



UNIVERSITY OF VIRGINIA
BICYCLE MASTER PLAN





Foreword

The University of Virginia Bicycle Master Plan is the product of a joint effort between the Office of the Architect for the University, The Department of Urban and Environmental Planning, and the Green Grounds Group, a student organization dedicated to implementing sustainable practices at UVA. The Master Plan culminates a diverse work effort that included UVA faculty, staff, graduate student interns, student volunteers, representatives from the City of Charlottesville and Albemarle County and review by VHB. This plan was produced by:

Andrew Greene
GIS Planner, Office of the Architect

Harry Hibbits
Graduate Student Intern, Urban and Environmental Planning

Danny Kwan
Graduate Student Intern, Urban and Environmental Planning

Julia Monteith, AICP
Senior Land Use Planner, Office of the Architect

David Neuman, FAIA
Architect for the University

Daphne Spain
Chair, Department of Urban and Environmental Planning

Elaine Uang
Graduate Student Intern, Architecture

The authors of this plan would also like to recognize the efforts of Rebecca White, Director, and Mike Goddard, Transportation Demand Management Professional, Department of Parking & Transportation; Chris Gensic, Park & Trail Planner, City of Charlottesville; Dan Mahon, Greenway Coordinator, Albemarle County; the Green Grounds Group volunteers who helped conduct the UVA bicycle amenities survey; and all of the 578 respondents to the UVA Bicycle Questionnaire.

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Section 1.1
Bicycle Plan Context
Planning, context and background of the Plan

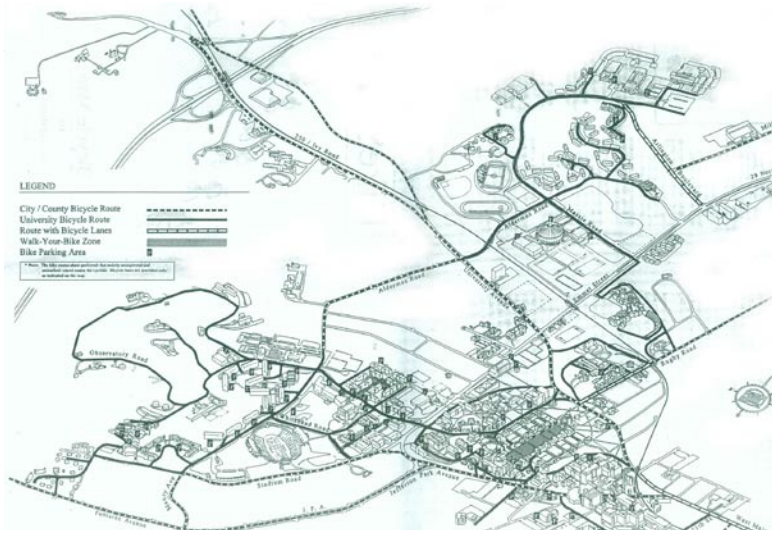
Introduction and Summary of 1993 Plan

The use of bicycles at the University of Virginia is a significant mode of transportation for students, faculty, staff and visitors for both commuting and recreational purposes. The 2007 University of Virginia (UVA) Bicycle Master Plan recognizes the importance and impact of bicycle traffic on and around Grounds. The University's document supports development strategies that include bicycle routes throughout Grounds and linkages to current and potential city and county bicycle routes. The City of Charlottesville 2003 Bicycle and Pedestrian Facilities Master Plan and the Jefferson Area Bicycle, Pedestrian and Greenways Plan adopted by Albemarle County in 2004 recognize the importance and impact of bicycle traffic in the area as well.

While UVA has encouraged bicycle use in the past by conducting studies, the 1993 University of Virginia Bicycle Master Plan was the first University-wide plan to outline a comprehensive bicycle system throughout and around Grounds. The 1993 plan outlined a route system, storage facilities, route signage and enforcement strategies. The plan also prioritized implementation projects and design standards. Given that the routes provided in the 1993 plan assumed a 'shared use' of roads with cars, the routes were not specifically delineated for bicycle use in the form of lanes or paths. This has resulted in a lack of clarity and safety for those who choose to use bicycles within the UVA Grounds.

The 2007 University of Virginia Bicycle Master Plan provides the historic context of past bicycle planning efforts and outlines the current route structure with recommended improvements and design strategies. This revised bicycle plan builds upon previous efforts to encourage bicycle use on Grounds. The purpose of this Master Plan is to develop a comprehensive system of bicycle routes, bicycle racks, and signage which will accommodate, encourage, and enhance safe and convenient use of bicycles on the University Grounds. In order to develop a broad

Bicycle resting outside a student's room in the Academical Village



Bicycle route map from the 1993 Bicycle Master Plan

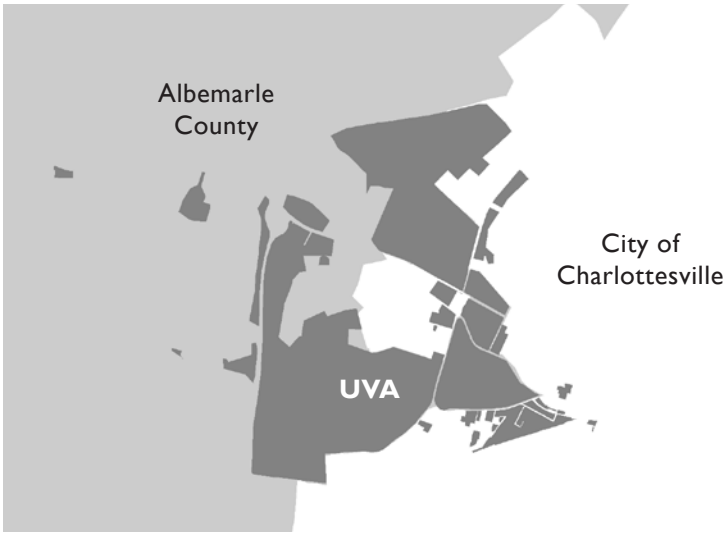
vision for bicycle use on Grounds, background information was incorporated into this planning document. This includes an examination of the bicycle planning efforts in the community, a summary of the 2006 UVA Bicycle Questionnaire, and research of bicycle planning practices at three model universities: The University of Texas at Austin, The University of North Carolina at Chapel Hill, and Virginia Polytechnic Institute and State University (Virginia Tech).

University Context

The University shares a boundary with both the City of Charlottesville and Albemarle County, and the network of roads is interlinked between these three entities. Both the City of Charlottesville and Albemarle County have recently completed bicycle plans, with proposed recommendations that may enhance the bicycle rider environment for the University and the region. The development of these plans provides background information and guidance for future bicycle facilities. The plans are essential to meet the Virginia Department of Transportation (VDOT) requirement that a roadway be identified as a bicycle facility in the locally adopted plan before improvements can be made. Identification of proposed bicycle facilities also opens up additional funding sources for implementation.

The City and County bicycle plans propose to expand the existing network of bicycle facilities to better connect destinations and make bicycling possible throughout the region. Routes are selected by the density of services and residents they connect. Facilities include bicycle lanes, shared roadways, and off-road, multi-use trails. Considerations in designing the network include safety, continuity and directness of bicycle routes, and attractiveness of the facility. To fully implement a comprehensive network of bicycle facilities, cooperation and coordination of efforts between the University, City, and County is essential.

City of Charlottesville



UVA's vicinity within the city of Charlottesville and Albemarle County

Charlottesville Transit Service's free trolley on UVA Grounds

Fifeville Neighborhood, Charlottesville

Charlottesville has the majority of existing bicycle and pedestrian infrastructure, usage, and future demand for the region. The Charlottesville Comprehensive Plan (2000) includes language addressing bicycle and pedestrian provisions, and explains how the City plans to include these modes of transportation in its overall development process. In 2003, the City of Charlottesville adopted their new Bicycle and Pedestrian Facilities Master Plan. The planning process was initiated in 2001 with numerous stakeholder meetings which identified key themes, such as providing an alternative mode of travel to automobiles and preserving the area's natural beauty. Challenges of adding bicycle facilities are identified in the plan and include the area's topography, a challenging street grid system, costs, security, and maintenance. This master plan is a long-range plan that will benefit the University of Virginia by enhancing the bicycle environment and connecting neighborhoods to the University. Some benefits have already been implemented, such as the installation of bicycle lanes along Emmet Street between University Avenue and Jefferson Park Avenue. The full implementation of the plan will require coordination between the City and the University

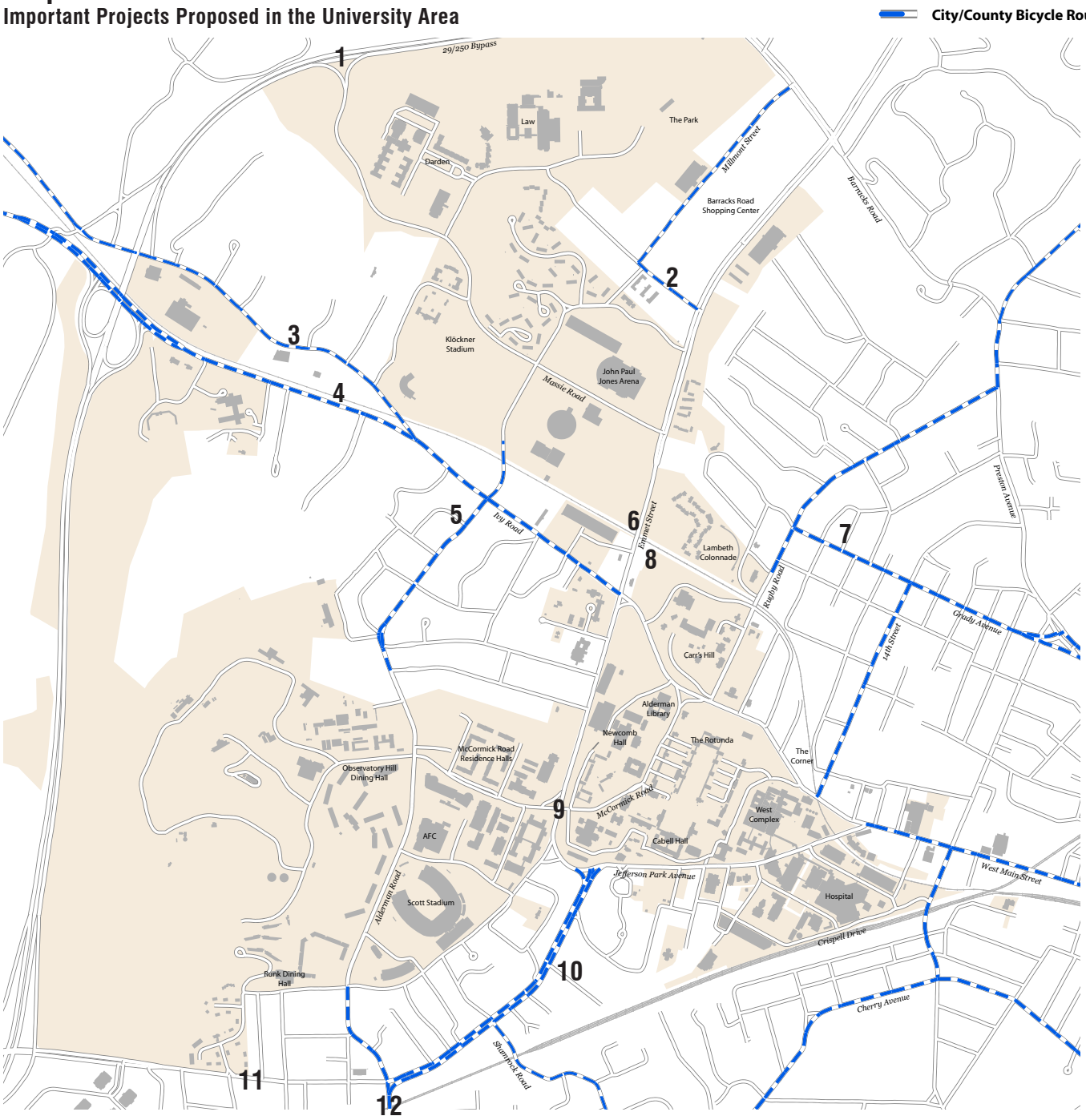
The Corner, Charlottesville

Several proposed transportation projects that would benefit the University community have been identified in the 2003 Plan. The following is a list of committed and recommended projects:

1. Barracks Road: a bicycle/pedestrian trail from the Business School and Law School across the Highway 250 Bypass should be explored
2. Arlington Road: existing bicycle lanes in the vicinity of the Law School and Business Schools should be extended to Emmet Street
3. Old Ivy Road: include sidewalks and bicycle lanes between Ivy Road and the Route 29/250 Bypass
4. General improvements to Ivy and Old Ivy Road
5. General improvements to Alderman Drive and Copeley Drive
6. Emmet Street: possible four lane widening between Ivy Road and Massie Road
7. Grady Avenue is also another area of high student density where bicycle improvements are noted in the plan
8. Re-design CSX Railroad Bridge over Emmet Street between Massie Road and Ivy Road
9. Replace/repair McCormick Road Bridge at Emmet Street
10. Jefferson Park Avenue (JPA) neighborhood is dominated with student housing. The number of students in this neighborhood represents a potential pool of bicyclists given the direct proximity to the University Grounds
11. Fontaine Avenue: improve to a two-lane, divided boulevard with bicycle and pedestrian facilities between Maury Street and the western City Limit
12. Jefferson Park Avenue: replace bridge over Norfolk Southern Railroad with a new bridge featuring bicycle lanes

Selected City Bicycle Improvement Proposals

Important Projects Proposed in the University Area



Mountains of southern Albemarle County

Monticello, Albemarle County

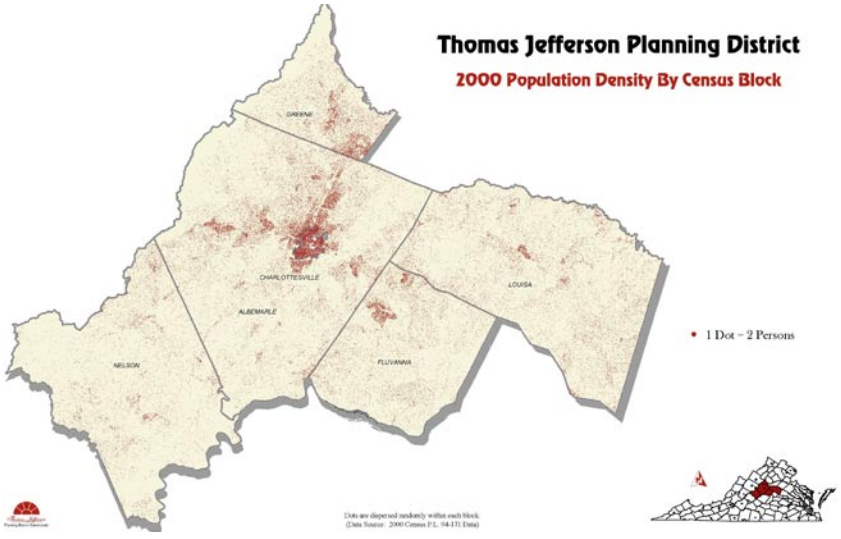
Albemarle County

The Albemarle County Comprehensive Plan (1996-2016) proposes to "develop a transportation system which employs a variety of modes, including the provision of walkways and bicycle facilities". The Comprehensive Plan also proposes the establishment of a network of greenway trails that would be linked to trails in the City of Charlottesville. To this end, the County has adopted the Jefferson Area Bicycle, Pedestrian and Greenways Plan in 2005. This effort was coordinated by the Thomas Jefferson Planning District Commission. This plan represents the County's priority bicycle and pedestrian projects for the first quarter of this century.

Current bicycle use in the County has been increasing for both transportation and recreational purposes and particularly amongst the urban and student population in and around the City and University. Generally any road or street in the urban area should be considered for bicycle facilities because of the high density of population and commercial, social, and cultural activities. Major obstacles to bicycle ridership in the County are the large road sizes, high volume of traffic, topography, climate, and cultural habits. The primary bicycle route improvements proposed for the urban area of Albemarle County around the University include Fontaine Avenue, Ivy Road, and Barracks Road. Proposed secondary, or neighborhood level, bicycle route improvements around the University include Old Ivy Road, Massie Road, and Copeley Road.

Thomas Jefferson Planning District Commission

The Thomas Jefferson Planning District Commission (TJPDC) is home to approximately 200,000 people and coordinates regional solutions for five counties (Albemarle, Fluvanna, Greene, Louisa, and Nelson) and the City of Charlottesville. TJPDC coordinated the Jefferson Area Bicycle, Pedestrian and Greenways Plan, which was adopted in 2004. TJPDC also serves as the regional Metropolitan Planning Organization (MPO) for Albemarle and Charlottesville and led the planning effort for the

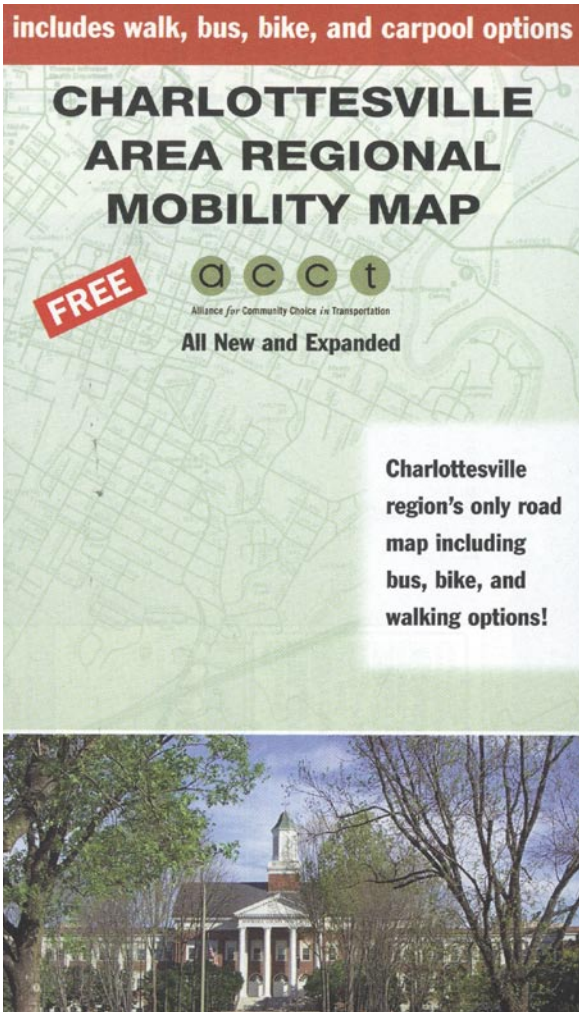


Population density in the Thomas Jefferson Planning District

United Jefferson Area Mobility Plan, UnJAM 2025, which combined the Charlottesville-Albemarle Regional Transportation Plan with the Rural Long Range Plan. In the UnJAM 2025 plan, TJPDC examined existing bicycle and pedestrian facilities and developed a list of bicycle and pedestrian priority projects for which funding is allocated over a 20-year time period. As part of the plan, regional mobility goals were established for a complete bicycle network and amenities. This includes on-road bicycle lanes on urban streets, off-road multi-purpose trails along major corridors, and protected bicycle parking at major destinations. TJPDC is also urging VDOT to give funding priority for bicycle and pedestrian projects in the Transportation Improvement Program.

Alliance for Community Choice in Transportation

The Alliance for Community Choice in Transportation (ACCT) is an advocacy group committed to working for improved bicycle networks throughout the Charlottesville area. ACCT distributes a free regional mobility map which shows all of the area's roads and information about bicycle lanes, bicycle routes, and other alternative transportation modes. In October 2006, ACCT organized a community bicycle summit to brainstorm and create a list of bicycle improvements that would make it safer and easier to ride. Currently ACCT is collecting public feedback to prioritize the list of bicycle projects that were identified in the summit. An implementation action plan for each prioritized project will then be developed.



Implementation

The success of implementing these bicycle plans depends upon initiation and coordination of public and private efforts at many levels. It is essential that broad citizen input and support from bicyclists, pedestrians, motorists, and other groups be developed during the planning and implementation phase. A bicycle user survey can identify the most traveled roads and determine bicycle facility needs. The Bicycle Compatibility Index can be applied to roadways designated as bicycle routes to determine existing conditions and help identify improvement needs. Once bicycle plans are completed there are a number of steps needed to fully implement the recommendations. The plans must be adopted in each locality and incorporated into local comprehensive plans, zoning and subdivision ordinances as they are updated. The bicycle plans are sent to VDOT state and district offices and other agencies for funding requests. After bicycle plans are in place, the development of bicycle facilities can begin.

Section 1.2
University Bicycle Questionnaire
Summary of 2006 Web-Based Questionnaire

University Bicycle Questionnaire

A bicycle questionnaire was developed and deployed in 2006 to solicit input from the University community in order to better understand current bicycle use on and around Grounds. The questionnaire generally targeted bicycle users in the University community, but was open to non-bicyclists as well. The main objective was to seek recommendations to improve the riding experience and make bicycle riding a more viable commuting strategy. In addition, the questionnaire sought to identify opportunities for bicycle facility improvements, bicycle route development, bicycle safety strategies, and links to the broader transportation systems.

The bicycle questionnaire was designed by members of the Green Grounds Bicycle Planning Initiative team, in collaboration with the Office of the Architect for the University and with input from the Director of Parking and Transportation. Fourteen questions covered topics from bicycle ownership and usage to bicycle safety and facilities. The questionnaire design, methodology, implementation, and full responses are included in the Appendix. The survey netted 578 responses from students, faculty, and staff. The following percentages refer to the actual number of responses to each question, as not all respondents answered every question.

Bicycle Use

83 percent of respondents own a bicycle. 64 percent of respondents use a bicycle to commute to Grounds. 85 percent of respondents live on Grounds or within 2 miles of Grounds. A majority of respondents also indicated they ride on Grounds and for recreation. 63 percent of respondents indicate adequate storage facilities to lock their bicycle. Respondents were asked to indicate which measures would encourage them to ride a bicycle more frequently; 79 percent indicated having more bicycle routes and dedicated bicycle lanes would encourage them

Bicyclist on asphalt path near the Goodwin Pedestrian Bridge

to ride more often. Other priority measures which would encourage more bicycle use include improved driver awareness, signed and marked bicycle routes and lanes, and covered or secure storage facilities.

Bicycle Routes

Over 96 percent of respondents ride their bicycle on the street and 80 percent ride in marked bicycle lanes. Over half of respondents ride on the sidewalk or on brick paths which can contribute to conflicts with pedestrians who use the same areas. This may result from the lack of information for bicyclists on where they are able to ride on Grounds and where they must dismount. Overall 49 percent of respondents say that the University does not provide enough information about bicycle facilities and safety.

Safety

18 percent of respondents reported having had a bicycle accident on Grounds, most involving a car rather than a pedestrian or other bicycle. Safety and visibility at night are other areas that need more attention. Only 44 percent reported that they always wear a helmet and use a light at night.

Several bicycle needs are identified from the survey responses. Addressing these needs in the bicycle plan can improve the bicycle user environment and encourage additional bicycle ridership.

- Additional dedicated bicycle lanes are desired and would encourage bicycle use.
- Better signage and lane marking on the roads can increase the safety of bicycle riders, pedestrians, and cars.
- Increased bicycle storage, especially covered and secure facilities, is important to survey respondents.
- Additional education and outreach is needed to provide information about bicycle facilities and rider safety to bicycle users.

Bicyclist on Emmet Street


Asphalt path near Piedmont Faculty Housing

Section 1.3
Case Study Summary
Survey of Bicycle Initiatives at Peer Institutions

Case Study Summary

The University of Virginia is a major center attracting students, faculty, and staff who live in the surrounding community, with attendant congestion that relates to dense development. There is an opportunity for the University to play a leadership role in reducing traffic through programs that encourage the use of alternative modes of transportation. In the Spring of 2006, students from the Green Grounds Group researched bicycle planning practices at three Universities; The University of Texas at Austin, The University of North Carolina at Chapel Hill, and Virginia Polytechnic Institute and State University (Virginia Tech) to understand how these institutions were addressing similar challenges. These institutions were selected based on similar climate, topography, institution type, regional influence, traffic issues. In 2006, these universities were listed as Best Workplaces for Commuters by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation. According to the EPA, the universities on this list are environmental leaders that have established programs that reduce traffic congestion and parking demand, save energy, and improve air quality. These universities offer a package of commuter benefits that improve the quality of life for their employees and students, and residents in their surrounding communities. A sample of the commuter benefits offered include transit and bus passes, vanpools, campus shuttles, access to an Emergency Ride Home program, financial incentives for staff who forego a parking permit, and providing facilities that support bicycling.

Case studies were developed for each of the institutions in order to assess how, along with other traffic demand management steps, the University of Virginia can encourage more bicycle use. Below is a summary of the findings from the three university bicycle plans along with other topics for the UVA to consider. The major areas of interest include Bicycle Use, Bicycle Planning, Storage Facilities, Bicycle Advocacy, Traffic Conflict Management, Local Transportation Connection, Education and

University of Texas, Austin

University of North Carolina, Chapel Hill

Enforcement, and Bicycle Use Incentives. Please refer to the appendix for the full case study summary and individual case study reports.

Bicycle Use

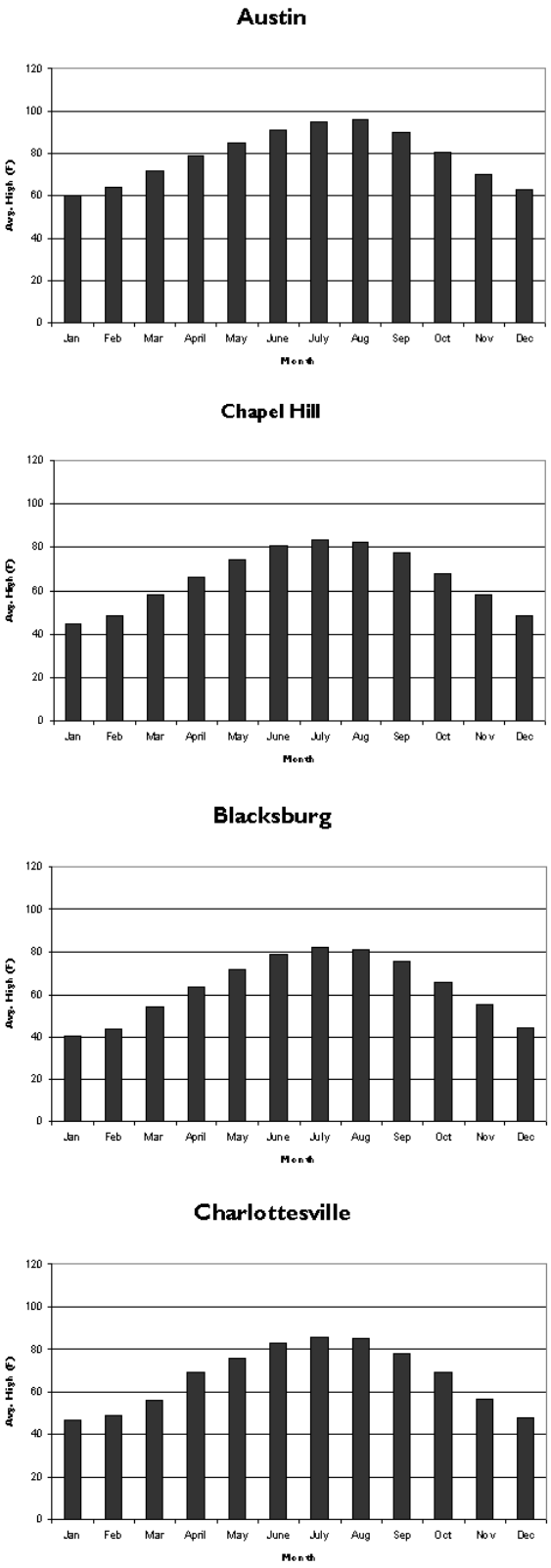
At Virginia Tech bicycles are a small but highly visible part of the transportation system. Based on a Parking and Transportation Survey, approximately 3 percent of commuters use a bicycle as their primary mode of travel to and from campus. Another 5.5 percent ride to campus at least once a week. At the University of Texas, over 1,000 people use bicycles as their primary daily mode of transportation to and from campus. A commuting survey at the University of North Carolina determined that 16.5 percent of commuting students use a bicycle to commute to campus and about 4 percent of employees regularly ride to work.

Bicycle Planning

All three of these universities have an established bicycle plan. The goals of these bicycle plans include reducing or eliminating driving on campus, encouraging walking or bicycling to campus, reducing bicycle-pedestrian conflicts and making bicycling to/on campus more accessible. Bicycling is also part of a strategy to reduce local air pollution. The Transportation and Parking departments at these universities play a key role in coordinating bicycle transportation and facilities, and providing bicycle information and registration. At the University of North Carolina, transportation services are under the Department of Public Safety. While these plans are primarily focused on the related institution, there is also recognition of the need to engage surrounding communities in the bicycle planning process.

At Virginia Tech, a bicycle section was included in the 2002 Parking and Transportation Master Plan. The Master Plan listed ways of improving bicycle facilities on campus. The following is taken from the plan:

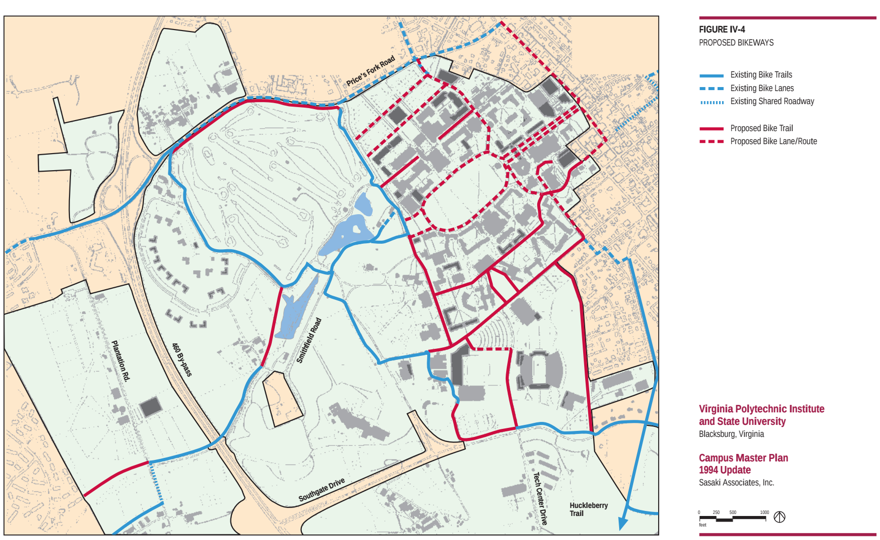
Virginia Tech, Blacksburg



Average monthly high temperature at case study universities

1. Improve Bicycle Lanes – ensure easily acceptable bicycle lanes exist from the perimeter of campus to the central campus.
2. Bicycle lanes and pedestrian paths should be well lit, provide ample space for passing bicycles/pedestrians, and provide properly spaced emergency call boxes. Additional amenities such as bicycle lockers, water fountains, and enhanced landscaping can also help.
3. All new roads constructed on campus should consider installing either a bicycle lane or a separate bicycle path. Bicycle lanes are preferred for routes where there are frequent intersections/driveways and a separate bicycle path is preferred for routes with infrequent intersections/driveways.
4. All new residence halls constructed on campus should include bicycle shelters over bicycle racks as an integral part of the design. Existing residential halls should have bicycle shelters installed near them.
5. The University should establish a capital budget for bicycle and pedestrian facilities. This budget should be used for improvements and maintenance to the bicycle and pedestrian network.

In 2004, the Virginia Tech Office of Transportation conducted a Parking and Alternative Transportation Customer Survey of 1,835 faculty, staff, and students. Overall, 23 percent of respondents reported having ridden a bicycle to campus in the past year. Survey questions attempted to assess respondents' perception of bicycling conditions on campus. 70 percent indicated they felt safe riding a bicycle on campus. 46 percent of respondents rated bicycle facilities (bicycle racks, shared paths, and bicycle lanes) on campus as fair, good, or excellent. However 46 percent indicated not being familiar with bicycle facilities. Through its planning efforts, Virginia Tech was able to secure funding for three phases of a bicycle pathways project called the Hokie Bikeways through TEA-21 Enhancement grants.

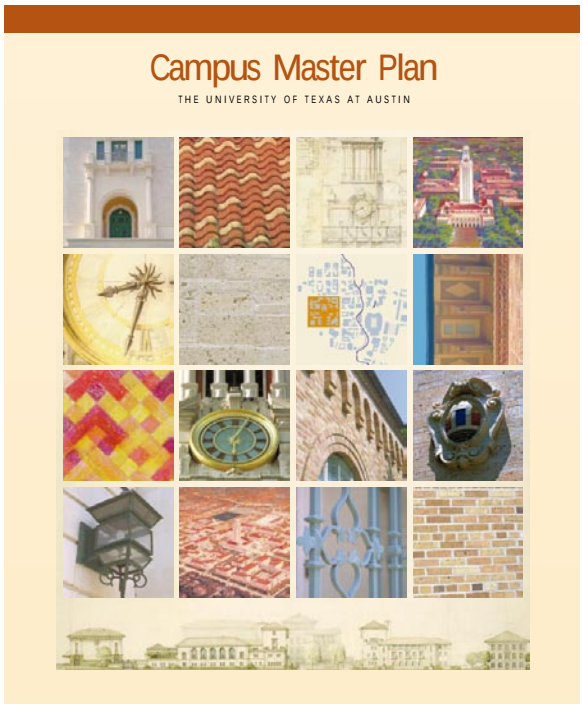


Proposed Bikeways map in Virginia Tech's 1994 Master Plan

MASTER PLAN

The Campus Master Plan for the University of Texas at Austin aims to diminish the presence of vehicles and entice pedestrians into the core campus area known as Forty Acres. Under the master plan all daily traffic and parking will be removed from within Forty Acres and streets will become pedestrian rights-of-way. Parking spaces displaced from these streets will be replaced in new, carefully designed structures built in or near the central part of the campus. Bicycle use is specifically addressed in the Master Plan with selected excerpts below:

1. Bicycles will be prohibited from special areas of pedestrian movement. These conflicts between pedestrians and cyclists will be resolved by creating separate bicycle lanes and establishing dismount zones within Forty Acres where all bicycles will be walked.
2. The master plan redesigns campus routes to include bicycle paths, lanes, roadways and corridors, with bicycle traffic and parking permitted exclusively on and in designated streets and areas. Recreational bicycle paths will run parallel to pedestrian paths. Paths for bicycles along North Congress will carry special markings distinguishing them from all other paths along the street.
3. Bicycle lanes will be separated within traffic corridors and used where space permits. Although these bikeways are the backbone of the system, alternative routes will be available to bicyclists. Bicycles will be permitted without preferential treatment on any street that serves normal vehicular traffic.
4. Bicycle parking will be provided in ample supply and kept as close as possible to the path system so that legal parking and pathways reinforce each other and encourage a self-policed system. Possible locations include major activity nodes, such as libraries, the Flawn Academic Center, recreation centers, intramural fields and student unions. Bicycle parking should be built in selected vehicle parking lots and garages and along selected roadway links. Using these guidelines, resident students will have easy access to their bicycles.

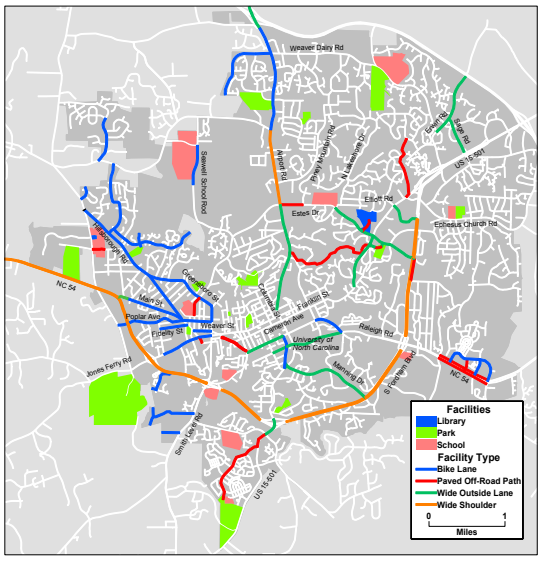


University of Texas Campus Master Plan

Aerial view of Forty Acres core campus at the University of Texas

Chapel Hill and Carrboro Bicycle Facilities

Note: Most road in Chapel Hill and Carrboro are suitable for bicycle travel Facilities on this map are explicitly designated for bicycle use.



Bike Lane - Striped and signed, curb
Wide Shoulder - Striped, no signs, varying width, no curb
Wide Outside Lane - Extra width in outer lane, no stripe
Paved Off-Road Path - Mixed-use trail, no motor vehicles

Prepared by: Chapel Hill Planning Department
Data Source: Chapel Hill Planning Department, September 2003

The League of American Bicyclists' Bicycle Friendly Community Bronze Award

At the University of North Carolina a bicycle plan advisory group consisting of representatives from the University and the towns of Chapel Hill and Carrboro assisted in the University's Development Plan (approved March 2001). The group discussed campus needs, identified potential bicycle routes, and formulated a campus bicycling mission statement. The overall goal of these efforts is to encourage more bicycling, to improve safety for bicyclists, and cater to the inexperienced bicyclist. The Plan aims to minimize additional traffic and parking, by improving bicycle facilities as a part of the University's Trip Reduction Strategy. Bicycle facilities in the towns surrounding the University are shown in the Plan. Additional bicycle facilities will be incorporated into site plans for new projects. Bicycle lockers will be installed in new parking decks and new roads and road modifications will consider bicycle needs.

For its bicycle planning efforts, the town of Carrboro earned the Bicycle Friendly Community Bronze award in 2004. Bicycle lanes in Carrboro provide greater bicycle circulation around town and links with the University of North Carolina Campus. The Bicycle Friendly Community Campaign is an awards program that recognizes municipalities that actively support bicycling for transportation and recreation and is administered by the League of American Bicyclists.

Storage Facilities

Bicycle parking facilities are being expanded at all three universities. At the University of Carolina, the Master Plan for the towns of Chapel Hill and Carrboro recommends new buildings include showers and clothing storage facilities for bicycle commuters. The plan also recommends providing a map that shows bicycle routes and locations of bicycle parking facilities along with better signage. An example of a bicycle storage facility at the University of North Carolina is the bicycle room in Sitterson Hall.

A bicycle rack survey at Virginia Tech was conducted in 2002. The type of bicycle rack, location of rack, and amount of bicycle rack use were identified. The survey identified high use and visible areas for new bicycle friendly bicycle loops to be installed. This addresses a need for better storage and parking facilities that were identified in the bicycle plan. Other bicycle parking needs identified include providing more bicycle racks near building entrances along the new and existing greenways, installing sheltered racks that would help prevent weather damage to bicycles, and providing secure bicycle lockers in peripheral parking locations that can allow commuter students to bicycle around campus during the day.

At the University of Texas, secure bicycle lockers are available at every parking garage. The high security Cycle-Safe bicycle lockers offer individual covered bicycle parking with key access. They are ideal for overnight parking and long term storage. The lockers can be rented at a cost of $48 a year.

Bicycle Advocacy

These universities have student groups and bicycle advisory groups that advocate for bicycle users. At the University of Texas, a student government bicycle committee addresses bicycle issues on campus as members of the Parking and Transportation Policies Committee. The Sustainability Initiative at the University of North Carolina involves student participation in the Transportation Task Force to better incorporate sustainable practices in transportation. The Environmental Coalition, a student group at Virginia Tech, organized the Bike Challenge 2006 to get people to bicycle commute in Blacksburg throughout the month of April. Bike Challenge 2006 signed up 315 participants who tracked their bicycle mileage through a website. In all the participants rode 14,351 bicycle commuter miles during the month.

Bicycle Conflict Management

The University of Texas limits car traffic within Forty Acres and has designated dismount zones to preclude bicycle accidents with pedestrians. At the University of North Carolina cyclists are allowed to use sidewalks on main campus which can lead to conflicts with pedestrians. At Virginia Tech, separate facilities are provided for vehicles versus bicycles and pedestrians. These combined trails, called greenways, are 12 feet wide which allow room for bicyclists to pass pedestrians, and are paved with asphalt to distinguish them from pedestrian only sidewalks. A typical section for a greenway is shown on page 18. The photo is an example of an existing greenway on Campus. Several new trails are proposed to better connect the campus trail network and enhance bicycling options.

Local Transportation Connection

The three universities have extensive local bus systems that serve their students and staff. These bus systems offer free rides to the university community and each system has buses that are equipped with bicycle racks. The University of Texas operates the largest university shuttle

Bicycle racks at the University of Texas

Cycle-Safe lockers offer protection from theft and the elements

Chapel Hill Transit on the UNC campus

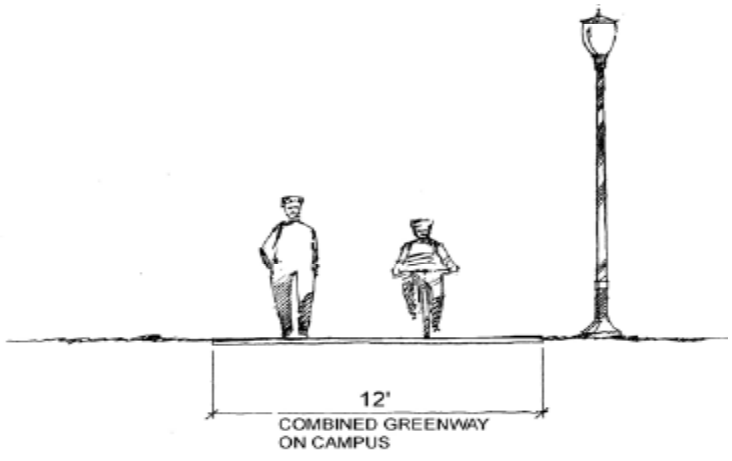
system in the country, with 16 routes and over 7.5 million passengers annually. The shuttle system is free to all students, faculty, and staff with a valid photo ID. The Capital Metro mainline bus system provides access to many parts of the Austin area and is also free to students, faculty, and staff with a valid ID. At Virginia Tech, Blacksburg Transit provides service around campus with links to the Town of Blacksburg. This bus system is tailored to fit the needs of students - students ride for free and all buses have bicycle racks. The towns of Chapel Hill and Carrboro have pooled resources with the University of North Carolina to provide free fares on Chapel Hill Transit.

Education and Enforcement

These case study campuses provide maps of bicycle routes and information about campus bicycle safety, regulations, registration, and parking on the internet. At Virginia Tech, providing an updated and easy to read map of the bicycle trails and greenways to incoming students is one way of encouraging bicycle use. All three universities require registration of all bicycles that operate and park on campus. This mandatory registration is designed to help improve bicycle parking facilities, prevent theft and assist with the recovery of stolen bicycles, and to provide bicycle owners guidelines for use of bicycles on campus. The mandatory registration of bicycles on campus is free and can be completed online. A decal is mailed to the applicant and is then affixed to the bicycle. Failure to register a bicycle can result in fines or impoundment.

Bicycle use Incentives

All the case study universities have incentive programs for commuters who give up a parking permit and use an alternative mode of transportation. The incentives can include a limited number of free daily permits for parking and access to an Emergency Ride Home Service that provides participants with a ride to their local residence in case of an emergency.



Typical Section – Greenway

Mixed pedestrian/bicycle greenway at Virginia Tech

The Bike, Bus & Walk (BB&W) program is available to Virginia Tech faculty, staff, and students who use alternative transportation methods as their primary means of commuting to campus (riding the bus, bicycling, and/or walking). BB&W participants cannot purchase a regular parking permit, but may purchase daily parking permits for $1/day. Those who register for BB&W will receive 15 free daily permits for the spring semester and access to Emergency Ride Home Service.

The Commuter Alternatives Program (CAP) at the University of North Carolina encourages all forms of alternative transportation including, bicycling, walking, transit, park and ride, carpool and vanpool. The program is free and is designed for commuters who do not purchase an on-campus parking permit. CAP members receive several benefits and perks, including a limited number of single day parking permits, access to the Emergency Ride Back service, a free annual regional bus pass for Triangle Transit Authority, and are eligible for prize drawings and discounts with many local merchants.

The University of Texas supports efforts to reduce congestion and curb vehicle pollution in the Austin area. The University has established an active Alternative Transportation Program, entitled UT Share, which encourages members of the University community to do their Share. The goal of the UT Share Program is to address and reduce the use of single occupancy vehicles (SOV) by staff, faculty, students, and visitors.

University of Texas bicycle decal

The UT Share program encourages alternatives to SOV use

Summary of Recommendations from Case Studies

- Establish a bicycle advisory committee to address bicycle related issues and assist with future transportation and Grounds plans
- Incorporate bicycle facilities into new construction
- Implement a bicycle registration policy
- Equip UTS buses with bicycle racks
- Expand outreach efforts to inform potential bicycle users of incentives (enrollment in emergency ride home program)
- Arrange for free rides on CTS buses for University community members as an alternative to bicycling when weather conditions or other factors make bicycling challenging
- Provide covered and secure bicycle storage facilities such as bicycle lockers
- Provide bicycle amenities such as showers, changing areas, and air pump stations

The provision of bicycle facilities can make bicycling an attractive option for UVA commuters, given the current lack of such amenities on Grounds. However the University does have four Athletic/Recreational Facilities on-Grounds (Aquatic Fitness Center, Memorial Gym, North Grounds, and Slaughter) that have locker and shower facilities available to students, staff and faculty members. Only full-time students are automatically members of these facilities, while faculty and staff may purchase memberships on a semester or yearly basis. The use of these existing facilities by bicycle commuters should be explored. There may already be bicyclists who utilize these facilities, but this use could be

CTS has installed bicycle racks on all of its buses


Due to concerns about maintaining short headways, bicycle racks have not been installed on UTS buses

formalized so every potential bicycle commuter is aware of this amenity. An option to encourage bicycling to work is to allow bicycle commuters who are not already members of these facilities use of showers and lockers when they ride to work.

Charlottesville Transit Service (CTS), the local community bus system for the City of Charlottesville and portions of Albemarle County, also serves the University community. The University is exploring a possible partnership with CTS where University members can ride for free. This partnership would be part of a larger effort to encourage the use of transportation alternatives, but can specifically benefit bicyclists traveling to and from Grounds when inclement weather makes bicycling more challenging. Another way to make bicycling more attractive is the installation of bicycle racks on buses. CTS has already installed bicycle racks on all its buses. The University Transit Service (UTS), which provides free service to students and staff on-Grounds and in adjacent neighborhoods, has examined the possibility of installing bicycle racks on its buses. UTS decided against installing racks since short headways, as little as 8 minutes, would be difficult to maintain given the time required to load a bicycle onto a bus rack. If a partnership with CTS is commenced, UTS could reexamine the use of bicycle racks on buses which would allow UVA users to transfer from CTS to UTS with their bicycles. The overall use of bicycles may increase by allowing bicycles on buses.

Future bicycle planning efforts can utilize an advisory group or tap into a network of bicycle advocates. The University has many groups such as Green Grounds that are involved with bicycle advocacy. There are also local community groups, such as ACCT, that are active in promoting alternative choices in transportation like bicycle use. The City of Charlottesville and Albemarle County are essential partners in establishing a comprehensive network of bicycle facilities that benefit the entire community.

The Department of Parking and Transportation at the University of Virginia is uniquely positioned to champion bicycling on Grounds. Like the other universities in the case studies, Parking and Transportation can promote bicycling as one of several alternative modes of transportation to single occupancy vehicles through incentives and support programs. Working in collaboration with other departments, such as the Office of the Architect for the University and Facilities Management, future improvements of bicycling facilities on Grounds could be implemented over time. The University could establish itself as a leader in the effort to enhance the bicycle riding environment in the community and be recognized as a Best Workplace for Commuters.

Weblinks

http://www.dps.unc.edu/dps/alternatives/bike.htm - Bicycle Travel at the University of North Carolina

http://www.utexas.edu/parking/transportation/biking/index.html -

Biking at the University of Texas at Austin

http://www.lib.utexas.edu/books/campusmasterplan/ - Campus Master Plan for the University of Texas at Austin

http://facilities.vt.edu/ot/depts.asp?value=bike - Alternative Transportation – Bicycling at Virginia Tech

http://www.bwc.gov/ - Best Workplaces for Commuters

http://www.bicyclefriendlycommunity.org/index.htm - Bicycle Friendly Community Campaign

Section 2.1
Planning Process
Includes overall plan, routes, facilities and implementation

Methodology of Bicycle Route Selection

Bicycle Amenity Field Survey
Student volunteers from the Green Grounds Group recorded the location of existing bicycle lanes, racks and other amenities on precinct maps provided by the Office of the Architect. This information was then transferred into a GIS database.

Route Selection
Office of the Architect staff and interns used field information, previous bicycle plans, aerial photos and knowledge of local conditions to develop route recommendations. Main and Quiet route designations are modified from Transport for London bicycle maps.

Route Verification
Office of the Architect interns and Green Grounds Group volunteers, representing both experienced and novice bicyclists, rode all of the recommended main and quiet routes to verify the suitability of each route. Route recommendations were adjusted based on the feedback provided by the bicyclists.

SMART Transportation Map
The University of Virginia SMART Transportation Map features the recommended routes, along with information on bicycle racks, lanes, dismount areas and caution zones. The reverse side of the pocket-sized map features the University and Charlottesville Transit Services' bus routes.

Planning Process

The University of Virginia's 2007 Bicycle Master Plan recommends bicycle routes through the University Grounds and the related context of the City of Charlottesville and Albemarle County based upon the safest primary routes used by faculty, staff and students. The Master Plan and accompanying map outline main, quiet, and proposed routes throughout the University Grounds and the related context. The main and quiet bicycle routes currently exist, while the proposed bicycle routes require varying levels of effort to implement. This section addresses the University's bicycle route network, route standards, bicycle facility information, safety/education programs as well as a list of implementation and funding strategies.

Main routes
Major University areas are linked together by the bicycle routes as illustrated on the 2007 SMART Transportation map. Currently the main bicycle routes consist of a variety shared bicycle routes, bicycle lanes and multi-use paths. The main bicycle routes carry the largest volume of vehicular traffic and in many cases are subject to higher vehicular traffic speeds. Therefore these routes should receive primary funding and priority for meeting the most suitable bicycle route design criteria.

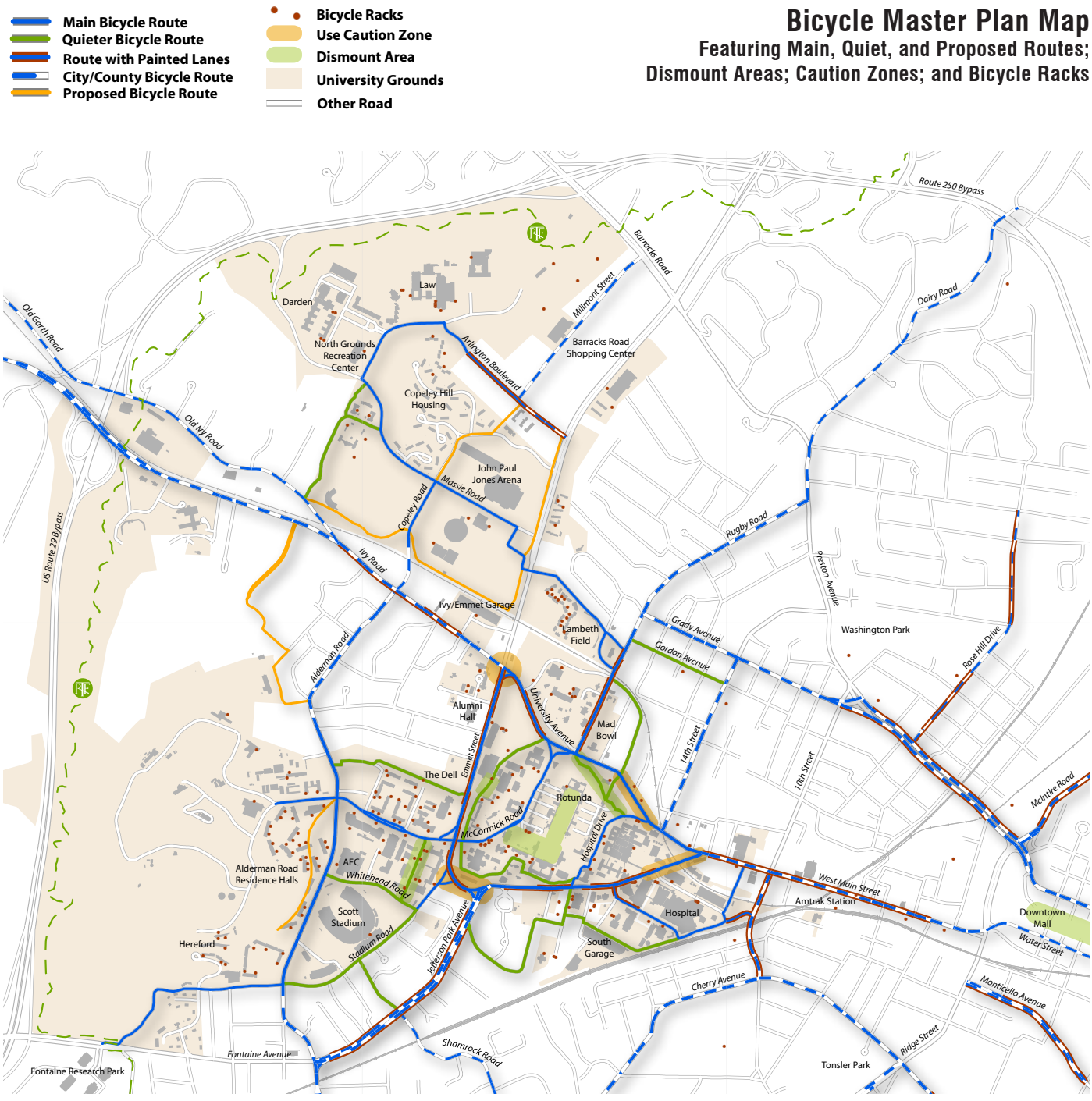
The main routes of the UVA bicycle network consist of the Rugby Road-McCormick Road-Alderman Road corridor for Central and West Grounds; the Massie Road-Goodwin Bridge corridor for North Grounds; and Jefferson Park Avenue-Lane Road-Crispell Drive corridor for South Grounds.

Quiet routes
The quiet routes offer bicyclists alternative routes with less and lower speed vehicular traffic, but potentially heavy pedestrian traffic. Currently the quiet routes use the shared bicycle lane concept as well as multi-use paths. Potentially the standards for quiet routes would mimic those of the main routes, such as utilizing bicycle lanes, "Share the Road" signage and increased multi-use paths with signage. The goal of the quiet routes is to provide a means for increased access to multiple areas of the University Grounds for novice riders, riding during inclement weather, and riding at night.

Quiet routes consist of Newcomb Road and Cabell Drive around Central Grounds, and the Shared Bicycle-Pedestrian pathway in front of the Rotunda from the intersection of Rugby Road and University Avenue to Hospital Drive. Quiet routes in West Grounds are found along Stadium Road and Shamrock, as well as south of the Aquatic and Fitness Center on Whitehead Road. A partially gravel-surfaced route can also be found in West Grounds connecting Alderman Road to Emmet Street along the University Cemetery and the Dell. Faulkner Way and Ivy Drive are the quiet routes within North Grounds. Within South Grounds, Valley Road and Crispell Drive compose the quiet routes.

Bicycle Master Plan Map

Featuring Main, Quiet, and Proposed Routes; Dismount Areas; Caution Zones; and Bicycle Racks



A proposed route runs north from the Goodwin Bridge

Bicycle lanes on Emmet Street exist, but continuity is an issue

Proposed Routes

Proposed bicycle routes are designated in areas where a strong demand for an increased bicycle network exists. The majority of proposed routes can be found within North Grounds.

The City of Charlottesville is researching the feasibility of a bicycle pathway along west side of Emmet Street from the Goodwin Bridge to Arlington Boulevard, similar to the University's 1993 Bicycle Plan project number 9. The proposed multi-use pathway along the north side of the rail line from Emmet Street to Old Ivy Road, will add support to the proposed regional Three-Notched Trail system. The proposed Copeley Road - Arlington Boulevard connection will require joint effort between UVA and the City and yield access to Copeley Hill apartment community and to the Barracks Road shopping center. The formalization of the connection between the U-Heights apartment community and Zehmer Hall along Kearney Lane is also on the list of proposed bicycle routes. Lastly, a future bicycle route is desired within West Grounds after the redevelopment of the Alderman Road residence areas.

Current Conditions of Bicycle Routes

The majority of bicycle routes on University Grounds are considered shared lane routes, where bicycles share the same road lanes with vehicular traffic. The shared lane concept has been successfully used in California, Maryland, and North Carolina. Ideally, shared vehicular and bicycle routes require a minimum of a 12 foot wide travel lane which assumes cars will stay to the left while bicycles, except when turning, will stay to the right. Shared bicycle lane markings are optional, but recommended and can be applied to the far right portion of the pavement without lane striping. Bicycle lanes, not shared bicycle routes, are the gold standard of any bicycle route network, and should be implemented to the degree possible throughout Grounds.

The heavy reliance on shared road lanes for the University's bicycle

McCormick Road is the major bicycle, pedestrian, bus, and auto spine on Grounds

network is based on a prior review of the advantages and disadvantages of alternative design standards for bicycle routes and of the existing development patterns of the University Grounds. The intent was to select a design standard that would best meet the general bicycle traffic patterns in a safe, consistent, and cost effective manner.

Standards for Bicycle Routes

Bicycle routes throughout Grounds take one of three forms. The first and most predominate is the shared bicycle lane where bicycles share the same road lanes with vehicular traffic. Shared bicycle lanes do not require a continuous painted bicycle lane stripe separating the automobile from the bicyclist, however it is recommended along with use of 'share the road' signage. The second route form is the bicycle lane, which can be defined as the road area, usually the far right portion, specifically dedicated to the use of bicyclists, separated from automobile traffic by a painted line. Bicycle lanes around Grounds are signed with "Right Lane, (Bicycle) Only" when they begin and "Bicycle Land Ends, Merge Left" when the lane terminates. Multi-use paths are the third type of bicycle route on Grounds. These routes consist of asphalt, concrete, gravel or brick pathways shared by pedestrians and bicyclists. Bicyclists are required to yield to pedestrians along multi-use paths. Signage for marking these as bicycle/pedestrian routes is needed.

Bicycle riding on sidewalks is prohibited throughout the Grounds in accordance with the Universities compliance with the codes and ordinances of Charlottesville. A sidewalk is defined as a walkway parallel and to a road, or a brick path within larger open space areas.

1. Shared Lane Concept: The shared lane concept, proposes a minimum lane width of 12 feet and a maximum of 15 feet, see figure 1-1 and 1-2. While its implementation along the University's main routes may require some road widening, it is a flexible standard and the most cost effective to implement. The majority of the costs associated with this implementation would be the removal of roadway conditions that are hazardous to bicyclists, and the addition of road markings and share the road signage.

2. The shared lane concept can be safely used on Grounds for a number of reasons. The low-posted speed limits are conducive to shared lanes in that the 15 and 25 mph speed limits theoretically enable bicycles to keep pace with automobile traffic. In addition, recent studies from California and Maryland have reported success with the shared lane concept. With mid-block turns typifying bicycle traffic at universities, shared lanes are well suited since they do not create an unrealistic separation of bicycle and vehicle traffic. Currently "Share the Road" signage is needed along all non-bicycle lane routes.

3. Bicycle Lane: A bicycle lane, see figure 2-1 and 2-2, can be defined as that portion of the road that has been set aside for the use of bicyclists. This is usually accomplished through pavement markings and lane striping. Bicycle lanes have not been fully adopted for use on the

Goodwin Bridge allows for safe access to North Grounds

Bicycle lanes on West Main Street

Bicyclist in shared lane on McCormick Road

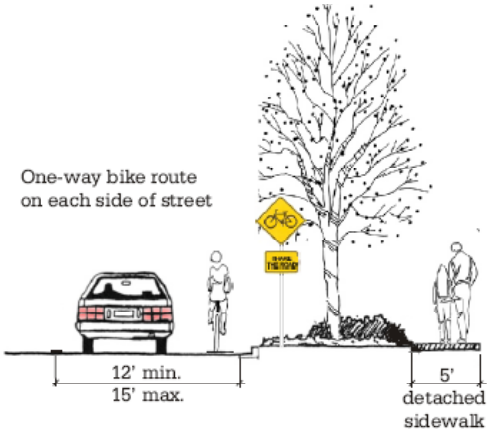


Figure 1-1 Charlottesville BPFMP, 2003

University Grounds because many of the routes are thought to be too narrow for both vehicle and bicycle lanes. Where bicyclists routinely make turns, especially along McCormick Road where bicyclists frequently turn at various mid-block locations, bicyclists need to use extra caution. In this situation, separate lanes may give motorists the impression that bicyclists will stay in their lane. In order to facilitate proper user behavior between bicyclists and motorists a safe riding program is highly recommended for all bicyclists at the University.

4. Multi-Use Paths: Multi-use paths are the third type of bicycle route on Grounds and are included as main, quiet and proposed routes. Multi-use paths are not parallel or immediately adjacent to roads. Multi-Use paths consist of asphalt, concrete, gravel or brick material shared by pedestrians and bicyclists. Bicyclists are required to yield to pedestrians along multi-use paths and maintain low speeds. Signage is needed to indicate these are viable bicycle routes as well as to indicate they are intended to be multi-use pathways. Multi-use paths provide an increase in travel accessibility for pedestrians and bicyclist and further facilitate the Universities environmentally sustainability agenda.

Bicycle Storage - Current Facilities

The intent of bicycle storage facilities such as the fixed and mobile/unattached racks is to provide a safe facility and convenient location to store bicycles.

Currently bicycle storage facilities consist of either fixed racks or mobile/unattached racks. Mobile/unattached racks are added near existing buildings where bicycle storage demands increase; and are bolted (or should be bolted) to a hard surface such as concrete. Fixed racks are frequently designed and installed as part of new building projects or installed by larger landscape architecture projects.

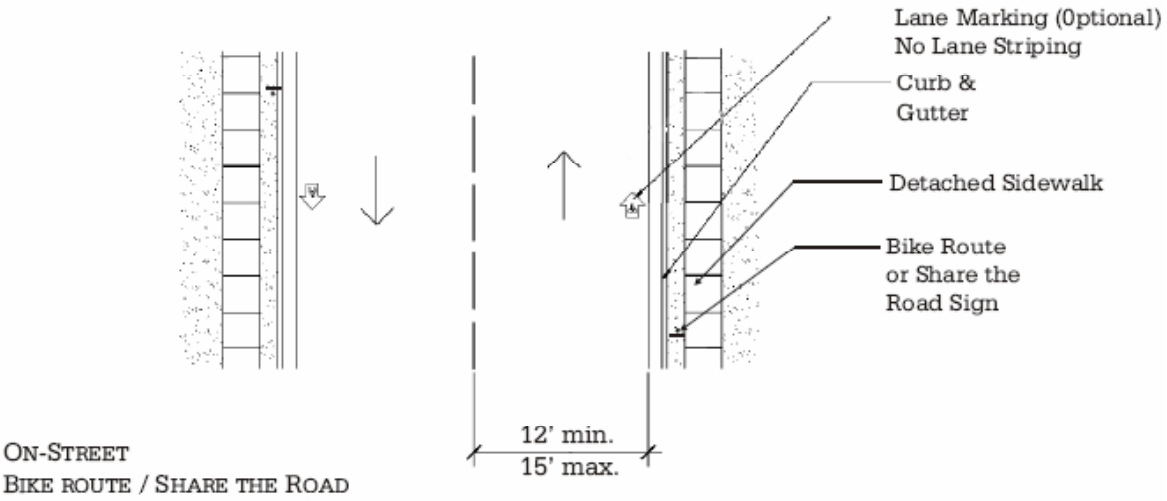


Figure 1-2 Charlottesville BPFMP, 2003

Fixed Bicycle Rack:
Approximately 91 fixed bicycle racks exist on Grounds with an average capacity of 14 bicycles per rack.

Mobile/unattached Rack:
Approximately 126 mobile racks exist on Grounds with an average capacity of 15 bicycles per rack.

An increase in bicycle storage facilities is needed throughout Grounds. Racks should be placed close to routes in order to minimize the need for bicyclists to traverse pedestrians paths to reach racks.

Bicycle Storage - Proposed Facilities

The typical congregation of fixed and mobile/unattached storage racks can be reorganized by the creation of "bicycle corrals". Bicycle corrals consist of large bicycle storage facilities open and/or covered from the elements, which can potentially provide bicycle related services such as air pumps, tire inner tubes, water fountains and/or towels. Bicycle corrals are best suited for areas highly frequented on Grounds such as the areas near Alderman and Clemons libraries, and the New Hospital east of the main entrance.

Bicycle storage lockers may be additional useful facilities within UVA parking garages. UVA employees and students who commute to Grounds via automobile could potentially store a bicycle in a secure locker. The locker would allow the user to access his/her bicycle after parking. The user could then travel to his/her specific destination via bicycle and return the bicycle to the locker at the end of the day. Other options for UVA parking garages include retrofitting automobile parking spaces on the ground level to cater toward bicycle storage, using standard mobile/unattached racks. Storing bicycles in the University garages would facilitate keeping bicycles out of the weather and provide better security. The logistics of ground level bicycle storage in

Fixed racks are often installed by new building projects

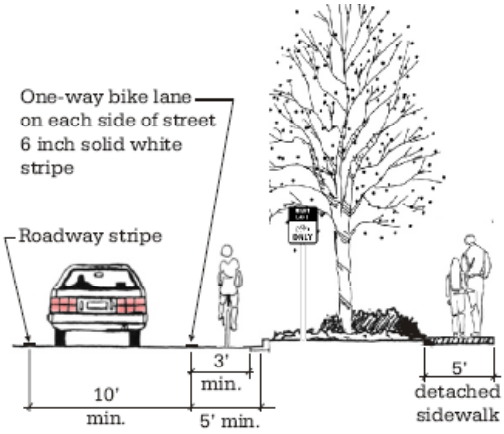


Figure 2-1 Charlottesville BPFMP, 2003

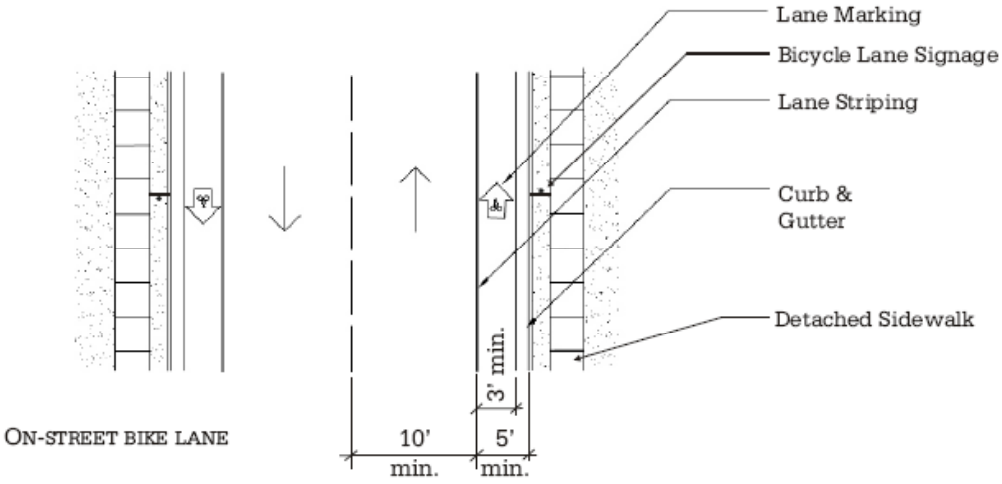
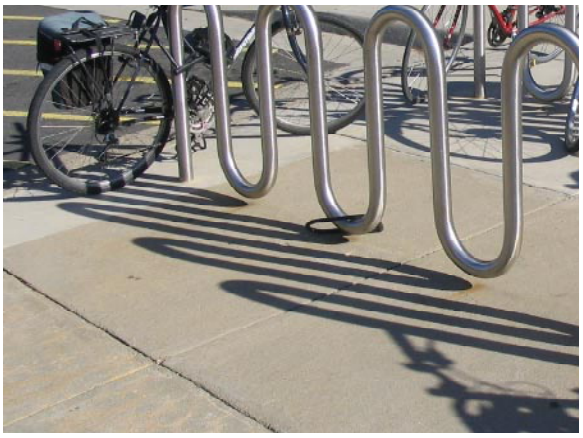


Figure 2-2 Charlottesville BPFMP, 2003

UVA parking garages is currently under investigation. Starting with the Arts Grounds Garage, new UVA parking garages are being designed with bicycle entrances that are separate from both automobiles and pedestrians.



Fixed bicycle rack at the Aquatic and Fitness Center

Equipping UTS buses with front mount bicycle transport racks; similar to Charlottesville's CTS buses and trolleys would increase the Universities alternative transportation options.

Bicycle Signage – Current Signs

The intent of bicycle signage is to inform motorists, cyclists and pedestrians of the bicycle route system and associated laws on Grounds. Current bicycle signage around grounds consists of two primary types indicating the beginning and end of bicycle lanes.

Other bicycle signage on Grounds is limited, but should be expanded. "Share the Road" bicycle caution signs can be seen on Stadium Road and a few small "pedestrian only" signs can be found near Minor Hall and Dawson's Row. Along Engineers way, they are used to indicate dismount zones.

Bicycle Signage – Proposed Signs

The primary bicycle route concept on Grounds is the shared road concept, yet only a few "Share the Road" bicycle signs exist. An increase in "Share the Road" type signage is necessary throughout Grounds. Recommended sign types can be seen below in figure 3-1, as outlined in Charlottesville's Bicycle and Pedestrian Facilities Master Plan.

Proposed Facilities – General

Proposed general bicycle facilities consist of promoting shower facilities and personal lockers in new buildings and during the renovation design process for older existing buildings. Faculty, staff, and students who bicycle to the University during the hot, humid late spring, summer, and early fall season would greatly benefit from such facilities.

A variety of mobile racks in front of Jordan Hall

This bicycle corral at UC-Berkeley features vertical storage to increase capacity

Safety, Education and Enforcement

Safety of all bicyclists in and around the University of Virginia is the main goal of the 2007 University of Virginia Bicycle Master Plan. Bicycling can be made safer with clearly indicated routes and signage, safe and convenient storage facilities in addition to enforcement procedures. But it is ultimately the responsibility of the bicyclist to ride defensively and conduct himself/herself in a proper and predictable manner.

Because accidents between motorist and bicyclists do occur, there is a need to provide education programs for bicyclists and motorists. Bicycle safety courses should be offered to all faculty, staff and students. These courses would outline safe and proper riding techniques as well as how to handle common and challenging bicycling activities. Incentives for participation should be provided, such as meal vouchers, academic credit and free bicycle accessories/parts. Motorists should be provided or directed to safety precautions concerning their appropriate conduct around bicyclists as well. Bicyclists will continue to be encouraged to register their bicycles with the University Police free of charge.

The University Police will continue to play an important role in ensuring the safety of bicyclists on Grounds. For continued promotion of bicycle safety on and around Grounds, representatives from the University, City of Charlottesville and Albemarle County Police departments are encouraged to meet to coordinate their bicycle safety enforcement strategies.

"Pedestrians Only" signs mark dismount areas on Grounds

Sign located at the end of the West Main Street bicycle lane

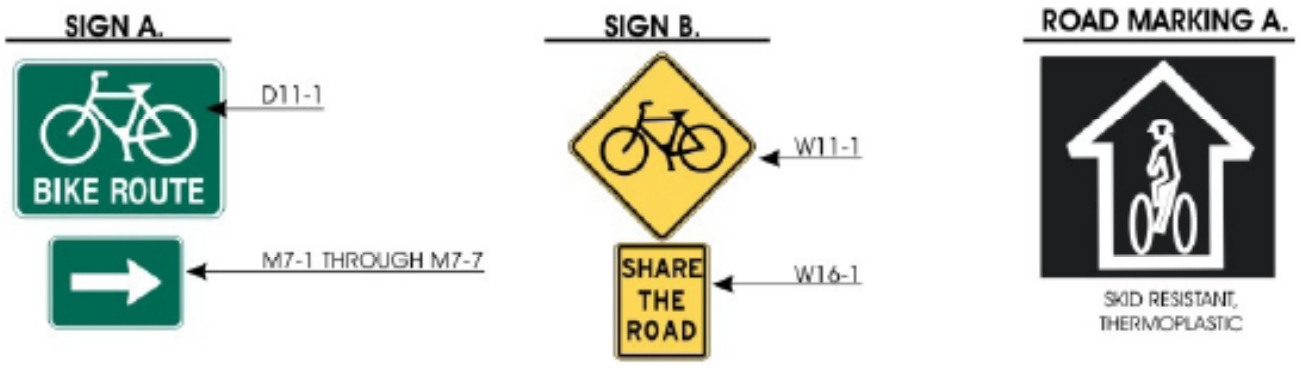
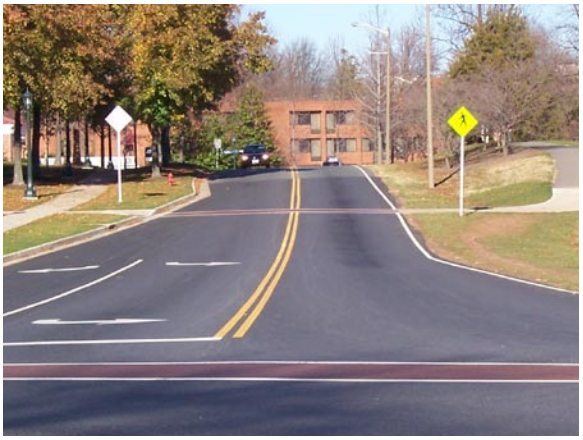


Figure 3-1 Charlottesville BPFMP, 2003

Section 2.2
Suggested Improvements and Objectives
Improvements to Routes, Storage, and Signage throughout Grounds



Massie Road at the intersection with Leonard Sandridge Rd.

The City holds a 5' easement connecting Copeley Road to Arlington Boulevard; this easement could provide a transportation connection in the future.

Suggested Improvements and Objectives

The University has traditionally been divided into four quadrants consisting of North Grounds, Central Grounds, West Grounds and South Grounds (Health System). The "bike-ability" of these areas is described below and specific projects are provided to enhance bicycle facilities on Grounds.

University Wide Bicycle Facility Suggestions

- Encourage development of proposed bicycle routes by coordinating with University, City of Charlottesville, and Albemarle County.
- Encourage bicycle facility improvements, such as bicycle lanes, multi-use paths, and appropriate signage with all new University development.
- Encourage bicycle lanes where road width is a minimum of 15 feet.
- Encourage an increase in "Share the Road" signage along routes too narrow for bicycle lanes.
- Encourage installation of bicycle transport racks on all UTS buses.
- Investigate traffic signalization triggering options for bicyclists.
- Encourage continued support of the Tri-Modal Committee, which promotes City, County and University coordination focusing on regional transportation alternatives.

North Grounds

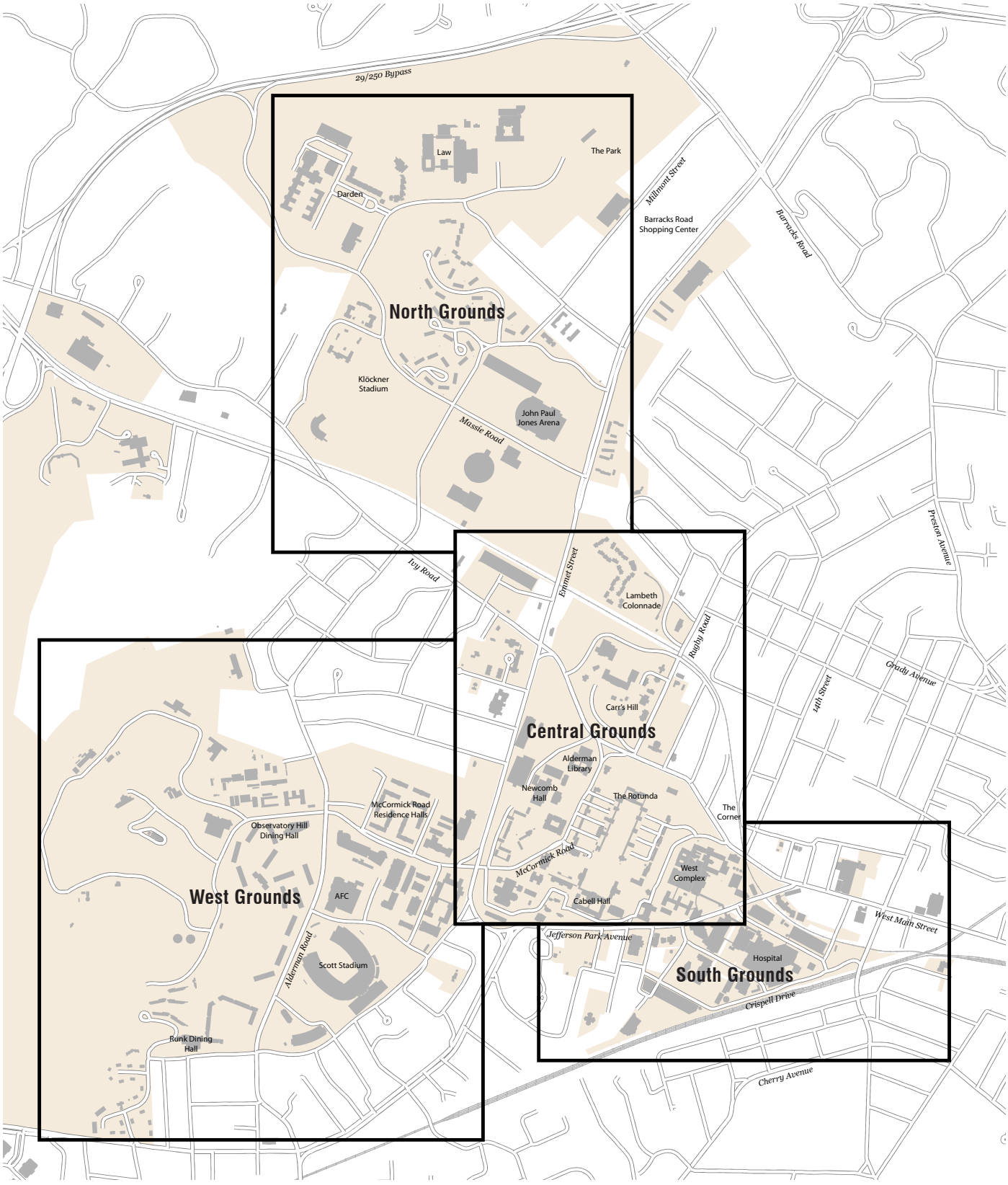
Bicycling around North Grounds is relatively comfortable. Development in the area is less dense, roads are wider, and traffic is less frequent than other areas on Grounds. North Grounds has the most potential and space for constructing new bicycle routes.

Route Improvements

- Encourage bicycle lanes along North Grounds roads where width exceeds 15 feet.
- Encourages quiet route along Faulkner Way and Ivy Drive to

The pavement or gate near the Miller Center should be modified to allow easy passage of bicycles to Faulkner Way and Old Ivy Road

MASTER PLAN


29/250 Bypass
Law
The Park
Darden
Millmont Street
Barracks Road Shopping Center
Barracks Road
North Grounds
Klöckner Stadium
John Paul Jones Arena
Massie Road
Ivy Road
Emmet Street
Lambeth Colonnade
Rugby Road
Preston Avenue
Grady Avenue
14th Street
Carr's Hill
Central Grounds
Alderman Library
Newcomb Hall
The Rotunda
The Corner
McCormick Road
West Complex
Cabell Hall
McCormick Road Residence Halls
Observatory Hill Dining Hall
West Grounds
AFC
Alderman Road
Scott Stadium
Runk Dining Hall
Jefferson Park Avenue
West Main Street
Hospital
South Grounds
Crispell Drive
Cherry Avenue

Path from Goodwin Bridge empties into a parking lot

Bicycle racks in front of Clark Hall are heavily utilized; this is an ideal spot for a future bicycle corral

become more bicycle accessible with appropriate signage and gate modifications.
- Encourage support of proposed City bicycle pathway along west side of Emmet Street from the Goodwin Bridge to Arlington Boulevard.
- Investigate multi-use pathway connecting Copeley and Millmont at the Arlington Boulevard intersection.
- Encourage multi-use pathway along the north side of rail line from Emmet Street to Old Ivy Road for increased University bicycle and pedestrian access as well as to support the proposed regional Three-Notched Trail system.
- Encourage signage of U-Heights/Zehmer Hall connection along Kearney Lane (gravel).

Signage Improvements

- Encourage increased "Share the Road" signage along roads too narrow for bicycle lanes.
- Signage/pavement markings are needed to indicate a bicycle zone exists northwest of Goodwin Bridge in the University Hall parking lot.

Central Grounds

Bicycling around Central Grounds can be challenging. A significant hill exists on University Avenue, which is heavily used by vehicles as well as UTS and CTS buses. A heightened sense of awareness and confidence is needed to ride on many roads in Central Grounds.

Route Improvements

- Encourage bicycle lanes within Central Grounds where road widths exceed 15 feet.

Signage

- Encourage increased "Share the Road" signage along roads too narrow for bicycle lanes.
- Encourage more effective signage for designated dismount zones around Clark Hall, in front of Garrett Hall and along the Lawn.
- Encourage signage requiring bicycle dismount from 8:00am-5:00pm within Newcomb plaza.

Storage

- Increase bicycle racks around Alderman Library, Clark Hall and Cabell Hall, preferably in the form of bicycle corrals.
- Campbell Hall wood shop rack gets no use, but café area needs storage racks
- Memorial Gym – Narrow racks by Nameless Field are not useful – need wider spacing. More storage needed by the gym area.
- Academic Village – Parking courts behind Pavilions are a good opportunity for storage.
- The Corner – bicycle storage needed throughout
- South Lawn – Difficult to access storage placed by Old Cabell, Bryan, Wilson Halls. Ad hoc paths from top of hill to JPA are dan-

gerous – but access is needed.

West Grounds

Similar to Central Grounds, West Grounds has a relatively high amount of vehicular traffic. Most bicyclists in West Grounds use Alderman and McCormick Road, which are currently absent of bicycle lanes.

Routes

- Encourage bicycle lanes within West Grounds where road widths exceed 15 feet.
- Increase bicycle lanes near and around the McCormick/Emmet/Stadium intersection.
- Encourage improved bicycle connection between Gooch and Hereford.

Signage

- Encourage increased "Share the Road" signage along roads too narrow for bicycle lanes.
- Encourage signage requiring bicycle dismount from 8:00am-5:00pm along Engineers Way (Thornton Hall running from McCormick Road to the Whitehead Road parking lot).

Storage

- Encourage increased storage facilities at Alderman dorms, especially around the dining halls.
- Encourage increased storage facilities near the stadium, potentially using the parking lot for secure storage and for commuter link options.

Bicycle storage on The Corner is insufficient

On roads too narrow for lanes, install "Share the Road" signs

Engineers Way is used heavily by pedestrians and is a designated dismount zone.

Valley Road provides a quiet alternative to JPA

Bicycle lanes on JPA help mitigate conflicts from heavy traffic

South Grounds

Bicycling the South Grounds health system area is challenging especially during morning and evening rush hour. Bicycle lanes exist in this area as well as a number of quieter routes that make South Grounds riding manageable.

Routes

- Encourage bicycle lanes within South Grounds where road widths exceed 15 feet.
- Encourage a median cut through on Jefferson Park Avenue at the intersection of Valley Road, for southbound bicycle traffic.
- Ensure that a bicycle connection remains at the South Lawn after Valley Road is closed.

Signage

- Encourage increased "Share the Road" signage along roads too narrow for bicycle lanes.

Storage

- Encourage a bicycle corral near Jordan Hall and the Health Sciences Library.
- Encourage an increase of bicycle storage facilities near McLeod/ MR-5 and the Old Hospital picnic area.

Funding Opportunities

(From Charlottesville's Bicycle and Pedestrian Facilities Master Plan, Chapter 6, pg VI-8 – VI-11)

Funding sources can be grouped as either public or private. A coordinated approach to funding should be developed since neither sector will have the resources to fund projects alone. Public/private sector cooperation at all monetary levels is the trademark of a successful funding strategy. The following discussion describes public and private sector funding opportunities:

Section 2.3
Funding Opportunities

Public Sector Funding

The Highway Construction Fund provides for highway construction or improvement projects that include bicycle facilities. The proposed project must be in the Virginia Transportation Development Plan in order for VDOT to consider using highway construction funds for the construction of bicycle facilities. This is the most common source of VDOT funding for bicycle facilities.

TEA-21 Transportation Enhancement Program

The Transportation Enhancement Program is funded through the 1997 Transportation Equity Act for the 21st Century, more commonly known as TEA-21. This federal program is managed and administered by VDOT at the state level. In order to be eligible for funding, a project must meet the following criteria:

- A relationship to the surface transportation system
- Qualifies under one of the Enhancement Program Categories (paved shoulders, bicycle paths, bicycle lanes, bicycle racks and lockers, development of education materials, safety campaigns and programs, safety training, and activities related to safety enforcement are all eligible projects)
- Formally endorsed by a local jurisdiction or public agency as evidenced by a resolution and commitment of a 20% minimum local match
- Must be endorsed by the MPO, if within a Metropolitan Planning Organization (MPO) area
- A duly advertised public hearing must have been held on the project
- Provides people with better access to jobs, services, and trade centers
- Encourages private-sector development patterns that achieve these goals

TEA-21 Department of Rail and Public Transportation

Similar to the TEA-21 Transportation Enhancement Program, TEA-21 legislation also provides money for enhancements to transit systems including the accommodation of bicycles, bicycle access, and multi-modal connections. Projects typically funded include installation of bicycle storage facilities and the installation of equipment for transporting bicycles on mass transit vehicles.

State Aid Transit Grants

The Virginia Department of Rail and Public Transportation also administers state aid grant programs. Approximately $100 million in state grant money is available each year for transit systems including bicycle accommodation. Although no minimum match is required, a local match of 20% is more likely to receive funding than a project with a match of 5%.

Virginia Recreational Trails Fund

The Virginia department of Conservation and Recreation (DCR) administer the Virginia Recreational Trails Fund. Grant money through this program is available for the purpose of providing and maintaining recreational trails and trail-related facilities. Eligible activities include, but are not limited to:

- Development of urban trail linkages near homes and workplaces
- Maintenance and restoration of existing recreational trails
- Easement acquisition and development for trail corridors in a state or local trail plan
- Construction of new trails that meet identified needs on state, county, municipal, or private lands
- Construction of new trails on federal lands if certain conditions are met

402 Highway Safety Program Annual Grants

Overall, the diversity of eligible programs ranges from prevention programs to motorcycle safety and child safety/safety belt use. Bicycle and pedestrian safety is also an eligible program. Each application must identify a specific issue (i.e. bicycle safety) and present a plan to address that issue. Proposals may address efforts to start a new program or they may look expanding an existing program.

402 Highway Safety Program Mini Grants

Similar to the annual grant program except that monies are available throughout the entire year while funds last. This enables localities and others to react to safety issues that may suddenly arise in their communities.

Private Sector Funding

Corporate Grant Foundations

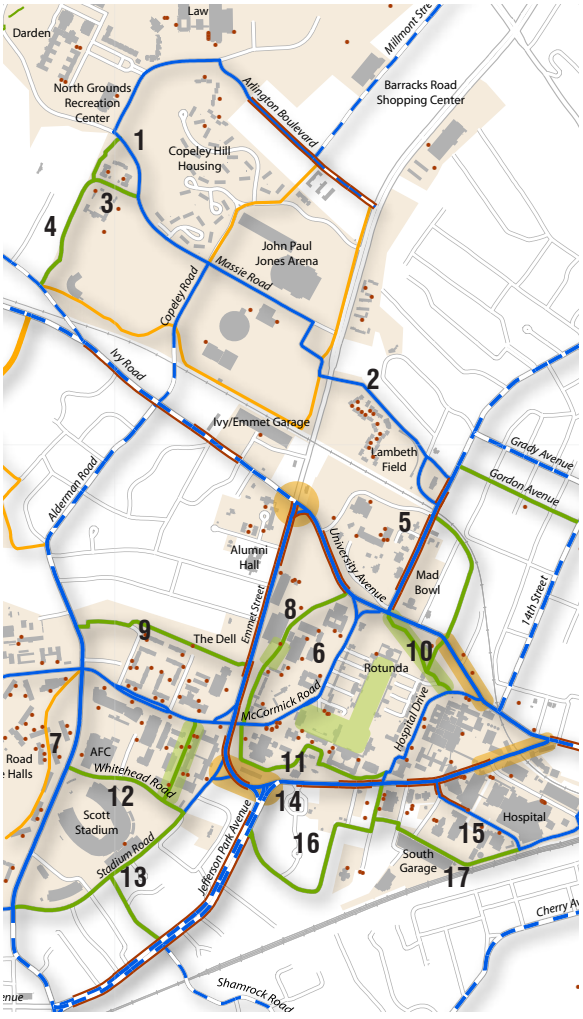
Corporate foundations may be locally based or national. Typically a list of corporate grant foundations can be found on the Internet or in the library. The list provides type(s) of projects that the foundation generally donates money too, typical amounts of grants, and information on how to apply. Grant amounts can range from the hundreds well into the millions of dollars. Corporate grant foundations support projects with local public and political support for the specified project. This support most often comes in the form of funds raised from the community and/

or appropriated by local government. Most corporate grant foundations do not fund maintenance activities but will be interested in how the project will be maintained once it is built.

Civic/Student Organizations

Local civic and student organizations that will benefit from a bicycle and pedestrian project should be mobilized behind the project. These organizations may include a variety of University clubs.

Appendix I
Route Details



North Grounds

Main Routes

1. Massie Road connector to Nash Drive (Law School): 0.75 mile, steady low grade hills
2. Rugby Road-Massie Road connector: 0.5 mile, moderate hill

Quiet Routes

3. Faulkner Way-Ivy Drive parallel corridor: 0.3 mile, moderate hill
4. Massie Road-Ivy Drive Connector: 0.1 mile, hill

Central and West Grounds

Main Routes

5. Rugby Road from Grady Avenue to University Avenue: 0.38 mile and moderately flat
6. McCormick Road: 0.68 mile, flat with moderate hill near Clark Hall
7. Alderman Road from McCormick Road to Jefferson Park Avenue: 0.7 mile, moderate hill

Quiet Routes

8. Newcomb Road, from University Avenue to McCormick Road: 0.33 mile, moderate hill, passes through bicyclist dismount zone
9. The Dell connector, from Alderman Road, north side of graveyard to Emmett Street: 0.35 mile, moderate hill and parts gravel
10. Shared bicycle-pedestrian pathway in front of the Rotunda from the intersection of Rugby Road and University Avenue to Hospital Drive: 0.2 mile, hill
11. Cabell Drive, from McCormick Road to Hospital Drive: 0.4 mile, flat, route partially through parking lot and shared bicycle-pedestrian pathway
12. Whitehead Road: 0.2 mile, easy hill
13. Stadium Road: 0.5 mile, rolling significant hills

South Grounds

Main Routes

14. Emmet Street, from McCormick Road bridge, along Jefferson Park Avenue (undivided section) to West Main Street: 0.72 mile, moderately rolling hills
15. Lane Road and Crispell Drive from Jefferson Park Avenue to Roosevelt Brown Boulevard (10th Street Connector): 0.4 mile, moderate hill

Quiet Routes

16. Valley Road: 0.4 mile, moderate hill, quiet residential street
17. Brandon Avenue-Crispell Drive: 0.3 mile, primarily flat, access to Crispell Drive through Elson Student Health Center parking lot

Appendix II
Glossary

Shared Lane:
A route in which bicyclists and automobiles share a similar lane that is not divided by a painted line, but appropriately signed. Shared lanes are proposed in areas with a minimum lane width of 12 feet and a maximum of 15 feet and assumes cars will stay to the left while bicycles, except when turning, will stay to the right.

Bicycle Lane:
A bicycle lane can be defined as that portion of the road that has been set aside for the use of bicyclists, through lane striping and pavement markings.

Multi-Use Paths:
Multi-use paths are pathways shared by bicyclists and pedestrians that are not parallel or immediately adjacent to roads. Multi-Use paths consist of asphalt, concrete, gravel or brick material. Bicyclists are required to yield to pedestrians along multi-use paths and maintain low speeds.

Sidewalk:
A sidewalk is defined as a walkway parallel and immediately adjacent to a road.

Fixed bicycle rack:
A bicycle rack permanently attached to a surface and usually part of the original site plan of a buildings design.

Mobile/unattached bicycle rack:
Bicycle racks that are added near a building in order to satisfy an increase or unforeseen demand for bicycle parking.

Bicycle corrals:
Bicycle storage facilities and potentially other bicycle related amenities grouped together in popular bicycle parking areas.

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