

TOWN OF
Herndon
VIRGINIA

Bicycle Network Master Plan

August 2019



Prepared By:

Town of Herndon Department of Community Development

Herndon Pedestrian & Bicycle Advisory Committee:

- | | |
|--|-----------------|
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Table of Contents:

- 1. Introduction**
 - a) Plan Purpose & Overview 3
 - b) Plan Background & Methodology 3
 - c) Policy Guidance 4
 - d) Plan Implementation & Management 4
- 2. Plan Principles & Objectives**
 - a) Principles 6
 - b) Objectives 7
- 3. Network Plan & Map**
 - a) Map 8
 - b) Network Projects 9
 - c) Existing Network 9
- 4. Program**
 - a) Existing Program 13
 - b) Program Projects 13
- Appendix** 16

1

INTRODUCTION



Plan Purpose & Overview

This document serves as the Town of Herndon's first official plan dedicated principally to the development and maintenance of a safe, accessible, well-designed, and connected bicycle route network that serves the entire town. This plan also profiles the Town's existing bicycle program, guides further development of the program, and provides bicycle policy principles for consideration by land use decision makers. Accommodating active and non-motorized means of travel has been an important goal of town planning for decades and this plan serves to advance that effort.

This plan has been developed as a long-range planning document to guide the town's multi-modal approach to transportation planning and design, and maximize access to transit stations, schools, employment centers, and local goods and services providers.

Herndon has a relatively high population density compared to other suburban communities and with expected redevelopment around the Metrorail stations, downtown, and in Herndon's commercial, office, and industrial areas, additional growth is assured. Where density increases and mass transit becomes available or improves, bicycle trips increase substantially. This plan means to meet that trend and encourage cycling by creating the necessary programmatic and physical infrastructure to ensure safety and viability of cycling as a travel mode for commuting, for local trips to goods and services, and for recreation. If enhanced cycling service levels are achieved thus encouraging more trips by bicycle, reliance on motor vehicle transport may be reduced. Vehicle trip reduction could provide some relief of the land use and fiscal demands of moving and parking cars.

Plan Background & Methodology

Previously, bicycle network planning and design decisions were guided by the Town of Herndon Pedestrian and Bicycle Advisory (PBAC) and Town Council endorsed Fairfax County Bicycle Master Plan, which was developed by County staff in 2012 in consultation with Herndon staff and the PBAC. Prior to the 2012 initiative, such decisions were guided by the Town's Master Trails Plan. The Master Trails Plan called for a mixed use trail network with facilities that required combining the various alternative transportation options into a single facility. With the endorsement of the Fairfax County plan, and to reflect current best practice, the Town's policy has transitioned to dedicated bicycle facilities and a separation of cyclists from pedestrians to maximize the safety and encourage the use of both travel modes. This document implements the Town's revised policy.

Town staff worked closely with the PBAC in development of this plan. Each principle, objective, network route and type, and recommended program element was evaluated based on best practices, industry standard models, and local conditions and considerations.

The route locations and facility types were determined using the Peter Furth model for cycling infrastructure and his Bicycle Facility Selection Matrix (see Appendix) as the baseline. This model focuses on cyclist stress levels derived from roadway design and vehicle speed and volume. It should continue to be used in this manner for any revisions or updates to the network plan. In addition to the Furth model, local conditions were considered for each route location and facility type. It was important to identify how best to provide access to transit, schools and public facilities, as well as routes along commercial corridors for access to goods and services and employment.

This plan builds on the earlier Fairfax County plan by showing additional routes that more thoroughly respond to the Town Vision and Comprehensive Plan goals, and provide network access from all areas of Town. While the network routes and improvements proposed in this plan supersede the Fairfax County Bicycle Master Plan as it relates to areas within Town boundaries; continued coordination with the County plan is vital to ensuring regional connectivity.

Policy Guidance

Herndon has prioritized bicycle planning along with pedestrian planning to reduce reliance on motorized vehicles and the land use requirements to move and park motor vehicles, to encourage active living and a healthier public, and to move towards environmentally responsible land development. This policy is prevalent in the Town's 2030 Comprehensive Plan and the Town's 2035 Vision Statement. The vision statement expresses that:

Residents walk, cycle, drive, or use public transit to their jobs, restaurants, and cultural events.

Through thoughtful planning, the town has a network of sidewalks, trails, streets and connections to public transportation that provides residents the opportunity for one-car or no-car living.

The Transportation section of the Comprehensive Plan sets a goal to "Provide safe streets that are friendly to pedestrians and bicyclists". An objective for transportation states:

Continue to integrate pedestrian and bicycle facilities with the street and transit network through the Trail and Sidewalk Program and other project components of the Town's Capital Improvement Program involving transportation improvements.

Plan Implementation & Management

This plan was developed by Town planning staff in close consultation with the Town's Pedestrian & Bicycle Advisory Committee. Adopted by the Town Council by resolution following review and recommendation by the Planning Commission, this plan sets forth the Town's official policy for future implementation and maintenance of cycling infrastructure.

The Departments of Community Development and Public Works are largely responsible for implementation and maintenance. As initially devised, the plan does not set a specific schedule for implementation however that may be included as a plan addendum at a later date.

The PBAC will evaluate the plan annually and staff will report on the progress of its implementation.

Staff will consult with the PBAC for any minor changes to the network map. If any change is proposed for a significant portion of a route and/or facility, a map change and new resolution by the Town Council would be required.

2

PLAN PRINCIPLES & OBJECTIVES



Plan Principles

In implementing the Herndon Bicycle Network Master Plan the following principles shall be applied.

1. The network map should be followed to the greatest extent possible. Changes in route locations or facility type may be considered for modification in specific locations if overriding design and engineering challenges arise.
2. Designs for each route facility type should adhere to National Association of City Transportation Officials (NACTO) and American Association of State Highway and Transportation Officials (AASHTO) design guidelines. Signage shall adhere to the Manual for Traffic Control Devices (MUTCD) where applicable.
3. For routes that run within or along streets, cycle facilities should be separate from sidewalks. As an interim condition, extra wide sidewalks that serve a shared use function may be considered where better options are not available.
4. Dedicated bicycle facilities such as bicycle lanes and cycle tracks should be separated to the greatest extent possible from travel lanes. The use of striping on-street to create a buffered bike lane or the use of a raised tree zone off-street between the curb and facility is preferred where space allows.
5. Routes should coordinate with similar routes at the Town boundary as they continue into neighboring jurisdictions.
6. Route continuity is vital for route safety and usage however certain routes may be dependent on private development and completed in phases or segments. In those instances, the termini must provide safe connection to existing conditions.
7. Some routes may require land acquisition or access easement over private property. All route design must be sensitive to these instances and cognizant of impacts for property owners and costs to the Town.
8. Bicycle routes should provide access to Metrorail stations and Fairfax Connector stops. Transit stops benefit from bicycle amenities such as racks, shelters, lockers, and maintenance stations.

9. The safety of bicycle routes relies on appropriate maintenance. Routes should be kept clean and re-stripped as part of a regular maintenance program.
10. Bicycle route design shall be sensitive to the service levels of other modes of travel and must coordinate with safe pedestrian and transit planning and design practices.
11. Provision of bicycle amenities such as racks, shelters, lockers, and maintenance stations should be coordinated with routes. Nonresidential property owners and business owners should be encouraged to provide bicycle accommodations outside the right-of-way for employees and customers.
12. Bicycle infrastructure planning, design, and construction should take into account all types of cyclists and the various reasons and personal preferences guiding the reasons people ride bicycles. Cycling is an activity that may be strictly recreational for some and it may be a necessary mode of travel for others. Cyclists may be commuting to work or just out for a family ride. Some cyclists may prefer to ride with vehicle traffic while some may opt to stay off-street. Bicycle facilities should be designed to recognize equity in this regard and maximize potential usage by ensuring the largest cross-section of cyclists are comfortable and safe using the provided facilities.

Plan Objectives

In implementing the Herndon Bicycle Network Master Plan the following objectives shall be achieved.

1. Establish baseline and seek to increase bicycle level of service townwide.
2. Establish baseline and seek to increase bicycle ridership throughout town.
3. Increase bicycle route network mileage annually until the network is completed in accordance with the plan.
4. Consider bicycle service levels and integrate bicycle facilities into all private development plans and public improvement plans.
5. Continue and expand bicycle use education and awareness programs and events.
6. Continue to develop partnerships with bicycle planning staff in other local jurisdictions, regional planning groups, and local advocacy groups.
7. Enhance bicycle safety and reduce opportunities for conflicts with other modes of travel.
8. Increase the available bicycle parking and bicyclist amenities on both private and public property.
9. Continue to utilize the PBAC as stewards of the Town's bicycle plan and advocates for safe, convenient, and well connected bicycle facilities.

3

NETWORK PLAN & MAP



Bicycle Network Master Plan Map

The Bicycle Network Master Plan Map shows all existing and proposed bicycle network routes and facility types. It shows the eventual final condition of the Town's bicycle route network and functions as a planning tool for programming when and how certain routes are created. This map may be modified as part of its annual review. Town staff will maintain a larger version of this map that more clearly indicates the location of each route.



Bicycle Network Projects

The Town has numerous public improvement projects in construction, design, and planning phases that include significant upgrades to bicycle service level and facilities. The following table lists the current projects. This table will be updated as part of this plan's annual review.

ACTIVE PROJECTS <i>Last Updated: June 2019</i>			
Project Name	Project Location	Status	Notes
East Elden Street - Bicycle Lanes & Cycle Track	Between Fairfax County Parkway and Monroe Street	Design Completed.	Expected to be under construction in 2024. Town project.
Chandon Park - Mixed Use Trail	To connect with Worldgate Trail to Van Buren Street	Design Completed.	Expected to begin construction in 2019. Town Project.
Herndon Parkway - Cycle Track	From Spring Street to Van Buren Street	Fully planned and concept designed. Portions completed.	To be built in phases <i>dependent on private development</i>
Van Buren Street Phase I- Bicycle Lanes	From Spring Street to Herndon Parkway	Fully planned and designed.	Expected to begin construction in late 2019. Town project.
Van Buren Street Phase II – TDB Facility Type	From Herndon Parkway to south town line and Spring Street to W&OD	Planned and beginning concept design	May also be built in phases <i>dependent on private development</i> .
Sterling Road – Bicycle Lanes	From Elden Street to Herndon Parkway	Planned, not yet designed.	Expected concept design in FY20. Town project.
Trails to Metro – Mixed Use Trail	From Worldgate Drive to Herndon Metrorail Station	Fully planned and designed	Expected to begin construction in late 2019. Town project.
Folly Lick Regional Trail	From Herndon Parkway to Center Street	Fully planned and concept designed	Dependent on substantial land acquisition (as currently designed). Town project.
Station & Spring Streets - Sharrows	From Park Avenue to Van Buren Street	Fully planned and designed	Expected construction 2019. Within existing right-of-way. Town project.

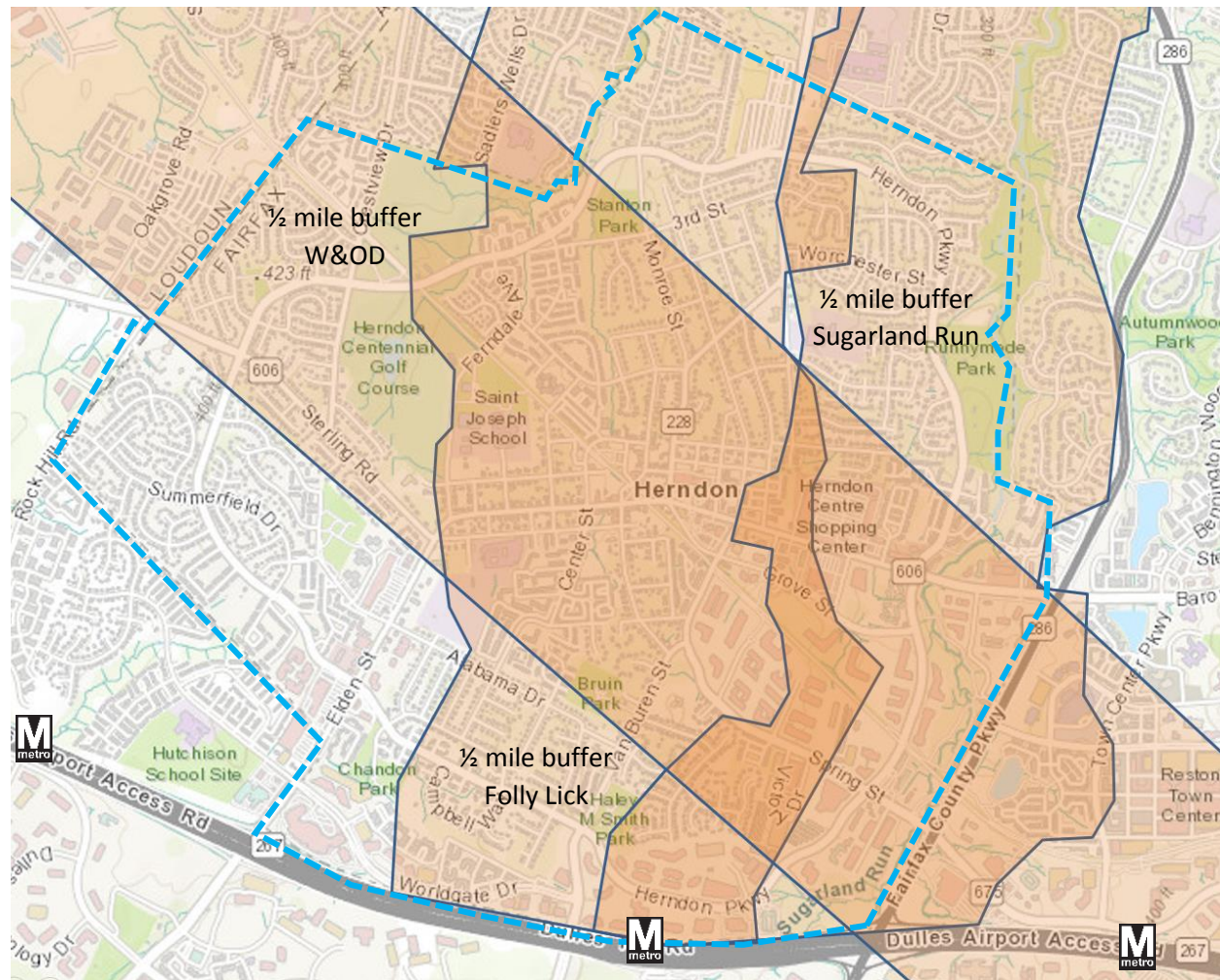
Existing Network

In recent years, Herndon has become a leader in the incorporation of bicycle facilities into public improvement plans. Many of the dedicated bicycle routes shown on the Network Map (Page 10), are

programmed to be constructed in the coming years. Those projects are listed in the Active Bicycle Network Projects table on Page 11 and will add approximately 6 miles of bicycle routes in town. Before completion of these new facilities, numerous routes are already available to cyclists in Herndon, and are heavily used. Three mixed use off-road regional trails either fully or partially pass through the town; the Sugarland Run Trail, Folly Lick Branch Trail, and the W&OD Trail. The W&OD Trail in particular has become a vital connection for cyclists commuting, training, and recreating. In addition to these regional off-road trails, Herndon has several wide sidewalks that were built as part of the Master Trails Plan to accommodate both cyclists and pedestrians. Many of these sidewalks provide local connectivity to residential neighborhoods in Town.

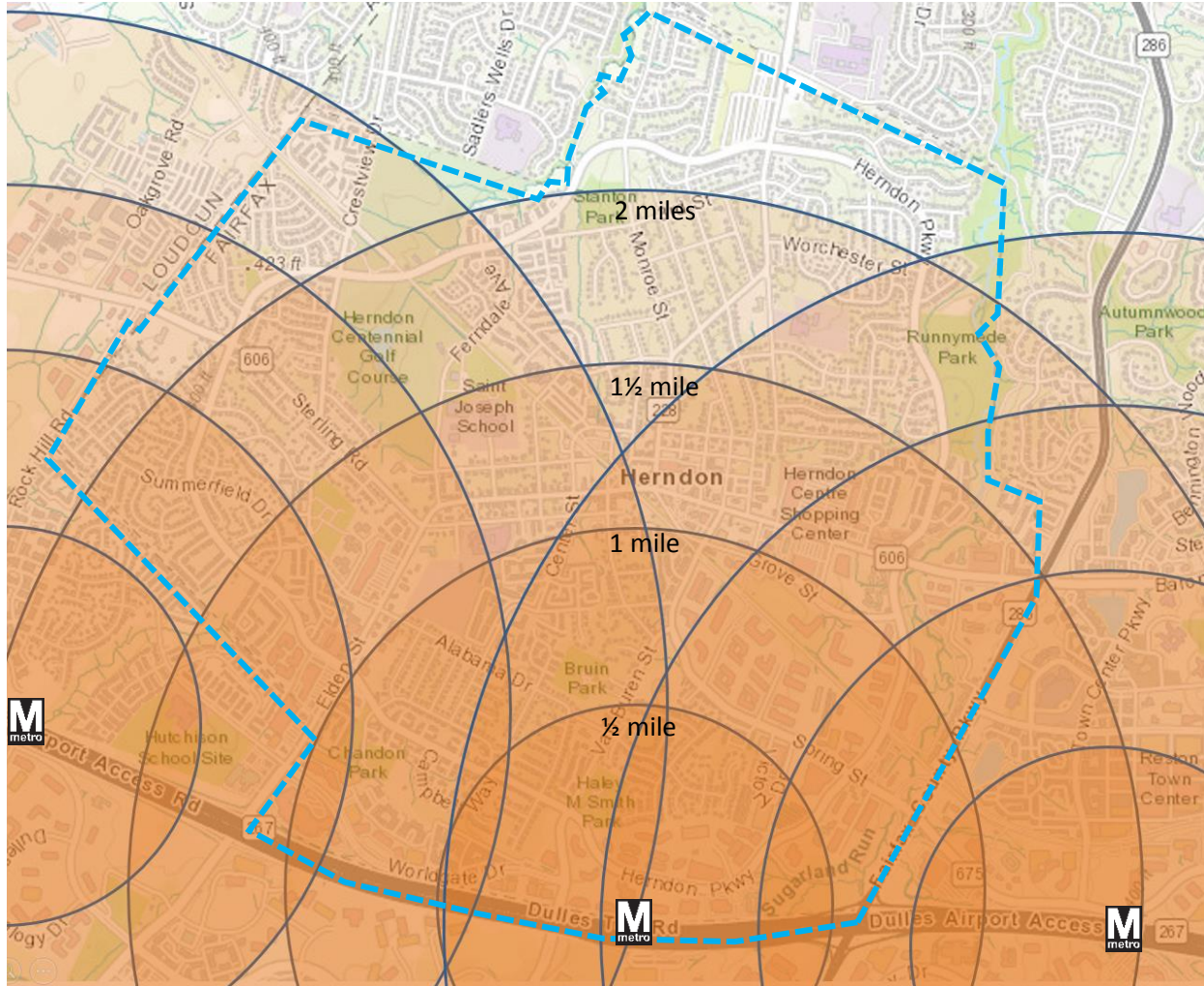
The following map shows the extent to which the Town is accessible by means of off-street trails. Most of the Town is within a half mile of a regional trail that provides off-street connectivity to neighboring jurisdictions, recreational areas, and Metrorail stations.

Herndon within ½ Mile of Regional Trail



In the future, the Town will have three Metrorail stations within cycling distance; Herndon Station, Innovation Center Station, and Reston Town Center Station. Access to these stations is of paramount consideration when implementing the bicycle plan and maintaining its planned network routes as they come to fruition. The following map shows the proximity of various Herndon neighborhoods to the Metrorail stations.

Distances from Metrorail Silver Line Stations



The Town seeks to improve and expand its bicycle network as guided by this plan. This will be primarily achieved through the Town’s Capital Improvement Program (CIP). The CIP currently has 15 projects that include significant bicycle facility components and a project sheet solely dedicated to installing bicycle routes in compliance with the bicycle plan.

With the existing trails serving as the backbone to a well-connected bicycle route network, continued supportive planning foresight, and a commitment to implementing the principles and objectives

provided in this plan through the CIP Program and Bicycle Program, Herndon has great opportunity to become a model for creating and maintaining a connected bicycle network that integrates into the pedestrian environment and transit network and enhances multi-modal levels of service. Herndon faces challenges though in effectuating a more balanced multi-modal transportation system in town is due to an increasingly competitive funding environment and the physical constraints of retrofitting its suburban land development pattern. Staying mindful of these challenges are important when evaluating and developing schedules for the bicycle program and bicycle project implementation.

4

BICYCLE PROGRAM

A blue bicycle icon is positioned to the left of a large, light blue chevron graphic that points to the right. The chevron is composed of three parallel lines of increasing length, creating a sense of forward motion.

Existing Program

Bicycle-related activities are managed across multiple town departments including Parks and Recreation, Public Works, Herndon Police Department, and Community Development. Town initiatives principally focused on or partially inclusive of bicycle programs or infrastructure are typically an inter-departmental effort. The Pedestrian and Bicycle Advisory Committee functions as a Town Council appointed group tasked to advise the Council on projects, plans, programs, and policies with bicycle (or pedestrian) components.

Bicycle infrastructure projects are largely managed through the Capital Improvement Program (CIP) as either standalone CIP projects or part of larger public improvement projects. Funding originates from various local, regional, and federal sources. Bicycling planning staff reviews public improvement project designs as part of a formal internal review process.

Bicycle facility design is guided by NACTO, AASTHO, and MUTCD standards, the Herndon Streetscape Manual, the Urban Design and Architectural Guidelines for the Herndon Transit-Oriented Core, and the Herndon Parkway Cycle Track Design Guidelines. The streetscape manual include design standards and material specifications for features such as bicycle racks, bicycle shelters, and bicycle repair stations. Both sets of guidelines set dimensional standards and material guidance for specific bicycle routes nearest to the Herndon Metrorail Station.

Program Projects

Transportation Demand Management Programs

The Town requires Transportation Demand Management (TDM) plans and practices for redevelopment that occurs nearest to the Herndon Metrorail Station. As part of TDM plans, the Town encourages the use of bicycle trips and the accommodation of cyclists to be integrated into building and site design. TDM plans should be established for developments and commercial enterprises throughout town to reduce the need for parking, reduce congestion, and provide alternative travel solutions to employees or customers.

Bicycle Parking

Herndon's zoning ordinance requires off-street bicycle parking within three planned development zoning districts. These three districts comprise the areas in town with the highest permitted densities. This

bicycle parking regulation is meant to ensure that residents, employees, and visitors on private property are provided appropriate facilities to park bicycles. Specific ratios are used to calculate the number of bicycle parking spaces per square footage of each specific land use category. A town-wide bicycle ordinance that expands required off-street bicycle parking to all zoning districts other than single family residential districts would ensure consistency in the types of bicycle facilities available throughout town.

The Town installs bicycle racks along public streets typically as part of larger public improvement projects and requires public bicycle racks as part of private development requiring a site plan. On-street public bicycle racks may be sponsored by a private entity and placed based on need determined by staff and preference of the sponsor. Expanding and formalizing a public bicycle rack program whereby citizens, organizations, or businesses may request a public bicycle rack and/or partnering with a private individual or group to sponsor public bicycle racks may encourage bicycle ridership by providing safe and convenient parking and possibly deter parking of bicycles in areas that obstruct sidewalks, damage landscaping, or pose a safety or security risk.

Design Manual

The Town relies on design guidance from the American Association of State Highway and Transportation Officials' (AASHTO) *Guide for the Development of Bicycle Facilities* and the National Association of City Transportation Officials' (NACTO) *Urban Bikeway Design Guide* when planning and designing bicycle routes. Additionally, Herndon design guideline documents and the Herndon Streetscape Manual are used. The streetscape manual mostly focuses on the design of public right-of-ways behind the curb and pedestrian accommodations. The development of design standards and guidelines would be beneficial to ensure clear and consistent direction for designers working on a bicycle route project and articulate the expected level of design. Those standards may be developed as part of a standalone bike facility design manual, or better may be integrated into this bicycle plan or the streetscape manual or both.

Bicycle Sharing

Access to bicycle sharing has become an important component of urban transportation networks. The Town is pursuing the establishment of a bicycle sharing program in partnership with Fairfax County. The County currently uses Capital Bikeshare as its public bicycle sharing vendor. Capital Bikeshare operates stations immediately outside Herndon within Reston. The Town is undergoing a planning study to determine the preferred location and number of stations, and is evaluating potential funding sources. It is the Town's intent to provide bicycle sharing services throughout town, but its initial focus is to locate them within areas of higher density, mix of uses, and close proximity to mass transit, employment, retail centers, and access to the W&OD Regional Trail. The Town is also considering policy for dockless bicycle and scooter sharing companies that already operate in Fairfax County and other areas of metropolitan Washington DC. As the nearby Metrorail stations begin to operate and redevelopment continues in Herndon, availability of bicycle sharing programs that integrate with other nearby programs should encourage bicycle ridership, enhance access to bicycles, and improve the balance of the current transportation modal split.

Personal Transporters

The use of personal transporters both by bicycle and scooter sharing companies and by private individuals, have increased in recent years. That trend is expected to continue in Fairfax County and the

Town of Herndon. Personal transporters typically use small electric motors to fully power mobility or assist with manual power. These vehicles are now permitted on the W&OD Trail and Fairfax County trails and are beginning to be used on Herndon sidewalks and streets. While electric scooter, pedal-assist bicycles, Segways, and other similar transporters have become a viable transit option, ensuring that they can be used safely with other travel modes is a key consideration. Pursuing guidelines and policies to best manage their use with the primary goals of enhancing transportation options but avoiding potential conflict with pedestrians, cyclists, and motorists, would be an important early step to addressing integration of personal transporters into the bicycle network.

Complete Streets

Herndon has implemented Complete Streets planning and design principles for years if not decades. Using the Town's 2030 Comprehensive Plan as the source of guidance, the town's transportation-related ordinances, programs, and projects have consistently employed a balanced approach to transportation infrastructure network improvements that address not just motor vehicles but also pedestrian, bicycle, and transit-user mobility. The concept of Complete Streets is meant to create a public facility that is accessible, safe, convenient, and comfortable for all modes of travel where no single mode level of service is operated at the expense of another mode. The success of the Bicycle Network Master Plan hinges on the plan's ability to consider impacts to other modes and adaptability to effectively incorporate those consideration into plan implementation. To best articulate and reinforce the town's commitment to a balanced transportation infrastructure network, a Complete Street Policy should be established and formally adopted. This policy would be instrumental in aiding decisions through the planning and design phases of infrastructure projects and serve a promotional function that demonstrates an obligation to a better balanced and more sustainable transportation system in Herndon.

5
APPENDIX



Bicycle Facility Stress Level Matrix

Bicycle Facility Selection Matrix

LANE CONFIGURATION	DAILY VEHICLE TRIPS	STREET TYPE & SPEED LIMIT			
		<i>Urban Local</i> 25MPH speed limit	<i>Urban Through</i> 30MPH speed limit	<i>Rural Local</i> 40MPH speed limit	<i>Fast Traffic</i> 45MPH speed limit or more
2 LANES (one-way each), no center-line	< 2500	sharrows	bike lane	buffered bike lane	cycle track
	2000 to 3000	sharrows	bike lane	buffered bike lane	cycle track
	3000 to 5000	sharrows	bike lane	cycle track	cycle track
	> 4000	bike lane	buffered bike lane	cycle track	cycle track
2 LANES (one-way each), with center-line	any	bike lane	buffered bike lane	cycle track	cycle track
4 LANES (two-way) or more	any	n/a (does not exist)	cycle track	cycle track	cycle track

Town Council Resolution – see following page.

TOWN OF HERNDON, VIRGINIA**RESOLUTION****August 13, 2019****Resolution- Town of Herndon Bicycle Master Plan.**

WHEREAS, in 2008 the Town Council adopted the 2030 Comprehensive Plan which guides the town to *facilitate alternative modes of transportation within the town and provide safe streets that are friendly to pedestrians and bicyclists and continue to integrate pedestrian and bicycle facilities with the street and transit network;* and

WHEREAS, the Town Council's adopted 2035 Vision Statement expresses that *Residents walk, cycle, drive, or use public transit to their jobs, restaurants, and cultural events and Through thoughtful planning, the town has a network of sidewalks, trails, streets and connections to public transportation that provides residents the opportunity for one-car or no-car living;* and

WHEREAS, on August 14, 2012, the Town Council adopted a resolution endorsing specific bicycle route and facility improvements in coordination with the Fairfax County Bicycle Master Plan; and

WHEREAS, the Code of Virginia §15.2-2231 requires each locality to develop a transportation plan that designates a system of transportation infrastructure needs and recommendations that may include the designation of new and expanded transportation facilities and that support the planned development of the territory covered by the plan and shall include, as appropriate, bicycle accommodations; and

WHEREAS, the Town Council appointed Pedestrian & Bicycle Advisory Committee steered the development of the plan at several meetings and recommends its adoption; and

WHEREAS, the Planning Commission reviewed the plan at its public hearing on June 24, 2019, endorses the plan, and recommends its adoption;

NEW THEREFORE, BE IT RESOLVED by the Town Council of the Town of Herndon, Virginia that the Town Council hereby adopts the Town of Herndon Bicycle Network Master Plan.

BE IT FURTHER RESOLVED that, the Town Council authorizes staff to make certain revisions to the Bicycle Network Master Plan, without prior Town Council approval for correction of clerical and administrative errors, updates of an administrative nature, excluding substantive changes.

BE IT FURTHER RESOLVED that, the Bicycle Network Master Plan shall be forwarded to Fairfax County transportation planning staff for integration into the County's Bicycle Master Plan.

BE IT FURTHER RESOLVED that, the Town Council recommends the Planning Commission to consider updates to the 2030 Comprehensive Plan transportation chapter to reference the Bicycle Network Master Plan and reinforce its content.

This is certified to be a true and accurate copy of Resolution 19-G-52 adopted at a legally convened meeting of the Town Council of the Town of Herndon on August 13, 2019.


Viki L. Wellershaus, Town Clerk



The Bicycle Network Master Plan, reviewed by the Herndon Planning Commission on June 24, 2019, is on file in the Department of Community Development.

