

# Draft Framework

## MTP Bicycle Element



November 30, 2017

## I. The Role of Bicycling in Arlington Transportation

Arlington is a vibrant community, in the heart of the dynamic Washington, DC Metro region. Arlington's transportation network has contributed to a high quality of life in the County by providing various transportation options, making it possible to travel around and through Arlington at all times with relative safety, speed and ease. Bicycling has consistently been one of the transportation options integral to Arlington's successful transportation network.

As continued growth of both the County and the DC region produces more travel demands on the transportation system the need for a robust and versatile multimodal transportation system becomes greater. The value of that versatility becomes most evident during times of extreme stress, such as during natural disasters or major facility shutdowns. In Arlington, it is increasingly important to provide varied options to serve diverse resident and visitor travel needs while also finding ways to reduce the environmental footprint of local transportation systems.

Bicycling plays a unique role in managing transportation demand for the growing population. When using bicycles, people can travel short- and medium-range distances quickly and efficiently while retaining freedom and flexibility in their routes and schedules. Bicycling can connect many origins and destinations to transit stations, conveniently providing "the first mile, last mile" access that allows a broader geographic reach for fixed transit routes. Shifting trips from motor vehicles to bicycles can also improve motorists' travel by reducing congestion and demand for parking spaces. Therefore, when the capacity and quality of the bicycle network is enhanced, travel by transportation modes other than bicycles is often improved as well.

The public cost for building or maintaining bicycling infrastructure is typically many times lower than providing similar facilities for driving or transit. In addition, bicycles take up much less roadway and parking space than motor vehicles. Streets and trails can accommodate many bicycles, moving in two directions, within the same amount of asphalt used by a single motor vehicle travel lane. Similarly, significant amounts of bicycle parking can be placed within smaller spaces than parking lots at low fiscal expense and with minimal opportunity cost. Reducing our community's need to pave areas for travel and parking means that more land would be available for open space or other uses.

Due to its low cost and lack of licensing or other requirements, bicycling is a very accessible travel mode. Bicycling enhances equity in Arlington as it broadens travel opportunities for all persons.

Bicycling and other active transportation modes also enhance the health of our citizens by providing moderate exercise while commuting and undertaking other personal travel. In addition to being clean and quiet, bicycling and other active transportation help to build community. People walking and bicycling are more recognizable and approachable to neighbors and fellow community members than people in cars or other vehicles. Bicyclists can more easily

converse with neighbors, observe happenings in their communities and spend more time traveling on local streets. Bicyclists also help the local economy, as they are more likely than motorists to shop at nearby businesses, to make more frequent visits, and to spend more dollars locally. Having an outstanding bicycling environment is often identified as an important economic asset that attracts both businesses and highly-skilled workers to a community. Bicycling fits well with Arlington’s local values of encouraging all residents to get out and be part of the community.

Currently, the technological state of bicycles is changing. Small, quiet, battery-powered motors can be integrated into bicycles thereby making bicycling accessible for more people and purposes. Travelers who may not have the ability or interest in pedaling bicycles and those who may need some motor assistance when going uphill or carrying large loads or extra passengers are gaining additional transport and route options. These devices provide opportunities for more people to travel in active ways, thereby reducing traffic demands on streets, promoting better public health, developing community and reducing the strain on the natural environment.

## II. Background

### Current Conditions

In 2009 Arlington began collecting data on bicycle use from a network of electronic counters installed at selected locations on area trails and some primary roadways. Utilizing the data collected by those counters, and from the Capital Bikeshare system, the County is gaining a clearer picture of bicycle use in Arlington. In addition, recent estimates from the 2015 Arlington Residential Travel Survey and the 2016 American Community Survey found that bicycling now accounts for 2.4 to 5.0 percent of all commute trips by Arlington residents. Those figures, when compared to estimates from past decades, indicate a more than tripling in bicyclist commute mode share.

The designated bikeways network is comprised of approximately 108 miles of: shared-use trails; marked, protected and buffered bike lanes; bicycle boulevards; and signed bicycle routes. The network serves much of Arlington, provides links to bridges across the Potomac River, and includes trails that extend into neighboring Virginia jurisdictions. The designated bicycle facilities are supplemented by several hundred miles of low-volume residential streets which generally offer convenient and comfortable bicycling routes. However,

#### Arlington’s Designated Bicycle

#### Network, Fall 2017:

Off-Street Trails = 30.0 miles

Bicycle Lanes = 22.0 miles

Buffered Lanes = 1.5 miles

Protected Lanes = 2.0 miles

Bike Boulevards = 2.0 miles

On-street Routes: = 50.5 miles

significant gaps remain in the network, resulting in barriers that leave bicyclists in portions of Arlington disconnected from the overall network.

### **The Master Transportation Plan and Bicycle Element**

The Master Transportation Plan (MTP) Goals and Policies document specifies three general policies that form the foundation of the MTP and, therefore, transportation in Arlington in the years ahead: integrating transportation with land use, supporting the design and operation of complete streets, and managing travel demand and transportation systems. This element of the MTP focuses on bicycle travel, which is greatly affected by land use, street design, traffic volumes, public perception and transportation system management. Bicycling can also affect motor vehicle traffic volumes when substituting for local travel by motorized vehicles.

Arlington County developed its first bicycle master plan in the early 1970's. That document established the first network of bicycle and pedestrian trails as well as signed on-street routes. The 1986 comprehensive rewrite of Arlington's MTP brought bicycles firmly into the County's multi-modal transportation planning. Subsequent bicycle plans 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* (Plan) in July 2008, there have been substantial changes to the bicycle environment 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 introduction of regional bikeshare systems. In addition, several types of enhanced on-street bicycle facilities, such as buffered and protected bicycle lanes, have been implemented. 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 local bicycle 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.

### **The Bicycle Element Update Process**

During the summer and fall of 2017, Arlington County undertook a comprehensive public engagement effort to gain input from a broad cross-section of Arlington residents for an update to the MTP's bicycle policies. That public engagement effort which included: monthly meetings of a citizen advisory panel, an on-line survey, a visual preference survey, presentations to advisory commissions and committees, focus group sessions and dialogues with interested residents provided robust guidance for the plan update. In addition, the draft Arlington Public Spaces Master Plan as well as bicycle master plans adopted by 12 peer communities and recent bicycle transportation research documents were examined to provide useful points of reference for Arlington's Bicycle Element update effort.

The community expressed great interest in bicycle travel and a strong desire for making Arlington a safer and more comfortable place to bicycle. A large percentage (45%) of the respondents indicated that their concerns about the safety of bicycling on Arlington streets is the primary reason why they do not bicycle more often. Building more protected bicycle lanes (64% of respondents), along with expanding the trail system (45%) and enhancing the existing bikeway network (44%) with more low-stress routes, were identified as the best ways for Arlington to achieve greater bicycle safety and more bicycling for transportation. The community responses also favored:

- making bicycle lanes more visible,
- addressing vehicles that obstruct bicycle lanes and
- enhancing bicycle priority on neighborhood streets through motor vehicle diversions, traffic calming and
- greater route connectivity.

This guidance from Arlington’s community outreach is reflected in updated plan’s goals and policy statements.

### **Summary of Revisions**

The primary focus of the *Bicycle Element* is the completion of a more fine-grained and comprehensive bicycle network of trails, bike lanes, and protected or buffered on-street facilities in order to create a safer and more comfortable bicycling experience for persons of all ages and abilities. Bicycling will be a more viable travel option for many Arlingtonians when several key network connections are completed. Enhancements in bicycle parking facilities at transit stations, shopping centers, offices, and in multifamily residential buildings as well as ample shower facilities, lockers and maintenance stands will also make bicycling a more attractive travel option.

The Plan includes an objective of having at least half of all residents ride bicycles for transportation purposes at least occasionally. Such a participation level would indicate that “average” residents find bicycling to be safe and convenient enough for at least some of their transportation needs. Achieving this level of comfort with bicycling will require, in addition to the facility network improvement, an effort by the County to address safety concerns. Many policy proposals in this plan are aimed at achieving greater safety and enhancing user comfort include facility upgrades, enhanced traffic law enforcement, safety education efforts, and promotional events such as mass rides and training classes. Bicyclists and all other travelers, can benefit from a proposed greater emphasis on safety educational and enforcement efforts including the adoption of a “Vision Zero” policy which seeks to end all roadway fatalities. Similarly, Arlington’s “Complete Streets” policy helps all street users by creating safer and more comfortable accommodations for all thereby reducing conflicts between bicyclists, motorists and pedestrians.

All Arlington travelers are expected to benefit from the overall efforts to expand the multimodal aspects of its transportation system. In particular, the effort to rebalance and right-size street space allocation to achieve more Complete Streets (explained in detail in the Streets Element of this plan) will help create safer and more comfortable streets as well as reduce conflicts between bicyclists and pedestrians on sidewalks. Upgrading bicycle access to transit stations, through the construction of secure, sheltered parking, will strengthen the intermodal connection between bicycling and public transit.

This Plan carries forth the overall goals and policies of Arlington's *MTP* while simultaneously bringing the Plan up to date with the advances in bicycle infrastructure, planning, execution, evaluation and technology and community desires that have occurred over the past ten years. The Plan seeks to achieve community desires through many, sustained County actions over the next decade. It 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 are to upgrade the bicycling network through achievement of a comprehensive network of 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 directed towards education: raising general awareness, increasing the use of bicycles as part of multi-modal travel, and further integrating bicycling needs in all aspects of planning, design, operation and maintenance of our community resources. Other aspects of bicycling that are strictly recreational in nature are excluded from this document and may be addressed in the Public Open Spaces Master Plan and other guidance.

### **III. Arlington's Vision for Bicycling**

*Bicycling is an integral part of Arlington's equitable, multi-modal transportation system and provides safe, reliable, convenient and comfortable travel for persons of all ages and abilities.*

The vision statement captures a few important themes:

- Bicycling supports the MTP's general policies of providing multiple viable travel options, supporting the design and operation of complete streets and managing travel demand and transportation systems.
- Providing a safe environment to bicycle within is a top County priority.
- Reliability and convenience are important determinants as to whether bicycling is actually an attractive travel option.
- The level of comfort of a route will affect a person's desire to bicycle on that route.
- Bicycling should be a viable travel person for everyone regardless of their age or physical abilities and skills. Facilities and services should also be provided in an equitable manner.

## **IV. Goals of the MTP and Bicycle Element**

### **MTP Goals**

The MTP outlines six broad goals intended to guide and unify Arlington's approach to transportation. These overall goals are:

1. Provide high-quality transportation services
2. Move more people without more traffic
3. Promote safety
4. Establish equity
5. Manage effectively and efficiently
6. Advance environmental sustainability

### **Bicycle Element Goals**

This Bicycle Element updates and applies these goals for bicycle transportation.

- A. Provide an environment in which people of all ages and abilities can get places by bicycle safely and comfortably.
- B. Make all of Arlington accessible by bicycle using easy-to-follow, low-stress routes.
- C. Increase the mode share of bicycle travel, aiming to have the population of persons who bicycle for transportation be demographically similar to the population of Arlington overall.
- D. Provide an excellent trail system that serves the needs of people walking and bicycling for transportation and for recreation.
- E. Properly manage, maintain, and operate the infrastructure that supports bicycling in Arlington.
- F. Integrate bicycling into an efficient, sustainable and equitable transportation system.

## **V. Policies and Implementation Actions**

Fourteen principal policies have been developed to direct the County's approach to bicycling. They are grouped here supporting the six updated Goals of the plan introduced above. Each policy is in turn illustrated by several implementation actions which will lead to measureable outcomes. Finally, performance measures and targets are established to assess progress toward achieving the goals.

**Goal A. Provide an environment in which people of all ages and abilities can get places by bicycle safely and comfortably.**

Arlington County aims to make bicycling safe, secure, convenient and accepted. This is achieved through projects that improve the physical infrastructure for bicycling, and by programmatic activities that build public acceptance for safe, convenient, and accessible bicycling. Persons of all ages, abilities and backgrounds are considered when developing bicycle projects and programs.

**Policy 1 – Make existing streets safer and more comfortable for bicycling.**

*Implementation Actions*

- Regularly review all bicyclist crash reports to identify street and trail locations where user safety can be improved through physical changes or other engineering, enforcement or education interventions.
- Upgrade existing on-street bikeways on arterial streets to include buffer striping or protective barriers where possible. Emphasize the provision of protected or buffered bicycle lanes on roadways with speed limits of 30 miles per hour and other roadways with daily traffic volumes of 6,000 vehicles per day or greater.
- Provide for safer, more comfortable bicycling at intersections with high-volumes of vehicular traffic. Make full use of available traffic control devices including: signals, signs, beacons, delineators and roadway markings.

**Policy 2 – Enhance the safety of bicycling in Arlington by addressing unsafe behaviors and encouraging safe travel behaviors. Increase traffic law enforcement pertaining to bicycle safety, placing priority on those violations that endanger vulnerable road users.**

- Build bicycle safety efforts into an integrated “Vision Zero” travel safety program, with the goal of zero traffic deaths or serious injuries.
- Promote PAL, the County’s approach to travel safety wherein everyone is encouraged to be Predictable, Alert, and Lawful.
- Coordinate with local police to implement traffic law enforcement programs directed towards the violations of traffic safety law by motorists, bicyclists and pedestrians that are most likely to cause crashes and injuries. Target efforts at locations with frequent bicycle/motor vehicle or bicycle/pedestrian conflicts.
- Utilize public awareness campaigns, law enforcement and physical barriers to prevent drivers from obstructing bicycle lanes and from opening car doors in the path of oncoming bicyclists.
- Continue headlight and helmet distributions that reach young bicyclists and persons of limited incomes.
- Encourage greater use of bicycles by police and County staff for routine and special work, such as trail patrols and site visits.



- Offer training to continuously upgrade planning, engineering, law enforcement and maintenance staffs' knowledge of best practices for bicyclist safety. Establish minimum training requirements for these professionals.

**Policy 3— Expand travel safety education programs for children and adults, including supporting an ongoing Safe Routes to Schools program.**

*Implementation Actions*

- Support an ongoing Safe Routes to School program that includes encouragement, education, enforcement, engineering and evaluation components, and involves school administrators, faculty, staff and parents, in addition to students.
- Provide Arlington elementary and middle school students training in safe and confident bicycling, and extend the training to high school physical education programs.
- Designate recommended bicycling routes to school. Criteria for safe routes should be established jointly among the staff of the Arlington Public Schools, Parks, Transportation, and Police. Continue to improve public infrastructure to increase the number and extent of routes that can be recommended for bicycling to school.
- Develop public safety campaigns and driver education materials aimed at addressing educating drivers on how to drive safely around people on bicycles.
- Conduct bicycle safety and maintenance courses through the Arlington Adult Education and BikeArlington programs. Encourage community colleges, bicycle organizations, fitness clubs, and others to offer safety instruction. Consider providing financial assistance to institutions or to students 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.

**Goal B. Make all of Arlington accessible by bicycle using easy to follow, low stress routes.**

Arlington County plans to expand and complete a network of low-stress bicycle facilities that reduce bicycling barriers and improve connectivity between origins and destinations across Arlington. The low-stress bicycling network will support bicycling to and from residential neighborhoods, retail and commercial districts, schools, recreation centers and parks, employment sites, transit stations, and activity centers in neighboring jurisdictions.

**Policy 4 – Provide a network of low-stress bicycling to routes that connect residential areas, commercial centers, transit stations, schools and County facilities across Arlington with links to outside destinations. Prioritize the implementation of the projects in this plan deemed to be of highest priority.**

*Implementation Actions*

- Fund and build planned projects and trail improvements identified in adopted County planning documents. Establish a regular funding stream and level of staff support to enable timely implementation of projects independently of other street improvements.
- Develop new shared-use connector trails or routes that link low-volume streets and establish more effective and efficient bicycle travel corridors. Emphasize access to public facilities such as schools, transit stations and community centers.
- Identify desired land acquisitions or easements needed to make route connections, and pursue such acquisitions or easements through donations, site development or public purchase.
- Prioritize projects that overcome barriers and complete network connectivity, in particular work with regional partners to enhance bicycle access to all Potomac River bridges. 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.
- Provide bikeways on new or existing streets in conjunction with major new development or redevelopment activities in Pentagon City, Crystal City, the Potomac Yard, Columbia Pike, Lee Highway, Rosslyn and elsewhere.
- Work with regional partners on the development of grade-separated bicycle and pedestrian crossings of major highways and to enhance existing at-grade crossings.
- Work with the Metropolitan Washington Airports Authority (MWAA) to establish convenient bicycle connections to Reagan National Airport from Crystal City and the Mount Vernon Trail.
- Increase engagement with Federal landowners to develop efficient routes for crossing or circumnavigating large federal institutions and properties, such as Joint Base Fort Myer Henderson Hall, the Pentagon Reservation, National Foreign Affairs Training Center and Arlington National Cemetery.
- Work with the Virginia Department of Transportation (VDOT) and the National Park Service (NPS) to ensure that bikeways are provided on and across VDOT and NPS operated arterial roadways, interstate and parkway corridors, as part of all projects to improve or reconstruct these roadways. Support the National Park Service with implementation of its 2016 Paved Trails Plan.

**Policy 5 – Accommodate bicycle infrastructure as part of all street improvement projects and provide the highest-quality on-street bikeway possible.**

*Implementation Actions*

- Review existing arterial street cross-sections and look for opportunities, through restriping or reconstruction, to reallocate street space to enhance bicycling safety, access and separation. Look for opportunities to create new protected or buffered bike lanes that bridge gaps in the existing bikeway network.

- Identify opportunities to achieve new or upgraded bicycle facilities from proposed new land development projects as they undergo the development approval process. In particular, work to implement significant sections of the projects identified in this Section TBD of this plan.
- Design and install new and upgraded on-street bicycle facilities in accordance with the National Association of City Transportation Officials (NACTO) guidelines and shared-use trails in accordance with the American Association of State Highway Officials (AASHTO) guidelines.
- Pilot innovative street and bikeway designs, considering examples and research from across the USA and rest of the world. Conduct test applications of markings, and reallocation of road space with paint or delineators.
- Add contra-flow bicycle facilities to one-way streets, where safe and appropriate.
- Implement traffic calming and other speed management measures as needed to improve safe sharing of roads by bicyclists and motorists.
- Upgrade and expand the signed bike route system. Provide wayfinding for bicyclists with signs, maps and mobile apps and adjust as necessary over time to account for changes to routes and destinations.

**Goal C. Increase the mode-share of bicycle travel, aiming to have the population of persons who bicycle for transportation be demographically similar to the population of Arlington overall.**

Make using a bicycle for transportation, at least occasionally, an accepted travel option for the majority of the Arlington residential population. When a large-enough portion of a community participates in an activity, it spawns a culture whereby an activity previously considered “fringe” becomes embraced by the mainstream of the community.

**Policy 6 - Establish 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 BikeArlington, including map publication, Bike-to-Work Day, organized group rides, Car Free Day, valet bicycle parking at events, learn to ride classes and route assistance.
- Distribute bikeway maps, program brochures, and safety education materials. Include guidance for safe and courteous use of shared-use paths and streets. Educate bicyclists and others about facility types that may be relatively new to the Arlington public.
- Continue to promote bicycling as a part of the County’s Transportation Demand Management (TDM) activities aimed at businesses, employees, and residents.
- Encourage employers to provide cash compensation to their staff who choose to bike to work, rather than receiving subsidizing motor vehicle parking at their workplaces.

- Conduct regular surveys and focus groups to determine actions to encourage greater bicycle use.
- Identify new marketing and education approaches to reach groups and individuals that are not currently bicycling or are low-confidence riders.
- Promote bicycling as an activity that will improve health and fitness and conveniently incorporate exercise and recreation into daily life. Support activities such as group bicycle rides and competitions that encourage more bicycle use.
- Support a range of BikeArlington programs to encourage bicycling for transportation, fitness, and recreation, including:
  - Bicycle fitness and training programs by the County and schools. Encourage similar programs by bike shops, bicycle advocacy organizations and bicycle clubs.
  - Recognition awards and incentives for bicycling – e.g., awards honoring residents who bicycle to work, and ride through the winter; awards for businesses and citizens who help make Arlington a better place for bicycling; awards for exemplary bicycling support in schools, businesses, and youth organizations.
  - Organize, support and encourage regular community-based bike rides that appeal to less-experienced bicyclists.
  - Develop open street events.
  - Provide learn-to-ride classes and training for the less-confident bicyclists.
  - Work with area schools to develop bicycling incentive programs for their staff and students.
- Incorporate information about Arlington’s bicycle registration program in County publications.
- Improve outreach to potential bicyclists that have been traditionally underrepresented in County planning and programs. Aim to reach and influence persons of lower incomes, recent immigrants, non-residents who pass through Arlington and young people and renters who tend to not engage in civic affairs.
- Clarify where electric bikes can be legally ridden. Encourage their use as a way to broaden the appeal and range of uses of bicycling.
- Undertake policing and communications programs that address reducing bike theft.
- Undertake measures that will lead to achieving by the year 2020, Gold Level Bicycle Friendly Community status, an honor awarded by the League of American Bicyclists for communities with exemplary bicycle programs and bicycle use.

**Policy 7 – Encourage and support provision of facilities to support bicycling, including showers, lockers and adequate bicycle parking by all new property developments.**

*Implementation Actions*

- Utilize the Arlington County Bicycle Parking Standards document, or its successors, to develop new bicycle parking installations. Review the standards periodically and adjust as needed.

- Amend the County zoning ordinance to require all commercial and multifamily residential buildings to provide ample, convenient and secure bicycle parking.
- Assist the managers and owners of commercial properties, including multifamily residential buildings, in selecting and installing high-quality, secure bicycle parking at existing buildings.
- Require appropriate bicycle support facilities, such as room for changing clothes, showering and bicycle parking in site plan conditions for commercial developments, including establishing minimum standards for quality and location.
- Provide bicycle parking both in buildings and on-streets that can accommodate cargo bikes.
- Provide more bicycle maintenance stands and resources, particularly in lower-income areas.
- Provide opportunities for e-bike charging at commercial, multi-family and public facilities.

**Goal D. Provide an excellent trail system that serves the needs of people walking and bicycling for transportation and for recreation.**

Arlington’s multi-use trail system is a highly-valued resource. Sufficient resources must be dedicated to ensure that all trails are well-maintained and available for year-round use. Attention must be directed to: physical improvements, including lighting; management and education; and issues of trail user conflicts and security.

**Policy 8 – Manage shared-use trails as community assets that enhance transportation and recreational opportunities for everyone.**

*Implementation Actions*

- Provide additional multiuse trails where significant community demand and support are expected. Develop and formalize trail concepts identified in adopted County documents such as the Public Spaces Master Plan, and area and sector plans.
- Promote volunteer maintenance on County-owned trails.
- Establish maintenance responsibilities and protocols for all trails in public access easements on privately-owned properties.
- Perform periodic trail pavement condition assessments. Establish a regular maintenance cycle for trail repaving and repair similar to that used for County streets.
- Implement measures such consistent mileage markers, new trailheads, and GPS coordinates to help emergency personnel and vehicles.
- Establish guidance for night-time lighting on trails.
- Provide access to drinking fountains, bathrooms and shaded resting areas on popular trails.

- Evaluate all existing trail signage and markings and modify as needed to enhance user safety and clarity.
- Expand the bikeway network wayfinding signage system. Implement trail identification signs, markers or art features at key trail entry points.
- Expand public outreach methods to ensure that information alerts about trail activities, are distributed widely to reach Arlington and regional bicycling networks.
- Protect the trails and buffer areas against encroachments from adjacent roadways and new development.

**Policy 9 – Manage trails for safety with increased use. Improve facilities to address user conflicts and encourage safer user practices.**

*Implementation Actions*

- Prioritize trail widening and trail/roadway intersection projects, especially where crashes or frequent user conflicts have been documented.
- Undertake safety evaluations of all street/trail intersections. Identify how safety might be improved through traffic signals, signage, markings, traffic calming, tunnels/overpasses, or other measures.
- Expand staff expertise in the proper design, upkeep and operation of heavily-traveled multi-use trails.
- Institute regular trail patrols by Police, Rangers, and volunteers especially during early morning and evening hours.
- Test markings and/or barriers to separate bicyclists and pedestrians.
- Create campaigns to emphasize proper behavior and etiquette by all trail users.
- Improve security and safety with measures such as trail lighting, convex mirrors and landscape treatments that improve visibility.
- Provide additional, high-quality, on-street bicycle routes that encourage faster bicycle traffic to relocate from trails to streets.

**Policy 10 - Make trail corridors more environmentally sustainable, with reduced storm-water runoff, additional shade and increased planting for bio-retention.**

*Implementation Actions*

- Submit plans for new or significantly modified trails to Arlington’s environmental assessment process early in the design stage.
- Review trail width standards; consider widening to accommodate heavy use, and allowing narrower trails for lighter use and smaller footprint.
- Minimize adverse impacts from paved trails in environmentally-sensitive areas, such as Resource Protection Areas; explore utilizing permeable paving materials.
- Modify County design practices to allow for increased planting of native trees within trail corridors.

**Goal E. Properly manage, maintain, and operate the infrastructure that supports bicycling in Arlington.**

Planning, designing, funding, and building infrastructure brings it into existence. To extend the life and utility of infrastructure, it must be well-managed, maintained and operated. This applies to the bicycle network – including the on-road portion- in order to provide sufficient bicycle travel capacity, an attractive level of service, functional reliability, safety, and security.

**Policy 11 – Implement measures to assure safe and convenient bicycle travel during and after inclement weather and with street and trail construction.**

*Implementation Actions*

- Improve and promote the County’s Report-a-Problem system that allows individuals to report maintenance needs and safety concerns on the web, over the phone, and via e-mail mobile app.
- Adopt the maintenance program and practices in Appendix TBD.
- Develop Maintenance of Travel (MOT) plans that maintain safe, continuous, and equivalent bicycling routes as part of all significant construction in the public right-of-way. Vigorously enforce MOT requirements throughout the duration of construction projects.
- Develop guidance for use by contractors about how to maintain safe bicycling routes while working in the public right-of-way.
- Designate priority transportation trails that require snow clearance and other regular maintenance.
- Enhance trail and bike lane snow/ice/debris clearance practices to minimize the time such bikeways are unusable.

**Policy 12 – Manage the bicycle network through regular collection and analysis of data including user counts and reported crashes.**

*Implementation Actions*

- Refine bicycle data collection on streets, trails, and bridges, to establish baselines, and monitor use, plan for maintenance and expansion, evaluate safety, and model active transportation.
- Operate trail and bikeway data collection systems in an efficient, sustainable, collaborative and comprehensive manner. Provide open access to collected data.
- Conduct periodic travel surveys that include bicycle use questions.
- Apply bicycle count and crash data in project prioritization, identification of bicycle facility needs, and other decisions regarding the transportation network.

- Build on bicycle count data to develop methods for characterizing and estimating bicycle use for future planning efforts.

#### **Goal F. Integrate bicycling into an efficient, sustainable and equitable transportation system**

Continue to integrate bicycling with transit, walking, taxicab, ride-sharing and high-occupancy vehicle (HOV) travel modes. Improve access to bicycling for residents of all backgrounds.

#### **Policy 13 - 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 the quantity and quality of bicycle parking at all Metrorail stations. Initiate new bicycle/transit integration services, and manage existing services. Provide sufficient free bicycle parking that offers a high level of security and weather protection.
- Improve the security of bicycle parking at Metrorail stations with more bicycle lockers, monitored bicycle stations and reliable surveillance.
- Provide sufficient bicycle parking at schools to meet established per-student and per-staff ratios. Provide secure bicycle 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. Increase the use of on-street bike parking, emphasize locations with little existing secure parking. Require new/better parking on private property as part of development approval and incentivize improvements at other times.
- Regularly assess the availability of secure, convenient bicycle parking for all types of bicycles, at County facilities and significant park and recreation sites. Upgrade quality and quantity of bicycle parking as part of regular facility/site improvements.
- Assess the market for integrating bicycle transportation with carpools, vanpools, taxis, car-sharing programs, and commuter bus or rail services.

#### **Policy 14 – Coordinate with regional partners and private providers to increase bike-sharing across Arlington and the Washington, D.C. region.**

##### *Implementation Actions*

- Reduce barriers, such as payment methods and age requirements, that limit the use of Capital Bikeshare and other bicycle-sharing systems.
- Locate bike share stations to attract greater numbers of system users and improve non-motorized access to County facilities and transit services.
- Identify how GPS-based, dock-less bike sharing systems can best integrate with and complement Capital Bikeshare and other transportation services.



- Promote bike sharing as a preferred travel mode for first and last mile trips to and from transit services.
- Support privately provided loaner bicycle programs for users such as employees and hotels guests.

## VI. Measures of Performance and Progress Targets

It is important that there be quantifiable measures to gauge progress towards achieving the six goals of the Bicycle Element. Establishment of target dates and outcomes will assist in tracking the County's progress in achieving the plan's goals. Several measures will require the collection and analysis of data that is not currently being captured by Arlington County. The measures should be reviewed periodically to evaluate the County's performance and effectiveness, and to determine if additional data collection is need.

This is currently a work in progress; Many target dates and figures have not yet been selected.

	Progress Target	Baseline in 2017	Goal A	Goal B	Goal C	Goal D	Goal E	Goal F
1	Reduce bicycle crash injury rates per 10,000 residents by ___% per year		○				○	
2	Achieve K-12 student education in bicycle safety to ___% by year 20___, and ___% by year 20___		○		○			○
3	Increase number of adult participants in bicycle education and encouragement events by ___% per year		○		○			○
4	Complete ___% of the Low Stress Bicycle Network by year 20___ and ___% by year 20___		○	○	○		○	○
5	Provide a low-stress bicycle route to ___% of the schools, transit stations, commercial centers and public facilities by year 20___, and provide routes to ___% by 20___		○	○	○			
6	Provide a low-stress bicycle route within ¼ mile of ___% of all households by year 20___, and ___% by 20___		○	○	○	○		○
7	Achieve 5% bicycle commute mode share by year 2020, and achieve 10% bicycle mode share by 2025				○			
8	Achieve ___% of all trips within Arlington by bicycle in year 20___, and achieve ___% by year 20___				○			
9	Increase the number of K-12 students bicycling to school by ___% over current numbers in year 20___				○			

10	Increase the number of Bike-to-Work Day participants in Arlington by _% each year				O			O
11	Reconstruct/repave at least 4% of all the multi-use trail miles each year		O			O	O	
12	Annually install at least _ new bicycle parking spaces within the public right-of-way or at existing developments		O		O			O
13	Increase the number of covered bicycle parking spaces at transit stations, schools and public facilities at least _% by year 20_		O		O			O
14	Expand Capital Bikeshare to 100 stations in Arlington by year 2020, and 120 stations by 2025		O	O	O			O

## VII. Network and Program Implementation Procedures

### Prioritizing Proposed Facility Improvements

Appendix {TBD in later version} provides lists of planned projects with locations and project descriptions. Existing and planned facilities are depicted in the MTP Map document. The entire planned bikeway network is shown in Figure {TBD in later version} of this document. Prioritizing projects remains a dynamic process that will evolve over time as the MTP is implemented.

### The Prioritization Process and Criteria

Bikeway project priorities are periodically reevaluated in conjunction with funding opportunities, such as the Arlington Capital Improvement Plan (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 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

- Safety needs and implications.
- Importance to bikeway network connectivity.
- Potential to relieve user congestion and/or conflicts on multi-use trails.
- Estimated demand for usage and potential to attract new bicyclists
- Availability, quality, convenience and distance of existing alternative routes/facilities.
- Community support.
- Cost relative to capital budget and availability of non-County funding.
- Ease of implementation, including neighborhood, environmental clearance, and need for additional right-of-way.
- Opportunity to achieve cost savings or easier implementation through combination with another project.
- Ability to reduce level of stress and increase use comfort of bicyclists.

A system for weighting the selected criteria and assigning values for the purpose of ranking proposed projects is currently being developed. It is anticipated that the listed criteria to be included in the project ranking system may change

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.

### Implementation

The Arlington Division of Transportation’s bicycle program is responsible for implementing many of the policies and strategies in this document to help ensure that bicycling accommodations and considerations are appropriately integrated into land development and regional transportation plans. The program also manages the design and construction of bicycling improvements undertaken by the County and works with the agencies responsible for projects not controlled directly by the County. Coordination amongst County agencies, especially agencies such as Parks and Recreation (DPR); Police; Community Planning, Housing and Development (CPHD); and Arlington Public Schools (APS) is essential. For example, DPR maintains Arlington’s trails and is involved in bicycle promotion and recreation. The Police Department is responsible for traffic law enforcement and crash reporting. CPHD directs neighborhood and sector planning, zoning, and development review. APS is responsible for guiding Safe Routes to School initiatives, providing safety education, and addressing school transportation issues. Coordination with neighborhood-based and business associations is also important for successful project implementation.

### Staff

As of 2017, the County’s Division of Transportation applies the equivalent of three full-time employees for staff to implement infrastructure, policy, educational and encouragement activities. This work includes developing and managing projects, encouraging bicycling, and educating people about bicycling. Additionally, other staff members work on projects and activities that are bicycle-related, such as: 1) managing multimodal projects that include bicycle facilities and elements; 2) conducting promotional activities related to bicycling; and 3) working

on safety, maintenance, traffic operations, and other multimodal transportation activities. Staffing is required to develop the large projects that enhance the bikeway network, as well as review all street improvement projects, increase the amount and quality of bicycle parking, enable bicycle safety education efforts, collect data such as usage and crashes and initiate the many encouragement activities that build the bicycle culture. The pace of project implementation will largely be governed by the staff and financial resources available to the program. Significant increases in the annual number of projects implemented will require additional staff resources. The County benefits from volunteer assistance with: advisory committees, event staffing, bike counts, facility inspections, educational efforts, and other activities.

### **Project Implementation Mechanisms**

Bicycle facility projects will continue to be implemented in a variety of ways. Many will be done as opportunities arise, such as street resurfacing or rehabilitation projects, while others will be implemented as independent bicycle improvements. Some projects may be developed for both bicyclists and pedestrians and as part of “Complete Street” efforts. Bicycle accommodations and considerations are routinely considered in the planning and scoping phases of new projects in Arlington County. Although providing a complete bikeway at one time is preferred, to avoid missed opportunities, planned facilities may be implemented in a piece-meal manner.

Providing high-quality bicycle facilities is a priority when considering improvements to the streets in the bikeway network. However, some streets in this network are also significant for other modes’ networks. In situations where limited right-of-way exists to adequately accommodate the highest-quality facility for each user group, the priorities of each mode will be considered on a case-by-case basis and balanced as much as possible. This balancing will consider the overall MTP goals and the need to complete and enhance the bikeway network. Typically bike lanes and shared-use-lanes “sharrows” have been created by reallocating roadway space from overly-wide travel lanes. Alternatively, on-street bicycle improvements, such as protected or buffered bicycle lanes, may be provided or enhanced by reducing the number of travel or parking lanes. Impacts upon traffic flow, safety, accessibility and community welfare are all considered in deciding whether existing roadway area should be reallocated to non-motorized travel modes.

### **Regional Coordination**

Many of the arterial roads within Arlington are under Federal or State management and are not directly subject to County policy. As a result, many bicycle projects will be implemented by or in conjunction with other agencies. In addition, large areas of Arlington, and several key travel routes, are under the control of Federal agencies such as the Department of Defense. It is critical that Arlington staff continue to coordinate closely with regional, state, and federal agencies to ensure that projects undertaken by these agencies contribute to and not hinder the completion of the Arlington bikeway network. Arlington staff will also work closely with neighboring jurisdictions on bicycling-related improvements within those jurisdictions that are of particular interest to Arlingtonians.

### **Funding**

In both the areas of capital improvements and maintenance, an adequate amount of funding needs to be available to ensure regular progress toward achieving the bicycle objectives of the MTP. The County works to identify new sources of funding to implement bicycle-related projects and programs and seeks to maximize the amount of Federal, State and private funding that can be leveraged by local dollars. Funding decisions will be made by the Arlington County Board as part of the Capital Improvement Program (CIP) and the annual budget processes.