is hereby APPROVED, as follows:

1. That the text of the plan as attached be adopted and incorporated into the upcoming update of the Comprehensive Plan.
2. That the implementation of the plan and funding of the plan be referred to the City Manager, the Dept. of Public Works and the Planning Commission CIP Committee for consideration in the upcoming CIP process.
3. That the recommendation of creating an advocacy or advisory committee on matters related to bicycle and pedestrian trails and safety be referred to the City Council Personnel Committee for consideration.

Douglas S. Waldron
Mayor

On behalf of the City Council
of Manassas, Virginia

ATTEST:
Kimberly D. Allen City Clerk
City of Manassas Bikeway and Pedestrian Trail System
Master Plan

Executive Summary

**Background:** The following Bikeway and Pedestrian Trail System Master Plan provides a framework for developing a comprehensive system of marked bicycle trails that implements the City of Manassas vision for a planned trail system serving recreational, alternative transportation, and public safety needs of its citizens. Throughout the past decade, the city has made significant progress toward achieving its goal, completing 8 miles of shared use paths, marked bike lanes, and improved crossing facilities at key street intersections along the bikeways.

This plan is adopted into the City’s Comprehensive Plan and forms the basis for guiding the investment decisions needed to continue this progress. It was developed by a committee of concerned citizens with guidance from City staff and Virginia Department of Transportation (VDOT) officials and approved by the City Planning Commission and the City Council and therefore reflects citizen priorities within technical and fiscal realities. This plan provides guidance over the next five year planning horizon for improvements that will encourage more people to ride daily.

**Vision and Objectives:** The vision of this master plan is to make bicycling and pedestrian activity an integral part of daily life in the City of Manassas by developing a comprehensive and interconnected system of safe trails for residents and visitors to enjoy. While progress in achieving this vision has been significant during the past decade, more remains to be done to complete the system. The city’s vision can be achieved by focusing on the objectives of building a comprehensive system that is part of an economic and transportation development program and by implementing safety education programs that reach motorists and bicyclists. The specific objectives for accomplishing this vision are:

- **A Continuous Bikeway and Pedestrian Trail System:** Develop a well-maintained system of marked and inter-connected bicycle and pedestrian trails throughout the city that are linked to surrounding areas and transportation modes while safely accommodating the current and future needs of all types of bicyclists, walkers, joggers, and other pedestrians.

- **Integrated Land Use, Trail Design, and Pedestrian Orientation:** Integrate the bicycle and pedestrian trail system into City and regional land use, transportation planning and development in a way that is efficient and cost-effective without compromising safety or aesthetics.

- **Enhanced Traffic Safety and Education:** Provide a comprehensive public safety program that targets both motorists and bicyclists to learn proper and safe City bicycling.

- **An Effective Alternative Transportation System:** Assure that the bicycle and trail system is used not only for recreation, but provides an alternative transportation system that is an integral part of the City’s multi-modal transportation system.

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**Improved Trail Amenities:** Increase the attractiveness and function of the bikeway and trail system by providing pedestrian amenities adjacent to the trail system.

**Funding Priorities and Execution Strategy:**

Constructing the bikeway system requires a three-tiered strategy for prioritizing funds and executing the plan. These are:

- Give priority to Capital Improvement Plan (CIP) projects that include bike facilities.

- Focus annual budget expenditures on completing low cost portions of the plan. By providing funds for marking and signing bike lanes and share the road trails, the City can complete three fourths of the remaining trails at less than 5 percent of the total cost.

- Collaborate with neighboring jurisdictions to jointly plan and construct bike facilities providing regional access to the City.

**What does this plan buy?:** Implementing this plan will provide over 27 miles of bikeways throughout the City, providing a connected system of alternative transportation and recreation facilities for our residents and visitors. Specifically, when completed, the City will gain:

- Over 13 miles of signed shared roadway trails.

- Over 7 miles of marked bike lanes.

- Nearly 8 miles of shared use paths for bikers and joggers.

- Over $100 thousand dollars in pedestrian signalization and crossing improvements at 14 intersections, many of which currently have the highest numbers of accidents in the City.

**Recommendations:** To effectively implement this plan, the following recommendations should be approved:

- This document should be formally adopted and appropriate revisions made to the City of Manassas Comprehensive Development Plan.

- A citizen’s advocacy group should be established to advise the City Council as the system starts to take shape. Progress in localities with similar groups indicated that citizen advocacy groups are effective vehicles to bring plans into reality.
Introduction

The following Bikeway and Pedestrian Trail System Master Plan provides a framework for developing a comprehensive system of 28 miles of marked bicycle trails throughout the City of Manassas that is also an integral part of Northern Virginia regional pedestrian transportation plans. The purpose of this plan is to implement the City’s vision for continuing the development of a planned trail system serving recreational, alternative transportation, and public safety needs in a coordinated and cost-effective manner. During more than a decade of planning and construction, the City of Manassas has made significant progress toward achieving its goal of a comprehensive bicycle and trail system. This plan is adopted into the City’s Comprehensive Development Plan and forms the basis for guiding capital investments and construction decisions to continue this progress. This plan was developed by a committee of concerned citizens with guidance from City staff and VDOT officials and approved by the City Planning Commission and City Council and therefore reflects citizen priorities within technical and fiscal realities.

The Plan provides guidance over the next five year planning horizon for improvements that will encourage more people to ride more frequently for daily needs. The vision of this master plan is to make bicycling and pedestrian activity an integral part of daily life in the City of Manassas. The key elements of this plan are:

- Policies, objectives, and strategies that form part of the Transportation Element of the City’s Comprehensive Development Plan;
- Existing bicycle facilities and roadway network;
- Planned bicycle and roadway improvements;
- Prioritized projects for development in the next five (5) years;
- Funding priorities and execution strategy;
- Design standards and guidelines for the construction of the trail system; and
- Linkages to bikeway and trail systems in neighboring jurisdictions.

Benefits of Bikeways and Trails

Studies have shown that there are many benefits of bikeways and trails, including recreation, transportation, health, economic revitalization, connectivity, and resource conservation. Each of these benefits is described below:

1) **Recreation**: The Virginia Outdoors Plan places walking for pleasure and bicycling as the first and sixth ranked recreational activities. The growing popularity of outdoor recreational activities, such as walking, bicycling, in-line skating, and jogging, have increased the need for recreational facilities, such as bikeways and trails. These provide a framework for recreational activities, as well as improving the quality of life for residents. These are also important assets of City living. In many jurisdictions, such as Portland, Oregon; Austin Texas; and Seattle, Washington, where bikeway planning goes back many decades, residents report that bikeways are their favorite city facilities.
2) **Transportation:** Bicycles have made their most significant contribution in responding to urban congestion. In many cases the bicycle is proving to be directly competitive with the automobile for distances less than 5 miles. Bikeways and trails are an integral part of the City’s multi-modal transportation system. It is by design that this chapter is placed in the Transportation Chapter of the Comprehensive Plan. The City should rely on bikeways and trails to provide an alternative and affordable transportation choice to relieve City streets of a significant amount of traffic generation and road impacts through trip avoidance (using a bicycle instead of an automobile). Bikeways also provide avenues for mobilizing the disabled, offering opportunities for wheelchair bound citizens a transportation choice. Many jurisdictions establish thresholds of trip avoidance due to the presence of the bikeway and trails network and its function within the community (such as 15% less vehicular traffic due to the pedestrian network). Trails should be designed to connect residential and business districts, so that users will find them convenient as a primary, safe, and efficient means of getting to and from work; schools shopping areas, and various recreational destinations.

3) **Health:** Bicycling and pedestrian activity is important as a source of basic health and fitness. Maintaining an active lifestyle will have significant health benefits by reversing the ill effects of obesity and physical inactivity. Numerous health problems arise from a sedentary lifestyle including: high blood pressure, heart attack, and diabetes. The Centers for Disease Control (CDC) trumpets the impact these facilities have on the health of the user by helping people incorporate exercise into their daily lives. Individuals must choose to exercise, but the City can make that choice easier by providing the bikeway and trail system available for residents to use.

4) **Economic revitalization:** In recent decades, the provision of pedestrian facilities, such as sidewalks and bikeways, simply was not a priority and was not often included in the design of residential and non-residential developments. Often residents walked in the street, because there was nowhere else for them to exercise. However, in recent years, regaining the pedestrian orientation of the community and providing pedestrian facilities has become very important to new developments and has become part of the amenity package of community development. Often these facilities create a great deal of excitement and economic potential. Additionally, many types of businesses, such as restaurants, shops, and convenience stores, benefit from a nearby pedestrian system. Further, these facilities have proven to have a direct impact on a community’s ability to attract jobs, as many companies seeking to relocate or establish a corporate headquarters have cited the availability of trails as a significant factor in their decision to choose one locale over another.

5) **Connectivity:** Imagine the City of Manassas as a place where one can bike or walk to work, school, shops, or visit friends and family using a coordinated and seamless system of bikeways and trails. Linking people with destinations with bikeways and trails is an important element in building a safer, healthier, and more livable and sustainable community and will help the City recover its pedestrian orientation. Many recent projects approved have incorporated this new way of thinking in their design and the City will benefit from this both in enhancements to the appearance or “look” of the City, but also the way that people move about in the City.

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6) **Resource Conservation**: A comprehensive bikeway and trail system can contribute to help reduce air pollution; safeguard green space; and reduce fossil fuel consumption and dependency. Further savings are realized because carbon monoxide from vehicles can be as high as 90% of all emissions in urban areas. Ozone and carbon monoxide generation is reduced in non-attainment areas that must take pollution reduction actions to meet air quality standards. Measures to increase the use of non-polluting bicycling and walking transportation can be effective means to achieve compliance. Trails are likely to play an even greater role in the future when these resources become more scarce and valuable.

**Existing Facilities**

Prior to adopting the 2001 plan, the City’s marked trail system was comprised of the Liberia Avenue segment from the Prince William Parkway to Centerville Road, the separated trail along Wellington Road from Grant Avenue to Prince William Street, and the Winters Branch Trail (Figure 1.). Since 2001 the City has increased its trail system by completing the following improvements:

- A shared use path along Wellington/Fairview Avenue from Liberia Avenue to Grant Avenue. This segment provides a separated shared use path from the Prince William Parkway trail, past Metz Junior High School, to the Jennie Dean Elementary School, the Dean Recreation Complex, and the Manassas Boys and Girls Club and is the centerpiece of the Manassas Bike Trail System.

- A shared use path along Airport Road from Godwin Drive to Observation Drive.

- A marked bike lane along Hendley Road from Wellington Road to Hastings Road.

- A marked bike lane along Godwin Drive from Wellington Road to Sudley Road.

- Additional signs to clearly mark trails and painted crosswalks at street intersections along the trail. These relatively low cost improvements provide motorists with increased awareness of pedestrians and bicyclists and enhance their safety.

Collectively, these efforts have resulted in the construction of eight (8) new miles of designated bike lanes, shared use paths, and improved pedestrian crossings that supplement the sidewalks already found in the city. See Appendix A. for a map of existing facilities.

**Planned Facilities**

While Manassas has achieved significant progress in accomplishing the plan, the trails that have been constructed to date represent less than a third of the planned system. Moreover, the bikeways and trails that have been completed are segments comprising portions of...
longer trails and do not provide smooth and continuous access to the major destinations in the City or to regional trails.

The following table and Master Bikeway and Pedestrian Trail System Map at Appendix B. describe the completed trail system.

Table 1. Master Bikeway and Pedestrian Trail System Summary

<table>
<thead>
<tr>
<th>Trail</th>
<th>Facility Classification</th>
<th>Destinations</th>
<th>Total Length (ft)</th>
<th>Cost to Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Winters Branch/Prince William/Signal Hill Rd Trail</td>
<td>Mixed shared use path, bike lane, share the road</td>
<td>Parks, Schools, Bikeways, Manassas Museum, VRE, Downtown Manassas, Liberia Ave Corridor, Major Residential Areas, Prince William County</td>
<td>16,786</td>
<td>$234,050</td>
</tr>
<tr>
<td>2. Wellington Road Trail</td>
<td>Shared use path</td>
<td>Park, Schools, Bikeways, Industrial Zone, Major Residential Areas, Prince William County Trail System.</td>
<td>19,064</td>
<td>$318,105</td>
</tr>
<tr>
<td>3. Main St/Portner/ Stonewall Park Trail</td>
<td>Shared use path, share the road</td>
<td>Schools, Parks, VRE, Bikeways, Downtown Manassas, Manassas Museum, Liberia House, Stonewall Park/Pool, Major Residential Areas, and City Government Facilities</td>
<td>14,640</td>
<td>$261,518</td>
</tr>
<tr>
<td>4. Liberia Ave/Euclid Ave Trail</td>
<td>Bike lane</td>
<td>Bikeways, Major Commercial Corridor, Manassas Park, Prince William County Trails.</td>
<td>11,786</td>
<td>$22,484</td>
</tr>
<tr>
<td>5. Hastings Drive Trail</td>
<td>Share the road/bike lane</td>
<td>School, Park, Major Residential Areas, Bikeways, Commercial Corridor</td>
<td>19,499</td>
<td>$19,486</td>
</tr>
<tr>
<td>6. Sudley/Stonewall Trail</td>
<td>Share the road/bike lane</td>
<td>Park, Bikeways, Major Residential Areas, Professional and Commercial Center, Prince William County.</td>
<td>10,078</td>
<td>$18,058</td>
</tr>
<tr>
<td>7. Godwin Trail</td>
<td>Bike lane/shared use path</td>
<td>Airport, Gateway Business Center, E.G. Smith Baseball Complex, Route 234 Bypass, Bikeways, Prince William County to include the Freedom Center, George Mason University, and Industrial Centers.</td>
<td>20,632</td>
<td>$959,401</td>
</tr>
<tr>
<td>8. Cloverhill Rd Trail</td>
<td>Bike lane/share the road</td>
<td>Major Residential Areas, Bikeways, Airport, Route 234 Bypass.</td>
<td>6,802</td>
<td>$8,189</td>
</tr>
<tr>
<td>9. Weems Rd Trail</td>
<td>Share the road</td>
<td>School, Park, Major Residential Areas, Downtown Manassas</td>
<td>6,730</td>
<td>$3,468</td>
</tr>
<tr>
<td>10. Dumfries Rd Trail</td>
<td>Shared use path</td>
<td>Bikeways, Commercial Corridor, Prince William County</td>
<td>5,100</td>
<td>$377,655</td>
</tr>
<tr>
<td>11. Gateway/Airport Trail</td>
<td>Shared use path/share the road</td>
<td>Manassas Airport, Gateway Business Park</td>
<td>15,920</td>
<td>$5,202</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>147,307</td>
<td>$2,227,616</td>
</tr>
</tbody>
</table>

1 See Appendix C. for a detailed description of bikeway facilities and standards.
2 Cost estimates are based on City of Manassas Public Works Administration Interoffice Memorandum to the Director of Parks and Recreation, dated March 14, 2007 as well as costs contained in the FY08 CIP. Estimates are not adjusted for inflation and do not include right of way or easement costs.

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Overall Vision, Objectives and Strategies

It is the overall vision of the City of Manassas to continue to develop a comprehensive and interconnected system of safe trails for Manassas City residents and visitors to enjoy. Additionally, this plan modernizes and refocuses the efforts of the 2001 plan by making a clear distinction between bikeways and trail systems used simply for recreation and proposes an alternative transportation system. While progress in achieving this vision has been significant during the past decade, more remains to be done to complete the system. This vision can be achieved by focusing on the objectives of building a comprehensive pedestrian system that is part of the City’s economic and transportation development program and by implementing safety education programs that reach motorists and bicyclists.

The specific objectives and strategies to accomplish this vision are:

**Objective A: Continuous Bikeway and Pedestrian Trail System**

**Develop a well-maintained system of marked and inter-connected bicycle and pedestrian trails throughout the city that are linked to surrounding areas and other transportation modes while safely accommodating the current and future needs of all types of bicyclists, walkers, joggers, and other pedestrians.**

**Strategies:**

1. Construct and/or mark trails linking popular destination points both within and near the City utilizing the existing and future road network as shown on the Master Bikeway and Pedestrian Trail System Map (Appendix B.) that accompanies this plan.
2. Encourage continuous bikeway and pedestrian systems that provide connectivity to other destinations in the City and to surrounding jurisdictions. Support well-functioning facilities and pedestrian supportive land use patterns.
3. Provide safe connections to regional bicycle trails, particularly those separate pedestrian trails found adjacent to primary transportation arteries in Prince William County, making the City a major destination point.
4. For public safety purposes, minimize the number of times trails change roadside or classification and other sources of vehicular/pedestrian conflict. For all types of bikeways, provide separation from vehicular traffic, to the extent possible.
5. Allocate annual funding to the Public Works Department and/or the Parks and Recreation Department to ensure trails and street crossings are properly maintained and clearly marked and compliant with the Americans with Disabilities Act.
6. Produce and distribute a map of the City of Manassas bicycle and pedestrian trail system that can be used by residents and visitors. This map will be entitled the Master Bikeway and Pedestrian Trail System Map.
7. Provide secure bicycle parking facilities at public buildings, tourist attractions, parks, schools, libraries, commercial centers, places of public assembly, and public transportation centers.

Objective B: Land Use, Trail Design, and Pedestrian Orientation

Integrate the bicycle and pedestrian trail system into City and regional land use, transportation planning, and development in a way that is efficient and cost-effective without compromising safety or aesthetics.

Strategies:

1. Make the provision of bicycle and pedestrian trails an integral part of the City’s economic development and transportation planning process.

2. Participate with other jurisdictions in advocating for a regional bike trail system that connects to City trails. Provide points of connection to current and future elements of the Prince William County trail system where they come into close vicinity to a planned trail segment.

3. Design trails to incorporate road design, lighting, landscape contours, and aesthetics.

4. Establish minimum design standards that specify painted crosswalks at all streets intersecting bicycle trails. Provide for safety and security of pedestrians, bicyclists and motorists, where trails cross primary transportation arteries.

5. Utilize the City’s CIP and VDOT’s Six Year Improvement Plan (SYIP) to guide the implementation schedule and prioritization for major trail construction.

6. Work with property owners, developers, and builders to encourage all new construction and redevelopment projects support and conform to the City’s Bikeway and Pedestrian Trail System Plan and address the needs of bicyclists and pedestrians.

7. Aggressively apply for all appropriate state and federal grant programs to assist with bike trail construction. Many grants require the establishment of a relationship between the trail and the surface transportation network.

8. The Recreation and Parks Committee will report annually to the City Council on the progress achieved in implementing the Plan and will conduct an update every five years.

Objective C: Traffic Safety and Education

Provide a comprehensive public safety program that targets both motorists and bicyclists to learn proper and safe City bicycling.

Strategies:

1. Promote Safe Routes to School Program in the City; particularly in elementary school walk zones.

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2. Publish a brochure establishing the rules of use for the City’s trail system and “road rules” and common courtesy practices used by bicyclists to inform pedestrians of their presence.

3. Ensure that pedestrian signalization and control devices are an integral part of transportation planning where bikeways come into direct contact with vehicular travelways and major intersections.

4. Assure that vehicular/pedestrian conflicts are minimized through such devices as proper pavement marking, rumble strips, and pedestrian control devices.

5. Assure that trail facilities are of the appropriate dimensions to promote safety and meet AASHTO or VDOT standards and design guidelines. Two-way traffic marking may be necessary at the busier sections of the bikeway system.

6. The Police Department, the Recreation and Parks Department, and the Prince William Safe Kids Coalition should partner to provide bicycle safety programs at City special events.

7. In cooperation with the Police Department, safety training and bicycle maintenance programs should be offered to children and adults to improve their safety awareness.

8. The Police Department should partner with the School System to sponsor a bike safety curriculum for elementary schools. The School System should include bicycle safety in their curriculums.

9. The Police Department should use special enforcement programs to promote safety and increase awareness for bicyclists and motorists. This includes using mobile message boards stationed periodically at the most dangerous intersections to increase motorist awareness of bicyclists.

**Objective D: Alternative Transportation System**

**Assure that the bicycle and trail system is used not only for recreation, but provides an ADA compliant alternative transportation system that is an integral part of the City’s multi-modal transportation system.**

**Strategies:**

1. Utilize the trail and bikeway system to connect the City’s major destinations. These include parks, schools, historic sites, libraries, museums, commercial businesses, the airport, and Old Town. All City parks will be accessed through the trail system.

2. Provide connections to the Prince William County system including the Prince William County Parkway, County Fairgrounds, Freedom Center/George Mason University complex, the Manassas National Battlefield Park, surrounding communities, and Wellington Road/Nissan Pavilion. Connection to the East Coast Greenway is achieved through the Wellington Road trail segment, then on the bikeway adjacent to the Prince William County Parkway. The resulting bicycle
system provides recreational and destination riding as well as connections to the existing and future Northern Virginia Regional bicycle system.

3. Provide a safe means by which school-aged children can utilize bike trails to go to school.

4. Amend the City’s zoning ordinance to require bicycle racks at all City-owned buildings and parks. Additionally, zoning requirements should be amended to require bicycle racks at future multifamily and apartment units, commercial centers, office buildings, cultural centers, and places of public assembly.

5. Encourage PRTA and other providers of public transportation services to outfit buses with bicycle racks.

6. Reduce air pollution and lessen the impact on the current and future road system by providing alternate transportation systems.

**Objective E: Trail Amenities**

*Increase the attractiveness and function of the bikeway and trail system by providing pedestrian amenities adjacent to the trail system.*

**Strategies:**

1. Provide wayfinding and destination information at many points along the trail.

2. Provide pedestrian furnishings along the trail and at trail head facilities. This may include benches, bike racks, informational kiosks, and trash receptacles.

3. Provide bicycle racks or lockers at the Train Depot, downtown parking garages, and other areas where long-term storage is a concern.

**Implementing Plan Strategies**

To effectively begin implementing the recommendations of this master plan, a number of concerted and sustained steps should occur. Formal adoption of this document and appropriate revisions to the Master Transportation Plan are the initial steps. This indicates the City’s and its citizen’s endorsement of the network and enhances our competitiveness for many state and federal funding opportunities. Second, the establishment of a citizen’s advocacy group is highly recommended to advise City Council as the system starts to take shape. Progress in localities with similar groups indicated that they are effective vehicles to bring plans into reality.³

Once the plan is formally adopted, various local, state, federal, and private funding sources are available for design and construction. Of these, VDOT Highway Construction Funds are the most common source of funding. Recently adopted policy changes within VDOT will enhance the consideration of bicycling and walking within in the planning, funding, design, construction, maintenance and operation of the City’s overall transportation network. The


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goals of these new policies are that motorized and non-motorized transportation receive equal consideration by VDOT that accommodations become the norm instead of the exception, and that bicycling and pedestrian access to the entire transportation system is accommodated. In Virginia, a locality must have an adopted bicycle plan before the VDOT will consider constructing facilities as part of highway construction projects within that jurisdiction.

Where future road projects are not anticipated, there may be opportunities to retrofit the existing corridor within the need to acquire additional right-of-way. When examining options to retrofit existing roadways, traffic considerations within a given corridor must be carefully reviewed to determine the feasibility of adding capacity for bikeway and trail facilities.

Methodology for Selecting and Prioritizing Projects

In order to implement the strategies necessary for achieving the objectives of this plan and its vision of a comprehensive bicycle and pedestrian trail system, the City of Manassas has approved the following steps and processes for building a well-maintained trail system, integrating trails into the development and transportation planning process, and providing a comprehensive safety program. Prior to selecting the routes contained within this plan, several performance criteria for route designation and facility standards were given consideration. These include: 1) safety; 2) accessibility; 3) directness to key destinations; 4) continuity; 5) route attractiveness; 6) low likelihood of vehicular and pedestrian conflict; and 7) consistency with the City’s Comprehensive Plan.

The criteria for prioritizing bikeway construction projects include the following:

1) Projects in the 5-Year Capital Improvement Plan (CIP);
2) Projects representing opportunities for assistance;
3) Projects that require little or no re-design or major construction;
4) Projects that provide access to the Prince William County trail system; and
5) Projects that address gaps in the primary bicycle routes identified on the Master Bikeways and Trails Map.

The following are prioritized projects and implementation plans for the current 5-year planning horizon. The focus of these efforts is to complete the most significant components of the planned system by leveraging the progress achieved to date. These trails can be

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Bicycle Trail Systems and Classifications

For the purpose of the City’s Bicycle Trail Master Plan, the term “bicycle trail” is used to refer to any road, path, route, or way specifically marked, maintained, and designated as open to bicycle travel (and also joggers, walkers, etc). Specific trail classes referred to in this plan follow accepted VDOT and AASHTO Guidelines and definitions. The City will adopt the design criteria for each of these classifications to the maximum extent feasible and within local context when choosing and designing bicycle facilities. The classes of trails described in this plan are:

- **Signed Shared Roadway** – Roadways identified by signing as preferred bike routes that indicate these routes are preferred over alternatives. Signage makes motorists more aware of bicycle activity.
- **Shared Roadway – Paved Shoulder** - Paved portion of the roadway to the right of the edge of a stripe designated for bicyclists. Paved shoulders should be at least 4 feet wide to accommodate bicycle travel.
- **Shared Roadway - Wide Outside Lane** – Travel lanes that provide adequate width for both motor vehicle and bicycle travel. In general, 14 feet of usable travel lane is recommended.
- **Bike Lane** - portion of the roadway designated by striping, signing, and/or marking for preferential or exclusive use by bicycles. This is often recommended in association with a widened outside lane (minimum 4 feet wide one-way traffic).
- **Shared Use Path** - Separate from the roadway and intended for bicycle use. A recommended paved width for two-way traffic is 10’. May be less than 10’ on certain roads because of City rights-of-way or proximity to existing structures.

See Appendix C for greater detail.
built in a cost-effective manner through the coordinated implementation of planned Capital Improvement Plan (CIP) projects for major construction projects combined with annual funding for share-the-road and marked bicycle lanes. Funding sources will include: 1) City commitments through annual funding and through the capital improvements plan (CIP); 2) VDOT Urban Construction Funds; 3) VDOT transportation enhancement grants; 4) Virginia Trails Fund through the Virginia Department of Conservation and Recreation (DCR); 5) Safe Routes to School (SRTS); and 6) private developers.

**Priority 1: Winters Branch/Prince William/Signal Hill Trail:** The 3.3 mile long Winters Branch/Prince William/Signal Hill Trail combines shared use path segments, bike lanes, and share the road segments generally along the east-west axis of Manassas. When completed, the trail will connect three parks, three City schools, the Manassas Museum, four other City trails, the VRE station, major residential areas, commercial centers in Downtown Manassas and along Liberia Avenue, and recreation centers in Prince William County.

- **Implementation:** The City has completed a .9 mile shared use path along Winters Branch; 27 percent of the trail. In order to complete the remainder of the trail, the following will be accomplished:

  - Complete the .6-mile Winters Branch extension under CIP Project R-8 based on the existing design. Include plans for lighting the complete Winters Branch Trail.
  - Install and mark a bike lane along Runaldue Court and down Prince William to Grant Street using CIP Project T-19 funds.
  - Paint crosswalks and install a pedestrian crossing signal at Grant Avenue.
  - Install signs at regular intervals and mark a shared roadway from Grant Avenue along Prince William Street across Fairview and along Signal Hill Road via Tudor Lane and Windsor Avenue.
  - At the intersection with Liberia Avenue, paint a crosswalk and install a pedestrian crossing signal on the south side of the intersection. This is one of the most dangerous intersections in the City and special precautions, such as improved warning signs for motorists should be implemented.

- **Estimated cost to complete:**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winters Branch</td>
<td>Shared Use Path</td>
<td>4,750 LF</td>
<td>0</td>
<td>Completed</td>
</tr>
<tr>
<td>Winters Branch Extension</td>
<td>Shared Use Path</td>
<td>2,600 LF</td>
<td>$224,000</td>
<td>CIP Project R-8</td>
</tr>
<tr>
<td>Runaldue Ct/Prince William St</td>
<td>Bike Lane</td>
<td>1,700 LF</td>
<td>0</td>
<td>CIP Project T-19</td>
</tr>
<tr>
<td>Grant Ave Intersection</td>
<td>Crosswalks/pedestrian signal</td>
<td>100 LF</td>
<td>0</td>
<td>CIP Project T-19</td>
</tr>
<tr>
<td>Prince William/Signal Hill</td>
<td>Signed Shared Roadway</td>
<td>7,736 LF</td>
<td>$2,890</td>
<td></td>
</tr>
<tr>
<td>Liberia Intersection</td>
<td>Crosswalks/pedestrian signal</td>
<td>120 LF</td>
<td>$7,160</td>
<td></td>
</tr>
</tbody>
</table>

November 14, 2007
City of Manassas, Parks and Recreation Committee
Priority 2: Wellington Road Trail: The 3.6 mile shared use path connecting the southeast quadrant of the City with the northwest quadrant represents the main artery opening up the City to major bike connections with Prince William County. The trail connects with seven other city trails, two schools, major residential areas and the City’s largest industrial zone.

- Implementation: The trail is two-thirds complete and with CIP projects T-6 (Reconstruction of Wellington Road), T-12 (Rt 28 Grade Separation) and T-47 (Wellington Road Right Turn Lane) the trail will be substantially completed during this planning period. In order to complete the construction of this trail, the following additional items need to be accomplished:

  - Because CIP Project T-40 (Wellington Road Overpass) has been deferred, the City will build an asphalt path between Prince William Street and Nokesville Road that fills this gap and provides a safe crossing for bikers and pedestrians at the railroad tracks. The proposed bridge over the railroad and Prince William Street represents the long term solution for connecting the existing shared use path and the path north of Dean Drive. Plans for the bridge need to include accommodations for bicyclists and pedestrians in order to preserve this connection.

  - Improve the pedestrian crossing at Wellington Road and Liberia Avenue by painting a crosswalk and re-aligning the knuckles on the Prince William Parkway side of the intersection. This intersection is among the major accident locations in the City and special care should be taken to provide safety for bicyclists, pedestrians and motorists.

  - Upgrades designed for CIP project T-12 should include painting a crosswalk on the west side of the intersection of Wellington Road and Nokesville Road and pedestrian crossing signals.

  - Paint crosswalks and install pedestrian crossing signals at the intersection of Wellington Road and Godwin Drive. This intersection is also one of the major accident locations in Manassas and special safety precautions should be taken to include warning signs and enhanced enforcement.

- Estimated Cost to Complete:

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost(k)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberia/Prince William</td>
<td>Shared Use Path</td>
<td>12,964 LF</td>
<td>0</td>
<td>Completed</td>
</tr>
<tr>
<td>Prince William/ Nokesville Rd</td>
<td>Shared Use Path</td>
<td>2,400 LF 5 signs</td>
<td>$313,949</td>
<td>Asphalt Path</td>
</tr>
<tr>
<td>Nokesville Rd/Godwin</td>
<td>Shared Use Path</td>
<td>3,700 LF 6 signs</td>
<td>0</td>
<td>CIP Project T-6</td>
</tr>
</tbody>
</table>

November 14, 2007
City of Manassas, Parks and Recreation Committee
Priority 3: Main Street/Portner Avenue/Stonewall Park Trail: This 2.7-mile trail is primarily a marked and signed shared roadway trail connecting the City center with destinations in the northeast quadrant of the City. The trail connects four trails, two schools, two parks, the VRE, downtown Manassas, important tourist destinations at the Manassas Museum and the Liberia House, major residential areas, and City government facilities. This trail opens access to the Stonewall Park and Pool facilities to bicyclists from major residential areas beyond the local neighborhoods.

- Implementation: This trail can be completed during the planning period by marking and signing the major portion of this route as a signed shared roadway. To do so, the following items need to be accomplished:
  
  - Mark and sign South Main Street (Figure 3.) from the Wellington Trail to the Prince William Street Trail as a shared roadway.
  
  - Mark and sign Main Street from Church Street to Portner Avenue as a shared roadway and paint crosswalks and install pedestrian crossing signals at the intersection with Sudley Road.
  
  - Mark and sign Portner Avenue to the Public Works complex, install pedestrian crossing signals at the Liberia Avenue intersection and provide maintained access to The Liberia House. The intersection at Liberia Avenue is among the most dangerous in the City and special precautions, such as improved warnings to motorists should be implemented.
  
  - Construct the Stonewall Park Trail Extension (CIP Project R-28) by constructing a shared use path and bridge over the causeway at the Public Works complex, mark and sign a shared roadway trail along Vicksburg Lane and Kirby Street to connect to a shared use path along the utility right of way to Stonewall Park.

- Estimated Cost to Complete:

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Main St from Wellington to Church</td>
<td>Signed Shared Roadway</td>
<td>3,710 LF/8 signs</td>
<td>$2,312</td>
<td></td>
</tr>
<tr>
<td>Church to Public Works</td>
<td>Signed Shared Roadway</td>
<td>8,280 LF/20 signs</td>
<td>$5,780</td>
<td></td>
</tr>
<tr>
<td>Sudley Rd Intersection</td>
<td>Crosswalks/pedestrian signal</td>
<td>96 LF/2 signals</td>
<td>$6,728</td>
<td></td>
</tr>
</tbody>
</table>

November 14, 2007
City of Manassas, Parks and Recreation Committee
Priority 4: Liberia Avenue/Euclid Avenue Trail: This 2.2 mile long trail forms the eastern section of the outer loop of the Trail system. The trail includes improvements along Euclid Avenue as an important connector to Manassas Park, as well as Prince William County trails leading to the Fairfax County system. It intersects four City trails, connecting major residential areas with an emerging commercial zone along the border with Prince William County.

- **Implementation:** The trail is 78 percent complete. The following projects will be accomplished in order to complete the trail.

  - Construct and mark a bike lane on the 800-foot City side of Liberia Avenue between Wellington Road and Hastings Road.
  
  - Paint and mark a bike lane on both sides of Euclid Avenue from Liberia to the Manassas City Limits.
  
  - Improve the crossings at Quarry Road and Euclid Avenue by painting crosswalks and installing pedestrian crossing signals as necessary. The intersection with Euclid Avenue is among those with the highest number of accidents and special precautions, to include warnings to drivers, should be implemented.
  
  - Future plans to widen Liberia Avenue from four to six lanes (CIP Project T-46) need to preserve the integrity of the existing trail

- **Estimated Cost to Complete:**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wellington Rd/Centreville Rd</td>
<td>Bike Lane</td>
<td>9,181 LF</td>
<td>0</td>
<td>Complete/CIP Project T-46</td>
</tr>
<tr>
<td>Wellington Rd/Hastings Dr</td>
<td>Bike Lane</td>
<td>805 LF 4 signs</td>
<td>$2,162</td>
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<tr>
<td>Euclid Ave (Liberia Ave to City Limits)</td>
<td>Bike Lane</td>
<td>1,800 LF (2x) 8 signs</td>
<td>$6,812</td>
<td></td>
</tr>
<tr>
<td>Quarry Rd Intersection</td>
<td>Crosswalks/pedestrian signals</td>
<td>125 LF 2 signals</td>
<td>$7,250</td>
<td></td>
</tr>
<tr>
<td>Euclid Ave Intersection</td>
<td>Crosswalks/pedestrian signals</td>
<td>70 LF 2 signals</td>
<td>$6,260</td>
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<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td>$22,484</td>
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</tr>
</tbody>
</table>

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City of Manassas, Parks and Recreation Committee
Priority 5: Hastings Drive Trail: This 3.3 mile signed shared roadway trail forms the southern quadrant of the outer loop of the Trail system. It connects major residential areas along the southern and western side of the city with four trails.

- Implementation: Mark the Hastings Drive Trail as a signed shared roadway by installing bike trail signs at regular intervals and instituting traffic calming approaches. Traffic calming approaches include instituting a 25 MPH speed limit along the entire roadway, installing 4-way stops and crosswalks at the intersections with Hendley Road and Waterford Drive.

- Estimated Cost to Complete:

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberia Ave/Godwin Dr</td>
<td>Signed Shared Roadway</td>
<td>17,424 LF, 20 signs</td>
<td>$5,780</td>
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</tr>
<tr>
<td>Hendley Road</td>
<td>Bike Lane</td>
<td>2,075 LF</td>
<td>$0</td>
<td>Complete</td>
</tr>
<tr>
<td>Hendley Rd Intersection</td>
<td>Crosswalks/signs</td>
<td>343 LF, 4 signs</td>
<td>$7,330</td>
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</tr>
<tr>
<td>Waterford Dr Intersection</td>
<td>Crosswalks/signs</td>
<td>290 LF, 4 signs</td>
<td>$6,376</td>
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</tr>
<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td>$19,486</td>
<td></td>
</tr>
</tbody>
</table>

Priority 6: Sudley/Stonewall Road Trail: This 1.9-mile trail comprises the northern quadrant of the City trail system. It connects a major residential area with three trails, an important professional and commercial center and provides access to major destinations in Prince William County. Completing these improvements would connect major portions of the outer ring of the City bike trail system and provide for improved safety at a busy city intersection.

- Implementation: The following projects will be accomplished in order to complete this trail:
  - Mark Stonewall Road from Stonewall Park to Sudley Road as a shared roadway with signs at regular intervals.
  - The Sudley Road Third Lane project (CIP Project T-15) should include designs for a bike lane along the northbound side of Sudley Road from Stonewall Road to Godwin Drive.
  - Intersections at Rolling Road and Godwin Drive should have painted crosswalks and pedestrian crossing signals. These intersections are among the most dangerous in the City and special precautions, to include signs warning motorists, should be implemented.

- Estimated Cost to Complete:

  4 25 mph speed limit along the entire roadway and installing 4-way stops at the intersections of Hendley Road and Waterford Drive, must be submitted to the Staff Transportation Safety Committee (STC) and the Transportation Safety Committee (TSC) for approval.

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City of Manassas, Parks and Recreation Committee
<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stonewall Park/Sudley Rd</td>
<td>Signed Shared Roadway</td>
<td>10,078 LF / 12 signs</td>
<td>$3,468</td>
<td>CIP Project T-15 currently in design phase</td>
</tr>
<tr>
<td>Sudley Rd Third Lane</td>
<td>Bike Lane</td>
<td>195 LF / 2 signals</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>Godwin Dr Intersection</td>
<td>Crosswalks/signal</td>
<td>60 LF / 2 signals</td>
<td>$8,510</td>
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</tr>
<tr>
<td>Rolling Rd Intersection</td>
<td>Crosswalks/signal</td>
<td>195 LF / 2 signals</td>
<td>$6,080</td>
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<tr>
<td><strong>Total Cost</strong></td>
<td></td>
<td></td>
<td>$18,058</td>
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</tr>
</tbody>
</table>

**Priority 7: Godwin Trail:** This 3.9-mile trail comprises the western quadrant of the City trail system and its construction will complete the outer ring. It connects six city trails providing access to the Airport, the Gateway Business Center, the E.G. Smith Baseball Complex, the Route 234 Bypass, the Freedom Center, the George Mason Campus, and commercial centers in Prince William County.

- **Implementation:** The trail is 23 percent complete. In order to complete the remaining portion of the trail, the following will be accomplished:
  - Paint and mark with signs a bike lane on both sides of Godwin Drive from Cloverhill Road to Hastings Road in conjunction with the Godwin Drive Phase II (Winged Elm to Hastings Drive), CIP Project T-44.
  - Construct a bike lane by improving the shoulder along the outer lane (generally southbound) of Godwin Drive from Hastings Drive to Wellington Road. Improve the intersections at Nokesville Road, University Drive, and Ashton Avenue by painting crosswalks and installing pedestrian crossing signals where needed. The intersection at Nokesville Road is among the most dangerous in the City and special precautions, in addition to improved crosswalks and signals, should be implemented to warn motorists—particularly given the proximity of the E.G. Smith Baseball Complex.
  - Construct a shared use path that provides access to the Route 234 Bypass and the Prince William County trails along westbound Route 28 as part of the planning and design work for CIP Project T-42 (Widening Nokesville Road).

- **Estimated Cost to Complete:**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloverhill Rd/Hastings Dr</td>
<td>Bike Lane</td>
<td>8,460 LF / 8 signs</td>
<td>$12,887</td>
<td>CIP Project T-44</td>
</tr>
<tr>
<td>Hastings Dr/Wellington Rd</td>
<td>Bike Lane</td>
<td>8,674 LF (2x) / 12 signs</td>
<td>$905,564</td>
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<tr>
<td>Godwin Dr to Rt 234 Bypass</td>
<td>Shared Use Path</td>
<td>3050 LF</td>
<td>0</td>
<td>CIP Project T-42</td>
</tr>
<tr>
<td>Nokesville Rd Intersection</td>
<td>Crosswalks/signal</td>
<td>100 LF / 4 signals</td>
<td>$13,750</td>
<td></td>
</tr>
<tr>
<td>University Dr Intersection</td>
<td>Crosswalks/signal</td>
<td>100 LF / 4 signals</td>
<td>$13,600</td>
<td></td>
</tr>
</tbody>
</table>

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City of Manassas, Parks and Recreation Committee
Priority 8: Cloverhill Road Trail: This 1.3 mile trail along Cloverhill Road from Wellington Road to Godwin Drive intersects three trails and provides a connection between residential areas and the Airport and the Route 234 Bypass.

- Implementation: Paint and mark with signs a bike lane on the westbound lane of Cloverhill Road from Wellington Road to Hastings Drive. Mark the portion from Hastings Drive to Godwin Drive as a shared roadway.

- Estimated Cost to Complete:

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wellington Dr/Hastings Dr</td>
<td>Bike Lane</td>
<td>2,852 LF 6 signs</td>
<td>$5,299</td>
<td></td>
</tr>
<tr>
<td>Hastings Dr/Godwin Dr</td>
<td>Signed Shared Roadway</td>
<td>3,950 LF 10 signs</td>
<td>$2,890</td>
<td></td>
</tr>
<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td>$8,189</td>
<td></td>
</tr>
</tbody>
</table>

Priority 9: Weems Road Trail: This 1.3 mile trail along Weems Road from Portner Avenue (via Weir Street) to Stonewall Drive connects the northern residential area with Downtown Manassas (via the Portner Avenue Trail) with Weems Elementary School and Byrd Park.

- Implementation: Install signs at regular intervals to mark the route from Portner Avenue to Stonewall Drive as a shared roadway.

- Estimated Cost to Complete:

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portner Ave/Stonewall Dr</td>
<td>Signed Shared Roadway</td>
<td>6,730 LF 12 signs</td>
<td>$3,468</td>
<td></td>
</tr>
<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td>$3,468</td>
<td></td>
</tr>
</tbody>
</table>

Priority 10: Dumfries Road Trail: This 1 mile trail along Dumfries Road from Wellington Road to the City limits connects two City trails with commercial areas and Prince William County destinations to the south of Manassas.

- Implementation: CIP Plans (Projects T-1 and T-24) to rebuild the northbound lanes on Dumfries Road along this route should include a shared use path. These projects have been deferred to the next planning period.

- Estimated Cost to Complete:

November 14, 2007
City of Manassas, Parks and Recreation Committee
<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wellington Rd/Hastings Dr</td>
<td>Shared Use Path/signs</td>
<td>2,740 LF</td>
<td>$375,639</td>
<td>CIP Project T-24 (8 ft asphalt trail was not built)</td>
</tr>
<tr>
<td>Hastings Dr/City Limits</td>
<td>Shared Use Path/signs</td>
<td>2,360 LF</td>
<td>0</td>
<td>CIP Project T-1</td>
</tr>
<tr>
<td>Dumfries Rd/Hastings Dr</td>
<td>Crosswalks/pedestrian</td>
<td>90 LF</td>
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</tr>
<tr>
<td>Intersection</td>
<td>signal</td>
<td>1 signal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dumfries Rd/Wellington</td>
<td>Crosswalks</td>
<td>112 LF</td>
<td>$2,016</td>
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</tr>
<tr>
<td>Shopping Cntr Intersection</td>
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</tr>
<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td>$377,655</td>
<td></td>
</tr>
</tbody>
</table>

**Priority 11: Gateway/Airport Trail:** This 3 mile trail connects the outer ring of the trail system at Godwin Drive with the Gateway Business Park, Manassas Airport and to planned Prince William County trail corridor along Piper Lane. This area will be the location of major development activity during the current planning period.

- **Implementation:** The trail is 42 percent complete. The uncompleted portions of the trail along Wakeman Drive and Observation Road will be accomplished by marking them as shared roadways. CIP Project A-33, which plans to realign this portion of the trail should preserve its integrity. This project has been deferred to the next planning period.

- **Estimated Cost to Complete:**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Type</th>
<th>Quantity</th>
<th>Cost</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gateway Blvd</td>
<td>Shared Use Path</td>
<td>6,730 LF</td>
<td>$0</td>
<td>Complete</td>
</tr>
<tr>
<td>Wakeman Dr</td>
<td>Signed Shared Roadway</td>
<td>4,530 LF</td>
<td>$1,734</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 signs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Road</td>
<td>Signed Shared Roadway</td>
<td>4,660 LF</td>
<td>$3,468</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 signs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td>$5,202</td>
<td></td>
</tr>
</tbody>
</table>

**Funding Priorities and Execution Strategy**

Providing the funds and determining the most cost-effective approach for executing this plan requires a sophisticated three-tiered strategy that leverages existing projects in the City’s Capital Improvement Plan (CIP), prioritized annual budget allocations, and cooperation with neighboring jurisdictions. Across each of the tiers in this approach, the City should aggressively pursue financial assistance from all available state and federal sources.

**Tier 1:** Give priority to CIP projects that incorporate bike facilities. Major cost items of the plan are currently including in the transportation and recreation and parks portions of the CIP. These projects comprise vital alternative transportation and recreation opportunities for the City, often representing key components of the highest priority bikeways. As a result, their contribution to the Bikeways plan should be emphasized in project descriptions where they should be specially identified as contributing to the bikeways plan as part of their

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justification, they should also be given priority during funding decisions and requests for transportation and recreation facility grants. The following projects, listed in priority order, are currently in the City’s CIP and are considered vital components of the bikeways plan:

- Project R-8: Winters Branch Extension
- Project T-19: Prince William Street
- Project T-6: Wellington Road (Nokesville Road to Godwin Dr)
- Project T-12: Route 28 Grade Separation
- Project T-47: Wellington Road Right Turn Lane
- Project R-28: Stonewall Park Trail
- Project T-42: Route 28 Nokesville Road Widening
- Project T-15: Sudley Road Third Lane
- Project T-44: Godwin Drive Phase II
- Project T-40: Wellington Overpass
- Project T-46: Liberia Avenue Improvements
- Project T-24: Dumfries Road Northbound
- Project T-1: Dumfries Road

Tier 2: Provide annual funding for low cost portions of the plan. Projects currently included in the CIP address major transportation needs for the city and when executed will significantly enhance the bikeway system. However, some planned trail facilities are omitted from the CIP, or CIP projects only address a portion of the trail. In most instances these facilities represent the lower cost bike lanes or signed shared roadways and with comparatively little expenditure, major portions of the system could be completed that would increase bicyclist access, move the City significantly closer to completing its bikeway system, and serve as a tangible measure of the City’s support for bikeways that would help support applications for financial assistance for higher cost projects. These comparatively lower cost facilities, in priority order are:

- Portions of the Winters Branch/Prince William/Signal Hill Trail
- Portions of the Main Street/Portner Avenue/Stonewall Park Trail
- The Entire Liberia Avenue/Euclid Avenue Trail
- The Entire Hastings Drive Trail
- The Entire Sudley Road/Stonewall Road Trail
- The Entire Cloverhill Trail
- The Entire Weems Road Trail

Focusing on these projects would complete over 15 miles of trails, building more than 75% of the trails needed to finish the system while spending less than 5% of its total cost.

Tier 3: Collaborate with neighboring jurisdictions. Cooperative planning and coordinated funding efforts are necessary to ensure connectivity between the City’s bikeways with those from neighboring jurisdictions, particularly with Prince William County. The highest priority for this effort should be completion of the Godwin Trail, particularly the segment from Hastings Drive to Wellington Road. This segment is not only a crucial component of the City’s bikeway system; it also serves as an important corridor for Prince William County bicyclists. It provides a connection between the City system and County trails from the west of Manassas along Nokesville Road to Route 234.

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City of Manassas, Parks and Recreation Committee
Connectivity to Regional Bikeways and Trails Systems

Increased attention, policy emphasis, and investment have been given to developing a network of bikeways in Northern Virginia during the previous planning period. Two major studies, the 2003 “Northern Virginia Regional Bikeway and Trail Network Study” produced by VDOT and the 2006 “TransAction 2030” study produced by the Northern Virginia Transportation Authority combine to outline steps for developing a system of regional bikeways that connect several major activity areas. The City of Manassas is the westernmost activity area included in these plans and City representatives have actively participated in their development using the 2001 Bike Trail Plan as a reference.

While the “Network Study” provides a detailed description of regional trails and recommendations for a more comprehensive and integrated system, “TransAction 2030” describes over 150 individual trail projects and improvements to link activity centers and provide connections along and between existing trails. These projects total over $60 million. Specific projects listed in the plan that link trails to Manassas are:

1. Prince William County Parkway Corridor:
   a. Fill in gaps along the Liberia Avenue Trail from Old Bridge Road to Jefferson Davis Highway
   b. Construct a trail along Prince William Parkway from Prince William Parkway to Signal Hill Road

2. Tri-County/Loudoun County Parkway & VA 234/VA 659 Corridor
   a. Construct a trail along VA234 from Dumfries Road to Jefferson Davis Highway
   b. Construct a trail along Prince William Parkway from Nokesville Road to Dumfries Road
   c. Construct a trail along Godwin Drive from Nokesville Road to Sudley Road

These projects form important connections with the Northern Virginia system of bike trails, opening up a wide variety of destinations for Manassas bikers, and providing regional bikers with improved access to the City’s recreational, historic, and commercial sites. The planned construction and improvement projects contained in this plan provide the access necessary to complete connections throughout the region.

Traffic Safety and Education

November 14, 2007
City of Manassas, Parks and Recreation Committee
As the City completes construction of the comprehensive trail system and greater numbers of bicyclists use these trails, a public safety program for bicyclists and motorists will become more important. The City already has local and regional resources at its disposal that can be leveraged to provide these programs and mitigate accidents, but State and Federal grant programs should be leveraged more effectively to promote the City’s trail system. Specifically:

1. The Police Department, the Recreation and Parks Department, and the Prince William Safe Kids Coalition shall partner to provide bicycle safety programs at City special events. The Recreation and Parks Department sponsors several special family events throughout the year for Manassas citizens. In cooperation with the Police Department, safety training and bicycle maintenance programs can be offered to children and adults to improve their safety awareness.

2. The Police Department shall partner with the School System to sponsor a bike safety curriculum for elementary schools. The Police Department assigns resource officers to Manassas schools who could include bicycle safety in their curriculums. A bike safety curriculum will be developed and with the approval of the School Board, will be introduced into the school system.

3. The Police Department shall use special enforcement programs to promote safety and increase awareness for bicyclists and motorists. Through special emphasis programs such as the “Smooth Operator” program, the Police Department can use mobile message boards stationed periodically at the most dangerous intersections to increase motorist awareness of bicyclists.

4. Schools are among the most important destinations connected by the trail system and the City will leverage federal and VDOT programs to encourage children to safely walk or bicycle to school. The Safe Routes to Schools (SRTS) Program offers grants for safety, education, encouragement and enforcement programs as well as for infrastructure projects for safety enhancements and bike/pedestrian facilities. The City will seek ways to use this program to secure grants in order to implement these improvements. In order to do so, the City school system will complete a “Safe Routes to School Plan” in accordance with SRTS program guidelines and submit it to VDOT as part of the grant application process.

November 14, 2007
City of Manassas, Parks and Recreation Committee
Appendix A: Map of Existing Facilities
Appendix B: Master Bikeway and Pedestrian Trail System Map
Appendix C: Facility Standards and Guidelines

This section provides additional design principles and standards based on the American Association of State and Highway Transportation (AASHTO) manual entitled “Guide to the Development of Bicycle Facilities (1991) with supplementary material from the 2002 “Virginia Bicycle Facility Resource Guide. All traffic control devices must conform to the Manual on Uniform Traffic Control Devices (MUCTD) as supplemented and adopted by the Virginia Department of Transportation (VDOT). Some information has been provided by the City of Manassas Department of Public Works, the agency that will be responsible for the construction or overseeing the construction of these trails. This section provides additional engineering details important to the public and City agencies on pavement width, marking, traffic safety measures, and other engineering concerns.

A bikeway is defined as any road or trail facility, either exclusively for bicycles or shared with other transportation modes that the City has specifically designated for bicycle travel. There are three (3) basic types of bikeways and trails that are proposed to accommodate bicycle and pedestrian traffic, including:

- **Shared Roadway** – Supplemented with bicycle signage: On a shared roadway, bicyclists and vehicles share the same travel lanes. A motor vehicle driver will usually have to cross over into the adjacent travel lane to pass the bicyclist. These facilities usually receive no special provisions for bicyclists other than signage. Shared roadways are adequate for neighborhood streets with very low traffic volume. Shared lanes typically feature 12 foot lane widths or less with no shoulders allowing cars to safely pass bicyclists only by crossing the center line or moving into another traffic lane. Shared roadways work well on local streets and collectors where speeds are posted at 25 mph or less, or average daily trips of vehicles does not exceed 3,000. See Figure A.

- **Shared Roadway - Paved Shoulder**: Roadways with adequate shoulder widths can reduce the amount of interaction between bicyclists and motorists by providing bicyclists with a separate area to operate within the roadway cross-section. Where it is intended that bicyclists operate on the roadway shoulders, paved shoulders need to be uniform, smooth and well maintained. Under ideal conditions, shoulder widths should be a minimum of 4 feet when intended to fully accommodate bicycle travel. Where 4-foot widths cannot be achieved, any additional shoulder width is better than none. Shoulders should be a minimum of 4 feet wide when designated to accommodate bicycle traffic. See Figure B

- **Shared Roadway - Wide Outside Lane**: A wide outside travel lane that is shared by bicyclists and motorists. Wide outside lanes have no stripe to delineate a separate lane for bicyclists. On streets with higher volumes and speeds where bicycle lanes are warranted but cannot be provided due to severe physical constraints, a wide outside lane may be provided to accommodate bicycle travel. A wide outside lane should be
wide enough to allow for a vehicle to pass bicyclist without crossing over into the adjacent lane. This facility may be accommodated if the right most through traffic lanes are substantially wider than 12 feet. Most traffic engineering professionals agree that 14 feet usually measured from the lane stripe to the edge of the gutter pan, rather than the curb face, is the minimum width necessary to allow bicyclist and a motorist to share the same lane without coming into conflict, changing lanes, or potentially reducing the motor vehicle capacity of the lane. Where traffic speeds exceed 40 miles per hour and the annual average daily traffic exceeds 10,000 vehicles, 15 or 16 feet lanes are considered desirable. See Figure C

- **Bicycle Lane**: A portion of roadway that has been designated for exclusive or preferential use by bicyclists. This is accomplished by striping, signing, and pavement markings. Bicycle lanes are appropriate on most urban arterials and collector streets where there is sufficient width to mark a reserved lane for bicycles. Bicycle lanes must be well marked to call attention to their preferential use by bicyclists. Typically, bicycle lanes are designed for one-way bicycle travel in the same direction as adjacent motor vehicle traffic. They are located along a paved shoulder separated by a 4-inch stripe. A diamond symbol (denoting pedestrian use) with or without a bicycle symbol provides further markings. Because of their pavement markings, bike lanes can also be an effective means of encouraging bicyclists to use a particular corridor in lieu of others. Bicycle route signage is provided at prominent locations along the bicycle route.

Bicycle route signage is provided along the route to specifically indicate that the facility is a bicycle lane. For streets where parking is not permitted, the recommended width of a bicycle lane is at least 4 feet plus the concrete gutter pan. The recommended width of a bicycle lane where parking is permitted is 5 feet. In some situations, the creation of bicycle lanes may not be possible due to width constraints and parking needs. These facilities are also known as Class II Bikeways. See Figure D

- **Shared Use Path**: A bikeway completely separated from motorized vehicular traffic by an open space or barrier and either within the highway right of way or within an independent right of way. Also known as multi-use trail or off-street path, this is a facility that is completely separate from vehicular traffic and is regarded as the safest of all bicycle transportation facilities. The shared use path could run along an independent right of way or within private or publicly owned property. Often these facilities are located within linear park corridors that may incorporate a shared use path within their boundaries. Shared use paths have been very successful in reintroducing communities
to bicycling as a form of transportation and recreation. In many situations, shared use paths are the catalyst for developing a bicycle network connecting a variety of destinations in the community.

Other facility types can only be used by bicyclists as pedestrians walking within a roadway would cause safety concerns. However, shared use paths can be used by pedestrians, joggers, in-line skaters, and bicyclists. Two-way shared use paths should be at least 10 feet (10’) in width and may or may not be divided by a solid marked line. Where possible, especially where bicycle and pedestrian traffic is expected to be high, trails should be a minimum of 12 feet wide. One-way bikeways have limited application, as without strict enforcement they will become two-way facilities. If provided, however, they should be a minimum of 5 feet wide. These facilities are also known as Class I Bikeways.

Based on AASHTO and Americans with Disabilities Act (ADA) requirements, a 5 percent grade is considered the maximum for a shared use path. A grade of 10 percent is allowable provided that the total distance of this gradient does not exceed 500 feet. Handicap accessible curb ramps (CG-12) should be provided with truncated domes. Traffic safety is a concern where bicycle trails cross a vehicular travel way. Crossings at grade introduce conflict points. To increase safety, the bicyclist should have access to a pedestrian control device or such crossings should occur where traffic is light. Signage should also be placed prior to the intersection. Bicyclists should always dismount and walk their bicycles across vehicular travel lanes. See Figure E.