

Draft Framework - Bicycle Plan Update - August 25, 2017

KEY

Black – Existing MTP language

Purple – Working Group or BAC recommendations

Red- County staff recommendations

A. Introduction, Context & Summary

Transportation policy for Arlington County is expressed through the Master Transportation Plan (MTP). Arlington’s MTP is comprised of eight elements with the *Goals and Policies* document stating Arlington’s transportation vision and its primary goals. The *Goals and Policies* document also provides a comprehensive list of transportation policies. Each of the modal elements, such as the *Bicycle Element*, reflect the overall vision and policies while focusing upon the subject travel mode. It is the intent of the *Bicycle Element* to provide policy guidance and specific project proposals for enhancing transportation by bicycle that effectively meshes with Arlington’s overall transportation plan.

The MTP expresses six primary goals for transportation in Arlington. Those goals are: to provide high-quality transportation services, to move more people without more traffic, to promote safety, to establish equity, to manage effectively and efficiently, and to advance environmental sustainability. The MTP also states three general transportation policies. They are the integration of transportation with land use, supporting the design and operation of complete streets, and managing travel demand and transportation systems.

Arlington County first developed a bicycle master plan in the early 1970’s. That document established the first planned network of bicycle and pedestrian trails as well as signed on-street routes. The comprehensive rewrite of the Arlington *Master Transportation Plan*, which was adopted in 1986, brought bicycles firmly into the County’s multi-modal transportation planning. Subsequent bicycle plans adopted in the 1990s added elements related to secure bicycle parking and bicycle lanes. The *Bicycle Element* of the MTP that was adopted in 2008 incorporated an expanded bicycle network plus extensive attention on educational and informational activities to encourage more travel by bicycle.

Since adoption of the *Bicycle Element* in July 2008, there have been substantial changes to the bicycle environment both in Arlington, the Washington, DC region and nationally that have changed the landscape for bicycling in urban areas. One of the most significant changes has been the establishment of the regional Capital Bikeshare system which has gained widespread regional support. In addition, in recent years, several types of enhanced on-street bicycle facilities, such as buffered and protected bicycle lanes, have been implemented regionally. Changes to national engineering and design guidance have also enabled greater utilization of innovative bicycle facility treatments. Moreover, during the past decade there has been substantial growth in bicycle local usage and awareness which necessitate making further revisions to the County’s plans for how bicycling should be provided for and how to achieve more equity between travel modes and traveling populations.

This update to the 2008 *Bicycle Element* document carries forth the overall goals and policies of Arlington's *Master Transportation Plan* while simultaneously bringing the plan up to date with the advances of the past ten years and looking ahead to what the community desires for the next decade. Consequently, this update includes both policy language from the 2008 *Bicycle Element* and new policy and implementation action statements.

This update of the *Bicycle Element* focuses on increasing the use of bicycles as a transportation mode in Arlington by broadening the population of persons that feel safe and comfortable riding bicycles on our streets. The primary initiatives of that objective are to upgrade the bicycling network – achieving a comprehensive network low-stress bicycling routes - and making bicycling a “normal” activity for persons of all ages and abilities. In addition to facility upgrades, achieving the objective will include actions to directed towards education, raising general awareness and further integrating consideration of bicycling needs in all aspects of planning, design, operation and maintenance of our community resources. Increasing the use of bicycles as part of multi-modal travel should also be facilitated.

B. Vision & Goals

Vision:

Arlington is a vibrant community where bicycling is comfortable and enhances the quality of life for individuals of all ages and abilities as an integral part of the county's transportation system.

Behind the Vision:

The vision statement captures a few important themes.

- Arlington's continued success as a thriving economy with healthy and engaged citizens cannot be achieved without continuing to build infrastructure and culture that enables people to choose active transportation for more trips.
- Comfort suggests that biking is a safe, convenient and attractive travel option.
- “All ages and abilities” is a priority for the plan, supporting the planning and building of bicycle facilities for individuals of various ages and comfort levels.
- Bicycling supports the Master Transportation Plan's general policies of integrating transportation with land use, supporting the design and operation of complete streets and managing travel demand and transportation systems.

Goals:

- A. Increase bike ridership by building culture and infrastructure that encourages more trips by bicycle
- B. Establish and continuously improve a bicycle network that supports community connections and complete streets
- C. Improve comfort and safety for bicyclists of all ages and abilities
- D. Manage an efficient and effective bike system that supports living in Arlington
- E. Promote biking as an integral part of a sustainable and equitable transportation system

- ~~A. Complete the Bikeway Network~~
- ~~B. Increase Bicycle Use~~
- ~~C. Improve Bicycle Safety~~
- ~~D. Manage and Maintain the Bikeway System~~
- ~~E. Integrate All Modes of Transportation with Bicycling~~

C. Policy Statements

Policy 1 – Complete and continuously improve, the Bikeway Network. Focus on overcoming barriers and completing network connections. Enhance bikeway information and way-finding.

Implementation Actions

- Implement currently funded projects ~~listed in Appendix B, Table B-1,~~ as soon as practical.
- Fund and Implement planned projects ~~listed in Appendix B, Tables B-2, B-3, and B-4~~ and also trail improvements identified in the Four Mile Run Restoration plan. Initial emphasis should be on implementation of the identified “short-term” projects. Regularly implement projects ~~in Table B-3~~ as opportunities arise.
- Add grade-separated crossings of major highways where feasible, improve existing crossings of major highways, and develop improved alternatives for crossing or circumnavigating large federal institutions and properties, such as Fort Myer, the Pentagon complex, and Arlington National Cemetery.
- Work with regional partners to ensure that bikeways are provided on and across VDOT and National Park Service (NPS)-owned arterial roadways, interstate and parkway corridors, as part of all projects to improve, or reconstruct these roadways. *Increase engagement with Federal landowners and regional neighbors to improve interjurisdictional bicycle facilities.*
- Coordinate with the National Park Service to complete implementation of remaining trail-improvement projects identified in the NPS’s ~~1990 Paved Recreational~~ **2016 Paved** Trails Plan.
- Evaluate, expand and upgrade the signed bike route system, and improve wayfinding information for bicyclists provided for bicyclists provided both on-site and electronically.
- *Develop connector trails or routes that link low-volume streets and establish corridors.*
- *Plan for new trail opportunities by identifying desired land acquisitions or easements needed for trail extensions or connections.*
- *Provide additional multiuse trails where significant community demand is expected. Look to adopted plans such as the Public Open Spaces, corridor, sector and neighborhood conservation for guidance.*

Policy 2- Provide a network of context sensitive, low-stress bicycling routes that connects residential areas with commercial centers, transit stations, schools and County facilities.

Implementation Actions

- Plan and construct new shared-use trails and trail connections in conjunction with new development. Focus on trails, bridges, and overpasses that link with other sections of the bikeway network, thereby enhancing the connectivity of the entire network and with regional bikeways in adjacent jurisdictions.
- Improve the safety and comfort of bicycling on existing north-south routes, and identify opportunities to provide additional low-stress corridors for north-south bicycle travel.
- Improve the connectivity of low-stress routes to public facilities such as schools and community centers.
- Utilize established project prioritization criteria for the purposes of funding applications and staff support.

Policy 2-3 – Provide high-quality bicycling facilities as part of all street improvement projects. Use marked bicycle lanes on arterial streets. Enhance on-street bicycling facilities with painted buffers or physical separation where feasible and applicable.

Implementation Actions

- Develop the bikeway network by installing proposed bike lanes, signed bike routes, and other bicycle facilities on arterial roadways and neighborhood principal roadways in conjunction with street/bridge improvements or as independent bicycle projects.
- Provide bikeways on new or existing streets in conjunction with major new development or redevelopment activities in Pentagon City, Crystal City, the Potomac Yard North and South Tracts, Rosslyn and other areas.
- As appropriate, pilot innovative facility designs (see Appendix A for a description of these measures) including – shared-lane pavement markings (sharrows), colored bicycle lanes, bicycle boulevards, bicycle box markings, and bicycle-specific traffic signal heads.
- Improve bicycle access to shopping districts, employment centers, and activity centers in nearby neighboring jurisdictions including Georgetown, **National Mall and Southwest Waterfront** in D.C.; Potomac Yard in Alexandria; **Falls Church City**; and Bailey’s Crossroads and Seven Corners in Fairfax County.
- New and renovated shared-use trails and bike lanes should be designed and constructed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) **and National Association of City Transportation Officials (NACTO)** guidelines.
- Incorporate innovative street and bikeway designs, consider applications and research from across the USA and world.
- Allow for design flexibility including pilot installations and trails of “tactical urbanism” applications.
- Ensure that adequate attention, including the use of traffic signals, beacons, markings as appropriate, is given towards getting bicyclists across challenging intersections.
- Implement traffic calming and other traffic speed management as needed to provide for safer sharing of roads amongst bicyclists and motorists.

- Review existing arterial street cross-sections and look for opportunities, through restriping or reconstruction, to reallocate street space to enhance bicycling safety and access.
- Consider addition of contra-flow bicycle facilities to one-way streets, where safe and appropriate.

Policy 3 4- Create a community culture that embraces bicycle use as a mainstream travel mode. Raise visibility and participation of bicycling in Arlington through events, prominent facilities and encouragement activities.

Implementation Actions

- Expand the encouragement program of Bike-Arlington, including map publication, Bike-to-Work Day, the Community Bike Ride, Car Free Day, valet bicycle parking at events and route assistance. Bikeway maps, program brochures, and safety education materials should be distributed widely and include guidance for safe and courteous use of shared-use paths and streets especially those facility types that ~~are~~ may be relatively new to the public.
- Continue to promote bicycling as a part of the County's Transportation Demand (TDM) activities aimed at businesses, employees, and residents.
- Undertake regular surveys or focus groups to determine what actions might encourage greater bicycle use. Identify new marketing approaches to reach populations that are not regular bicyclists through the provision of Bicycle Program information and encouragement messages.
- Promote bicycling as an activity that will improve citizen health and fitness and provide convenient recreational opportunities. The County should support a variety of programs to encourage bicycling for transportation, fitness, and ~~fun-recreation. which may include:~~
- Incorporate information about Arlington's bicycle registration program in County publications.
- Undertake measures recommended for achieving Gold Level Bicycle Friendly Community status, an honor awarded by the League of American Bicyclists for communities with exemplary bicycle programs and commuting usage of bicycles.
- Enhance consideration of and outreach to those bicyclists who are traditionally underrepresented in County planning and programs. Such outreach should target persons of lower incomes, recent immigrants and non-residents who pass through Arlington.
- Include outreach to child cyclists and parents through school-based bicycle safety and encouragement programs.
- Provide outreach, including training classes, for the less-confident cyclists.
- Continue support for the BikeArlington programs for community outreach, education and encouragement.
- Clarify where electric-bikes can legally ride and encourage their use in appropriate locations, particularly for those persons who may need physical assistance when bicycling.
- Seek to achieve specific goals for bicycle use by Arlington residents and local workers including: travel to work, travel to school and non-work/non-school transportation.
- Request County Police and communications staff work together to address reducing bike theft.

Policy 4 5 – Require the provision of appropriate facilities to support bicycling such as showers, lockers and bicycle parking as part of all new property developments.

Implementation Actions

- Refine bicycle parking standards per detailed recommendations in Appendix D. Periodically review the bicycle parking requirements for new developments, and update as needed.
- Assist the managers/owners of retail, office and multifamily residential properties in selecting the appropriate locations and equipment needed to provide high-quality bicycle parking at existing buildings and complexes.
- Ensure that the new parking and shower facilities required in site plan conditions for developments meet minimum standards for quality and location.
- Explore whether the County’s zoning ordinance can be amended to require all commercial and multifamily residential buildings to provide convenient and secure bicycle parking.
- Review existing site plan bicycle parking conditions and adjust as needed.
- Implement measures to achieve bicycle parking upgrades in by-right and other existing private properties.
- Provide bicycle parking in buildings and on-street that can accommodate cargo bikes.
- Provide more bicycle maintenance stands and maintenance programs in lower-income areas.
- Encourage employers to provide their staff who bike to work to receive cash compensation in lieu of subsidized motor vehicle parking at employment sites.

Policy 5 6– Annually collect bicycling data on County streets and trails.

Implementation Actions

- Develop methods of bicycle-use data collection, establish a baseline, and continue regular measurement to monitor usage. Establish locations where regular bicycle counts are made and volumes are compared over time to determine changes in usage.
- Operate trail and bikeway data collection system in an efficient, sustainable and comprehensive manner. Continue to provide open access to collected data.
- Conduct periodic travel surveys that include bicycle use questions.
- Expand bicycle counting efforts.
- Utilize bicycle count data in project prioritization, identification of bicycle facility needs, and other decision making regarding the transportation network.
- Utilize bicycle count data to develop methods for estimating future bicycle use.

Policy 6 7– Expand the bike-sharing system to each area of Arlington and coordinate with regional partners to increase the system coverage. Implement a bike sharing program in the transit corridors and other densely developed areas.

Implementation Actions

- ~~Initiate a bike sharing program. Coordinate with any programs in adjacent jurisdictions.~~
- Support privately provided loaner bicycle programs such as by businesses for their employees and hotels for their guests.

- Reduce barriers to use of Capital Bikeshare by lower-income users.
- Site new and relocated bike share stations to attract more system users and improve non-motorized access to County facilities and transit services.
- Consider how a GPS based, dock-less bike sharing system could be integrated with or complement the existing Capital Bikeshare system and other transportation services.
- Promote bike sharing as a preferred travel mode for the first and last mile trips to and from regional transit services.

Policy 8 – Enhance the safety of bicycling in Arlington by addressing unsafe bicyclist and motorist behaviors. Increase enforcement of traffic law enforcement pertaining to bicycle safety.

Implementation Actions

- Conduct bicycle safety and maintenance courses through the Arlington Adult Education and BikeArlington programs, and encourage community colleges, bicycle organizations, fitness clubs, and other educational institutions to initiate safety instruction. Consider providing financial assistance to institutions or to students as an initiative to encourage participation.
- Produce Spanish-language and multilingual bicycle safety education literature and media campaigns and continue to participate in the Washington region’s multi-lingual Street Smart safety campaign.
- Promote proper shared-use trail behavior through signs, trailside displays, brochures, video education programs, and recreation program classes.
- Coordinate with local law enforcement officials to implement bicycle safety enforcement programs directed towards bicyclist and motorists who commit traffic violations including targeted efforts at locations with regular bicycle/motor vehicle or bicycle/pedestrian conflicts.
- Continue to conduct safety outreach programs such as headlight and helmet distributions that reach young cyclists and other persons of limited incomes.
- Offer training to continuously upgrade planning, engineering, law enforcement and maintenance staffs’ knowledge of best practices to improve cyclist safety.
- Initiate physical improvements to streets and bikeways and law enforcement efforts, as appropriate, to address identified bicycling safety concerns.
- Encourage greater use of bicycles by local police as part of routine and special patrols, including on multi-use trails.
- Utilize public awareness campaigns, law enforcement and physical barriers where applicable, to keep cars from obstructing bicycle lanes.
- Develop a more integrated County approach to bicycling and travel safety.
- Coordinate bicycle safety efforts as part of more comprehensive County “Vision Zero” program.

Policy 7.9 – Conduct an ongoing safe bicycle routes to school program including travel safety education programs for children and adults. Support an ongoing Safe Routes to School program that includes Education, Enforcement, Engineering and Evaluation interventions. This program should be developed in

conjunction with the Arlington Police Department and Arlington County Schools, including administrators, teachers, parents and students. Over time include all public and private schools in Arlington.

Implementation Actions

- Coordinate with Arlington Public Schools to provide Arlington elementary and middle school students training in pedestrian and bicycle operations, **etiquette** and safety, and continue offering bicycle and pedestrian training in high school physical education program.
- Designate recommended bicycling routes to school. Criteria for ‘safe’ routes should be established jointly among the staff of the Arlington Public Schools, Transportation, and Police. Continue to make necessary engineering improvements to the public infrastructure to increase the number, and distribution of routes that can be recommended for bicycling to school.
- Work with Arlington Public Schools to conduct County-wide school transportation surveys on select days and develop multimodal travel profiles of student, teacher, and staff trips to and from school.
- Develop Countywide and school-based implementation plans for Safe Routes to Schools programs.
- **Expand bicycle safety education in schools including as part of physical education and driver training.**

Policy 8 10 – Manage the trails for safety with increased use. Undertake facility improvement projects to address overcrowding and user conflicts on trails and develop instructional materials to encourage safer user practices.

Implementation Actions

- Expand the e-mail bicycle information/alert program to ensure that information alerts address the entire Arlington and regional bicycling networks, and incorporate additional communication methods, such as radio and television traffic reports, traffic alert Web sites, and/or other technologies.
- Continue to operate and expand promotion of the County spot-improvement request system that allows individuals to report maintenance problems in writing, over the phone, via e-mail, and by other methods.
- Adopt the maintenance program and practices in ~~Appendix E~~ TBD.
- Incorporate County trail repaving/repair into a regular maintenance cycle similar to that used for County streets including periodic pavement quality assessments. **Address maintenance for all trails across private property that have public access easements.**
- Prioritize trail widening and trail/roadway intersection projects, especially in those areas where multiple crashes or ~~near-crashes~~ **frequent user conflicts** have been documented.
- Undertake safety evaluations of street/trail intersections. Identify how safety might be improved through traffic signals, signage, markings, traffic calming, tunnel/overpasses, or other measures.
- Implement measures such as new trail entry points and GPS Coordinates to give emergency personnel and vehicles better access to the trail system.

- Protect the trails and **significant** buffer areas against encroachments from adjacent roadways and new development.
- Promote volunteer maintenance and enhancements to trails including establishment of a “share the trail” program.
- Conduct regular patrolling of trails by Police, Park Rangers and volunteers particularly during early morning and evening hours.
- Review trail width standards – some wider for heavy use, some narrower for light use
- Undertake educational campaigns both on the trails and through various media that emphasize proper behavior and etiquette by all trail users.
- Improve trail user security and safety through installation of measures such as trail lighting, convex mirrors and selected landscaping cutting or removal that increase user and site visibility.
- Integrate bicycle access and use in park design and recreational programming.
- Expand the bikeway network wayfinding signage system. Implement trail identification signs, markers or art features at key trail entry points.
- **Establish guidance as to when and where it is appropriate to have night-time lighting on trails.**

Policy 9 11 - Provide convenient, covered and secure bicycle parking at transit stations, schools, public facilities and commercial centers.

Implementation Actions

- Coordinate with WMATA and private property owners to increase bicycle parking at Metrorail stations, initiate new bicycle/transit integration services, and manage existing services. The quality and quantity of bicycle parking should be upgraded at Metrorail stations, especially Rosslyn, Crystal City, Pentagon City, Ballston-MU, and Clarendon. Provide sufficient amounts of free parking that offer a high level of security and weather protection.
- Construct bicycle stations at a minimum of one of the following Metro stations – Ballston MU, Rosslyn, East Falls Church and Pentagon City.
- Ensure that new **streetcar and** commuter rail cars can accommodate the transport of bicycles.
- Assess the market for integration of bicycle transportation with carpools, vanpools, taxis, car-sharing programs, and commuter bus and commuter rail services.
- Improve the security of bicycle parking at Metrorail stations including greater provision of bicycle lockers, monitored bicycle stations and enhanced surveillance.
- Increase the supply of bicycle parking at schools to meet established per-student and per-staff ratios. Provide secure parking for staff and locations for parent/child bike drop-off.
- Work with property-owners to enhance the quality and quantity of bike parking in commercial centers. Undertake installations within streetscape – targeting those locations with little existing secure parking. Require new/better parking on private property as part of development approval and incentivize improvements at other times.
- Provide opportunities for e-bike charging at commercial, multi-family and public facilities.
- Enhance integration of bicycles with transit operations.

- Regularly assess the availability of secure, bicycle parking at all County facilities and significant park and recreation sites. Upgrade bicycle parking quality and quantity as part of regular facility/site improvements.

Policy 12 – Implement measures to maintain safe and convenient bicycle travel during/after inclement weather and with street and trail construction.

Implementation Actions

- Develop Maintenance of Travel (MOT) plans that maintain safe, continuous bicycling routes as part of all plans for significant construction in the public right-of-way. Vigorously enforce MOT requirements throughout the duration of construction projects.
- Designate high-usage, trails as transportation corridors that require snow clearance and other regular maintenance.
- Enhance trail and bike lane snow/ice/debris clearance practices to minimize the amount of time when such bikeways are not usable.

Policy 13 - Design trail corridors to be “greener” reducing impervious surface area and enhancing planting opportunities.

- The design of new or significantly widened trails should go through Arlington’s environmental assessment process early in the design stage.
- As appropriate, utilize permeable materials for trail surfaces.
- Adjust design standards to allow for increased planting of trees, as appropriate, within trail corridors.

D. Facility Design Principles

It is important the Arlington utilize the best design guidance when developing and operating its streets and bikeway facilities. Two national organizations, the National Association of City Transportation Officials (NACTO) and the American Association of State Highway Transportation Officials (AASHTO) have published bicycle facility design guide books that are widely used in the United States. County staff, and consultants working for Arlington, should utilize the most current editions of such guides, and other relevant design guides and research, when producing designs for construction and operation of local streets and bicycle facilities.

Street width in excess of what is needed for motor vehicle travel may provide an opportunity for right-of-way for shared-use trails, bike lanes, or widened sidewalks.

1. **Trail Widths** – shared-use trails should generally be a minimum of 10 feet wide; however, a 12-foot width should be considered where feasible and warranted by user demands. Tunnels and bridges should be at least 2 feet wider than the approaching shared-use trails. A 2-foot minimum

graded grass shoulder area should be provided adjacent to each side of shared-use trail or, where appropriate, a 2- to 3-foot wide crushed rock path may replace one grass shoulder. Connector trails with expected low volumes and travel speeds may be constructed **with a paved surface that is 8 feet wide.**

2. **Bicycle Accommodation on Sidewalks** – For adults, sidewalk bicycling is generally appropriate or permitted **only** in certain situations:
 - a. Where shared use paths must merge with existing sidewalks to maintain continuity.
 - b. Where existing sidewalk segments provide the neighborhood linkage to and from shared-use paths.
 - c. Where one-way sidewalk bicycling may be determined to be the safer and preferred accommodation for most cyclists, such as a location where roadway space is severely limited and traffic volumes and/or speeds are high.
 - d. Where access over or under major highways, railroads, or waterways is available only on existing roadways that have minimal travel space.
 - e. Where designation is determined to be a measure needed to help ensure pedestrian and bicyclists’ safety on facilities that are being shared.
 - f. Where no prohibitions against on-sidewalk bicycling have been enacted.

Segments of sidewalk where more than occasional two-way bicycle travel is expected should have a minimum sidewalk width of 10 feet, with a preferred width of 12 to 14 feet. If one-way bicycle access is designated for the sidewalks on *each* side of the street the minimum sidewalk width may be 8 feet. A utility buffer of at least 2 feet, preferably 4 feet, is recommended.

3. **Bike Lane Widths** – Designated bicycle lanes along streets without parking require a width of ~~3.0~~ **4.0** to 5.0 feet, plus the width required for any concrete gutter. Bicycle lanes along streets where parking is permitted should be 5.0 to 6.0 feet wide. **Additional bicycle lane width, in the form of painted buffers and/or physical separations, should be considered whenever feasible.**
4. **Crosswalk Widths** – Shared-use trail crosswalks and curb ramps are to be a minimum of 10 feet in width and generally as wide as the intersecting trail.
5. **Grades** – Shared-use trails are to be constructed with a relatively flat grade and smooth surface—generally having no more than a 5 percent grade for long sections and an 8 percent grade for short runs (less than 150’ in length), with switchbacks and pull-off areas provided as per ADA guidelines on long grades. Cross slopes on trails should be between 1 and 3 percent.
6. **Visibility** – Bikeways are to be designed to provide high visibility between motorists, pedestrians, and bicyclists at potential points of conflict, including warning signs for motorists, pedestrians, and bicyclists, and, where appropriate, removal or relocation of signs, poles, vegetation, or other obstructions.
7. **Trail Accessibility** – Shared-use trails are to be designed with wide curb cuts suitable for wheelchair and bicycle use; any necessary utility openings, such as manholes and sewer inlets, are to be flush with the surface and of a design suitable for safe wheelchair and bicycle travel.

8. **Vertical Clearance** – AASHTO establishes the minimum height clearance for designated multiuse shared-use trails as 8 feet.¹ Ten feet or more is required to provide clearance for maintenance vehicle access. In the United States, underpasses have become undesirable and little used in many communities. One reason is that most were built to be very low and narrow, making users feel highly constrained and severely limiting sight distances on the approach and from inside the facility. A higher vertical clearance and wider opening greatly increases the users' sense of safety and comfort.
9. **Curve Radii** – Whenever warranted and feasible the minimum radius of curvature for shared-use trail curves should be 100 feet, corresponding to safe travel at 20 miles per hour.
10. **Pedestrian Accommodation** – Designated shared-use trails are to have design features satisfactory to all users including pedestrians. **On heavily used trails, physical separations and lane markings should be considered as measures to reduce conflicts between pedestrians and bicyclists.**
11. **Lighting** – Lighting is desired along designated commuter shared-use trails and in underpasses, at a minimum level of one-half foot candle (5.4 lux) for shared-use paths and two foot candles (21.5 lux) for underpasses. Vandal-resistant fixtures should be used.
12. **Motor Vehicle Barriers** – Shared-use trails are to be designed to minimize potential use by unauthorized motor vehicles, with brightly painted and reflective bollards, installed on trail centerlines, are to be used only where other enforcement methods are unsatisfactory.
13. **Trail Crosswalks** – Intersection and mid-block crossings of streets, by shared-use trails should be designated by high-visibility markings.
14. **Traffic Signal Detection** – Traffic signals should be constructed and maintained so that the vehicle-detection sensors will respond to bicycles.
15. **Environmental and Historic Considerations** – Design of shared-use trails is to minimize disruption to historic resources, trees, and the natural environment. Shared-use trail designs should undergo public review focusing on impacts to natural, scenic, and historical resources, as prescribed by public regulations including County Administrative Regulation 4.4. Projects near the Mount Vernon Trail should recognize the national historic designation of the trail and the George Washington Memorial Parkway.
16. **Tree Preservation** – Shared-use trails are to be designed to avoid injury to healthy mature trees and wetlands; however, trails should have relatively straight alignments whenever possible. Landscaping of shared-use trails is to emphasize planting locations and species whose limbs and roots will not intrude into the pathway, require frequent trimming, or create concealment areas. New trees and large shrubs should not be planted **within 10 feet of in locations where their roots could be expected to damage** existing paved trail surfaces.
17. **Trail Landscaping** – Where feasible, landscaping should be used to separate shared-use trails from streets and create an attractive environment.

¹Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials, 1999; page 36.

18. **Design of Traffic-Reduction Measures to Accommodate Bicycle Travel**– Physical turn prohibitors, diverters, street closures, and other physically restrictive measures imposed to reduce motor vehicle volumes should not restrict bicycle traffic, except where necessary for safety reasons or as required by law.
19. **Traffic Calming Design** – Nubs, traffic circles, speed humps, and other devices installed to reduce motor vehicle speeds should not adversely affect bicycle safety.
20. **Trail Buffers** – Shared-use trails should be designed to include buffer areas, a minimum of 25 feet in width, between the shared-use trail surface and adjacent active recreational facilities. Buffers can be reduced to 3 feet in width where a fence, wall, or other barrier is used to separate the trail from other uses.
21. **Street Design** – All new street construction, widening, and extensive rehabilitation projects should include provisions for motor vehicle, pedestrian, and bicycle use. Arterial streets ~~should at least accommodate advanced bicyclists, while and~~ neighborhood streets should be designed to a standard that encourages use by ~~basic and child~~ bicyclists ~~of all ages and abilities~~.
22. **Trail Surface** – Shared-use trails should be paved with a hard, relatively smooth surface. Appropriate materials include asphalt and concrete. Permeable asphalt and concrete applications should be ~~investigated for suitability~~ considered for use, particularly in locations in close proximity to stream Resource Protection Areas.

Bicycle Parking (to be added with next draft)

E. Project Prioritization Principles

Bikeway project priorities are periodically reevaluated in conjunction with funding opportunities, such as the Arlington CIP. Prioritization takes place through a formal process that involves Bicycle Advisory Committee members, BikeArlington staff, and representatives of other agencies as appropriate. The prioritization criteria in the text box below are to be considered in ~~project scoring and ranking determinations regarding resource allocation and timing~~. While these criteria are used to develop project priorities, public input is also considered in finalizing priorities.

Project Prioritization Criteria

1. Importance to bikeway network connectivity.
2. Safety needs and implications.
3. Estimated demand for usage.
4. Potential to attract new bicyclists.
5. Community support.
6. Cost relative to capital budget ~~and availability of non-County funding~~.
7. Ease of implementation, including neighborhood, environmental clearance, and need for additional right-of-way.
8. Availability and quality of existing alternative routes/facilities.
9. Opportunity to achieve cost savings or easier implementation through combination with another project.

Reporting priorities to neighboring jurisdictions, State and regional transportation planning agencies can allow planned projects to take advantage of proximate roadway work by other area agencies.

F. Street & Trail Maintenance Principles (to be added with next draft)

G. Plan Performance Measures (to be added with next draft)