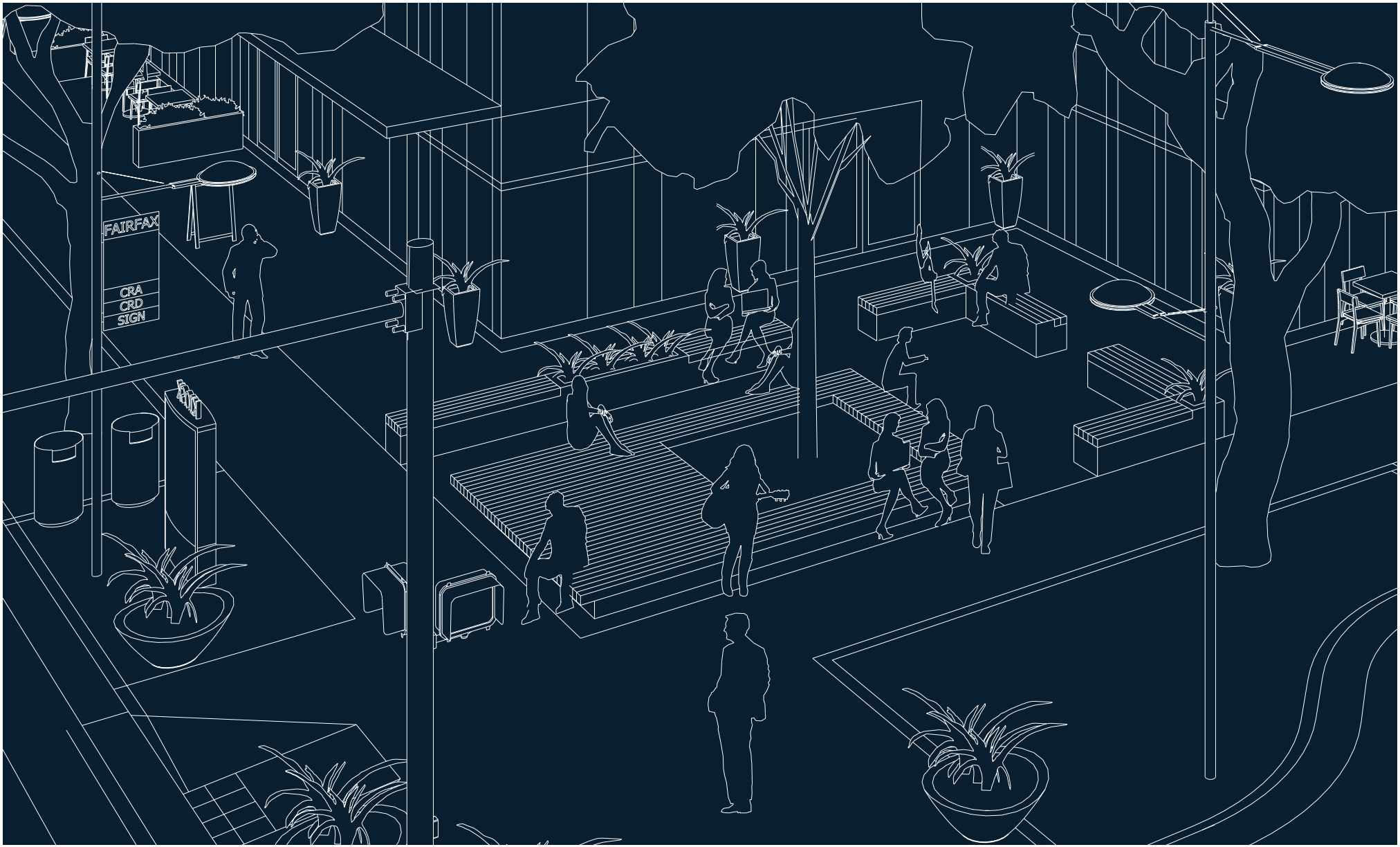

VOLUME I

URBAN DESIGN GUIDELINES

FOR FAIRFAX COUNTY COMMERCIAL REVITALIZATION DISTRICTS AND AREAS

1st Edition SEPTEMBER 2018, REV Edition DECEMBER 2025

ACKNOWLEDGMENTS

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PLANNING & DEVELOPMENT

COUNTY OF FAIRFAX
1742
VIRGINIA

Image Credit: The Lakota Group

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Image Credit: apartments.com

1 INTRODUCTION

INTRODUCTION

The practice of urban design addresses the physical features that define the character of streets, public spaces, neighborhoods and communities. Urban design is used to align the desired scale and character of development with the social, economic and aesthetic values of a community.

Fairfax County is committed to achieving a high standard of urban design and architectural quality in its Commercial Revitalization Districts (CRDs) and Commercial Revitalization Areas (CRAs). Urban Design Guidelines for these areas are a means to provide best practices and detailed design suggestions for new development, redevelopment and capital projects to ensure integration with their surroundings, functionality, compatible aesthetics, community vitality, and improved livability of an area.

Purpose of these Guidelines

The Volume I Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas (Guidelines) are intended to guide the appearance, arrangement and function of the built environment. The Guidelines serve as a companion document to the *Fairfax County Comprehensive Plan (Plan)* by elaborating upon the Plan's more general recommendations. The Guidelines further articulate the intent, objectives and performance recommendations contained in the Plan by conveying design ideas in greater detail, especially with regard to street and streetscape design, building form and design, and site features, including interim development conditions.

As stated in the *Countywide Strategic Plan*, flexibility and agility in zoning and development review is necessary to respond to evolving development trends and technologies. The content in this document is non-regulatory and is not meant to apply like a "one size fits all" requirement. The Guidelines offer design guidance with flexibility in how or whether a design element or recommendation is realized.

The Guidelines are intended to:

- provide a common language with which to discuss how to create developments that contribute to an attractive, vibrant and livable area;
- offer clarity on important aspects to consider in the design of developments;

1A STRUCTURE OF THESE GUIDELINES

- help facilitate the dialogue that occurs among stakeholders in the development review process;
- provide solutions that balance the desire for a high-quality environment with the need for developments to be economically feasible;
- foster compatible development that responds to the surrounding context; and,
- encourage the design of communities of the highest quality, where each building and public space contributes positively to the overall character of the area.

The Urban Design Guidelines are comprised of two documents:

- **Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas** describes urban design principles and best practices.
- **Volume II: District Design Guidelines** contains urban design guidelines for the CRDs and CRAs that are tailored specifically to the individual area.

Thus, the Guidelines applicable to each CRD or CRA include not only the common design language articulated in Volume I, but also the distinct, district-specific guidelines included in Volume II.

Volume I, Chapter 1 includes the purpose and use of the document. Chapters 2 through 6 contain urban design principles and strategies addressing specific topics including street and streetscape design (Chapter 2), parks and open space design (Chapter 3), building design (Chapter 4), parking and access (Chapter 5), and additional placemaking elements, such as public signage, public art and water features (Chapter 6). Chapter 7 provides guidance on interim development conditions. An accompanying Appendix contains additional details, a toolbox of sustainable design strategies, and reference materials. Chapters 2 through 6 are organized in the following manner:

- **Intent:** An introduction to each chapter describes the overarching purpose and intent of the chapter.
- **Topical Sections:** Each chapter is divided into sections that address a specific subject matter.
- **Design Principles:** The topical sections include design principles defining the goals and general urban design conditions necessary to achieve desired outcomes.
- **Design Strategies:** Each topical section also provides specific design strategies which, in some instances, include suggested materials and dimensional requirements for implementing the design principles.

Within the topical sections, local and national references are offered for additional information. Additional specifications—a tree plant list and planting details—are included in the Appendix, along with a toolbox of sustainable design strategies. References are hyperlinked within each section. The complete listing of all references and their web addresses is located in the Appendix.

1B USING THESE GUIDELINES

The Guidelines apply to development proposals for all properties located within the boundaries of the CRDs and CRAs. They may be appropriate to apply to other select mixed-use centers including Suburban Centers, Community Business Centers (CBCs), and Transit Station Areas (TSAs) when referenced in the Comprehensive Plan. They are intended for use by citizens, developers, landowners, designers, Fairfax County staff, the Fairfax County Planning Commission, and the Board of Supervisors when either proposing, designing or reviewing development proposals.

Where applicable, the two volumes of the Guidelines should be used together to inform strategic design decisions in planning for redevelopment, land use, transportation, and infrastructure. There may be instances where guidance provided in Volume II of the Guidelines may elaborate upon or contradict material provided in Volume I. In such instances, the guidance in Volume II supersedes the guidance in Volume I. Some areas will not have a Volume II.

The Guidelines are not a substitute for the codes and ordinance provisions associated with the development review process. The Guidelines are meant to offer design guidance only. There is flexibility in how a design element may be realized, provided the design intent can be achieved. As such, the Guidelines are not prescriptive; architectural style, specific street furnishings, plant species, or exact paver types are not dictated. Rather, the Guidelines present a palette of design options that provide flexibility and allow for innovation. Designers and property owners are encouraged to use the Guidelines as a frame of reference when making specific design decisions as long as the selections meet the intent laid out in the Guidelines.

FLEXIBILITY

There will be instances where the urban design and streetscape recommendations outlined in the Plan and these Guidelines cannot be accommodated in the manner envisioned, even with reasonable adjustment and flexibility. They may include pre-existing site constraints, infill or building expansion constraints, or needed modifications to the streetscape guidance to conform to applicable County and/or Virginia Department of Transportation (VDOT) requirements. In these cases, variations may be permitted on a case-by-case basis using the following criteria:

- The inability to conform to the recommendations is demonstrated through written and/or graphic evidence; and,
- Deviations are as minimal as possible; and,
- Modifications still meet the intent of the Plan and the Guidelines.

FUTURE AMENDMENTS

As places develop and evolve, the Guidelines may need amendments to respond to changing conditions. In addition, new technologies, maintenance challenges, and innovations may

Chapel Hill, NC

provide opportunities for different design strategies, new products, materials, etc., which should be reflected in updated versions of these Guidelines.

RELATIONSHIP TO THE PUBLIC FACILITIES MANUAL

The Guidelines may differ from the requirements set forth in the Fairfax County Public Facility Manual (PFM) based upon the unique characteristics of the urban environment. The treatments and designs described in the District Guidelines may be substituted for details found in the PFM. Criteria for using them as an alternative to the PFM is found in PFM Sec. 2-1100 Applicability of the Urban Design Guidelines.

LEFT
The Guidelines encourage the use of durable, renewable materials in public spaces such as this LEED-ND project
Image Credit: Peyton Chung

Liverpool, England

BOTTOM
The Guidelines provide recommendations to improve the public realm, including streetscape areas such as this example from England
Image Credit: ADP Architecture

1C COORDINATION WITH OUTSIDE AGENCIES

The potential exists for conflicts to occur between utilities and pedestrian features, particularly in the public right-of-way. To avoid such conflicts, utility easements, utility boxes, and access to equipment require special consideration in the design process. Dominion Energy, Washington Gas, Fairfax Water, communications providers, and other utility companies should be consulted early in the design process. On-going planning and coordination among project designers, the County and the various utility providers is essential to ensure that utilities and utility equipment are located appropriately.

Coordination with VDOT is critical for projects that include the installation of improvements within its right-of-way. VDOT requires a permit for any installation proposed within its right-of-way, including trees, planting beds, paving, and street furniture. Developers may construct on-street parking, landscape panels, sidewalks, and sometimes bicycle facilities that border travel lanes, in the right-of-way and which are subject to VDOT's inspection and acceptance into its secondary road system.

RIGHT
The development process requires early and ongoing coordination with Fairfax County, VDOT, and a range of utility providers, including Fairfax Water, Washington Gas, and Dominion Energy

1D MAINTENANCE RESPONSIBILITY

Establishing maintenance responsibility and expectations is critical to the long-term success of streetscapes and pathways. Depending on the type of infrastructure, maintenance may be the responsibility of the property owner, Fairfax County, VDOT, or utilities such as Dominion Energy.

Unless otherwise specified, it is preferred that maintenance of all facilities that are proffered and constructed as part of a new development be maintained by the property owner in perpetuity. This includes features within the right-of-way. The Building Zone, located outside of the right-of-way, should be privately owned and maintained.

Did you Know? In CRDs, Fairfax County's Department of Public Works and Environmental Services (DPWES) operates a program for maintenance of non-standard features including portions of the streetscape, gateway signs, and certain public spaces, much of which is located within the right-of-way. Additional routine maintenance services such as street sweeping, trash removal, remediation of trip hazards, landscaping, and crack weed spraying are also provided.

ROADWAYS AND STREETSCAPES

VDOT classifies streetscapes within its right-of-way as either standard or non-standard. Standard streetscapes include grass, some landscaping, and concrete sidewalks. Non-standard streetscapes are those that deviate from the standard by incorporating additional components or unique materials such as brick pavers, street trees, street furnishings, utility easements required for new installations of electric distribution duct-banks and manholes, and other special features.

VDOT requires that all non-standard streetscapes be maintained by the property owner, and in instances where non-standard hardscape or furnishings is proposed, a maintenance bond is required. In these instances, the property owner must enter into a 'Covenant of Perpetual Maintenance' with VDOT obligating the property owner to on-going maintenance of the streetscape.

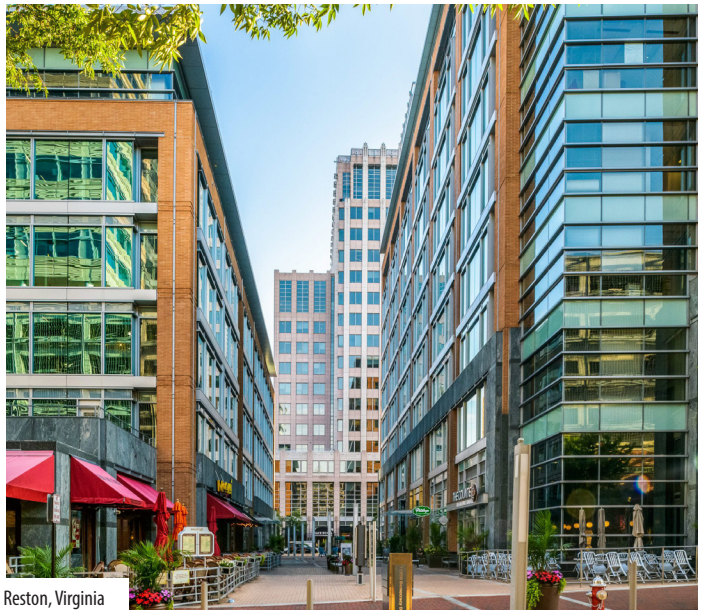
OVERHEAD UTILITIES IN THE RIGHT-OF-WAY

In many instances, the Comprehensive Plan recommends that overhead utility lines be buried in duct-banks and decorative streetlights be installed. Dominion Energy requires easements over the duct-banks and associated manholes or vaults which are typically located under the sidewalk. VDOT will not accept easements in its road system; therefore, maintenance of these encumbered spaces is the obligation of the property owner.

During the rezoning process, developers should account for the required dimensions of duct-banks and manholes and ensure maintenance responsibility is articulated. See Chapter 2 for more information about utility locations in the streetscape.

McLean, Virginia

TOP
Non-standard streetscape within McLean CBC
Image Credit: Fairfax County



Reston, Virginia

BOTTOM
Pedestrian pathway at Reston Town Center Development
Image Credit: Boston Properties

STREETLIGHTS

Chapter 7-0800 of the PFM outlines requirements for new developments to install street lighting. PFM Section 7-0804 states that streetlights are limited to three standard fixture styles. However, styles recommended in the Urban Design Guidelines are permitted as alternates in accordance with Section 2-1100. The LED streetlight models referenced in the Guidelines are listed in Dominion Energy's standard streetlight catalog or available as part of Dominion Energy's Schedule 153. Using Dominion-approved fixtures ensures that the county will pay for monthly operating costs and that Dominion Energy will maintain the fixtures, including the replacement of damaged or non-working fixtures. Where non-standard fixtures are installed, private operation and maintenance is required.

PEDESTRIAN PATHWAYS (OUTSIDE OF THE RIGHT-OF-WAY)

Off-street pedestrian pathways are an important part of the pedestrian circulation system in many areas. They often include paving, lighting, furnishings, trees, landscaping, and other enhancements. Pathways may be planned entirely within a new development or may connect across multiple developments. In either instance, proffered pathways must stipulate who is responsible for maintaining the pathway surface and any landscaping or other special features and operating light fixtures. Public access easements should be recorded for pedestrian pathways that are intended for public use. Easements should extend beyond the pathway to include adjacent publicly accessible areas.

1E KEY VALUES AND PRIORITIES

The Guidelines advance four key values that reflect County priorities. These provide an underlying framework that is reflected in the design principles and strategies articulated in the remainder of this document.

SOCIAL EQUITY AND COMMUNITY HEALTH

Design decisions affecting the built and natural environment should consider the impacts to social equity and community health. Efforts should focus on creating accessible spaces that support a high quality of life. Additional efforts include promoting employment opportunities, access to housing, and amenities and services available to people of all backgrounds and abilities. CRDs, CRAs and other mixed-use activity centers are uniquely positioned to support active living and provide opportunities for growth and mobility because of their higher level of transit accessibility, access to jobs and services, range of housing types and prices, and recreational opportunities.

In 2017, the One Fairfax Policy was adopted jointly by the Board of Supervisors, the School Board, and the Park Authority. This policy established the framework that is used to consider equity in decision-making in both the County government and the school system. These Guidelines incorporate the principles of One Fairfax, particularly as they relate to improvements to multimodal connectivity, parks and open spaces. Development proposals should embrace the One Fairfax policy by contributing to the creation of equitable places.

TOP LEFT
Sustainable practices, such as ensuring that new trees are planted with sufficient root space to promote sustained long term growth, are a key aspect of these Guidelines
Image Credit: Silva Cell

BOTTOM LEFT
Stakeholders participating in development of design concepts for the vision for a community
Image Credit: Fairfax County

BOTTOM RIGHT
One Fairfax is a policy established to consider equity as part of the County's decision-making process
Image Credit: Fairfax County

SUSTAINABILITY AND RESILIENCE

Fairfax County is committed to achieving a sustainable and resilient community. In 2017, the Board of Supervisors updated its Environmental Vision which includes, "an overarching vision to attain a quality environment that provides for a high quality of life and is sustainable for future generations. These aspects of a quality environment are essential for everyone living and working in Fairfax County. No matter what income, age, gender, ethnicity, or address, everyone has a need and right to breathe clean air, to drink clean water, and to live and work in a quality environment."

New York, NY

BOTTOM
Streetscape with low-maintenance plantings that also function as bioretention facility, capturing runoff from the adjacent non-porous surfaces while reducing urban heat island effect and increasing native pollinators
Image Credit: Yuka Yoneda, Inhabitat

New developments should contribute to this County vision. This can take many forms, such as creating a walkable and bikeable environment; supporting and increasing public transit options; achieving compact development; protecting and increasing green space, green infrastructure, and tree canopy; promoting the design and construction of green buildings, including integrating water and energy efficiency measures and on-site renewable energy production; protecting habitat and natural resources; reducing and recycling waste; creating climate-ready and adaptable communities with resilient design; and, integrating existing architecturally and culturally significant themes and buildings into new development.

There are many resources that elaborate on the County's sustainability and resilience goals and that provide specific guidance for achieving the desired outcomes. These include: the Community-wide Energy and Climate Action Plan (CECAP), the Resilient Fairfax Plan, the Operational Energy Strategy; the Sustainable Development Policy for Capital Projects, the Environment Section of the Policy Plan of the Comprehensive Plan, and the Heritage Resources Section of the Policy Plan, among others.

MAINTENANCE AND DURABILITY

An urban environment that is low-maintenance and consists of durable materials that weather and age well over time is important in achieving a sustainable public realm. Public spaces should accommodate changing demands, as the use of these spaces evolves over time. The use of high quality and wear-resistant materials for streetscape surfaces should be a priority for all projects.

The long-term maintenance of sidewalks, trees, landscaping, paving, furnishings, lighting, park facilities, and other components of the public realm is a chief consideration of these Guidelines. Specifications were selected based in part on the anticipated level of durability and maintenance.

San Francisco, CA

SMART CITY

Smart City technologies utilize electronic data collection to supply information which is used to manage assets and resources efficiently. These technologies improve sustainability, encourage economic development, and enhance quality of life factors for people living and working in such areas. Collected data can be used to monitor and manage transportation systems; power and water supply; waste management; law enforcement; and systems as diverse as schools, hospitals, and other community services. Examples of this technology that relate to these Guidelines include, but are not limited to, the incorporation of wifi services into benches, programmable street lighting, smart trash bins that monitor capacity, and transit facilities that provide real-time information for passengers. Smart City features are rapidly evolving; developments should incorporate these evolving technologies where feasible.

Minneapolis, MN

LEFT
Scored, poured-in-place concrete sidewalks provide a consistent, durable, and low-maintenance surface most suitable for persons with disabilities and strollers
Image Credit: Prado Group

RIGHT
Bus stop with real-time information - an example of smart city technology
Image Credit: NACTO

1F BY-RIGHT DEVELOPMENT

By-right developments are those that conform to the property's zoning regulations and can be built without a rezoning, special exception, special permit, or variance process. While by-right development does not require the approvals of a rezoning application, it is strongly advised that anyone proposing a by-right development consult these Guidelines and implement their recommendations to the extent feasible. Feasibility is often dependent on site-specific factors such as the size of the proposed development and the proposed uses. As always, there is flexibility in achieving the specific objectives of the Guidelines. *(See Graphic 1: By-Right Development)*.

All by-right development projects should address the following:

1. **Comprehensive Plan Recommendations:** include components of the Comprehensive Plan's ultimate condition wherever feasible and facilitate completion of long-term planning objectives such as transportation improvements, utility undergrounding, and plazas or parks, among other public facilities.
2. **Pedestrian and Bicycle Connectivity:** provide multimodal connectivity to ensure that pedestrian and bicycle facilities are consistent and continuous across the site and to adjacent properties. For example, this may include providing bicycle facilities along the street consistent with Active Fairfax Plan recommendations or providing a pedestrian walkway through a parking lot.
3. **Streetscape Design and Dimensions:** to ensure consistency across an area, wide sidewalks, and associated trees, landscaping, and furnishings should be provided, as they are essential to achieving a consistent, safe, and walkable environment for pedestrians, and for placemaking. The Volume II Urban Design Guidelines include preferred tree species, paving materials and furnishing style/specifications. See Chapter 2F for more information.
4. **Streetlights:** to ensure visual continuity for the area, use the preferred streetlight. If no light is specified in the Volume II Urban Design Guidelines, the full cut-off acorn light should be used. See Chapter 2F for more information.
5. **Building Setbacks:** a building's frontage should be located at the build-to line or setback as depicted in the street cross-section. Build-to lines or setbacks are typically located at the edge of the Building Zone. Parking should not be located between the building and the street. Building entrances should face the primary street. See Chapter 4A for more information.
6. **Parking Location and Screening:** when surface parking is unavoidable, design opportunities should be employed to creatively integrate parking and vehicle circulation into the site, so it is less obtrusive to the visual appearance of the area and provides safe and comfortable pedestrian access to the building and along the street frontage. For example, locating the parking on the side or rear of the site and placing the building at the front edge of the Building Zone is essential to transforming areas to a more urban form. See Chapter 5 for more information.
7. **Ground Floor Design:** ground floors of buildings should work symbiotically with the adjacent streetscape and public spaces to provide an experience that is active, safe, comfortable, and engaging for pedestrians. Non-residential ground floors should have floor-to-floor heights of 14 to 16 feet and be at least 60% transparent. Residential ground floors should have individual unit entrances facing the street. Residential entrances should be elevated where feasible and include porches or stoops. See Chapter 4C for more information.

GRAPHIC 1: BY-RIGHT DEVELOPMENT

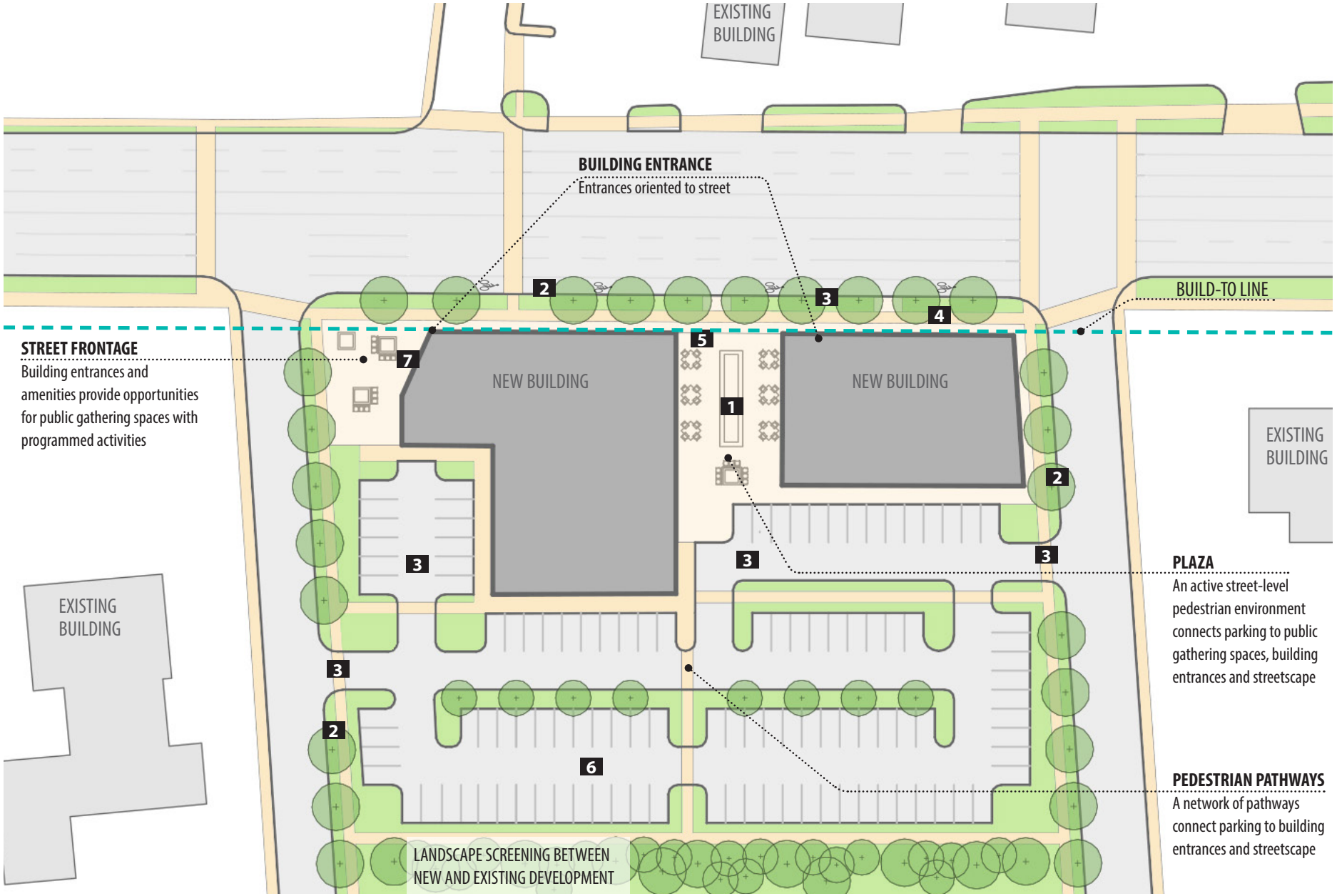


Image Credit: Rhodeside & Harwell

2 STREET & STREETSCAPE DESIGN

INTENT

Streets are a vital component of livable, attractive communities and help to define the character of the CRDs and CRAs. How the streets and their associated components are implemented has an effect on the quality of life of the people who use them and on the economic vitality of their surroundings. Well-designed streets and their adjacent streetscapes can encourage the use of transit and support walking and bicycling, which results in healthier, more sustainable communities. Therefore, residents, employees, and visitors should have access to safe, convenient and attractive streets and streetscapes throughout their community–whether they are walking, driving, bicycling, or taking public transportation.

Excessive roadway widths and large amounts of pavement can detract from a compact, pedestrian-oriented environment. For example, wide travel lanes encourage excessive speeds, larger intersections make pedestrian crossing longer distances. Larger roadway pavements also coontribute to the urban heat island effect and urban flooding issues. A balance must be achieved between accommodating all components of the street while minimizing the amount of land required for them to function. If all streetscape elements cannot be incorporated into a proposed project, designers should work with the County to understand priorities for the particular circumstance. Adequate width for the active transportation facility and the provision of sufficient planting area for street trees are frequently the priorities for constrained streetscapes.

All streets should be designed for multimodal travel. There are certain locations, however, where a vehicular street is not necessary or desirable. In these instances, midblock facilities that support pedestrian connectivity are preferred. These pedestrian-only connections make walking more convenient and promote healthier, more sustainable lifestyles. Section 2L provides design information for these midblock facilities.

INSPIRATION

Fairfax, VA

Montreal, Canada

Washington DC

Shirlington, VA

Tysons, VA

The design of streets and streetscapes incorporates many elements that contribute to a high-quality environment, including pedestrian and bicycle infrastructure, streetscape furnishings, trees, and sustainable design features, as depicted in these images

2A COMPLETE STREETS

A Complete Streets approach to street design integrates people and placemaking into the planning of the active transportation networks to ensure that streets and their associated bicycle, pedestrian, and transit facilities are safe and comfortable for people of all ages and abilities. This approach balances the needs of different travel modes and supports land uses, local economies, and the environment. Complete Streets encompass both the roadway and the streetscape in an integrated manner intended to balance the needs of pedestrians, cyclists, transit riders, as well as drivers. The use of innovative designs that address environmental impacts and promote healthy communities is encouraged in the design of Complete Streets. Programs and policies that impact the design of Complete Streets include:

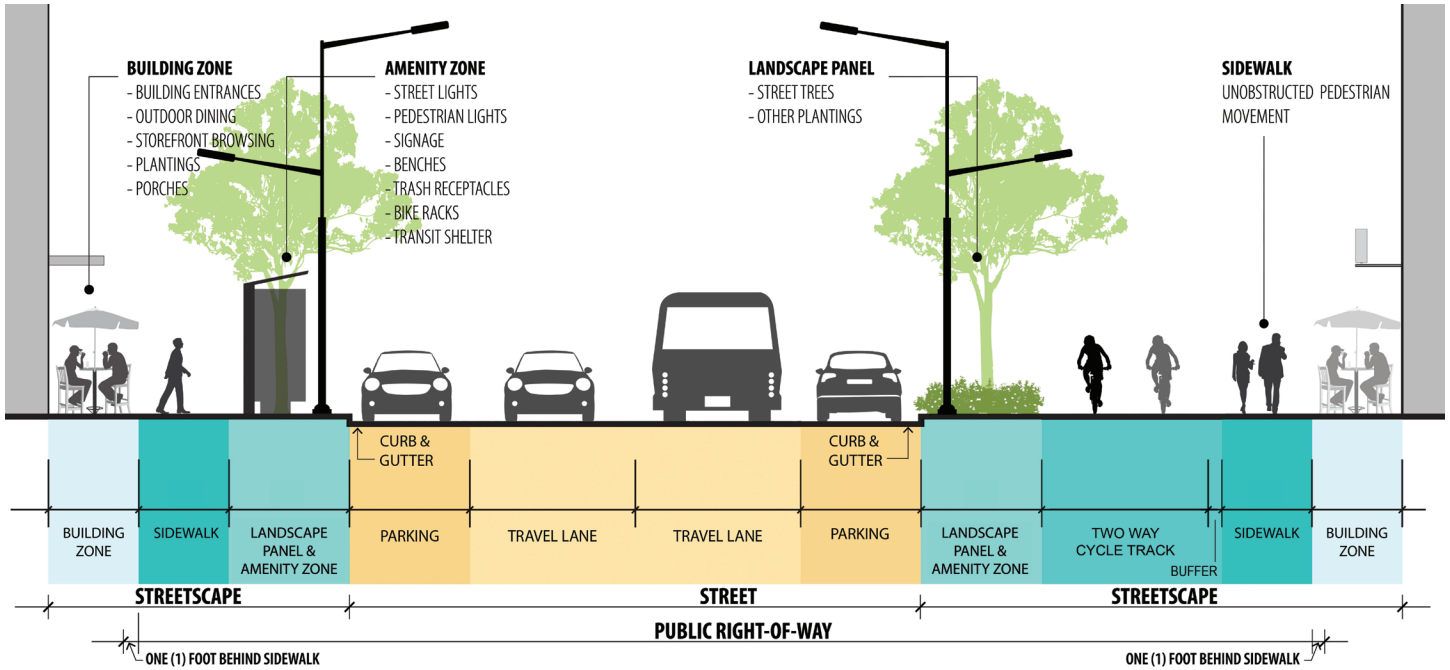
ACTIVE FAIRFAX

Active Transportation refers to pedestrian, bicycle, and other non-motorized ways of traveling around Fairfax County. The County's Active Transportation Plan provides a comprehensive countywide facility network map for cycling, walking and other non-motorized travelers. An Active Transportation Toolkit and Facility Selection Matrix are available to assist with facility selection and design. Active Transportation Toolkit

VDOT MULTIMODAL SYSTEM DESIGN GUIDELINES

VDOT, in conjunction with the Virginia Department of Rail and Public Transportation, has developed Multimodal System Design Guidelines to promote

GRAPHIC 2: STREET AND STREETSCAPE COMPONENTS



the integration of Complete Streets in Virginia's more urban areas. They include a functional classification system for public streets that is being applied in Fairfax County's activity centers, including its CRDs and CRAs. The Comprehensive Plan and/or the Volume II: District Design Guidelines provide information on functional classifications and cross-sections for the design of streets within each area. Cross-sections illustrate the location and dimensions of each component of the street's configuration. This chapter provides general information on quality street design and basic standards for instances where these standards are not provided in other documents.

STREET AND STREETSCAPES MAINTENANCE

Non-standard streets and design elements will likely require private or County maintenance and are subject to VDOT approval. See Chapter 1D for more information on street maintenance requirements.

Additional Resources

- Manual on Uniform Traffic Control Devices (MUTCD)
- National Association of City Transportation Officials (NACTO) Urban Street Design Guide
- VDOT and Department of Rail and Public Transportation's Multimodal System Design Guidelines
- Public Right-of-Way Accessibility Guidelines

Alexandria, VA

BOTTOM
A transit boulevard with future BRT near Alexandria, Virginia
Image Credit: Fullertography

2A.1 STREET AND STREETSCAPE COMPONENTS

STREET COMPONENTS

See *Graphic 2: Street and Streetscape Components Section* and *Graphic 3: Elements of Complete Streets* which represents prototypical examples with their various components.

The following street components are located in the right-of-way:

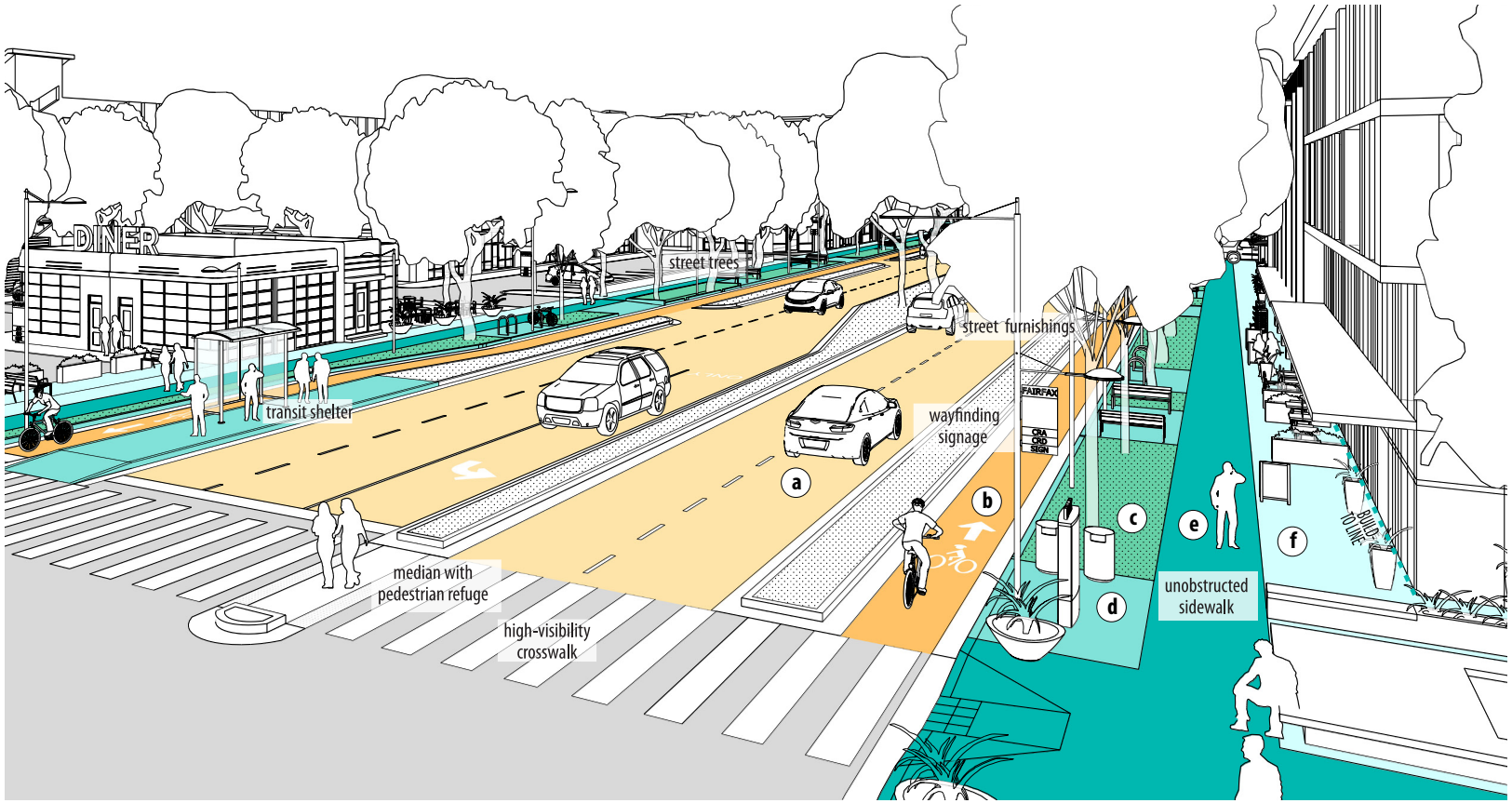
- **Medians** are the strip of land between the travel lanes of opposing traffic on a divided street. They can also be used as a buffer between modes (such as to provide a barrier between cyclists and moving vehicles) or to separate local and through traffic. Medians can include plantings and can accommodate transit facilities, pedestrian pathways and refuges, turn lanes, street lighting, and signage.
- **Travel lanes and turn lanes** are lanes for the movement of vehicles. A turn lane may be incorporated within the travel lane or provided as an additional exclusive lane. On streets without bicycle facilities, vehicles must share the travel lane with cyclists.
- **On-street bicycle facilities** are lanes and trails designed for the movement of cyclists. They can be designed as dedicated facilities (such as a cycle track) for the exclusive use of cyclists or shared with other modes (see *Graphic 3*).
- **Curb and gutter** are continuous facilities that separate the street from the adjacent streetscape, help control vehicles from departing the roadway, and control stormwater runoff.

STREETSCAPE COMPONENTS

The following streetscape components are typically located within the right-of-way on public streets:

- **Landscape panel:** the area adjacent to the street, which includes space for street trees, plantings, streetlights, and signage.
- **Amenity zone:** the paved area (constructed of porous or impermeable hardscape materials) located within the Landscape Panel designated for pedestrian and bicycle amenities including seating, bicycle racks, bus shelters, and other street furnishings. Amenity Zones are generally the same width as the Landscape Panel and can range in length depending on furnishing requirements.
- **Off-street bicycle facilities, shared use facilities, and associated buffers:** may include off street cycle tracks with parallel sidwalk or shared use facilities for pedestrian and cyclists (see *Graphic 2*). One specialized type of shared use facility for urban areas is the 'Urban Trail'. Urban Trails support bi-directional bicycle and pedestrian travel similar to paved multi-use trails but with a distinct urban aesthetic. Urban Trails are a space-saving alternative to cycle tracks.
- **Sidewalk:** the hardscape area reserved exclusively for pedestrian movement that is clear of any obstructions.

GRAPHIC 3: ELEMENTS OF COMPLETE STREETS



a TRAVEL LANE
Reserved for vehicular travel and turning movements

b CYCLE TRACK
Reserved for unobstructed bicycle travel

c LANDSCAPE PANEL
Retained for street trees and plantings

d AMENITY ZONE
Designated for seating, bike racks and furnishings

e SIDEWALK
Reserved exclusively for pedestrian movement without any obstructions

f BUILDING ZONE
Designated for building-related elements including outdoor dining, awnings, plantings, porches, etc.

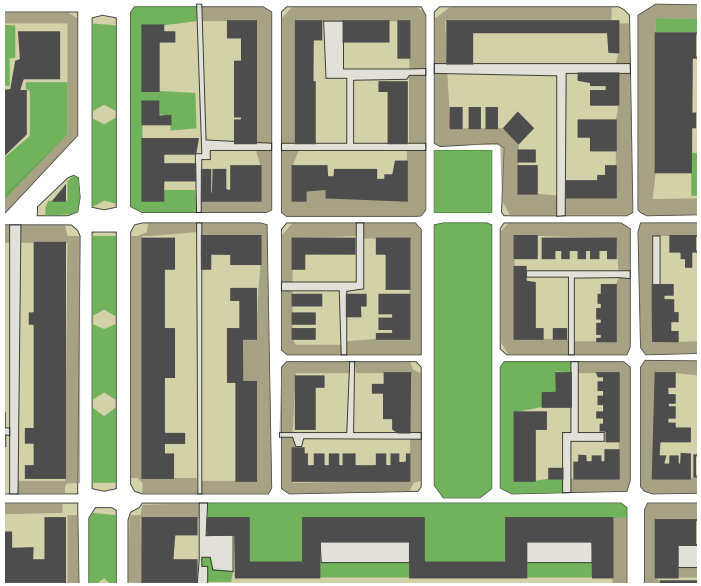
The following is located outside of the right-of-way on private property:

– **Building zone:** the area between the sidewalk and the face of the building that is designated for building-related elements including entrances, outdoor dining, browsing, plantings, transit shelters, and residential porches or stoops. The width of the Building Zone varies depending on the street type. On all streets, a 1-foot VDOT maintenance easement should be included adjacent to the sidewalk in the Building Zone.

2B STREET NETWORK

The planned street networks in the CRDs and CRAs are designed to support local circulation while allowing for maximum development potential. When well-connected, the street network provides alternative options for navigating an area by supporting travel by multiple modes of transportation.

The planned street network should be considered early in the initial conceptual design phase of a development proposal. The Comprehensive Plan and the Volume II: District Design Guidelines describe both the existing and planned street network including street cross-sections, street configurations, and required rights-of-way for the various street types.



RIGHT
An urban grid of streets that provides a well-connected street network with smaller scaled blocks to encourage walking and biking
Image Credit: Fairfax County

DESIGN PRINCIPLES

Establish a multimodal circulation system as the primary organizing feature of the development. As specified in the Comprehensive Plan, the urban design vision for the CRDs and CRAs calls for the creation of a safe, multimodal circulation system consisting of a well-coordinated network of streets, sidewalks and bicycle facilities, with an emphasis on pedestrian, bicycle and transit mobility. The design of a site should fully consider the needs and convenience of the active transportation users through the provision of sidewalks and bicycle facilities that encourage walking and biking and that reduce dependency on vehicular trips.

Create an efficient local street network with pedestrian-scaled blocks. In general, a network of local serving streets that form smaller, walkable development blocks is the most successful approach to improving local circulation and promoting walking. Pedestrian-scaled, well-defined development blocks also support the efficient layout of developments.

These design principles apply to all development and redevelopment within CRDs and CRAs, including infill developments with townhomes and stacked townhomes.

DESIGN STRATEGIES

1 MULTIMODAL AND COMPLETE STREETS

A. Proposed developments should incorporate the recommended multimodal street network that provides the necessary transportation infrastructure for people of all ages and abilities. Plans should depict circulation routes for each transportation mode to ensure there are no route gaps.

B. Streets should be designed to minimize and mitigate conflicts between travel modes by limiting the number of driveways and access points, determining the most suitable locations for frequent and convenient pedestrian crossings and signals, and ensuring that pedestrians can easily access uses without having to walk unnecessarily across travel ways or parking areas.

Arlington, VA

C. On-street parking should be incorporated on all streets where space permits to provide convenient parking for businesses and residents, disperse parking, buffer pedestrians, and in certain instances, buffer cyclists from moving vehicles.

D. Lane widths for vehicle travel should be no more than 11 feet to manage vehicle speeds, shorten crossing distances for pedestrians, reduce the extent of impervious pavement, and increase space for sidewalks and streetscape amenities.

E. Transit shelters should be provided at all transit stops. See section 2K ("Transit Shelters") for additional detail regarding the location and design of transit shelters.

F. Pedestrian-scaled lighting, trees, and furnishings should be incorporated on all streets for pedestrian safety and comfort. See section 2F ("Landscape Panel and Amenity Zone") for additional detail regarding pedestrian-scaled lighting and furnishings.

2 BLOCK DESIGN

A. New blocks formed by the street network should facilitate the efficient use of space. These should be regularly shaped blocks that maximize the use of developable land, support walking, are adaptable, and are easy to navigate.

LEFT
A complete street with cycletrack, on street parking, narrow lanes, trees, and pedestrian amenities
Image Credit: Arlington County Government

DESIGN STRATEGIES (CONTINUED)

B. Blocks should generally be between 300–600 feet in length, while the perimeter of a block should not exceed 2,000 feet. Midblock connections, including breaks in buildings and pedestrian passages through buildings, may be appropriate for long blocks (see section 2B.1).

C. For residential infill development, the following strategies apply.

   i. Extend the infill community's street network to the surrounding neighborhood's street network to avoid isolating the new community and provide a cohesive network.

   ii. When designing new development, orient new streets to align with or logically extend the existing street network. Incorporate multiple connection points to improve circulation and distribute traffic efficiently.

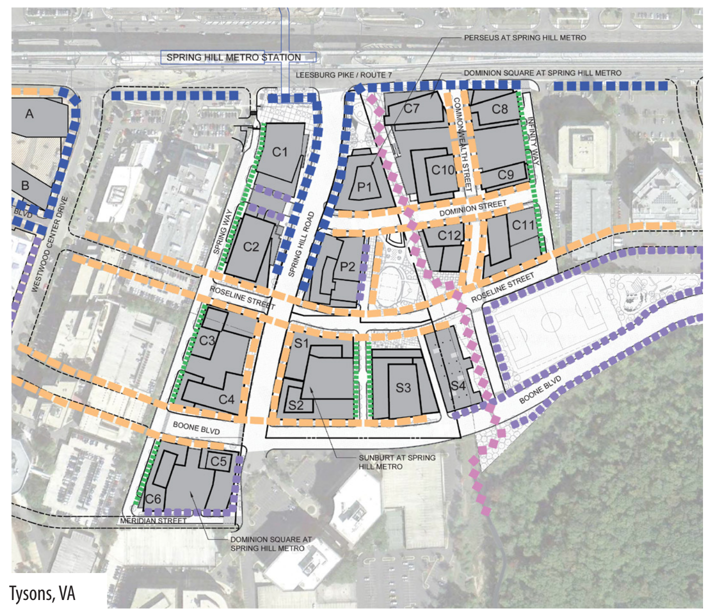
D. Avoid the use of dead-end streets/cul-de-sacs. Where they cannot be avoided, use the following design measures to improve connectivity and enhance placemaking.

   i. Connect dead-end streets to neighboring streets and trails with dedicated walking/biking paths, providing residents a direct route to nearby destinations.

LEFT
The street network of the townhome community integrates seamlessly with the rest of the Mosic District
Image Credit: EagleView Technology Corporation

RIGHT
Pedestrian plan and street hierarchy organized within new street blocks in Tysons
Image Credit: Land Design

Fairfax, VA



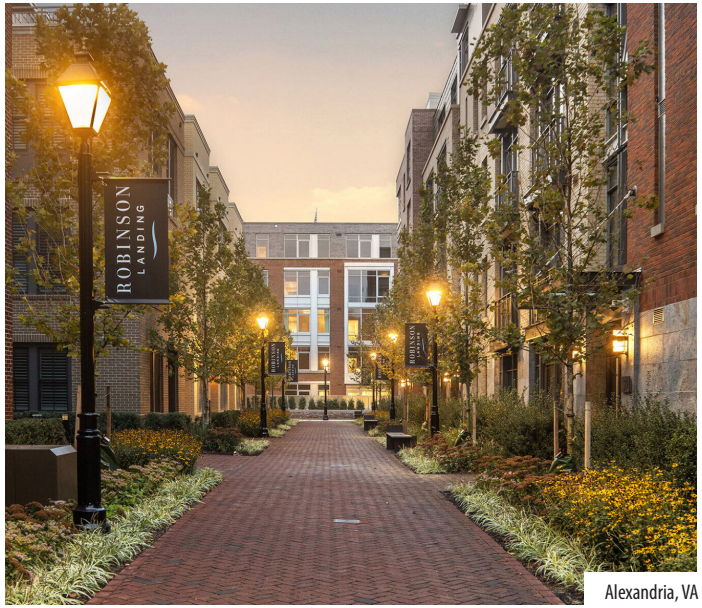
Tysons, VA

DESIGN STRATEGIES (CONTINUED)

ii. Connect cul-de-sacs in larger developments with a network of internal greenways or walkways.

iii. When designing a new community, avoid excessively long dead end streets by looping the road system where possible.

iv. Use cul-de-sac termini for pocket parks, public art installations, or enhanced landscaping. Position residential units with architectural features like porches or large windows to frame these spaces and foster a sense of enclosure and community.



Alexandria, VA

3 TRAFFIC AND SPEEDS

A. Street grid associated with new developments should not encourage significant increase in non-local traffic through existing neighborhoods. If an increase in non-local traffic is anticipated as a result of new development, appropriate mitigation measures, such as those listed below, should be provided.

   i. Strategies such as the addition of on-street parking, curb bulb-outs, and small traffic rotaries should be considered for existing neighborhood streets to manage the speed of traffic.

B. Low speed, low volume streets can include a range of treatments that encourage the sharing of roadway space by all users. Examples include Slow Streets, Neighborhood Greenways, Pedestrian-first Streets, and Green Alleys. More information on such streets is available in the county's Active Transportation Toolkit.

LEFT
Robinson Landing, a mostly townhome community integrates its internal cirdulation with the street grid of Old Town Alexandria
Image Credit: KTGY

2B.1 PEDESTRIAN-ONLY CONNECTIONS

Off-street trails can be an important aspect of the pedestrian network. They serve many functions including connecting destinations mid-block where there are large blocks that would otherwise make walking inconvenient. They may also serve a recreational purpose.

The size and design of off-street trails will vary depending on their context and function. Typical facilities will vary but will generally consist of a continuous urban trail, lighting, and seating, and may include other active and/or passive recreation components.

BOTTOM
Projects can facilitate pedestrian movement by incorporating mid-block pedestrian pathways
Image Credit: Foster + Partners

Washington , DC

DESIGN PRINCIPLES

Off-street trails should seamlessly connect with other aspects of the public realm, such as sidewalks and bicycle lanes, and be part of the interconnected network with visible connections to nearby destinations.

DESIGN STRATEGIES

A. A minimum 8-foot wide hard surface trail, 10-feet wide is preferred. The trail should have a pedestrian focus, or be designed as a shared-use facility to accommodate cyclists.

B. Pedestrian-scaled lighting should be provided using an illumination standard of 0.5-1.0 footcandles across the facility.

C. Wayfinding signage is encouraged.

D. A public access easement should be recorded across the facility.

2C INTERSECTIONS

Intersections are a critical aspect of street design, as they are the point where vehicular, bicycle, and pedestrian movements converge. Most collisions on thoroughfares take place at intersections. Intersections may also serve an important placemaking function as gateways. Prominent land uses and architecturally-significant buildings as well as public art, signage, landscaping, and trees can serve as focal points at intersections. As such, it is critical that intersection design serve a variety of purposes, including addressing potential conflicts between travel modes, supporting safety and mobility for all users of the street, and contributing to a vibrant and accessible public realm.

Image Credit: NAIOP

Fairfax, VA

2C.1 INTERSECTION DESIGN

Planning for intersections includes not only the immediate intersection, but also the approaches to it, the median (if present), street signage and striping, and active transportation facilities. Elements that need to be considered in an integrated manner in the design of an intersection include the vehicular capacity of the roadway; the number of travel ways; large-vehicle turning requirements; safety; pedestrian and bicycle convenience; accessibility, including applicable ADA regulations; and, the efficiency of transit (See *Graphic 4: Intersection Design*).

Design features described in this section assume signal-controlled intersections, although many design principles and strategies also apply to signage-controlled intersections and midblock crossings, where permissible. Final decisions for intersection design features on public roads are subject to approval by VDOT.

Buenos Aires, Argentina

LEFT
A curbless street corner with bollards for pedestrian protection
Image Credit: Arlington County Government

DESIGN PRINCIPLES

Design compact intersections to unify, rather than fragment, the surrounding blocks and minimize crossing distances. The design of intersections determines, to a great degree, whether a street ties together a neighborhood or functions as a physical barrier that divides communities. When designed compactly—with smaller corner radii to slow vehicle turning speeds and shorter crossing distances—streets can function as places for people, tie together surrounding blocks, and unify communities.

Ensure that an intersection's configuration and design promotes visibility and predictability, such that pedestrians, bicyclists and motor vehicles can see each other and predict each other's movements through the intersection. Making intersection operations visible and predictable entails minimizing visual obstacles that obscure oncoming traffic or street crossings by pedestrians and bicyclists. It also requires clearly-marked crosswalks, pedestrian-scaled lighting, and stop lines for vehicles.

DESIGN STRATEGIES

1 COMPACT DESIGN

A. Intersections should be designed as compactly as practical to minimize pedestrian crossing distance, crossing time, and exposure to traffic, while still accommodating vehicular movements.

B. Corner curb radii should be as minimal as possible to reduce the speed of turning vehicles and shorten the crossing distance for pedestrians. No more than 25-foot radius for streets with a design speed of 35 mph or more, and 15-foot radius for streets with a design speed of 25 mph or less.

C. Curb extensions should be considered for streets with on-street parking. Plantings or other vertical elements inside the curb extension should not impede adequate sight distance. Curb extensions, also known as bulb-outs, entail extending the curb into the roadway at the crosswalk to shorten the crossing distance, provide additional space for pedestrians, and allow pedestrians to see and be seen by vehicles before entering the crosswalk. Curb extensions can also provide an opportunity to extend the landscape panel and include planting and bioretention areas, as well as street furnishings.

2 VISIBILITY

A. The ability of drivers to see pedestrians and cyclists should be addressed by limiting signage and parking near intersections, planting only low vegetation that does not exceed 3-feet in height, installing vehicular stop lines 8 feet behind crosswalks, using high-visibility crosswalks, and/or installing curb extensions, where applicable.

B. Street lighting oriented for pedestrians and vehicles should be provided. For large intersections, pedestrian-scaled lighting should be provided that is independent from lighting designed to illuminate the roadway.

BELOW
A compact multi-model intersection with tight turning radii and curb extension
Image Credit: Anthony Crisafulli Photography

Cambridge, MA

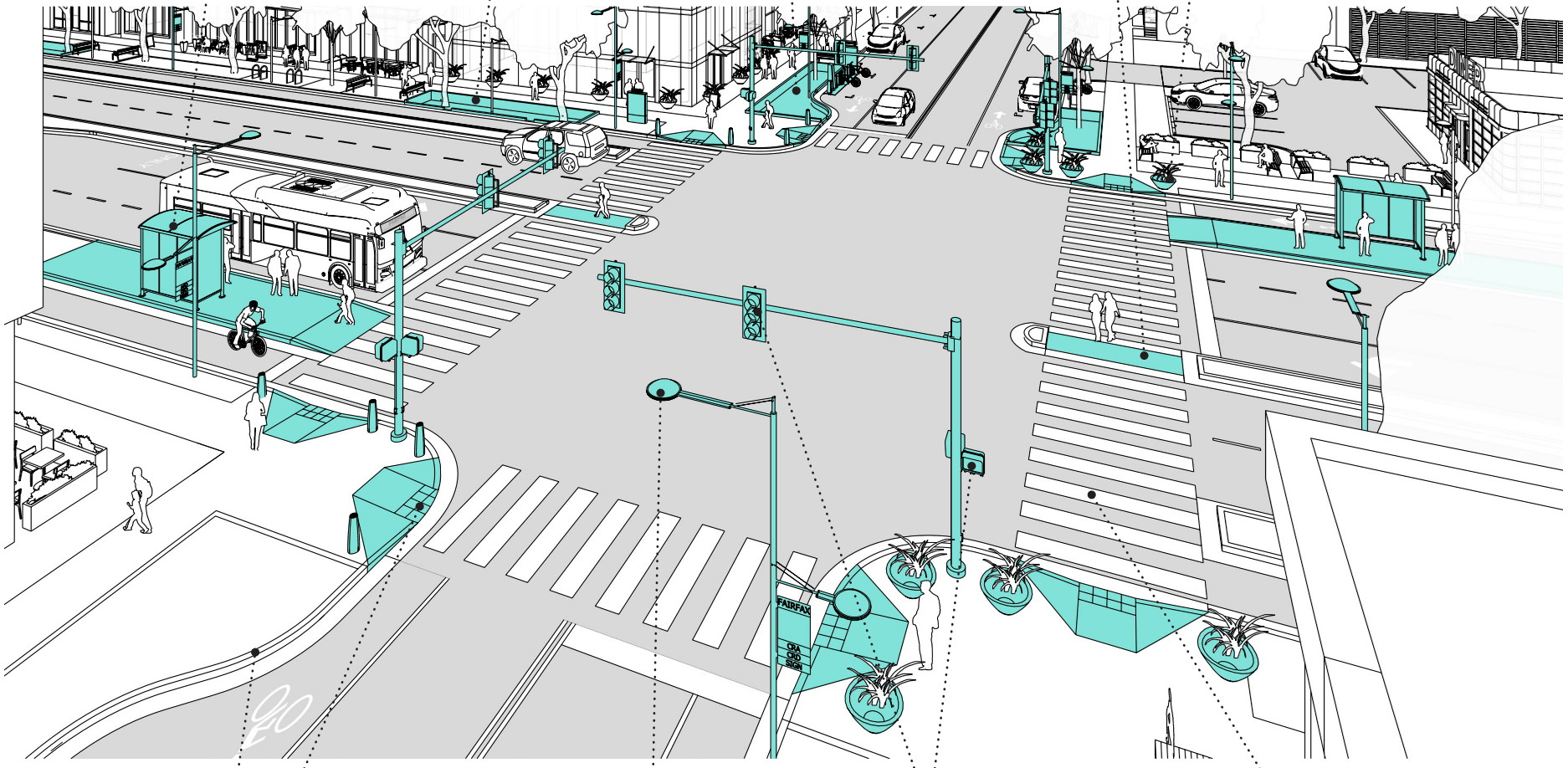
GRAPHIC 4: INTERSECTION DESIGN

TRANSIT SHELTERS
Provide waiting space, shelter, shade, and smart city technology

LANDSCAPE PANEL
Capture and filter stormwater runoff via bioretention planters

PEDESTRIAN REFUGES
Provide a safe place to wait for pedestrians crossing divided roadways

FREE-STANDING PLANTERS / BOLLARDS
Reinforce the physical separation between the pedestrian realm and the street to ensure pedestrian safety



CURB EXTENSIONS
Narrow the roadway at intersections to provide shorter crossing distances and improve visibility for pedestrians

CURB RAMPS
Facilitate access to crosswalks for pedestrians of all ages and abilities; ramps should align with crosswalks; material changes for visually impaired

LIGHTING
Improves visibility of crosswalks and pedestrians to drivers at nighttime or in low light

TRAFFIC & PEDESTRIAN SIGNALS
Control the movement of vehicles and pedestrians; attaching signals to a single pole minimizes visual and physical clutter at street corners

HIGH-VISIBILITY CROSSWALKS
Provide visibility to drivers and clearly indicate pedestrian pathways

2C.2 CROSSWALKS & DRIVEWAY CROSSINGS

Crosswalk markings are used to define the pedestrian path of travel across a roadway and to alert drivers to locations where pedestrian traffic will occur. Pedestrian and vehicular points of conflict should be managed through appropriate design solutions, and all crosswalks, signals and associated infrastructure should be in compliance with the Manual on Uniform Traffic Control Devices (MUTCD), the Americans with Disabilities Act (ADA) standards, and the VDOT Road Design Manual and applicable Instructions and Informational Memoranda. Proposals for non-standard intersection designs, should be discussed early with FCDOT and VDOT to determine their feasibility.

Arlington, VA

DESIGN PRINCIPLES

Install high-visibility crosswalks. High-visibility crosswalks are recommended for all intersections where permitted by VDOT.

Install pedestrian signals wherever warranted on public and private streets. Pedestrian signals should be installed at all intersections on public streets that meet VDOT warrants and on private streets that have either high vehicle traffic, high vehicle speeds, or transit service to increase safety and promote a walkable environment.

For midblock crossings, incorporate special safety elements and coordinate with VDOT. Subject to VDOT approval, midblock crosswalks should be considered where there is a specific need based on adjacent uses and where there are no existing or planned crosswalks within 300 to 400 feet of the desired crossing. Adjacent uses that may warrant a midblock crosswalk include: midblock bus stops, parks and plazas, grocery stores, schools, trailhead, trail crossings, and other public institutions. Overhead signage and signalization of the midblock crosswalk will be determined by VDOT and are subject to MUTCD guidelines. Specific safety elements should be incorporated into midblock crosswalk designs, such as a median refuge, pedestrian-scaled street lighting, and landscaping to aid in distinguishing the crossing.

LEFT
A high-visibility crosswalk is preferred at intersections, where permitted by VDOT
Image Credit: NACTO

DESIGN STRATEGIES

1 CROSSWALKS

A. Crosswalks at roadway intersections should be located to provide the shortest route possible for pedestrians (*See Graphic 5: Crosswalk Configurations*).

B. Crosswalks, where feasible, should be included on all four legs of an intersection.

C. High-visibility, ladder-style crosswalks are the preferred crosswalk pattern. Brick or other materials are generally not recommended for crosswalks.

RIGHT
A ladder style crosswalk with pedestrian refuge and pedestrian HAWK signal
Image Credit: Michigan Complete Street Coalition

D. Crosswalks should match the width of the entire pedestrian and cyclist travel way inclusive of any Urban Trail, cycletrack, shared facility, or sidewalk. Crosswalks with high volume of pedestrian traffic should be 12 feet wide or more.

E. Durable inlay or thermoplastic tape should be used for all crosswalk striping rather than paint. High-visibility markings should be spaced to avoid the wheel path of cars, thereby reducing wear-and-tear on the striping.

F. Curb ramps should be aligned directly with the crosswalk. Avoid situations when one single curb ramp serves two crosswalks at the street corner.

G. Vehicular stop bar should be located 8 feet from the crosswalk (ADA preferred)

H. Any block greater than 600-feet in length should have an internal mid-block pedestrian connection, where feasible. Mid-block connections may include a pedestrian walkway, a service street with a sidewalk, a trail connection, a publicly-accessible walkway through a building, or other publicly-accessible connection. A corresponding mid-block crossing of the street is encouraged to accompany mid-block connection.

DESIGN STRATEGIES (CONTINUED)

I. An 8-foot wide (6 foot minimum) pedestrian refuge should be included within medians, especially those where the total crossing distance is over 60 feet curb-to-curb.

J. Pedestrian signals should be installed at all signalized intersections, if warranted by VDOT.

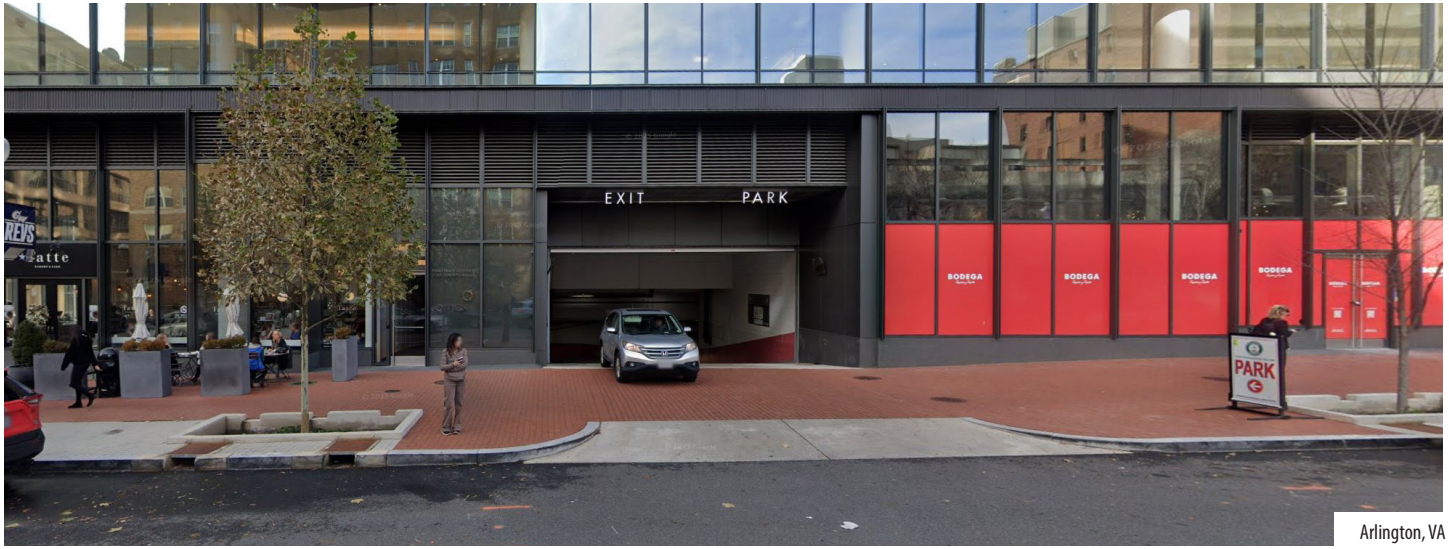
2 DRIVEWAY CROSSINGS

A. Driveways should be as narrow as permitted. See the VDOT Road Design Manual (RDM). Where applicable, see RDM Appendix B(2) for alternative specifications.

B. The sidewalk or streetscape pavement material should be continuous across the curb-cut or driveway entrance. The material can be concrete or other specialty sidewalk materials planned for the area. The width of the crossing should match the width of the sidewalk.

C. Sidewalks and off-street bicycle facilities should not ramp down to the roadway grade. Sidewalks should remain at a consistent grade across the driveway.

D. For commercial driveways and residential driveways with greater than 20 vehicle trips/day: ADA-compliant trunked dome pavers in gray colored concrete should be provided at the edges of the driveway to warn pedestrians of cross-traffic.



Arlington, VA

BOTTOM
Sidewalk paving material continues across driveway entrance
Image Credit: Google Maps

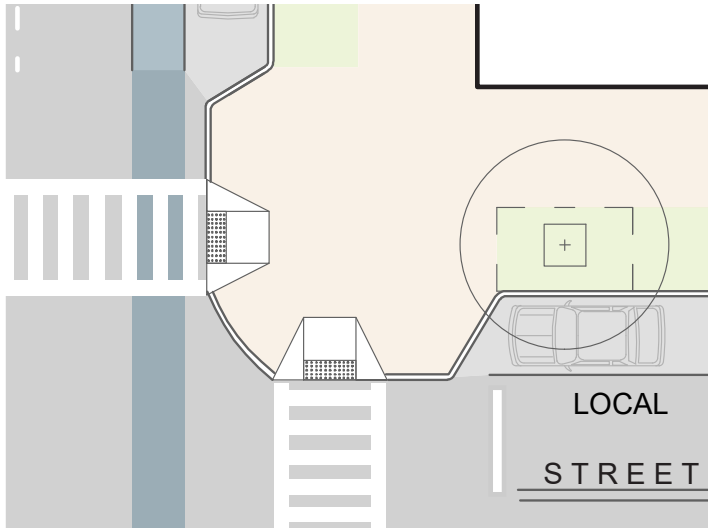
GRAPHIC 5: CROSSWALK CONFIGURATIONS

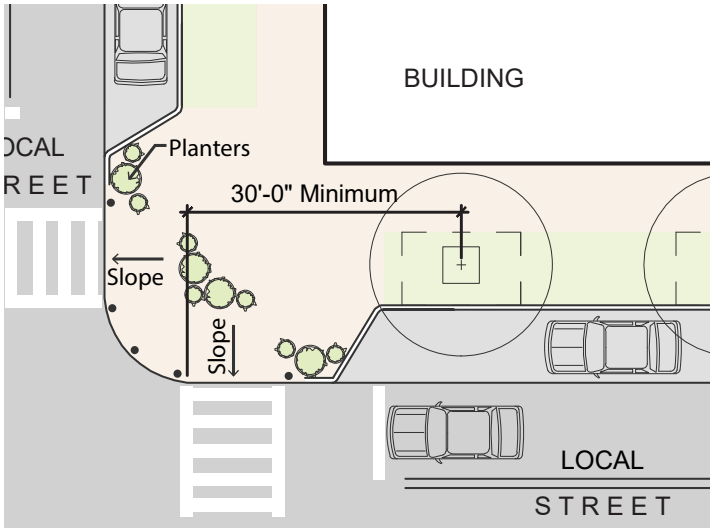
TOP LEFT
Acceptable curb ramp alignment where ramp is directly aligned with the crosswalk

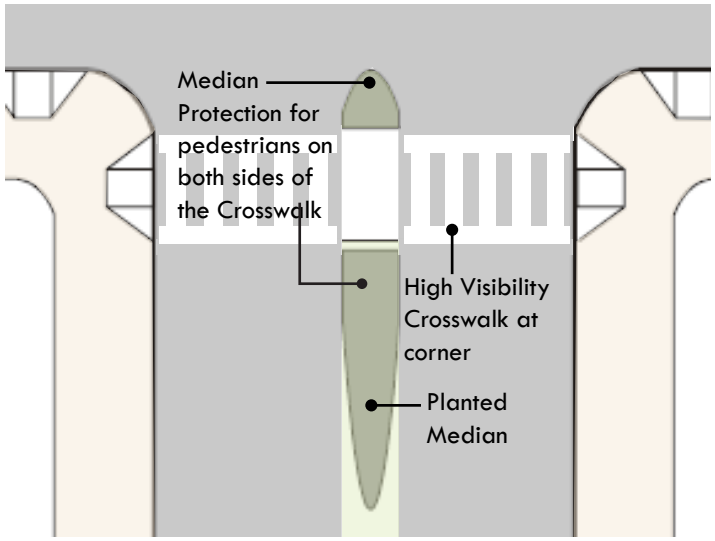
TOP RIGHT
Curbless corner design for intersections with high volumes of pedestrian traffic

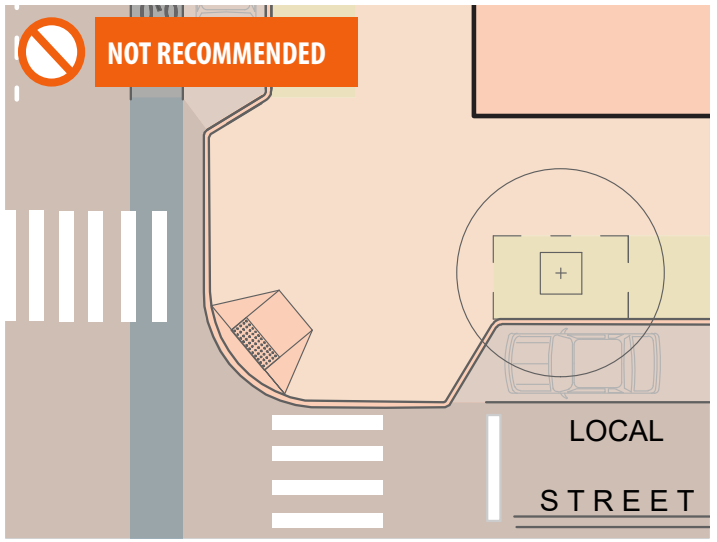
BOTTOM LEFT
Crosswalk through a median provides a pedestrian refuge for long crossings; raised medians on both sides of the crosswalk provide buffer for pedestrians

BOTTOM RIGHT
Unacceptable design where a single curb ramp is not aligned with crosswalks









2D BICYCLE FACILITIES AND URBAN TRAILS

Bicycles play an increasingly important role in the movement of people and, as such, are an essential component of a complete multimodal transportation network. In addition to the street cross-sections depicted in the Comprehensive Plan Area Plans, the following resources should be used to incorporate bicycle facilities into a proposed development plan:

- Fairfax County Comprehensive Plan
- Fairfax County Active Transportation Network Map and Toolkit
- Fairfax County Public Facilities Manual
- Fairfax County Bicycle Parking Guidelines
- The National Association of City Transportation Officials (NACTO) Urban Bikeways Design Guide
- Federal Highway Administration (FWHA) Separated Bike Lane Planning and Design Guide

New York City, NY

Bicycle Facility Types

There are many potential configurations for bicycle facilities, depending on the available right-of-way, adjacent land uses, and the needs of cyclists on a particular roadway. Some streets that are low-speed and have low traffic volumes can be designed to accommodate cyclists within the roadway. On these streets, pavement markings and/or signage may be incorporated to alert drivers that they are expected to share the roadway with cyclists. On other streets with higher speeds and higher traffic levels, greater separation between bicycles and vehicles is necessary.

The Fairfax County Active Transportation and Trail Network Map is a comprehensive, countywide bike and trail map. The map identifies the CRDs and CRAs as 'Special Planning Areas'. For these areas, designers should consult the Comprehensive Plan Area Plan recommendations because they contain specific facility recommendations for each street. Common types of bicycle facilities planned for Special Planning Areas include:

- Bike lanes
- Buffered bike lanes
- Cycle tracks
- Urban Trails
- Shared-use Paths

Indianapolis, IN

TOP
Landscaped bioswale adjacent to the bike lane - creative addition to the infrastructure
Image Credit: Our Greenway

Arlington, VA

BOTTOM
Buffered bike lane provides protection from vehicular travel lanes
Image Credit: bikearlington.com

DESIGN PRINCIPLES

Design for safety, comfort and all ages and abilities. Bicycle facilities, including Urban Trails must be properly designed and implemented in order to ensure that they are safe, comfortable, useful, and attractive to the population, across the spectrum of age, ability and cycling experience.

Ensure a logical, comprehensive bicycle circulation system that offers seamless connections. Associated on-site and off-site bicycle amenities should be incorporated and prioritized at the conceptual design phase for the development.

Prioritize separated facilities wherever possible. Several types of bicycle facilities, ranging from on-street bicycle lanes to separated bicycle facilities such as cycle tracks and shared-use paths, are proposed in the CRDs and CRAs based on the specific roadway condition. Separated bicycle facilities are preferred on streets where they are deemed necessary for safety and user comfort.

Utilize Urban Trails in context-appropriate locations. Urban Trails are appropriate in certain contexts within urban areas. They are a space-saving alternative that may be implemented on roadways with any volume and speed but generally for streets with four travel lanes or along high-volume roads with few signalized pedestrian crossings. Although they are designed as two-way facilities, it is recommended that they are provided on both sides of the street.

DESIGN STRATEGIES

1 BICYCLE FACILITY DESIGN

A. Refer to the Comprehensive Plan Area Plan for planned facility types within or adjacent to the proposed development. Refer to the 'Active Transportation Toolkit' for detailed design guidance for bicycle and shared-use facilities.

B. Intersections with bicycle facilities should be designed to reduce conflicts with vehicles by heightening the level of visibility, denoting a clear right-of-way, and facilitating eye contact and awareness between modes. Bicycle lane markings should be extended through the intersection.

C. When on-street parking and bicycle facilities are planned for a roadway, additional design features should be considered, including determining whether the on-street parking or the bicycle facility should be located adjacent to the vehicle travel lane; and, providing adequate space in a buffer between the parked car and the bicycle lane to prevent a cyclist from being hit by an open car door. The 'FHWA Bicycle Facility Selection Toolkit' provides specific guidance for bicycle facility design adjacent to on-street parking and buffers.

2 URBAN TRAIL DESIGN

Urban trails are shared active transportation facilities that support bi-directional bicycle and pedestrian travel similar to paved multi-use trails but with a distinctly urban aesthetic.

A. Urban Trail design characteristics should be consistently applied to reinforce the continuity of the pathway and create a distinction between sidewalks and other nearby facilities. They should be visually distinctive from other bicycle and pedestrian facilities so that they are recognizable as a shared space.

B. Minimum of 8 feet in width, 10-12 feet preferred.

C. Sawcut concrete or smooth pavers preferred. Asphalt may be acceptable depending on the local communities' preference.

Alexandria, VA

LEFT
Bicycle lane configuration at an intersection where pavement markings help define spaces for pedestrians, vehicles, and cyclists
Image Credit: Rhodeside & Harwell

Chicago. IL

TOP
Specialized buffered bicycle facility known as "Dutch Intersection" provides an enhanced, safe intersection treatment where a high-volume of cyclists is anticipated
Image Credit: John Greenfield

Indianapolis, IN

BOTTOM
Intersection Plaza on the Indianapolis Cultural Trail
Image Credit: ICT

DESIGN STRATEGIES (CONTINUED)

D. Landscaping, trees, seating and furnishings, and other amenities are encouraged within the building zone.

E. Signage explaining 'Bikes Yield to Peds', 'Bike Route', and/or bicycle wayfinding signage should be provided along the route to communicate the shared use to facility users.

F. Enhanced treatments at intersections and driveways should be provided, including Intersection Plaza treatments and elevated driveway crossings.

2 INTERSECTION TREATMENT FOR CYCLE TRACKS AND URBAN TRAILS

Where urban trails, cycletracks, or other shared-use facilities approach a roadway intersection, an appropriate intersection treatment (such as an Intersection Plaza, corner refuge, raised crossing, or other context-sensitive design) should be considered.

The type and length of treatment will depend on several factors and will be determined at the time of rezoning or site plan review. Curb ramps and crosswalks that match the width of the widest sidewalk or trail facility, meet cycling standards, and adhere to VDOT Road Design Manual shared-use path ramp requirements, should be provided at all street crossings.

2E PEDESTRIAN FACILITIES

The pedestrian realm includes the public and private spaces that are designed to be frequented by pedestrians. High-quality, convenient and safe pedestrian environments will promote walk-trips, attract people and contribute to the economic success of the CRDs and CRAs. In CRDs and CRAs, the parks, plazas, and sidewalks along streets comprise most of the pedestrian realm. This section sets forth general design principles and strategies for creating a high-quality pedestrian realm, followed by greater detail on many of these approaches *(See Graphic 6: Pedestrian Realm)*.

DESIGN PRINCIPLES

Accommodate a high volume of pedestrian activity while serving the social, recreational and environmental needs of each community. Open spaces, land uses, building orientation, building setbacks, and a comprehensive sidewalk system should create an integrated pedestrian network that promotes walking and active living at both the neighborhood and site-specific scales. Streets and open space networks serve as connectors for pedestrians to the various parts of the area and should function as safe, accessible, convenient, direct, and comfortable connections between origin and destination points.

Take advantage of unique, site-specific opportunities to enhance the pedestrian realm. Whether it is the presence of environmental features, such as an adjacent stream corridor, or a site's role as a gateway to a CRD or CRA, existing conditions on a site can create opportunities for context-sensitive solutions that are tailored to the individual site while enhancing the larger pedestrian realm.

Denver, CO

RIGHT
Streetscape emphasizes comfort and safety; curb extension reduces crossing distance; vertical elements between the vehicle lane and the pedestrian realm create a sense of enclosure and physical separation from vehicles
Image Credit: Design Workshop

DESIGN STRATEGIES

1 SAFE AND UNOBSTRUCTED PEDESTRIAN MOVEMENT

A. Sidewalks and trails should create comfortable environments that are of an adequate width to accommodate and encourage pedestrian activity for a range of users. Facility widths should anticipate pedestrian needs based on adjacent land uses, types of users, and the projected volume of pedestrian traffic.

B. Public realm environments are required to be ADA accessible and accommodate users of all ages and abilities:

   i. Sidewalks and trails should be sufficiently wide and unobstructed, utilizing non-slip and even materials to promote access and usage by all users.

   ii. Curbs should be designed to accommodate safe mobility for users of all ages and abilities by incorporating ramps at crossings that are aligned with crosswalks.

   iii. Hardscape materials, landscaping and furnishings should be durable, low-maintenance and easy to repair or replace.

   iv. Maintenance should occur on a regular basis.

C. Pedestrian circulation should occur at the ground level. Above-grade bridges or below-grade tunnels are generally discouraged, except potentially when crossing Multimodal Through Corridors, highways, interstates, ramps, or for major recreational trails.

D. Clearly delineated crossings and pedestrian signals should be incorporated at intersections and midblock connections. See Section 2C.2 Cross Walk and Driveway Crossings for more details.

2 PEDESTRIAN-ORIENTED SPACES AND AMENITIES

A. The pedestrian realm should incorporate interesting, safe, and properly sized spaces that include gathering areas, trees and landscaping, lighting and street furnishings, and other facilities to accommodate pedestrian-oriented programming.

Charlottesville, VA

RIGHT
Rooftop outdoor space oriented to the street animates the pedestrian realm even though it is not located at the street level
Image Credit: downtowncharlottesville.net

DESIGN STRATEGIES (CONTINUED)

B. Buildings should be designed to interact positively with the pedestrian realm by including features such as entryways, storefronts, awnings or overhangs, space for outdoor restaurant seating and merchant displays along streetscapes.

C. Retail and other land uses that require and/or are supportive of pedestrian traffic, such as at key intersections or buildings adjacent to plazas, should be served by high-quality public spaces, streetscapes and pedestrian amenities.

D. A mix of sunlit and shaded pathways, sidewalks and seating areas should be provided to address the impacts of weather on the pedestrian environment. Shaded areas should be provided along southern and western oriented building frontages, while sunlit facilities should be emphasized along northern and eastern oriented building frontages.

E. Pedestrian comfort and enjoyment should be prioritized through the creative use of streetscape elements that both serve as amenities for pedestrians and guide pedestrian movement.

   i. Repetitive, evenly spaced streetscape elements should be used, including pedestrian-scaled light fixtures, furnishings, street trees, and a mix of hardscape and landscape areas.

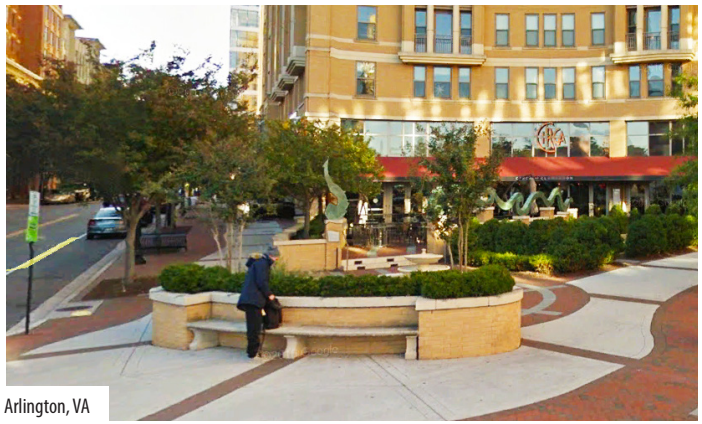
   ii. The repetition and continuity of these streetscape elements can establish the overall feel and comfort level of a sidewalk, and can be used to direct pedestrian movement.

F. Locations for wayfinding signage and furnishings for pedestrians and cyclists should be considered when designing the pedestrian network.

3 STREET CORNERS

A. Special streetscape design treatments may be incorporated at intersections to highlight the importance of corners in the overall streetscape and to define the pedestrian realm.

   i. Street corners may be expanded with curb extensions, increasing the amount of pedestrian space while reducing the crossing distance between curbs.



Arlington, VA

RIGHT
Street corner with distinctive paving, art and seating to accentuate the corner's importance and visual prominence
Image Credit: Google

GRAPHIC 6: PEDESTRIAN REALM

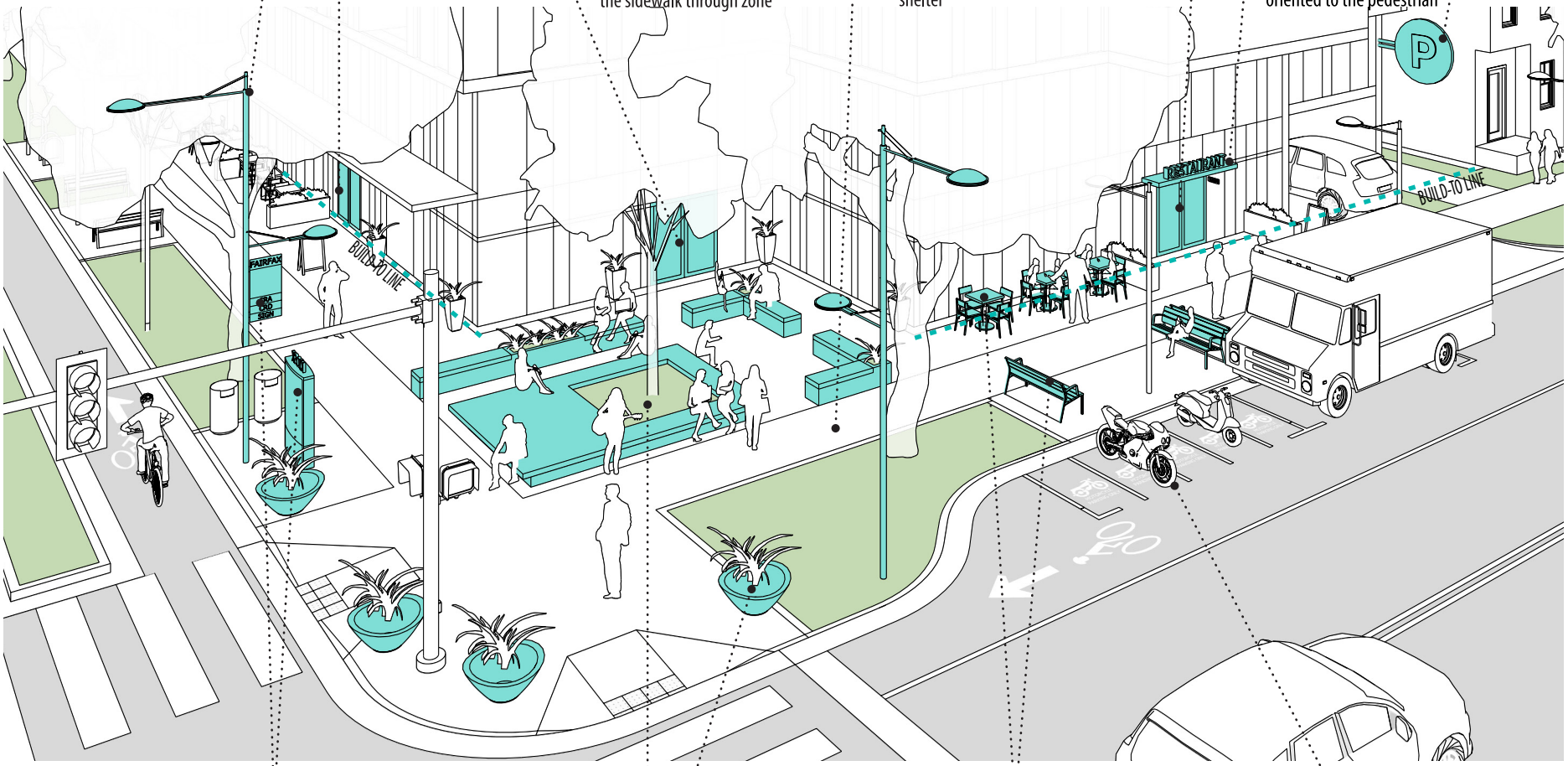
PEDESTRIAN-SCALED LIGHTING
Contributes to pedestrian safety and comfort at night

BUILDING ENTRANCES
Create an active street-level pedestrian environment along key streets and at corners

UNOBSTRUCTED SIDEWALKS
Allows continuous and unimpeded pedestrian movement when utilities and amenities are placed outside of the sidewalk through zone

STOREFRONT DOORS & WINDOWS
Provides facade transparency when facing the street; awnings highlight entrances and storefronts while providing shade and shelter

BUILDING SIGNAGE
Highlights individual businesses and destinations; scaled and oriented to the pedestrian



BRANDING & WAYFINDING
Provides information and area-wide identity through banners, signage, and kiosks

OPEN SPACE
Provides opportunities for public gathering spaces, particularly at gateways or special places, such as street corners; helps create a distinct character for the area and can be activated with programmed activities

TREES, LANDSCAPING & PLANTERS
Add shade and greenery to streetscapes to enhance pedestrian comfort; provide sense of enclosure and safety

FURNISHINGS & AMENITIES
Make the streetscape feel comfortable and welcoming to pedestrians when provided in Amenity Zone and Building Zone

ON-STREET PARKING
Provides convenient parking for area businesses while serving as a buffer between the sidewalk and the street

DESIGN STRATEGIES (CONTINUED)

ii. Bollards, trees and/or enhanced landscaping should be located between the corner and the roadway to delineate pedestrian areas and provide safety buffers.

iii. Special paving treatments may be incorporated to highlight and differentiate prominent street corners. Prominent corners can be designed to orient people and connect physically and visually to other design elements in the public realm. For example, a similar design language of materials and furnishings can be used while also incorporating unique features to distinguish the corner.

iv. Streetscape design features may be continued around corners and onto connecting cross streets to provide a transition between different streetscape treatments.

v. Buildings should embrace street corners with design elements such as entrances that open directly onto the street; fenestration to provide facade transparency; and, special paving to highlight building entrances. Where sufficient space exists, outdoor seating areas may be incorporated adjacent to buildings to further enliven street corners. For additional details on building corner treatments, see section 2H ("Building Zone") and Chapter 4 ("Building Design").

vi. Where excess space exists outside zones of pedestrian movement, plantings and stormwater management features may be incorporated to provide sustainable management of stormwater runoff, reductions in the amount of impervious surfaces, and aesthetic benefits such as visual variety and the definition of spaces within the streetscape. See section 2K ("Sustainable Street and Streetscape Design") and Appendix A2 ("Sustainable Design Toolbox") for additional information on incorporating stormwater management features into the streetscape.

Massillon, OH

RIGHT
Street corner curb extension with street furniture and bollards for extra pedestrian protection
Image Credit: Sérgio Oliveira@ Pinterest.com

DESIGN STRATEGIES (CONTINUED)

BELOW
Landscape, pedestrian amenities and architecture contribute to inviting street corners
Image Credit: SantanaRow.com

San Jose, CA

B. The design of corners should facilitate, rather than impede, safer pedestrian crossings and turning movements.

   i. Parking should be prohibited within 30-feet of a street corner to ensure that oncoming traffic, cyclists, pedestrians are visible at intersections.

   ii. Curb ramps, aligned with crosswalks, should be provided, in compliance with ADA guidelines, to facilitate safer and more comfortable crossings for pedestrians of all ages and abilities.

   iii. The path of pedestrian travel should be free of utility infrastructure and other potential obstructions, such as bicycle racks, signage, trash receptacles, or other street furnishings.

C. Where sufficient space exists, the design of street corners should foster safe, inviting and comfortable environments that encourage a variety of pedestrian activities and gatherings.

   i. In some instances, design features should be incorporated that enable the corner to feel and function like a small plaza space with landscaping and special plantings, seating, low walls with integrated seating, pergolas, shading devices, special lighting features, public art, and electronic kiosks displaying CRD/CRA-related information (businesses, transit, etc.).

   ii. In commercial areas, corner treatments should support and complement adjacent businesses (for example, incorporating seating where patrons can consume food and beverages purchased from nearby businesses).

2F LANDSCAPE PANEL AND AMENITY ZONE

The Landscape Panel and Amenity Zone together comprise the space between the curb and the sidewalk or active transportation facility. Landscape Panels may also be located between bicycle and sidewalk facilities. These zones serve as a buffer between different active transportation users, while housing many of the amenities that define a streetscape's character and support its many functions.

The Landscape Panel accommodates trees and other plantings that line a street. These planted elements are important to the quality of life and offer a range of benefits. Plantings provide cooling, shade, texture, color, and visual interest. Well-landscaped spaces also provide significant benefits to the urban ecology and the environment, including enhanced stormwater remediation, reduced heat island effects, improved air quality, and increased biodiversity. Streetlights and signage may also be located within the Landscape Panel.

The Landscape Panel may be largely continuous along some streets; however, particularly along streets in activity centers where pedestrian activity is greatest, the Landscape Panel frequently includes Amenity Zones, the paved areas with a variety of pedestrian and bicycle amenities—including seating, bicycle racks, transit shelters, parking meters, trash receptacles, streetlights, signage, and other street furnishings. The Amenity Zone serves a variety of important functions, including providing places to sit, socialize, rest, park a bicycle, and wait for transit; it also reinforces the physical and visual separation between the sidewalk and vehicles.

The arrangement of the Landscape Panel and the Amenity Zone may vary depending on factors such as the amount of space available, the amount of furnishings required, and the overall character of a particular street. Along some blocks, the Landscape Panel may be entirely or mostly continuous; along other streets, particularly streets with significant pedestrian activity, the Landscape Panel may be interspersed with Amenity Zones, with the two zones occupying the same linear space between the curb and sidewalk. In particularly constrained rights-of-way, the Amenity Zone may also be located within curb bump outs or in the Building Zone as space allows.

This chapter provides detailed design principles and strategies for the various elements that comprise the Landscape Panel and the Amenity Zone.

Washington, DC

RIGHT
Streetscape with Landscape Panel and with seating in the Amenity Zone
Image Credit: Rhodeside & Harwell

2F.1 TREES AND LANDSCAPING

Street trees are vital to creating vibrant streetscapes, especially in urban activity centers where walking and transit use are prevalent. They contribute to placemaking, while offering environmental, social, and economic benefits, including providing shade, buffering pedestrians from the roadway, reducing urban heat island effects, and filtering stormwater.

Chapter 12 (Tree Conservation) of the Public Facilities Manual, sets standards for minimum tree canopy within developments; importantly, trees within the streetscape now contribute to canopy credit. Urban trees are subject to harsh conditions that affect long-term health and viability, including inadequate soil volume, salt exposure, pedestrian traffic, street maintenance practices, and utility conflicts. The following design guidance balances placemaking, environmental, and engineering needs to ensure the long-term functionality of trees and landscaping.

BELOW
Continuous Landscape Panel; large canopy trees and understory plantings lining streets provide shade and buffer pedestrians from moving vehicles
Image Credit: scotland.landscapeinstitute.org

Santa Monica, CA

DESIGN PRINCIPLES

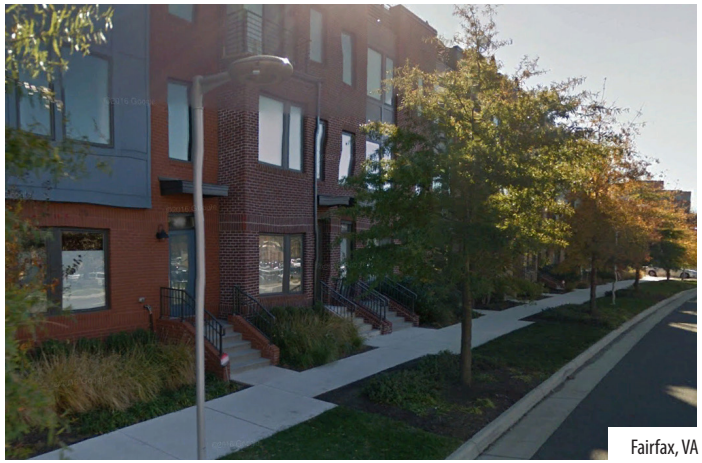
- **Street trees should be planted to form continuous green corridors.** Trees have greater impact in groupings than when alone.
- **Layer canopy trees, ornamental trees, shrubs, ground covers, and grasses to mimic natural systems.** Layered plantings can infiltrate stormwater, re-establish native plant communities, reduce heat island impacts, stabilize soil, and add seasonal interest.
- **Use a diverse palette of native species.** Supplementing with non-native, non-invasive tree species may sometimes be necessary in urban conditions.
- **Locate trees to complement ground floor building uses.** Trees should not impede building entries, restaurant seating, or other activities in the Building Zone.
- **Landscaping and planters should not be used to create barriers to public spaces.** If planters are used to solve grading challenges, pedestrian pathways should be provided at regular intervals.
- **Ensure the long-term survival of trees.** Proper tree selection, planting techniques, and ongoing care and maintenance will result in healthier trees.

DESIGN STRATEGIES

The following information should be included in landscape plan sets:

Prepare landscape plans using a multi-disciplinary approach taking into account all engineering, architectural, maintenance, and legal requirements. Failing to account for all design factors typically results in fewer trees planted during construction. Landscape plans included with rezoning applications should include the following:

- Sight distance triangles at street intersections and driveways
- All recorded easements
- Utilities (existing and proposed)
- Preliminary grading
- Streetlights
- Existing vegetation to be preserved



Fairfax, VA

1 PLANT SELECTION AND LOCATION

Trees

Table 12.14 in Chapter 12 of the PFM classifies trees in four categories:

- Category I are narrow columnar trees
- Category II are understory trees with less than 20 feet height and spread
- Category III and IV are taller, upright shade trees, with heights of up to 50 feet or more under optimal conditions.

A. Install large canopy (Category III or IV) trees that are between 2.5- and 4-inches in caliper size at the time of planting. Use 3- to 4-inch caliper size trees on Avenues (Collectors) and Boulevards (Arterials).

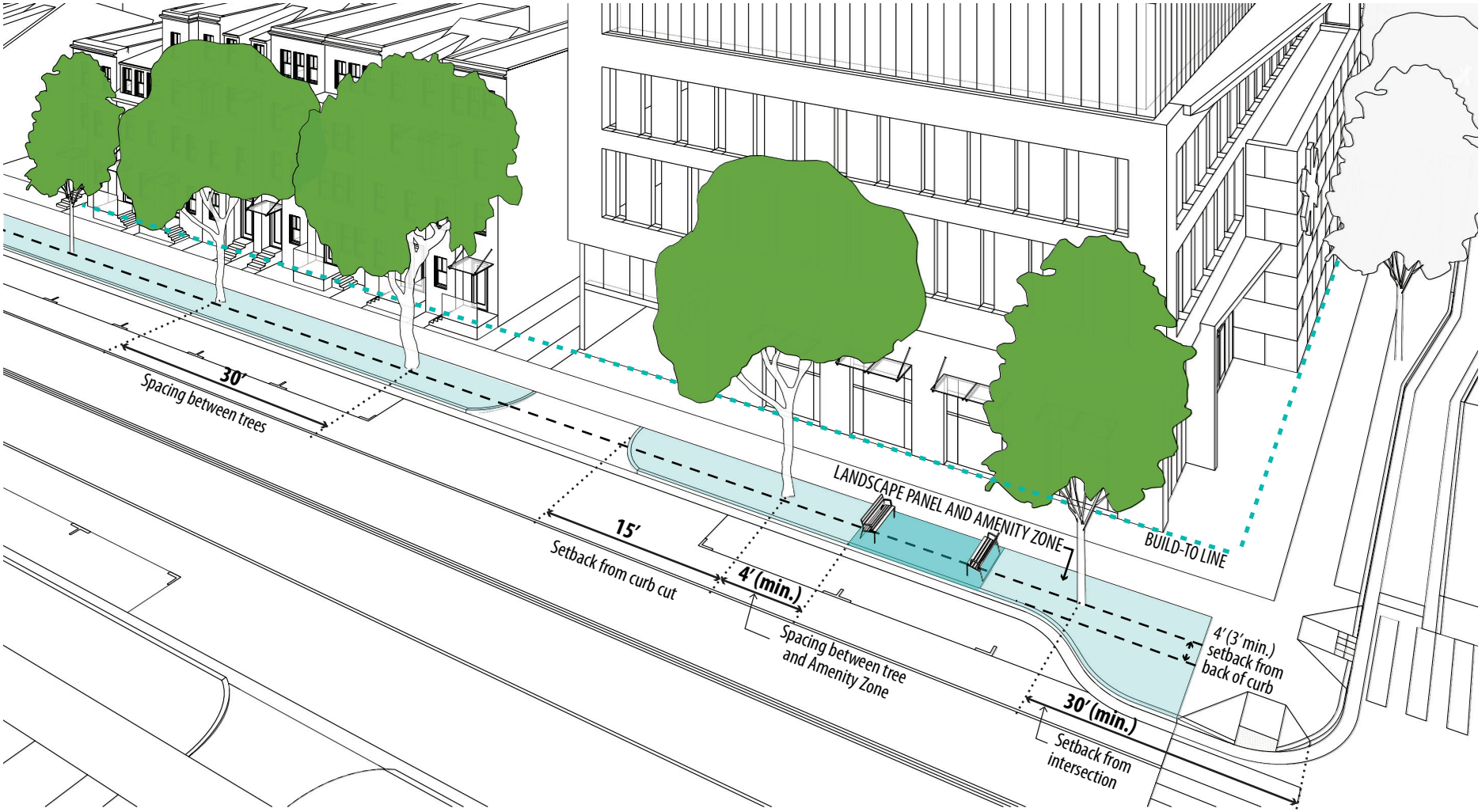
B. Space Category III or IV trees approximately 30-feet on-center. Category I or II trees may be spaced closer together, depending on the species (See Graphic 7: Tree Locations and Spacing).

C. Vary tree species to decrease susceptibility to insects and disease.

D. Generally, trees should be planted in continuous planting areas, not tree wells. Breaks in consistently spaced street trees may occur to accommodate Amenity Zones, curb cuts, or utilities.

LEFT
Street trees spaced 30 feet apart; the sidewalk width is reduced to accommodate proper open soil area for trees
Image Credit: Google Earth

GRAPHIC 7: TREE LOCATIONS AND SPACING



See tree planting details in Appendix A1 for more information

DESIGN STRATEGIES (CONTINUED)

E. Select trees that are more likely to survive due to high urban environmental tolerance and climate resilience.

F. Tree locations may need to be adjustmented for fire truck access. Trees should not be planted within 30-feet of an intersection or within 15-feet of a curb cut.

G. Plant trees in medians when adjacent to trails and bike lanes to provide shade and support year-round use.

H. Plant trees in the Building Zone where space allows.

I. See the Appendix for a recommended tree list, as well as the plant resources below:

– Plant NOVA Natives
– Earth Sangha
– Alliance for the Chesapeake Bay Native Plant Center

Understory Plantings

A. Plant native ornamental shrubs, grasses and perennials in the landscape panel; turfgrass is discouraged. Plants in site distance triangles should be less than 2-feet tall at maturity. Taller species may be used in the building zone.

B. Incorporate understory landscaping in the Landscape Panel to buffer pedestrians from vehicles and enhance the visual character of the street.

C. Understory landscaping should provide year-round visual interest. Select plants with multi-season interest and/or mix them with seasonal plants to ensure visual interest year-round. Avoid filling landscaped areas with plants that die back or go dormant during several months of the year. This is particularly important in landscape areas without trees, including bioretention basins.

D. See the Appendix for a recommended plant list.

Fairfax, VA

RIGHT
Eight-foot-wide planting area accommodates two trees with understory landscaping
Image Credit: Fairfax County

Canopy Credit for Street Tree Planting

Preserving and maintaining tree canopy cover is a core value for Fairfax County. Chapter 12 of the PFM is concerned with Tree Conservation, and seeks to ensure that tree canopy is maintained with new development. New developments may receive ten-year tree canopy credit for street trees installed within VDOT right-of-way, private streets, and utility easements, where permitted. Canopy credit is awarded incrementally. Refer to PFM Table 12.14 for baseline 10-year Tree Canopy credits.

Tree size should be between 2.5 inches and 4 inches in caliper at time of planting, depending on the category of tree.

Credit Amount

Street tree canopy credits are awarded as follows:

A. Bonus credit (1.5): Trees planted per the Public Facilities Manual (PFM) (PFM § 12-0310.4E) receive 1.5 times the 10-year Tree Canopy credit.

B. Full credit (1.0): Trees receive full (1.0) Tree Canopy credit when:

i. Soil volumes in PFM § 12-0310.4E(9) are met, but other provisions of PFM § 12-0310.4E are not; and,

ii. A contiguous soil panel meeting the minimum soil volumes is provided.

iii. See Appendix for tree planting diagrams.

C. Half credit (0.50): A multiplier of 0.50 times the 10-year Tree Canopy credit may be applied for Category III and IV trees when the Alternative Planting Standard described in the next section is used. See Appendix for tree planting diagrams.

D. No credit: Trees planted with less soil than the Alternative Planting Standard receive no 10-Year Tree Canopy credit.

E. Other multipliers found in the PFM do not apply to trees planted in the right-of-way.

Long Term Commitment

A. Trees in VDOT right-of-way: To receive 10-year Tree Canopy credit, a replacement agreement must be executed with Fairfax County and a perpetual maintenance agreement must be executed with VDOT.

B. Trees along private streets or within easements: To receive credit, a perpetual maintenance and replacement agreement must be executed with Fairfax County.

Other

A. Street trees in utility easements may receive canopy credit under any of the above scenarios. Adequate depth may be an issue for underground utilities. For overhead utilities, the right species is important to avoid excessive trimming. Applicants should coordinate with the Forest Conservation Branch (FCON) on planting details and species selection.

B. Street trees in bioretention facilities may receive 10-year Tree Canopy credit if planting areas meet PFM § 12-0310.4.E standards.

C. Trees in the Building Zone: If significant site constraints exist that impact the landscape panel, such as existing utilities that cannot be moved, trees may be located in the Building Zone. The amount of canopy credit depends on the soil quantity and the configuration of planting space. Where space allows, trees are encouraged to be planted in both the landscape panel and building zone. Canopy credit may be received for both.

DESIGN STRATEGIES (CONTINUED)

2 STREET TREE INSTALLATION

A. **Standard Dimensions.** For optimal tree health and long term viability, the Public Facilities Manual (PFM 12.0310.4E) requires the following:

- Soil volume (minimum)
  - 700 cubic feet (CF) soil/tree
  - 1200 CF soil/2 trees
  - 1500 CF soil/3 trees
  - Each additional tree in the group requires an additional 500 CF of soil
- Soil width: 8-feet minimum, with 6-feet minimum width at surface
- Distance from a curb or any restrictive barrier: 4-feet minimum

B. **Since most tree roots grow in the top 10 to 12 inches of soil, providing sufficient surface area for tree roots to spread is critical.** Where right-of-way space is limited, portions of the soil zone can be covered with paving.

C. **Structural Cells and Cantilevered Sidewalks.** These approaches allow paving over portions of the tree planting area. For these planting methods, ensure that there is 6-feet minimum surface width. See the Appendix for details.

D. **Soil Coverage.** Where right-of-way space is at a premium, an open soil area of 6 feet by 6 feet may not allow adequate space for pedestrian movement. In this case, permeable hardscape solutions which allow water to infiltrate may be used in consultation with Forest Conservation staff. Tree grates, which restrict tree growth, cause litter to collect, and are a tripping hazard, are not recommended. They should be used only when other solutions cannot be found.

3 ALTERNATIVE TREE PLANTING STANDARD FOR CONSTRAINED SITES

Where constrained site conditions make tree planting unlikely to occur, the Alternative Planting Standard may be considered. It is intended for use in older urban activity centers where paved roadways and utilities occupy most of the right-of-way. It should not be used as a means of maximizing developable area on adjacent parcels.

Indianapolis, IN

RIGHT
Structured soil system in a tree well
Image Credit: Keep Indianapolis Beautiful

DESIGN STRATEGIES (CONTINUED)

A. As an alternative to the PFM standard § 12-0310.4.E and Table 12.14, tree planting space may be reduced in width and soil volume without requiring additional rooting space below pavement. All other locational provisions of PFM § 12-0310.4.E apply. The Alternative Planting Standard may be an option only when one or more of the following site conditions occur:

- There is insufficient space between the back-of-curb and the right-of-way line to fit the required widths for both the sidewalk and the landscape panel.
- There are conflicts with existing utility easements, manholes, pull boxes, traffic cabinets, and other structures within the landscape panel.
- The right-of-way width varies and/or has an unusual or irregular shape. Street sections allow the full planting width for most of a block, while narrowing in short stretches. In this situation, full or bonus credit may be possible for most of the street trees, with the Alternative Planting Standard used for only a few trees.
- See the Appendix A1 for Alternative Street Tree Planting Details.

4 IRRIGATION

A. Trees and landscaping should be watered during the establishment period, using automatic drip irrigation or other methods. When automatic drip systems are used, care should be taken to adjust seasonally to ensure that trees are neither over nor underwatered.

TOP RIGHT
Continuous tree wells provide adequate soil volumes by sharing soil among multiple trees
Image Credit: Kim Hartley Hawkins

BOTTOM RIGHT
Amenity Zone cantilevered over a tree well
Image Credit: Fairfax County

2F.2 STREET FURNISHINGS

Street furnishings provide important amenities for pedestrians by adding functionality and vitality to the pedestrian environment. They can help to make pedestrians feel welcome and comfortable. These amenities provide a functional service as well as visually enhancing the sense of place.

Street furnishings encompass the following elements: benches and seating, bicycle racks, bollards, signs, lights, transit shelters, and trash and recycling receptacles. Furnishing clusters refers to seating that is grouped with other complimentary amenities such as trash receptacles and bicycle racks. Performance specifications for each furnishing element are detailed in the *Volume II: District Design Guidelines*.

DESIGN PRINCIPLES

Prioritize street furnishings in certain pedestrian environments. Furnishings should be emphasized on streets with high levels of pedestrian activity; where pedestrians may linger in the public realm, such as on commercial or mixed-use streets; and on streets with an enhanced recreational component, including linear parks. Other streets should include furnishings at corners and on busier blocks, or where warranted by adjacent land use and pedestrian activity. Street furnishings should also be clustered near transit stops. On residential streets, alleys and curb extensions, less frequent clusters of street furnishings can create attractive and inviting public spaces where neighborhood residents or customers of local businesses can sit and rest, play, eat, or enjoy people-watching.

Arrange street furnishings in coordination with street trees and street lighting. Street tree and street lighting placement should define the major rhythm of design elements along the street; site furnishings should be coordinated with the locations of trees and lights.

BELOW
Street furnishings such as benches, bollards, signs, etc. add to the vitality and comfort of the pedestrian environment
Image Credit: placestogrow.ca

Kitchener, ON, Canada

DESIGN STRATEGIES

1 FURNISHING PLACEMENT

A. Furnishings should be located in the Amenity Zones or in the Building Zone.

B. Furnishing offsets:

   a. Furnishings should never be placed within the sidewalk, where they could impede pedestrian flow.

   b. Objects that are fixed to the ground must be set back from adjacent bicycle or shared-use facilities to avoid interfering with cyclists. Verify offset distances with the Fairfax County Department of Transportation.

   c. Placement of site furnishings should consider car overhangs and door swings. When placed near the curb, furnishings should be located at the ends of the on-street parking stalls rather than at the center.

C. Furnishing Spacing:

   a. On tpyical streets, furnishing clusters should be spaced ~ 150-feet, but there should be a minimum of one seating cluster per block.

   b. On streets heavily traveled by pedestrians, furnishing clusters generally should be spaced ~90-feet apart.

D. Street furnishings may also be placed within curb extensions.

2 FURNISHING STYLE AND MATERIALS

A. Furnishings should be considered as part of the overall family of elements within the streetscape so that there is a cohesive appearance to the public realm.

B. Furnishing clusters in the Amenity Zone should generally be permanently fixed to the ground.

C. Street furnishings should strive to use environmentally responsible materials, including materials with recycled content or certified wood. Bike racks should be made of tamper-proof materials.

D. Furnishing materials should be durable to withstand long-term exposure to the elements, limit opportunities for graffiti, and be easy to keep clean.

3 ACCESSIBILITY REQUIREMENTS

A. All street furnishings must meet ADA guidelines and should be ADA accessible from the adjacent sidewalk.

B. Furnishings should not interfere with pedestrian access to the entrance of any building.

C. Wherever possible, street furnishings should be of a contrasting color to the sidewalk to aid pedestrians with visual impairments.

D. A minimum of 8-feet clearance should be provided between street furnishings and adjacent accessible parking and passenger loading zones.

2F.3 STREET LIGHTING

While the primary purpose of lighting is to provide nighttime visibility for the safety and security of drivers and pedestrians, it also influences how people use streets and public spaces. Well-lit areas encourage greater physical activity and contribute to placemaking in urban activity centers. Pedestrian lighting is especially crucial in vulnerable areas where residents depend on walking, public transit, and other multimodal transportation options. Before any development or redevelopment, applicants should coordinate with both the Streetlights Branch of DPWES and the Community Revitalization Section of DPD to ensure compliance with lighting requirements and fixture/pole specifications.

The LED streetlight models referenced below are listed in Dominion Energy's Streetlight Catalog or are available as Dominion approved fixtures under 'Rate Schedule 153' of the Virginia Energy Purchasing Governmental Association (VEPGA) Agreement, noted with an asterisk (*) below. Fairfax County covers monthly maintenance and operating costs for all Dominion Energy-approved fixtures. If private streetlight fixtures are installed within the public right-of-way, their operation and maintenance become the responsibility of the private entity. Generally, private streetlights are discouraged.

BELOW
Exterior lighting in the Building Zone can create an inviting ambiance when varied in placement and style
Image Credit: Fairfax County

Budapest, Hungary

DESIGN PRINCIPLES

Ensure that streetlights fit within a larger family of light fixtures and other furnishings within a CRD or CRA. Streetlights are one component of the overall illumination of an area. Other lighting may include bollard lighting, accent lighting, and site and building-mounted lighting. When selecting the lighting for streets and streetscape areas, all fixtures should be considered as part of the family of furnishings, so that there is a cohesive appearance to the streetscape.

Do not over-light or under-light the public realm. In many situations, particularly when people are concerned about security, there is a tendency to over-light a space. However, too much lighting can be just as bad as too little lighting. A good lighting strategy addresses the type, placement, height, color, and wattage of lighting while minimizing up light and glare. The amount and color of light emitted from all exterior sources including streetlights should be evaluated as part of a comprehensive lighting strategy for both aesthetic and functional reasons and to avoid potentially underlit or over-lit areas.

Rockville, MD

BOTTOM
Family of pedestrian lighting, landscape lighting, and building lighting creates a safe and vibrant environment
Image Credit: Street-Works Studio

DESIGN STRATEGIES

1 STREET LIGHT TYPE AND PLACEMENT

A. Volume II: District Design Guidelines for a CRD/ CRA provides the selected fixture style that should be used district-wide. If no district style is recommended,

   ii. **Roadway Lighting** -Trika MAXI on narrower roads. To achieve appropriate lighting levels on wider roads, the Decorative Shoebox may be necessary.

   iii. **Pedestrian Lighting** - Metroscape or Trika Post Top

D. Streetlights should illuminate both the roadway and the streetscape such that all areas within the right-of-way are sufficiently lit but not overly illuminated. Roadway and pedestrian street lighting is encouraged to be co-located on the same pole.

E. Streetlights should be sized to the scale of the roadway. Lights, generally 14-16 feet high, should be located on Local and Avenue (Collector) street types; taller lights, generally 24 to 35 feet high, should be located on Major Avenues and Boulevards (Arterials).

F. Street lighting should be coordinated with building-mounted and accent lighting. Building and accent lighting should complement the style of streetlights recommended in the Volume II: District Design Guidelines for a CRD/ CRA.

	New Development Use these fixtures, as directed, for new development within CRDs and CRAs	**Existing/Infill Development** These fixtures have been historically used in Fairfax County and are generally not recommended for new developments. They may be appropriate for infill development to match adjacent development
Mast Arm (Roadway)	 Trika MAXI*  Decorative Shoebox	 Shoebox
Post Top (Pedestrian)	 Metroscape*  Trika Post Top*	 Carlyle Acorn  Cutoff Acorn  Cutoff Round Lantern  Cutoff Colonial

NOTE:
Information on Schedule 153 fixtures noted with asterisk (*) is available through these links: Trika MAXI and Trika Post Top (Cyclone Lighting) and Metroscape (Accuity Lighting).

Bilbao, Spain

LEFT
Street and pedestrian lighting co-located on the same pole
Image Credit: Santa Cole

DESIGN STRATEGIES (CONTINUED)

2 STREET LIGHT FEATURES

A. Full cutoff LED fixtures are required by the Zoning Ordinance to reduce light glare from parking garages, parking lots, and buildings onto walkways, streetscapes, and streets. All lighting on both public and private property should use full cutoff fixtures or have a shield that controls the light so that it is focused only on the object that is being illuminated.

B. Most lighting should use lower color temperature bulbs (3000K or below) for neutral white or warm white color light. The color rendition index (CRI) should be 70 or greater.

C. Smart technologies, such as the ability to dim the lights and self-report outages, is encouraged to be incorporated into street lights.

2G PAVEMENT TREATMENTS

Existing pavement materials vary in the CRDs and CRAs, but primarily consist of a mix of poured concrete, brick, and concrete and stone pavers. New paving in the public realm should be designed and selected based on durability, ease of maintenance, aesthetics, environmental considerations, and the ability to meet accessibility requirements.

Specific paving materials and locations for the individual CRDs and CRAs are provided in the Volume II: District Design Guidelines.

Oklahoma City, OK

DESIGN PRINCIPLES

Select paving materials based on the context and character of the street. Certain materials are better suited for specific zones and street types; as such, designs and material selections should be chosen based on the context in which the paving materials will be located and should reflect the character of the street.

Emphasize durability and maintenance. Durable, low-maintenance and readily available materials should be used for sidewalks.

Environmental and Sustainability Considerations. Only pave when necessary. Minimizing impervious paving surfaces can reduce the amount of storm water run-offs and be more environmentally friendly. Consider paving materials' environmental impact when choosing materials.

Des Moines, IA

LEFT
Paving pattern variations relate to adjacent tree placement
Image Credit: Fairfax County

RIGHT
Walkway with stabilized gravel aggregate allow rainwater to permeate back to the groundwater table
Image Credit: Organic-Lock

DESIGN PRINCIPLES (CONTINUED)

Choose paving materials that store less heat and have lower surface temperatures to reduce the urban heat island effect. Consider paving materials with less embodied carbon in its life cycle (production, installation and maintenance) to achieve a smaller carbon footprint.

Highlight special features and transitions. Sidewalks or trails may be accented with specialty materials to highlight features. Special paving patterns in the streetscape should be used to delineate the different zones and their related functions. Shifts in patterns should be employed to indicate different uses, highlight entrances, and frame seating areas. Materials can be used to define the edges of spaces and to visually enhance entire spaces, such as plazas. Creativity is encouraged, particularly in the Building Zone, where there is greater flexibility in material choices.

Portland, OR

LEFT
Complementary paving patterns interchanged with poured concrete to create an interesting hardscape
Image Credit: fotsos.com

DESIGN STRATEGIES

1 PAVING MATERIAL

A. Durable paving materials, such as poured-in-place concrete, should be used as the primary paving material in the sidewalks or trails, unless otherwise specified in design guidelines for the individual CRD/CRA.

B. Stamped concrete is generally discouraged as a sidewalk and crosswalk material because it is prone to cracking and fading, and may be difficult to repair.

C. The use of permeable paving materials (including soft paving, porous unit pavers with open joints, and permeable concrete) is encouraged in appropriate locations such as the Amenity Zone, in order to allow stormwater runoff to infiltrate through the material into the ground instead of being diverted into the storm drain system. Refer to section 2K ("Sustainable Street and Streetscape Design") and Appendix A2 ("Sustainable Design Toolbox") for more information on permeable paving applications and other sustainable design approaches.

D. The use of paving materials that store less heat and have lower surface temperatures. This may include pavement with with lighter colors. Light-colored paving materials have a high solar reflectance that aids in the reduction of surface temperatures and minimizes the amount of heat that is absorbed into the pavement. Thus, in turn

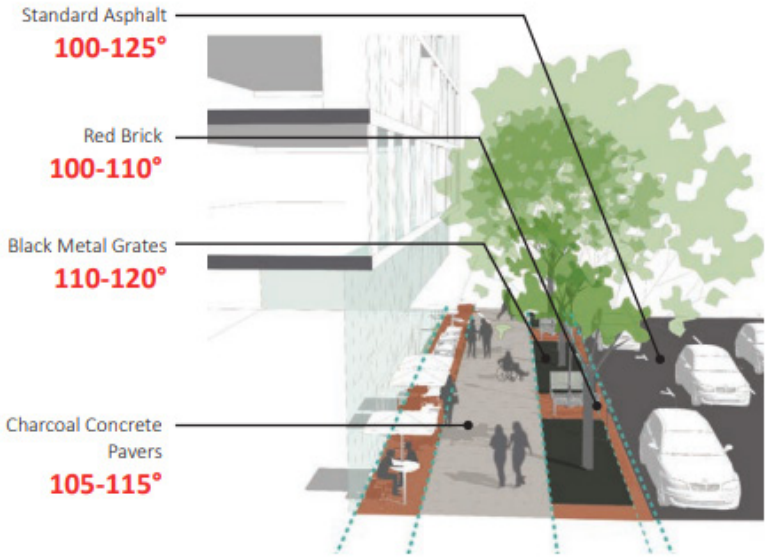
DESIGN STRATEGIES (CONTINUED)

helps reduce heat island effect. USGBC suggests selecting paving materials with a three-year aged solar reflectance (SR) value of at least 0.28. (LEED v 4.1: Heat Island Reduction – Non-Roof). For communities with historic characters that requires a darker paving material for sidewalks, consider supplementing with a lighter color material for adjoining areas, such as Amenity Panels or Building Zone. Also consider shading to minimize direct sun exposure to paving areas with a darker material.

E. When selecting paving materials, take into consideration their embodied carbon and the life cycle impact. Explore products with less embodied carbon during the production process. Reduce and recycle materials whenever possible.

F. Sidewalk materials should extend across driveway aprons to maintain a consistent streetscape material for the length of the sidewalk.

BASELINE MATERIALS



COOL STREET MATERIALS

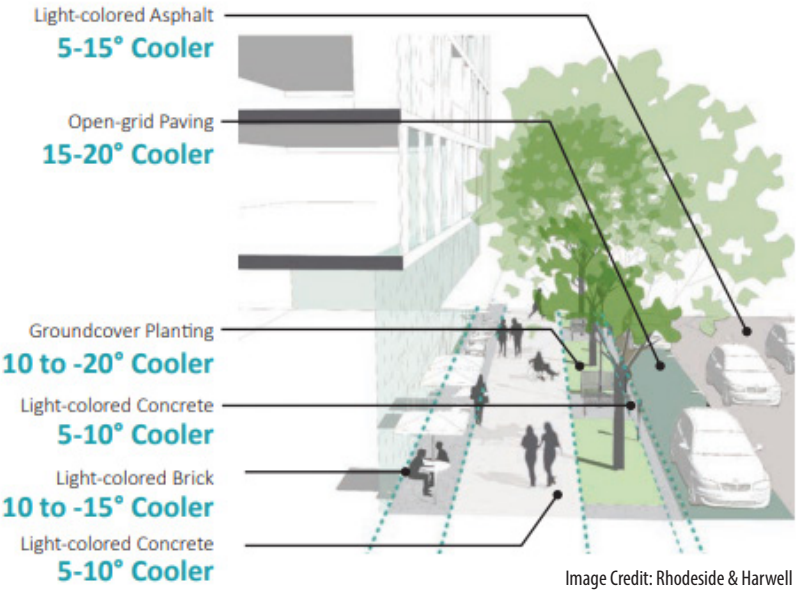


Image Credit: Rhodeside & Harwell

San Francisco, CA

DESIGN STRATEGIES (CONTINUED)

2 PAVING DESIGN

A. Paving design should create a dynamic, layered effect through the use of multiple patterns, varying paver sizes and materials, as well as through changes in color and the use of scoring patterns. Paving patterns and materials should provide visual texture and function as a backdrop for the other elements found in the public realm.

B. Paving patterns in the Building Zone can be the same or different from those in the sidewalk and in the Amenity Zone and should be complementary to both the adjacent building and the other streetscape elements.

C. Paving patterns should reflect the adjacent uses and provide visual cues that help define individual streetscape areas or mark transitions between different uses. For example, paving patterns can change in front of building entrances or help frame outdoor seating areas.

LEFT
Durable poured-in-place concrete sidewalk; paving variations between the sidewalk and Amenity Zone help define streetscape areas and provide texture
Image Credit: asla.org

2H BUILDING ZONE

The Building Zone, located between the sidewalk and the face of the building, is the area that transitions between the public sidewalk and the space within buildings. It is a component of the streetscape that is located on private property and is designated for elements including entrances, outdoor dining, browsing, plantings, and residential porches or stoops.

DESIGN PRINCIPLES

Utilize street cross-sections in Volume II to determine dimensions. Each street type has its own defined dimension for the width of the Building Zone as specified in the street cross-sections depicted in Volume II: District Design Guidelines. Widths were determined based on the adjacent land uses, the overall size of the street, and the anticipated volume of pedestrian traffic.

Emphasize character in Building Zone design features. Creativity is encouraged in the Building Zone, where there is greater flexibility than in the right-of-way to incorporate unique features and material choices, including distinctive paving materials and patterns, movable seating and tables, landscaping, awnings and other shading devices, to name a few. The Building Zone design should coordinate with the sidewalk and the Amenity Zones so that there is harmony within the streetscape.

DESIGN STRATEGIES

1 USES AND FEATURES

A. The Building Zone may be used for outdoor displays, café, tenant, or restaurant seating, and plantings.

B. Architectural elements such as awnings, canopies, and marquees may also occupy this zone.

C. Where there is insufficient width in the Landscape Panel to accommodate amenities, elements such as benches, trash cans, and bicycle parking may be located in the Building Zone to keep the sidewalk clear.

2 DESIGN CONSIDERATIONS

A. On residential streets, the Building Zone should be wide enough to accommodate porches, stoops, steps, low walls, pedestrian gates, and landscaping to provide an effective transition between the public sidewalk and private residences. These features should not obstruct pedestrian movement along the sidewalk or trail.

B. On commercial streets, particularly streets with ground-floor retail, the Building Zone should be wide enough to allow for café tables and seating, benches, plantings, merchandise displays, door swings, ramps, steps, and other building access elements, among other amenities.

BELOW
Activated Building Zone with sidewalk seating and awnings. Note: the Landscape Panel does not meet the Fairfax County minimum planting requirements
Image: Locallygrownnorthfield.com

Northfield, MN

2I UTILITIES

Transformers, meters, telecommunications equipment, and other utilities can negatively impact the pedestrian experience by obstructing pedestrian circulation, reducing suitable tree planting locations, and adding visually unappealing elements within the streetscape.

Early planning of utility easements during the conceptual design phase of a development is critical to ensure that utilities are appropriately located to be less visible.

LEFT
Utility vaults hidden by consistent paving material and integrated within the sidewalk
Image Credit: Fairfax County

Vienna, VA

DESIGN PRINCIPLES

Locate utilities underground to avoid obstructing pedestrian travel and to minimize impacts on the visual character of the streetscape. Utilities can have major impacts on the pedestrian realm. Overhead utilities are unsightly, can obstruct pedestrian movement, and can interfere with the provision of trees in the streetscape. Service lines should be placed underground. Transformers and utility equipment should be located in vaults either under the sidewalk or in the Building Zone.

Minimize conflicts with, or impacts on, street trees and pedestrian facilities. Conflicts between street trees and overhead wires, as well as between street trees and underground facilities, such as trunk and service lines should be minimized. If installed in the wrong locations, underground facilities may preclude planting trees, particularly those with deep roots, or may result in the removal of, or damage to, vegetation during repairs or upgrades to underground facilities.

DESIGN STRATEGIES

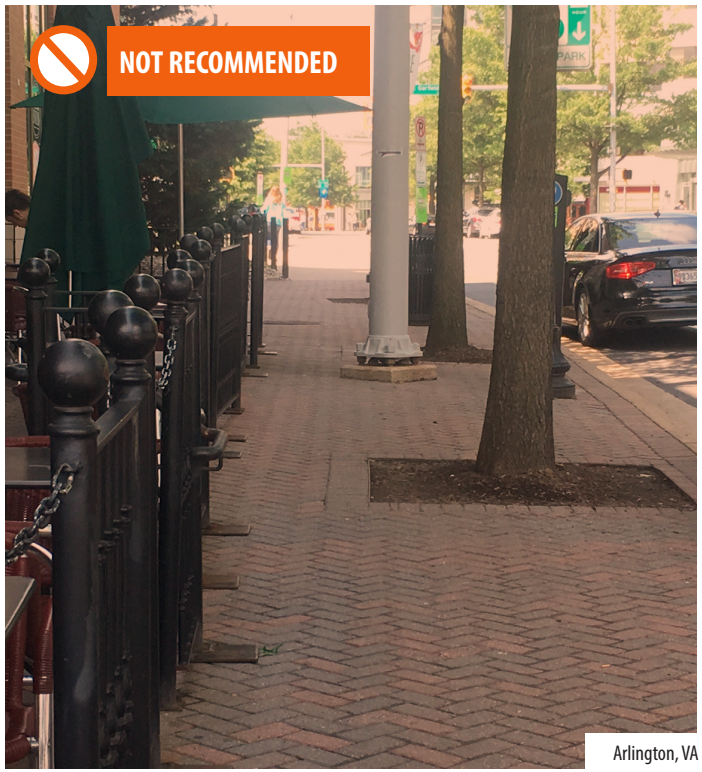
1 LOCATION OF UTILITIES

A. *Graphic 8* depicts the preferred location for underground utility conduits and vaults. A conceptual utility plan should be prepared during entitlement process to designate and organize easements and utility equipment.

B. To the extent feasible, all utility lines should be buried underground and co-located in common trenches.

C. At grade utility equipment and vaults should be located as unobtrusively as possible. They should be located outside of the sidewalk, either within the building or in the Building Zone, so as not to obstruct pedestrian and bicycle travel. Vaults and electric transformers may be located below active transportation facilities; however, locating utility infrastructure under the these facilities will require a maintenance agreement with VDOT.

D. In general, no building-serving utility infrastructure should be located within or below the Landscape Panel in order to avoid conflicts with street tree placement and reduce the potential for conflicts after planting.



Arlington, VA

Fairfax, VA

LEFT
Utility pole and trees placed in the middle of the sidewalk obstructs pedestrian flow
Image Credit: Fairfax County

RIGHT
Poor placement of utilities obstructs pedestrian flow and detracts from the visual character of the streetscape
Image Credit: Fairfax County

DESIGN STRATEGIES (CONTINUED)

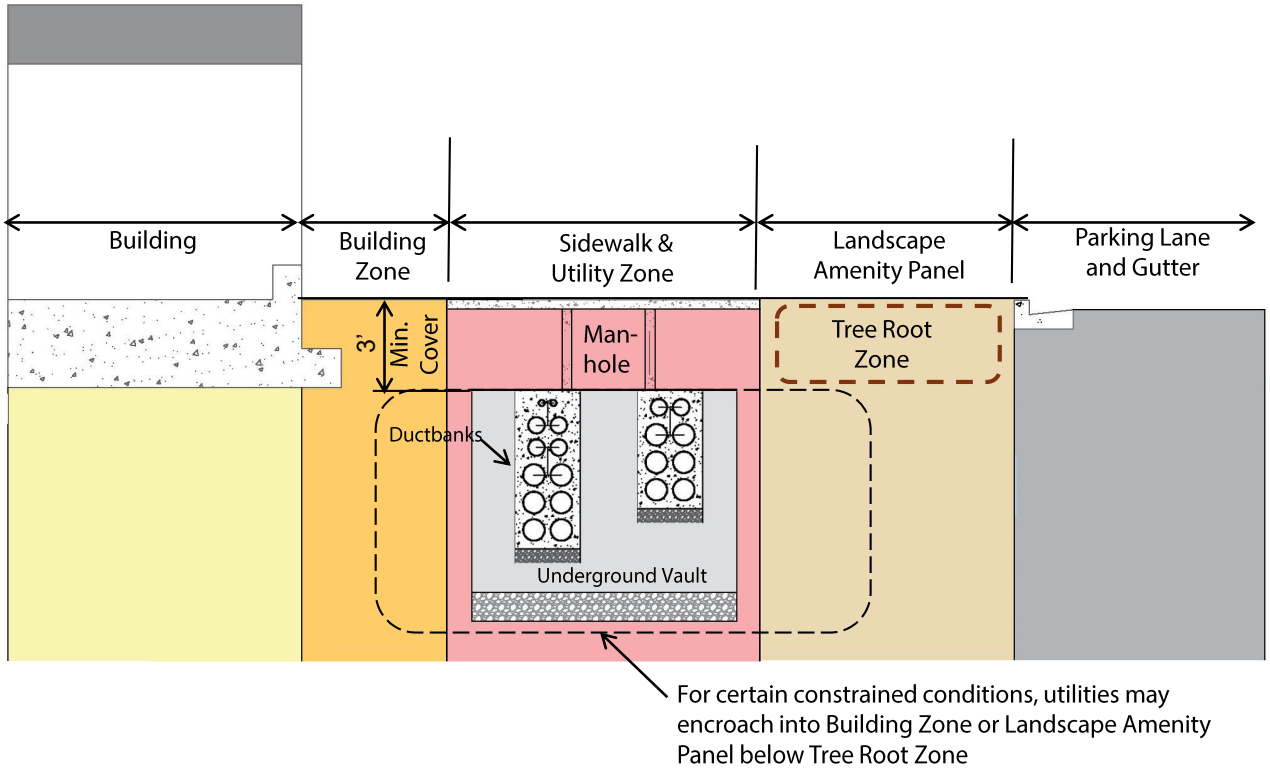
E. Streetlights and pedestrian-scaled lighting should be located within the Landscape Panel and at least 10-feet from the nearest tree. The primary underground electric line for streetlights should be placed outside the Landscape Panel, either under the sidewalk or Building Zone, with only minor lateral lines extending into the Landscape Panel. [See section 2F ("Landscape Panel and Amenity Zone") for additional guidance on street lighting].

2 MATERIALS

A. If located adjacent to the sidewalk, vault covers and access points to below-grade equipment should be finished in the same material as the adjacent sidewalk surface and should have ADA accessible surfaces that are attractively incorporated into the streetscape.

B. Equipment that is visible from the street should be screened using walls, landscaping, public art, or other materials.

GRAPHIC 8: UNDERGROUND UTILITIES IN THE STREETSCAPE



2J TRANSIT SHELTERS

There are a variety of transit shelter types currently in use in the CRDs and CRAs. Some of these shelters are no longer recommended and should be phased out over time to allow for new, more visually appealing shelters that include modern technology and improved features. Ease of maintenance and graffiti-prone designs are chief concerns in the selection of shelter styles.

DESIGN PRINCIPLES

Incorporate FCDOT-approved shelters to achieve area-wide consistency. New shelters should meet specifications set forth by FCDOT, and are subject to review by the state of Virginia and FCDOT. Unless otherwise indicated in the Volumne II: District Design Guidelines for each CRD or CRA, developments should incorporate one of the two state- and FCDOT-approved transit shelter models to ensure that shelter styles are consistent across an area.

Ensure that transit shelters are accessible and served by range of amenities for riders. Paved, accessible pathways between the sidewalk and the transit shelter entrance are an essential design feature for all transit stops. In addition, amenities such as benches, signage, lighting, and real-time technology are critical to ensuring rider comfort, safety, and ease of navigation.

Portland, OR

RIGHT
Accessible transit shelter located in the Amenity Zone; shelter includes rider amenities and displays real-time information
Image Credit: asla.org

DESIGN STRATEGIES

1 LOCATION AND CONTEXT

A. ADA-accessibility requires 8-feet of space between the shelter and the curb. Adjustments to this dimension may be possible depending on the shelter's configuration.

B. The preferred location for transit shelters is within the landscape panel. If necessary, due to space constraints, shelters may be located within the Building Zone provided there is a clear physical and visual pathway between the transit shelter and the bus entry point. This can be accomplished by installing a freestanding transit shelter in the Building Zone or by integrating the transit shelter into the design of the building itself through the use of building overhangs or recesses. Transit shelters in the Building Zone may require additional pedestrian signage to adequately identify the facility.

   i. On certain streets where the Amenity Zone is not wide enough to accommodate the transit shelter, the sidewalk may be realigned around the transit shelter structure if the width of the sidewalk is not reduced.

   ii. In certain limited instances, it may be appropriate to narrow the sidewalk adjacent to the transit shelter in order to accommodate it largely within the Amenity Zone, provided that the sidewalk is no less than 6-feet wide.

C. Areas around transit shelters should be well lit to provide visibility and safety at night.

D. Active transportation facilities should connect directly to the transit shelter.

E. Bus stops should be co-located with pedestrian and bicycle amenities such as bicycle parking, shaded areas, wayfinding signage, and trash receptacles. Benches (in addition to the bench located within the transit shelter) should be placed near the transit shelter if the bus stop will have a high volume of transit riders.

2 SHELTER STRUCTURE DESIGN

A. Transit shelters and pads should be designed in accordance with manufacturer's specifications described in the accompanying graphic. All transit shelters should provide an overhead shade structure to protect pedestrians from the elements.

B. Transit shelter structures should incorporate innovative technology to provide up-to-date, real-time rider information and other features to enhance rider experience, whenever possible.

C. Transit shelter structures should incorporate sustainable elements, including solar power or LED lighting, whenever possible.

TRANSIT SHELTER SPECIFICATIONS

Unless otherwise specified in the Volume II: District Design Guidelines for an individual CRD or CRA, the following shelters should be used.

Image Credit: Fairfax County

TRANSIT SHELTER: EURO

- Tolar Manufacturing – Euro Shelter with integrated bench
- Transit shelter dimensions: 6-feet wide by 10-feet long
- There are many available options for mounting, lighting, materials, and other technologies. Developers should work with FCDOT on the specific transit shelter features.

SHELTER PAD

- 6-inch thick, reinforced concrete pad that is a minimum of 15-feet long by 6-feet wide and that is connected directly to the sidewalk for accessibility purposes.
- If the transit shelter is to be located on a street with an 8-feet wide Amenity Zone, the transit shelter pad should be 8-feet in width to provide a contiguous surface from the curb to the sidewalk.

Image Credit: Tolar Manufacturing

TRANSIT SHELTER: NIAGARA

- Tolar Manufacturing – Niagara Shelter with integrated bench
- There are many options for mounting, lighting, materials, and other technologies that are available from the manufacturer. Developers should work with FCDOT on the specific shelter features.

SHELTER PAD

- 6-inch thick, reinforced concrete pad that is a minimum of 18-feet long by 6-feet wide and that is connected directly to the sidewalk for accessibility purposes.
- If the transit shelter is to be located on a street with an 8-feet wide Landscape Panel, the transit shelter pad should be 8-feet in width to provide a contiguous surface from the curb to the sidewalk.

2K SUSTAINABLE STREET AND STREETSCAPE DESIGN

As urban areas in Fairfax County continue to grow, streets play an essential role in shaping the community's sustainability and quality of life. The design and construction of streetscapes present an opportunity to not only improve the functionality of these spaces but also contribute to the county's broader sustainability goals. This section highlights key considerations for creating environmentally responsible, resilient streets.

Fairfax County can create streetscapes that benefit the environment and its residents by maximizing tree canopies and vegetation, incorporating Low Impact Development (LID) approaches for stormwater management, choosing materials with lower embedded carbon, and integrating renewable energy solutions, . Each of these strategies reduces urban heat island effects, mitigates stormwater runoff, conserves energy, and lowers the carbon footprint of urban infrastructure.

LEFT
Sustainable streetscape with bioretention facilities and permeable paving materials in the Amenity Zone
Image Credit: City of Portland, OR

Portland, OR

Thoughtful integration of these elements can create streets that are catalysts for positive environmental change and enhanced public spaces, as well as functional.

VDOT requires most urban roadways to have a curb and gutter to be accepted into the public roadway system; therefore, designs that direct stormwater into vegetated swales or bioretention planters should be coordinated closely with VDOT. For specific guidance related to drainage design for VDOT projects, refer to the VDOT Drainage Manual.

For general guidance regarding sustainable design strategies, refer to Appendix A2 and to the following sources of stormwater management best practices:

- The Sustainable Sites Initiative (SITES)
- Leadership in Energy and Environmental Design (LEED) rating system created by the US Green Building Council

For specific applications to streets and streetscapes, see the Urban Street Stormwater Guide by the National Association of City Transportation Officials.

DESIGN PRINCIPLES

Rethink streets as integral components of urban natural systems. Streets are not just mobility corridors; they can function as ecological assets that help communities adapt to climate change. By integrating nature into their design, streets can regulate temperatures, manage stormwater, improve air quality, and provide habitats for wildlife. Tree canopies and reflective or porous materials reduce urban heat island effects, while permeable pavements and green stormwater infrastructure capture, filter, and slow runoff before it reaches drainage systems. Together, these strategies improve water quality, conserve resources, and strengthen urban resilience.

Reduce impervious surfaces to promote sustainability. One of the most effective and economical ways to reduce urban flooding is to limit pavement and allow water to infiltrate naturally. Streetscapes designed with permeable pavements, vegetated medians, and expanded tree cover lessen dependence on costly stormwater infrastructure. Replacing excess hardscape with natural surfaces not only absorbs CO_2 but also lowers street-level temperatures and improves overall environmental quality. Using sustainable construction materials with lower embodied carbon—such as recycled or locally sourced products—further reduces the long-term carbon footprint of street projects.

Design for multiple ecological and community benefits. Beyond climate adaptation, well-designed streetscapes can enhance quality of life and strengthen community identity. Incorporating Low Impact Development (LID) strategies and sustainable materials enables streets to serve environmental, social, and transportation functions simultaneously. Green infrastructure and strategic planting can buffer noise, improve pedestrian comfort and safety, and create more inviting public spaces. In this way, streetscapes that integrate nature become places that support social interaction, encourage active transportation, and build resilience against future climate challenges.

Tysons, VA

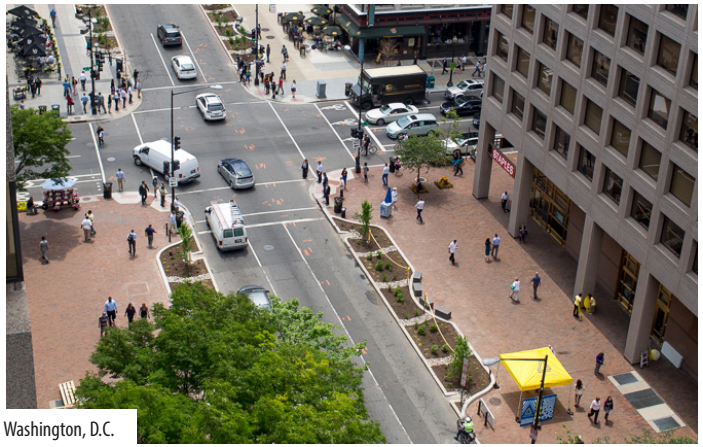
BOTTOM
LID features help to define the streetscape and enhance the pedestrian experience while providing stormwater management benefits
Image Credit: Fairfax County

DESIGN STRATEGIES

A. Maximize tree canopy and vegetation within the public right of way. See Chapter 2F for strategies to maximize tree planting. Include trees within stormwater retention planters whenever possible. *Graphic 9* depicts the components and configuration of a stormwater retention planter.

B. Stormwater management methods should be incorporated prominently as design features that provide multiple benefits, including environmental, habitat creation, species diversification, traffic calming, educational, and aesthetic benefits.

C. LID strategies in the public right-of-way should focus on space-efficient facilities that do not impede pedestrian, cyclist or vehicle travel, and that achieve a reduction in the amount of impervious surface. Appropriate locations for bioretention facilities include street medians and traffic islands, within the Landscape Panel, as part of curb extensions at intersections, bump outs between on street parking spaces, or within midblock crossings.



Washington, D.C.

LEFT
Landscape Panel with rain gardens for capturing stormwater, increasing landscaping, and providing space for outdoor seating
Image Credit: Golden Triangle BID

i. Porous materials, such as porous concrete or porous structural pavers, should be used whenever feasible to reduce the amount of impervious surfaces, particularly on parking spaces, within the Amenity Zone, and in the Building Zone. The design and construction of the pavement should comply with ADA and Public Right-of-Way Accessibility Guidelines (PROWAG) regulations when applicable.

ii. Bioretention facilities with native groundcover plantings, shrubs or trees (i.e., bioretention planters or bioretention cells) should be incorporated to filter stormwater as a first layer of treatment. The use of native vegetation within bioretention facilities provides multiple benefits including nutrient cycling, energy transfer, improved water quality, support for wildlife and insects including bees, and enhanced aesthetics. Please refer to *Appendix A1.2 - Tree and Plant List* for plant species that are appropriate for bioretention facilities.

iii. Linear swales, wet or dry, may be installed where sufficient space exists.

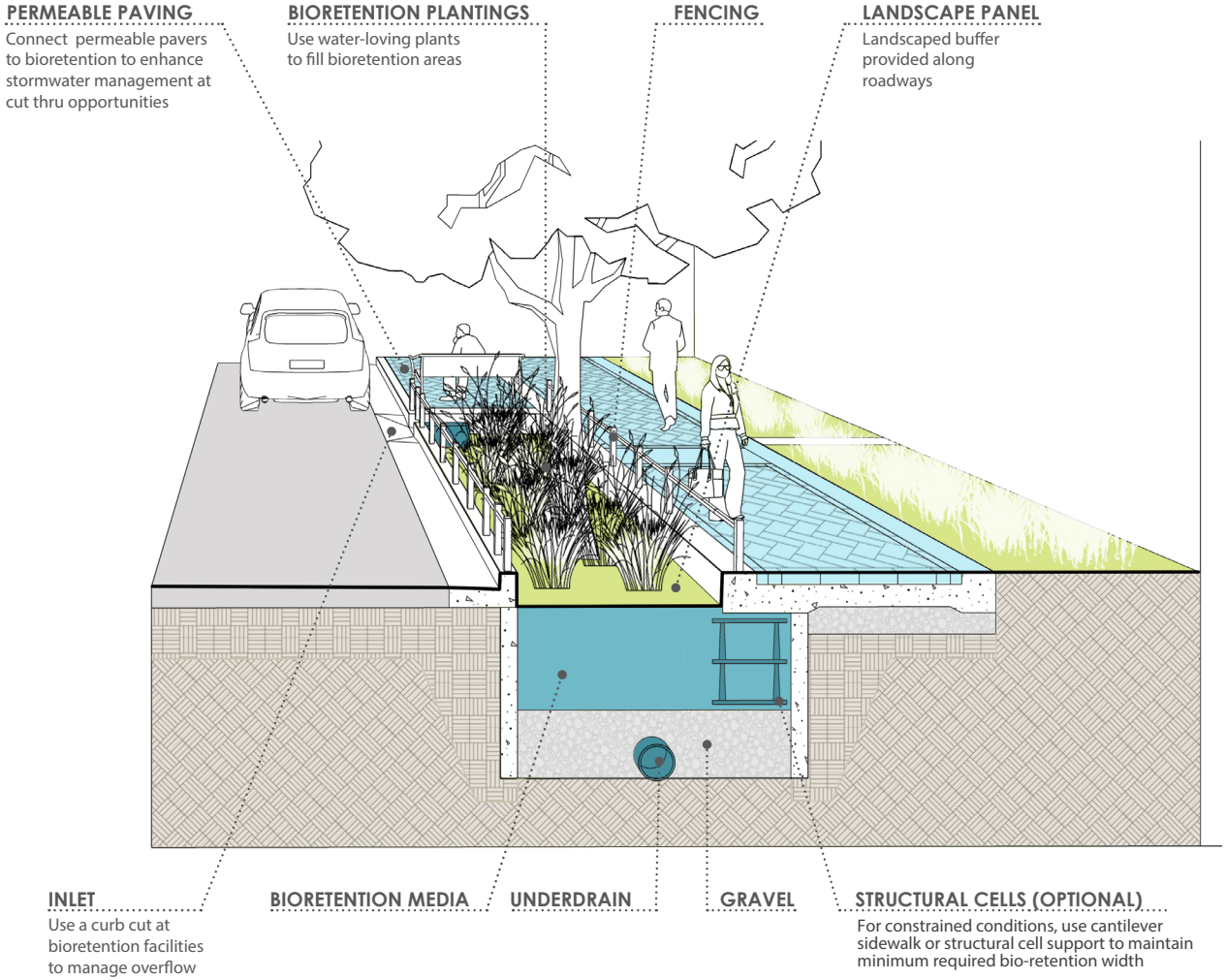
iv. Structural cell technology may be incorporated to support the sidewalks while

DESIGN STRATEGIES (CONTINUED)

allowing more water and air to reach tree roots in the uncompacted soil below, as described in section 2.F.1 ("Trees and Landscaping").

D. Consider the embodied carbon and lifecycle impact when selecting materials and planning the construction process. Choose materials like wood, stone, and others that have a lower embodied carbon footprint.

E. Integrate renewable energy generation into public rights of way by incorporating solar and small wind power on public facilities within the streetscape, such as bus shelters, light fixtures, and traffic signals. Whenever possible, prioritize the use of low-energy consumption fixtures and equipment.



GRAPHIC 9: STORM WATER PLANTER DETAIL

BOTTOM RIGHT
Example of a bioretention planter with a tree and decorative fencing in the McLean CBC
Image Credit: Fairfax County

McLean, VA

Image Credit: design-mor

3 PARKS & OPEN SPACE

INTENT

As the County's urban districts continue to grow and evolve, there is an opportunity to support and complement new development with a variety of open spaces that enhance the quality of life for those who live, work, and visit these areas. Open spaces may be publicly-owned or privately-owned, but all must be available for public use. They may vary in size and character - from larger parks to smaller plazas and pocket parks - and offer a range of experiences, including active and passive recreation, programmed activities and events, playspaces, and areas for conversation and quiet respite.

Regardless of size or type, all parks, open spaces, and trails should be welcoming, safe, comfortable and accessible to the full spectrum of park users, in accordance with the goals of the One Fairfax Policy. They should bring people of all ages and backgrounds together for gatherings large and small, casual and programmed, while serving as catalysts for community connections and economic development.

Newly developed parks, open spaces, and trails should also align with the Fairfax County Park Authority's Parks, Recreation, Open Space, and Access (PROSA) Strategy goals. The PROSA Strategy has four main elements: improve 10-minute walk access to FCPA parks, enhance access to complete park experiences, preserve and protect natural assets, and prioritize recreation needs with an equity lens.

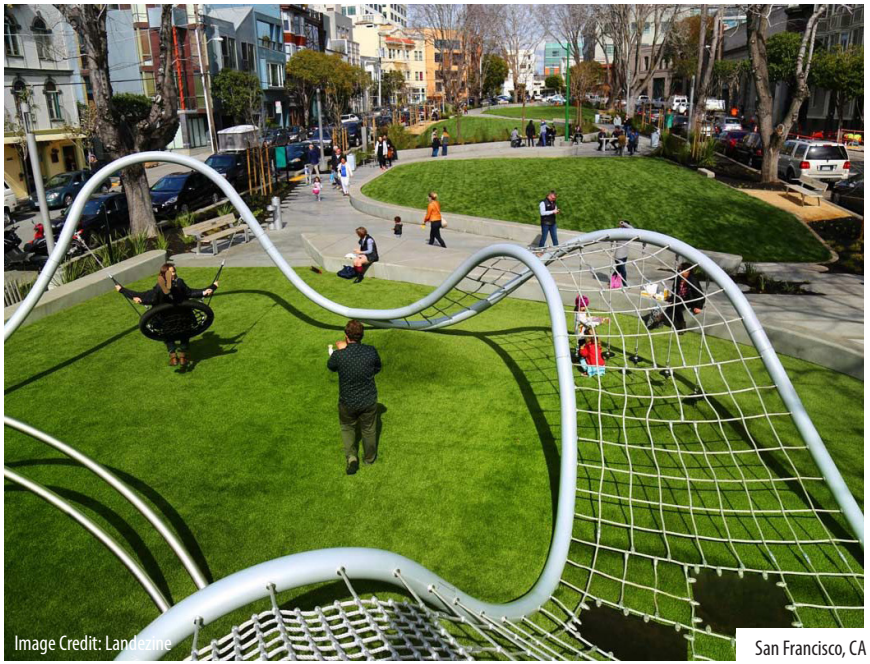
Both the One Fairfax Policy and PROSA Strategy will help provide park and recreation opportunities needed to reach an equitable outcome across the county, allowing everyone access and enjoyment of high quality parks, open spaces, and trails. In addition, these policies support new public parks or open spaces to balance and complement new development. Collectively, parks, open spaces, and trails should function as a larger integrated network connecting neighborhoods, natural areas, and economic centers. Trails and open spaces should connect neighborhoods and wildlife habitats by serving as natural corridors for people and animals.

This chapter describes the main typologies of urban parks and open spaces included in the County's Urban Parks Framework and identifies design principles and strategies to maximize potential benefits to the CRDs and CRAs. These design recommendations build on previous public

open space planning efforts. The design of parks and open spaces should be consistent with the recommendations in the following documents:

- The Parks and Recreation chapter of the Policy Plan element of the Comprehensive Plan, including the Urban Parks Framework appendix.
- The planned parks, open space, and trails network as described in the area plans of the Comprehensive Plan.
- The parks and open space chapter as contained in Volume II: District Design Guidelines for each CRD and CRA.
- The Parks, Recreation, Open Space, and Access (PROSA) Strategy.

INSPIRATION



San Francisco, CA

Dallas, TX

Indianapolis, IN

Urban parks designed to be compact, multifunctional, and relate to adjacent uses and context; design elements provide opportunities for a range of active and passive recreation and ensure that these spaces function as community gathering places

3A URBAN PARKS FRAMEWORK

Urban parks found in the County's urban districts provide functions, uses, amenities, and visual form that are appropriate in an urban context. Residents in urbanizing areas are more likely to rely on publicly accessible parks and plazas for socializing, passive/contemplative recreation, active recreation and exercise, and access to natural and cultural amenities. Similarly, workers and visitors of the urban districts seek attractive, safe and comfortable spaces for leisure and social activities.

The *Fairfax County Urban Parks Framework* includes several types of parks: Civic Plazas, Recreation-Focused Parks, Linear Parks, Common Greens, and Pocket Parks. These park types encompass a diverse range of purposes, uses, sizes, and features while accommodating a broad spectrum of needs. Ideally, each area will contain a variety of urban parks in order to improve walkable access to parks, provide a variety of park experiences, support revitalization goals, and create or enhance an area's sense of culture, liveliness, and identity.

The Urban Parks Framework establishes standards for the provision of urban parks based on the park needs generated by new development and

Arlington, VA

RIGHT
Plaza with programmed pedestrian activity areas; active ground floor uses, landscaping and pedestrian-scaled lighting lend vibrancy to the space
Image Credit: thelightingpractice.com

redevelopment. The precise number, size, and arrangement of urban parks will be evaluated based on the demand created by each specific development and the applicable policies and guidelines of the Urban Parks Framework, the Comprehensive Plan, and Volume II: District Design Guidelines recommendations regarding parks. For more detailed recommendations pertaining to size, access, service area and amenities of Urban Parks, please refer to the Fairfax County Urban Parks Framework located in Appendix 2 of the Parks and Recreation Chapter in the Comprehensive Plan, Policy Plan.

New York, NY

TOP
Pocket park with movable seating, shade and a water wall create an active gathering place and community amenity
Image Credit: Theodora Park

Tampa, FL

Sydney, Australia

BOTTOM LEFT
Recreation-focused urban park that includes a trail, splash pad, playground, pavilions, a Common Green and a bandshell for events and music
Image Credit: Plan Hillsborough

BOTTOM RIGHT
Linear park with active recreation amenities including a trail, dining tables, study pods, table tennis, and active water play features
Image Credit: ASPECT Studios

URBAN PARK TYPES

New York, NY

Image Credit: Fairfax County

CIVIC PLAZA:

Civic Plazas include public gathering spaces set aside for social purposes and that are supportive of commercial activities, such as open-air markets, summer concerts, festivals, outdoor exercise classes and/or special events. They are often planned at the intersection of important streets, within a town center or at other notable locations, and serve as community focal points.

Arlington, VA

Image Credit: Hughs Group Architects

RECREATION-FOCUSED PARK:

Recreation-Focused Parks include facilities such as athletic fields and multi-use courts, along with associated amenities such as trails, seating, tot lots, shade structures, water features, picnic areas and restrooms. The size of the park should be appropriate to accommodate the proposed recreation facilities.

LINEAR PARK:
Linear Parks are continuous spaces, generally designed for recreational use that may include sidewalks or trails, recreational amenities, public art, wayfinding signage, and environmental amenities. Linear greenways that utilize urban stream valleys for trails and trail connections are a form of Linear Park.


Image Credit: Landezine

Dallas, TX

COMMON GREEN:
Common Greens are flexible open spaces with lawn areas that serve as the recreational and social focus of a neighborhood. These spaces may include amenities such as tot lots, playgrounds, fitness courses, paved trails, and sport courts.


Image Credit: Tighe & Bond Studio

Boston, MA

POCKET PARK:
Pocket parks are small-scale open spaces incorporated into developments or located on small, underutilized pieces of public or privately-owned land. Typically designed for casual, passive use by people working and living in the immediate area, these spaces may consist of hardscape elements, lawns, or landscaped areas and may incorporate elements such as seating, water features and art.


Image Credit: Copley Wolff Landscape Architecture

Boston, MA

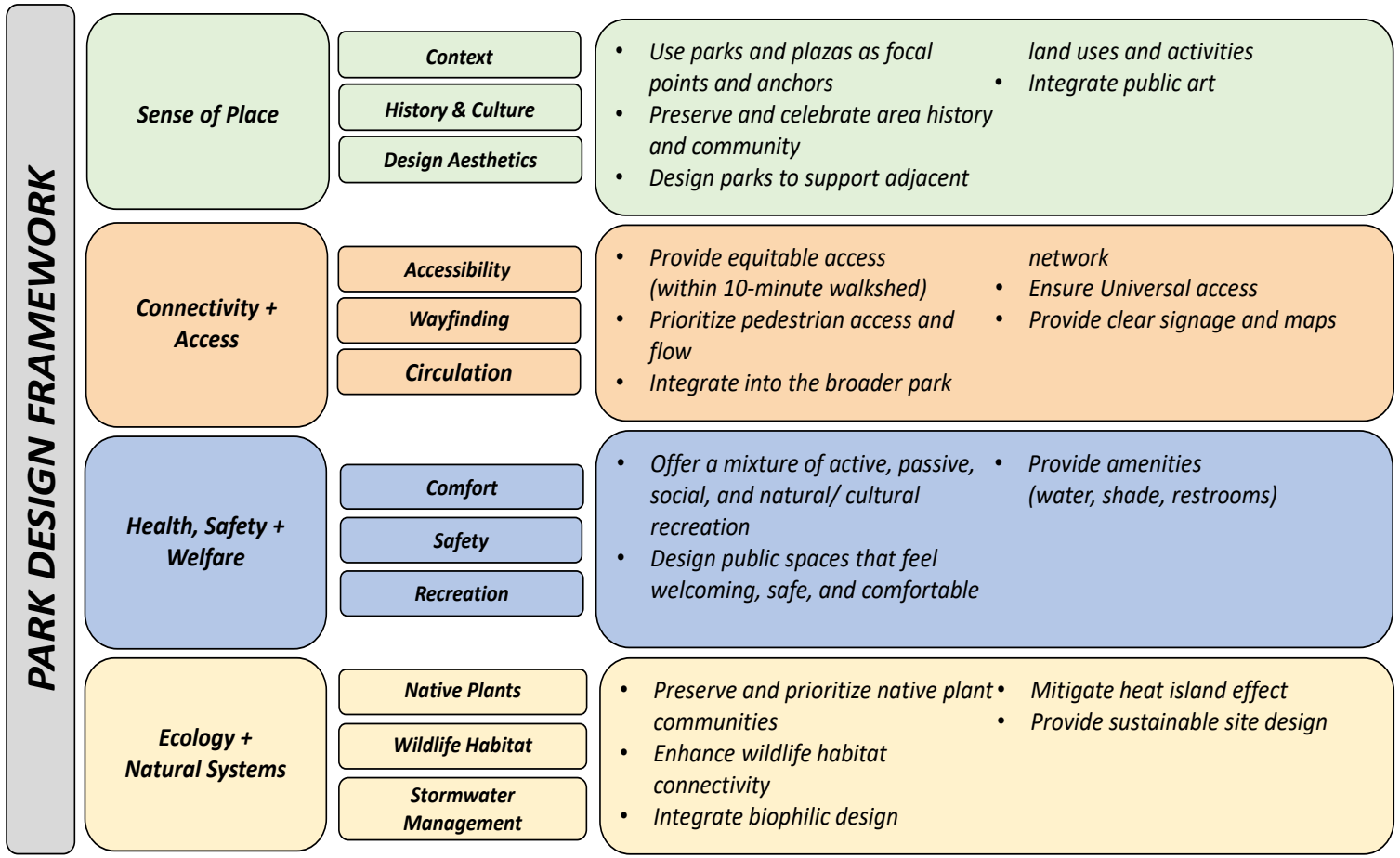
3B PARKS & OPEN SPACE

DESIGN PRINCIPLES & STRATEGIES

Urban parks should serve a diverse range of uses and users while also contributing to the placemaking and economic vitality of urbanizing areas. The design of urban parks and open spaces should reflect the four general design principles and strategies outlined below.

Note: Unless otherwise stated, the term "parks" refers broadly to parks and urban park types like civic plaza, urban plaza, common green etc.

GRAPHIC 10: PARK DESIGN FRAMEWORK



DESIGN PRINCIPLES & STRATEGIES (CONT'D)

1 SENSE OF PLACE [S]

Well-designed parks that thoughtfully relate to the surrounding context create a sense of place to foster social interactions, increase civic pride, and support active, healthy lifestyles.

S-1 – Configure blocks to locate public parks in high visibility areas and distinguish them from private spaces.

Urban parks should be:

- Located to create a safe environment.
- Sited to create strong connections to the street and pedestrian networks.
- Provided in areas with high pedestrian traffic.

S-2 – Use parks and plazas as the focal point for commercial development and public space.

- Buildings and amenities should be organized around parks and plazas.
- Publicly accessible parks provided by private developments should be oriented towards streets, trails, or adjacent commercial and public uses.

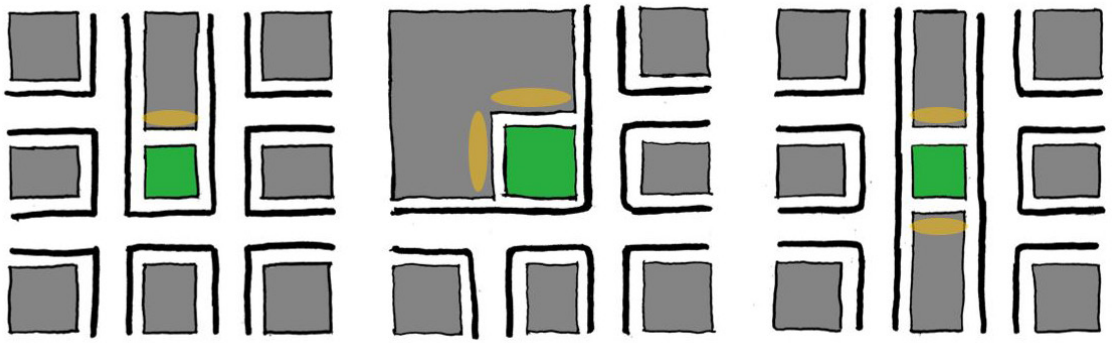
S-3 – Create and frame prominent view corridors to provide grand views of focal points and areas of activity.

The corridors should be spatially significant. Examples of focal points may include:

GRAPHIC 11: URBAN PARK BLOCK CONFIGURATION

– The "Adjacent Park" configuration orients the park at the terminus of the block which provides retail and other supporting uses on at least one edge while the remaining sides front adjacent streets or public right of way.

– The "Corner Park" and the "Sandwiched Park" configurations offer ground level retail on at least two edges providing a more activated and energized space while also improving safety by exposing fewer of park edges to adjacent roadways.



Rockville, MD

RIGHT
Activated open space with areas for play and relaxation
Image Credit: Bethesda Magazine

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

- commercial activity or use
- public art
- water features
- historical and/or cultural monuments

S-4 – Establish identity by incorporating features of historical, cultural, and natural importance. Link historical and cultural heritage to the park design by:

- Using interpretive educational signage
- Incorporating symbolic materials
- Including public art to connect to heritage

BELOW
Integrated bioretention area and boardwalk in a linear park
Image Credit: Woltz Landscape Architects

Alethia Tanner Park, Washington, DC

S-4 – Parks and their surrounding built environment should complement each other.

- The design of open spaces should respond to and support activities related to adjacent land uses. (e.g., outdoor seating areas enable patrons to enjoy food or beverages from adjacent businesses.)

S-5 – Enliven public areas, define spaces and create "outdoor rooms" with these elements:

- Distinctive paving materials, paving patterns, and/or accent banding.
- Colors and lighting that frame spaces.
- Furniture that can be rearranged, reclinable, or reconfigured for different purposes.

S-6– Integrate public art into all park types

- Pay special attention to prominent park spaces like Civic Plazas, Common Greens, and Linear Parks.
- Explore "playable art" and other dual-purpose artistic installations.
- Refer to Chapter 6 for further guidance on public art.

S-7 – Water features should be incorporated as landmarks, focal points, and places to play that enhance the park or open space. Additional details regarding water features are provided in Section 6D ("Water Features").

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

2 CONNECTIVITY AND ACCESS [C]

Parks that are logically ordered and seamlessly connected through a public spaces network improve connectivity within a community. Successful public places are accessible to all and create a seamless arrival, departure, and navigation experience.

C-1 – Locate parks within a 5-to-10-minute walking distance of residential areas and other uses.

- Integrate these spaces into a network to enhance walkable access.

C-2 – Connect pedestrian walkways with public and private pedestrian infrastructure

- Facilitate pedestrian access within and beyond the park site.
- Integrate walking loops into larger park networks for recreational use.

C-3 – Provide spacious areas for pedestrian flow and circulation

- Focus on areas with heavy pedestrian traffic or expected influx of visitors.
- Ensure that paths are minimum of 8-feet wide, but preferably 10-feet wide.

Columbus, OH

TOP
Open space activated with programming for all ages
Image Credit: Scioto Mile

BOTTOM
A modern, interactive fountain in a downtown plaza
Image Credit: Fairfax County

Sundance Square Plaza, Fort Worth, TX

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

C-4 – Ensure Universal access in park design

- Integrate ramps, level landings, textured surfaces, and seating.
- Support visitors of all abilities.

C-5 – Create a strong sense of arrival at park entrances.

- Use design elements like seat walls, monument signage, flanking piers, signature landscaping, or columns to create attractive park entrances.
- Install clear park entrance and directional signage, along with informational maps, to enhance navigation and create inviting spaces at all access points.
- Refer to the Wayfinding section for further guidance on creating effective visitor paths and signage.

C-6 – Provide clear park signage and delineate public parks from private spaces.

- Reference the Publicly Accessible Private Open Space (POPS)Sign Standards for sign styles and content.

C-7 – Public access easements should be recorded for the purpose of permanent public access and to create a connected, publicly accessible park or open space.

- These easements may be granted to Fairfax County, FCPA, or other public entities depending on individual circumstances. Public access easements should encompass the whole of the space counted toward urban park space and accommodate the spectrum of public recreational uses expected in urban parks. In addition, opportunities to allow adjacent developers to improve the site should be considered if maintenance responsibilities can be agreed upon.

BOTTOM
Material selection and plaza design visually enhance the pedestrian environment and help delineate spaces and uses
Image Credit:BCT Architects

Arlington, VA

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

3 HEALTH, SAFETY AND WELFARE [H]

Parks should provide safe and comfortable experiences for all users, offer unique features and park elements and experiences, support healthy lifestyles, and promote or enhance natural and cultural resources.

H-1 – Design parks to offer a variety of recreational experiences, such as active, passive/contemplative, social, natural, and cultural recreation.

- Balance recreation types for health benefits.
- Provide flexible spaces for diverse recreational activities.
- Frame spaces with topography, seat walls, art, and landscaping.
- Consider local context for unique recreational opportunities.

  Examples of different recreational experiences are provided in the Fairfax County Park Authority's Parks, Recreation, Open Space and Access (PROSA) Strategy.

H-2 – Design public spaces to feel welcoming, safe, and comfortable and provide recreation for the full spectrum of park users, in accordance with the goals of the One Fairfax Policy.

Seattle, WA

TOP
Water feature creates a playful, welcoming environment for families
Image Credit: parentmap.com

BOTTOM
Interactive art installation animates a Brooklyn plaza
Image Credit: 6sqft

Brooklyn, NY

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

- Include playgrounds, tot lots, play structures, playable art, and interactive water features.
- Place seating and amenities near play areas for caregivers to supervise children.

H-3 – Create viewsheds into parks.

Provide lines of sight and encourage natural surveillance ("eyes on the street") through:

- Strategic placement of doors, windows, balconies, and street-level uses.
- Keeping park views unobstructed from walls, plantings, building corners, or down narrow passageways.

H-4 – Incorporate multifunctional site amenities. For example, a bench may also serve as a sculptural art element, or a sculptural element serve as play equipment.

H-6 – Plan for formal and informal uses.

- Include spaces for recreation, walking, sitting, and community activities like performances, movie nights, farmers markets, kiosks, bulletin boards, cafes, and street vending.
- Ensure provision of electric service for events like festivals or farmers markets.

H-7 – Design parks to concentrate activity areas in places with a balance of sun and shade. Include features that encourage activities beyond daylight hours and throughout the year. Such features could include:

- Appropriate lighting
- Electrical outlets
- Movable seating and chairs
- Weather protection and shade
- Outdoor heaters
- Wi-fi service

BOTTOM
Integrate biophilic design and green infrastructure creates a refuge for people and wildlife in the midst of this bustling downtown neighborhood. Image Credit: GreenWorks

Portland, OR

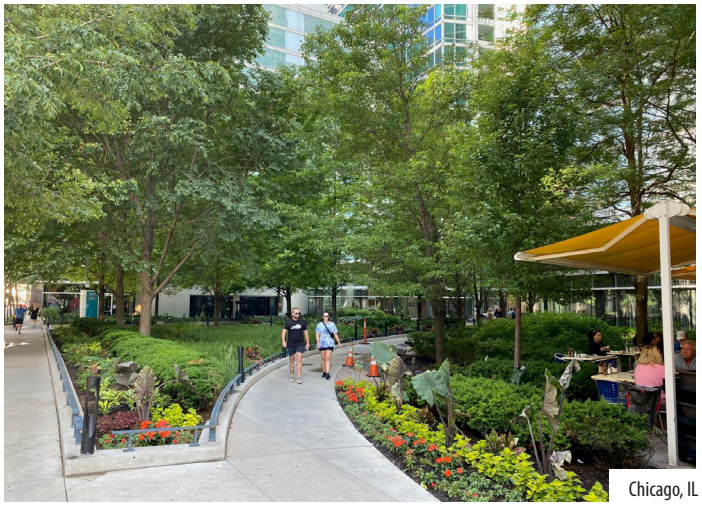
DESIGN PRINCIPLES & STRATEGIES (CONT'D)

H-8 – Provide lighting for safety including pathway illumination, pedestrian and entry lighting, and/or security lighting.

- Ensure well-lit parks, plazas, and open spaces with downward-directed lighting using full cut-off optics.
- Prioritize proper lighting for trails serving commercial areas and transit access.
- Develop a photometric plan for county review during rezoning or site plan approvals.
- Pathways, trails, and park spaces that are intended for evening use should be lit uniformly at an average of 1.0 to 1.5 Foot Candles (FC).

H-9 – Design plazas, pocket parks, and other open spaces to protect pedestrians from vehicles, weather, and adjacent undesirable uses.

- Use features like on-street parking, trees, landscaping, low walls, bollards, and art to visually and physically buffer pedestrians.
- Ensure any low walls used for seating are 18 to 24 inches high and at least 18 inches deep.



Chicago, IL

TOP
Layered landscape creates a lush environment in an urban setting
Image Credit: Fairfax County

BOTTOM
Water feature within a pedestrian plaza
Image Credit: Foster + Partners

Washington, DC

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

H-10 – Coordinate early in the conceptual design process to ensure that existing and planned infrastructure and utilities do not encumber the development of park amenities and facilities.

- Avoid placing underground stormwater detention systems under improved park spaces as they limit the park amenities and plantings that can be provided in these spaces.
- Be cautious with underground utilities, duct banks, and easements to ensure full park functionality.
- If park placement above infrastructure is unavoidable, carefully position access panels and above-ground equipment to minimize visual and functional impacts.
- Include existing and proposed utility easements on the CDP/FDP to identify potential conflicts with park improvements.

Houston, TX

BOTTOM
A welcoming pocket park forms the focal point of the development
Image Credit: visithoustontexas

4 ECOLOGY AND NATURAL SYSTEMS [E]

Parks are places where people can connect with nature and improve their physical and mental health. They can define visual character, offer shade, support ecological systems and create wildlife habitats, improve air quality, reduce the urban heat island effect, and mitigate the impacts of climate change. For ecological and natural systems inside and around parks to thrive, special consideration needs to be given to habitat creation with a focus on biodiversity and connectivity, water quality, and health of soils.

E-1 – Minimize disturbance to existing vegetation and topography, including healthy soil.

- Provide adequate soil volume to support long-term tree health.
- Ensure healthy soil containing optimal nutrients and and organic matter to support plant growth.
- Incorporate existing natural features like terrain, topography, mature trees, and environmental elements into park designs.

E-2 – Prioritize native, pollinator, and bird-friendly plants in plant selection.

- Maximize use of native plants and incorporate diverse plantings for aesthetic richness.

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

- Consider factors like native species, local ecosystem, future climate, water needs, light, soil conditions, adjacent use patterns, and maintenance requirements when choosing plants.

E-3 – Design for enduring natural systems.

- Use a diverse palette of locally native trees, shrubs, grasses, and perennials in a park space to increase biodiversity.
- A network of park spaces with diverse plantings improves habitat connectivity by creating a variety of microhabitats.

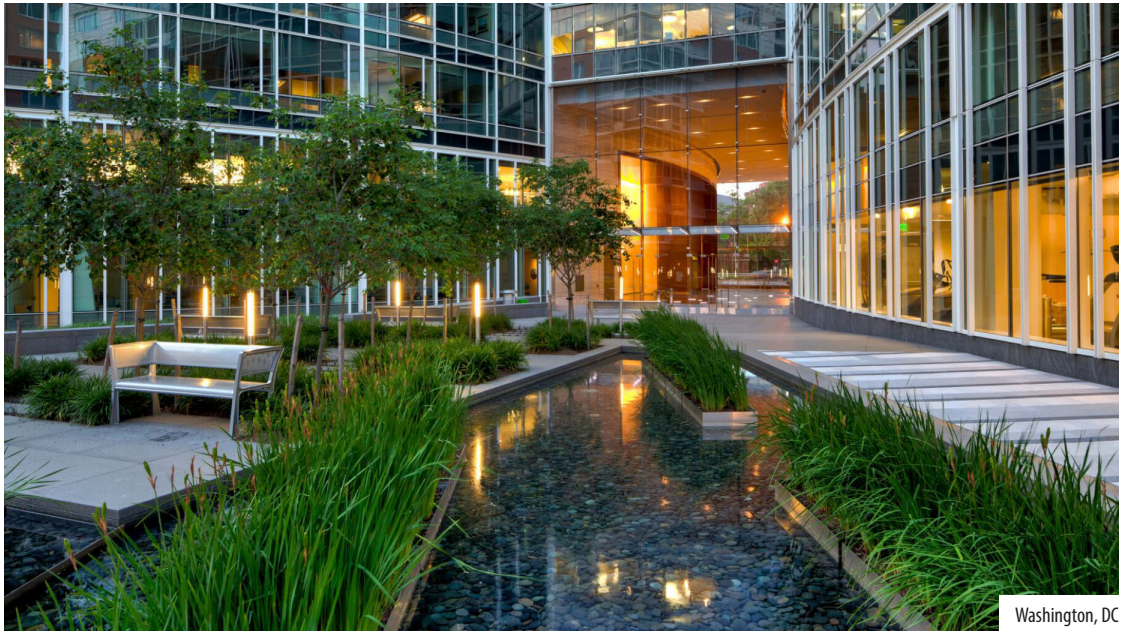
E-4 – Integrate biophilic design principles and green infrastructure that can improve heat mitigation, air quality, water quality, and stormwater management. Green infrastructure includes:

- Bioretention ponds
- Bioswales
- Permeable surfaces and pavements
- Green roofs
- Tree conservation
- Floodable parks
- Green spaces

Tysons, VA

TOP
Native plants and existing topography are incorporated within the park design
Image Credit: Fairfax County

BOTTOM
A water feature above an underground parking garage filters and collects rain water for irrigation
Image Credit: Sasaki



Washington, DC

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

E-5 – **Provide sustainable irrigation practices.**

- Use automated irrigation systems in landscaped spaces when necessary.
- Prioritize rainwater collection and recycled gray water for irrigation.

E-6 – **Soften park edges with vegetated buffers composed of trees, shrubs, perennial grasses, and/or natural berms** to separate the park and/or open space from roadways and the rest of the built environment.

E-7 – **Use sustianable materials wherever feasible.** Recommended materials include:

- Permeable pavers in hardscaped areas to promote natural water infiltration and reduce runoff.
- Recycled aggregate materials (e.g., crushed concrete or crushed concrete or recycled asphalt) for pathways and sub-base layers (These materials should be placed separately from trees and natural resources proposed to be preserved.)
- Cool pavements that reflect solar energy and enhance water evaporation to reduce the heat island effect.
- Certified sustainable wood (e.g., FSC-certified) for site furnishing
- Locally sourced materials to minimize transportation emissions and support local economies.

Indianapolis, IN

BOTTOM
Locally sourced, stabilized gravel used in this pedestrian plaza will allow stormwater to permeate into the underground water table
Image Credit: Organic-Lock

DESIGN PRINCIPLES & STRATEGIES (CONT'D)

5 KEY TERMS

- **Active recreation:** experiences that encourage physical activity and play, such as using sport courts, fields, playgrounds, trails, and fitness equipment.
- **Complete park access:** the ability of residents to get to parks that provide a variety of recreational experiences within a 10-minute walk or 5-minute drive from their home.
- **Healthy soil:** good or healthy soil should provide good nutrients to plants and have good water retention. Good soil structure provides a medium for plant roots and building structures. The minerals and microbes in soil are also responsible for filtering, buffering, degrading, immobilizing, and detoxifying organic and inorganic materials.
- **Natural/Cultural recreation:** experiences that provide opportunities to connect with the outdoors and nature, as well as present-day and historical heritage, such as enjoying nature trails or wildlife habitats, or visiting historical and cultural landmarks.
- **One Fairfax:** a joint racial and social equity policy adopted by the Fairfax County Board of Supervisors, School Board, and the Park Authority Board. It commits the county, schools, and Park Authority to intentionally consider equity when making policies or delivering programs and services.
- **Passive/Contemplative recreation:** experiences that offer a place for relaxation, reflection, and mindfulness. Park amenities for this type of recreation experience include outdoor seating areas, walking paths, trails, and gardens.
- **Privately-owned Public Space:** a type of public space that is privately-owned but open to the public, typically through the execution of a public access easement or other public land rights.
- **Public access easement:** an easement over private property granting the right of access and use to the general public and authorizing the County to regulate traffic and enforce maintenance thereon for the purpose of protecting the public health, safety, and general welfare.
- **Social recreation:** experiences that encourage people to gather, engage in shared activities, and foster relationships with family, friends, neighbors, and acquaintances, such as enjoying picnic areas, community gardening, or going to an event. They facilitate community interactions and connections.
- **Ten-minute walk:** 10 minute (½ mile) walk to a public entrance of a publicly accessible park.

Image Credit: Design Collective

4 BUILDING DESIGN

INTENT

Well-designed architecture supports a vibrant, walkable urban environment and contributes to the creation of a cohesive and coordinated public realm. Buildings play a critical role in creating pleasant, pedestrian-friendly places. How buildings interface with the public realm should be considered from the perspective of the pedestrian. Buildings that are scaled to the street and contain ground-floor features designed to interest the pedestrian will promote a positive experience.

The recommendations in this chapter help ensure that buildings contribute to a public realm that is:

- comfortable and safe environment for pedestrians;
- cohesive and coordinated across the district; and,
- sensitive to the existing context.

This chapter addresses the physical elements of buildings, including their placement along streets, massing and form, ground floor design, façade modulation, articulation, and materials. It details how utilities, service access, and loading facilities should be accommodated. General building design guidance, including maximum building heights, is contained in the Comprehensive Plan and/or the Zoning Ordinance.

INSPIRATION

Image Credit: Gensler

Nashville, TN

Image Credit: PlannerDan

Vancouver, Canada

Image Credit: Federal Realty

Bethesda, MD

Image Credit: Architect Hord Coplan Macht

Fairfax, VA

Building form, building placement on the site, and ground floor design are key design features that contribute to an area's sense of place, while supporting a high-quality pedestrian environment

4A BUILDING PLACEMENT

Buildings are instrumental in contributing to a positive pedestrian experience when they define the boundaries of public spaces, contain uses that bring vitality to the area, and are designed so that the building's uses interface with the street and public realm. Buildings should be located so they frame the street to support walkability, street-level activity, civic gatherings, and retail vibrancy.

BOTTOM
Buildings sited at the build-to line; entrances front onto the street to create a comfortable, welcoming and pedestrian-oriented street with a sense of enclosure
Image Credit: Avalon Bay

Merrifield, VA

DESIGN PRINCIPLES

Locate buildings close to and fronting on the street. Pedestrians want convenient access to buildings and have a psychological desire for well-defined streetscapes. When buildings and their primary entrances directly front the street and coordinate with the street's pedestrian facilities, they create a lively, inviting, and pedestrian-scaled environment where people can feel comfortable walking between local destinations. (See Graphic 8: Building Placement).

Adhere to minimum setbacks or build-to lines to foster a consistent street wall. A consistent street wall is formed when the majority of buildings on a block are located at the desired build-to line. Where existing buildings are set back from the street, new developments should aim for a more urban form. Street walls help establish the character for the street, provide a sense of comfort and enclosure to pedestrians, and have a positive impact on placemaking.

The build-to line is a theoretical line adjacent to the streetscape indicating where the façades of buildings should be located. In these Guidelines, the build-to line is analogous to a building setback. The build-to line ensures that the ground floors of all buildings on a block are generally aligned with one another. It generally applies to the podium (or base) of the building structure and excludes building towers, which may be set back further to allow light and air to reach the ground.

Sec. 3102.3.C.(2) of the Fairfax County Zoning Ordinance permits properties within Commercial Revitalization Districts to use a lesser setback than the underlying zoning district regulations where specified in the Comprehensive Plan.

DESIGN STRATEGIES

1 Setbacks and Built-to Lines

A. The ground floor of buildings should be located along the build-to lines as depicted in the street cross-sections contained in the Comprehensive Plan and/or the Volume II: District Design Guidelines. Where not specified in the Comprehensive Plan, the build-to line is located at the edge of the Building Zone and does not intrude into the streetscape area.

B. In locations where buildings are not present, consider landscape features or structures such as short landscape walls, canopy structures, or additional trees and vegetation along the built-to-line to define the street edges.

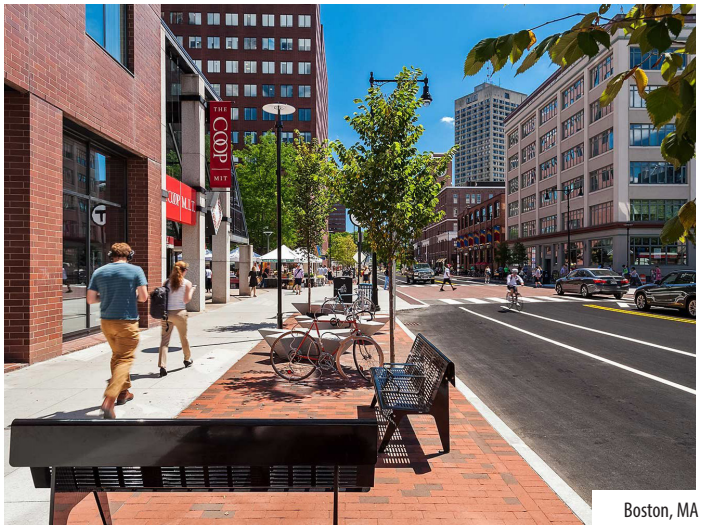
C. Plazas, pocket parks, open spaces, and landscape features may occasionally interrupt the build-to line to create special moments. Auto-oriented features such as parking lots or autocourts should be located away from the primary street or internal to the development.

D. As a general guideline, at least 75% of a building's frontage should be located at the build-to line.

E. Additions to existing buildings should be designed so that they increase the presence of the building on the street by either adhering to, or coming closer to, the desired build-to line.

New York, NY

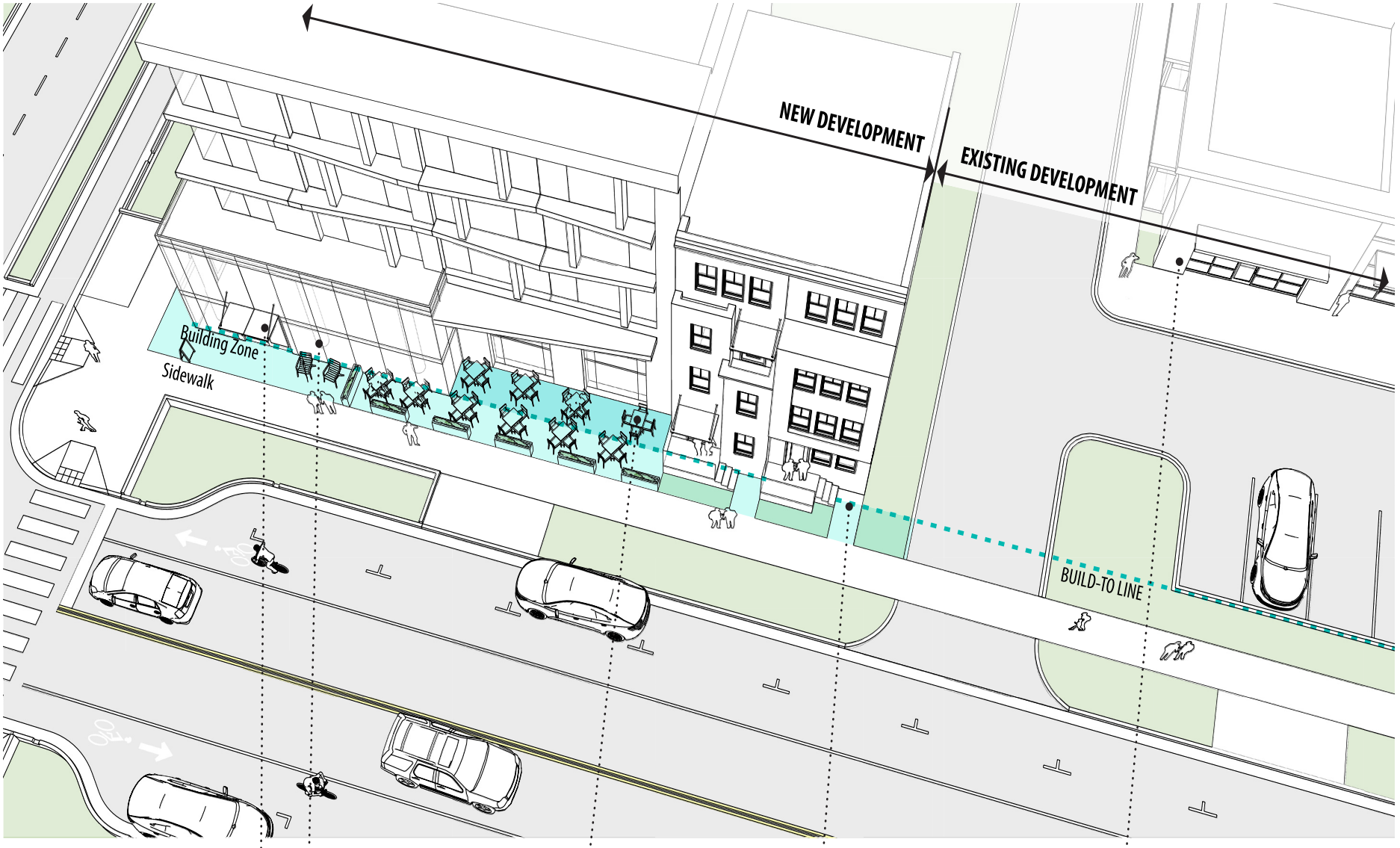
TOP
Ground floor portion building is aligned with the streetscape at the build-to line, while upper floors are set back to create an appropriately scaled structure in relation to the street
Image Credit: RAMSA



Boston, MA

BOTTOM
Building orientation that faces the street frontage reinforces an urban form along a busy pedestrian-oriented street
Image Credit: Christian Phillips Photography

GRAPHIC 12: BUILDING PLACEMENT



BUILDING PROJECTIONS
Canopies, or other building overhangs, can project into the Building Zone

FENESTRATION
At least 60% of the commercial ground floor facade should be transparent

AMENITY SPACE
Buildings can be set back to accommodate additional amenities or building entrances

BUILD-TO LINE
At least 75% of the commercial building frontage should be located at the build-to line

EXISTING DEVELOPMENT
Existing buildings are often set back further from the street; new buildings should adhere to build-to lines as described in the Volume II: District Design Guidelines

4B BUILDING FORM

Building form refers to the height, the general shape, and how it relates to other building masses in the area. A creatively massed development incorporates techniques such as step-backs and building height variation to form urban spaces that function well for users. A building's form can be used to create focal points at gateways and town centers, frame views and define public spaces, and enhance the walkability of an area by the way that it interacts with the pedestrian realm to create visual interest and offer protection from the elements.

Alexandria, VA

DESIGN PRINCIPLES

Design contextually, with a compatible but unique architectural language. A successful building form should reflect the building's context by relating positively to other buildings, including identified or potential historic buildings and environmental or topographical features in the area. Where there is an opportunity, design cues from surrounding buildings should be incorporated into new developments. This does not mean mimicking the neighboring buildings, but rather developing an architectural language that utilizes elements from the existing context such as architectural rhythm, materials, and/or scale to create a design that is compatible but distinctive.

Ensure that building heights conform with the Comprehensive Plan and transition compatibly to adjacent uses. In the Comprehensive Plan for the CRDs and CRAs, maximum building heights are a factor that is used to achieve an overall urban form and to focus intensity at certain locations, while also limiting impacts on adjacent properties. The tallest buildings are frequently planned closest to the center of the CRD or CRA, located in town centers and/or near transit facilities.

Employ creative building massing to foster variations in urban form and minimize impacts on adjacent properties. A creatively massed development incorporates techniques such as building step-backs and variation in building height, especially when adjacent to sensitive land uses; it distinguishes a structure's bottom, middle,

BOTTOM LEFT
The form of this residential building is stepped down to transition to lower height adjacent uses
Image Credit: Shalom Baranes Architects

DESIGN PRINCIPLES (CONTINUED)

and roof line, while emphasizing features on the ground floor. In some instances where a large building footprint could dominate an entire block, such as a parking garage or large-format retailer, it may be necessary to incorporate design strategies that minimize the impact of these uses on the pedestrian experience. Massing and orientation can also reduce shadowing while maximizing access to sunlight.

Variations in building heights can be used to create a signature building at a key intersection or gateway. Tapering down of building heights is often used to address impacts to neighboring single-family or low-density residential areas.

Alexandria, VA

RIGHT
Building form and use is delineated through variations of materials, building step-backs and building heights
Image Credit: Fairfax County

DESIGN STRATEGIES

1 Building Height-to-Street Width Ratios

A. Building height-to-street width ratios of between 1:3 and 1:2 should be provided to create an appropriate sense of enclosure for the street, while the height-to-width ratio should not exceed 1:4. *(See Graphic 9: Building Height to Street Width Relationship).*

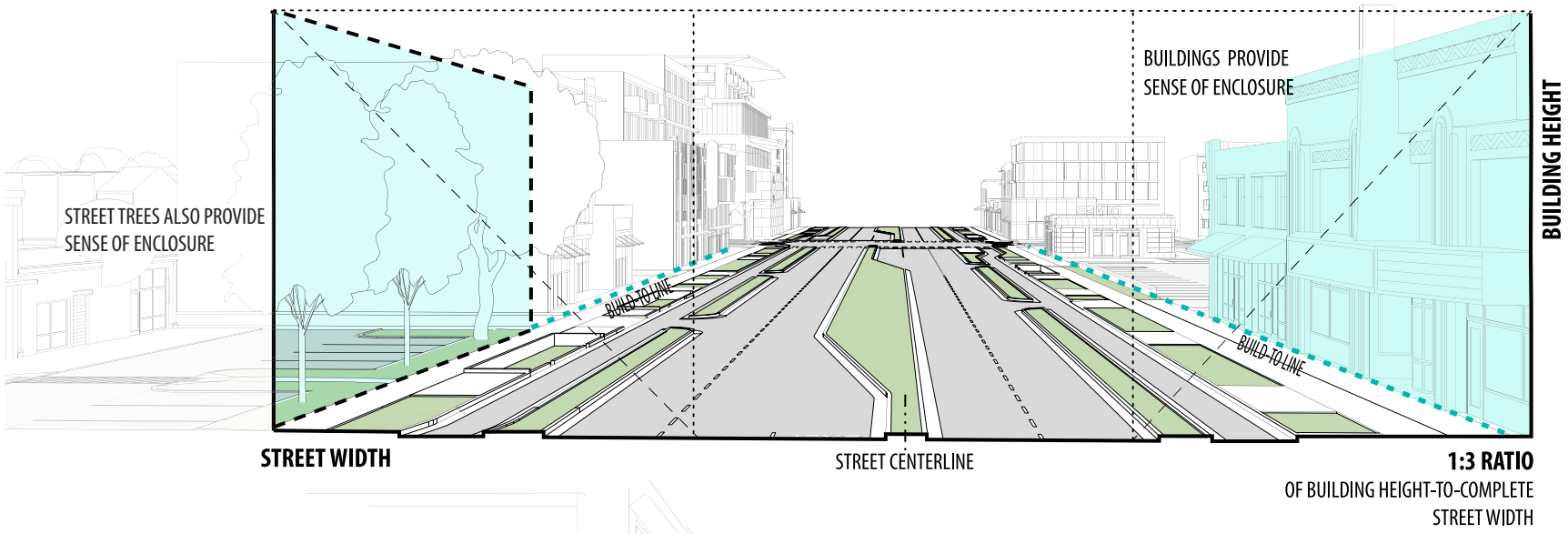
   i. On Local Streets, a 1:1 ratio may be appropriate.

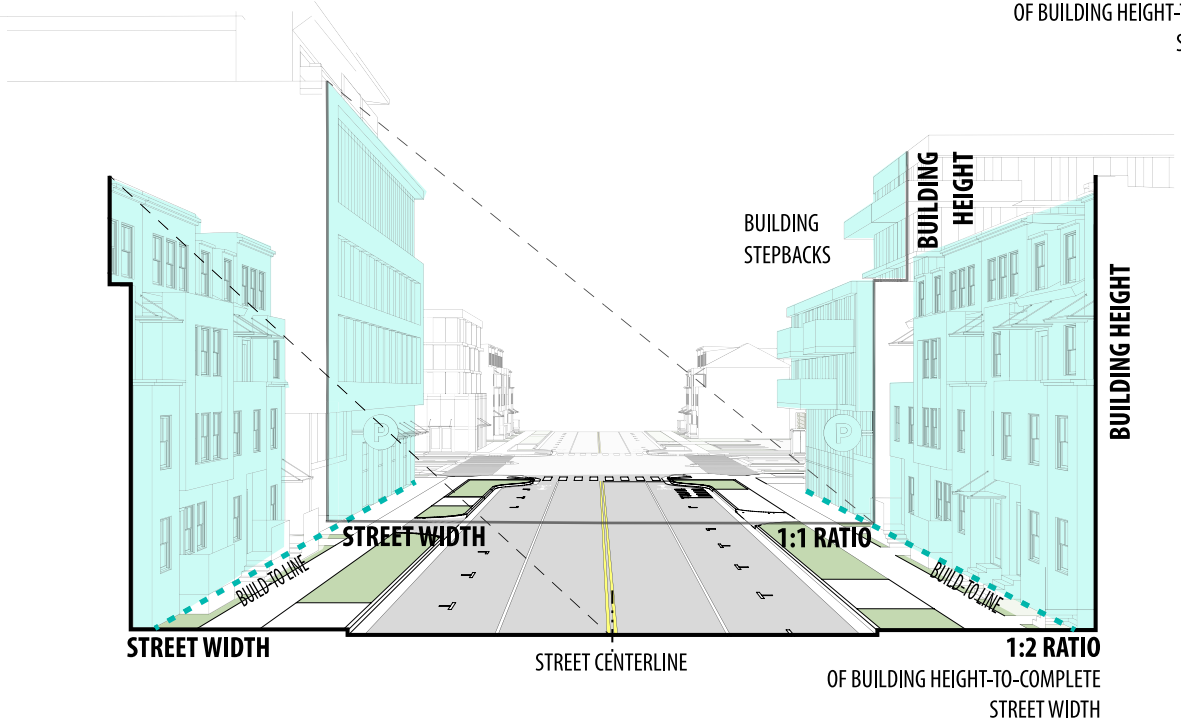
   ii. Street width is calculated from the build-to line on one side of the street to the build-to line on the opposite side of the street.

B. Step-backs in building height and massing on upper floors can be used to create an appropriate proportion of street width to building height, while creating a sense of enclosure where buildings meet streetscapes.

C. Closely spaced street trees or median trees may be used to provide a similar sense of definition and enclosure while softening the edges of buildings. Trees can also define and enclose the inside edge of a sidewalk in locations where building frontage does not exist adjacent to the sidewalk.

GRAPHIC 13: BUILDING HEIGHT TO STREET WIDTH RELATIONSHIP





DESIGN STRATEGIES (CONTINUED)

2 Building Massing

A. It is highly encouraged that building heights within a single development be varied to create a more dynamic skyline..

B. Above the building's base (also known as the podium), building step-backs or breaks in the building form are encouraged to create effective transitions in heights, highlight open spaces, frame views, and/or to reduce the impact of building height and shadows on the ground. Step-backs can vary in depth and location, depending on the size and proportion of the building.

C. The difference between a building's podium and remainder of the building (the tower) should be expressed to foster a design that is human-scaled. This can be achieved through changes in material, use of cornice lines, arcades, and/or changes in fenestration, where appropriate to the architecture. Effective techniques for each portion of the building include:

   i. Building base – The base and cornice line should primarily be proportional to the building, then consider how they relate to adjacent, existing buildings. Use compatible architectural details, step-backs and/or materials. A distinctive ground floor design should utilize durable materials, prominent building entries, window fenestration, and design details that lend pedestrian scale and visual interest to the building, see Section 4C ("Ground Floor") for additional information.

   ii. Middle floors – Distinctive fenestration and articulation should produce a rhythm that complements adjacent buildings as well as the building's base and roof line.

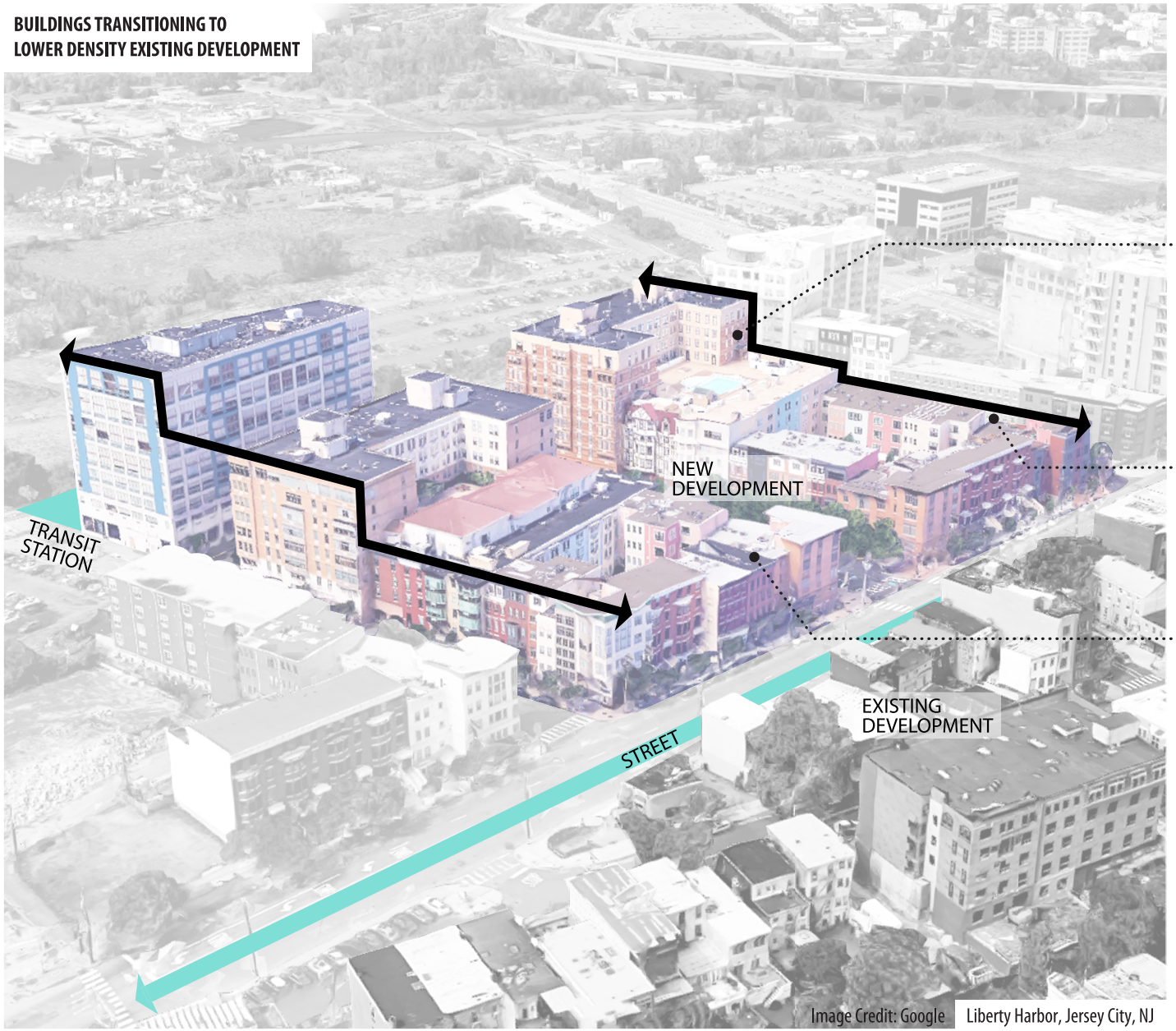
   iii. Top floor and roof line – A varied roof line should be provided to add visual interest from observable angles and reduce the perceived mass of large scale buildings.

D. Green roofs or occupiable spaces are encouraged within the outdoor areas created by the step-backs to maximize the use of the site and to create a pleasant appearance when viewing these spaces from upper floors. (*See Graphic 10: Transitions in Building Form*).

Tysons, VA

BOTTOM
Base-middle-top composition reduces building scale and sets up proportion
Image Credit: Design Collective

GRAPHIC 14: TRANSITIONS BETWEEN BUILDING FORMS



Liberty Harbor, Jersey City, NJ

BUILDING STEPBACKS
Upper floors of building are stepped back to reduce building height along street edge

BUILDING HEIGHT TRANSITIONS
New development steps down to smaller-scale buildings across from existing development

CONTEXTUAL BUILDING FORM
Building forms and heights match those on the opposite side of the street

DESIGN STRATEGIES (CONTINUED)

3 Building Orientation

A. Building orientation should minimize the casting of shadows onto adjacent properties and open spaces.

   i. Step-backs in building height and massing on upper floors can be used to reduce the impacts of shadows and increase access to sunlight, a particularly important consideration as it relates to public open spaces.

BELOW
Step-backs in massing reduce shadow over the central plaza and pedestrian alley
Image Credit: Foster + Partners

Washington, DC

   ii. A shadow study may be necessary to ensure that adjacent buildings, open spaces and sidewalks will have access to adequate light and air.

B. The design of corner buildings should incorporate building form variations that highlight the building's prominent and visible location, such as additional building height relative to surrounding buildings, distinctive rooftop and façade elements, and shifts in building geometry.

C. Signature buildings with notable architectural features that stand apart from those of surrounding buildings should be sited in prominent and visible locations, such as at gateways, key intersections, on corner sites, at higher elevations, or at other locations that are highly visible from surrounding areas.

   i. Signature buildings should create a sense of arrival and serve as a visible landmark for the area.

   ii. Signature buildings should be distinguished by their distinctive form—for example, by incorporating additional height relative to surrounding buildings.

4C GROUND FLOOR DESIGN

In a high-quality urban area, the ground floors of buildings work symbiotically with the surrounding streetscape and public spaces to provide an experience that is safe, comfortable, and engaging for pedestrians.

The "Ground Floor" is defined as the first level of a structure that is at a similar elevation as the streetscape.

The phrase "Activated Ground Floor" refers to the combination of use and design that creates a positive experience for pedestrians or helps to generate pedestrian activity. Having uses such as retail, restaurants, outdoor dining, lobbies, entrances to individual residential units, building amenities, public spaces, and certain office uses on the ground floor is the desired way for buildings to relate to the street. Other interim or permanent creative uses can help enliven ground floors also are strongly encouraged.

DESIGN PRINCIPLES

Ground floor building space should contain active uses adjacent to streets and parks. Active uses include offices and conference rooms, lobbies, retail, restaurants, and building amenity areas. Consider how to promote a relationship between the ground floor uses and the Building Zone. Refer to Chapter 2H for information on the Building Zone design. Parking, loading, and other back-of-house functions are strongly discouraged adjacent to streets and parks.

Incorporate a range of façade and building form treatments to foster a varied and dynamic pedestrian experience. The careful articulation of the ground floor façade is crucial because it is experienced close up by pedestrians. Building treatments such as changes in materials, special corner designs, transparency, modulation, entrances, and cornice lines contribute to a high-quality ground floor design. (*Graphic 11: Ground Floor Strategies for Residential and Non-Residential uses illustrates how to incorporate these features*).

BELOW
Retail storefront with well-designed glazing and seating activates the street
Image Credit: San Jose Blog

San Jose, CA

DESIGN STRATEGIES

1 Non-Residential Ground Floors

A. The height of the ground floor in non-residential buildings should be tall enough to accommodate a variety of uses. Floor-to-floor heights should range from 16 to 20 feet.

B. Non-residential entrances should be oriented toward primary streets and should be accessed directly from the adjacent public sidewalk or Building Zone.

C. Except when there are significant existing topographic variations, storefronts should be at the same grade as the sidewalk and Building Zone.

BOTTOM
Retail storefront with well-designed glazing and seating in a narrow Building Zone activates the street
Image Credit: River Oaks District

Houston, TX

D. Door and window openings should be spaced to promote building transparency.

   i. As a general guide, doors should be provided approximately every 60-feet.

   ii. In general, glazing and other transparent materials should be used for at least 60 percent of the total ground floor façade.

   iii. Clear glass should be located 2 to 10 feet above-grade. False windows, highly reflective glass, opaque glass, and permanent vinyl window clings that obstruct views through windows are discouraged.

   iv. Windows should not be obstructed by window signs, permanent displays or blinds.

   v. Storefronts should be well-lit but not overly bright as to detract from the pedestrian experience.

E. When retail or other commercial uses are not supported by the current market, consider alternative uses or designs that create an "Activated Ground Floor" such as highly transparent lobbies and amenity spaces, live-work units, and residences with individual entrances and well-defined Building Zones. Consideration should be given to designing these spaces in a manner that allows for the future conversion to retail use.

DESIGN STRATEGIES (CONTINUED)

F. Awnings and canopies are encouraged to be incorporated into ground floor façades to provide protection for pedestrians and identification for businesses.

i. Awnings and canopies should relate to the scale of the building and should not overwhelm the façade.

ii. Awnings and canopies should be made of high-quality, easily maintained materials, such as canvas or painted aluminum.

iii. Awnings and canopies should be installed so that the valance is a minimum of 8-feet above the ground in the Building Zone or sidewalk and should not overhang into the Landscape Panel. Placement should avoid conflicts with mature street trees.

Washington, DC

2 Multi-family Residential Ground Floors

A. Residential lobby entrances should be highlighted through overhangs, special paving, building-mounted signage, landscaping, and/or lighting.

B. The façades of lobbies should be predominately transparent.

C. Individual residential entrances should be frequently spaced to create breaks in the building façade, encourage 'eyes on the street', and increase pedestrian interest.

D. Ground floor residential uses and private, individual entrances are encouraged to be grade-separated from the public sidewalk to separate the public and private realms.

i. The ideal vertical difference between the sidewalk and the main level of the residence is ~3-feet so that windows are mostly above eye-level at the street.

ii. Stoops, bays, porches, or entries should be incorporated.

iii. Stairs, porches, or ramps should not impinge upon the sidewalk and should be located entirely within the Building Zone.

iv. When grade separation cannot be achieved, a hardscaped or landscaped space should be provided between residential use and the public sidewalk.

LEFT
Ground floor engages with the street by being at the outer edge of the Building Zone
Image Credit: Jon Banister, Bisnow

GRAPHIC 15: GROUND FLOOR STRATEGIES FOR RESIDENTIAL AND NON-RESIDENTIAL

RESIDENTIAL

Renton, WA — Image Credit: Seattle.gov

1. Landscaped buffer between sidewalk and building
2. Grade separation of residences from street provides privacy
3. Stoops and overhangs highlight entrances and add rhythm to the streetscape

RETAIL

London, UK — Image Credit: London Lifestyle Apartments

1. Storefronts distinguished from other uses above by façade treatment
2. Storefronts with large, pedestrian-oriented windows provide transparency and activate the street

HOTEL/OFFICE

Birmingham, MI — Image Credit: Lambros Photography

1. Signage, canopy and ground floor windows highlight hotel entrance, lobby and curbside drop-off area
2. Larger windows at ground floor engages the street and adds façade transparency

Fairfax, VA — Image Credit: SK&I Architecture

1. Ground floor windows and entrances add transparency and activate the street
2. Prominent entrance and lobby highlighted by façade treatment and clearly delineated from rest of building
3. Entrance design accentuates the importance and visibility of the street corner

Healdsburg, CA — Image Credit: CSW / ST2

1. Large windows, glazing and open storefront provide transparency and activate the streetscape
2. Pedestrian-scaled signage

Seattle, WA — Image Credit: Pennon Construction

1. Façade treatment, overhang, and lighting highlight and distinguish the entrance
2. Street furnishings and plantings enhance the character of the streetscape

4D BUILDING MODULATION AND ARTICULATION

Buildings gain their character and distinguish themselves through modulation and articulation. Modulation generally refers to changes in a building's horizontal and vertical planes. Articulation refers to the organization of the building details and materials. Modulation and articulation work together to transform a simple mass into a composition that results in complexity and variety; both are essential to developing an interesting streetscape for pedestrians.

Washington, DC

DESIGN PRINCIPLES

Utilize modulation and articulation to break up building mass, define architectural character, and animate the streetscape. Horizontal and vertical planes should be used on each building façade to break up the mass of a large structure and to create visual interest. The appropriate scale for this articulation is a function of the size of the building and the adjacent public spaces including sidewalks, landscape zones, and roadways.

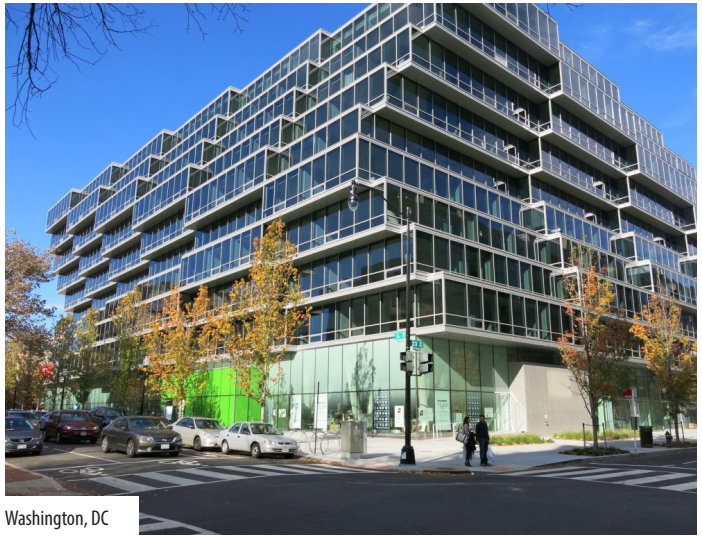
Use high-quality and context-sensitive exterior materials. The materials used in façades should contribute to the character of an area, especially for the building's base. Finishes, along with architectural details, can bring a human scale to buildings and add interest to a streetscape when considered in conjunction with the adjacent public realm.

Treat building façades to create a unique building character. In the CRDs and CRAs, building character should be expressed through the proportion, style, and rhythm of building elements. The treatment of façades should reflect the overall architectural style of the project, while also retaining individuality. Details such as transparency, light, color, texture, and the inclusion of art should be used cohesively to create a unique character. (*See Graphic 12: Building Façade Modulation*).

LEFT
One large multi-family building facade is broken down into 4 facade modules to mimick a traditional multi-building urban block
Image Credit: Torti Gallas

Washington, DC

TOP
Large format retailer integrated into the core of a building mass
Image Credit: MMA Architects



Washington, DC

BOTTOM
Cantilevered glass façade with some sections that step out and back preserve neighbors' views and minimize the structure's bulk along the streetscape
Image Credit: amrank.info

DESIGN STRATEGIES

1 Façade Modulation

A. Façades should include a rich composition of design elements that provide visual interest from different vantage points. A variety of horizontal and vertical planes should be organized to break up a building's mass, create visual interest, and align the scale of the architecture to the pedestrian.

B. Façades should be modulated to express changes in uses or tenants.

   i. Changes in vertical massing, architectural projections, and recesses may be used to achieve this modulation.

   ii. Modulation should be clearly delineated and balanced with the design of the building.

   iii. For residential uses on the ground floor, exterior modulation should correspond to individual units, where possible

C. The visual appearance of long building elevations should be enhanced by incorporating variations in the wall plane, and the use of bays and fenestration, as well as through the addition of public art, and/or landscaping. Large blank façades are discouraged, except potentially along service streets or other locations where they cannot be viewed from the public realm.

D. Arcades, or porches can be incorporated to foster a human-scaled environment at ground level and to create external walkways that provide protection from the elements, particularly in locations where it is anticipated that pedestrians will linger.

DESIGN STRATEGIES (CONTINUED)

2 Façade Articulation

A. All façades of a structure that are visible from the public realm should receive equal attention in order to attain a quality building design.

B. Building materials that help relate to the human scale are encouraged to be incorporated in the design of façades. Consideration should be given to breaking façades up into sections through the use of different materials or architectural treatments.

C. Three-dimensional architectural elements such as cornices, moldings, and window heads should be incorporated on building façades where architecturally appropriate to create shadows on the façade and provide both variety and scale.

D. Window groupings are encouraged to be used to create interest. This can be particularly effective when highlighting building entrances. Windows should be chosen based on the proportions and architectural style of the building.

E. Building design should minimize large, uninterrupted surfaces of transparent or reflective glass by creating "visual noise" or noticeable surface areas that birds will not try to fly into or through.

London, UK

TOP
Three dimensional elements and building groupings create interest
Image Credit: Squire Partners

Vancouver, Canada

BOTTOM
Modulated façade establishes vertical proportions that divide the mass of the building into bays; horizontal balconies that reduce the scale of the building's proportions create a well-articulated elevation
Image Credit: Vassilena Sharlandjieva via www.ubyssey.ca

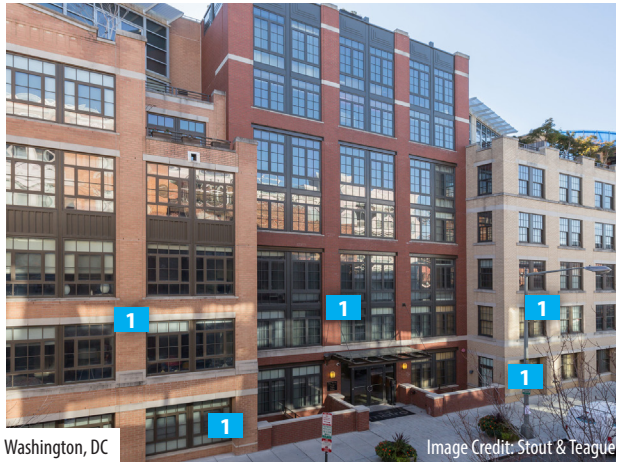
GRAPHIC 16: BUILDING FAÇADE MODULATION

MODULATION AND ARTICULATION OF FAÇADES

Fairfax, VA

Image Credit EYA Homes

1 Variations in façades and materials highlight individual residences and add architectural variety



Washington, DC

Image Credit: Stout & Teague

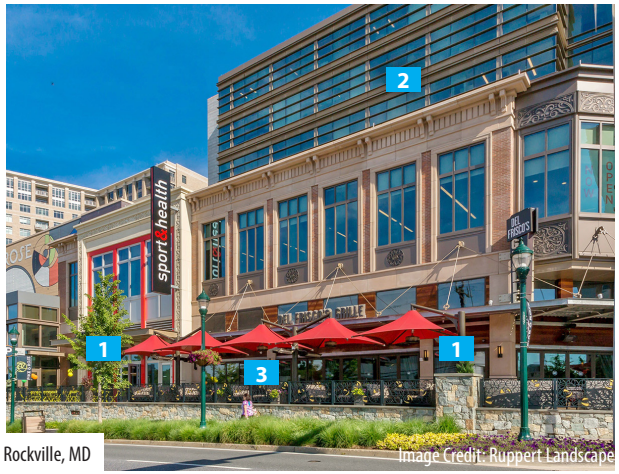
1 Variations in wall plane and materials break up the building mass, while creating visual interest and rhythm along the streetscape

West Hartford, CT

Image Credit: Hartford Daily Photo.blogspot

1 Variations in façade color and texture (balconies, bay windows) break up the mass of larger buildings

2 Retail uses at ground floor distinguished from upper-floor residences by distinctive ground floor design



Rockville, MD

Image Credit: Ruppert Landscape

1 Different materials and architectural treatments create vibrant storefronts and differentiate uses

2 Upper floors stepped back to reduce building scale

3 Outdoor restaurant seating activates the street

Huntersville, NC

Image Credit: Patrick Schneider

1 Porches and balconies create vertical interest and add texture to the building frontage

Arlington, VA

Image Credit: Cooper Carry

1 Curved face of building and vertical façade variations add rhythm and break up the mass of the building

2 Horizontal elements distinguish office building lobby and entrance from upper-floor office uses

3 Reflective façade adds individuality and visual interest

4E BUILDING SIGNAGE

Building signs are important because they provide necessary information and can contribute to the identity and character of the area. Attractive, creative, and appropriately scaled building signage enhances area appeal. Signage that is conceived in a comprehensive manner, where all types of building and site signage are designed as part of a family, will prevent sign clutter and provide a cohesive appearance.

In these Guidelines, building signage refers to several types of signs including ground-mounted project identity or monument signs, building-mounted project identity and business signs, pedestrian-scaled blade and awning signs, and, window signs, among others. Refer to section 6A ("Signage and Wayfinding in the Public Realm") for additional guidance on signs.

The Zoning Ordinance provides regulations regarding the permitted types, size, and appropriate locations of signs. Most CRDs and CRAs are also located within a Sign Control Overlay Zoning District, which places additional restrictions on the amount and type of allowable signage. Comprehensive Sign Plans (CSP) may be submitted for developments zoned to the Planned Districts to allow for more flexible and creative project-specific signage.

DESIGN PRINCIPLES

Design building signage to animate the public realm. Building signage can be an important component of a lively and animated public realm by adding color, lighting, and style that creates visual interest. At night, the manner in which signs are illuminated can help a building come alive and can play a role in defining the character of the public realm. However, visual clutter and glare due to excessive or overly lit signage is discouraged.

BELOW
Coordinated multi-tenant retail storefronts within a mixed-use building using a range of building-mounted signs
Image Credit: MontgomeryPlanning.org

North Bethesda, MD

DESIGN PRINCIPLES (CONTINUED)

Consider signage in a comprehensive and cohesive manner, balancing compatibility within the overall context a distinctive design. Developments should ensure that the signage reflects the character of each CRD or CRA, while being distinctive as it relates to the specific development. All signage within a development should be considered in a comprehensive and cohesive manner; variations reflecting of the nature of the individual businesses are encouraged to foster a sense of place. Individual signs should share similar design characteristics, including scale, alignment, and/or placement with other signage in the same development, particularly when it comes to building-mounted signs. Building-mounted signage should fit with the architectural style and scale of the building. Signage should use materials and colors that are complementary to the building's finishes, and should be incorporated into the architectural elements of the structure.

Design signage so that it functions on multiple scales while minimizing the use of free-standing signs. Signage should consist of both auto-oriented and pedestrian-scaled signs. The use of free standing signs should be minimized, and any such signs should be considered part of the street furniture and be integrated into those other design elements.

North Bethesda, MD

BOTTOM
Properly coordinated building signage and lighting design contributes to the sense of place
Image Credit: Federal Realty

DESIGN STRATEGIES

1 Building Signage Design and Placement

A. All signage should be well-organized, neat, well-maintained, durable, concise, and legible. Signs should be constructed of durable, high-quality materials that withstand long-term exposure to the elements.

B. The typeface, characters and graphics of storefront signage should be scaled to pedestrians. Appropriate types of pedestrian signage may include blade signs, awning signage, and sign bands.

C. Pedestrian blade signs projecting from buildings should be mounted a minimum of 8-feet above the sidewalk grade. Blade signs should project no more than 4-feet from the building façade.

D. Building identity signs should be sized and placed so that they are legible by both pedestrians and moving vehicles and are appropriate to the scale of the building.

E. The use of monument signs should be limited, especially where the building can accommodate signage. Pole-mounted signs should not be used.

F. Building-mounted signs should be placed in architecturally defined areas on the façade where they are framed or delineated.

G. Window signage should not unreasonably obstruct views from the street to the interior. Permanent or temporary window signs may be considered for a portion of the glazed area of the storefront as long as transparency is maintained for at least 50% of the window. Window decals may also be used to reduce bird collisions so long as designs do not obstruct views.

H. Building-mounted cabinet signs and display windows may be considered in areas where functional storefronts are not possible or where blank walls exist along pedestrian areas.

I. Sign lighting can include: back-lighted letters/ halo lettering, front-lighted channel letters, internally-lighted canopy signage, gooseneck spot lights, and other varieties of exterior illumination.

Fairfax, VA

BOTTOM
Multi-tenant signage (building-mounted, canopy, and blade signs) as part of a Comprehensive Sign Plan
Image Credit: Edens

4F BUILDING LIGHTING

The design of light fixtures on private property in the Building Zone and in the locations within the public realm should complement the street lighting, the other site furnishings, and the architecture of the buildings. Lighting should promote a safe environment while enhancing the character and appeal of the public realm.

Article 14 of the Zoning Ordinance contains the County's Lighting Standards for illumination levels for private property. The International Dark Sky Association provides guidance on selecting appropriate, full cut-off fixtures.

The following qualitative design strategies should be used to guide choices for appropriate lighting within the Building Zone. Additional design strategies for street lighting are detailed in *Section 2.F.3 ("Street Lighting")*, while the illumination of building signage is addressed in *Section 4E ("Building Signage")* above.

DESIGN PRINCIPLES

Incorporate lighting from a variety of sources to highlight architectural details and other site features. A good lighting plan includes light from a variety of sources including fixtures that are building-mounted, located within storefront windows, integrated into canopies and signage, and those that emanate from overhead sources such as string lights, and from the ground including landscape lighting, bollards and steps. Accent lighting is encouraged to highlight architectural details and site features such as specimen planting, public art, and/or signage.

Minimize glare. Illumination should be contained within the site and only full cut-off fixtures should be utilized. Full cut-off fixtures provide light only from the bottom of the fixture and ensure that no light emits upward (above 90 degrees). Shields may be used to control and direct light where desired. Small, intense light sources create glare and should be avoided.

LEFT
Illuminated storefront windows and streetscape lighting help create an appropriately scaled pedestrian environment
Image Credit: Jacqueline Renfrow

RIGHT
Building lighting from a number of sources including building-mounted, internal illumination, and bollards
Image Credit: Corey Templeton

Dallas, TX

Portland, ME

DESIGN STRATEGIES

1 Lighting Planning

A. A sitewide photometric plan is encouraged for all developments. Photometric plans are particularly important for sites that are near transit stations, adjacent to existing residential neighborhoods, and urban park spaces.

2 Lighting Fixtures and Technology

A. All fixtures should use LED bulbs or more advanced energy-saving technologies, if available.

B. Full-cut off fixtures are required by the Zoning Ordinance to reduce light pollution from parking garages, parking lots, and buildings onto walkways, streetscapes, and streets. Building/wall-mounted lighting, canopy lighting, accent lighting, and other lighting on private property should have a shield that controls the light so that it is focused only on the object that is being illuminated.

C. Most lighting should use lower color temperature bulbs (3000K or below) for neutral white or warm white color light. The color rendition index (CRI) should be 70 or greater.

3 Lighting Locations and Uses

A. Lighting should highlight architectural building elements like columns, glass, or towers to promote a dramatic and exciting urban environment at night.

B. Lighting incorporated into hardscape elements such as steps, railings, and pavement is encouraged.

C. For safety, lighting should not result in shaded or low-visibility areas that may encourage loitering and crime, particularly at the edges of a site.

D. Paths, entries, and exits should be lit to facilitate wayfinding. However, lighting should not be so intense that it is unpleasant. 0.5 to 1.0 Footcandle is a general standard for pathway lighting.

E. Gateways and prominent corners should be emphasized through special lighting designs.

F. Lighting should be incorporated into public art.

G. Internal and external storefront illumination should be provided to create an inviting pedestrian environment. Visual interest can be enhanced by highlighting architectural features such as overhangs and canopies.

H. Seasonal lighting strategies should be considered to enhance the character of place for prominent buildings such as those in shopping districts and for civic uses.

Image Credit: Midwest Living, Meredith Corporation

Madison, WI

4G LOADING FACILITIES, UTILITIES AND EQUIPMENT

The loading facilities, utilities and equipment that serve buildings include utilities, maintenance equipment, telecommunications equipment and service areas for loading, trash pickup and recycling. Such facilities and equipment can be disruptive to the function and visual appearance of developments if not designed properly. They should be located in a manner that minimizes their impact on the pedestrian and visual environments, including views from adjacent residences or office buildings, while still enabling easy access by utility and service providers. Refer to *Section 2J ("Utilities")* for additional guidance on utilities in the public right-of-way.

Fairfax, VA

RIGHT
Loading, deliveries, and parking entrances for residents and commercial uses co-located at the rear of the property in an alley
Image Credit: Fairfax County

DESIGN PRINCIPLES

Identify and address conflicts with utility and service requirements early in the design process. It is important to anticipate the locations for utility and service facilities during the conceptual design phase of a development. Understanding utility needs and locational requirements and integrating them appropriately will not only save time during the design and construction process, but will also contribute to a quality development by avoiding the placement of utilities in locations that interfere with aesthetics or conflict with the placement of trees or other site amenities.

Minimize pedestrian and visual impediments. Utility cabinets and vaults should be located within a building structure or within certain streetscape zones in a manner that avoids creating pedestrian impediments and sight distance conflicts; provides the most attractive streetscape possible; and permits easy access for maintenance.

Conceal equipment and services at the rear of a site or within enclosures. All maintenance and building equipment and services areas should be located within the building, to the rear of the site, behind buildings, along a service street, or within a parking garage and shielded from public view. Dumpsters should be housed inside enclosures if not located within the building structure. Consideration should be given to consolidating service areas of multiple developments in the interior of a block through the use of cooperative arrangements among landowners.

DESIGN STRATEGIES

1 Location of Equipment and Facilities

A. The back-of-house functions necessary for the building's function should be located along service streets or interior to the site.

   i. Locations of wet utilities (water and sewer pipes) may significantly impact the placement of buildings, the size of the Building Zone, or plantings within the Building Zone, and locations for such utilities should be anticipated in the conceptual design of the site. Trees should be planted a minimum of 5 feet from utility easements containing pipes.

   ii. Dry utilities (electrical and communications lines) should be placed to the rear of the building, under the sidewalk, or in the Building Zone.

B. A conceptual utility plan should be prepared to designate and organize easements and utility equipment.

C. Developments should bury all existing overhead utility lines underground.

D. Utility lines should be co-located in common trenches to the extent feasible.

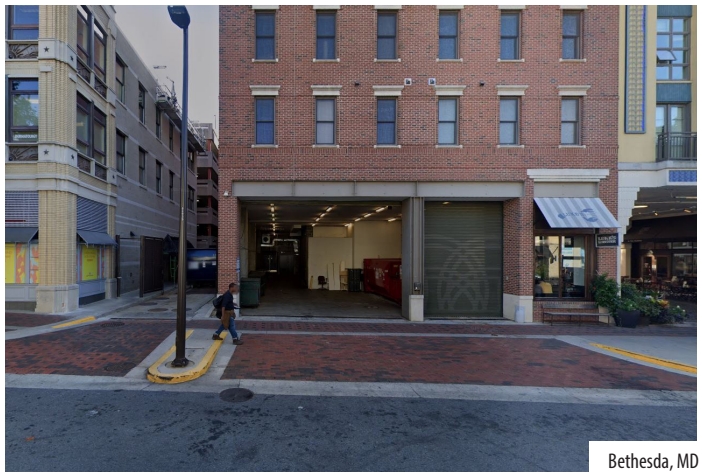
E. Dumpsters should be located either within the building or the parking garage, or near loading and service areas.

F. Access to building loading and trash collection should be located on the portion of the site that is least intrusive to adjacent properties, existing and planned park spaces, and other pedestrian areas. These building services should not be located on streets with commercial storefronts or where loading may impede pedestrian movement.

2 Aesthetic and Noise Considerations

A. If located external to structures, utility, maintenance and service facilities should be screened so they are not visible from the street, from adjacent properties, or from open spaces.

   i. Landscaping, screens, fences, walls, or architectural features should be used to conceal ground level equipment.



Bethesda, MD

RIGHT
Co-locat loading entrances from neighboring properties to minimize impact to pedestrian flow
Image Credit: Google Earth

DESIGN STRATEGIES (CONTINUED)

ii. Materials compatible with and integral to the building architecture should be used to conceal roof equipment or dumpsters; concrete or brick enclosures are preferred to wood, particularly if they are visible from the street.

iii. Chain link enclosures are not generally recommended.

B. Antennas and telecommunications equipment should be flush-mounted or hidden behind screen walls, parapets or other building features. Innovative treatments for incorporating equipment as architectural elements within the structure of the roof are encouraged. Consideration should be given to minimizing rooftop equipment to reduce hazards for birds.

C. Noise-generating equipment such as air-conditioning units should be located internal to buildings, on rooftops, or away from neighboring properties. If not possible, noise barriers and other means of reducing impacts should be provided.

D. Loading and vehicle parking entrances should be co-located wherever possible and should be integrated visually into the building to minimize a potential unsightly appearance. Loading and entrance doors should complement the architecture of the building. If facing a public street, always use a driveway apron to raise the driveway elevation to pedestrian level so that the pedestrian flow is not interrupted.

3 Gas Meters and Regulations

A. Gas meters and regulators must be installed in an open-air condition. This may include a building alcove or outdoor screened area. A vault with external access may be another option. In certain instances, with permission from the natural gas provider, meters and regulators may be installed within a parking garage (see example photo).

Alexandria, VA

RIGHT
Gas meeters are located in an open air area under the building just outside of the parking entrance
Image Credit: Google Earth

4H AUTOMOBILE-ORIENTED USES

As some of Fairfax County's suburban areas transition into a more urban environment, uses that are traditionally designed around the automobile – such as drive-throughs, service stations, and large retail establishments – should be re-conceived to promote a more compact and walkable form of development. In many of the mixed use activity centers, the Comprehensive Plan discourages or has specific recommendations regarding auto-oriented uses.

In general, the design principles and strategies provided in this chapter apply to any auto-oriented uses. In addition, special considerations are provided here for drive throughs, service stations and large retail sales establishments. ***The purpose of this section is not to encourage these uses, but to provide principles and strategies that can result in a more compact, walkable, and desirable form of development.***

Falls Church, VA

DESIGN PRINCIPLES

Auto-oriented uses should be adapted to fit within a more urban, pedestrian-oriented context. This can be achieved by incorporating them into mixed-use or multi-tenant buildings, avoiding standalone, single-use buildings. A more urban form can also be achieved through design techniques such as siting decisions that locate parking and infrastructure to the side or rear of a site; and designing automobile access points to connect to secondary streets or service alleys.

Siting is crucial to accommodating auto-oriented uses within a more compact urban form. The buildings serving these uses should be oriented toward the street and should utilize as much street frontage as possible. Facilities such as gas pumps, car washes, and parking areas should be shielded from view and located at the rear of a site, wherever possible. Generally, such uses should also minimize corporate-branded architecture.

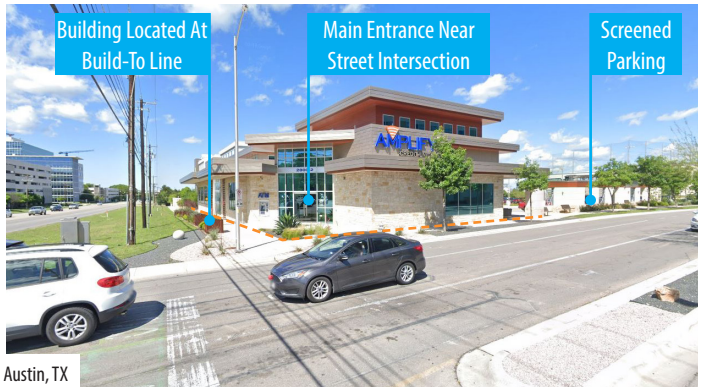
Fort Worth, TX

LEFT
A big box retail establishment fit within a pedestrian-oriented environment
Image Credit: Kip Dawkins Photography

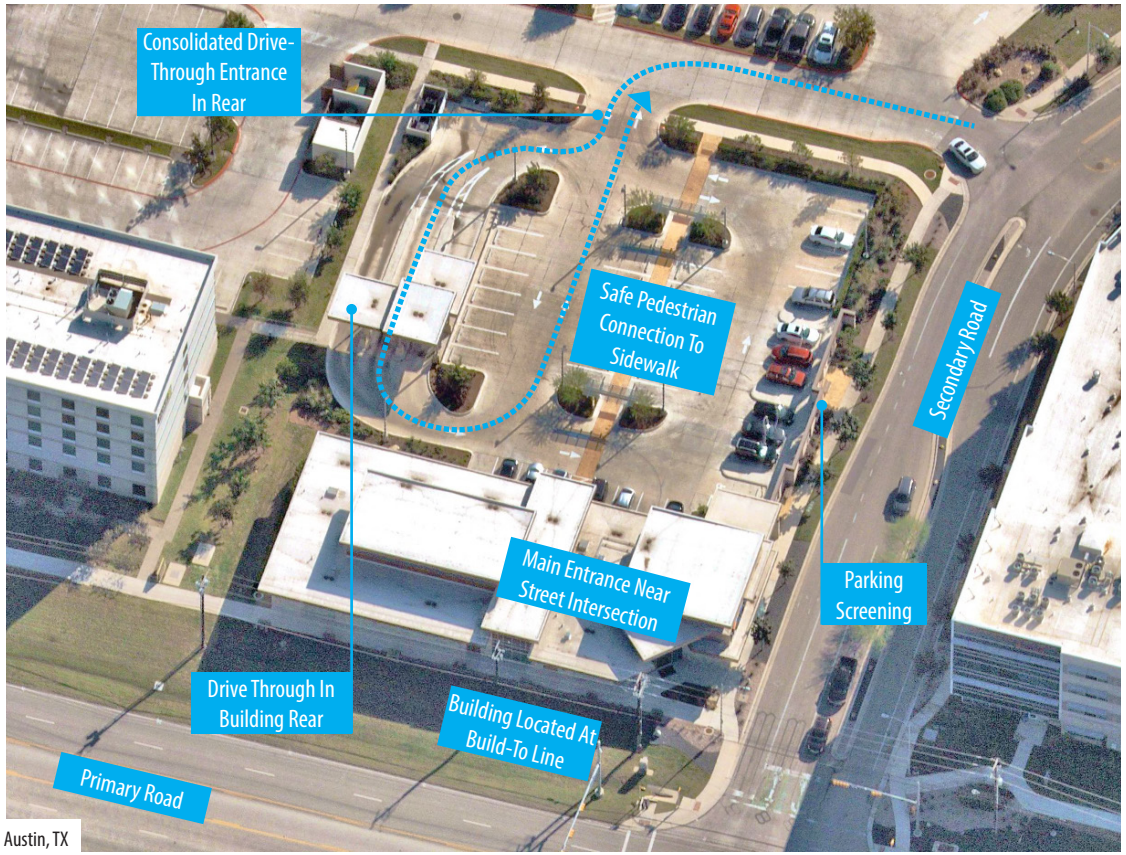
BOTTOM
A gas station convenient store anchors the street corner at a busy intersection
Image Credit: Urbanfortworth via Instagram

4H-A DRIVE THROUGHS

Drive-through uses contain designated outdoor locations to place an order, pick-up, and/or drop-off items to minimize the need for people to exit their vehicles.



Austin, TX



Austin, TX

A drive-through bank located along primary street frontage with a prominent corner entrance and architectural and landscape screening
Image Credit: Nearmap, Google Streetview

DESIGN STRATEGIES

1 Alternative Approaches

A. Instead of dedicated drive-through lanes and drive-up windows, designated delivery or pick-up spaces are encouraged. These should be integrated within on-street parking spaces or off-street parking lots located behind buildings.

2 Location and Integration

A. Prioritize drive-through locations as follows:

   i. Preference #1: Integrate into larger commercial/ mixed-use buildings.
   ii. Preference #2: Locate within commercial shopping center buildings.
   iii. Preference #3: Integrate with at least one additional commercial use rather than as a single, stand-alone use.

B. Stand-alone drive-through uses are discouraged.

3 Site Layout / Organization

A. Buildings with integrated drive-through facilities should be located at the build-to line along street frontages.

B. Pick-up windows, order boxes, and service areas should not visible from public streets. Ideally, these will be located at the back of buildings.

C. Waiting/queuing lanes/ordering stations/pick-up points:

   i. Should be integrated into rear or side service alleys, with access provided from the back of buildings.

DESIGN STRATEGIES (CONTINUED)

ii. Should not be visible from public streets or park spaces.

D. Multiple drive-through lanes and by-pass lanes should be avoided.

4 Built Form

A. Building design should align with the Comprehensive Plan vision for buildings/ architecture, as described in the Urban Design section of the Plan. Similar architectural features should be employed on all sides.

B. Corporate branded architecture and colors should be avoided.

C. To promote an active street frontage along primary streets, interior seating and activity areas should be clearly visible through front building facades and coordinated with outdoor areas for customer seating and play spaces.

Charlottesville, VA

D. Canopies over pick-up areas along the building side (covering order boxes or pick-up windows) should be minimal in size and visually unassuming. They should blend in and be integrated into the design of the entire building.

5 Pedestrian Connectivity

A. The site should include safe and accessible connections from sidewalks to main building entrances.

B. Vehicle drive lanes and waiting/queuing lanes should avoid crossing pedestrian walkways.

C. In cases where pedestrian connections across vehicle drive lanes cannot be avoided, a crosswalk with landscaped pedestrian waiting areas on either side of the crosswalk should be provided. Sidewalk/walkway material (e.g. concrete) should be continuous across driveways.

D. Where possible, pedestrian crosswalks should be raised to match sidewalk grades.

E. Pedestrian walkways should be separated from drive-through lanes by low-height architectural walls, fences, bollards, and/or landscaping.

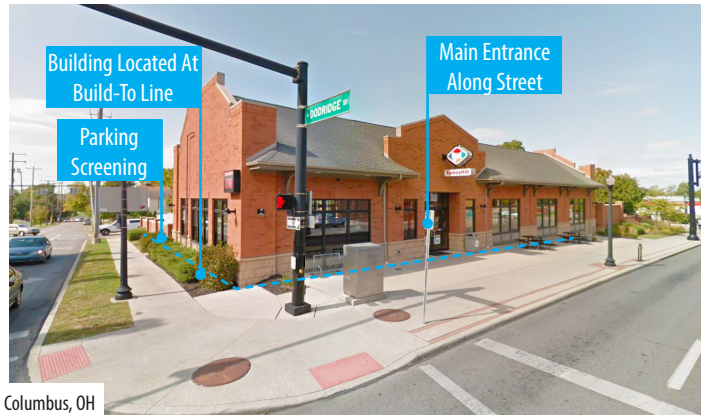
6 Landscaping, Screening and Buffering

A. Low-height architectural screens (30"-48"), trees and understory plantings should be provided on both sides of drive-through lanes to guide pedestrians to crosswalks and soften the visual impact of drive-through lanes.

LEFT
A drive-through facility incorporated under an office building that houses a data center and the bank headquarters, on the back side away from the primary street
Image Credit: Stoneking Von Storch Architects

4H-B SERVICE STATIONS

Convenience stores and service stations should be integrated into other uses to the extent feasible. The design of buildings and site elements should reflect local character and the community's vision. Corporate branded architecture should be minimized. Landscaping/screening, canopy design, lighting, and signage should complement the surrounding areas.



Columbus, OH

Columbus, OH

A service station and convenience store with architectural features that are consistent with surrounding buildings. This site layout is appropriate for instances in which a service station property abuts non-residential uses at the rear of the property
Image Credit: Nearmap, Google Streetview

DESIGN STRATEGIES

1 Location and Integration

A. Service stations and related convenience stores should be located using the following order of preference:

   i. Preference #1: Integrate within commercial buildings.

   ii. Preference #2: Locate associated buildings such as the convenience store along the primary road's frontage or at street intersections, with the fuel pumps located in a less conspicuous location, such as the side or rear of the convenience store building. Building front doors should be oriented towards both the street and fuel pumps.

B. Asphalt areas should be minimized. Parking spaces should be located away from streets and should be limited to the minimum required by the zoning ordinance.

C. Access points should be consolidated and should be no larger than the minimum required width.

2 Landscaping, Screening and Buffering

A. Continuous street frontage should be provided by locating the convenience store building at the build-to line and/or by including high-quality screening between the streetscape and the site with a combination of raised planters, low walls, green space, street trees, and landscaping.

DESIGN STRATEGIES (CONTINUED)

B. Service areas, utility boxes, trash enclosures, etc. should be located at the rear of the site and screened by dense plantings or screening walls/ fences.

3 Built Form

A. Service Station Canopies

i. Canopy design and architectural detailing should be consistent with the design of other buildings on the site to ensure a cohesive appearance. Corporate-branded architecture should be avoided.

ii. Canopy columns should be made of a material similar to the building.

iii. Sustainable designs and alternative technology within canopy design is encouraged to be creatively integrated. For example, the roof of the canopy can be utilized for the location of solar panels or as a green roof.

iv. Lighting and signage on the canopy fascia should be carefully designed. Application of corporate colors should be avoided.

v. Breaking down monolithic canopy structures into a series of smaller canopy structures is encouraged when transitioning to smaller-scale neighboring development.

Washington, DC


Milwaukee, WI

LEFT
A service station integrated into a mixed-use building; canopy design incorporating green roofs and associated planting
Image Credit: Google Maps

RIGHT
A service station convenience store built along build-to lines, with the service pumps behind the building
Image Credit: Google Maps

DESIGN STRATEGIES (CONTINUED)

vi. The height of the canopy should be limited to 16' from the ground level to the top of the canopy. This height limitation excludes any vegetation/green roof treatment above the canopy.

B. Convenience Store, Car Wash and Auto-Repair Buildings

i. A well-designed pedestrian connection should be provided between the public sidewalk and the building entrance. It should not be located through parking lots.

ii. Convenience store building façades that face public rights-of-way should be transparent with glazing on the ground floor for at least 60% of the facade so that increased views of interior activities and displays create interest along the streetscape.

iii. Service bay locations for car wash and auto-repair buildings should not front major commercial public streets. Service bay doors visible from public right of ways should include high-quality materials with architectural details that complement adjoining commercial/mixed-use buildings.

iv. Decals and posters should not obstruct views into the store.

Fort Worth, TX

BOTTOM
A gas station convenient store anchors the street corner with well defined streetscape and pedestrian scale lighting
Image Credit: QuikTrip via Reddit.com

4 Signage and Lighting

A. Free-standing business identity or gas pricing signs should be ground-mounted, monument styles and should include cladding materials that are consistent with the building design

B. Repetitive usage of, or oversized commercial signage, such as corporate logos on canopies and buildings, should be minimized or avoided completely.

C. Site lighting (including canopy lighting, corporate signage, and storefront lighting) should minimize light pollution beyond property boundaries, use downward-directed cut-off light fixtures, and be Dark Sky compliant - an outdoor lighting criteria developed by the International Dark Sky Places (IDSP) Program.

DESIGN STRATEGIES

1 Location and Integration

A. Large retail structures should be located using the following in order of preference:

   i. Preference #1: Integrate stores into commercial/mixed-use buildings. Building floorplans are encouraged to be subdivided into multiple floors to reduce the building footprint.

   ii. Preference #2: Co-locate with stand-alone, smaller footprint retail buildings so that they conform to the street grid recommended in the Comprehensive Plan.

B. Large retail stores should have internalized structured parking or, at a minimum, heavily screened and landscaped surface lots that area located to the side or in the rear of the property.

C. Ground floors should be placed along build-to lines and coordinated with the building façades of adjacent buildings to create a cohesive streetscape environment.

2 Building Character

A. Building façade forms and material applications should be compatible with desired future character of buildings, and should avoid corporate branding façade treatments.

Washington, DC

Washington, DC

4H-C LARGE RETAIL SALES ESTABLISHMENTS

"Large Retail Sales Establishment" applies to retail establishments over 80,000 gross square feet. To the extent feasible, guidance should apply to other large-format retail uses that fall under this size. Large retail sales establishments are convenient but often are sprawling, single-story, warehouse-style formats. However, more urban footprints have begun to emerge. As Fairfax County's suburban areas redevelop, these types of retailers should have a more urban format and buildings should be of high-quality design that responds to each area's planned design character.

LEFT
A grocery store integrated within a mixed-use building; a corner entrance is highlighted with architectural awnings
Image Credit: Bright Media

RIGHT
A grocery store with storefront display windows along the streetscape
Image Credit: Wikimedia

TOP
Parking garage access, via stairs, elevators and escalators, are integrated into the building and have special entrance features at the ground level
Image Credit: Wikimedia

Merrifield, VA

BOTTOM
Parking garage and entrance creatively designed to integrate with building form and materiality
Image Credit: Rhodeside & Harwell

Alexandria, VA

DESIGN STRATEGIES (CONTINUED)

B. Pedestrian access to internalized parking structures should follow with entry feature guidelines in Volume I, Chapter 4C.1: Non-Residential Ground Floors. These entry features can include canopies or awnings or should highlight entrances with special materials and architectural treatments.

C. Entrances should be located along primary streetscape frontages and not exclusively at internal parking structures or rear parking areas.

D. Ground floor façades along build-to lines should be, at a minimum, 60% transparent; storefront and clear glass windows should provide views of showrooms, displays, internal activity spaces, and related interior uses from the streetscape.

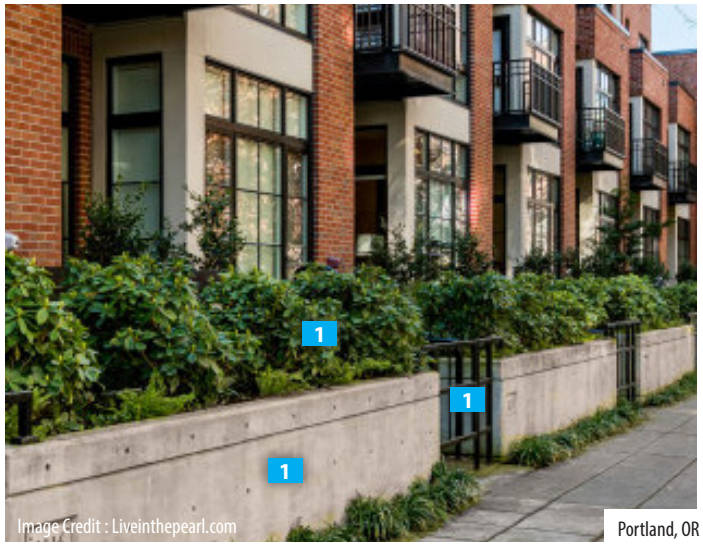
E. Parking garage access, loading and related back-of house operations should be located along service streets, or be located interior to the site or underground.

F. Decals and posters should not obstruct views into the store.

4I TOWNHOMES AND STACKED TOWNHOMES

Townhomes are typically multi-story homes that share side walls with neighboring units, offering a balance between single-family homes and apartment living. Stacked townhomes take this concept further by stacking units vertically, creating a compact, yet spacious design that maximizes land use without sacrificing privacy. Both types of housing promote higher density living, support walkability, and contribute to the urban fabric by fostering more diverse and sustainable neighborhoods. These designs are increasingly popular in redevelopment projects in CRDs and CRAs, where limited space and the demand for affordable housing intersect.

The planning and design of townhome communities should adhere to the same principles of connectivity, walkability, and integration as other forms of urban fabric development. Refer to Chapter 2, Section 2B for more details.



1 High-quality architectural walls and plantings screen service areas and provide privacy

1 Grade-separated entries provide privacy from street

2 Landscaped setback areas create an attractive streetscape environment

DESIGN STRATEGIES

1 Townhome Setbacks And Front Yards

A. Townhomes should incorporate landscaping in front setback areas to provide both an attractive streetscape environment and privacy for residents. Landscape elements can include plantings, berms and high-quality walls and railings less than 4-feet in height.

B. Design strategies, such as a slight grade separation, should be used to help distinguish private spaces from public ones, creating a more clearly defined boundary for residents. Incorporate front stoops and gardens where appropriate to make entrances more welcoming.

Bethesda, MD Image Credit : Trulia

1 Building elements wrapping around to the side at street corners; windows and fenestrations on the side provide relief and interest to building mass

Portland, OR Image Credit: Pinterest

1 Range of building forms along streetscapes on both primary and secondary streets

Alexandria, VA Image Credit : bing.com/maps

1 Townhomes sited around quality open space serving all residents

Fairfax County, VA Image Credit : Mosaicdistrict.com

1 Façade treatments applied to all street-facing sides of buildings

2 Access to alley and service areas framed by building elements and landscaping

DESIGN STRATEGIES (CONTINUED)

2 Townhome Placement And Orientation

A. Building façades should be oriented toward primary streets and open spaces.

B. Building façades should be parallel to the edges of streets, adjoining plazas, and/or open spaces.

C. The sides of buildings facing primary streets should include doors, canopies, and windows to present a front façade appearance. Side and front building facades and cladding materials should match, specifically where sides are exposed to primary streets or open spaces. Architectural elements should be wrapped around building corners.

D. Corner units should include windows on both street facing sides, while main entrances should be located on the primary street.

E. Front façades of buildings should include porches, stoops, windows, and other architectural features to activate ground floor spaces. To promote visual connections between interior and exterior spaces, locate living rooms and other social interior spaces facing primary streets and neighborhood parks/ community open spaces.

F. When a waiver from privacy yard requirements is requested for rear loaded townhomes, high quality community open spaces should be substituted nearby. Pedestrian access should be provided from open spaces to both streets and adjacent residences.

DESIGN STRATEGIES (CONTINUED)

3 Townhome Modulation

A. Building step-backs, facade modulations, materials for townhomes and the design of privacy fences or walls should be consistent with the strategies outlined in the *Building Modulation and Articulation* section of this chapter. In addition, creative façade breaks, use of materials, step-backs, offsets, bay windows and similar forms of building façade treatments are encouraged to increase visual variety and highlight individual units.

B. Where significant grade differences exist within a block, ground floor elements of contiguous building units or segments of buildings, such as porches, stoops, or fenestrations, should follow the street grade in order to maintain a similar relationship between ground floor elements and adjoining sidewalks along the same block.

4 Townhome Parking / Garages

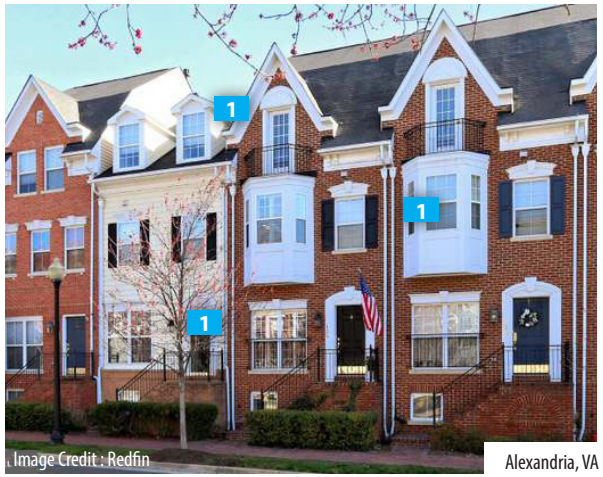
C. Garage and service access should be located behind buildings, with access from secondary streets or alleys. Keep the streetscape frontage pedestrian-focused.

D. If front loaded townhome units cannot be avoided, extend the sidewalk across driveways, differentiating it with a distinct paving material, pattern, or texture.

E. Garages and driveways between adjacent clusters of townhomes should be consolidated to create larger spaces for planting and to enhance the appearance of the streetscape.

F. Mechanical and outdoor electrical equipment should be located in the alleys behind the building, if not on the roof of the townhomes.

G. Garages should be at least 20 feet wide (measured from inside wall to inside wall) if two cars are intended to be parked side-by-side.



1 Façade elements such as bay windows, different roof forms and fenestrations add to the range of diverse building elements

1 Buildings follow the street grade to maintain consistent relationship of ground floor elements, such as stoops and fenestrations, with sloped sidewalk areas and site grades

1 High-quality building materials along alley/service areas framed by landscaping creating an inviting environment

Image Credit: Architizer

5 PARKING AND ACCESS

INTENT

The location, form and design of parking facilities, as well as the manner in which buildings are accessed from the street, have important implications for the form, layout and character of blocks and their streetscapes within CRDs and CRAs. When creatively accommodated within a site, parking and access design can enable active, pedestrian-oriented streetscapes and building frontages while still supporting buildings' essential functions and daily operations. If not located appropriately, they can detract from how an area looks and functions.

To fit within an urban context, parking and access design should reinforce, rather than detract from, the pedestrian- and bicycle-friendly character of CRDs and CRAs. In practice, this means limiting the overall amount of parking; locating parking on-street, underground, and/or in structures to the maximum extent feasible; and concealing any off-street parking facilities from the street. It also requires creatively integrating parking structures into building sites to minimize the visual impact of these facilities and maintain an active and appealing pedestrian environment at street level.

Moreover, while development in CRDs and CRAs should enable convenient vehicular access to a site, the impacts of vehicular access on the streetscape should be mitigated by consolidating access points and locating service and loading facilities away from major streets.

INSPIRATION

Image Credit: Rhodeside & Harwell

Chicago, IL

Image Credit: Mutual Materials

Portland, OR

Integrated, well-designed and appropriately-located parking contributes to a high-quality, pedestrian-oriented environment and urban character

Image Credit: Google Earth

Alexandria, VA

Image Credit:

Dagsboro, DE

Image Credit: trentrush

San Antonio, TX

5A PARKING STRUCTURES, ON-STREET PARKING AND SURFACE PARKING

Vehicular parking can be accommodated on a site in a variety of ways, ranging from underground parking and above-ground parking structures to on-street parking and surface parking lots. While each type of parking facility has its place, the County discourages surface parking lots in CRDs and CRAs, and encourages underground and structured parking, as well as on-street parking on designated streets, to reinforce the urban character of these districts.

Regardless of the type of parking, the design and location of parking facilities can determine whether or not it supports the urban design character envisioned in Comprehensive Plans for each area. The following design principles and strategies provide further guidance on the design and location of types of parking facilities to ensure consistency with the County's vision for these areas. *(See Graphic 17: Surface Parking and Graphic 18: Structured Parking).*

Bethesda, MD

RIGHT
Artistic facade treatment enlivens what would otherwise be a blank wall above the garage entrance
Image Credit: Fairfax County

DESIGN PRINCIPLES

Provide parking underground or in parking structures that are integrated with primary uses, wherever feasible. Ideally, parking should be underground. If not feasible, integrated podium or wrapped parking is preferred, while free-standing garages are discouraged. Ground floors should include retail, lobbies, or other active uses, and any exposed parking facades must be screened and designed to enhance appearance. A trash management plan should also be in place to prevent litter and dumping within and near parking facilities.

Locate any surface parking to the sides or rear of a building and incorporate appropriate screening, landscaping and stormwater management. Surface parking, other than on-street or limited "teaser" spaces, is discouraged. Where provided, it should be located to the side or rear of buildings, maintain pedestrian access, and be screened with landscaping and sustainable design features. Impervious surfaces should be minimized, green space maximized, and stormwater and heat-island impacts mitigated. Pavement materials that retain less heat should be used to reduce heat-island effects. Redevelopment projects retaining surface lots should enhance landscaping and stormwater management to improve environmental performance and reduce visual impacts.

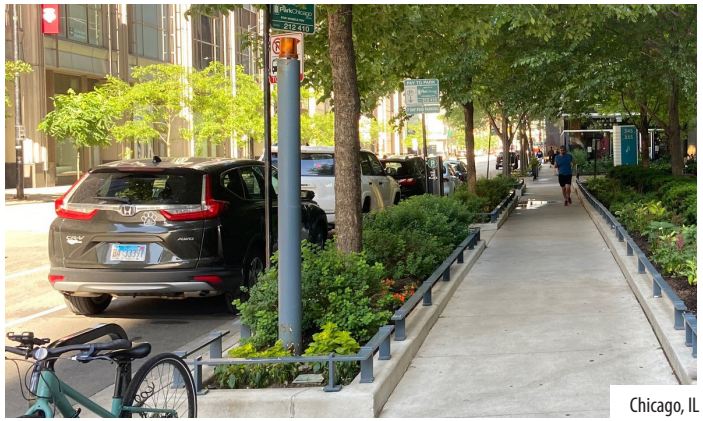
DESIGN PRINCIPLES (CONTINUED)

Incorporate on-street parking for convenience and pedestrian safety. On-street parallel parking, including short-term residential and retail parking, can contribute to the activity on the street. The provision of limited amounts of highly visible, convenient parking is desirable for retail, civic and entertainment uses. On-street parking also increases safety and comfort for pedestrians by acting as a barrier and buffer between moving vehicles and the sidewalk. The presence of on-street parking also encourages drivers to travel at slower speeds, giving pedestrians, cyclists and motorists more time to react to the presence of one another.

Minimize the overall quantity of parking. The need to provide sufficient parking should be balanced against the goals of implementing walkable places and reducing reliance on the automobile. To minimize the impact of parking on the quality of the built environment, strategies that result in the reduction of the total number of parking spaces are encouraged, and parking facilities should be sited to support shared use and efficient access.

Integrate electric vehicle charging stations. Electric vehicle charging stations should be located in convenient, visible, and well-lit areas of parking facilities. Equipment should not impede pedestrian circulation and should be accompanied by signage and appropriate screening. Where feasible, charging areas should incorporate renewable energy sources, such as solar canopies to enhance sustainability.

Los Angeles, CA



Chicago, IL

Miami, FL

TOP
Surface parking lot design incorporates bioswale to collect stormwater runoff
Image Credit: Ciara Gonzalez

MIDDLE
On-street parking offers convenient access to nearby businesses while also functioning as a buffer between moving vehicles and pedestrians
Image Credit: Fairfax County

BOTTOM
Parking garage screened with mix of plant materials and ground floor lined with activative uses
Image Credit: Dan Forer

GRAPHIC 17: SURFACE PARKING

SIDE PARKING

Image Credit: GBD architects

Portland, OR

Image Credit: GBD architects

1. Side parking enables the building to front the street and maintains a pedestrian-oriented streetscape
2. Landscaping near sidewalk screens the parking area from the street and minimizes visual impact
3. Side of building faces pedestrian pathway, which connects parking to the building entrances

REAR PARKING

Image Credit: Google

Newport News, VA

Image Credit : Google

1. Continuous building frontage with majority of parking in rear, enables continuous building frontage along streets
2. Surface parking located at rear of building
3. Access to parking from secondary street

TEASER PARKING

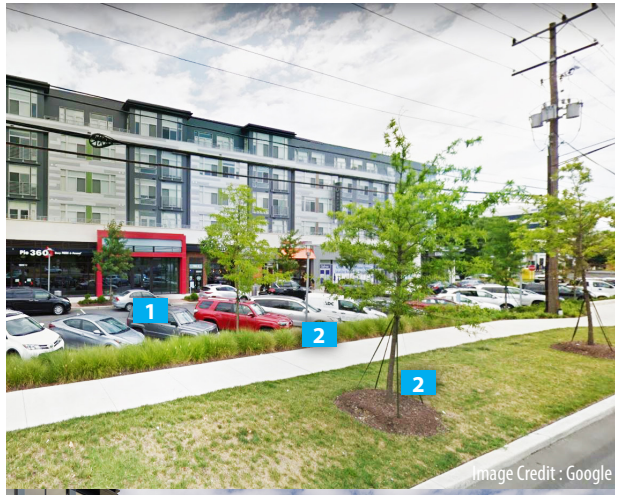


Image Credit : Google

Rockville, MD

Image Credit: Ford Coplan Macht

1. Teaser parking maintains pedestrian-oriented streetscape while providing some visible convenience parking for retail customers
2. Parking screened from street by landscaping (trees and understory planting)
3. Continuous streetscape along entire building frontage and parking access road

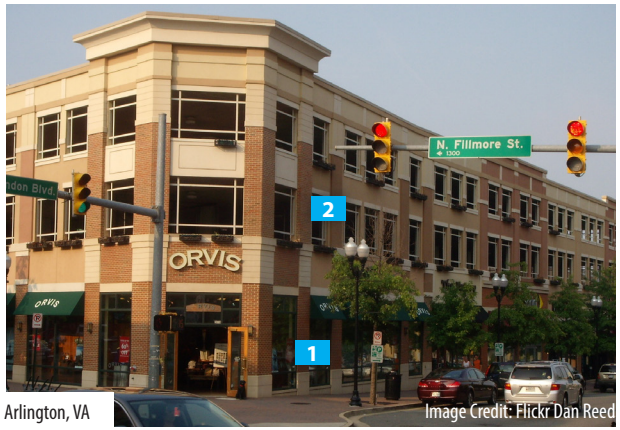
GRAPHIC 18: STRUCTURED PARKING

WRAPPED
Parking structure surrounded by buildings on multiple sides

Plano , TX — Image Credit:Transitoriented.com

1. Parking garage integrated into internal portion of development
2. Service street access to parking
3. Continuous building frontage along streets, due to location of parking in rear

STRUCTURED
Free-standing parking structure, which may include other uses on ground floor



Arlington, VA — Image Credit: Flickr Dan Reed

1. Retail uses on ground floor of parking structure
2. Façade treatment disguises and conceals parking on upper stories

PODIUM
Parking integrated into middle floors of building

Fairfax, VA — Image Credit: blog.wethmangroup.com

1. Retail uses at ground floor maintain pedestrian-oriented streetscape
2. Podium parking above ground floor, concealed by exterior screening

Boulder, CO — Image Credit: Flickr BeyondDC

1. Parking garage hidden behind retail uses facing the street
2. Entrances to parking from the street

West Chester, PA — Image Credit: TCA

1. Windows facing the street at ground level create pedestrian-oriented streetscape
2. Façade treatment of parking structure conceals parking on the upper floors and reflects architectural style of the surrounding buildings
3. Discreet but visible signage directing vehicles to parking

Falls Church, VA — Image Credit: Kip Dawkins Photography

1. Podium parking located between ground floor and residences on upper stories
2. Façade treatment conceals parking and blends into architecture of the building
3. Ground floor of building reinforces pedestrian-oriented streetscape

5A.1 PARKING STRUCTURES

DESIGN STRATEGIES

1 PARKING STRUCTURE DESIGN

A. Parking should be provided in underground structures to the extent feasible. If not provided underground, parking structures should be integrated into a building.

B. Stand-alone, above-grade parking structures are strongly discouraged. Where parking structures do exist, they should be wrapped with active uses, particularly in areas where a high volume of pedestrian traffic is anticipated.

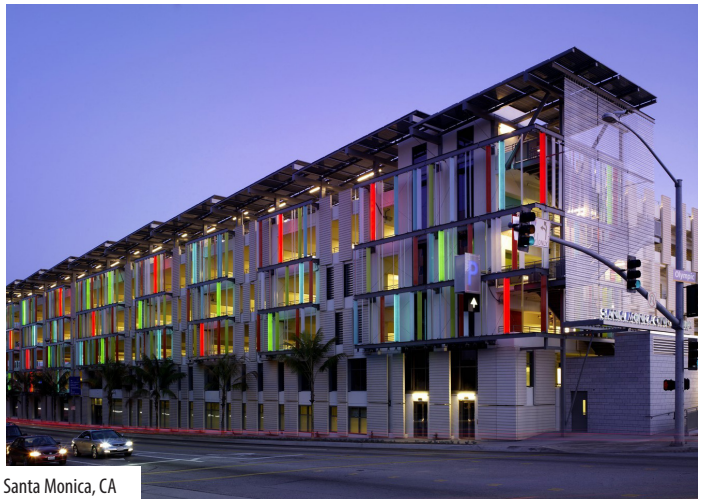
C. The architecture of the parking structure should be generally consistent with the architecture of the building with which it is associated. It should also be compatible with adjacent buildings, through the use of similar architectural styles, materials and detailing.

D. Articulation and detailing of exposed facades (public art installations, vertical planting, or other architectural features) should be provided for visual interest, to break up monotonous facades, and to disguise the parking uses within. Facades should be designed to reduce light pollution caused by headlights shining on to adjacent buildings.

E. Ground plantings and landscaping should be incorporated along exposed exterior faces of parking structures to conceal internal parking facilities and to buffer the parking structure from adjacent land uses.

F. Garage openings should occupy no more than 20 percent of the street frontage; wherever possible, the exposed face of these structures

LEFT
Lighting and solar panel roofs are incorporated into the architectural design of the parking garage
Image Credit: Archello



Santa Monica, CA

RIGHT
Tall floor-to-floor heights allow for future infill of active building uses within the parking garage
Image Credit: Huffton+Crow

Miami, FL

DESIGN STRATEGIES (CONTINUED)

should not be located on streets that have high volumes of pedestrian and vehicular traffic.

G. The ground floors of parking structures should have 16- to 20-foot ceiling heights for safety and to allow for the possibility of civic uses during off-peak times or for future repurposing into uses other than parking. Higher ceiling heights can also allow for trash and recycling collection to take place within the garage. In addition to higher floor to ceiling heights, ramped floor-plates should be minimized to allow garages to be adapted to other uses, where feasible.

H. Green roofs, solar panels, solar panel canopies on rooftops, park space, or recreational amenities should be considered for incorporation into the top deck of a parking structure. Shade structures designed to make open parking decks more attractive and usable should be incorporated where feasible.

Springfield, VA

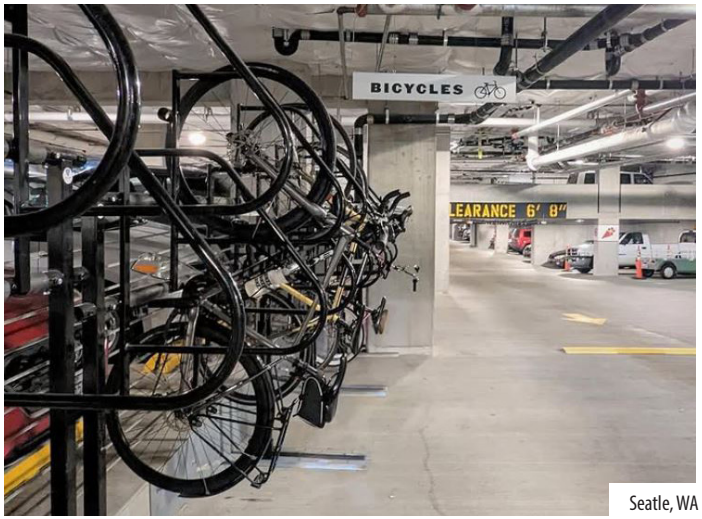
2 ACCESSIBILITY AND AMENITIES

A. Access to parking should be clearly signed to facilitate vehicle access and reduce pedestrian and bicycle conflicts.

B. Dedicated parking areas for non-vehicular modes of transportation, including bicycles and motorcycles, should be incorporated into new and existing parking structures.

C. The incorporation of smart technologies such as parked car sensors and dynamic signage should be should be considered.

D. Electric vehicle charging stations and associated parking spaces are encouraged in parking structures to accommodate the growing number of electric vehicles.



Seatle, WA

LEFT
A rooftop park on the top level of a commuter parking garage
Image Credit: Fairfax County

RIGHT
Bike storage area inside a parking garage
Image Credit: PikePlacePublicMarket via Instagram.com

5A.2 ON-STREET PARKING

DESIGN STRATEGIES

1 LOCATION AND FEATURES

A. On-street parking should be parallel, not perpendicular or angled to the street.

B. On-street parking should be designed to minimize vehicular conflicts with bicyclists and pedestrians and to maintain sight lines for people walking, biking and driving. Strategies to address these concerns include restricting on-street parking within 10-30 feet of corners and painted or physical buffers between bicycle facilities and parking lanes that provide for the space required to open the doors of parked cars.

C. On-street parking spaces should not exceed a width of 8.5 feet, inclusive of the curb and gutter.

D. The use of permeable paving in parking stalls is encouraged on private streets.

Bethesda, MD

LEFT
On-street parking located adjacent to a retail street
Image Credit: Fairfax County

E. On streets with on-street parking, intersections should incorporate curb bulb-outs or landscape islands, wherever possible, to reduce vehicle speeds and minimize the distance for pedestrians to cross the street.

F. A 2-foot paved step-off zone, inclusive of the curb, should be included between the roadway and the Landscape Panel on streets with on-street parking.

G. Designated, on-street moped/motorcycle parking spaces should be incorporated to accommodate these modes of transportation and to minimize inefficient use of vehicular parking spaces.

H. The need for designated, on-street drop-off and pick-up areas for deliveries and for ridesharing companies should be considered as a means of reducing issues such as double-parking, blocking of bicycle lanes, and conflicts with transit. These areas should be clearly marked with signs and conveniently located near major destinations and entrances to buildings.

I. Available parking technology should be utilized to the maximum extent feasible to increase the efficiency and convenience of on-street parking. Strategies include prioritizing the use of mobile parking apps and consolidating pay stations to conserve streetscape space for other furnishings, plantings, and amenities.

5A.3 SURFACE PARKING

DESIGN STRATEGIES

1 LOCATION AND FEATURES

A. Surface parking, if provided, should be located to the sides or rear of the building and not in front of the building. *(See Graphic 19: Surface Parking Configurations - Rear Parking and Graphic 20: Surface Parking Configurations - Side Parking).*

B. A clearly defined pedestrian pathway should connect the parking lot to the building entrance. This pathway should be well landscaped; lighted; be made of a contiguous, contrasting material such as concrete or pavers; and, be a minimum of 5-feet in width. Pedestrian wayfinding signage should be provided, where appropriate.

C. Landscaping, screens, berms, high-quality fences, and/or low walls should be used to shield parking from sidewalks, streets, and adjacent uses. A row of trees, landscaping, and a low 18 – 36-inch-high continuous row of shrubs should be provided as a buffer between the sidewalk and the parked vehicles.

D. Landscaped islands provided within, or along the periphery of parking lots should have a minimum width of 10 feet to accommodate healthy growth of trees and shrubs. In addition, these islands are encouraged to be used as stormwater capture basins or rain gardens.

Hyattsville, MD

TOP
Surface parking lot effectively concealed by the surrounding townhomes, which face the street
Image Credit: Fairfax County

Alexandria, VA

BOTTOM
Pedestrian path connecting surface parking lot to the building entrance provides safety and comfort
Image Credit: Rhodeside and Harwell

DESIGN STRATEGIES (CONTINUED)

E. Convenience "teaser" parking, if provided, should be located to the side rather than the front of the building whenever possible. It should be limited to one row of parking between the street and the building. If located in the front of a building, teaser parking should be oriented to the streetscape side of the parking area. *(See Graphic 21: Surface Parking Configurations - Teaser Parking).*

F. Safety and security of less visible parking areas, particularly those located at the rear and sides of a building, should be considered. If not visible from street or public spaces, parking areas should be well lit. Dead-end corridors or areas where people could hide should be avoided.

LEFT
Decorative brick walls shield parking from the adjacent sidewalk
Image Credit: Fairfax County

Fairfax, VA

BOTTOM RIGHT
Parking located to the side while the building fronts the public street
Image Credit: Google Maps

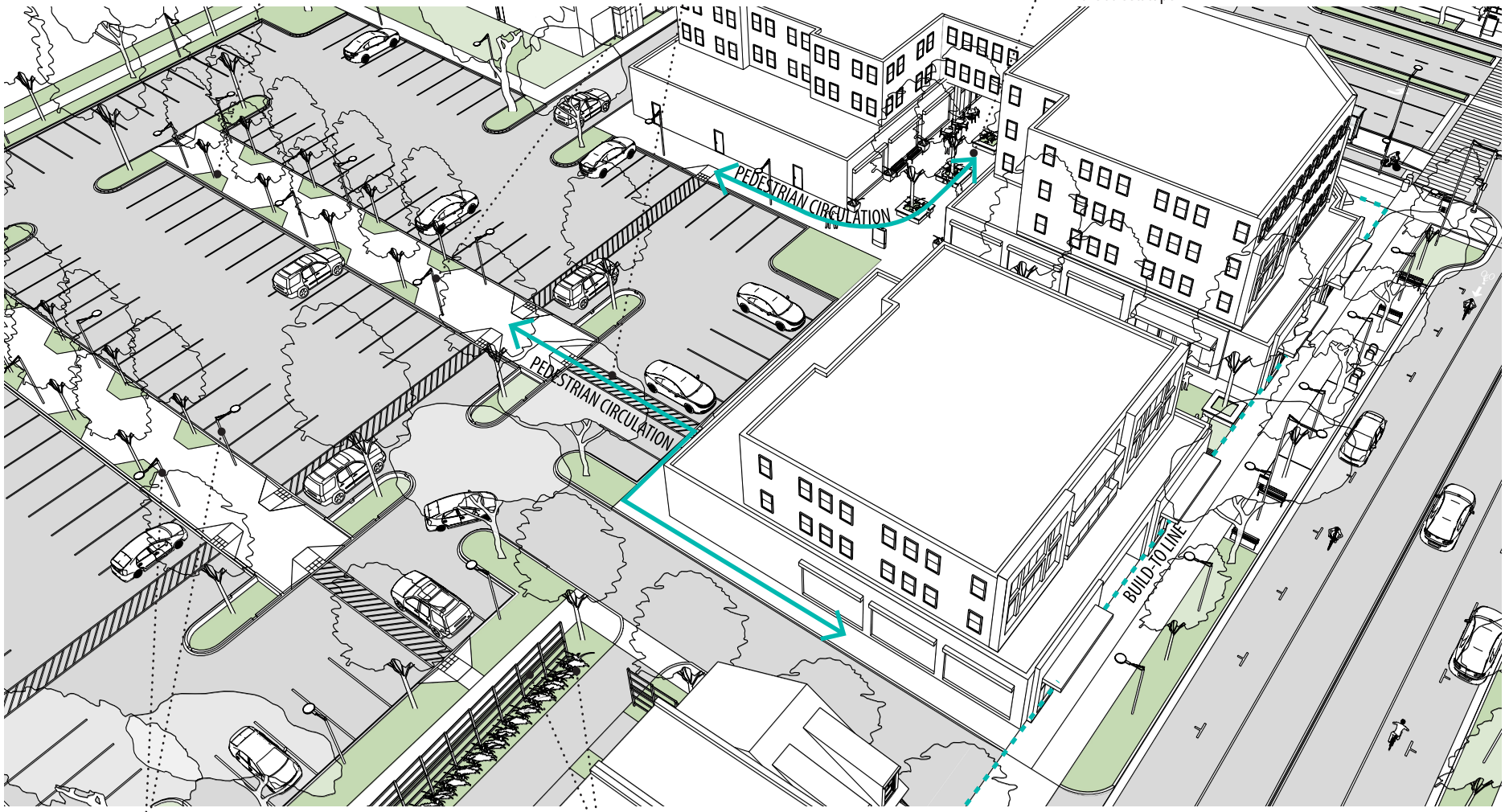
Annandale, VA

GRAPHIC 19: SURFACE PARKING CONFIGURATIONS - REAR PARKING

LANDSCAPED ISLANDS
Accommodate shade trees, planting, bioretention, and lighting

PEDESTRIAN PATHWAYS
Emphasize continuous access with contrasting paving applications

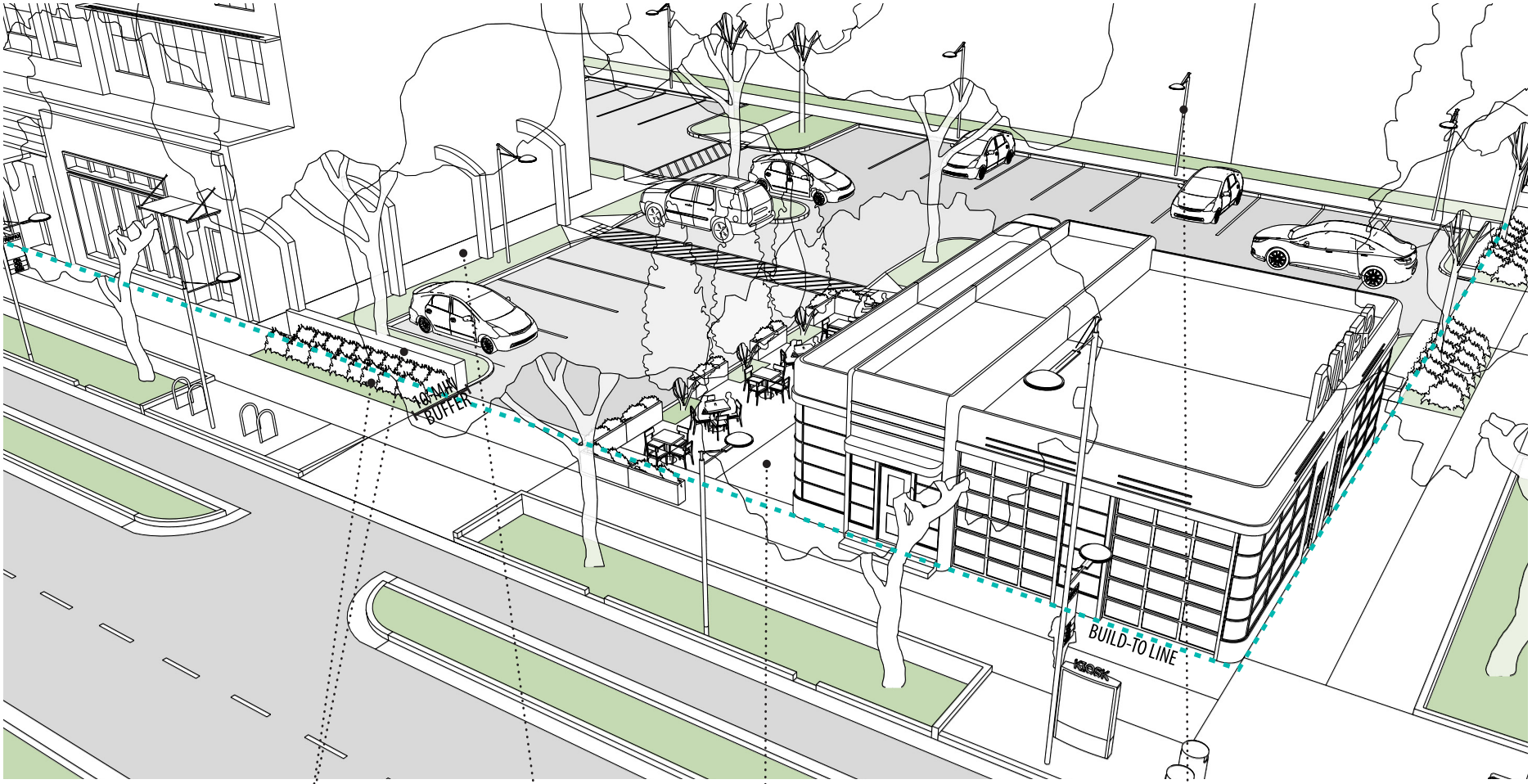
PEDESTRIAN ACCESS
Connects parking at the rear of buildings to building entrances along the streetscape



LIGHTING
Incorporate pedestrian-oriented lighting to foster a sense of safety and security, particularly in low-visibility areas such as parking lots located to the rear and sides of buildings.

BUFFERS
Visually separate parking and buildings with attractive landscaping, low walls and/or fencing

GRAPHIC 20: SURFACE PARKING CONFIGURATIONS - SIDE PARKING

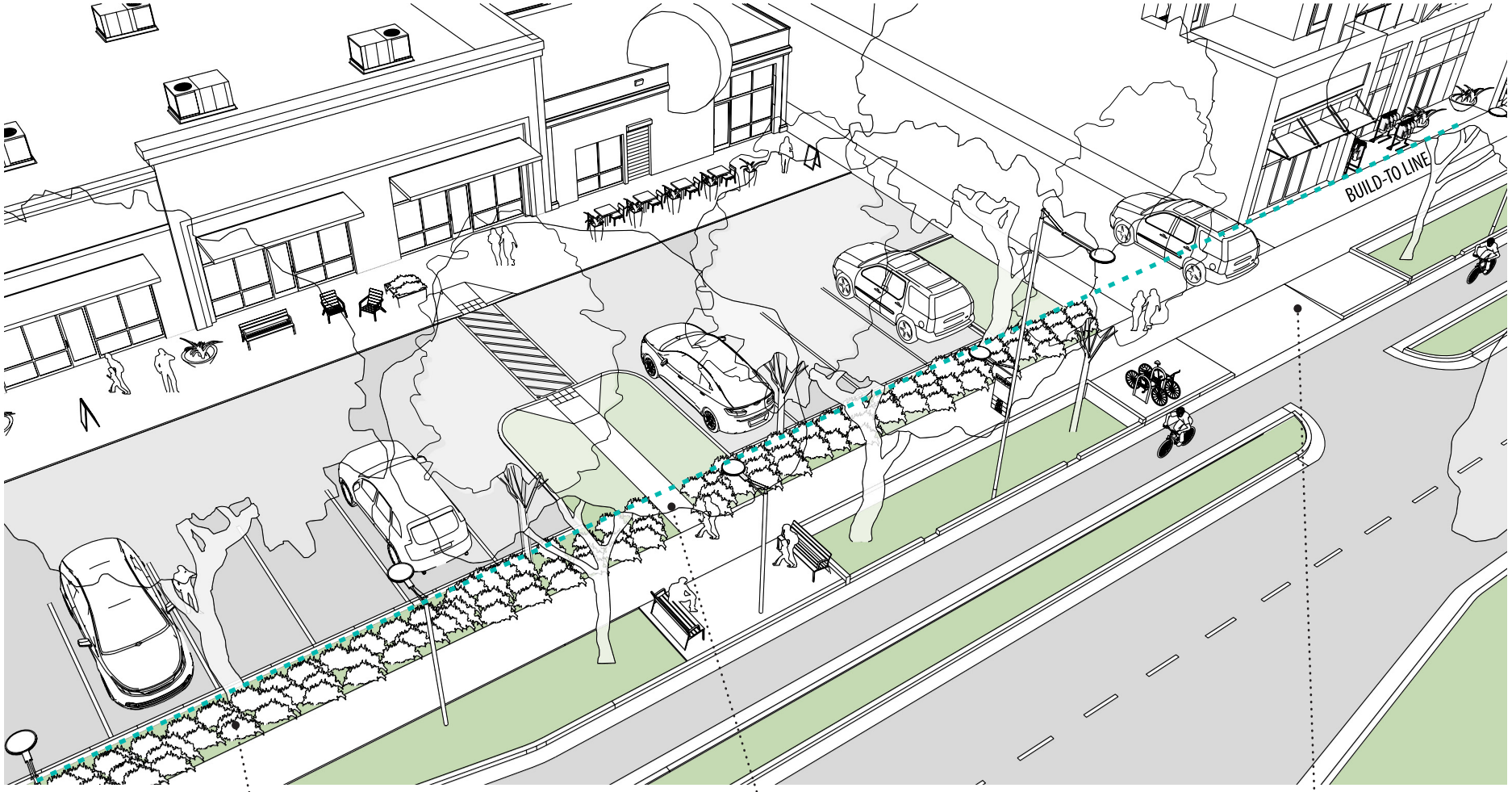


SCREENING
Landscaping and low walls screen parking from the streetscape

PEDESTRIAN PATHWAYS
Connect between parking/amenity and building entrances

LIGHTING
Incorporate pedestrian-oriented lighting to foster a sense of safety and security, particularly in low-visibility areas such as parking lots located to the rear and sides of buildings.

GRAPHIC 21: SURFACE PARKING CONFIGURATIONS - TEASER PARKING



BUFFER
Landscaping and/or low walls between sidewalks and teaser parking

PEDESTRIAN ACCESS
Direct pathway connecting the streetscape/sidewalk through parking lot to building entrances

PARKING ACCESS
Access to front/side teaser parking and additional parking at the rear of buildings

5B BICYCLE PARKING

Bicycle parking is a key component of a bicycle network. The secure, convenient provision of bicycle parking facilitates the use of bicycles as a means of both recreation and transportation. Bicycle parking facilities should be decentralized so that they are available near multiple destinations and accommodate the inherent flexibility of bicycles as a mode of travel.

The Fairfax County Department of Transportation provides guidance on short-term and long-term bicycle parking, including how to site bicycle parking, how to select the type of bike parking, and how to size facilities for a development. Moreover, Table 2B, Bicycle Parking Requirement for Urban Centers and Transit Station Areas in the "Bicycle Parking Guidelines," describes appropriate locations for bicycle parking, desired types of parking facilities and the required quantity of bicycle parking spaces based on building type and square footage. Volume II: District Design Guidelines may provide additional recommendations on the proper location of bicycle racks and rack design features.

Reston, VA

RIGHT
Bicycle parking room internally-housed within parking garage helps promote cycling as a mode of transportation by providing secure and covered space
Image Credit: Fairfax County

DESIGN PRINCIPLES

Emphasize proximity, functionality and quantity as key considerations in the design of bicycle parking. Bicycle racks, bike lockers, and bicycle parking rooms should be situated for convenience and safety for those who use bicycles on both a regular and on an infrequent basis. They should be sited in locations that are easily visible to a passersby, both to encourage use and for security.

Identify bicycle parking locations early in the design process, rather than as an afterthought. Appropriate locations for both long-term and short-term bicycle parking should be identified early in the design process so that they are properly integrated into the design of the site. Bicycle racks should be incorporated into parks, streetscapes, and private spaces such as courtyards, parking garages, and areas adjacent to transit stations. Whenever possible, bicycle parking should be located in buildings, or under covered areas, awnings or overhangs to make bicycle transportation more viable for daily, year-round use.

Select bicycle racks that complement the design and character of streetscapes and open spaces. Aesthetics are an important consideration for bicycle racks that are visible in the public realm. Rack selection should be coordinated with other site furnishings to create a cohesive aesthetic.

DESIGN STRATEGIES

1 BICYCLE RACKS

A. Bike racks should be located in the Amenity Zone, in the Building Zone, or within the ground floor of a building's parking garage, and should not intrude into the sidewalk or other pedestrian activity areas.

B. The preferred bicycle rack type is the inverted "U" rack or variation of the "U" rack. Bike racks should be anchored to the ground at two points (see photo examples).

C. If located outside, bicycle racks should complement the style of other streetscape furnishings to create a cohesive pedestrian environment. Bike racks should be made of metal with a powder-coated finish.

D. Public art or branding may be integrated into bicycle racks along with other functional elements of the streetscape.

2 LOCATION OF BICYCLE PARKING

A. Short-term bicycle parking should be visible from and located generally within 50-feet of the building entrance it serves. In larger developments, short-term bicycle parking should be spread throughout the site. Locations should be determined in conjunction with the pedestrian circulation plan for the area or site.

B. Long-term bicycle parking for residents or office workers should be located within 100-300 feet of the building entrance. Bicycles should be protected from the weather and parking provided within a secured space.

C. Both short-term and long-term bicycle parking is encouraged to be located in parking structures, either as part of the original design or as retrofits to existing structures. Even in existing structures without designated bicycle parking areas, there are often "leftover" spaces that can be repurposed as bicycle parking areas.

D. Bike corrals may be appropriate in areas with anticipated high-volumes of bicycle traffic such as near parks, transit stations, or large shopping centers, and should generally accommodate 8-12 bicycles. Bike corrals are typically located on streets adjacent to the curb.

Springfield, VA

LEFT
Bicycle racks reflect specific branding elements
Image Credit: Rappaport Properties

5C ACCESS

While vehicular access to parking, service and loading facilities is essential to the daily operations of a development, the manner in which vehicles access the site from the street can have significant implications. When access is well-coordinated, consolidated, context-sensitive and located away from busy streets, it can support and preserve the desired urban design character of a block and its streetscapes. When access strategies do not respect the surrounding context—for example, when streets are lined with excessive access points and curb cuts, or when loading and service activities disrupt other street functions or visually detract from the character of a streetscape—access-related impacts can diminish or erode urban design character while increasing opportunities for conflicts between pedestrians and vehicles.

LEFT
Multiple parking and loading entrances co-located on an alley street and clearly marked with building mounted signage. The facade of the garages blends into the building architecture using consistent materials with the rest of the building
Image Credit: Fairfax County

RIGHT
Excessive curb cuts along a street creates safety hazards for pedestrians and cyclists
Image Credit: Stephen Lee Davis via t4america.org

Alexandria, VA

DESIGN PRINCIPLES

Consolidate and limit the overall number of access points into a development. Access points along a street should be located in ways that minimize the extent to which vehicular access disrupts street functions and the continuity of the streetscape. Wherever possible, access points should be consolidated to limit the number of curb cuts and minimize conflicts between pedestrians and vehicles.

Locate access points, loading docks, and other service and loading areas on side streets and service streets. Vehicular access points, as well as the facilities and designated locations for service and loading activities, should be located on Local and service streets to avoid disruptions to the primary street activities and the overall visual continuity of these streets.

Atlanta, GA

DESIGN STRATEGIES

1 CONSOLIDATED ACCESS FROM THE STREET

A. Vehicular access points into a site should be consolidated to simplify traffic patterns and to minimize conflicts among pedestrians, bicyclists, and vehicles.

B. Care should be taken to maintain sidewalk continuity. Vehicular access points on streets intended to experience a high volume of pedestrian traffic should be minimized. Single-use sites should not have more than one or two vehicular access points.

C. Opportunities to consolidate property access points with adjacent parcels should be explored to limit interruptions in the streetscape.

D. Driveway access points between the site and the roadway should be designed to meet minimum requirements for turning movements, safety and visibility while not intruding excessively upon the pedestrian environment. See *Section 2C ("Intersections")* for additional detail regarding intersection design.

E. Access to building sites via midblock service streets is encouraged as a means of minimizing the number of curb cuts along the streetscape and facilitating efficient access for both commercial and residential buildings.

2 SERVICE AND LOADING ACCESS

A. Whenever possible, loading, trash pickup and other services should be co-located along service streets.

B. Access to loading areas should be provided from side streets or service streets at the rear of buildings or in locations that minimize impacts to adjacent properties. Loading spaces should not be sited on Primary Pedestrian Streets and on those with retail storefronts.

LEFT
Consolidating entrances on a shared service street provides access to a public parking garage and private residential units as well as for loading
Image Credit: Google Earth

Image Credit: crja.com

6 ADDITIONAL PLACEMAKING ELEMENTS

INTENT

In addition to the features of the built environment discussed in previous chapters, an additional layer of urban design elements—signage and wayfinding, gateways, public art and water features—can help to further shape the identity and sense of place in CRDs and CRAs and bring these areas to life. These placemaking elements make the built environment more legible and easier to navigate, create landmarks, establish a sense of arrival, provide visual interest and variety, and encourage people to linger in public and private spaces.

While each element described in this chapter serves its own distinct purpose and functions, together they help shape how residents, employees, and visitors experience and respond to urban spaces and entire CRDs and CRAs. The following sections provide design principles and strategies for each of these elements.

INSPIRATION

Image Credit: mmmm...

Baltimore, MD

Image Credit: Fairfax County

Fairfax, VA

Image Credit: www.carmelartsanddesign.com

Carmel, IN

Image Credit: Ashton Design

Baltimore, MD

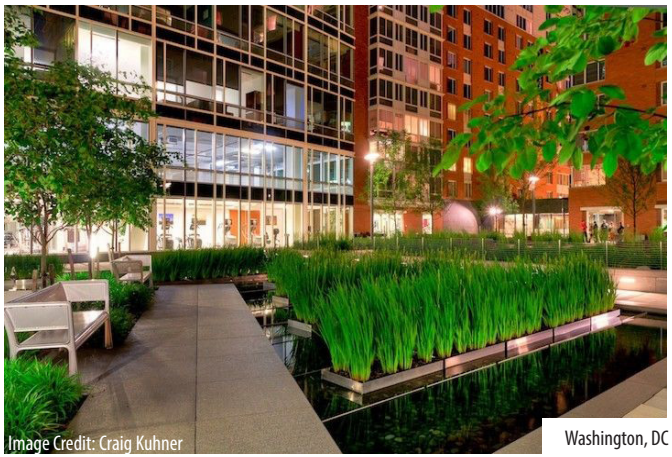


Image Credit: Craig Kuhner

Washington, DC

Elements such as water, art installations, public signage, and gateway features contribute to the pedestrian experience and help build a sense of place in a community

6A SIGNAGE AND WAYFINDING IN THE PUBLIC REALM

Wayfinding includes specialty street signage, maps and other graphics designed to help visitors navigate an individual site or an entire community. Wayfinding informs people about where they are and what is in their surroundings. By strategically locating wayfinding information, people can be guided to key destinations, including landmarks, public facilities, special streets, and parks.

The Fairfax County Zoning Ordinance provides regulations regarding the permitted types, size and location of signs on private property. VDOT regulates signage in the right-of-way. Section 4E ("Building Signage") provides guidance on project idenity and commercial signage.

BELOW
Distinctive street and wayfinding sign with mobile app integration
Image Credit: PAM

Sydney, Australia

DESIGN PRINCIPLES

Design public signage in a comprehensive, coordinated manner that complements the area's character. While building and storefront signage can convey information about an individual use, signage and wayfinding in the public realm conveys information at a broader level and should be considered as part of a comprehensive area wide information system. In addition, wayfinding and other public signage serve as furnishings in the public realm and their aesthetic should be considered as a component of the site furnishings used to build on the sense of place. Coordinated public signage can help provide a recognizable identity and a unified character for an area. All such signage does not need to be identical but should be designed so that it is complementary to other signage, street furnishings, and the character of the area. Wayfinding signage often includes logos or other unique branding features that further distinguish an area.

Provide clear, consistent information through a variety of media. Effective signage and wayfinding consists of a comprehensive, clear and consistent visual communication system with concise messaging. Wayfinding can be presented in static signs that may include maps and text; it can describe distances in linear feet, miles or in average walking time; and, it can include dynamic options such as interactive, electronic displays that allow users to look up more detailed information.

DESIGN STRATEGIES

1 PURPOSE AND LOCATION

A. Large, multi-parcel and mixed-use developments should develop a comprehensive system of wayfinding signage for both pedestrians and motorists that complements the individual project and the area as a whole. Wayfinding signs should be coordinated with the development's pedestrian and vehicular circulation plan to ensure that signage is located in the most appropriate locations for pedestrians and motorists.

B. If permitted, streetlight-mounted banners that advertise public events, seasonal or other area attractions are encouraged. Where desirable and feasible, select street light poles that are engineered to support banner brackets as part of their design.

C. Where possible, wayfinding systems should be interactive, and should coordinate with online information to provide up to-date information on travel, events and other relevant information.

D. Gateway, monument, and location marker signs should be positioned in the Building Zone, in the median, or within plazas and open spaces, or should be integrated into the face of a planter or seat walls, or designed as art pieces.

2 VISUAL CHARACTER AND GRAPHIC DESIGN

A. Wayfinding signs should be well organized, neat, well-maintained, concise, and legible. Signs should be able to withstand weather conditions, and should be constructed from durable materials and replaced as needed to maintain a high quality appearance. Structural components should complement the color and finish of street furnishings.

Hyattsville, MD

RIGHT
A directional sign
Image Credit: Fairfax County

DESIGN STRATEGIES (CONTINUED)

B. Wayfinding systems that can be utilized by a wide variety of users, including the visually and hearing impaired, and that comply with accessibility requirements are strongly encouraged.

C. Community logos should be incorporated when appropriate to help create an identity for the CRDs and CRAs. Signs in gateway areas, in particular, should include community logos.

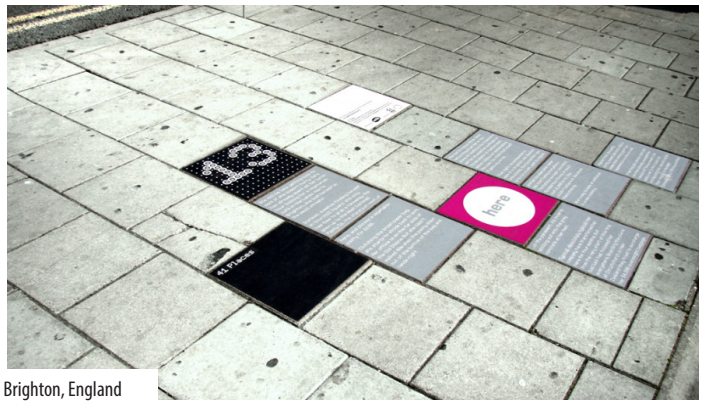
D. If appropriate, ornamental plantings should be provided at the base of signs to enhance their overall appearance.

E. Overly lit wayfinding signs that create light pollution or distract drivers should be avoided.

F. Unnecessary signage that results in visual clutter of the public realm should not be included. Signs should not impede pedestrian movement or sight lines of drivers.

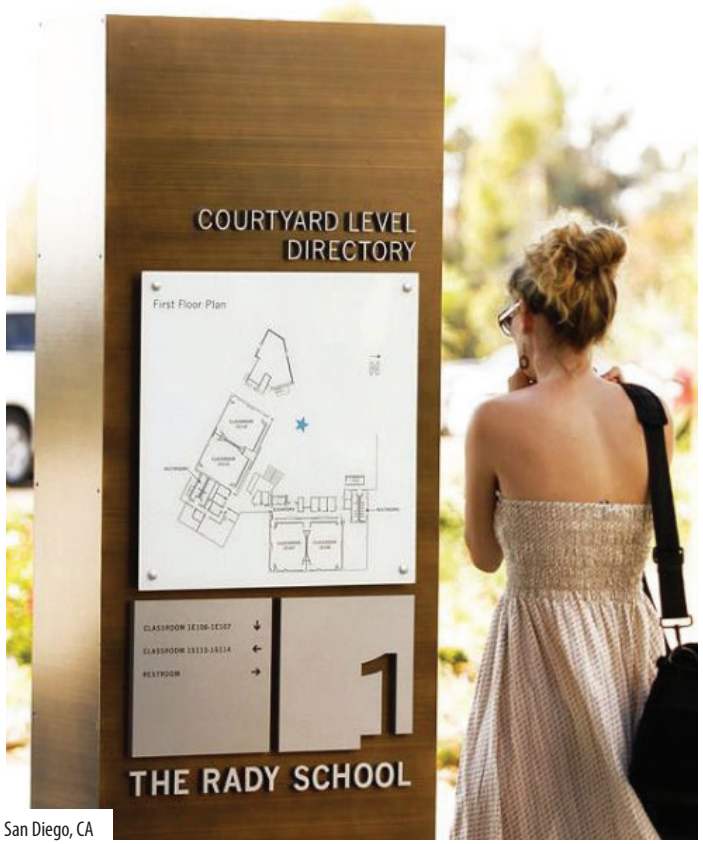
G. The size, typeface, graphics, illustrations and orientation of signs should be designed for the intended user based on where the sign will be viewed from – e.g. – by a pedestrian, by a driver, or by a passenger in a moving vehicle. International wayfinding symbols should be incorporated, where possible.

LEFT
Wayfinding that shares local historic stories integrated into the sidewalk
Image Credit: Richard Wolfstrome



Brighton, England

RIGHT
A pedestrian wayfinding sign with directory information
Image Credit: CREO Exhibits



San Diego, CA

6B GATEWAYS

The integration of gateway elements into the built environment can help denote entrance points or major approaches to an area, as well as transitions between neighborhoods and districts, particularly along major roadways. Gateways play a key role in communicating a first impression of an area. They can serve as landmarks to announce to pedestrians, bicyclists, transit riders, and motorists that they have arrived at a particular place or destination while helping to define an area's edges and entryways and can convey a community's identify.

Gateways can be established in the built environment in a variety of ways—through the design and placement of buildings; through the overall visual character of a streetscape; through distinctive landscaping and vegetation; or though signage, art and other visual elements that function as landmarks or express the identity of an area. The following design principles and strategies offer ideas and guidance for designing these elements to establish and reinforce gateways.

DESIGN PRINCIPLES

Incorporate signature elements that create a sense of arrival and a memorable visual impression of an area. Gateways should incorporate signature elements that are iconic, memorable, creative, and innovative. Signature elements may include:

- High-quality architecture and building materials, including signature buildings in prominent and visible locations
- Specialty area signage or branding that is consistent with an established logo or brand identity, if applicable
- Streetscapes and prominent street furnishings that reflect the character and prevailing design language of an area

BELOW
The twin churches at Piazza Del Popolo forms the northern gateway into historic City of Rome
Image Credit: ArcheoRoma

Arlington, VA

DESIGN PRINCIPLES (CONTINUED)

- Distinctive tree and landscaping patterns
- Public art, including commemorative statues or art that highlights the history of the area
- Water features

Establish gateways at prominent locations, utilizing elements that are clearly visible to both vehicles and pedestrians. Gateways are most often located at prominent intersections at the edges of areas and districts to convey transitions in the built environment, establish a sense of arrival, and reinforce an area's distinct identity. As such, they should be legible to drivers of moving vehicles, signaling a transition in character to the CRD or CRA.

Washington, DC

LEFT
A pedestrian gateway at a transit station with landmark art
Image Credit: washington.uli.org

DESIGN STRATEGIES

1 LOCATION AND CONTEXT

A. The types and overall scale of gateway features should be appropriate to the gateway's location, context, and function.

B. Gateways should reflect adjacent street types. For example, on Major Avenues, Avenues, and Local Streets, buildings should have prominent architectural features, signage, public art, and high-visibility crosswalks; along Boulevards and Multimodal Through Corridors, gateways should include landmark buildings, prominent signage/branding elements, specialty lighting, and large scale plantings.

C. Streetscape design may establish or reinforce the gateway experience through distinctive paving, furnishings, lighting, trees, and landscaping that collectively express an area's discernable design language and visual character.

D. Highly visible, landmark plazas and other open spaces can function as gateway elements. In certain locations, smaller public spaces and outdoor seating areas on street corners can also serve a gateway function by marking a transition to a more pedestrian-oriented environment.

DESIGN STRATEGIES (CONTINUED)

2 FEATURES AND AMENITIES

A. Mechanisms such as signature buildings, changes or variations in height, distinctive façade treatments or rooftop elements, and the placement of buildings relative to the street should be utilized to create gateways.

B. Public art, boundary markers, area signage, commemorative statues, or other location-specific elements should be incorporated where appropriate to foster a sense of arrival and connote the area's history and context, and to help build community identity.

Vancouver, Canada

TOP
Gateway highlighted by monument sign placed in a landscaped median
Image Credit: University of British Columbia

Washington, DC

BOTTOM LEFT
A gateway sign indicates threshold into a special district
Image Credit: Daniel Kelly

Arlington, VA

BOTTOM
Gateway site highlighted by a signature building at a prominent corner
Image Credit: SmithGroup JJR and Design Illustration Group

6C PUBLIC ART

The integration of public art into everyday life is a key element in building a sense of place in the CRDs and CRAs. Public art can increase vitality, place identity, and pride in the community. Public art may be used to enhance or personalize otherwise impersonal spaces; to catalyze civic dialogue; to offer opportunities for local artists; to increase wayfinding by creating visual landmarks; or, to provide a vehicle for the community to express its identity. In some instances, public art may be facilitated as a joint venture between the public and private sectors.

Arts Fairfax is a resource for the development of public art in the community.

Prince George's County, MD

RIGHT
Life-size bronze statues at the entrance to a median park celebrate historical figures
Image Credit:

DESIGN PRINCIPLES

Public art should be contextual. Public art can be used to honor, celebrate and give visual expression to the local diversity found in the community. Promoting culture and history through public art can be achieved by commemorating local historic events or people, or by recognizing the residents and workforce who live in the area today. Providing opportunities for citizens to participate in the process of planning and selection of public art is highly encouraged.

Public art can serve multiple purposes, from ornamental and functional to playful and interactive. While public art may be ornamental in nature, it can be particularly effective when it also serves other purposes. It may provide an essential function in an artistic manner (for example, art incorporated into stormwater management features), educate the public about the history or ideals embedded in a place, or inspire dialogue and interaction among members of a community. Alternatively, public art may provide a distinct environment where—or upon which—children are encouraged to play. When public art adds meaning to a place, brings people together, and fosters interaction, its impacts can extend far beyond the physical space it occupies.

DESIGN PRINCIPLES (CONTINUED)

Public art should reflect, and be informed by, the population it serves. Public art should be designed or selected through inclusive public involvement and education to ensure that it expresses the values of the community in which it is located and instills a sense of pride in place. When art is created with or by members of the community, rather than imposed from the outside, it is more likely to become a meaningful and cherished part of the urban landscape.

DESIGN STRATEGIES

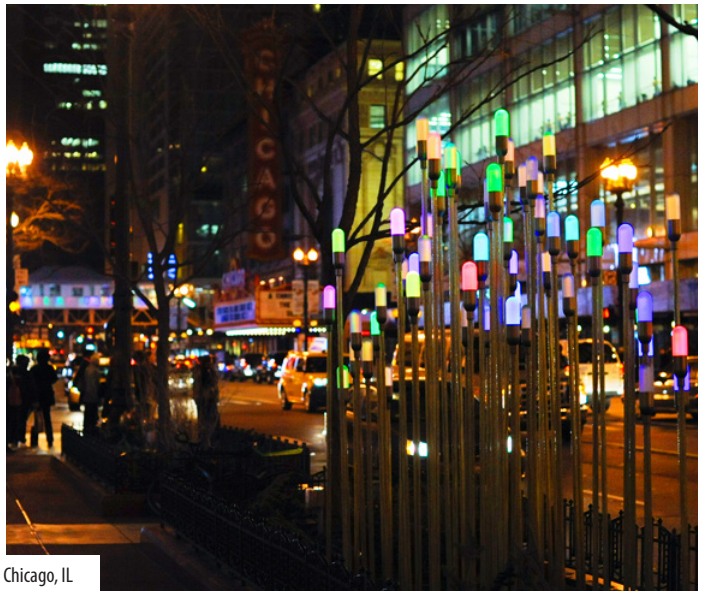
1 PUBLIC PARTICIPATION

A. The local community should be involved in the location, design and selection of artwork so that it reflects community goals and character. Property owners should work with stakeholders when determining the appropriate type of public art to be installed.

B. Public art should enhance the built environment by placing engaging art pieces in locations where they can be enjoyed by residents and visitors.

BOTTOM
A mural art that celebrates the local heritages on a blank wall of a building
Image Credit: Fairfax County

Fairfax, VA



Chicago, IL

TOP
Light installation integrates programmable LED lights into the streetscape and choreographs lighting sequences with themed music
Image Credit: Chicago Loop Alliance

San Francisco, CA

BOTTOM
Public art mosaic integrated into staircase
Image Credit: incoherentboy.com

DESIGN STRATEGIES (CONTINUED)

2 LOCATION AND CONTEXT

A. Opportunities to express local identity through functional and ornamental design elements should be considered. Art that is incorporated into functional elements in the public realm, such as mosaics in an interactive spray park, provide dual benefits to the community and are encouraged wherever feasible.

B. If a development is proposed at or near a historic site, projects should address the significance of the location through public art and a narrative describing the site's history.

3 FEATURES

A. Public art should be provided at a variety of scales, to be experienced by both pedestrians and drivers, where possible.

B. Plazas and other public spaces should be designed in a manner that promotes the integration of both temporary and permanent visual and performance art.

C. If public art is to be permanent, maintenance and durability should be considered, particularly if the art will be exposed to the elements.

6D WATER FEATURES

Water has a magnetic quality that attracts people. The sight and sound of splashing or moving water enhances an urban area. Water features are an important element of the public realm because they provide places to play, attenuate street noise, create a visually appealing environment, and can serve as landmarks and focal points. Water features are often used to distinguish places such as civic centers and cultural institutions.

Water features can be used to highlight environmental features or be incorporated into sustainable design practices. There are many ways to creatively and sustainably integrate water into the urban landscape.

Cincinnati, OH

DESIGN PRINCIPLES

Consider incorporating water in multiple contexts to enhance large and small public and private spaces. Water features can fit into and enhance a variety of public and private spaces, from small features in the entry plazas and courtyards of private developments to large, interactive centerpieces of public spaces. In all contexts, and regardless of the size of the feature, the design of water elements should leverage water's innate ability to attract people, provide a calming visual setting and background sounds, and inspire play, gathering, socializing, and relaxation.

Design water features to serve multiple functions—ornamental, functional, playful and educational. As with public art, water features can serve a variety of purposes and functions, ranging from ornamental backdrops to water play installations or interpretive features explaining topics such as water resources, water quality and conservation, and stormwater management. Water features can be most compelling when they have purpose and meaning on multiple levels, encourage people to interact with the water and each other, or educate the public about the role of water in our communities and the natural environment. If designed properly, water features can serve environmental functions such as capturing and treating stormwater runoff or providing benefits to wildlife. A water feature's evaporative cooling function can also help reduce urban heat island effect.

LEFT
Fountain adds character, sound, and a sense of history
Image Credit: Trip Expert

Silver Spring, MD

TOP
Interactive fountain with mosaic art integrated into the paving surface
Image Credit: Montgomery County

Arlington, VA

BOTTOM
Water feature in a public plaza
Image Credit: Arlington Public Art

DESIGN STRATEGIES

1 LOCATION AND CONTEXT

A. Water features should be located on private property, within the Building Zone or in open spaces. They should not be located within the public right-of way.

B. The appearance of water features during winter months or droughts should be considered.

2 FEATURES

A. All water features should be designed to adhere to Fairfax County standards for outfall, drainage, and other requirements.

B. Water features should be used to augment recycling, storage, and recirculation of stormwater and HVAC systems, where feasible.

C. High-quality materials should be used in a manner that complements adjacent architecture and public space design.

D. Water features should be routinely maintained, repaired, and replaced as necessary.

E. Water features that are intended for active play should not have standing water that could pose a safety hazard.

F. Water features are encouraged to incorporate elements such as rocks, areas for animals to rest, and native plantings that make them wildlife-friendly.

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Image Credit: Laura McDermott Bloomberg

7 INTERIM DEVELOPMENT CONDITIONS

INTENT

The vision for the CRDs and CRAs will be implemented over many years. Some sites will develop in the near future, some will be phased, some may be developed with temporary uses, and others may not redevelop at all. Some of this development may align with the allowable build-out and vision of the Comprehensive Plan; other development may be desirable on a shorter-term basis, although it may not conform fully to the vision, and thus can be viewed as temporary development that could be subject to redevelopment in the future. As a result of those or other potential scenarios, interim development conditions will exist on sites until the ultimate project build-out is complete.

Interim development conditions can last from several months to many years. Selecting infrastructure improvements that are appropriate to both the development and the anticipated length of time that the interim condition will remain is important. More permanent infrastructure features are encouraged to support interim development conditions that are anticipated to be in place indefinitely.

When a larger development that will be implemented in phases is proposed, the expectation is that the development plans associated with the rezoning will demonstrate how the phasing will occur over time and how interim development conditions will be addressed. Development projects should consider which amenities and building conditions will exist with each phase, and what commitments to specific elements are anticipated with each phase. These plans and commitments should demonstrate how the phases of development will support the vision for the CRDs and CRAs by maintaining (or adding) pedestrian access and circulation across sites and to transit; by providing for the planned network of streets; by providing parks, streetscapes, and stormwater facilities; and, by addressing interim building and site conditions, such as exposed above grade parking structures and surface parking to remain.

Phasing plans and interim developments should also consider temporary or permanent placemaking efforts and how the site can contribute to the vitality of the CRDs and CRAs through such things as the programing of parks, use of buildings for interim uses, construction of interim structures, and the inclusion of pop-up uses.

Interim development conditions should result in enhanced connectivity and functionality and a positive visual appearance. The items described above are further refined below and are provided to spark creativity on how interim development conditions could be addressed. Innovation in design and approach is highly encouraged.

INSPIRATION


Image Credit: Eric Rasch

Silver Spring, MD


Image Credit: Garden Rant

Silver Spring, MD


Image Credit: Project for Public Spaces

New York City, NY


Image Credit: Archello

Fosnavåg, Norway


Image Credit: David Madison Photography

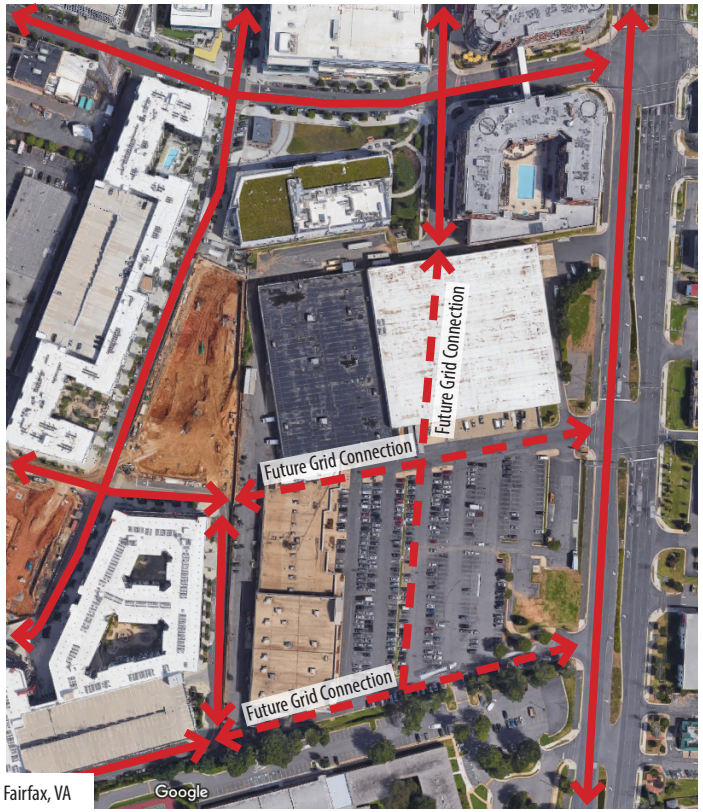
Reston, VA

Sites that are in transition provide opportunities for creative interim projects that improve the circulation, the visual appearance of an area, and the pedestrian experience while laying the groundwork for permanent changes

7A INTERIM STREETS AND STREETSCAPES

The first phase of development, whether a temporary development or a portion of the ultimate build-out, will establish the framework for how the rest of the development will function, as well as how adjacent developments will interface with the development. This framework needs to be generally consistent with the street network contained in the Comprehensive Plan.

LEFT
Existing network of streets, shown in solid lines, to be enhanced by future planned street grid, shown in dashed lines
Image Credit: Google Maps



Fairfax, VA

RIGHT
Street redesign to incorporate an interim bicycle facility and midblock pedestrian crossing
Image Credit: Westside Today


Los Angeles, CA

DESIGN STRATEGIES

A. Provide a street, pedestrian and bicycle network that will not only serve the initial development but will also become a part of the overall network as the project is built-out through later phases of development.

B. Incorporate interim multimodal connections to public facilities, parks, retail, and transit.

C. Provide streetscape improvements that conform to the recommendations in the Volume II: District Design Guidelines and that result in continuity of the streetscape design.

   i. Consider implementing the ultimate streetscape associated with later phases of development in earlier phases to facilitate the pedestrian experience and the visual appearance of the development.

DESIGN STRATEGIES (CONTINUED)

ii. In instances where the ultimate streetscape cannot be provided with the interim development, provide the streetscape to the extent feasible and design interim streetscapes in a way that allows them to be expanded or easily reconfigured upon completion of future phases of development. This may include widening sidewalks for a final streetscape or integrating a pathway into a future public open space.

D. Provide temporary landscape improvements to enhance the aesthetics and functionality of streetscape spaces that are programmed to be developed later.

E. Consider installing street trees early in development phases to provide shade for pedestrians. Early installation also gives trees a head-start for reaching their expected canopy size and provides the opportunity to transplant such trees to permanent locations in future phases.

F. Consider installing a temporary street, intersection, or bike lane design using paint, bollards, and/or landscaping in locations where the permanent facility cannot be constructed or where testing of certain roadway configurations or design solutions needs to occur.

Fairfax, VA

TOP
Planned roadway network, shown in red, will be implemented in phases to create a grid of streets. An interim pedestrian connection, shown in blue, provides access from the Metrorail Station to the residential community
Image Credit: Google Maps

Austin, TX

BOTTOM
Interim curb extension with a bike share station designed to increase the pedestrian waiting areas at the corner and reduce roadway crossing distance until the curb is permanently relocated
Image Credit: NACTO

7B INTERIM PEDESTRIAN CONNECTIVITY

To create the pedestrian-oriented environments envisioned in the Comprehensive Plan for the CRDs and CRAs, it is essential that pedestrian connectivity be prioritized with any interim development.

Vienna, VA

TOP
Interim pedestrian connection between a transit station and residential community; public art, pedestrian lighting and furnishings are provided
Image Credit: Fairfax County

Mumbai, India

BOTTOM
Short-term intersection improvements designed to improve pedestrian safety and encourage pedestrian activity through paint and intersection reconfiguration
Image Credit: NACTO

DESIGN STRATEGIES

A. Provide interim pedestrian connections, and street crossings to pedestrian-oriented facilities, including parks, retail corridors, work places, etc., as warranted.

B. In phased developments, incorporate temporary or permanent pedestrian access throughout all stages of development, even if such connections occur prior to construction of the final street networks and/or future building phases.

C. Design interim connections to be expanded, enhanced, or reconfigured upon completion of future phases of development. This may include widening sidewalks for a final streetscape or integrating a pathway into a future public open space.

D. Give consideration to the coordination and maintenance of pedestrian access across multiple projects if adjacent sites will be under construction simultaneously.

7C INTERIM SITE, BUILDING AND PARKING DESIGN

As development will be constructed over time, many developments will function in an interim condition within a larger context that will be completed by future related or non-related developments. As such, buildings must be sited and designed to respond not only to the current conditions, but also to the future streets and streetscapes that are envisioned in the Comprehensive Plan. It is expected that the building and site design objectives detailed in Chapters 4 and 5 of this document will apply to interim conditions; however, temporary or less costly materials and construction methods may be considered for interim conditions. Architectural screening, painted murals, and mesh fabric treatment are examples of ways in which this can be achieved.

DESIGN STRATEGIES

A. Locate buildings for the ultimate street network by siting them to conform with the planned urban form.

B. For façades that are to remain visible, provide articulation to each building face, utilize architectural treatments to ensure compatible transitions to adjacent structures, and incorporate appropriately scaled entrances.

C. Consider artwork or other facade applications as interim conditions for blank facades or on partially constructed buildings.

D. Mitigate uses such as drive-throughs or other auto-oriented uses that detract from the pedestrian experience by locating drive-throughs at the rear of the site, combining vehicular circulation and access points where feasible, and by providing enhanced streetscapes, additional trees and landscaping, and low walls to screen less desirable portions of the development.

E. Improve the aesthetic appearance of existing surface parking lots that may remain to serve interim developments by adding landscaping within and around the lots. In addition, pedestrian connectivity should be provided to transit and other surrounding uses in a manner that considers the physical and visual experience for pedestrians. Clearly delineated pedestrian walkways through surface parking lots should incorporate striping and/or distinct pavement treatments, along with landscaping and pedestrian-scaled lighting to buffer people from moving and parked vehicles. Allowing existing parking lots to remain without the integration of landscape and pedestrian enhancements is highly undesirable.

F. Design the stormwater system to manage interim conditions and consider how each facility will function as part of an integrated system at ultimate build-out.

Washington, DC

RIGHT
Interim pedestrian connection through a surface parking lot that restores the original street grid while the site awaits redevelopment
Image Credit: Rhodeside & Harwell

7D CONSTRUCTION SITES

Construction sites will be another component of the landscape that, although less permanent than other interim conditions, will affect the appearance and quality of the pedestrian realm and livability of the area. The use of creative screening, scaffolding and other techniques will minimize the visual impact of this disturbance. While construction conditions are inevitable, they should not detract from the livability of the area.

Quebec City, Canada

TOP
Artwork covered shipping container provides a temporary pedestrian connection on a busy street
Image Credit: Fairfax County

Omaha, NE

BOTTOM
Art on construction fencing around a building that is being repurposed
Image Credit: US Air Force photo by Josh Plueger

DESIGN STRATEGIES

A. Ensure that contiguous, safe pedestrian paths are provided at all times during construction, particularly along heavily traveled pedestrian routes. Coordination with adjacent properties, including those under construction, should occur to ensure seamless pedestrian paths are provided. Routes should be as direct as possible, although it is understood that the paths may need to be widened or re-routed during the construction process

B. Consider cladding construction fences with public art pieces, photographs or other aesthetic elements.

C. Ensure that construction sites are appropriately lighted; incorporate temporary lighting elements that illuminate the pedestrian way.

D. Ensure that temporary construction elements do not block site lines for vehicles at intersections or create low-visibility locations that may be unsafe for pedestrians.

E. Coordinate with the relevant County agencies to appropriately locate temporary construction yards and related activities so that their impacts on surrounding residents and businesses, as well as with the street network, can be minimized.

7E INTERIM PARK DESIGN

Parks may evolve over time as developments are phased and as collective efforts to create the park network are implemented. Some parks may be built on rooftops of buildings or top decks of parking structures, thus their construction may be phased with the construction of the associated structure. Ideally, public parks and amenity spaces will be provided with each phase of development; however, temporary parks may help to meet a development's need for open space until the final parks within the development can be constructed. Interim parks should include fundamental elements from the County's Urban Parks Framework.

Reston, VA

Tysons, VA

DESIGN STRATEGIES

A. Include both planted and hardscape features where appropriate.

B. Incorporate low-cost, temporary planting strategies such as annuals and shrub plantings to create visual interest.

C. Consider economical structures in lieu of trees to provide shade and shelter where interim park conditions are expected to remain for less than five years. Alternatively, plant and maintain trees in a manner that they may be relocated to final locations in a final park design.

D. Incorporate economical, but high-quality amenities such as benches, trash receptacles, lighting, and play equipment that offer places to rest, play and socialize. These elements may be re-used for completion of the final park design.

E. Provide for both active and passive recreation opportunities. Recreation opportunities may be provided through temporary facilities and furnishings (such as interim playspaces or equipment, moveable tables and chairs, temporary athletic fields or green spaces) or by programming spaces with a variety of activities (such as food trucks, live performances, fitness classes, or similar events).

F. To manage expectations, provide signage that explains the temporary nature of the public park.

TOP
Temporary park with creative, low-cost outdoor dining and seating options
Image Credit: David Madison Photography

BOTTOM
Temporary park with a painted ground surface and movable planters; food trucks activate the space during lunch hours
Image Credit: Arts Council of Fairfax

7F INTERIM PLACE-MAKING

Interim development creates an opportunity to provide placemaking on sites. Interim parks, the reuse of existing buildings, and interim structures can help to build and brand CRDs and CRAs as destinations and can serve the needs of the community until the ultimate build-out occurs.

Appropriate site selection for interim placemaking locations is important. Sites should be of a manageable scale and located in a place that can be activated easily by users.

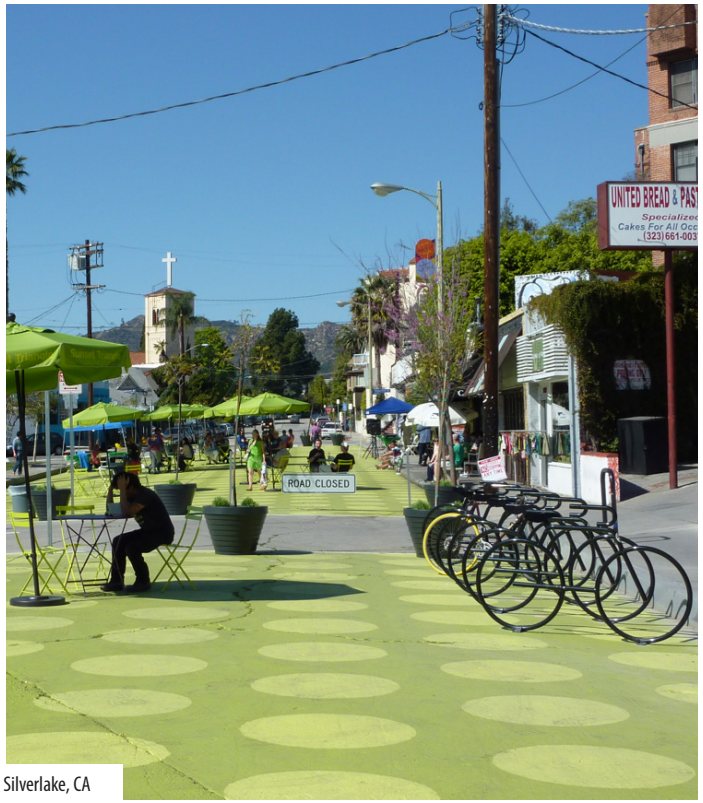
DESIGN STRATEGIES

A. Consider the interim use of existing buildings or new interim structures on site for pop-up or short term retail or entertainment space.

B. Design surface parking lots to be flexible so they can accommodate a variety of programs or uses; provide landscaping, shade structures, and/or movable furniture to allow them to be used as parks, farmers' markets, festivals, or gathering spaces.

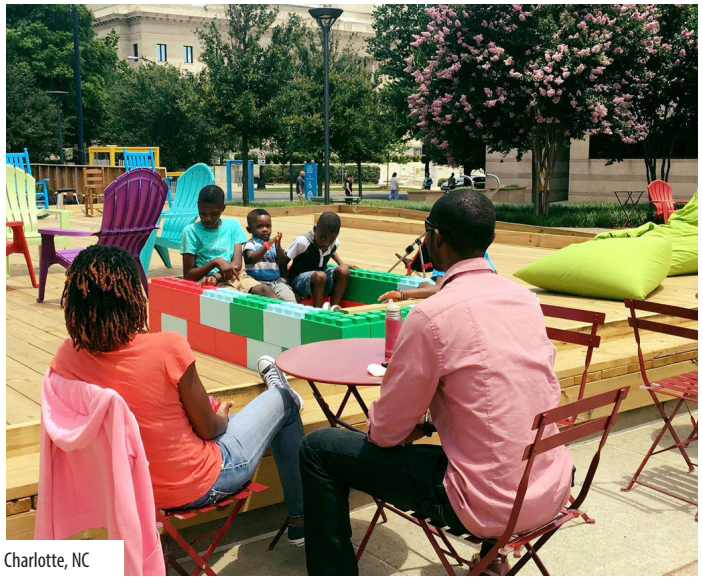
C. Consider temporary art installations at key locations to help enliven the space and create visual interest.

LEFT
Underutilized block transformed from roadway into a safe, pleasant, and vibrant public space
Image Credit: Anna Peccianti



Silverlake, CA

RIGHT
An interim public space with play features
Image Credit: KaBOOM!


Charlotte, NC

DESIGN STRATEGIES (CONTINUED)

D. Designate space for food trucks as an additional element that adds vitality and draws people to a site.

E. Consider collecting usage data on the temporary improvement to inform the final design if an interim project may lead to permanent construction.

Tampa, FL

Annandale, VA

San Francisco, CA

TOP
Parklet with musical instruments, planters and temporary art creates an interim gathering place
Image Credit: Urban Conga

BOTTOM LEFT
Parking lot designed for multiple, temporary uses such as music events
Image Credit: Fairfax County

BOTTOM RIGHT
Temporary outdoor food hall surrounded by new development; food venues create activity and promote increased use of outdoor spaces of the site
Image Credit: Envelope A+D

A APPENDIX

A1 TREE PLANTING DETAILS, SUGGESTED TREE AND PLANT LIST, AND ALTERNATIVE TREE PLANTING DETAILS

The Public Facilities Manual (PFM) provides tree planting design recommendations and a list of approved tree species for planting in public spaces.

In the CRDs and CRAs, a unique palette of trees and other landscaping has been selected as an alternative to the guidance in the PFM. Tree and plant species were selected based on hardiness, low maintenance, drought tolerance, texture, and form to provide a diverse and resilient landscape palette that is sustainable in an urban environment. The list is not exhaustive; other tree types may be specified as long as the types align with the criteria as outlined in these Guidelines. The list indicate appropriate planting locations and their anticipated size at maturity for each tree and plant species.

The PFM has specific requirements for tree wells for Category III and IV street trees. However, this guidance may not always be feasible to implement in urban environments. In such instances, the following tree planting details may be substituted for those in the PFM, depending on available space, specific streetscape conditions, and desired character, if warranted by the site-specific conditions. Final determination of appropriate tree planting methods should be done in consultation with the County's Urban Forestry Management Division. The following graphics illustrate different methods for planting trees depending on site conditions.

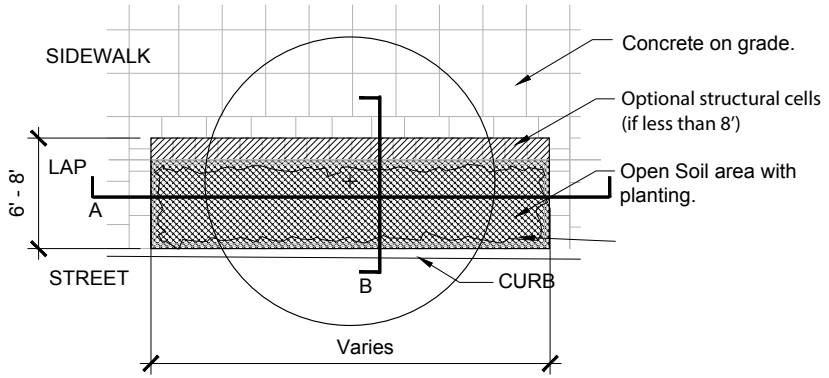
- *Graphic 22: Open Soil Tree Well Planting Detail*
- *Graphic 23: Covered Tree Well Planting Detail*
- *Graphic 24: Connected Tree Well Planting Detail with an Amenity Zone*
- *Graphic 25: Connected Tree Well Planting Detail without an Amenity Zone*
- *Graphic 26: Alternative Design Strategy 2: Structural Cell Supporting Sidewalk*
- *Graphic 27: Alternative Design Strategy 3: Cantilevered Sidewalk*

Washington, DC

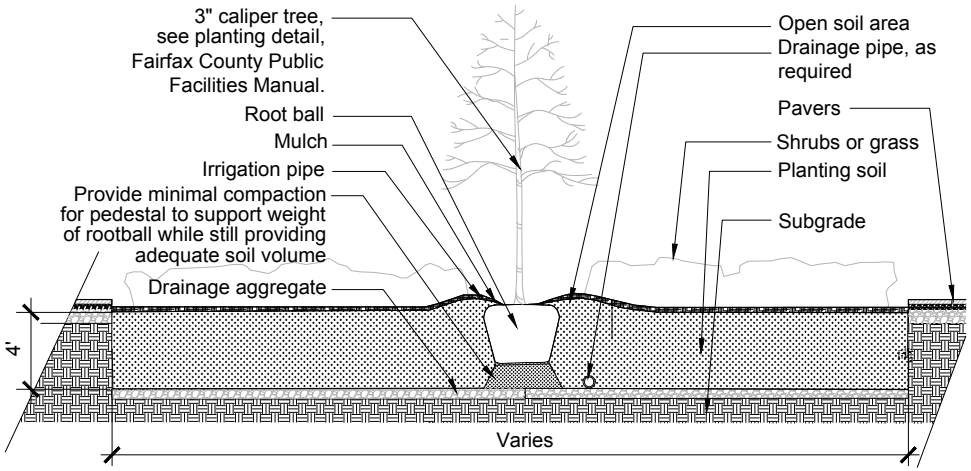
BOTTOM
Sidewalks cantilevered over tree well provides uncompacted soil for tree roots to grow under hardscaping
Image Credit: Fairfax County

GRAPHIC 22: OPEN SOIL TREE WELL PLANTING DETAIL

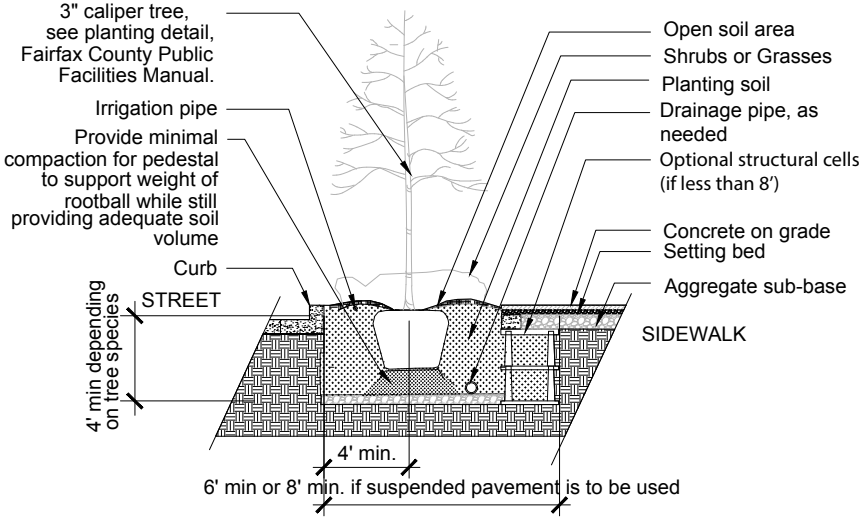
A1.1 TREE PLANTING DETAILS



Plan

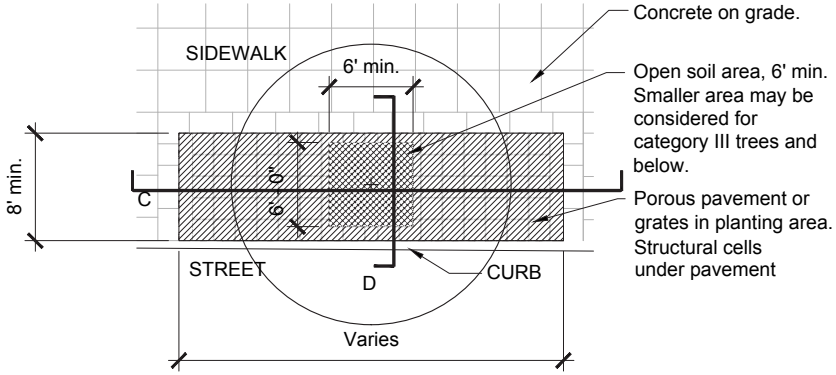


Section A

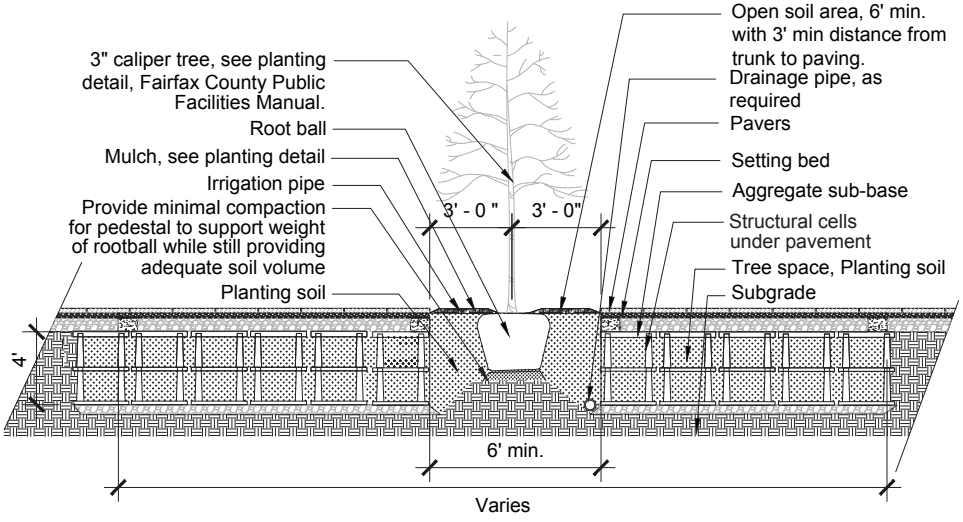


Section B

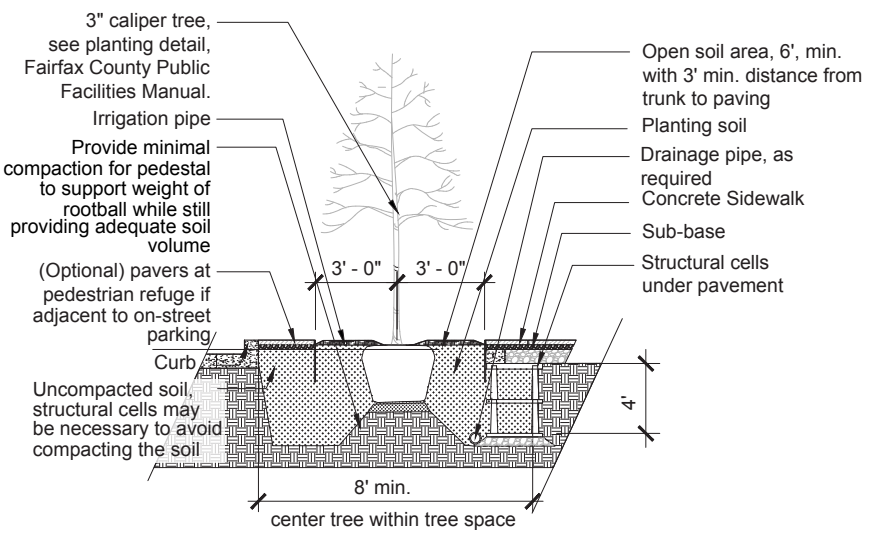
GRAPHIC 23: COVERED TREE WELL PLANTING DETAIL



Plan

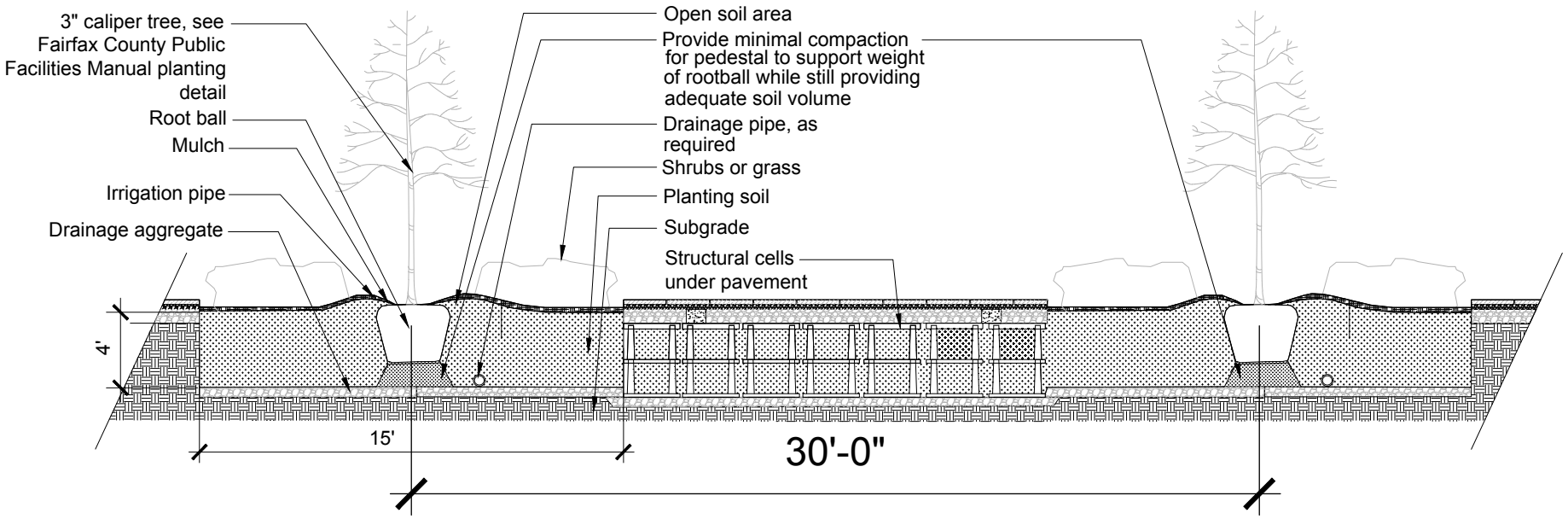


Section C

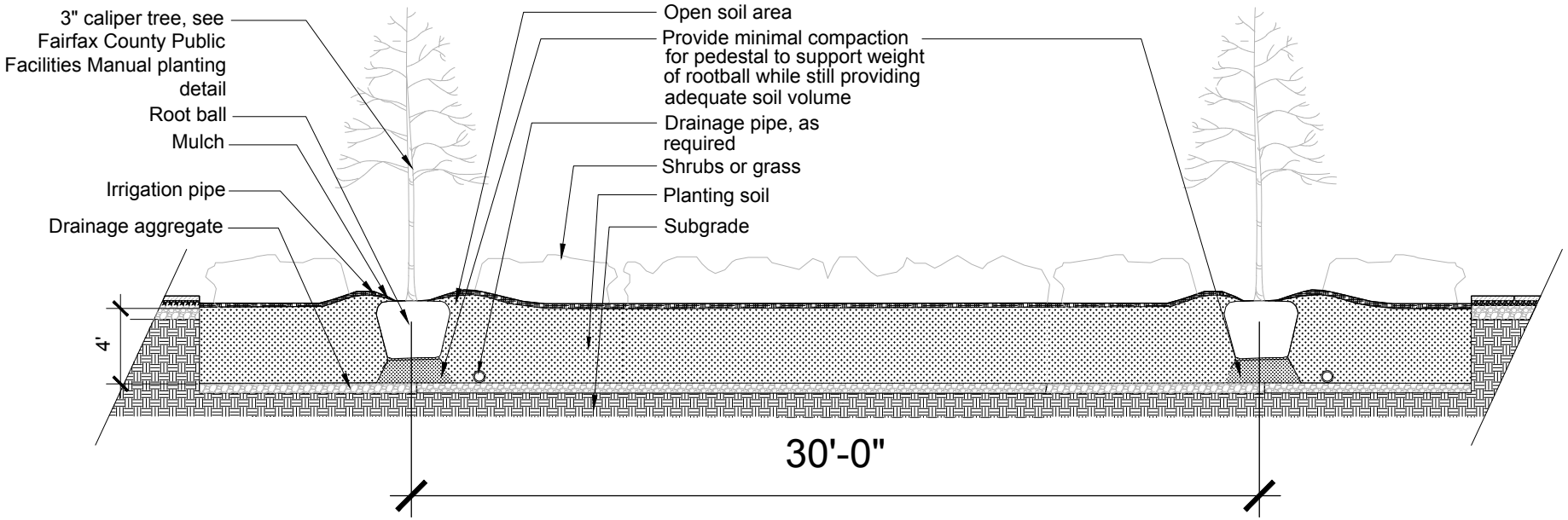


Section D

GRAPHIC 24: CONNECTED TREE WELL PLANTING DETAIL WITH AN AMENITY ZONE



GRAPHIC 25: CONNECTED TREE WELL PLANTING DETAIL WITHOUT AN AMENITY ZONE



A1.2 TREE AND PLANT LIST

CATEGORY I, II, III, AND IV TREES

COMMON NAME	SCIENTIFIC NAME	NATIVE	PLAZA	STREET	PARK	LID	AVG. HGT/ SPREAD
Category IV							
London Plane Tree	Platanus acerifolia 'Bloodgood'			X		X	60'-100'/80'
Sycamore	Platanus occidentalis	X			X	X	75'-100'/75'-100'
Swamp White Oak	Quercus bicolor	X	X	X*	X	X	50'-60'/50'-60'
Willow Oak	Quercus phellos	X		X	X		40'-60'/30'-40'
Northern Red Oak	Quercus rubra	X	X	X	X		75'/50'-60'
Valley Forge Elm	Ulmus americana 'Valley Forge'	X	X	X	X		50'-70'/40'-50'
Category III							
River Birch	Betula nigra	X	X		X	X	30'-70'/25'-60'
Hackberry	Celtis occidentalis	X		X	X	X	40'-60'/40'-60'
Thornless Honeylocust	Gleditsia triancanthos inermis	X	X	X*		X	30'-70'/30'-70'
Black Gum	Nyssa sylvatica	X	X	X		X	30'-50'/20'-30'
Bald Cypress	Taxodium distichum	X		X		X	50'-100'/20'-35'
Category II							
European Hornbeam	Carpinus betulus		X	X			40'-60'/35'-40'
American Hornbeam	Carpinus caroliniana	X		X		X	35'-50'/20'
Persian Parrotia	Parrotia persica		X	X			15'-40'/15'-30'
Eastern Hophornbeam	Ostrya virginana	X		X	X		25'-50'/20'35'
Category I							
Columnar Red Maple	Acer rubrum 'Columnaris'			X			60'/15'
Columnar European Hornbeam	Carpinus betulus 'Columnaris'			X*			30'-50'/20'-30'
Princeton Sentry Gingko	Ginkgo biloba 'Princeton Sentry'		X	X*			50'-80'/30-60'

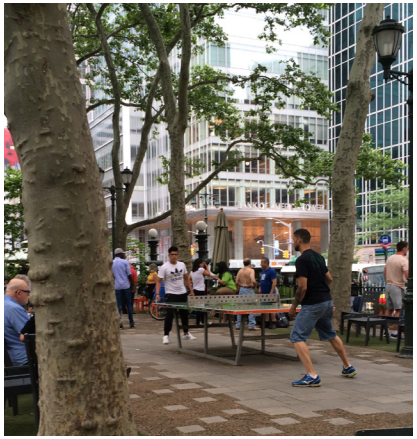
* Note:
1. Swamp white oak is vulnerable to air pollution.
2. Thornless Honeylocust is shade vulnerable, avoid planting in the proloned shaded areas.
3. Columnar European Hornbeam is vulnerable to flood and salt. Avoid flood prone areas and de-icing salt
4. Princeton Sentry Gingko is vulnerable to flood and salt

Valley Forge Elm

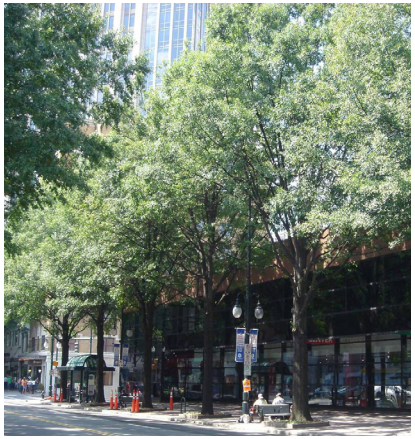
Silver Linden

Northern Red Oak

Columnar European Hornbeam



London Plane Tree



Willow Oak

Swamp White Oak

River Birch

CATEGORY II AND III FLOWERING TREES

COMMON NAME	SCIENTIFIC NAME	NATIVE	PLAZA	STREET	PARK	LID	AVG. HGT/SPREAD
Category III							
Yellowwood	Cladrastris kentukea	X	X		X		30'-50'/40'-55'
Category II							
Serviceberry	Amelanchier arborea	X	X	X		X	15'-30'/20'
Serviceberry	Amelanchier canadensis	X			X	X	10'-15'/10'-20'
Eastern Redbud	Cercis canadensis	X	X		X		20'-30'/25'-35'
Flowering Dogwood	Cornus florida 'Appalachian Spring' or 'Cherokee Princess'	X	X		X		15'-30'/15'-30'
Sweetbay Magnolia*	Magnolia virginiana	X	X	X	X	X	40'-50'/15'-25'
Sourwood	Oxydendrum arboreum		X				20'-50'/10'-25'
Sassafras	Sassafras albidum	X			X	X	20'-30'/10'-20'
Persimmon	Diospyros virginiana	X			X	X	30'-80'/20'-35'

*Notes:

5. Sweetbay Magnolia is not drought tolerent.

Flowering Dogwood

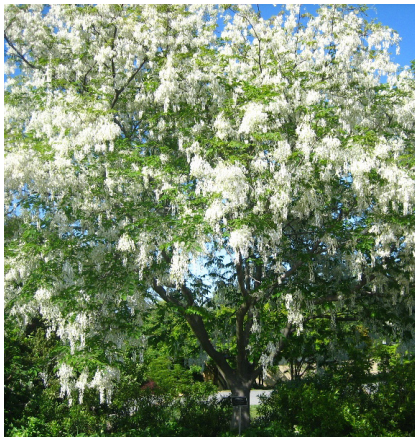
Carolina Silverbell

Serviceberry

Japanese Snowbell Flowers

Eastern Redbud

Sourwood



Yellowwood

SHRUBS

COMMON NAME	SCIENTIFIC NAME	NATIVE	PLAZA	STREET	PARK	LID	AVG. HGT/SPREAD
Red Chokeberry/Choke Cherry	Aronia arbutifolia	X	X	X	X	X	2'/4'
False Indigo-bush	Amorpha fruticosa	X	X		X	X	10'/10'
American Beautyberry	Callicarpa americana	X	X		X	X	3'/3'
Sweet Pepperbush	Clethra alnifolia	X	X		X	X	10'/10'
Midwinter Fire Red Twig Dogwood	Cornus sanguinea 'Midwinter Fire'			X	X	X	5'-6'/5'-6'
Red Twig Dogwood	Cornus sericea	X	X		X	X	3'-6'/10'-15'
Witch Hazel	Hamamelis virginiana	X			X	X	15'-20'/15'-20'
Oak Leaf Hydrangea	Hydrangea quercifolia			X	X		5'-6'/5'-6'
Inkberry Holly	Ilex glabra	X	X		X	X	3'-5'/3'-5'
Common Winterberry	Ilex verticillata	X	X	X	X	X	3'-12'/3'-12'
Virginia Sweetspire	Itea virginica	X	X	X	X	X	3'-6'/3'-6'
Northern Bayberry	Myrica pennsylvanica	X	X	X	X	X	5'-6'/5'-6'
Common Ninebark	Physocarpus opalifolius	X	X		X		5'-8'/4'-6'
Winged Sumac	Rhus coppalinum	X			X	X	7'-15'/5'-12'
Densiformis Spreading Yew	Taxus x media 'Densiformis'		X	X	X		4'/8'
Possumhaw Viburnum	Viburnum nudum	X	X	X	X	X	5'-12'/5'-12'
Blackhaw Viburnum	Viburnum prunifolium	X	X	X	X	X	12'-15'/6'-12'

Virginia Sweetspire

American Beautyberry

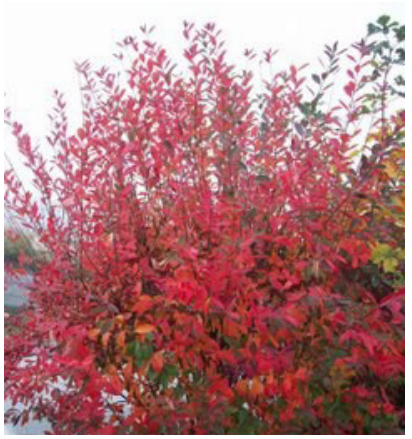
Densiformis Spreading Yew

Oak Leaf Hydrangea

Common Ninebark

Common Winterberry

Midwinter Fire Red Twig Dogwood



Red Chokeberry

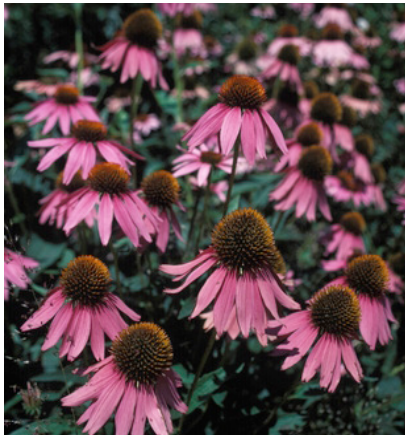
ORNAMENTAL GRASSES, PERENNIALS, AND GROUND COVERS

COMMON NAME	SCIENTIFIC NAME	NATIVE	PLAZA	STREET	PARK	LID	AVG. HGT/SPREAD
Blue Star	Amsonia tabernaemontana	X		X	X		18″/18″
Big Bluestem	Andropogon gerardii	X	X	X	X		5′-7′/2′-3′
Swamp Milkweed	Asclepias incarnata	X			X	X	1′-3′/2′-3′
Butterflyweed/Milkweed	Asclepias tuberosa	X		X	X	X	30″/24″
Wild Blue Indigo	Baptisia australis	X	X	X	X	X	3′-5′
Creek Sedge	Carex amphibola	X	X	X	X	X	12″/18″
Pennsylvania Sedge	Carex pennsylvanica	X			X	X	12″/18″
Tussock Sedge	Carex stricta	X			X	X	18″/12″
River Oats	Chasmanthium latifolium	X	X	X	X	X	30″/48″
Turtlehead	Chelone glabra	X		X	X	X	18″/12″
Tickseed	Coreopsis verticillata 'Moonbeam'	X		X	X		18″/18″
Purple Coneflower	Echinachea purpurea			X	X		24″/12″
Purple Lovegrass	Eragrostis spectabilis	X	X	X	X	X	1′/2′
White Wood Aster	Eurybia divaricata	X	X	X	X		12″-30″/18″-30″
Bloody Cranesbill	Geranium sanguineum			X	X		9″-18″/12″-18″
Alumroot	Heuchera americana	X	X		X		12″/18″
Virgina Ginger	Hexastylis virginica	X			X	X	6″-12″
Iris	Iris veriscolor			X	X	X	24″/12″
Blazingstar	Liatris spicata	X	X		X	X	24″/12″
Allegheny spurge	Pachysandra procumbens	X			X	X	12″/24″
Golden Ragwort	Packera aurea	X	X		X	X	12″/24″
Switchgrass	Panicum virgatum		X	X	X	X	36″/36″-72″
Creeping Phlox	Phlox stolonifera	X	X		X	X	6″-18″
Orange Coneflower	Rudbeckia fulgida var. fugida	X	X	X	X	X	24″/24″
May Night Meadow Sage	Salvia nemorosa 'May Night'			X	X		18″/18″
Little Bluestem	Schizachyrium scoparium	X	X	X	X	X	30″/24″
Woolgrass	Scirpus cyperinus	X	X	X	X	X	4′/2′
Autumn Joy Sedum	Sedum 'Autumn Joy'			X	X		18″/18″-24″
Goldenrod	Solidago spp.	X	X	X	X		2′-6′/3′-4′
Indian Grass	Sorghastrum nutans	X	X	X	X		36″-60″/12″-24″
New England Aster	Symphyotrichum novae-angliae	X	X	X	X		36″-72″/24″-36″

Turtlehead

Blue Star

Tussock Sedge



Purple Coneflower

Indian Grass

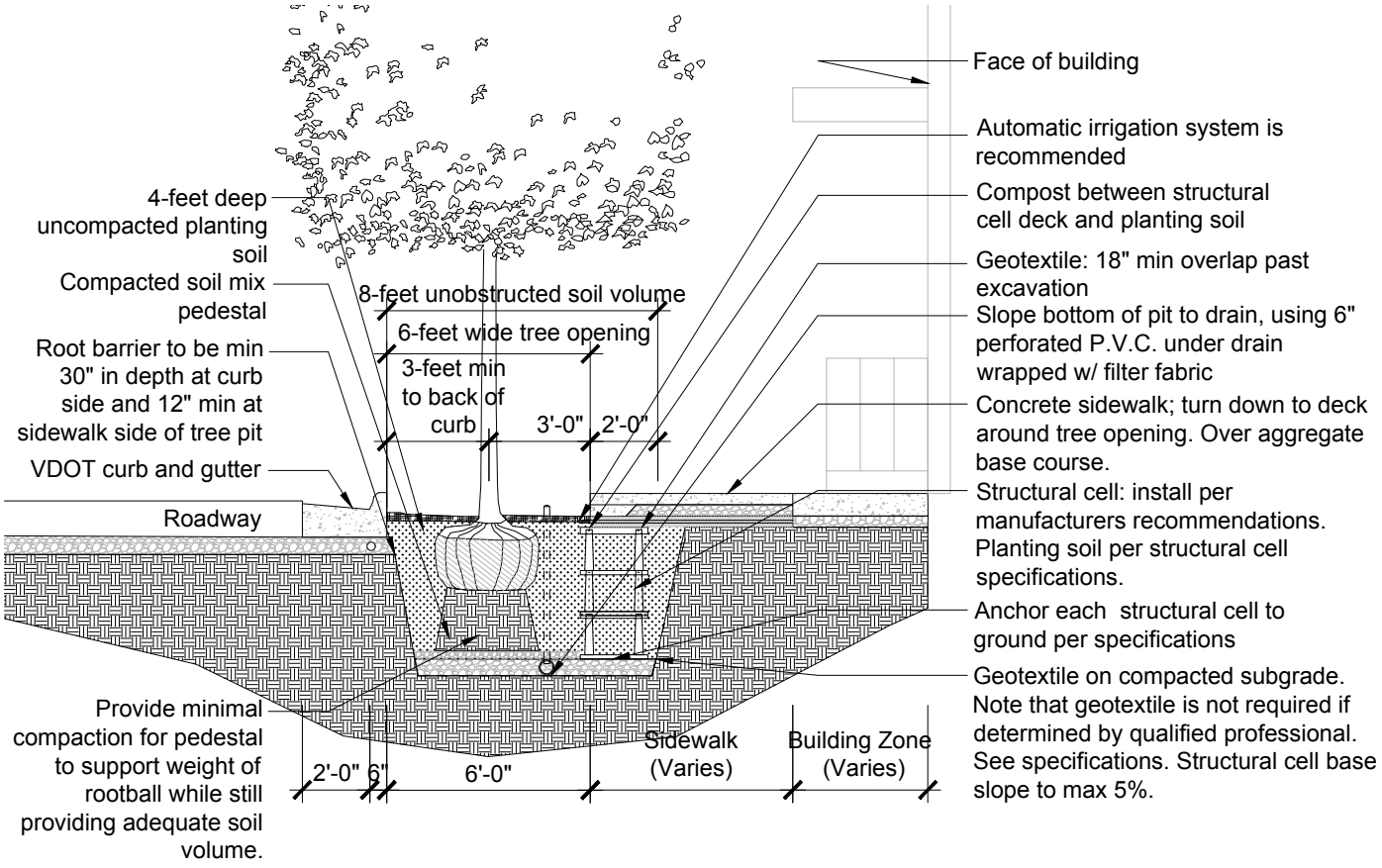
Butterflyweed

Autumn Joy Sedum

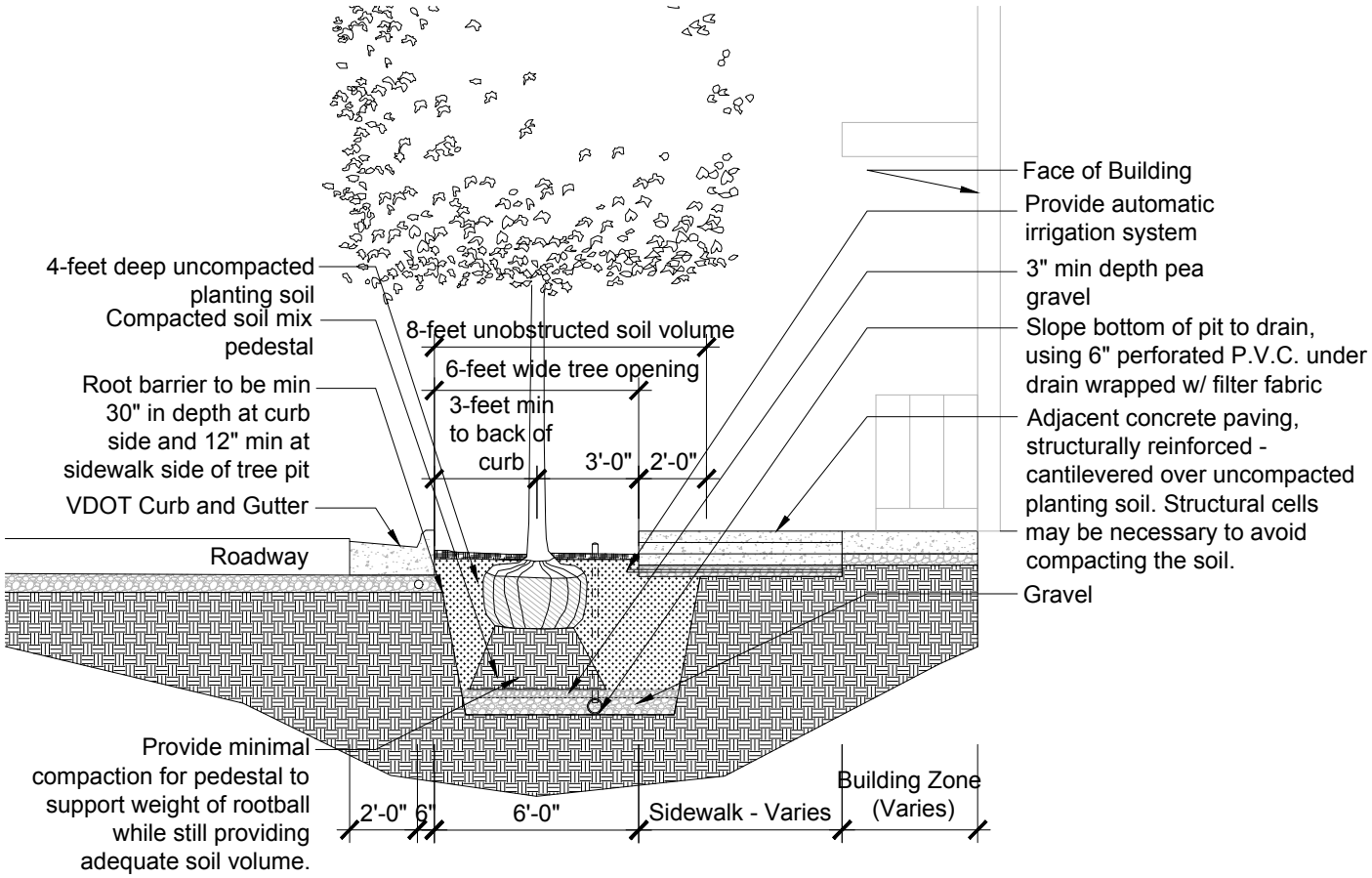
Switchgrass

A1.3 ALTERNATIVE TREE PLANTING DETAILS

GRAPHIC 26: ALTERNATIVE DESIGN STRATEGY 2: STRUCTURAL CELL SUPPORTING SIDEWALK



GRAPHIC 27: ALTERNATIVE DESIGN STRATEGY 3: CANTILEVERED SIDEWALK



A2 SUSTAINABLE DESIGN TOOLBOX

Modern development strategies no longer view stormwater management as stormwater disposal. Modeled after natural systems, Low Impact Development techniques (LIDs) are a preferred stormwater management approach. LIDs aim to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Instead of conveying and treating stormwater in large, land intensive facilities, LIDs address stormwater through smaller, more cost-effective landscape features known as Integrated Management Practices (IMPs). LID techniques can reduce runoff volumes entering local streams and may be easier to incorporate into developed areas than more traditional detention and retention ponds. Many components of the urban environment have the potential to integrate LID features. This includes not only open space, but also rooftops, streetscapes, parking lots, sidewalks, and medians.

Stormwater strategies should be developed at the project's conceptual design stage so that features can be integrated into the site to benefit the overall project. A three-tiered strategy should be employed for stormwater management. The first tier should focus on creating an efficient site design, minimizing the extent of impervious surface, and maximizing native vegetation to reduce stormwater runoff. Site features such as building structures, utility corridors, and parking should be sited to reduce the amount of impervious surface. The second tier should employ LIDs, and, finally, the third tier should address any remaining stormwater needs through more conventional retention and detention methods.

Individual LID tools that are most applicable to CRDs and CRAs are summarized in the following toolbox:

LEFT
10-foot wide vegetated bioswale within the streetscape uses low maintenance plantings and grasses to absorb rainwater
Image Credit: Fairfax County

RIGHT
Innovative green roof serves as a building amenity and screens roof equipment
Image Credit: GreenRoofGardener

BIO-RENTENTION FACILITY:
an excavated, shallow surface depression planted with specially selected native vegetation to treat and capture runoff. Bioretention facilities temporarily capture stormwater to be absorbed by plants and infiltrated into the groundwater. These facilities may include smaller facilities such as bioretnention planters or cells incorporated into a streetscape or within street medians and islands, or larger facilities such as rain gardens, where additional space is available on a site or in a streetscape. In addition to their stormwater management functions, bioretention facilities can be designed to serve as aesthetic features to enhance the site or streetscape.

Applications: Bioretention facilities should be located in well-drained soils and can be located adjacent to sidewalks, walkways and driveways within the Landscape Panel, in the Building Zone, in parking lots, or within other public spaces. Native vegetation that thrives in wet conditions should be planted to enhance the water absorption capabilities of the rain garden. Educational signage and other interpretive elements may be included to illustrate how bioretention facilities can reduce stormwater runoff and benefit the larger watershed.

Image Credit: Environmental Protection Agency

Portland, OR

REFORESTATION:
refers to the replanting of a portion of the site with trees that will eventually create a significant canopy. Natural forests have multiple layers of canopy from low level ground cover to shrubs to large shade trees.

Applications: Reforestation can occur in both natural areas and developed areas, including riparian corridors, common greens and other park spaces. Reforestation and planting of trees near picnic areas, pavilions, spectator areas, playgrounds, benches, trails, and other built features will enhance the environment, provide shade, and create a sense of place.


Image Credit: ASLA

GREEN ROOF:
a roof of a building or structure (such as a parking deck) that is covered with non-invasive vegetation and a growing medium, planted over a waterproofing membrane. Green roofs absorb rainwater and prevent a portion of that water from running off roof surfaces and onto the ground. Green roofs provide additional environmental benefits, including insulation of the underlying building, wildlife and pollinator habitat, and lowering ambient air temperature. They can also provide an outdoor fresh-air experience, which may be beneficial in an urban environment.

Applications: Green roofs can be put on many types of buildings; however, they are relatively expensive due to structural requirements (related to the load placed on buildings), waterproofing, soil substrate, and plantings. Wood frame buildings pose additional challenges for installing green roofs due to the potential for water intrusion and additional loads on a wooden structure. Green roofs should be considered for sites where they provide multiple benefits, such as providing outdoor common space and increasing energy efficiency while also off-setting stormwater demands.


Image Credit: Fairfax County

VEGETATED SWALE:
a broad, shallow channel that is densely planted with a variety of trees, shrubs, and/or grasses. Vegetative swales may be utilized in lieu of pipes to convey stormwater naturally and are beneficial in accommodating infiltration, reducing runoff volume, incorporating native vegetation, and filtering pollutants.

Applications: Vegetated swales are an economical alternative to piping and may be constructed in the Landscape Panel, Building Zone, parking lot, plaza or park and, if designed in an aesthetically pleasing way, can be an open space amenity.

NATURALIZED INFILTRATION BASIN:
an earthen structure constructed either by impoundment of a natural depression or by excavation that provides temporary storage and infiltration of stormwater runoff.

Applications: Existing and new stormwater management basins can be naturalized with native plantings to aid infiltration and to provide wildlife habitat. Basins can be planted with native wildflowers and seasonal grasses that are both attractive and help restore ecosystem services.


Image Credit: Fairfax County

PERVIOUS PAVEMENT:
a permeable pavement underlain by a uniformly-graded stone bed which provides temporary storage for stormwater runoff and promotes infiltration. The pavement surface may consist of porous concrete or porous structural pavers. The use of pervious pavement manages stormwater beneath the surface, minimizes disruption of additional areas for the management of stormwater and reduces the costs associated with construction of a stand-alone stormwater management facility.

Applications: Pervious pavement can be used in parking areas, in plazas, or for recreational courts, trails and certain walkways, as well as within the Amenity Zones of streetscapes. Use of pervious pavement may not be practical in flood-prone areas where the water table is elevated, where sediment and leaf litter will quickly fill the porous voids, or where there are steep grade changes. For large parking lots, a mix of surface types that include turf parking with a gravel base, aggregate paving for traffic aisles, and pervious paving for parking stalls should be considered.


Image Credit: Fairfax County

A3 REFERENCE MATERIALS

FAIRFAX COUNTY REFERENCE MATERIALS

Arts Fairfax
https://artsfairfax.org/

ActiveFairfax Transportation Plan
https://www.fairfaxcounty.gov/transportation/bike-walk/activefairfax

Fairfax County Bicycle Master Plan
https://www.fairfaxcounty.gov/transportation/bike/master-plan

Fairfax County Bicycle Parking Guidelines
https://www.fairfaxcounty.gov/transportation/sites/transportation/files/Assets/Documents/PDF/bikeprogram/parking/2024%20Fairfax%20County%20Bicycle%20Parking%20Guidelines.pdf

Fairfax County's Comprehensive Plan
https://www.fairfaxcounty.gov/planning-zoning/fairfax-county-comprehensive-plan

Fairfax County's Comprehensive Plan - Policy Plan
https://www.fairfaxcounty.gov/planning-zoning/comprehensive-plan/policy-plan

Fairfax County Environmental Quailty Advisory Council
https://www.fairfaxcounty.gov/planning-zoning/environmental-quality-advisory-council

Fairfax County Office of Community Revitalization
https://www.fcrevite.org/

Fairfax County Operational Energy Strategy
https://www.fairfaxcounty.gov/environment-energy-coordination/operational-energy-strategy#:~:text=The%20Operational%20Energy%20Strategy%20promotes,sustainable%20future%20for%20Fairfax%20County.

Fairfax County's Policy Plan Environment Element, Objective 13
https://www.fairfaxcounty.gov/planning-zoning/sites/planning-zoning/files/assets/compplan/policy/environment.pdf

Fairfax County Public Facilities Manual (PFM)
www.fairfaxcounty.gov/landdevelopment/public-facilities-manual

Fairfax County Safe Streets for All Recommendations
https://www.fairfaxcounty.gov/transportation/sites/transportation/files/Assets/Documents/PDF/PedestrianProgram/safe%20streets%20for%20all/Final%20SSFA%20Program%20Recommendations.pdf

Fairfax County Sustainability Initiatives:
https://www.fairfaxcounty.gov/environment/sustainability-initiatives

Fairfax County Urban Parks Framework, Appendix 2 in the Comprehensive Plan, Policy Plan
https://www.fairfaxcounty.gov/planning-zoning/sites/planning-zoning/files/assets/compplan/policy/parksrec.pdf

Fairfax County's Zoning Ordinance
https://www.fairfaxcounty.gov/planning-zoning/zoning-ordinance

Fairfax County's Zoning Ordinance, Article 12 Signs
https://www.fairfaxcounty.gov/planning-zoning/sites/planning-zoning/files/assets/documents/zoning/zoning%20ordinance/art12.pdf

Fairfax County's Zoning Ordinance Article, 14 Part 9, Outdoor Lighting Standards
https://www.fairfaxcounty.gov/planning-zoning/sites/planning-zoning/files/assets/documents/zoning/zoning%20ordinance/art14.pdf

One Fairfax Policy
https://www.fairfaxcounty.gov/topics/one-fairfax

Resilient Fairfax Plan
https://www.fairfaxcounty.gov/environment-energy-coordination/resilient-fairfax

The Community-Wide Energy and Climate Action Plan (CECAP)
https://www.fairfaxcounty.gov/environment-energy-coordination/cecap

ADDITIONAL REFERENCE MATERIALS

American Bird Conservancy Bird Friendly Building Design
https://abcbirds.org/wp-content/uploads/2015/04/Bird-friendly_Building_Guide_WEB.pdf

Federal Highway Administration (FWHA) Separated Bike Lane Planning and Design Guide
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/page00.cfm

International Dark-Sky Association
https://darksky.org/

National Association of City Transportation Officials (NATCO) Urban Bike Design Guidelines
https://nacto.org/publication/urban-bikeway-design-guide/

National Association of City Transportation Officials (NACTO) Urban Street Stormwater Guide
https://nacto.org/publication/urban-street-stormwater-guide/

Project for Public Spaces
https://www.pps.org/

US Green Building Council's Leadership in Energy and Environmental Design (LEED)
https://new.usgbc.org/leed

US Green Building Council's Sustainable Sites Initiative (SITES)
https://www.sustainablesites.org/

National Street Design Reference Materials

American Association of State Highway and Transportation Officials (AASHTO) "Policy on Geometric Design of Highways and Streets"
https://www.transportation.org/

Americans with Disabilities Act Accessibility Guidelines (ADAAG)
http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/background/adaag

Design and Safety of Pedestrian Facilities: A Recommended Practice of the Institute of Transportation Engineers (ITE)
https://safety.fhwa.dot.gov/ped_bike/docs/designsafety.pdf

Manual on Uniform Traffic Control Devices (MUTCD)
https://mutcd.fhwa.dot.gov/

National Association of City Transportation Officials (NACTO) Urban Street Design Guide
https://nacto.org/publication/urban-street-design-guide/

Virginia Street Design Reference Materials

Virginia Department of Transportation's Drainage Manual
http://www.virginiadot.org/business/locdes/hydra-drainage-manual.asp

Virginia Department of Transportation's Road and Bridge Specifications
https://www.vdot.virginia.gov/doing-business/technical-guidance-and-support/technical-guidance-documents/road-and-bridge-specifications/

Virginia Department of Transportation's Road Design Manual
https://www.vdot.virginia.gov/doing-business/technical-guidance-and-support/technical-guidance-documents/road-design-manual/

Virginia Department of Transportation and Department of Rail and Public Transportation's Multimodal System Design Guidelines
http://www.drpt.virginia.gov/planning/multimodal-guidelines/

Virginia Trees and Plants Reference Materials

Earth Sanga
http://www.earthsangha.org/

Plant NOVA Natives
http://www.plantnovanatives.org/

US Fish and Wildlife Service - Native Plants for Wildlife Habitat and Conservation Landscaping - Chesapeake Bay Watershed
https://www.fws.gov/Chesapeakebay/pdf/NativePlantsforWildlifeHabitatandConservationLandscaping.pdf

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