

Executive Summary

In Fairfax County, roads were initially built to support access to villages and farms by foot, horse, bicycle and low-speed motorcars. As motorized transport modernized, roads were converted, and new roads were built to support faster travel speeds. Over time, these “incomplete streets,” roadways that lack appropriate low speed facilities, accessibility features and amenities, have impacted the usability of the transportation network because they do not fully accommodate lower speed modes of travel. Today these lower speed modes of travel, for either transportation or recreational purposes, are referred to as ‘active transportation’ and include, but are not limited to, walking, biking, hiking and riding scooters.

Fairfax County is dedicated to advancing equity in transportation through the successful implementation of a Complete Streets network. Complete Streets are roadways designed and operated to enable safe use, accessibility, and mobility for all people using the roadway space: drivers, transit, and active transportation users of all ages and abilities. Complete Streets include supportive amenities within the roadway right-of-way, such as street trees, lighting, pedestrian scale lighting, high quality bus stops along transit routes, bicycle parking, and benches. A 'Complete Streets Network' does not simply focus on individual streets having the necessary elements for completeness; it emphasizes the need for a comprehensive, interconnected network that functions as a whole. In addition, a Complete Streets approach may include actively promoting and encouraging use of the facilities by the surrounding community.

While the term Complete Streets is not explicitly stated within the 2017 Comprehensive Plan Policy Plan, Fairfax County has been applying Complete Streets principles in transportation planning and development review and has developed several documents and related policies to aid in implementation. The [Transportation element of the Policy Plan of the Comprehensive Plan](#), [Urban Street Standards](#), [ActiveFairfax](#), [Countywide Transportation Network Study](#), [Countywide Strategic Plan](#), [Urban Design Guidelines](#), [Transit Oriented Development Plan Design Guidelines](#), and [One Fairfax](#), are examples of work done toward implementing Complete Streets. For example, the [Bike Master Plan](#) and [Countywide Trails Plan](#), which form the basis of the ongoing ActiveFairfax work, helps to further advance the elements of the Complete Street network approach as it serves to implement a component of pedestrian and bicycle facilities countywide to further connectivity.

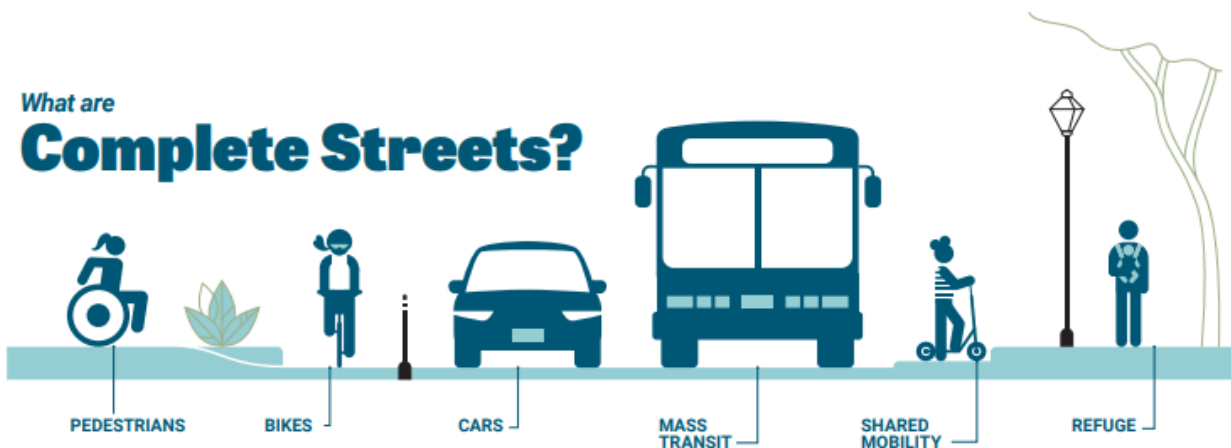
This paper is intended to lay the groundwork for future efforts on a Complete Streets Guide. The goal is to develop a cohesive Complete Streets policy, rather than having it scattered across the Comprehensive Plan and other supporting documents, such as those mentioned above. In setting up this framework, the paper also explores the tools and strategies necessary for the successful incorporation of Complete Streets principles throughout the county.

What are Complete Streets?

Complete Streets balance the needs of all people and create places that are inviting, safe, and pleasant. The concept of Complete Streets encompasses many approaches to planning, designing, and operating roadways and right-of-way that make the transportation network safe and comfortable for people of all ages and abilities, regardless of whether they are traveling as motorists, pedestrians, bicyclists, or in public transportation.

[Smart Growth America](#) explains that while Complete Streets are a process and approach to street design, there is no singular design prescription for Complete Streets. A Complete Street balances different travel modes and may include sidewalks, bicycle lanes, bus lanes, accessible public transportation stops, safe crosswalks, median islands, wayfinding, curb extensions, narrower travel lanes, and other elements such as trees, pedestrian scale lighting, bicycle parking, and benches. Complete Streets encompass both the streets and the streetscape in an integrated manner that is intended to place pedestrians, cyclists, and transit riders on equal footing with motor vehicle users. Furthermore, Complete Streets rarely look the same everywhere, as the needs of people are different, such as in rural, suburban, and urban communities. Each one is unique and will respond to the community's form and need. Therefore, the streets will look different as a result, but each community will receive the same benefits of the approach.

The use of innovative designs that address environmental impacts and promote active, healthy communities is encouraged in the design of Complete Streets, such as the use of continuous sidewalks and cycle tracks. Complete Streets policies can therefore assist this effort when planning, designing, operating, and maintaining a road network. Such policies can also support Fairfax County's Transportation Policy Plan objectives to not only have a cohesive transportation network that focuses on all modes of transportation but to also encourage the reimagining of the vehicular and pedestrian spaces in the right-of-way, to better incorporate more functionality, rather than just for vehicular usage.



ActiveFairfax Active Transportation Toolkit

Current Complete Streets Efforts in Fairfax County

Fairfax County has already begun transitioning towards a Complete Streets framework for roadway design. This section explores the completed and ongoing planning efforts supporting this work, which could inform a future Complete Streets Guide.

ActiveFairfax

The [ActiveFairfax](#) plan serves as an effort to encourage Complete Streets treatments countywide. ActiveFairfax is intended to guide the implementation of active transportation infrastructure throughout the county, including sidewalks, bicycle lanes, and trails, with the goal of providing a safe and connected infrastructure network throughout the County. It combines and updates the Comprehensive Plan's Countywide Trails Plan and Bicycle Master Plan, which recommend locations for active transportation infrastructure and off-street trails, respectively. It supplements, but does not replace, federal, state, and local standards which may be applicable at given locations.

ActiveFairfax recommends a variety of on-street and off-street treatments, including multi-use trails, cycletracks, and neighborhood greenways. It provides guidance to planners and engineers on how to choose specific treatments, based on roadway characteristics, land use context, and community needs and preferences. The plan also provides a guide for Complete Streets implementation, which meet the mobility and safety needs of active transportation users.

In addition to providing a toolbox of on-street and off-street facility treatments, ActiveFairfax also provides guidance on other design considerations that make active transportation a safer, easier, and more pleasant experience, consistent with the goals of Complete Streets. These include wayfinding signage, benches and other street furniture, pedestrian-scale lighting, and more. Also included in the plan is a list of potential funding sources for active transportation projects and a description of the framework used by the County to prioritize these projects.

The plan concludes with a series of case studies, identifying locations where active transportation infrastructure is used not just for utilitarian purposes, but for economic development or creating/enhancing a community identity.

Phase I of the ActiveFairfax planning effort launched in 2020 with the development of a vision statement, goals, and objectives, as well as a Safe Streets for All program plan and an initial round of public and stakeholder engagement. This initial phase concluded in 2022. Phase II, which is currently ongoing, includes updates to the active transportation and trail network plan, the creation of an active transportation toolkit, as well as policy, program, and implementation strategies. The ActiveFairfax planning effort is expected to conclude by 2026, with the plan's adoption into the County's Comprehensive Plan.

Urban Design Guidelines and Urban Street Standards

For some parts of Fairfax County, [Urban Design Guidelines](#) or [Urban Street Standards](#) have been developed. These provide additional planning guidance for key growth and redevelopment areas, generally in an urban context. These incorporate Complete Streets principles, prioritizing multi-modal mobility, incorporating placemaking and environmental stewardship principles, and promoting safe and comfortable facilities for all road users.

Urban Design Guidelines are applicable to county Commercial Revitalization Districts and Areas (CRDs/CRA). The Guidelines use a two-document approach: Volume I addresses all CRDs and CRAs, providing broad recommendations for urban design in these areas; Volume II is unique to each CRD/CRA based on community-specific preferences.

Urban Street Standards apply to the areas surrounding four Silver Line Metro stations: Herndon, Reston Town Center, Wiehle-Reston East, and Innovation Center. Urban Street Standards also apply to the Tysons area, under a 2011 Memorandum of Understanding between Fairfax County and the Virginia Department of Transportation, and as of January 2025, Urban Street Standards are also in development for Richmond Highway. These Urban Street Standards classify streets by modal emphasis and provide sample cross sections of each recommended street classification. Cross sections include Complete Streets elements such as bike facilities and street trees.

External Case Studies

Across the country, local and regional entities are working to implement Complete Streets principles in their communities, seeking to create safer places to walk, ride a bicycle, e-bicycle, or scooter. Each community takes its own approach to these principles, rooted in its values, with a commitment to safety and multimodal access for all.

Howard County

Howard County, Maryland, began its [Complete Streets planning efforts](#) in 2016, in response to concerns about the lack of safe facilities and existing barriers to mobility for people who walk, bicycle, or take transit. The existing street network predominantly served single-occupancy vehicles, rather than fully serving its residents, employees, or visitors. Advocates, county staff, and elected officials came together, working in partnership to develop a Complete Streets policy.

Public engagement was a key element of the project, bringing together a variety of key stakeholders, such as local realtors and the Maryland chapter of the AARP. These stakeholders enabled the county to conduct walk audits and pop-up Open Streets events, which helped people understand the issues and begin to reimagine public spaces.

As part of the Complete Streets planning process, Howard County updated its Design Manual to reflect community priorities, with a shared understanding from all stakeholders regarding implementation. The policy also has a focus on equity, and requires that planners, designers, and other county staff receive training on Complete Streets. These changes have helped the county implement a Complete Streets approach in roadway design, including green bicycle lane markings and retrofitted sidewalks.

Howard County’s Complete Streets policy was awarded the National Complete Streets Coalition 2023 award for the best Complete Streets policy in the country, the first such policy in the nation to receive a perfect score from that organization. In particular, the organization praised the county’s focus on equity, as well as its clearly defined and specific list of exemptions to the policy. Howard County’s experience underlines the importance of making Complete Streets policies clear and consistent, with policy elements that are distinct and easy to understand.

Des Moines

In 2018, the city of Des Moines, Iowa, published its [MoveDSM](#) transportation plan. The plan lays out a set of transportation goals, which include “Enhance the Bicycle Network,” “Make Transit More Attractive,” and “Develop Updated Street Design Standards.” The plan analyzes the safety and usability of the existing transportation network, noting that many of its streets are overly wide and that cyclists and pedestrians are disproportionately likely to be harmed by crashes, and identifies the substantial gaps in the existing sidewalk, bikeway, and bus networks.

MoveDSM then lays out a vision for the future of transportation, reclassifying streets into typologies by their role in the network, their character and feel, and how they are currently used. For each typology, the plan provides recommended base street designs and opportunities for customization. Special guidance is provided for “modes and nodes”, streets that run through major activity centers or have specialized purposes (e.g. a bus priority corridor or a primary emergency response route). Examples of each typology are included. MoveDSM also provides a traffic calming toolbox, intended to be applied at activity centers and on low-volume streets, as well as recommendations for improving sidewalk and bike network connectivity. It includes an implementation plan and a prioritization framework.

Chicago

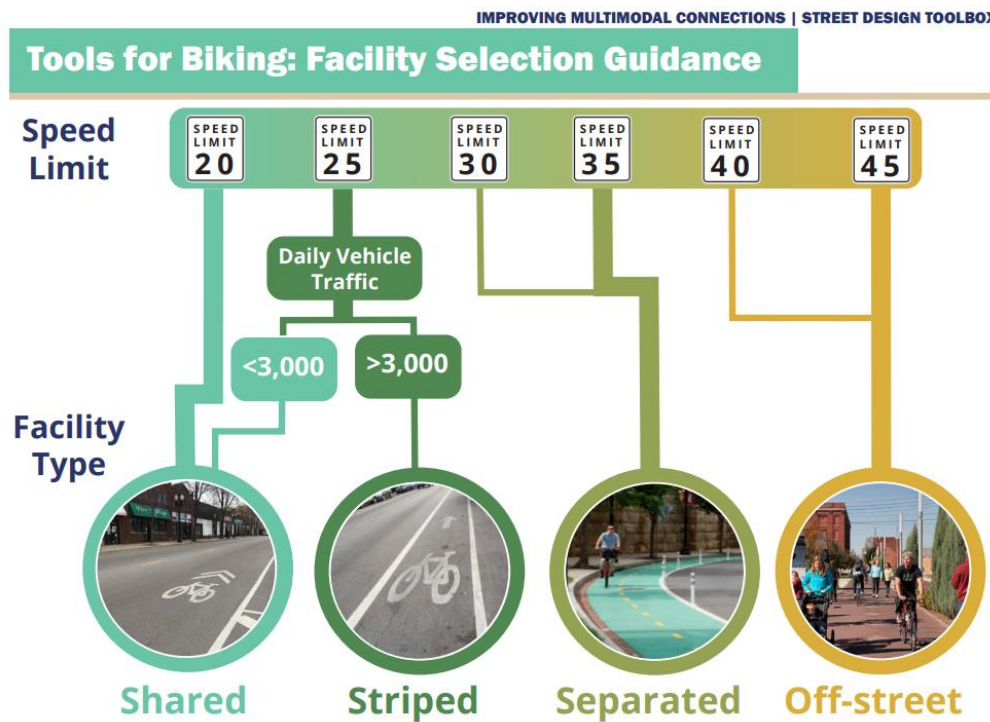
The Northwest Municipal Conference serves 43 municipalities across Chicago’s northern and northwestern suburbs. Its 2020 [Multimodal Transportation Plan](#) lays the foundation for a safe and cohesive network of facilities for individuals getting around the region on foot, on bicycle, or by transit. Grounded in an all ages and abilities framework, it includes an analysis of multimodal travel conditions in the region and a toolbox of design and policy strategies that its member communities can implement.

The plan designates a set of priority corridors designed to complement the region’s existing trail network, connecting all the Conference’s member communities to the active transportation network. It examines current policies in its member communities, as well as crash data. Its toolbox of design and policy strategies includes tools for street design (e.g. traffic calming), walking and biking to transit, and placemaking. It also includes programs and policies tools, such as Vision Zero policies, Universal Design policies, and Safe Routes to School. In its implementation plan, it includes a sidewalk gap prioritization methodology and project development guidance and recommends potential sources of funding for its member municipalities.

Policies, Resources, and Guidelines

This section examines some of the policies, resources, and guidelines that could influence how Complete Streets are implemented in Fairfax County. These include federal and state regulations that govern right-of-way design and development, local street and district design requirements, and guidance from national organizations dedicated to better planning and engineering.

United States Access Board



The above criteria are adapted from the National Association of City Transportation Officials' Contextual Guidance for All Ages and Abilities Bikeways.

Source: Northwest Municipal Conference

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The United States Access Board published [Public Right of Way Accessibility Guidelines \(PROWAG\)](#) in 2023, which were formally adopted in 2024. These guidelines, which are based on the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA), address access to street infrastructure, street furniture, and other components related to public rights of way. They establish technical requirements that ensure individuals of all abilities have full and equal access to public rights-of-way, particularly when acting as pedestrians. They apply to newly constructed and altered pedestrian facilities, as well as to temporary facilities providing alternatives to areas under construction or maintenance. When streets, trails, or sidewalks are built or upgraded, their design must comply with PROWAG. Examples of PROWAG requirements include accessible pedestrian signals at intersections, detectable warning surfaces to alert pedestrians to potential hazards, and maximum slopes for sidewalks and curb ramps.

Federal Highway Administration (FHWA)

The Federal Highway Administration (FHWA) maintains the [Manual on Uniform Traffic Control Devices \(MUTCD\)](#), which regulates the signs, signals, and pavement markings used on America's roads. The MUTCD, last updated in 2023, applies to all roads in the United States open to public travel. Many states, including Virginia, use state supplements to determine how the elements of the MUTCD will be implemented in that state. MUTCD elements affect Complete Streets implementation in a variety of ways: For example, they regulate the design of wayfinding signage, traffic signals, and pavement markings that can be used for on-street bicycle lanes, separated bikeways, and shared-use paths.

In addition to the regulations contained within the MUTCD, FHWA also publishes guidance for jurisdictions wishing to enhance their active transportation infrastructure.

FHWA's 2015 [Separated Bike Lane Planning and Design Guide](#) assists agencies in planning for separated bike lanes, drawing on lessons learned from previous bicycle lane implementations. It includes a broad review of planning considerations and a toolbox of flexible design recommendations, helping agencies determine when and where to use separated bicycle lanes. It also addresses funding and maintenance of these facilities and provides best practices for evaluating the effectiveness of a separated bicycle lane.

FHWA's [Safe Transportation for Every Pedestrian \(STEP\)](#) program also provides assistance to agencies looking to implement Complete Streets design elements. This program helps agencies address crashes at uncontrolled crossings by providing technical guidance on, and encouraging implementation of, six proven countermeasures that reduce pedestrian-involved crashes. These include crosswalk visibility enhancements, raised crosswalks, pedestrian refuge islands, pedestrian hybrid beacons, road diets, and rectangular rapid-flashing beacons.

FHWA also offers guidance on multimodality for small towns and rural communities. Its 2016 report, "[Small Town and Rural Multi-Modal Networks](#)," provides resources for smaller communities with limited resources that are looking to make their roads safer for active transportation users. Utilizing an All Ages and Abilities framework, this guide examines the challenges that are unique to these geographies, such as limited access to public transit or other automobile alternatives. It offers design ideas for various street typologies, drawing on small town and rural case studies, as well as policy considerations such as speed and access to public lands. This document may assist planning efforts in some lower-density communities in Fairfax County.

Virginia Department of Transportation (VDOT)

Like many states, Virginia publishes [a supplement to the MUTCD](#), adapting the federal document based on state laws and regulations. This document contains a section regulating traffic control for bicycle facilities. It regulates the placement of signage and pavement markings for bicycle users. For this reason, planners must pay attention both to the federal MUTCD and state supplement when planning Complete Streets that include bicycle facilities.

In 2004, Virginia’s Commonwealth Transportation Board (CTB) adopted its [Policy for Integrating Bicycle and Pedestrian Accommodations](#), which requires VDOT to accommodate bicycling and walking on all highway projects, with limited exceptions. It further establishes that project development for these active transportation elements should be concurrent with, and follow the same engineering processes as, auto-oriented construction projects. The policy offers significant latitude to project managers and local authorities to determine how pedestrians and cyclists should be accommodated at a given location.

While this policy does not use the words “Complete Streets,” it is referenced in the Complete Streets Guidelines included as an appendix in VDOT’s [Road Design Manual](#). While the Road Design Manual itself is the principal document that governs how roadways are designed in the state, this appendix is dedicated to the design of bicycle, pedestrian, and transit facilities. This appendix catalogs various types of active transportation infrastructure, provides design guidelines for each, and indicates when each facility type should be implemented based on auto speed and traffic volumes. It also regulates the placement and design of transit infrastructure such as bus stops and shelters.

Another appendix of the Road Design Manual covers Multimodal Design Standards for Mixed-Use Urban Centers. This document provides policy backing for jurisdictions applying the state’s Multimodal System Design Guidelines. It specifically references Complete Streets approaches and emphasizes equal access for users of all modes. It includes modified design standards for roads in mixed-use urban centers and design considerations that localities should consider when implementing multimodal designs in urban areas. This policy requires interested jurisdictions to prepare a Multimodal System Plan to be submitted to both VDOT and the Virginia Department of Rail and Public Transportation (DRPT) for approval.

Virginia Department of Rail and Public Transportation (DRPT)

The Virginia Department of Rail and Public Transportation (DRPT) publishes [Multimodal System Design Guidelines](#) to help jurisdictions plan for all modes when designing streets and communities. Most recently updated in 2020, this document is a resource rather than a policy, but it is still useful for implementing Complete Streets principles in Virginia. It outlines key concepts in multimodal planning, recommends processes that can help planners successfully achieve multimodal outcomes, defines community typologies where multimodal planning can be applied, and recommends treatments for corridors and intersections.

Other Guidance

A variety of other organizations also provide guidance relevant to Complete Streets implementations. The American Association of State Highway and Transportation Officials (AASHTO) published the fifth edition of its [Guide to the Development of Bicycle Facilities](#) in 2024. This document includes recommendations on the safe accommodation of cyclists, including guidance on choosing a bikeway type, design elements for each bikeway type, and wayfinding elements for cyclists. AASHTO also offers its 2021 [Guide for the Planning, Design, and Operation of Pedestrian Facilities](#), which recommends appropriate methods for accommodating pedestrians in public rights of way.

The National Association of City Transportation Officials (NACTO) provides several guides for design of active transportation facilities. Its 2013 [Urban Street Design Guide](#) offers guidance on Complete Streets principles and roadway treatments such as curb extensions and bioswales. Their 2014 [Urban Bikeway Design Guide](#) recommends Complete Streets interventions for cycling facilities based on global best practices, while NACTO's 2019 [Don't Give Up at the Intersection Guide](#) builds on this guidance with targeted interventions for improving intersection safety such as protected intersections.

Considerations

The Fairfax County Policy Plan already incorporates a variety of Complete Streets considerations aimed at creating streets that are safer, more accessible, and more pleasant for people who use active transportation or public transit. These considerations are found in principles of placemaking/placekeeping, equity, environmental sustainability, and healthy communities. The approach is individual, not one size-fits all, and includes diverse design options, such as street trees and pedestrian-scale lighting, as part of the Complete Streets approach.

As described in this paper, Fairfax County is transitioning towards a Complete Streets framework for roadway design. The county is moving to develop a comprehensive countywide Complete Streets guide, with a strong commitment to promoting equity in transportation through the successful implementation of a Complete Streets network. With the current Complete Streets considerations outlined in the Fairfax County Policy Plan and supporting documents, the goal moving forward is to consolidate these into one single, cohesive Complete Streets Guide. To ensure the continued success of this initiative, the following considerations could be included in the future efforts.

Policy Elements

According to the [National Complete Streets Coalition \(NCSC\)](#) an essential part of creating a strong Complete Streets policy is the incorporation of a set of elements that make streets safe, comfortable, and accessible for all, while balancing transportation needs and supporting local communities and environments. These elements should be taken into consideration as Fairfax County works to develop a Complete Streets policy.

1. Establish commitment and vision. *How and why does the jurisdiction want to complete its streets? This specifies a clear statement of intent to create a complete, connected network and consider the needs of all users.*

2. Prioritize underinvested and underserved communities. *Will require the County to define who their most underinvested and underserved communities are and prioritize them throughout.*
3. Applies to all projects and phases. *Instead of a limited set of projects, the policy applies to all new projects, retrofit or reconstruction projects, maintenance projects, and ongoing operation.*
4. Allows only clear exceptions (defined as any instances that do not conform to the general rule of the design guidelines). *Any exception must be specific, with a clear procedure that requires high-level approval and public notice prior to exceptions being granted.*
5. Mandates coordination. *Requires developers to comply, and interagency coordination between government departments and partner agencies.*
6. Adopts excellent design guidance. *Directs agencies to use the latest and best design criteria and guidelines and sets a time frame for implementing this guidance.*
7. Requires proactive land-use planning. *Considers every project's greater context, as well as the surrounding community's current and expected land-use and transportation needs.*
8. Measures progress. *Establishes specific performance measures that match the goals of the broader vision, incorporate equity considerations, and are regularly reported to the public.*
9. Set criteria for choosing projects. *Creates or updates the criteria for choosing transportation projects so that Complete Streets projects are prioritized.*
10. Creating a plan for implementation. *It must include specific steps for implementing the policy in ways that will make a measurable impact on what gets built and where.*

Key Policy Considerations

When developing a Complete Streets policy, the following items could be considered for incorporation in the road network.

Amenity Zone

The [Fairfax County Volume I: Urban Design Guidelines](#) defines an Amenity Zone as the paved area located within the Landscape Panel that is designated for pedestrian and bicycle amenities including seating, bicycle racks, bus shelters, and other street furnishings. The street furnishings in this zone provide important amenities for pedestrians by adding functionality and vitality to the pedestrian environment by providing places to sit, rest, park a bicycle and wait for transit. It can also reinforce the physical and visual separation between the sidewalk and the street, providing a welcoming and comfortable refuge.

A true Complete Street contains infrastructure that meets the mobility needs of all community members with amenities such as street trees, pedestrian oriented/ scale lighting, benches, trash cans, bus stops, bicycle parking, wayfinding signage and more.

- **Streets trees** are an important element of healthy, sustainable and livable communities and Complete Streets as it adds to the aesthetic streetscape character enhancing sidewalks and bicycle paths. Street trees should be planted in the Landscape Panel to provide shade and reduce the heat island effect and act as a natural buffer for pedestrians from the roadway. Street trees are also encouraged to be planted adjacent to trails and bicycle lanes for similar benefits. When implemented with Complete Streets, a safer and more aesthetic landscape condition that appeals to pedestrians and bicyclists is created, which may encourage use of alternative modes of transportation rather than using motorized vehicles.

- **Pedestrian oriented/scale lighting** should be located behind the curb in the Landscape Panel and ideally within the Amenity Zones. Quality street lighting helps to define or reinforce the urban character of an area and supports nighttime activities. Lighting should be designed not only for vehicular traffic on the roadways, but also for pedestrians to promote a safe environment and serve as a way-finding tool, while enhancing the character and visual appeal of the public realm.
- **Wayfinding signage** serves to help people orient themselves in physical space and navigate from place to place. It can also play a central role in defining or reinforcing the character and identity of a place and inform people’s daily experiences. Wayfinding signage should be oriented towards multiple travel modes, consisting of comprehensive signing and/or pavement markings to guide residents and visitors to their destination along routes that are safe, comfortable and/or attractive. Signs along key routes should be in high visibility places and indicate the direction of travel, the locations and distances to those destinations and should be communicated through a unified system of maps, signs, and directional markers throughout the public realm to enable orientation. Wayfinding and information signage should also cater to the needs of all community members, especially those with a variety of needs.
- **Street furnishings** such as benches, trash cans, enhanced bus stops, and bicycle parking are the elements that allow the streetscape to become more than simply a walkway and permit it to function as a public space. It is important that the furnishings are conveniently located and do not block the pedestrian circulation and placed in locations where people gather along primary pedestrian routes.
 - **Benches** encourage social interactions, contribute to the overall aesthetics in public spaces, provide a place for respite, and support accessibility to accommodate different abilities. Seating should be located to enable pedestrians to view street/sidewalk activity and at bus stops.
 - **Bicycle parking** is a key component of a bicycle network, as it allows cyclists to secure their bikes at their destinations and enjoy their surroundings or explore the public space. A bicycle rack is a type of bicycle parking that encourages both use and security, and also contributes to the overall aesthetics of an area by enhancing its appeal and creating a sense of place.
 - **Bus stops** are designed to address the safety, comfort, and convenience of pedestrians (including those with all abilities) and bicyclists utilizing transit services. This amenity should be placed in well-lit locations with accessible routes, good sight distance, and proximity to crosswalks. An enhanced bus stop may provide shelter as well as pedestrian and bicycle amenities such as benches, bicycle parking, shaded areas, wayfinding signage, and trash cans.

Placemaking and Placekeeping Efforts in Transportation

Placemaking and placekeeping is a community-driven approach to shape and/or enhance public spaces that reflect people's needs, aspirations, and identities. Complete Streets are often enhanced by placemaking/placekeeping policies.

A Complete Street approach to street design integrates people and placemaking/placekeeping into the planning of circulation networks, ensuring that streets, along with their associated bicycle,

pedestrian, and transit facilities are safe, comfortable, engaging and vital in creating or enhancing vibrant, inclusive, and functional communities. This can be done at a small scale, such as public art in the form of crosswalks, curb extensions, public transit, and protected bike lanes, transit stops, and streets designed with wide sidewalks. These features encourage slower, more human-centered movement, fostering connections between people and their environment. By thoughtfully designing and laying out streets, this approach can activate sidewalks and public spaces, fostering flexibility, sociability, and transformation. It focuses on creating or enhancing destinations that influence how people interact with their surroundings. Transportation systems that prioritize walking, biking, and transit play a key role in supporting placemaking/placekeeping initiatives.

Walkability Score

A [walkability score](#) is a numerical value ranging from 0 to 100 that indicates how easily you can carry out daily errands on foot from any given address. It's a quick way to gauge whether a neighborhood is compatible with a pedestrian-friendly lifestyle, providing insight into the convenience of living in that area without relying heavily on a car. Locations that have closer amenities (dining, groceries, shopping, etc.) will receive higher walkability scores and meet the needs of people who are non-Single Occupancy Vehicle (SOV) users. If a location receives a 0-24 walkability score it means that it is likely a car dependent area, while if a location receives a 90-100 walkability score is defined as a "walker's paradise".

However, this methodology should not solely be relied on as it lacks consideration of access to trail systems or even the walkability of the streets themselves. The methodology does not focus on the existence or quality of the infrastructure available for a pedestrian. This methodology does not evaluate the actual walkability of an area but rather is reflective of the surrounding land uses. Meaning it is a good tool to indicate how well land use is distributed to produce short walkable distances for a pedestrian to get from place to place, but not a reflection of actual existing facilities.

Climate Trends and Complete Streets

Climate change has a range of negative impacts on transportation. Increased heat, including droughts and heat waves, contributes to damage of roads and rail tracks, as well as increased wildfire risk. Heavy rain and storm surges cause flooding, mudslides, traffic congestion, and weaken roadway materials resulting in damage to roads, bridges, railways, ports, and coastal airports.

The Environmental Protection Agency (EPA) reports that the transportation sector is responsible for 29% of greenhouse gas (GHG) emissions in the US. Since 1990, total transportation emissions have increased 19%. Transportation includes cars, trucks, trains, ships and airplanes with a majority of emissions sourcing from vehicles using gasoline and diesel fueled combustion engines. 37% of emissions come from light-duty trucks, 23% comes from medium and heavy-duty trucks, and 20% is from passenger cars. The total Vehicle Miles Traveled (VMT) by passenger cars and light-duty trucks has increased by 47% since 1990. Complete Streets, where possible, must serve a dual purpose as climate trends change.

The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) states that transportation's CO₂ emissions can be reduced by a variety of methods including: Improving Operating Practices and Reducing Travel demand. Public transit and active transportation infrastructure, alongside mixed-use zoning, can reduce demand for motorized vehicle trips by

allowing people to live closer to the employment, shopping, and public destinations they need to reach.

Complete Streets policies work together with land-use planning to reduce GHG emissions. Placing complementary land uses in close proximity to each other reduces the distances that people must travel to get to the locations they need to go to, while safe infrastructure for active transportation users encourages the use of walking, cycling, and microtransit over motorized vehicles. Reducing lane widths and by extension, the amount of paving, along with providing street trees can provide environmental benefits. In combination, these land use and transportation choices bring residents, employers, visitors, businesses, and public services closer together, while also enabling safer and easier travel for those not traveling by car. Providing high-quality accommodations for active transportation not only provides safety and accessibility benefits, but environmental benefits as well, reducing both the number of trips taken and the emissions created by those trips.

Fairfax County is committed to sustainable transportation solutions which aim to reduce traffic congestion, reduce emissions, and improve commuter experiences. This is demonstrated in the Fairfax County Transportation element of the Policy Plan, which includes the Active Transportation and Trails Network Map.

Safety Considerations

The Fairfax County Department of Transportation prioritizes active transportation projects that enhance pedestrian and bicyclist safety through the implementation of proven safety countermeasures focusing on three objectives of a Safety System Approach: Safer People, Safer Roads, and Safer Speeds.

The Safety System Approach is a holistic and comprehensive approach for addressing the complex challenges of traffic safety, providing a guiding framework to improve the safety of communities. In order to prevent crashes from happening and minimize the damage to those involved when crashes do occur, the system works by building and reinforcing multiple layers of protection.

There are a variety of road safety countermeasures that can enhance safety for all modes. FHWA's list of [Proven Safety Countermeasures](#) and the [VDOT Pedestrian Safety Action Plan](#) are two important sources for roadway improvements that are known to improve safety for all users, especially vulnerable road users such as bicyclists and pedestrians. FHWA and VDOT both recommend the following countermeasures for improving safety: Lower speed limits, On-street bicycle facilities, Improved intersection/crosswalk lighting, Leading pedestrian intervals, Refuge islands, Pedestrian Hybrid Beacons (PHB), Rectangular Rapid Flashing Beacons (RRFBs), Road diets/lane reductions, Sidewalks/Multi-use Trails.

- **On-street bicycle facilities** are designated spaces within the street that are specifically designed for the movement of cyclists. The cycle clear path should provide a smooth, continuous cycling path that is free of obstructions. As explained in the [Fairfax County Volume I: Urban Design Guidelines](#), common types of dedicated on-street bicycle facilities in Fairfax County are bike lanes and buffered bike lanes.
- **Leading Pedestrian Intervals (LPis)** initiate the pedestrian "WALK" signal three to seven seconds before motorists traveling in the same direction are given the green indication. This allows pedestrians to enter the intersection prior to turning motorists, increasing visibility

between both modes. LPIs are typically used at intersections with high volumes of pedestrians and conflicting motorist turning movements.

- **Pedestrian Hybrid Beacons (PHB)** is a traffic control device designed to help pedestrians safely cross higher-speed roadways at midblock crossings and uncontrolled intersections. The beacons should be installed if warranted at crossings of streets that are more arterial in nature, either due to high vehicle speeds or the number of lanes. Hybrid beacons are centered over each travel lane, typically push activated, and are accompanied by signage to indicate to drivers where to stop and how to interpret the light patterns.
- **Rectangular Rapid Flashing Beacons (RRFBs)** are used to enhance pedestrian visibility and increase driver awareness at uncontrolled, marked crosswalks. RRFBs consist of a pair of rapidly flashing rectangular amber beacons beneath a pedestrian crossing warning sign and are typically push activated but can also include passive detectors that recognize pathway users and immediately activate the RRFB. When possible, pedestrian refuge islands should be included.
- **Sidewalks/ Multi-use Trails** should create comfortable environments for all ranges of people in use of the facility. Multi-use trails are located outside of the road right-of-way and provide two-way travel designated for walking, bicycling, jogging, skating, and traveling by scooter, wheelchair, and other micromobility devices. As a part of a Complete Street design, it is essential to address conflicts between bicyclists, pedestrians, and drivers at intersections of streets and trails.

Summary

Fairfax County has several documents and policies which apply Complete Streets principles to current and future projects. This paper provides information, insights and potential policy considerations to inform the future development of a Complete Streets Guide and does not serve as an official policy or directive. Staff will continue to coordinate with County staff and applicable stakeholders in the future when the County begins to create a unified Complete Streets document. Any proposed recommendations in this paper should be viewed as possible discussion points rather than finalized courses of action.

Glossary of Terms

Active Transportation: Non-motorized modes of travel, including walking, biking, hiking, and using scooters, either for transportation or recreation.

Bicycle Parking: Designated areas for parking bicycles, typically racks or other secure structures, that allow cyclists to safely leave their bikes while engaging in other activities.

Cohesive Transportation Network: A transportation system that is well-integrated and connects various modes of transportation (e.g., car, bus, bike, walking) seamlessly, offering residents multiple travel options.

Complete Streets: Streets that are designed and operated to accommodate all users, including motorists, pedestrians, cyclists, and public transit riders. They are planned to be safe, accessible, and supportive of various forms of transportation for people of all ages and abilities.

Complete Streets Approach: A method of designing streets that balances different travel modes and may include sidewalks, bike lanes, bus lanes, accessible public transportation stops, safe crosswalks, and other elements like trees and benches.

Crosswalks: Marked paths for pedestrians to safely cross streets, typically with road markings or signals to alert drivers and pedestrians of the designated crossing areas.

Curb Extensions: Extensions of the sidewalk at intersections or along roads that reduce the crossing distance for pedestrians and improve visibility for both pedestrians and drivers.

Environmental Impacts: The effects that transportation infrastructure and development have on the natural environment, including air quality, noise, water management, and wildlife habitats.

Equity in Transportation: Ensuring that transportation systems are accessible, affordable, and fair for all members of a community, including disadvantaged groups such as low-income, elderly, and individuals with disabilities.

Healthy Communities: Communities that are designed to promote physical and mental well-being, often through active transportation options, green spaces, and safe environments for all residents.

Incomplete Streets: Streets that lack adequate facilities or amenities for all users, such as missing sidewalks, bike lanes, or accessible public transportation options. These streets may not be suitable for people of all ages or abilities.

Median Islands: Raised areas in the center of the street, often used to divide traffic or provide a refuge for pedestrians crossing busy roads.

Modal Emphasis: The designation of one or more travel modes (e.g. walking, cycling, public transit, driving) that should be emphasized in the design of the cross-section for a street or corridor. While one or more travel modes may be emphasized on a street or corridor, other modes are almost always still accommodated.

One Fairfax: A policy initiative that promotes racial and social equity within Fairfax County, addressing disparities and ensuring that policies and programs benefit all residents equitably.

Pedestrian Scale Lighting: Street lighting designed specifically to enhance the safety and comfort of pedestrians by providing softer, lower-level light compared to standard street lighting.

Public Transportation Stops: Locations where passengers can board or exit buses, trains, or other forms of public transportation.

Right-of-Way (ROW): The land designated for transportation purposes, which includes streets, sidewalks, bike lanes, and other infrastructure. It is the space within which transportation elements are constructed and maintained.

Streetscape: The physical elements of a street, including sidewalks, bike lanes, trees, lighting, benches, and other features that enhance the pedestrian and cyclist experience while also accommodating vehicles.

Transportation Modes: Different methods of travel, including walking, biking, driving, and public transportation, all of which need to be accommodated for a comprehensive transportation system.

Transportation Policy Plan: A set of guidelines or strategies in a comprehensive plan aimed at shaping the future transportation system in a region, such as Fairfax County, to improve mobility, safety, and accessibility.

Transit: Public transportation systems, such as buses, trains, or subways, that are available for public use and are designed to move people efficiently across a region.

Transit-Oriented Development (TOD): A planning and development approach that focuses on creating dense, mixed-use communities centered around transit hubs (e.g., bus or train stations) to promote sustainable transportation choices.

Vehicular Space: The portion of a street or roadway designed primarily for the use of motor vehicles.

Wayfinding: Signage and other tools that help people navigate streets and public spaces, making it easier to find destinations and navigate routes, especially for pedestrians and cyclists.