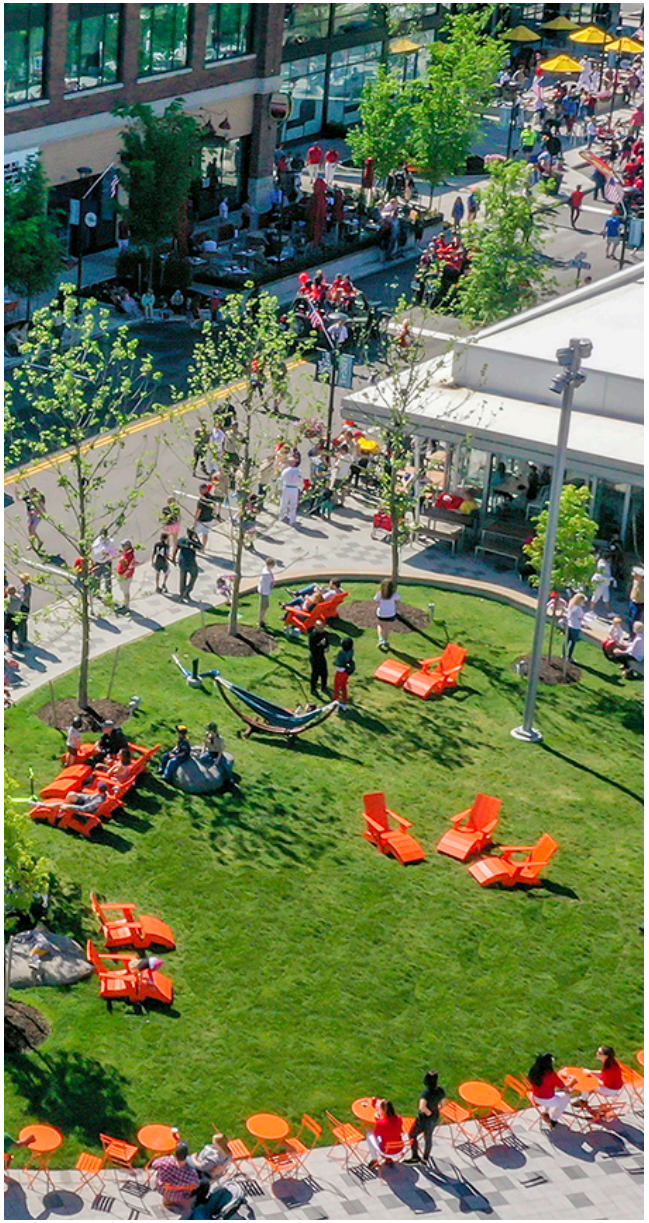


VOLUME II

DISTRICT DESIGN GUIDELINES

RICHMOND HIGHWAY

MARCH 2020

ACKNOWLEDGMENTS

FAIRFAX COUNTY BOARD OF SUPERVISORS

Jeff C. McKay, Chairman
Penelope A. Gross, Vice Chairman - Mason District
Walter L. Alcorn - Hunter Mill District
John W. Foust - Dranesville District
Pat Herrity - Springfield District
Rodney L. Lusk - Lee District
Dalia A. Palchik - Providence District
Kathy L. Smith - Sully District
Daniel G. Storck - Mount Vernon District
James R. Walkinshaw - Braddock District

FAIRFAX COUNTY PLANNING COMMISSION

Chairman, Peter Murphy - Springfield District
Vice Chairman, John Ulfelder, Dranesville District
Candice Bennett - At-Large
John Carter - Hunter Mill District
Walter Clarke - Mount Vernon District
Mary Cortina - Braddock District
Andres Jimenez - At-Large
Daniel Lagana - Lee District
Phillip Niedzielski-Eichner - Providence District
Timothy Sargeant - At-Large
Evelyn Spain - Sully District
Julie Strandlie - Mason District

ADVISORY GROUP

Jonathan Bondi, PLA, LEED AP
Jay Brinson
Ron Chase
Clay Clarke
Holly Dougherty
Mark Hendrickson
Edythe Kelleher
Elisabeth Lardner
Cathy Ledec
Chris Soule
Gretchen Walzl

PRODUCED BY THE FAIRFAX COUNTY DEPARTMENT OF PLANNING AND DEVELOPMENT

12055 Government Center Parkway, Suite 1048
Fairfax, VA 22035
www.fcrevite.org

PLANNING & DEVELOPMENT

CONSULTANT: RHODESIDE & HARWELL, INC

510 King Street, Suite 300
Alexandria, VA 22314
www.rhiplaces.com

Published March 2020

TABLE OF CONTENTS

Image Credit: MVA Architects

1 INTRODUCTION

1A OVERVIEW OF THE TWO VOLUMES OF THE DESIGN GUIDELINES

The Urban Design Guidelines for Fairfax County's Commercial Revitalization Districts/Areas (CRDs/CRAs) are contained in two documents, collectively referred to as the "*Design Guidelines*."

– **Volume I: Urban Design Guidelines for Fairfax County's Commercial Revitalization Districts and Areas (Volume I)** contains urban design principles and strategies that are applicable generally to all of the CRDs and CRAs.

– **Volume II: District Design Guidelines (Volume II or *District Guidelines*)** contains urban design guidelines that are tailored specifically for each CRD or CRA.

The two volumes of the *Design Guidelines* should be used together to inform design decisions. There may be instances where guidance provided in *Volume II* may elaborate on or contradict material provided in *Volume I*. In such instances, the guidance in *Volume II* supersedes the guidance in *Volume I*.

1B PURPOSE AND RELATIONSHIP TO THE COMPREHENSIVE PLAN

The *Design Guidelines* serve as companion documents to the Fairfax County Comprehensive Plan. The Comprehensive Plan describes desired land uses and levels of intensity of development and provides general guidance on built form and open space. The *Design Guidelines* provide detailed guidance regarding the desired character of the built environment, including site design, building massing, and the treatment of interim conditions; are used to inform the design of components of the public realm such as streetscapes, plazas, parks, and landscaped areas; and are a complement to the Comprehensive Plan for use by citizens, developers, landowners, designers, Fairfax County staff, the Fairfax County Planning Commission, and the Board of Supervisors when either planning, designing, proposing, or reviewing development proposals.

1C APPLICABLE AREA

The Richmond Highway *District Guidelines* apply to development proposals for all properties located within the Richmond Highway area. The Richmond Highway area is defined as the geographic area encompassing the following: all six of the Richmond Highway Community Business Centers (CBCs), all six of the Suburban Neighborhood Areas (SNAs), and Land Units R & Q of the Huntington Transit Station Area (TSA). There is a zoning overlay district called the Commercial Revitalization District (CRD) that is mostly analogous with the CBCs, with some minor differences. Graphic 1 depicts the boundaries of the Richmond Highway area's CBCs, SNAs, and CRDs, as well as Land-Units R & Q of the Huntington TSA.

The CBCs are planned for the greatest densities and a wide range of uses in the Richmond Highway area. These densities and uses will be supported with new transit options, including nine Bus Rapid Transit (BRT) stations and, longer-term, two Metrorail stations. The SNAs are lower in density and generally include a mix of residential and neighborhood-serving retail uses. The Huntington TSA Land Units R & Q are planned primarily for higher intensity residential development and community-serving retail uses.

This volume applies to all properties in the Richmond Highway area, regardless of whether it is in a CBC, CRD, SNA or land-units R&Q of the Huntington TSA.

1D STRUCTURE OF THE RICHMOND HIGHWAY DISTRICT DESIGN GUIDELINES

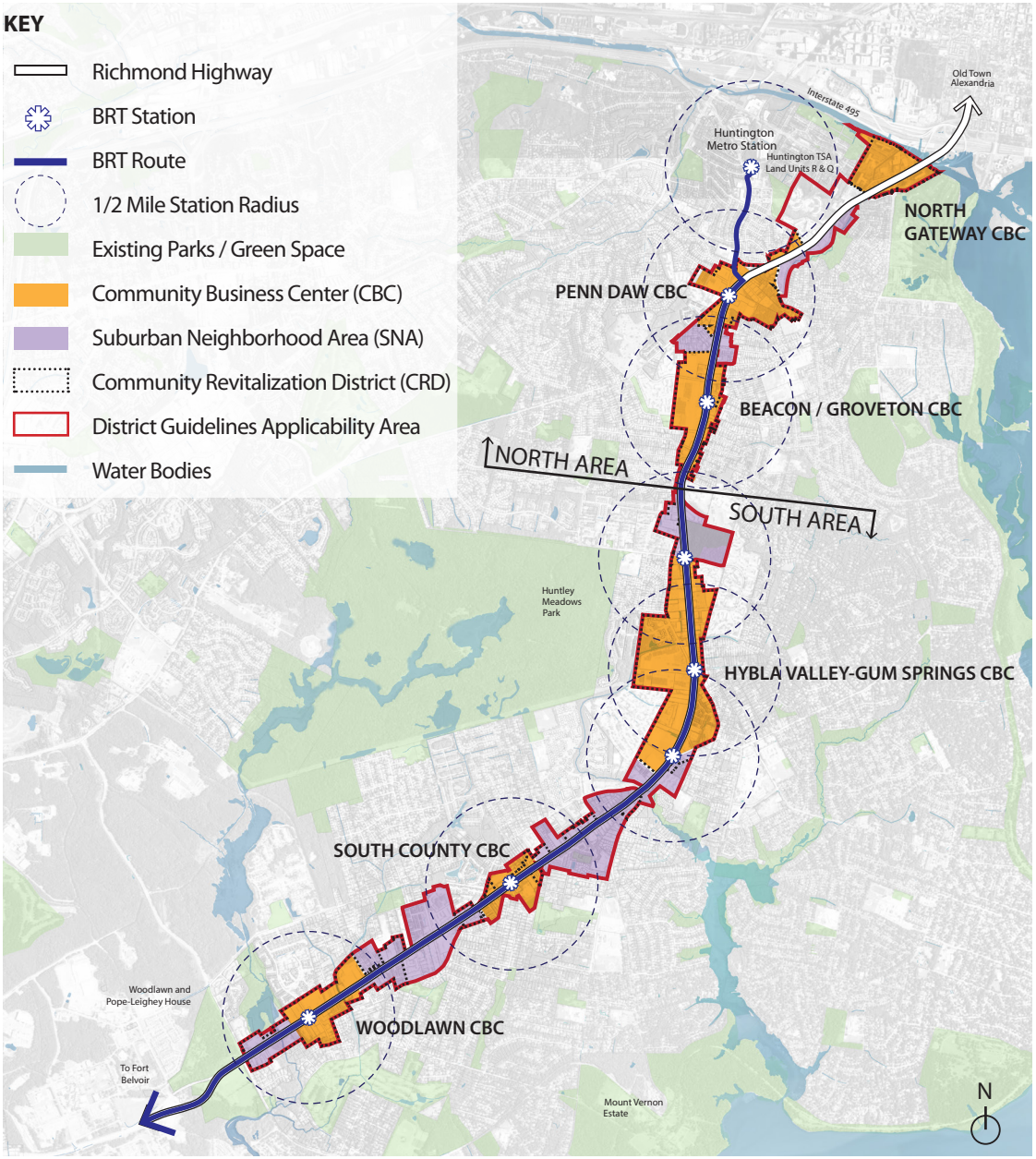
The *District Guidelines* for the Richmond Highway area are organized into seven chapters. This chapter, **Chapter 1**, introduces the *District Guidelines* and explains how and where they should be applied. **Chapter 2** presents the vision and urban design framework for the entire Richmond Highway area. **Chapter 3** provides urban design guidance for major public realm features, including streetscape paving and furnishings, trees, linear parks, and stormwater management facilities. **Chapter 4** contains building design recommendations. **Chapter 5** contains recommendations specific to the Richmond Highway Transit Boulevard[1] streetscape and frontage. **Chapter 6** provides CBC-specific guidance for urban design elements that shape and reinforce the unique character of each CBC. Finally, **Chapter 7** addresses uses that require special design considerations (such as drive-through uses, service stations, large retail sales establishments, landscaping and screening between uses, and interim streets).

In Chapters 3 through 7, topical sections are organized as follows:

- **Design Principles:** summarize each urban design element, defines the goals to be achieved, and explains the purpose of each element, as well as the desired conditions needed to successfully achieve its intent.
- **Design Strategies:** provide concepts, schemes, dimensions, and details to articulate a means to implement the ideas contained in the Design Principles. In some instances, additional Design Features and Implementation Strategies are included to supplement the design strategies.
- **Suggested Specifications:** include suggested products with model numbers, sizes, colors, and installation recommendations to illustrate the intended appearance and quality for certain design elements (see Chapter 3).
- **References:** within the topical sections, references are made to related sections of the *Volume I* guidelines, along with other relevant guidelines, standards, and resources.

1 In this document, the terms "Richmond Highway Transit Boulevard" and "Richmond Highway" are used interchangeably.

GRAPHIC 1: RICHMOND HIGHWAY AREA CBCs, SNAs AND CRDs



1E FLEXIBILITY IN APPLYING DESIGN GUIDELINES

Flexibility and agility in zoning and development review is necessary to respond to evolving development trends and technologies. The content in this document is designed to be applied as guidelines rather than as "one size fits all" requirements. The *District Guidelines* are meant to offer design guidance only, with flexibility in how a design element may be realized, provided the intent can be achieved. Thus, the *District Guidelines* are not prescriptive; architectural style, specific street furnishings, plant species, and paver types are not dictated. The suggested palette allows for flexibility and innovation.

The *District Guidelines* are not a substitute for the codes and ordinance provisions associated with the development review process. However, the County's Public Facilities Manual (PFM) does permit the recommendations in the *District Guidelines* to substitute for the PFM standards (Fairfax County PFM 2-1100).

There will be instances where the urban design and streetscape recommendations outlined in the Comprehensive Plan and the *Design Guidelines* cannot be accommodated in the manner envisioned, even with reasonable adjustment and flexibility. Where pre-existing site constraints are present, where infill or expansion of buildings or other existing features limit the ability of a development to satisfy the urban design recommendations, or when modifications to the streetscape guidelines are necessary to conform to applicable County and/or Virginia Department of Transportation (VDOT) requirements, variations may be permitted. Modifications or alternative strategies should be provided on the Development Plan in written or graphic form. An explanation of how the modification or alternative meets the intent of the Guidelines may be requested.

1F FUTURE AMENDMENTS

As the Richmond Highway area develops and evolves, the *District Guidelines* may need to be amended to respond to those changing conditions. In addition, new products, materials, and technologies, along with maintenance challenges and innovations, may provide opportunities for different design strategies. These changes should be reflected in updated versions of the *District Guidelines*.

PAGE INTENTIONALLY LEFT BLANK

Image Credit: BCT Architects

2 VISION AND URBAN DESIGN FRAMEWORK

2A COMPREHENSIVE PLAN VISION FOR THE RICHMOND HIGHWAY AREA

In March 2018, Fairfax County adopted a new Comprehensive Plan for the Richmond Highway area (Plan). This chapter describes the vision and urban design themes of the Plan and how these have informed the *District Guidelines*.

The Comprehensive Plan envisions the transformation of the Richmond Highway area into a series of distinctive and vibrant activity centers supported by a variety of multimodal transportation options. These include an interconnected street network, pedestrian and bicycle facilities, and a high-quality bus rapid transit (BRT) system between the Huntington Metrorail Station and Fort Belvoir, with a future connection to Prince William County. The Plan also envisions a future extension of the Yellow line Metrorail to Hybla Valley.

The Comprehensive Plan designates six CBCs to serve as priority redevelopment areas and focal points along the Richmond Highway. From north to south, these are North Gateway, Penn Daw, Beacon/Groveton, Hybla Valley-Gum Springs, South County, and Woodlawn.

Each CBC is envisioned as a distinct, compact, pedestrian-friendly, and transit-oriented place offering a mix of residential and non-residential uses. Through redevelopment, each CBC is planned to achieve a transit-supportive mix of uses within a one-quarter- to one-half-mile radii of the BRT stations (except North Gateway).

Other key elements of the Comprehensive Plan's vision for these CBCs include:

- An active mix of uses;
- A hierarchy of street and streetscape types;
- A network of open spaces and connected green corridors; and,
- Building design that fosters active street frontages, distinctive architecture, and compatibility with adjacent neighborhoods.

Interspersed with the CBCs along Richmond Highway, are six Suburban Neighborhood Areas (SNAs). The SNAs are envisioned as primarily lower-density residential areas with neighborhood-serving retail.

It is anticipated that properties in the Richmond Highway area will redevelop at different times. To fully achieve the goals of the Plan, coordination of infrastructure elements will be needed. This includes built infrastructure such as roads, sidewalks, crosswalks, bike trails, and other paved and built surfaces. It also includes green infrastructure such as urban parks, Ecological and Livability Spines and other green corridors, landscape panels, and additional natural elements. Together, these infrastructure components should be conceptualized and designed strategically to ensure that developments will seamlessly link these components as part of a broader network (see the 'Implementation' section of the Plan for more information).

2B URBAN DESIGN THEMES

Derived from the Plan's vision, four major urban design themes for the Richmond Highway area - Legacy, Ecology, Connectivity, and Placemaking - provide an overarching framework for these District Guidelines.

1. LEGACY

The urban environment should be designed to connect to and support heritage resources and preserve viewsheds that distinguish the Richmond Highway area. The Richmond Highway area's rich history should be expressed through its design in a way that reveals and accentuates "legacy features," including infrastructure, old road and trail alignments, Richmond Highway's role as a 20th century transportation network, pre-World War II settlement patterns, cultural assets, earlier inhabitants and businesses, and the area's aviation history. Creative urban design should interpret and commemorate these heritage features, embedding them in the design of public spaces and streetscapes and integrating them as distinguished elements of the CBCs.

2. ECOLOGY

Urban design should strengthen the relationship between people and nature throughout the Richmond Highway area by protecting, restoring, and celebrating the area's rich ecological resources. Streets, public spaces, and private developments should embrace, preserve, and rehabilitate natural systems within and adjacent to the area, while also emphasizing the value of connected ecological assets and stormwater management facilities as urban design features. Urban design should employ tools and methods such as innovative green stormwater infrastructure techniques, environmentally-friendly building design, and a network of "Ecological Spines" which "daylight" or restore local stream corridors. All of these approaches will establish a network of green corridors throughout the Richmond Highway area that provide vital open space linkages, reduce heat island effects, and improve habitat areas and ecological services.

3. CONNECTIVITY

The new grid of streets and their blocks should enable and encourage walking, bicycling, and transit use for daily transportation and recreation needs. Redevelopment should result in an interconnected network of existing and new streets that support Richmond Highway's function as a Transit Boulevard and improve access from the surrounding neighborhoods to the station, new retail services and other amenities while supporting Richmond Highway's function as a Transit Boulevard. The BRT system should be served by a series of accessible, pedestrian-friendly BRT stations and transit plazas. Moreover, a network of high-quality streetscapes and public spaces along the Richmond Highway Transit Boulevard and within the CBCs should prioritize the pedestrian experience while orienting users to the area's overall identity and sense of place.

Stockholm, Sweden

LEFT
Rehabilitated waterway combined with a public space creates an opportunity for residents to interact with nature
Image Credit: Smart Preservation

Washington, DC

Dallas, TX

TOP
Architectural design that employs a variety of techniques such as building step-backs and step-downs combined with high-quality construction materials to form a unified identity
Image Credit: GTM Architects

BOTTOM
Public space with pop-up activities that encourage creative play
Image Credit: Fairfax County

4. PLACEMAKING

Richmond Highway's sense of place is shaped by both its architecture and its public spaces.

i. Distinctive, Cohesive and Compatible Architecture

Building design should be guided by a form-based approach that encourages distinctive architecture while establishing a strong, unified identity for the area. Architectural variety and interest should be created through techniques such as step-backs and step downs, façade modulation, and varied building heights. Building design should also be used to foster appropriate transitions between higher-intensity development near BRT stations and the surrounding neighborhoods, all while creating usable outdoor amenities and maximizing sunlight.

ii. Diverse and Active Public Spaces

A variety of public spaces should serve the needs of residents and visitors. Unique public spaces - including two types of linear parks ("Ecological Spines" and "Livability Spines"), transit plazas at BRT stations, and neighborhood parks in CBCs - should function as primary organizing elements within CBCs and along Richmond Highway. The design of public spaces should consider the needs of the anticipated users to ensure that they are welcoming to a diverse population. These spaces should be designed to accommodate a range of active and passive recreational opportunities. To generate activity and foster social interaction, public spaces should be framed by, and integrated into, surrounding development. The spaces outside buildings should be activated by the buildings' ground floor design and by programmed activities, which may also serve as venues for planned events.

2C URBAN DESIGN FRAMEWORK

Urban design can influence both the form and character of the Richmond Highway area, as well as how people navigate through and experience it. The Richmond Highway area is envisioned to have both cohesive and distinctive elements. Some uniformity of elements should be carried throughout the area, while allowing each CBC to have its own unique identity.

Achieving a balance between a cohesive Richmond Highway area and the distinct identities of its CBCs requires a multi-layered urban design approach. These "layers" are described in greater detail below.

AREA-WIDE GUIDANCE

The design of the Richmond Highway Transit Boulevard plays a central role in balancing the cohesion and differentiation of the CBCs and provides the "connective ribbon" that ties the area together. Key cohesive elements along the Richmond Highway Transit Boulevard include consistent paving materials and patterns; shade trees along its entire length; a continuous, planted median accommodating the BRT; similarly designed station areas; and, distinctive buildings fronting the Richmond Highway Transit Boulevard. The trees in the median and along the streetscapes on both sides of Richmond Highway establish its defining characteristic and its memorable image.

Although the majority of development and infrastructure improvements are concentrated in the CBCs, transitional areas where CBCs and SNAs meet should be strategically coordinated. This includes both built and natural infrastructure.

SUB-AREA GUIDANCE: NORTH AREA AND SOUTH AREA

Specific urban design features (e.g., furnishings, signage and wayfinding, and building design) are used to reinforce the differences in context and character between the northern segment of the Richmond Highway area (North Gateway, Penn Daw, and Beacon/Groveton and related SNAs) and the southern segment (Hybla Valley–Gum Springs, South County, and Woodlawn CBCs and related SNAs) (see *Graphic 10*). A more contemporary aesthetic is suggested for the character and built form of the north area, while the southern portion should have a more traditional aesthetic. Chapters 3 and 4 describe how contemporary and traditional design aesthetics can be applied to elements such as furnishings and building design.

PLACE-SPECIFIC GUIDANCE

i. Building Design Along the Richmond Highway Transit Boulevard

The design of the Richmond Highway Transit Boulevard is generally consistent within the public right-of-way. It includes uniform treatments for paving, landscaping, and lighting. However, there is an ebb and flow of building frontages as these alternate between the more urban frontage of the CBCs and the wider, greener setbacks of the SNAs.

ii. Distinguishing Elements of Community Business Centers

There are specific urban design elements that distinguish each CBC. These distinguishing elements are identified in Chapter 6 and add another layer of place-specific design guidance to the area-wide and North/South approaches.

Image Credit: Oliver Design Studio

3 PUBLIC REALM FEATURES

3 PUBLIC REALM FEATURES

ORGANIZING FRAMEWORK OF THE PUBLIC REALM

This chapter provides urban design guidance for public realm features, including streetscapes, linear parks, and stormwater management facilities. Additional guidance on public realm design can be found in Chapter 5, which addresses the design of the Richmond Highway Transit Boulevard streetscape and frontage, and in Chapter 6, which includes design guidance on the urban design features that distinguish individual CBCs.

As illustrated in *Graphics 2-7*, a common set of public realm features creates an organizing framework for the Richmond Highway Transit Boulevard and for each CBC, as described below. Graphic 2 illustrates these features on an area-wide scale, while *Graphics 3-7* provide details of public realm features within each CBC.

Richmond Highway Transit Boulevard: Includes much of the BRT system and stations, adjacent vehicular travel lanes, and associated streetscape zones and plazas.

Gateway Streetscapes: These are relatively short streetscape types, running perpendicular to the Richmond Highway Transit Boulevard, that link BRT station areas to the internal street networks of CBCs and that serve as gateways into the CBCs.

Neighborhood Streetscapes: These are streetscape types that comprise much of the internal street network within each CBC.

Legacy Corridor (Hybla Valley-Gum Springs): This is a special streetscape type, which highlights and interprets the history of the Hybla Valley-Gum Springs community. *Note*: The alignment and design of the Legacy Corridor is not depicted in Graphics 7A and 7B but is addressed in Chapter 6.

Livability Spines: These are specialized streets with linear parks that have enhanced pedestrian and bicycle connectivity along both sides of the roadway. The design of Livability Spines is addressed in Section 3B.1 of this chapter.

Ecological Spines: Linear parks along enhanced or daylighted streams. Ecological Spines are located within the North Gateway, Hybla Valley-Gum Springs, and Woodlawn CBCs. The design of each of the four types of Ecological Spines is addressed in Section 3B.2 of this chapter.

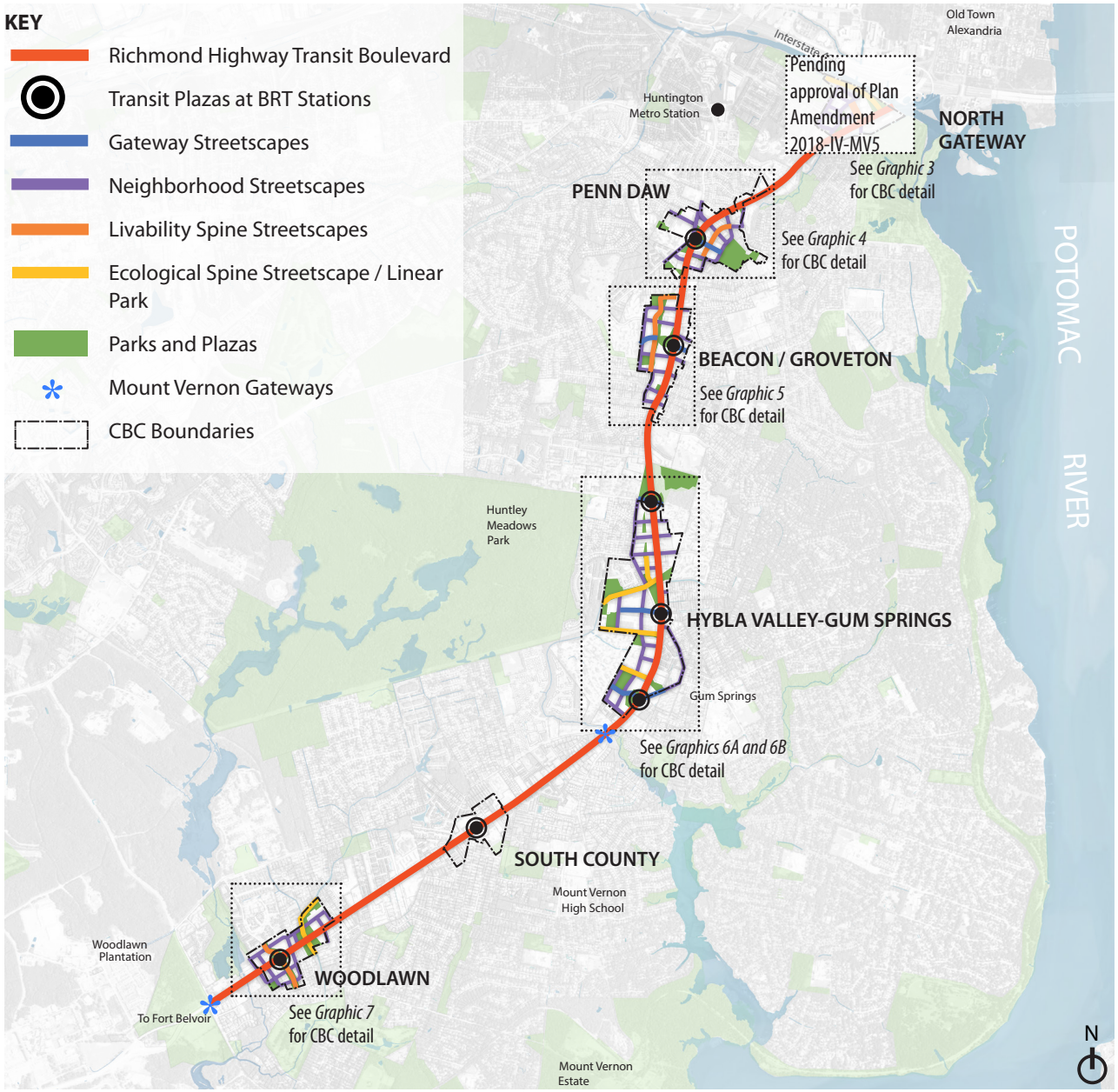
Parks and Plazas: These are the public open spaces within CBCs which serve as major focal points and gathering spaces.

Transit Plazas/Intersection Plazas: These are specialized plazas at each BRT station. *Transit Plazas* are located at street corners within private developments. *Intersection Plazas* are plazas located within the public rights-of-way between Transit Plazas and the edge of curb, where pedestrians and bicyclists mix.

Cultural Corridor (Woodlawn): This is a proposed network of multi-use trails in the Woodlawn CBC. The Cultural Corridor should link heritage destinations while highlighting and interpreting aspects of the area's history along the trail route. *Note*: The Cultural Corridor is not depicted on *Graphic 7*, showing the Woodlawn CBC, because the route had not been finalized at the time of publication.

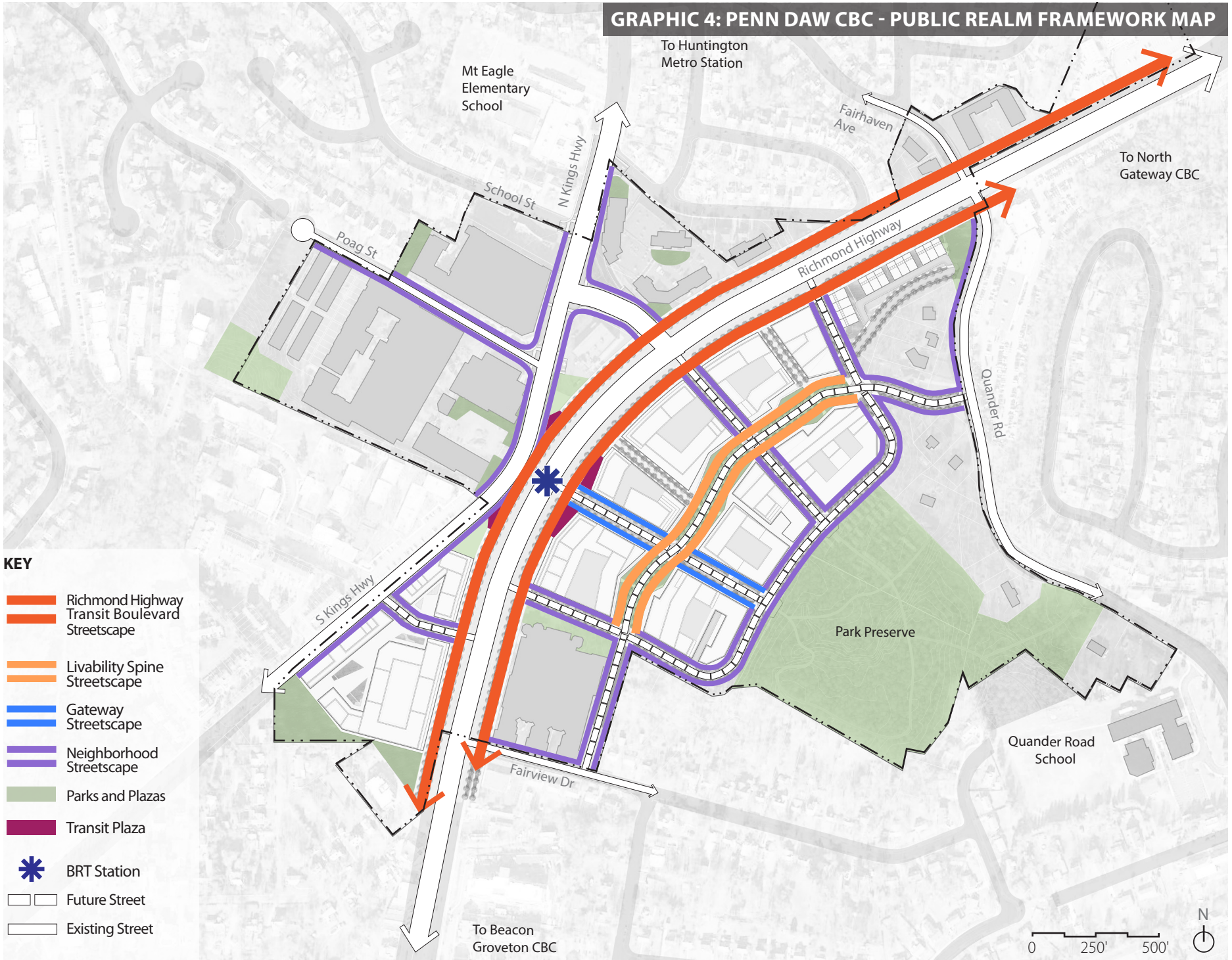
Mount Vernon Gateways: These gateways are at roadway intersections with Richmond Highway (Mt Vernon Memorial Hwy and Old Mt Vernon Rd) that lead to George Washington's estate. They should include features such as signs, public art, open spaces, lighting, and other elements that provide a sense of entry from Richmond Highway to the historic site.

GRAPHIC 2: PUBLIC REALM FRAMEWORK MAP

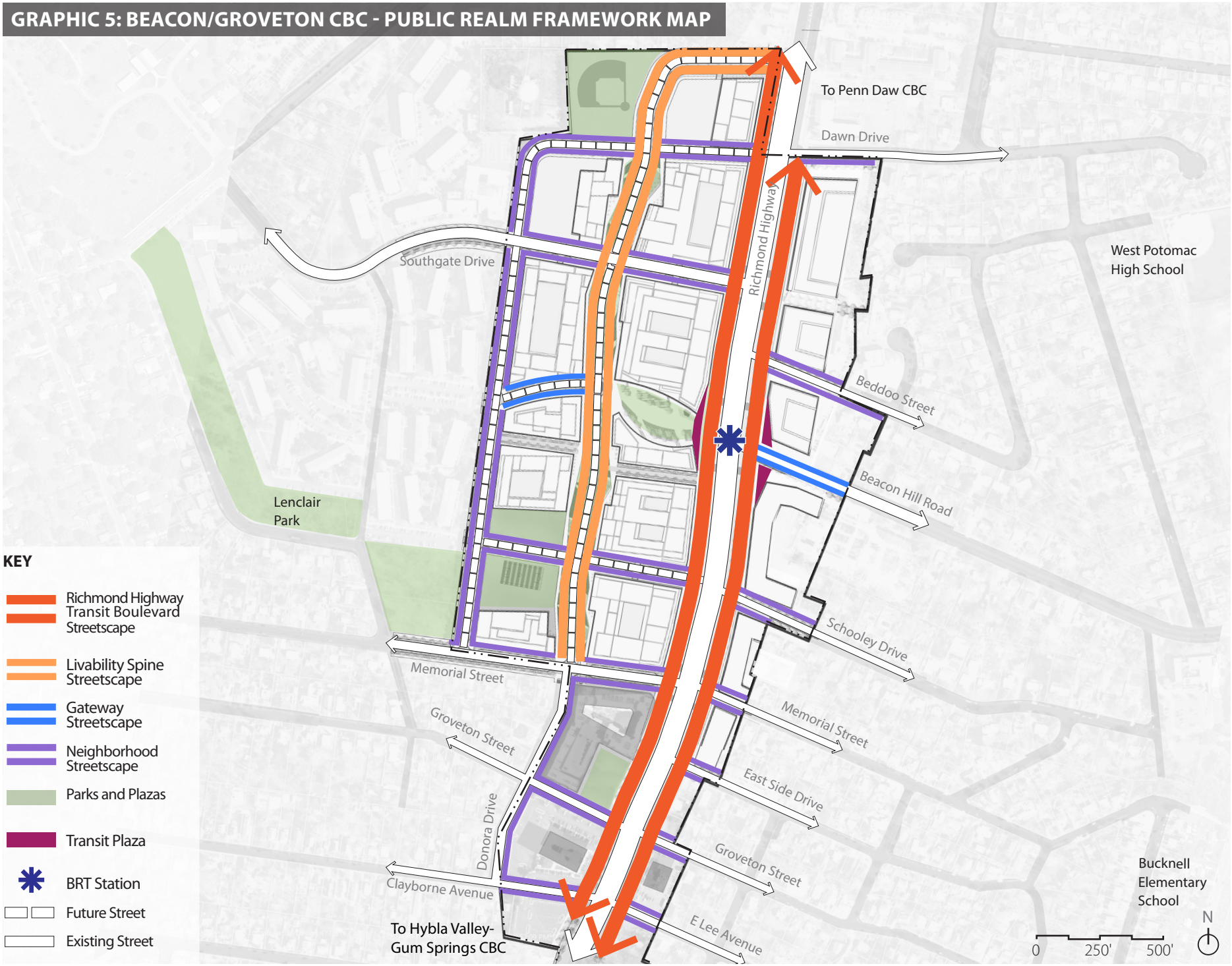


GRAPHIC 3: NORTH GATEWAY CBC - PUBLIC REALM FRAMEWORK MAP

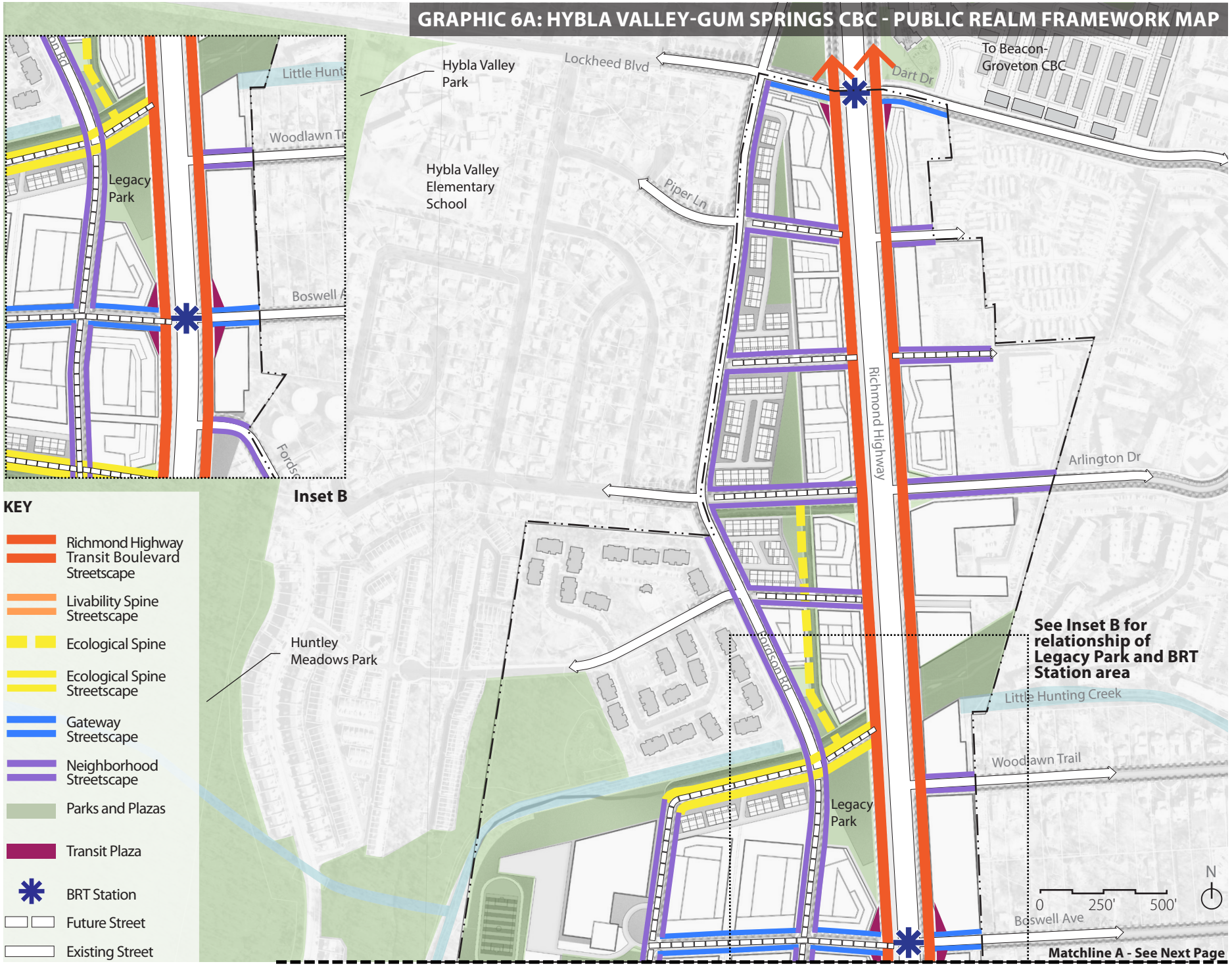
GRAPHIC 4: PENN DAW CBC - PUBLIC REALM FRAMEWORK MAP



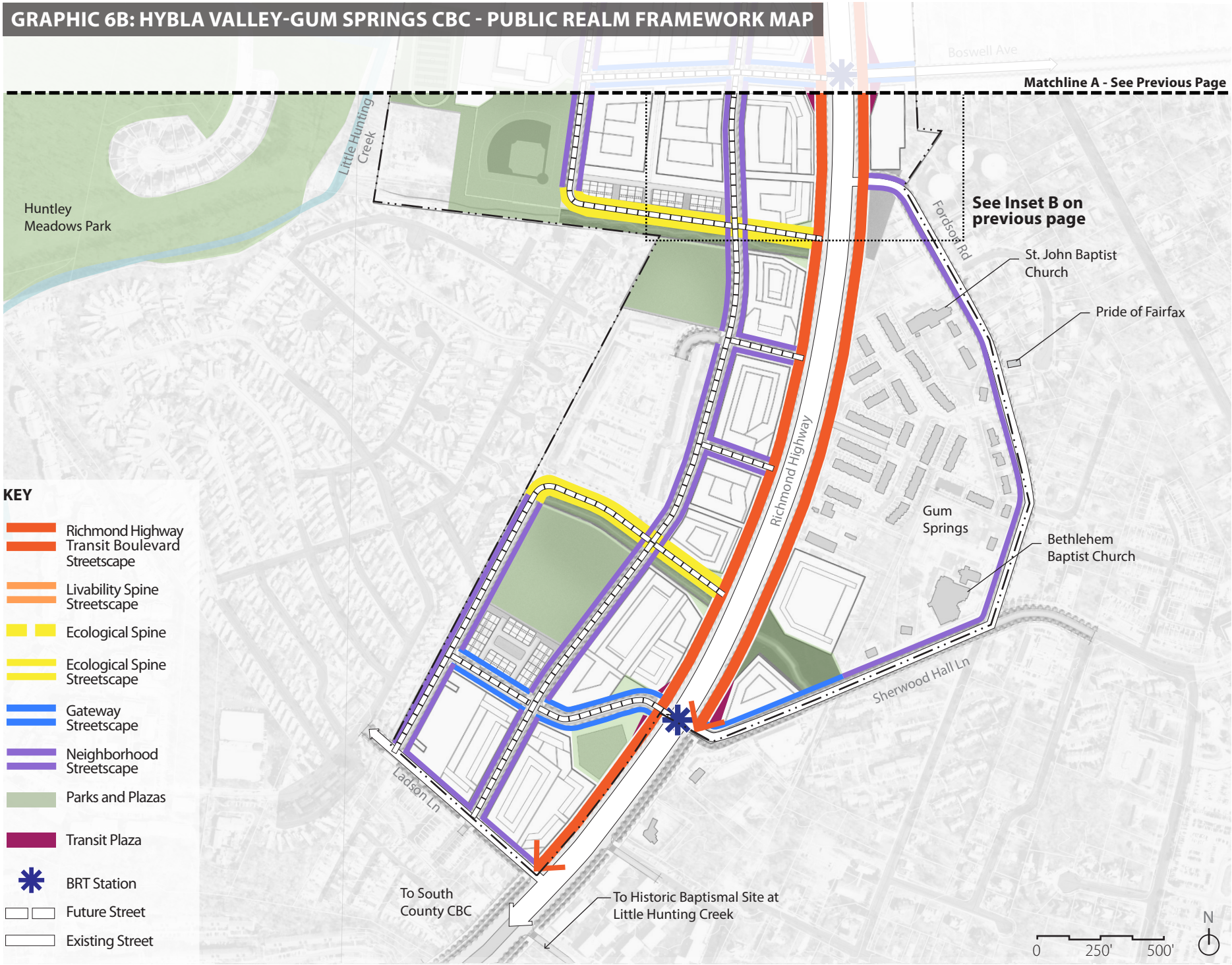
GRAPHIC 5: BEACON/GROVETON CBC - PUBLIC REALM FRAMEWORK MAP



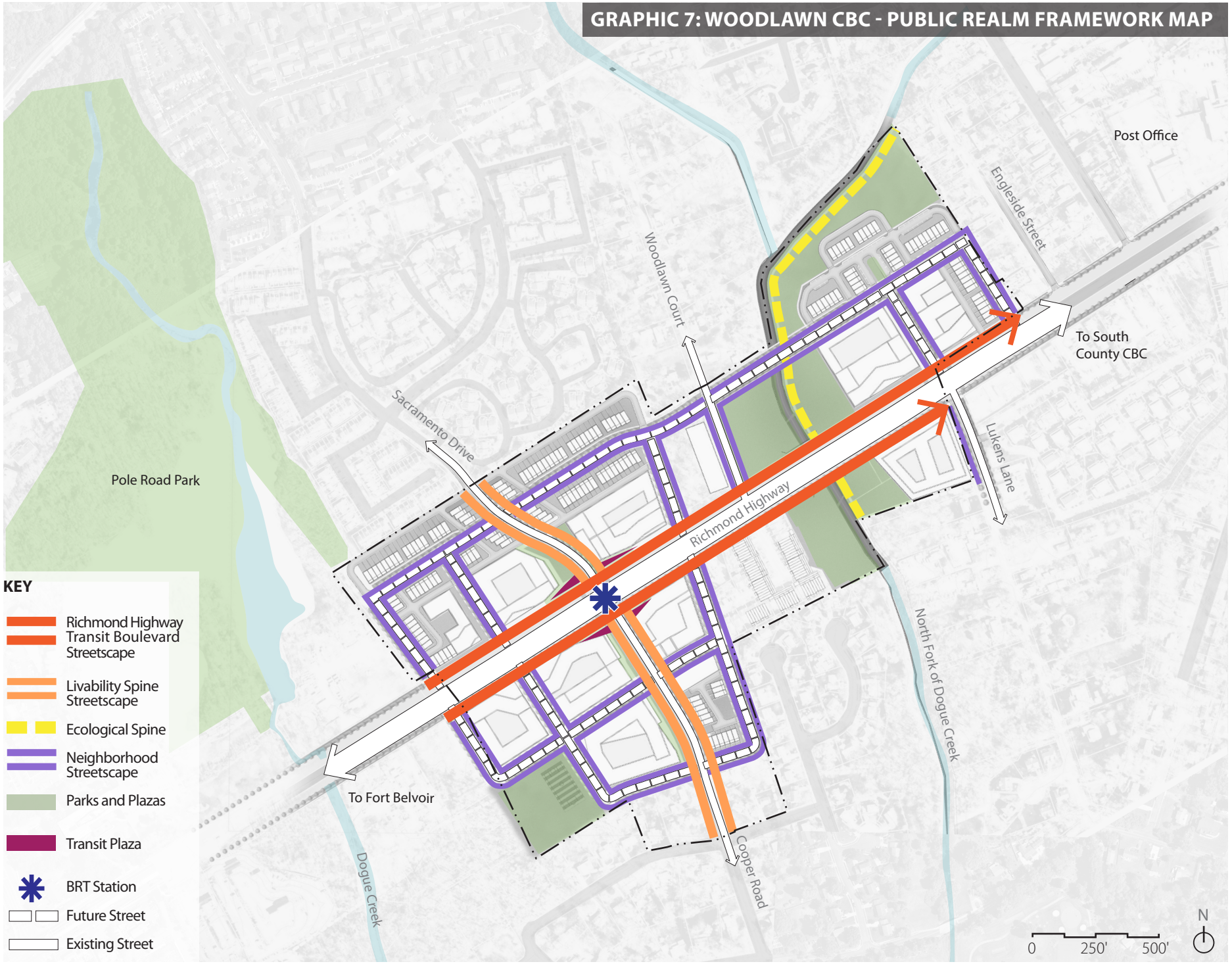
GRAPHIC 6A: HYBLA VALLEY-GUM SPRINGS CBC - PUBLIC REALM FRAMEWORK MAP



GRAPHIC 6B: HYBLA VALLEY-GUM SPRINGS CBC - PUBLIC REALM FRAMEWORK MAP



GRAPHIC 7: WOODLAWN CBC - PUBLIC REALM FRAMEWORK MAP

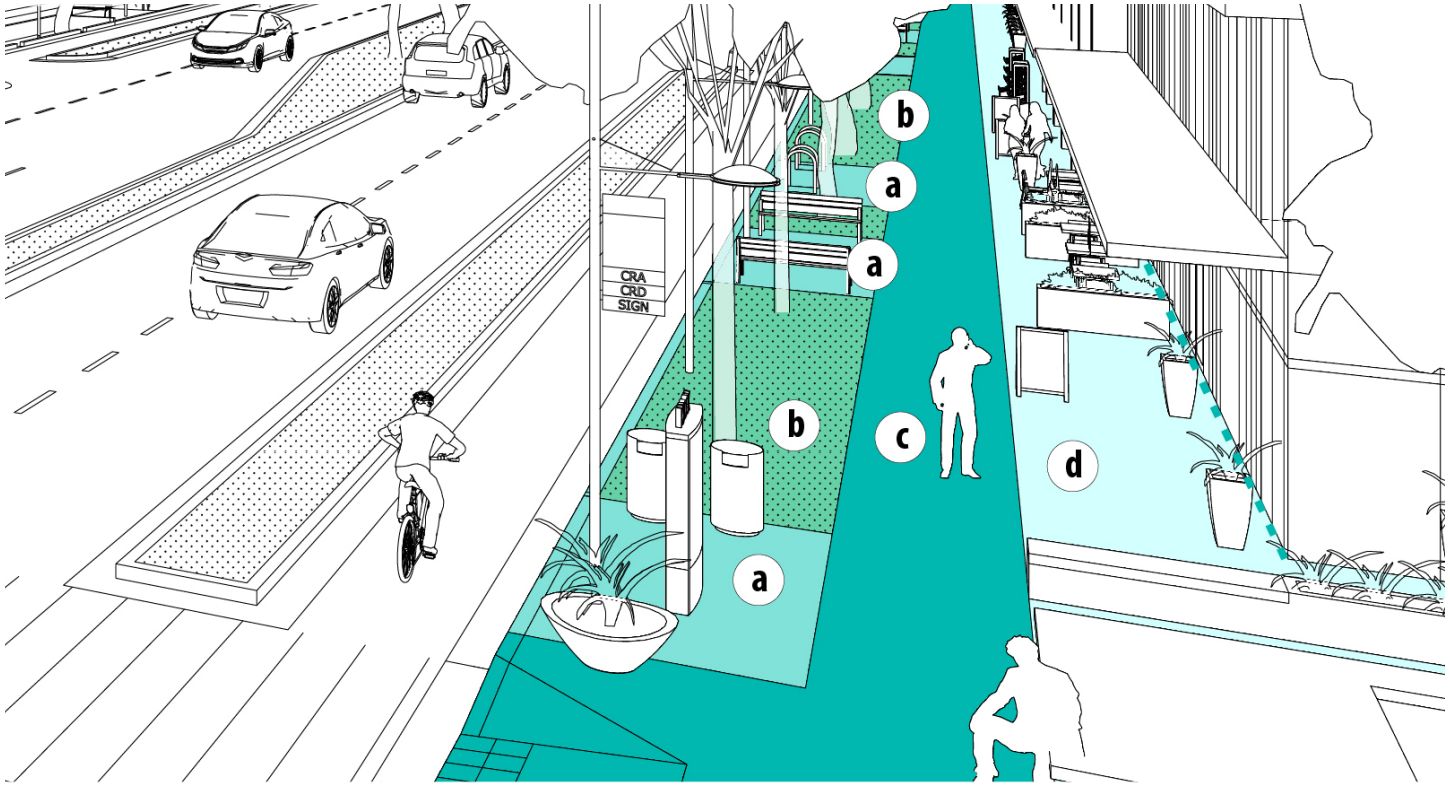


3A STREETSCAPES

The design guidance in this section addresses the different elements that comprise the streetscape, including paving, furnishings, plantings, and wayfinding. The guidance builds on that contained in *Volume I,* pertaining to the design, selection, and location of these elements.

Many recommendations in this chapter refer to specific zones of the streetscape, including the Amenity Zone, the Landscape Panel, the sidewalk, and the Building Zone. The location and function of each of these streetscape zones is summarized in *Graphic 8*. **All streetscape dimensions and the full cross-sections are provided in the "Urban Street Network Design" section of the Comprehensive Plan.**

GRAPHIC 8: STREETSCAPE ZONES



a AMENITY ZONE
Designated for seating, bike racks and furnishings

b LANDSCAPE PANEL
Retained for street trees and plantings

c SIDEWALK
Reserved exclusively for pedestrian movement without any obstructions

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

3A.1 PAVING IN THE SIDEWALK AND AMENITY ZONE

The paving for streetscapes in the Richmond Highway area is designed to serve multiple purposes. Paving should be functional, durable, easy to maintain, environmentally conscious, and easy for pedestrians of all ages and abilities to navigate. It should also provide aesthetic and placemaking benefits by helping to define the visual character and tie the area together as a whole. In select locations, the use of special pavers provides visual cues that highlight transitions in character and use.

Suggested paving options are provided in Table 1; however, these options are not prescriptive. Alternative paving materials are acceptable as long they meet the intent of these guidelines and match the character envisioned for the Richmond Highway area.

DESIGN PRINCIPLES

For consistency and durability, concrete should serve as the primary paving material. Poured-in-place concrete is recommended as the primary paving material for streetscapes due to its durability, ease of maintenance, lower cost relative to other materials, and ability to achieve flat and smooth surfaces for maximum accessibility. In limited instances, a select palette of special concrete pavers should be utilized as accents to highlight special areas (e.g., Amenity Zones, Transit Plazas, and Intersection Plazas). The same palette of pavers should be used for all streetscape areas within the right-of-way to achieve a unified environment.

Paving colors should integrate well in either traditional or contemporary urban environments, while enabling visual contrasts with other streetscape elements. Paver colors should mix traditional reds into a predominately grey base to visually integrate with adjacent concrete sidewalks. Larger, rectilinear pavers provide a contemporary appearance while reducing the number of joints and maintenance. In general, paving materials and colors should be neutral and should highlight visual contrasts with vertical elements such as street furnishings, plantings, signage, and public art.

DESIGN STRATEGIES

1 SIDEWALK PAVING MATERIAL - ALL STREETS

A. Poured-in-place concrete should serve as the primary sidewalk paving material. It should be installed with a 3-feet by 3-feet joint pattern and a brushed finish. If the sidewalk is less than 6-feet wide, the scoring pattern should be half the width of the sidewalk.

2 AMENITY ZONE PAVING MATERIAL

A. Special precast concrete pavers should serve as the primary paving material for the Amenity Zone of all streetscape types except for the Richmond Highway Transit Boulevard.

   i. Pavers should be rectilinear in shape with approximate dimensions of either 4-inches by 16-inches or 6-inches by 18-inches, depending on the selected manufacturer. Paver depth depends on the anticipated users. If vehicles are expected to drive on the pavers, even occasionally, they should be rated for vehicle use.

   ii. Paver colors should include a mix of grey and red tones (75% grey, 25% red). Pavers with blended or high-contrast colors should be avoided.

   iii. Pavers should be installed in a random "running bond" pattern, as illustrated in *Table 1*.

Graphic 9 illustrates paving along Gateway and Neighborhood Streetscapes and Graphics 3-7 for maps showing streetscape types in each CBC.

3 RICHMOND HIGHWAY BUFFER STRIP, TRANSIT PLAZA AND INTERSECTION PLAZA

A. The Richmond Highway Transit Boulevard streetscape does not have Amenity Zones in the Landscape Panel. Instead, the special concrete pavers described in Design Strategy 2, should be incorporated in the buffer strip and in the Transit and Intersection Plazas (see Chapter 5 for more information).

STANDARD PAVING: POURED-IN-PLACE CONCRETE

TABLE 1: SUGGESTED SPECIFICATIONS FOR PAVING

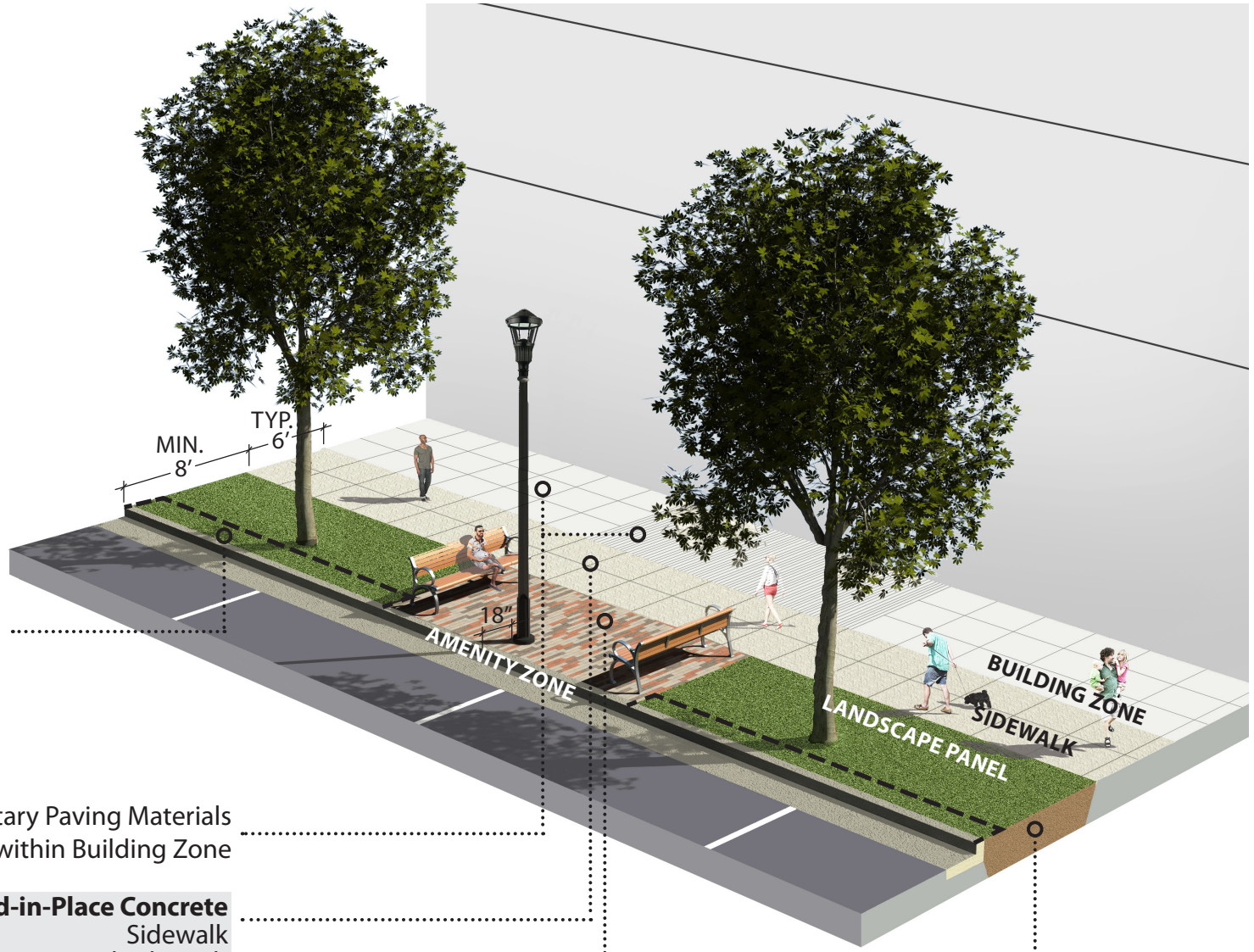
POURED-IN-PLACE (PIP) CONCRETE: SUGGESTED SPECIFICATIONS	
Color	• Untinted, standard aggregate
Pattern & Finish	• 3-feet x 3-feet joint pattern, or half the width of the sidewalk if less than 6-feet wide • Brushed finish
Application Locations	• All streetscape zones except those designated for special paving (see suggested specifications for precast concrete pavers below) • Driveway aprons

SPECIAL PAVING: PRECAST CONCRETE PAVERS (RANDOM RUNNING BOND PATTERN)

PRECAST CONCRETE PAVER: SUGGESTED SPECIFICATIONS	
Color	• Blend of grey and red tones (75% grey, 25% red)
Pattern & Finish	• Rectilinear/elongated pavers • Random running bond pattern
Application Locations	• Amenity Zones along Gateway, Neighborhood, and Livability Spine streetscapes • Buffer strips along Richmond Highway streetscape • Pedestrian crossings over driveways where they cross over streetscape • Transit Plazas and Intersection Plazas at BRT stations

PRECAST CONCRETE PAVER MANUFACTURER OPTIONS		
Option 1:		
Unilock (Promenade Plank Paver)	**Paver Size**: 4"x16" *- 2.75" thick pedestrian use only* *- 4" thick vehicle and pedestrian use*	**Paver 1 (25% of blend)**: *Il Campo Granite (Brushed)*
		Paver 2 (50% of blend): *Premier (Enduracolor) Opal*
		Paver 3 (25% of blend): *Premier (Enduracolor) Red*
Option 2:		
Hanover (Traditional Prest Brick)	**Paver Size**: 6"x18" *- 2" thick pedestrian use only* *- 3" thick vehicle and pedestrian use*	**Paver Type 1 (25% of blend)**: *Traditional Prest Brick- Charcoal*
		Paver Type 2 (50% of blend): *Traditional Prest Brick- Natural*
		Paver Type 3 (25% of blend): *Traditional Prest Brick- Quarry Red*

GRAPHIC 9: GATEWAY AND NEIGHBORHOOD STREETSCAPES



Optional paved step off zone in high traffic parking areas (suspended over soil)

Complementary Paving Materials within Building Zone

Poured-in-Place Concrete
Sidewalk
Brushed Finish

Precast Concrete Pavers
Amenity Zone

Continuous Soil Panel (where possible)

3A.2 PAVING IN THE BUILDING ZONE

DESIGN PRINCIPLES

Within the Building Zone, there is an opportunity for greater flexibility and creativity in paving design. Due to its location on private property, outside of the VDOT right-of-way, a broader palette of materials and colors is suggested, provided that the paving treatment does not interrupt the unified character of the streetscape as a whole.

REFERENCES FOR PAVING

Volume I Urban Design Guidelines (Sections 2A.1, and 2G)

United States Access Board, Public Rights-of-Way Accessibility Guidelines (PROWAG)

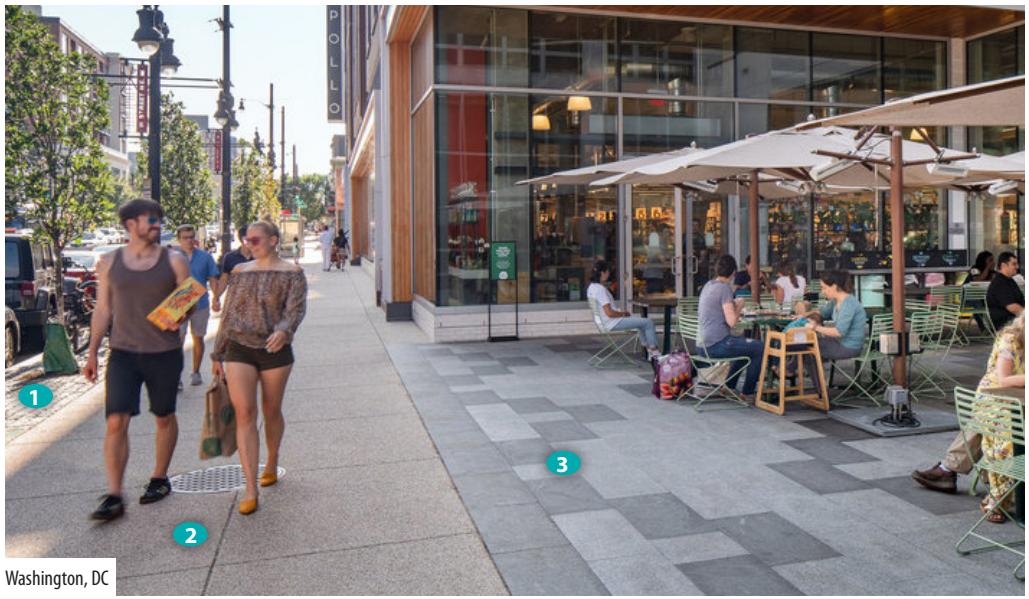
DESIGN STRATEGIES

1 MATERIALS AND TREATMENTS

A. Paving materials and paving design in the Building Zone should be complementary to, and compatible with, the character of the adjacent development and the design of the streetscape.

B. Paving materials may include poured-in-place concrete, precast concrete pavers, or other high-quality paving materials.

C. Changes in paving patterns are encouraged as a means of providing visual cues that signal changes in pedestrian patterns or land use. For example, special paving treatments may accentuate and demarcate building entrances or other zones of activity, such as outdoor seating areas.



Washington, DC

RIGHT
A streetscape that includes a compatible paving material in the Building Zone
Image Credit: Landscape Architecture Bureau

1. This Amenity Zone is paved with pavers
2. This Sidewalk is paved with poured-in-place concrete
3. This Building Zone is paved with pavers that are compatible the those in the Amenity Zone and the Sidewalk

3A.3 STREETSCAPE FURNISHINGS AND LIGHTING

Streetscape furnishings - which include benches and other seating, bicycle racks, bollards, wayfinding and interpretive signs, street lights, and trash and recycling receptacles - add both functionality and vitality to the pedestrian environment. In addition to helping pedestrians feel safe and comfortable, these elements also shape the aesthetic character of a place. Along with paving, the selection and application of furnishings should help to define and unify the Richmond Highway area, while also influencing how people experience the area on foot.

Boston, MA

Chicago, IL

DESIGN PRINCIPLES

Street furnishings should contribute to a unified visual character in the Richmond Highway area while helping to establish each CBC's context. Two sets of furnishing options, one for the North Area and one for the South Area, are a means to unify large portions of the Richmond Highway area. While furnishings in the North and South Areas will each have a different style, certain features and materials should be consistent to provide a coordinated appearance.

Furnishing styles should emphasize the shift between the North Area and South Area along the Richmond Highway Transit Boulevard. The North Area and South Area (see *Graphic 10*) are treated with different families of furnishings in order to respond to and reflect the shift in character from a more contemporary aesthetic (North Area) to a more traditional one (South Area) that is compatible with the area's heritage resources. For replacement and maintenance purposes, street lights should be a consistent style in both the North Area and South Area.

Suggested furnishing options for both the North and South Areas are provided in Tables 2 and 3; however, these options are not prescriptive. Alternative furnishings are acceptable as long they meet the intent of these guidelines and match the character envisioned for the Richmond Highway area.

REFERENCES FOR FURNISHINGS AND LIGHTING

Volume I Urban Design Guidelines for CRDs and CRAs (Sections 2E and 2F)

United States Access Board, Public Rights-of-Way Accessibility Guidelines (PROWAG)

TOP LEFT
An example of contemporary furnishings
Image Credits: Landscape Forms

BOTTOM LEFT
An example of traditional furnishings
Image Credits: Santa and Cole

DESIGN STRATEGIES

1 MATERIALS AND STYLE

A. When selecting furnishings, aesthetic considerations should be balanced with functional concerns such as durability, ease of maintenance, and comfort. Furnishing materials and styles should adhere to the following:

North Area (North Gateway, Penn Daw, Beacon/Groveton and Adjacent SNAs)

i. Furnishings in the North Area should reflect a more contemporary aesthetic, characterized by clean, simple, and straight lines and an emphasis on grey/aluminum and black as predominant colors and materials, along with hardwood or synthetic wood.

South Area (Hybla Valley-Gum Springs, South County, Woodlawn and Adjacent SNAs)

ii. Furnishings in the South Area should be characterized by a more traditional aesthetic that takes cues from traditional architecture and the area's heritage resources. These furnishings should incorporate curvilinear designs and should emphasize black as the predominant color, along with hardwood and synthetic wood materials.

B. General Criteria (All Areas):

i. Seating with a backrest is preferred; however, backed seating may be supplemented with additional backless options.

ii. In high-traffic pedestrian areas, Smart Trash receptacle technology that wirelessly relays real-time capacity information to maintenance staff should be considered. Trash receptacles require a side access door and domed lid to accommodate the relay hardware.

C. A broad palette of furnishings may be used in the Building Zone. Such furnishings should be complementary to, and compatible with, the North and South Area furnishings. Movable seating of all types is encouraged in the Building Zone for maximum flexibility in all weather conditions.

2 PLACEMENT

A. Placement of furnishings along the streetscape should adhere to the following criteria.

i. Furnishings such as benches and trash receptacles should be placed within the Amenity Zone and clustered near street intersections. If a block is more than 500-feet in length, an additional cluster of furnishings should be located near the mid-block of the streetscape. Per Article 2-505 of the Zoning Ordinance and section 7-0305.2 of the Public Facilities Manual, furnishings should be located outside the sight triangle to preserve lines of sight at intersections.

ii. Fixed seating placed within the Amenity Zone should be installed perpendicular to the roadway, in order to avoid situations in which people are seated with their backs facing either the sidewalks or the roadway. As an exception, bus shelters and benches for bus stops on the streetscape should be placed parallel to the roadway, as is standard practice.

iii. Seating and furnishings should be placed in locations that maximize shade from trees or structures so that they are used year-round.

iv. Along the Richmond Highway Transit Boulevard, furnishings should be located within the Buffer Strip and in the Planting Zone facing the sidewalk. Seating may be placed parallel or perpendicular to Richmond Highway depending on furnishing size and site conditions *(see Table 2)*.

3 STREET LIGHTING

A. The majority of street lights in the right-of-way are owned and maintained by Dominion Energy. The Cutoff Round Lantern was selected as the pedestrian-scaled street light for the entire Richmond Highway area (except for the Richmond Highway Transit Boulevard) for its aesthetic quality and its minimal uplighting, which enables compliance with dark sky standards *(see Table 2)*.

   i. Street lights designed to illuminate roadways may be needed to supplement pedestrian-scaled street lights on roadways that are wider than two lanes.

   ii. Street light spacing should be determined by the site lighting plan.

B. All street lights should follow guidance described in Chapter 2F.3 of *Volume I* including the use of LED bulbs with lower color temperature (3000K or below).

C. If street lights are planned outside the right-of-way in the Building Zone, the style should follow the specifications in *Table 2*.

D. For the Richmond Highway Transit Boulevard, a special dual-direction street and pedestrian light fixture was selected to illuminate areas within the right-of-way. The fixture has a black finish and is maintained by Dominion Energy.

   i. As a supplement to the street lights within the right-of-way of the Richmond Highway Transit Boulevard, the Cutoff Round Lantern (see Table 2) should be installed in the Planting Zone or Building Zone by the property owner.

   ii. Solar powered lights are encouraged to be incorporated into street and pedestrian fixtures where possible.

GRAPHIC 10: RICHMOND HIGHWAY - NORTH AND SOUTH AREAS

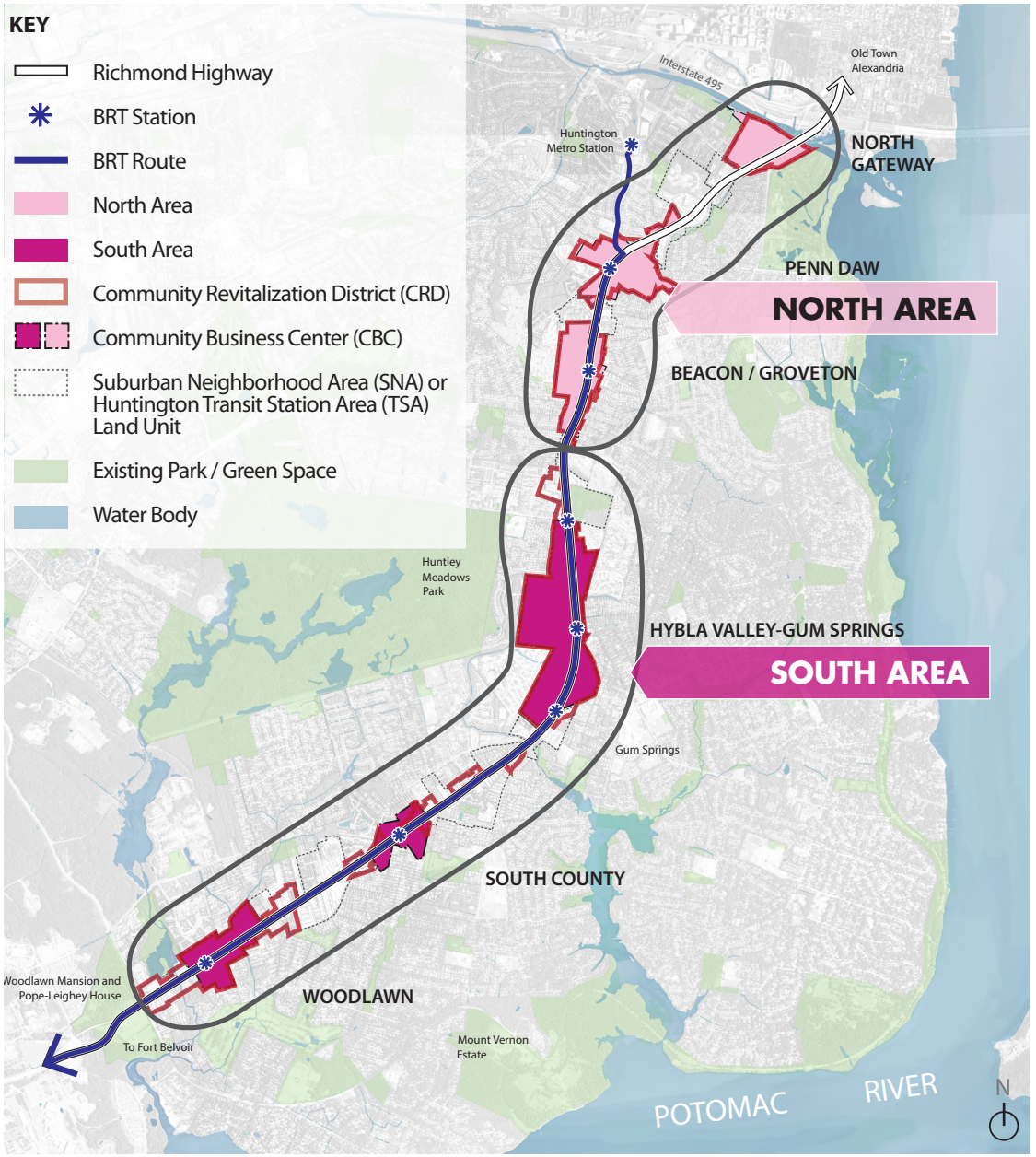


TABLE 2: SUGGESTED SPECIFICATIONS FOR FURNISHINGS

TYPE	NORTH AREA (NORTH GATEWAY, PENN DAW, BEACON/GROVETON)	
Benches	**MATERIAL:** • Metal (powder coated), hardwood, synthetic wood **COLOR:** • Aluminum, grey/silver, natural hardwood **FORM:** • Rectangular with horizontal slats **LENGTH:** • 69", 72", or 96" (with center arm) **LOCATION:** • Within the Amenity Zone and in clusters as specified in Design Strategy 2: Placement	**SAMPLE OPTIONS:** • (LEFT) Landscape Forms: Santa Cole Neoliviano | (RIGHT) Forms & Surfaces: Knight Series  
Trash Receptacles (including recycling receptacles)	**MATERIAL:** • Metal (powder coated), hardwood, synthetic wood **COLOR:** • Aluminum, grey/silver, natural wood **FORM:** • Rectangular with horizontal slats and flat front; with lid **CAPACITY:** • 24 to 30 gallons **LOCATION:** • Within the Amenity Zone and in clusters as specified in Design Strategy 2: Placement • Recycling receptacles should be co-located with trash receptacles	**SAMPLE OPTIONS:** • (LEFT) Forms & Surfaces: Apex | (RIGHT) Id created, inc.: Ecoside  
Bike Racks	**MATERIAL:** • Metal (powder coated) **COLOR:** • Aluminum, grey/silver **FORM:** • Rectangular rack with two ground-mounted anchor points **SPACING:** • 36" (minimum); also, see Fairfax County Bicycle Parking Guidelines for additional spacing standards **LOCATION:** • Within the Amenity Zone without encroaching on sidewalk areas; at major street intersections	**SAMPLE OPTIONS:** • (LEFT) Forms & Surfaces: Cordia | (RIGHT) Landscape Forms: Concord  

TABLE 2: SUGGESTED SPECIFICATIONS FOR FURNISHINGS

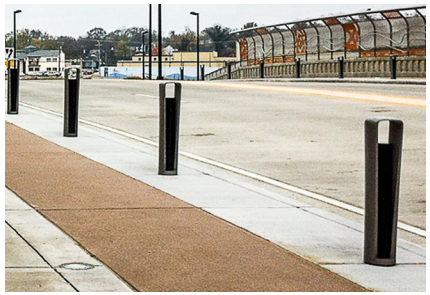
TYPE	NORTH AREA (NORTH GATEWAY, PENN DAW, BEACON/GROVETON)	
Planters	**MATERIAL:** • Metal, concrete, wood **COLOR:** • Silver/grey, natural wood **FORM:** • Rectangular **LOCATION:** • Within the Amenity Zone without encroaching on sidewalk areas, particularly in areas where buffers are needed between pedestrians and vehicles • Within the Building Zone	**SAMPLE OPTIONS:** • (LEFT) Landscape Forms: Sorella | (RIGHT) Tournesol: Boulevard Wood Mixed Media  
Bollards	**MATERIAL/TYPE:** • Metal (powder coated), stainless steel **COLOR:** • Silver/grey **FORM:** • Rectangular with or without light fixtures **LOCATION:** • At certain intersections with high volumes of pedestrians (outside the clear zone) and/or within the Amenity Zone along roadways to guide pedestrian and automobile movement to designated areas	**SAMPLE OPTIONS:** • (LEFT) Landscape Forms: Stop | (MIDDLE & RIGHT) Forms & Surfaces: Tangent and Knight   
Pedestrian-Scale Street Lighting	**MATERIAL/TYPE:** • Metal with LED light fixtures **COLOR:** • Dark grey or black **FORM:** • Post-top light with round lantern **LOCATION:** • Within Landscape Panel/Amenity Zone, approximately 18-inches behind the curb. • Richmond Highway only: within Building Zone for on-site lighting. Note: street and streetscape lighting for Richmond Highway will be installed by Fairfax County • Spacing: As determined by site/lighting plan **VENDOR:** • Dominion Energy is the approved vendor/supplier for VDOT maintained roads	**SAMPLE OPTION:** • Dominion: Cutoff Round Lantern with Smooth Round Tapered Black Composite Pole  

TABLE 2: SUGGESTED SPECIFICATIONS FOR FURNISHINGS

TYPE	SOUTH AREA (HYBLA VALLEY-GUM SPRINGS, SOUTH COUNTY, WOODLAWN)	
Benches (Fixed Seating)	**MATERIAL:** • Metal (powder coated), hardwood, synthetic wood **COLOR:** • Black, natural wood **FORM:** • Curvilinear with horizontal slats, ornamental accents **LENGTH:** • 48", 72", 75", 96" or 98" **LOCATION:** • Within the Amenity Zone and in clusters as specified in Design Strategy 2: Placement	**SAMPLE OPTIONS:** • (LEFT & MIDDLE) Victor Stanley: FMBF-324 & FB-324 | (RIGHT) Forms & Surfaces: Trio 
Trash Receptacles (including Recycling Receptacles)	**MATERIAL:** • Metal (powder coated) **COLOR:** • Black **FORM:** • Cylindrical with vertical slats and lid **CAPACITY:** • 24 to 36 gallons **LOCATION:** • Within the Amenity Zone and in clusters as specified in Design Strategy 2: Placement • Recycling receptacles should be co-located with trash receptacles	**SAMPLE OPTIONS:** • (LEFT) Forms and Surfaces: Urban renaissance | (RIGHT) Landscape Forms: Poe 
Bike Racks	**MATERIAL:** • Metal (powder coated) **COLOR:** • Black **FORM:** • Hoop rack with ground-mounted anchor points **SPACING:** • 36" (minimum); also, see Fairfax County Bicycle Parking Guidelines for additional spacing standards **LOCATION:** • Within the Amenity Zone without encroaching on sidewalk areas; at major street intersections	**SAMPLE OPTIONS:** • (LEFT) Victor Stanley: BRWS-101 | (RIGHT) Landscape Forms: Ring 

TABLE 2: SUGGESTED SPECIFICATIONS FOR FURNISHINGS

TYPE	SOUTH AREA (HYBLA VALLEY-GUM SPRINGS, SOUTH COUNTY, WOODLAWN)	
Planters	**MATERIAL:** • Concrete, Hardwood, Terracotta (earthen) **COLOR:** • Natural Grey (concrete, may be tinted), natural wood, terracotta colors **FORM:** • Cylindrical with horizontal ribbing **LOCATION:** • Within Amenity and Building Zones without encroaching on sidewalk areas, particularly in areas where buffers are needed between pedestrians and vehicles • Within the Building Zone	**SAMPLE OPTIONS:** • (LEFT) Tournesol: Centurion | (RIGHT) Landscape Forms: Masaru Series  
Bollards	**MATERIAL:** • Metal (powder coated), cast iron **COLOR:** • Black **FORM:** • Fluted stem, finial cap, fits over 4" steel pipe **LOCATION:** • At certain intersections with high volumes of pedestrians (outside the clear zone) and/or within the Amenity Zone along roadways to guide pedestrian and automobile movement to designated areas	**SAMPLE OPTION:** • (LEFT) Neenah/Reliance Foundry (R-7530-AL) 
Pedestrian-Scale Street Lighting	**MATERIAL/TYPE:** • Metal with LED light fixtures **COLOR:** • Dark grey or black **FORM:** • Post-top light with round lantern **LOCATION:** • Within Landscape Panel/Amenity Zone, approximately 18-inches behind the curb. • Richmond Highway only: within Building Zone for on-site lighting. Note: street and streetscape lighting for Richmond Highway will be installed by Fairfax County • Spacing: As determined by site/lighting plan **VENDOR:** • Dominion Energy is the approved vendor/supplier for VDOT maintained roads	**SAMPLE OPTION:** • Dominion: Cutoff Round Lantern with Smooth Round Tapered Black Composite Pole  

3A.4 TREES

In urban areas, trees provide numerous urban design, environmental, and public health benefits - from defining visual character, offering shade for pedestrians, and buffering sidewalks from traffic, to supporting ecological systems, creating habitats, and mitigating impacts of climate change. In the Richmond Highway area, trees serve as unifying elements that beautify streetscapes and help create a high-quality environment. They highlight and accentuate key places and "moments," and can mark where one streetscape character transitions to another. Along the Richmond Highway Transit Boulevard, trees also help define the distinct character of each CBC, as illustrated in *Graphic 11* and described in the design principles and strategies that follow. In public spaces such as neighborhood parks, Transit Plazas, and Livability Spines, the selection and placement of trees reinforces the organization and character of these spaces by defining the areas where different activities will occur.

The guidance for tree planting along streetscapes pertains to two streetscape zones.

- The *Landscape Panel* is an area within the public right-of-way reserved for street trees and understory planting. It serves as a green buffer separating the roadway drive lanes from pedestrian- and bicycle-oriented areas outside the curb.
- The *Planting Zone* is a streetscape area that occurs in private spaces along the Richmond Highway Transit Boulevard. Located between the sidewalk and the Building Zone, this zone is reserved for trees and other landscaping, and may also include bioretention facilities and seating. The width of the Planting Zone varies along the length of the Transit Boulevard, with the widest portions located in the SNAs.

This section supplements the *Volume I* guidance for trees and other plantings (see Section 2F.1 and Appendix A1), which includes tree planting diagrams and guidance for species selection in urban areas.

DESIGN PRINCIPLES

Tree planting should emphasize a diversity of native species and maximize tree canopy coverage to create green corridors. While the use of non-native, non-invasive species may be considered in urban situations per County policy, a wide variety of native species is preferred. This is based on current science documenting the ecological benefits of native plants and the re-establishment of native plant communities. In general, per the *Volume I* guidelines, an assortment of species is recommended to reduce the health risks associated with monoculture environments. Collectively, a mix of mostly native tree species should create strong, continuous green corridors along the Landscape Panel and Planting Zone that provide a range of ecosystem benefits and habitats for wildlife. In all locations, tree canopy coverage should be maximized to the greatest extent possible.

To define the extent of each CBC, distinct pairs of tree species with similar or complementary characteristics should be planted within the Richmond Highway Landscape Panel along the entire length of each CBC. The pairs of tree species should help establish a unique sense of place and identity within each CBC. They will serve as visual cues that help orient pedestrians and motorists while highlighting the progression between distinct areas along the Richmond Highway Transit Boulevard. Incorporation of limited numbers of ornamental trees in select locations as visual accents is also encouraged as a means of further distinguishing each CBC. Potential locations for ornamental trees includes the Building Zone and Transit and Intersection Plazas.

Trees should be consistently and regularly spaced along the Richmond Highway Transit Boulevard and CBC streetscapes in both the Landscape Panel and Planting Zone, while more informal or irregular tree arrangements are desirable in SNA Planting Zones as well as in neighborhood parks and plazas. In general, the Richmond Highway Transit Boulevard (within CBCs), Gateway Streetscapes, and Neighborhood Streetscapes should all be characterized by uniform tree spacing and alignment. This will create a unified streetscape character with a consistent canopy,

DESIGN PRINCIPLES (CONTINUED)

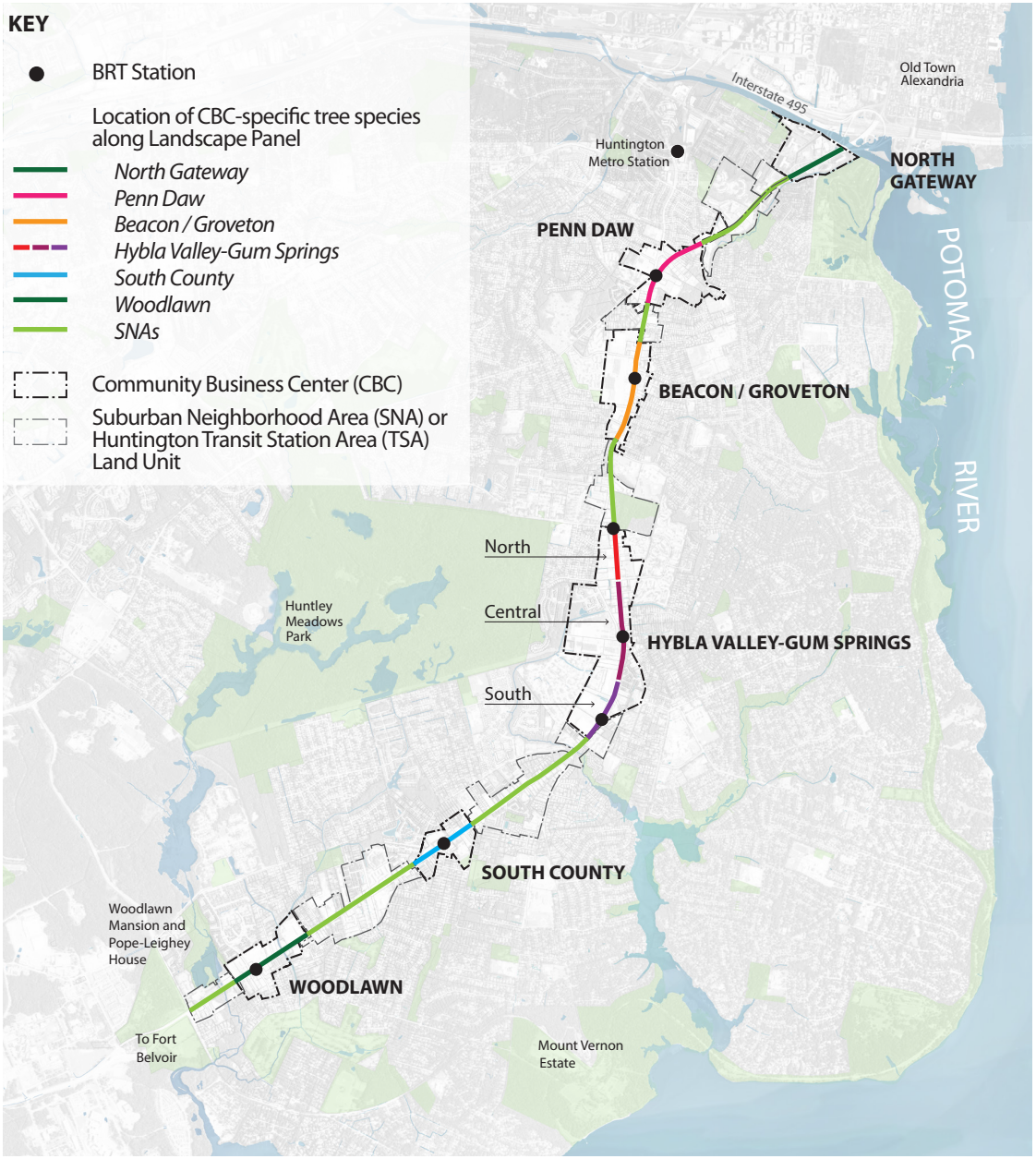
a sense of enclosure, and a memorable visual character along Richmond Highway. To distinguish SNAs from CBCs, a dense mix of informally-placed trees should be located within the Planting Zone to accentuate the greener character of the SNAs. Informal groupings of trees are also encouraged in Ecological Spines, Livability Spines, and other neighborhood parks and plazas to help define internal spaces and increase programming opportunities, while achieving a predominately forested character.

Select streetscapes should be distinguished by tree species and patterns that visually stand apart from trees along the Richmond Highway Transit Boulevard. Trees within Gateway Streetscapes should be a mix of Oak species to have a similar experience and highlight the connection from BRT stations into each CBC. The Legacy Corridor streetscape in the Hybla Valley-Gum Springs CBC should be distinguished by its own mix and rhythm of distinctively-shaped trees.

REFERENCES FOR TREES

- Volume I Urban Design Guidelines for CRDs and CRAs (Section 2F.1 and Appendix A1)
- Fairfax County Public Facilities Manual (Chapter 7, section 7-0305.2, Chapter 12)
- Fairfax County Code, Chapter 122 Tree Conservation Ordinance (10-year tree canopy)
- Virginia Department of Conservation and Recreation (Natural Landscaping Strategies)
- Fairfax County Zoning Ordinance (Article 2-505)
- US Fish and Wildlife Service - Native Plants for Wildlife Habitat and Conservation Landscaping - Chesapeake Bay Watershed
- Plant NOVA Natives
- Virginia Department of Transportation's Northern Virginia Planting Guidelines
- Trees in the City of Falls Church, Virginia
- Native Plants for Northern Virginia
- Arlington County, Large Street Tree Recommendations
- Virginia Department of Conservation and Recreation, Chesapeake Bay Local Assistance, Riparian Buffers Modification & Mitigation Guidance Manual

GRAPHIC 11: RICHMOND HIGHWAY TREE PLANTING



DESIGN STRATEGIES

1 AREA-WIDE PLANTING STRATEGIES

A. Developments should meet the county's '10-year tree canopy' requirement through a combination of tree preservation and the planting of additional trees. See Chapter 122 of Tree Conservation Ordinance and Chapter 12 of the Public Facilities Manual for additional information.

   i. Preservation of existing trees that are on-site prior to redevelopment should be used to meet as much of the '10-year tree canopy' requirement as possible. The location of buildings, paved areas, and open space should be considered in order to preserve trees where possible.

   ii. When tree canopy requirements cannot be met on-site, Tree Fund applications are handled by the Urban Forestry Management Division (UFMD) on a case-by-case basis. Note: trees planted inside the right-of-way may only be counted towards 10-year tree canopy credit within a CRD.

B. Trees should be planted in a row with approximately 30-foot spacing, unless otherwise specified.

C. Per VDOT requirements, trees should have a vertical clearance to minimize conflicts between tree branches and trucks, buses, and bicyclists traveling in the right-of-way. The vertical dimensions of trees will vary for each species, and is dependent upon the physical characteristics (e.g., the branching structure and size of trees at installation) of each tree species.

D. Understory landscaping should be located outside the line of sight, per Article 2-505 of the Zoning Ordinance and section 7-0305.2 of the Public Facilities Manual.

E. Natural landscaping strategies, which utilize native plant species in palettes that are designed to mimic natural systems, should be considered as part of the site's landscape design. The Virginia Department of Conservation and Recreation provides resources for selecting native palettes that can achieve these mutually beneficial relationships.

F. If green stormwater infrastructure (GSI) is included in the Landscape Panel, it should be planted with wet-tolerant native plants. Additional flexibility from the recommended lists may be needed when selecting trees species in order to meet GSI design requirements. See *Table 4* and *Volume I* (Appendix A1) for wet tolerant tree recommendations. Replacement of trees and landscaping should be anticipated in GSIs due to maintenance of the stormwater system which can impact roots and the long-term viability of flora.

G. Tree planting should follow the *Volume I* guidelines for soil volume and continuous soil panels to promote proper plant growth and ensure the long-term success of trees (see *Volume I*, Appendix A1).

H. Tree species selection will be subject to approval by the County's UFMD during the site plan review process.

2 RICHMOND HIGHWAY TRANSIT BOULEVARD: WITHIN CBCs

A. CBC Landscape Panel: Should be planted with two tree species for the entire length of the CBC (see *Graphic 12*). Given the length of the Hybla Valley-Gum Springs CBC, a distinct pair of species should be planted in the blocks surrounding each of the three BRT stations in the CBC. Tree planting should adhere to the following:

   i. Tree species were chosen for their ability to withstand the environmental challenges of Richmond Highway and for the height of their canopies (in order to minimize conflicts between tree branches and trucks, buses, and bicyclists traveling the right-of-way). All species should be large, deciduous shade trees

DESIGN STRATEGIES (CONTINUED)

(Category III or IV) to match the scale of the Richmond Highway Transit Boulevard and its streetscape. The recommended species include wet-tolerant species for areas adjacent to waterways or with a high water table (e.g., North Gateway, Hybla Valley-Gum Springs, and Woodlawn)

ii. Suggested species for each CBC are listed in *Table 4* and include the following:

   a. North Gateway: Bald Cypress and Swamp White Oak

   b. Penn Daw: London Plane Tree and Princeton Elm

   c. Beacon/Groveton: Shingle Oak and Kentucky Coffeetree

   d. Hybla Valley-Gum Springs (North): Swamp Chestnut Oak and Southern Red Oak

   e. Hybla Valley-Gum Springs (Central): Black Gum and Hackberry

   f. Hybla Valley-Gum Springs (South): Golden Colonnade Gingko and Sweetgum

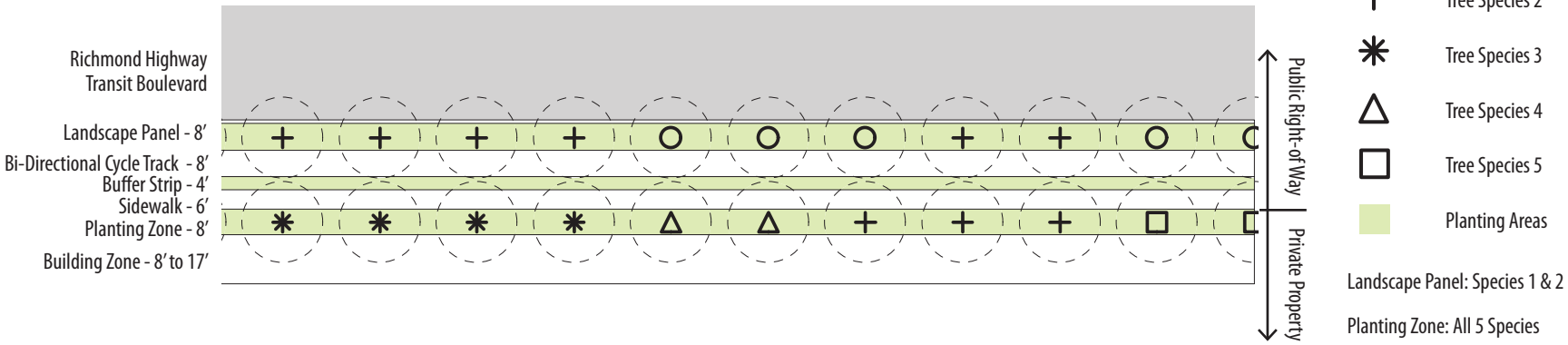
   g. South County: White Oak and Silver Linden

   h. Woodlawn: Bald Cypress and Swamp White Oak

iii. If another tree has similar characteristics and is compatible with the environmental conditions of the CBC, it may be substituted for a tree listed in A.ii with approval from UFMD. Arlington County provides recommended trees for planting in restricted spaces, such as along streets.

iv. The pattern of tree planting should be mixed and arranged such that no more than five trees of the same species are planted consecutively in alignment (see example planting pattern in Graphic 12).

GRAPHIC 12: TREE PLANTING PATTERN FOR THE RICHMOND HIGHWAY TRANSIT BOULEVARD LANDSCAPE PANEL AND PLANTING ZONE



DESIGN STRATEGIES (CONTINUED)

B. CBC Planting Zone: Should be planted with a row of trees comprising a diverse mix of tree species. Tree planting in the Planting Zone should adhere to the following guidance:

i. At least five tree species should be selected from the list of tree species provided in the *Volume I* urban design guidelines within the Category III and Category IV deciduous tree table.

ii. Fastigate cultivars of the species recommended for the CBC Planting Zone should be considered to minimize potential conflicts with adjacent structures.

iii. Trees in the Planting Zone should be planted in alignment with the Landscape Panel rather than staggered; however, some flexibility should be allowed in consideration of adjacent building design.

See Chapter 5 for additional details and cross-sections depicting the Landscape Panel and Planting Zone along the Richmond Highway Transit Boulevard (Sections 5A and 5B).

Washington, DC

RIGHT
Example of a Landscape Panel with understory plantings
Image Credits: Fairfax County

3 RICHMOND HIGHWAY TRANSIT BOULEVARD: WITHIN SNAs

A. SNA Landscape Panel: Should be planted with a mix of tree species for the entire length of the SNA. Tree planting in the Landscape Panel should adhere to the following guidance:

i. Tree species should consist of four to seven species per SNA selected from the *Volume I* urban design guidelines within the Category III and IV deciduous tree tables. Species should be distinct from those recommended in the adjacent CBCs to highlight the change from CBC to SNA.

ii. The pattern of tree planting should be mixed and arranged such that no more than five trees of the same species are planted consecutively.

B. SNA Planting Zone: Should comprise a diverse mix of tree species in an organic, naturalistic arrangement to maximize opportunities afforded by this extra-wide space. Tree planting in the Planting Zone should adhere to the following guidance:

i. Trees should comprise a mix of deciduous and evergreen species (the mix should consist of 75% native deciduous species and 25% native evergreen species). Evergreens should be used to provide some degree of year-round privacy and sense of enclosure.

ii. Species should be selected from tree lists published in the PFM by UFMD.

iii. Trees should be planted with irregular spacing in a natural/organic arrangement. While the spacing may be irregular, trees should still be densely planted.

See Chapter 5 for additional details and cross-sections depicting the Landscape Panel and Planting Zone along the Richmond Highway Transit Boulevard (Sections 5A and 5C).

DESIGN STRATEGIES (CONTINUED)

4 GATEWAY STREETSCAPES

A. Gateway streetscapes, which are relatively short street segments, should be lined with trees of a similar character to form a symbolic entryway and transition from Richmond Highway into the CBCs and residential neighborhoods (see *Graphic 13*).

   i. Gateway Streetscapes should feature a mix of three Oak species to create a memorable, welcoming street with a distinctive tree canopy (see *Table 4*).

   ii. The pattern of the planting should be mixed and arranged such that no more than five of the same trees are planted consecutively.

   iii. Tree species should be planted in different patterns on both sides of the street so that similar species do not mirror each other.

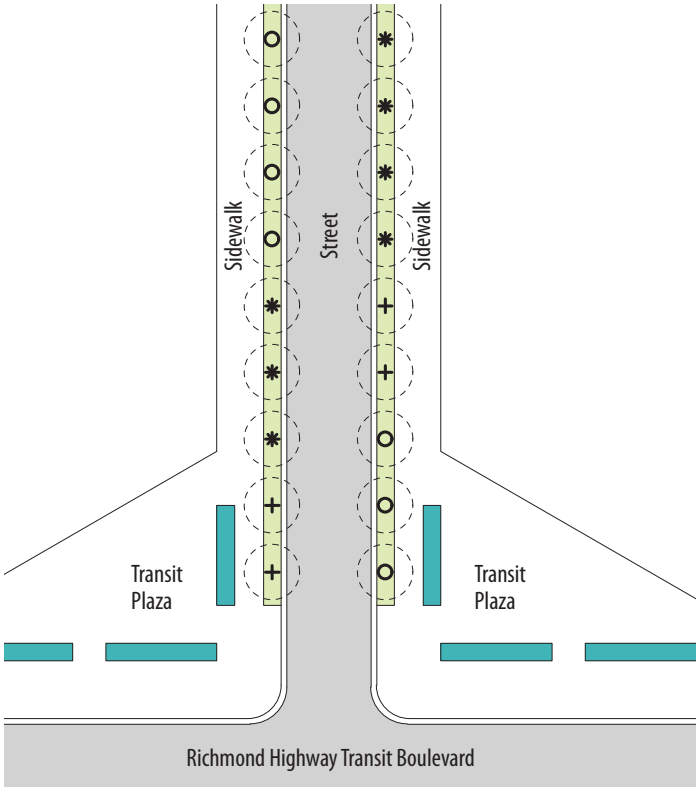
5 TRANSIT PLAZAS

A. The types and arrangements of trees within transit plazas should be determined based on the design evolution of the plaza and adjacent development (see *Graphic 13*).

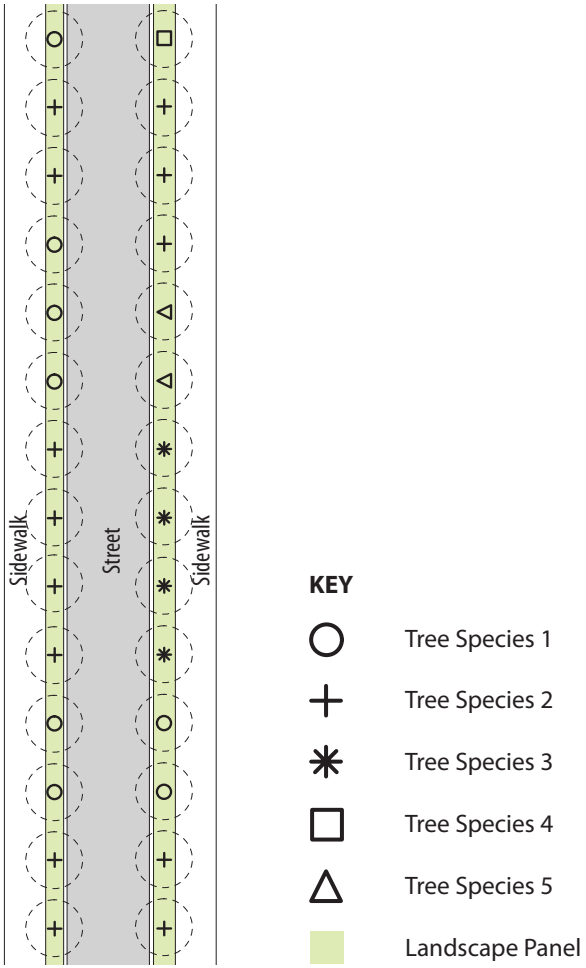
   i. Category III and IV tree species should be used to provide shade. For tree types, refer to the list in *Volume I* (Appendix A1).

   ii. Ornamental trees should be incorporated into planting areas to help define the character of each transit plaza while providing additional buffering from the Richmond Highway Transit Boulevard (see *Table 4*).

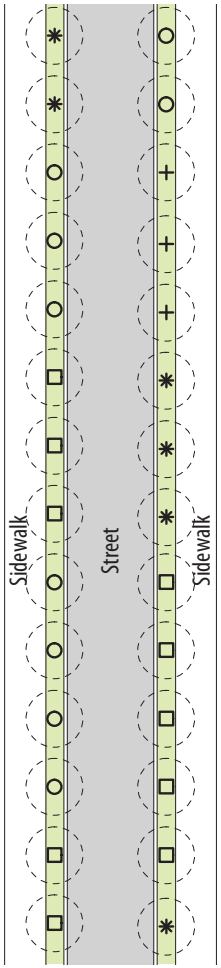
GRAPHIC 13: TREE PLANTING PATTERN FOR THE GATEWAY STREETSCAPES



GRAPHIC 14: TREE PLANTING PATTERN FOR THE NEIGHBORHOOD STREETSCAPES



GRAPHIC 15: TREE PLANTING PATTERN FOR THE LEGACY CORRIDOR



DESIGN STRATEGIES (CONTINUED)

6 NEIGHBORHOOD STREETSCAPES

A. Neighborhood Streetscapes should be lined with a mix of native tree species planted in the Landscape Panel (see *Graphic 14*).

B. For each block, three to five species should be selected from the list of medium- to large-sized (Category III or IV) shade trees in *Volume I* (Appendix A1).

C. No more than five trees of the same species should be planted in a row.

7 LEGACY CORRIDOR

A. The Legacy Corridor (located in Hybla Valley-Gum Springs) should be planted with a mix of medium-sized, distinctively-shaped trees to spatially differentiate this corridor from other streets, and to highlight the heritage resources along this street (see *Graphic 15*).

B. Upright fastigate/columnar shaped trees with dark green leaves.

C. No more than five trees of the same species should be planted in a row.

DESIGN STRATEGIES (CONTINUED)

8 LIVABILITY SPINES

A. Along the Landscape Panel of Livability Spines, trees should follow the guidance for Neighborhood Streetscapes.

B. Linear park portions of Livability Spines should be planted with a variety of small- to medium-sized, native, deciduous and evergreen trees, along with some flowering trees.

   i. Planting should strive for a roughly 75% deciduous-25% evergreen mix. Trees should be selected from the list of tree species published by the County's Urban Forest Management Division available in the PFM.

   ii. These trees should be arranged primarily in informal groupings to create a series of outdoor "rooms," and to maximize shade and ecological benefits. A predominately forested character should be achieved.

9 ECOLOGICAL SPINES

A. Trees in the Landscape Panel along the roadway of Ecological Spines Type 1 and Type 2 should follow the planting guidance for Neighborhood Streetscapes.

B. Linear park portions of Ecological Spines should be planted with native trees that are tolerant of wet conditions, when they are adjacent to daylit streams, stream banks, or stormwater management pond banks. See wet tolerant trees in *Table 4* for options as well as the list of recommended plants for riparian buffers included in Appendix 7 of the Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers.

C. Trees should be planted in groupings and in an organic, naturalistic layout to promote resilient landscape design.

10 NEIGHBORHOOD PARKS

A. The types and arrangements of trees within parks should be determined based on the design evolution of those spaces and adjacent development. Category III and IV tree species should be used to provide shade and are encouraged to be supplemented with lesser category ornamental trees. For tree types, refer to the list in *Volume I* (Appendix A1) and the list published by the County's Urban Forest Management Division, available in the PFM.

11 ORNAMENTAL AND HABITAT ENHANCING TREES

A. In addition to locations listed in prior design strategies, native, ornamental (flowering) trees should be planted along the Richmond Highway Transit Boulevard in the CBC Planting Zone (where there is adequate space to accommodate them in addition to the recommended trees or where there is insufficient space to plant the recommended tree) and as understory plantings in the SNA Planting Zone.

B. A list of ornamental tree species is provided in *Table 4*. Note: although not native species, Yoshino Cherry and other non-native cherry varieties may be planted in limited quantity as accents where extra space exists. These trees are particularly appropriate in the Woodlawn CBC, in the Richmond Highway median and adjacent to BRT stations, in order to extend the regional tradition of planting this iconic spring flowering tree.

C. Habitat enhancing understory trees are encouraged in park spaces, riparian buffers, Ecological Spines, and stormwater management areas. Common Paw Paw and Common Persimmon is suggested only for Ecological Spines.

TABLE 4: TREE PALETTE BY STREETSCAPE TYPE - RICHMOND HIGHWAY

STREET TYPE	COMMON NAME	SCIENTIFIC NAME	CAT*	NATIVE	WET TOLERANT	CHARACTERISTICS
Richmond Highway CBC Streetscape: North Gateway	Bald Cypress	Taxodium distichum	III	Y	Y	50'-70' tall, pyramidal shape, rich green color, brown fall color, good for wet areas
	Swamp White Oak	Quercus bicolor	IV	Y	Y	
Richmond Highway CBC Streetscape: Penn Daw	London Planetree	Platanus x acerifolia	IV	N	Y	50'-100' tall, pyramidal to vase shape when mature, yellow to brown fall colors, prefer moist to well-drained soils
	Princeton Elm	Ulmus americana 'Princeton'	III	Y	Y	
Richmond Highway CBC Streetscape: Beacon / Groveton	Kentucky Coffeetree	Gymnocladus dioicus	III	N	Y	50'-75' tall, oval shape when mature, elongated oval leaf shape, dark green to bluish green color, yellow fall color
	Shingle Oak	Quercus imbricaria	IV	Y	Y	
Richmond Highway CBC Streetscape: Hybla Valley-Gum Springs *North*	Southern Red Oak	Quercus falcata	IV	Y	N	70'-100' tall, pyramidal to broadly rounded shape when mature, medium green color, prefer well-drained soils, red fall color
	Swamp Chestnut Oak	Quercus michauxii	IV	Y	Y	
Richmond Highway CBC Streetscape: Hybla Valley-Gum Springs *Central*	Hackberry	Celtis occidentalis	III	Y	Y	30'-60' tall, pyramidal to irregular shape when mature, glossy green leaves, fleeting fall color
	Black Gum/Tupelo	Nyssa sylvatica	III	Y	Y	
Richmond Highway CBC Streetscape: Hybla Valley-Gum Springs *South*	Golden Colonnade Gingko	Gingko biloba 'JFS-UGA2'	I	N	Y	Plant only fruitless varieties 45'-75' tall, pyramidal to rounded upright shape when mature, yellow to red fall colors
	Sweetgum	Liquidambar stryaciflua	IV	Y	Y	
Richmond Highway CBC Streetscape: South County	White Oak	Quercus alba	IV	Y	N	40'-60' tall, rounded upright shape when mature, yellow to bronze fall colors
	Silver Linden	Tilia tomentosa	III	N	Y	
Richmond Highway CBC Streetscape: Woodlawn	Bald Cypress	Taxodium distichum	III	Y	Y	50'-70' tall, pyramidal shape, rich green color, brown fall colors, good for wet areas
	Swamp White Oak	Quercus bicolor	IV	Y	Y	

NOTE: A SPECIES CAN BE SUBSTITUTED WITH AN ALTERNATE IF IT MATCHES THE CHARACTERISTICS IN THE TABLE.
TREE PALETTES NOT FINALIZED AS OF 02/2020. UNDER REVIEW WITH COUNTY AND STATE AGENCIES AND OTHER STAKEHOLDERS.

* Tree category as defined in the Fairfax County Public Facilities Manual (PFM)

IMAGES OF TREES FOR RICHMOND HIGHWAY STREETSCAPE

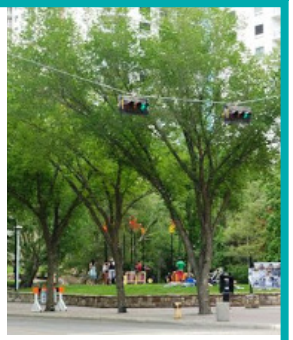
North Gateway and Woodlawn CBCs

Bald Cyprus

Swamp White Oak

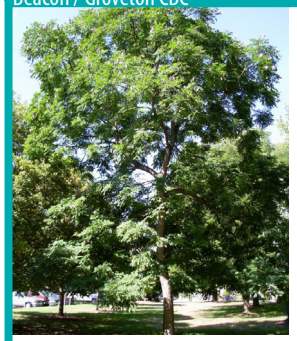
Penn Daw CBC

London Planetree



Princeton Elm

Beacon / Groveton CBC



Kentucky Coffee Tree

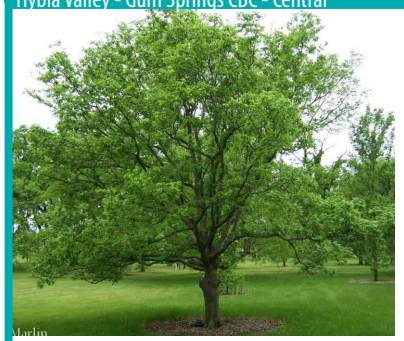
Shingle Oak

Hybla Valley - Gum Springs CBC - North

Southern Red Oak

Swamp Chestnut Oak

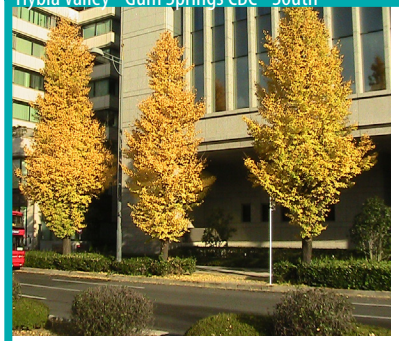
Hybla Valley - Gum Springs CBC - Central



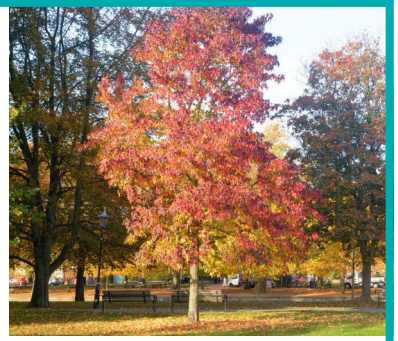
Hackberry

Black Gum / Tupelo

Hybla Valley - Gum Springs CBC - South



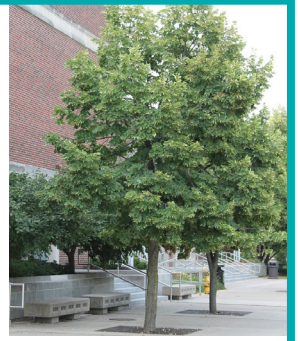
Golden Colonnade Gingko



Sweetgum

South County CBC

White Oak



Silver Linden

TABLE 4: TREE PALETTE BY STREETSCAPE TYPE - GATEWAY AND LEGACY CORRIDOR

STREET TYPE	COMMON NAME	SCIENTIFIC NAME	CATEGORY*	NATIVE	WET TOLERANT	SPECIFICS
Gateway Streetscape	Thornless Honeylocust	Gleditsia triacanthos f. inermis	IV	Y	N	
	Willow Oak	Quercus phellos	IV	Y	N	
	Japanese Zelkova	Zelkova serrata	IV	N	N	
Legacy Corridor Streetscape	American Hornbeam	Carpinus caroliniana	II	Y	Y	
	American Beech	Fagus grandifolia	IV	Y	N	
	Sweetbay Magnolia	Magnolia virginiana	II	Y	Y	
	American Hophornbeam	Ostrya virginiana	II	Y	N	

NOTE: TREE PALETTES NOT FINALIZED AS OF 1/2020. UNDER REVIEW WITH COUNTY AND STATE AGENCIES AND OTHER STAKEHOLDERS.

* Tree category as defined in the Fairfax County Public Facilities Manual (PFM)

IMAGES OF TREES FOR GATEWAY STREETSCAPES AND LEGACY CORRIDOR STREETSCAPE


Thornless Honeylocust


Willow Oak


Japanese Zelkova


American Hophornbeam


American Beech


Sweetbay Magnolia


American Hornbeam

TABLE 4: TREE PALETTE BY STREETSCAPE TYPE - ORNAMENTAL AND EVERGREEN

STREET TYPE	COMMON NAME	SCIENTIFIC NAME	CATEGORY*	NATIVE	WET TOLERANT	SPECIFICS
Ornamental Trees	Downy Serviceberry	Amelanchier arborea	II	Y	Y	
	Shadblow Serviceberry	Amelanchier canadensis	II	Y	Y	
	Common Paw Paw	Asimina triloba	II	Y	Y	In Ecological Spines
	River Birch	Betula nigra	III	Y	Y	Single stemmed
	Virginia Fringetree	Chionanthus virginicus	II	Y	Y	
	Flowering Dogwood	Cornus florida 'Appalachian Spring'	II	Y	N	Appalachain cultivars
	Common Persimmon	Diospyros virginiana	II	Y	Y	In Ecological Spines
	Carolina Silverbell	Halesia carolina	II	N	Y	
	Sweetbay Magnolia	Magnolia virginiana	II	Y	Y	
	Okame Cherry	Prunus 'Okame'	II	N	N	
	Yoshino Cherry	Prunus × yedoensis	III	N	N	
Evergreen Trees	Foster Holly	Ilex × attenuata 'Fosteri'	II	N	N	
	American Holly	Ilex opaca	II	Y	Y	
	Eastern Red Cedar	Juniperus virginiana	I	Y	N	
	Loblolly Pine	Pinus taeda	III	Y	N	
	Virginia Pine	Pinus virginiana	II	Y	N	In groupings

NOTE: TREE PALETTES NOT FINALIZED AS OF 1/2020. UNDER REVIEW WITH COUNTY AND STATE AGENCIES AND OTHER STAKEHOLDERS.

* Tree category as defined in the Fairfax County Public Facilities Manual (PFM)

IMAGES OF ORNAMENTAL AND EVERGREEN TREES


Downy Serviceberry


Shadblow Serviceberry


Common Persimmon


Common Paw Paw


Yoshino Cherry


Sweetbay Magnolia


Virginia Fringetree


Flowering Dogwood


Eastern Red Cedar


American Holly


Foster Holly


Virginia Pine

3A.5 WAYFINDING AND INTERPRETIVE SIGNAGE

Interpretive signage and wayfinding (which includes signs, maps, pavement markings, or other features designed to educate or orient people) are important not only for their functions but also for their role in creating the identity of an area. These types of signs play a central role in building the character of a place, tying together an area, and informing people's daily experiences. Collaboration with local organizations is encouraged when developing interpretive and wayfinding sign programs to ensure that the desired community information is provided.

Signage should be coordinated with applicable County standards. The Overlay and CRD Regulations in Article 7 of the Fairfax County Zoning Ordinance regulate the size of wayfinding signage in these areas. Article 12 regulates the permitted types, size and location of signs on private property. VDOT regulates signage in the public right-of-way. Most of the signs addressed in this section should be located outside the right-of-way. For guidance on project identity and commercial signage, refer to Section 4E in the *Volume 1* guidelines.

REFERENCES FOR WAYFINDING AND INTERPRETIVE SIGNAGE

Volume I Urban Design Guidelines for CRDs and CRAs (Sections 4E, 6A, 6B)
Fairfax County Zoning Ordinance: Overlay and Commercial Revitalization District Regulations (Article 7-500), Signs (Article 12-200)
Toronto 360 Wayfinding Products

Hamilton, Canada

RIGHT
An example of interpretive signage
Image Credit: Ontario Growth Secretariat, Ministry of Municipal Affairs

DESIGN PRINCIPLES

New wayfinding and interpretive signage should coordinate with and build upon existing gateway and wayfinding signs located along the Richmond Highway Transit Boulevard. New signage can also promote the Richmond Highway Transit Boulevard as the gateway to historic resources such as Mount Vernon and other important destinations that are located off of corridor. Entry Feature signs should mark the major street intersections that lead to these sites.

Wayfinding in the Richmond Highway area should utilize a consistent family of graphics and materials. Consistency in design and placement is fundamental to effective wayfinding signs, providing predictability for users and establishing a recognizable brand. The family of graphics and materials should include variations to distinguish geographical areas - such as CBCs and the larger North and South Areas that encompass them - while still adhering to a common, identifiable design and graphic style. Different sign types (e.g., directional, orientation, and gateway/identity) may vary in size and shape to serve their intended functions and locations while sharing a consistent design motif and graphic style. Further, while the design of wayfinding should be tailored to each geographic area and sign function, it should be utilized and located in a consistent manner throughout the entire Richmond Highway area.

Interpretive signage should serve as a means of educating the public about the history and ecology of the area and surrounding communities. The Legacy Corridor, Woodlawn Cultural Corridor, Livability Spines, and Ecological Spines are signature elements of the Richmond Highway area. Each element should be acknowledged and celebrated through the design and information shared on signs. Signage within the Ecological Spines and within green stormwater infrastructure should be designed to educate the public on the benefits of these systems to promote public health and a healthy environment.

The BRT system should serve as a primary reference point for wayfinding. All wayfinding should begin at the BRT system and note the location of BRT stations. Signage at BRT stations and transit plazas should incorporate wayfinding elements.

DESIGN STRATEGIES

1 FAMILY OF SIGNAGE

A. A consistent family of signage in the Richmond Highway area should be created that incorporates, builds upon, and coordinates with existing wayfinding signage along Richmond Highway. While existing wayfinding signage (see images below) is located primarily within the Richmond Highway Transit Boulevard right-of-way, these guidelines for new signage apply primarily to signage located outside of the right-of-way. The family of signage should include the following organizing elements:

   i. **Area-wide**: Utilize and build upon elements of existing wayfinding signage along the Richmond Highway Transit Boulevard.

   ii. **North and South Areas**: Select distinct color palettes as follows:

      a. **North Area (Contemporary)**: Vibrant colors consistent with the area's streetscape furnishings and building design.

      b. **South Area (Traditional)**: Warm and earthen colors consistent with the area's streetscape furnishings and building design.

   iii. **CBC-Specific**: Select signage for each CBC that is differentiated by distinct identity elements specific to each CBC, such as logos, typefaces, and related branding elements.

B. The family of signage should be coordinated with other Richmond Highway branding, including existing wayfinding, BRT-related signage, and POPS signage guidance[1], to ensure a cohesive visual identity. While designs do not need to match, the types, locations, and functions of signage should all work together in a coordinated manner.

1 Privately Maintained Public Space (POPS) is a signage wayfinding system developed by the Fairfax County Park Authority to promote a consistent sign style and universal content for public spaces in the county. A document detailing the system specifications is available from the Park Authority.

2 PURPOSE, TYPES, AND LOCATION

A. The three primary purposes of signage along the Richmond Highway Transit Boulevard and related CBCs should be:

   – Wayfinding
   – Interpretation
   – Gateway/Identity

B. The type, location, and design of signage should vary based on the location and purpose of each sign.

   i. **Entrance Feature Signage** should convey a sense of arrival and impart a memorable visual impression of the Richmond Highway area, at both the human (pedestrian) and vehicular scales. They should be used at either end of the Richmond Highway Transit Boulevard in Fairfax County, the boundaries of each CBC, and at cross-streets that lead to important destinations off of the corridor. Signs should be visible to vehicular traffic as well as to pedestrians, bicyclists and those using other alternative modes of transportation. Gateway elements may also include and/or be integrated with public art features.

Fairfax County, VA

LEFT
Richmond Highway's existing gateway and wayfinding signage
Image Credits: Rhodeside & Harwell

FAMILIES OF SIGNAGE: EXAMPLES

Portland, OR

TOP
A family of traditional signage with consistent overall design vocabulary for different sub-districts and area-specific identity elements, such as, colors, logo, etc.
Image Credit: Coroflot.com

Minneapolis, MN

BOTTOM
A family of contemporary signage for a single subdistrict with a consistent identity and varying applications, such as, paving-embedded, ground-mounted, interpretive panels, etc.
Image Credit: Pentagram

1. Color is applied as a distinct identity element for each subdistrict (or CBC)
2. Different sub-districts (or CBCs) are unified with a consistent signage design and layout
3. Different signage types and applications are recognizable as a family through consistent branding

DESIGN STRATEGIES (CONTINUED)

ii. **Ground-mounted Signs** can include wayfinding and other information. These signs should be at the human scale (targeting people walking, riding bicycles, and riding micromobility modes. Ground-mounted signage should not exceed 10-feet in height, measured from ground level. Signage may include:

   a. **Information/Directional Signs** should be located within the Amenity Zone or at intersections, and should not encroach onto sidewalk areas. They should provide information about the location of BRT stations, area amenities, including (but not limited to) a context map (with possible orientation for users, such as "You Are Here"), as well as listings of parks, businesses, services, and upcoming events.

   b. **Interpretive Panels** should be used to provide context related to special features and areas, such as Livability Spines, Ecological Spines, stormwater management areas, the Legacy Corridor, the Woodlawn Cultural Corridor, and other public spaces, in order to communicate such things as the history, functions, flora, and fauna of these areas.

iii. **Banners Mounted on Street Light Poles** should provide vehicle-focused information, with large lettering for easy reading, when permitted. This type of signage should include Richmond Highway-related branding as well as icons specific to each area. Pole-mounted signage should not exceed 16-feet in height, measured from ground level to the top of the banner.

iv. **Paving-embedded Elements and Context-sensitive Decals** can serve as both wayfinding and interpretive devices for pedestrians. They should provide information about area amenities, including (but not limited to) a context map (with possible orientation for users, such as "You Are Here"), as well as listings of parks, businesses.

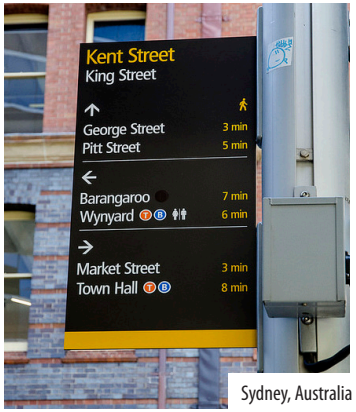
v. **BRT-Related Wayfinding Signage** should include information such as distances and directions to area hubs/attractions (e.g., "You're 500 feet or a three min walk to the Hybla Valley BRT Station"). Area names provided on signage within CBCs should correspond to the nearest BRT station, to create a connection between the BRT system/station plazas and each CBC.

C. Special, place-based signs should be adopted for areas such as Livability Spines, Ecological Spines, the Legacy Corridor, and the Cultural Corridor, as follows:

   i. Signage should be located along walkways, near seating clusters, and near any programmed activity areas.

   ii. Along Livability Spines:

      a. Creativity is encouraged regarding the location, design, and topic of signage, as long as it fits within the broader family of signage for the Richmond Highway area. For example, signage may incorporate creative use of color, digital and interactive features, or identity elements that complement the design and uses of the Livability Spine.



Sydney, Australia

LEFT
Ground-and pole-mounted wayfinding signage showing directions to a nearby transit station
Image Credit: Minale Tattersfield, City of Sydney

DESIGN STRATEGIES (CONTINUED)

b. Interpretive signage should relate to notable features and destinations within the CBC, including but not limited to heritage and ecological resources.

iii. Along Ecological Spines and near stormwater management features in Livability Spines:

a. Signage should include interpretive elements that explain, celebrate, and make visible the green infrastructure, ecological functions, and seasonal variations occurring within the linear park corridors, including the value of stormwater as a resource and how it is being managed.

iv. Along the Legacy Corridor (Hybla Valley-Gum Springs) and the Cultural Corridor (Woodlawn):

a. *Purpose*: The topic of interpretation should vary by zone (and related feature); however, all signage should have a common and distinctive visual character to distinguish the Legacy Corridor and Cultural Corridor from other areas. See Section 6D for descriptions of the Legacy Corridor zones and Section 6E for further description of the Cultural Corridor.

b. *Type*: Signage should include interpretive panels that explain the importance and history of the Richmond Highway area, while paving-embedded elements can be used to mark important paths and places.

c. *Location*: Legacy Corridor signage should be located either within the Amenity Zone or along the back edge of the sidewalk, at intervals of one signage panel (or cluster of panels) per block. Cultural Corridor signage should be located at regular intervals along trails, at special locations with heritage and cultural interest, or at key trail intersections.

3 CONTENT AND GRAPHIC STYLE

A. Imagery/icons

i. Signage should reflect significant characteristics of the CBCs along the Richmond Highway Transit Boulevard, including any community-specific branding elements.

ii. Icons (such as those meant to represent the BRT system, shopping areas, environmental features, etc.) should be simple and easy to interpret in any language.

B. The size, typeface, graphics, illustrations, and orientation of signs should be designed for the intended user based on where and by whom a sign will be viewed (e.g., by a pedestrian, by a driver, or by a passenger in a moving vehicle).

C. Sign content including lettering and maps should be designed with a range of users in mind and include features such as contrasting sign content and clear lettering.

i. Maps and content that are intended to be viewed in close range should be located between 35 and 55 inches above ground level.

D. Distances to destinations should be provided in both length and time (e.g., "You're 1500 feet / five minute walk / three minute bike ride to the Gum Springs Community Center and Museum").

E. Technology such as "smart" signage and digital displays should be incorporated in the public realm to provide current information regarding businesses, transit, parking, etc.

F. The design of signage should reflect current research and best practices pertaining to bird-friendly design. Color and material selection should prioritize colors and materials that do not have an adverse impact on birds. To the extent possible, signage should be designed to welcome perching birds. Reflective materials should be avoided.

3B LINEAR PARKS

Linear parks are typically long, narrow open spaces that follow the alignments of corridors such as waterways, roadways, and trails. In the Richmond Highway area, two predominant types of linear parks serve as organizing elements and significant open spaces within CBCs.

– **Livability Spines** are special street types that include Linear Parks.

– **Ecological Spines** are linear parks and riparian corridors that may include roadways.

The linear parks also function as green corridors, providing critical ecological and public health functions that include stormwater absorption and filtration, tree canopy expansion, and wildlife habitat creation while also serving as opportunities to re-establish native plant communities and educate the public about ecological processes.

This section provides design guidance for each type of linear park. When design principles and strategies refer to the linear park portions of Livability Spines and Ecological Spines, this area is generally assumed to encompass the green and open areas located between adjacent sidewalks, buildings, property lines, and other constructed edges. For the purpose of calculating contributions toward open space requirements, any walkways or pathways integrated into these green and open areas are also considered to be part of the linear park.

LEFT
A linear park that abuts a roadway and an adjacent development
Image Credits: Wesley Nel

3B.1 LIVABILITY SPINES

Livability Spines are roadways that include linear green spaces and plazas along both sides of the roadway and along multiple street blocks. As a key component and organizing feature of the Richmond Highway area, Livability Spines enhance multimodal mobility by integrating pedestrian and bicycle facilities, and may provide connections from the CBCs to the BRT stations. As linear parks with outdoor activities and active uses adjacent to the ground floors of buildings, Livability Spines can function as "main streets" and community gathering places for the CBCs.

REFERENCES FOR LIVABILITY SPINES

Volume I Urban Design Guidelines for CRDs and CRAs (Chapter 3)
Urban Parks Framework in the Comprehensive Plan – Policy Plan
Public Facilities Manual – Chapter 8

DESIGN PRINCIPLES

Livability Spines should serve as important open space and ecological connections. They should link individual open spaces to active CBC land uses and, in some instances, to BRT stations, while also functioning as green corridors through the provision of a range of ecological functions.

Livability Spines should be flexible spaces that accommodate a spectrum of active and passive uses to foster street life. Livability Spines should function as public, democratic spaces that accommodate diverse users. Each Livability Spine should be designed with a broad spectrum of spaces and uses, including spaces for both active, programmed activities and passive recreation and respite. Livability Spines should also include adaptable spaces that are able to support a range of temporary uses when opportunities arise.

RIGHT
A rendering of the Livability Spine in Penn Daw CBC showing an interconnected multi-use walkway, linear park space, and active Building Zone

DESIGN PRINCIPLES (CONTINUED)

Uses and programming within Livability Spines should complement and respond to adjacent land uses. With some exceptions, as noted in the following design strategies, portions of the Livability Spine adjacent to commercial or retail uses or other higher-density land uses should emphasize active programming, while portions adjacent to lower-density residential neighborhoods should emphasize passive uses.

Livability Spines should be created by aggregating park space contributions by individual property owners to create vibrant linear parks adjacent to the roadway. In lieu of each new development providing its own, disconnected park space, the developers of projects abutting a Livability Spine should coordinate in the design and implementation of the linear park. The result will be a set of larger common public spaces, coordinated across developments, that have an impact that is greater than the sum of its individual parts.

Gubei, China

DESIGN STRATEGIES

1 ACTIVE AND PASSIVE USES

A. As shown in *Graphics 16-18*, the selection and location of activities within the Livability Spines should reflect a mix of active and passive uses that generally correspond with adjacent land uses, building densities, and ground floor designs.

   i. The most active Livability Spine uses should generally be located in areas that are (a) closest to the Richmond Highway Transit Boulevard and BRT stations, and (b) adjacent to commercial, retail and medium- to high-density multifamily uses and other highly-active public areas.

   ii. The majority of passive uses should generally be concentrated on blocks adjacent to lower-density residential neighborhoods or in locations where topography may impact the feasibility of active uses.

   iii. Exceptions to the guidance above may occur in instances where Livability Spine uses and adjacent land uses are complementary in nature. For example, a Livability Spine may incorporate passive green space, such as an open lawn or garden area, that complements adjacent higher-density restaurant and retail uses (e.g., consuming a carry-out meal or coffee, while seated on a lawn or bench). Similarly, an active use such as a small playspace may be appropriately located next to a lower-density residential neighborhood as long as sufficient noise buffers are provided between playspaces and individual homes.

   iv. Even the most active portions of Livability Spines should incorporate spaces devoted to passive recreation to enable a diverse range of experiences, including places for rest, relaxation, and informal gatherings.

LEFT
Example of a linear park with Livability Spine features. These include outdoor dining along the building façade, wayfinding signage, and connections between Building Zones through the linear park
Image Credits: Tom Fox

DESIGN STRATEGIES (CONTINUED)

B. Livability Spines should include flexible spaces that can support temporary activities.

   i. Where possible, spaces for passive recreation, such as open lawn areas, should be designed for a variety of active, programmed uses when the need or opportunity arises.

   ii. Temporary roadway closures of the Livability Spine should be considered for special events.

2 TRANSITIONS AND INTEGRATION OF SITE ELEMENTS

A. Generous landscaping and street furnishings should be incorporated into the Landscape Panel adjacent to the roadway to create a comfortable and adequately buffered pedestrian environment.

B. A multi-use walkway should accommodate both pedestrian and bicycle travel. The alignment and design of the walkway should be flexible and should be creatively integrated into the linear park, such that it is a distinctive facility that connects to adjacent uses and other paths.

   i. A minimum 2-foot lateral clear zone to a fixed object is required on both sides of the multi-use walkway.

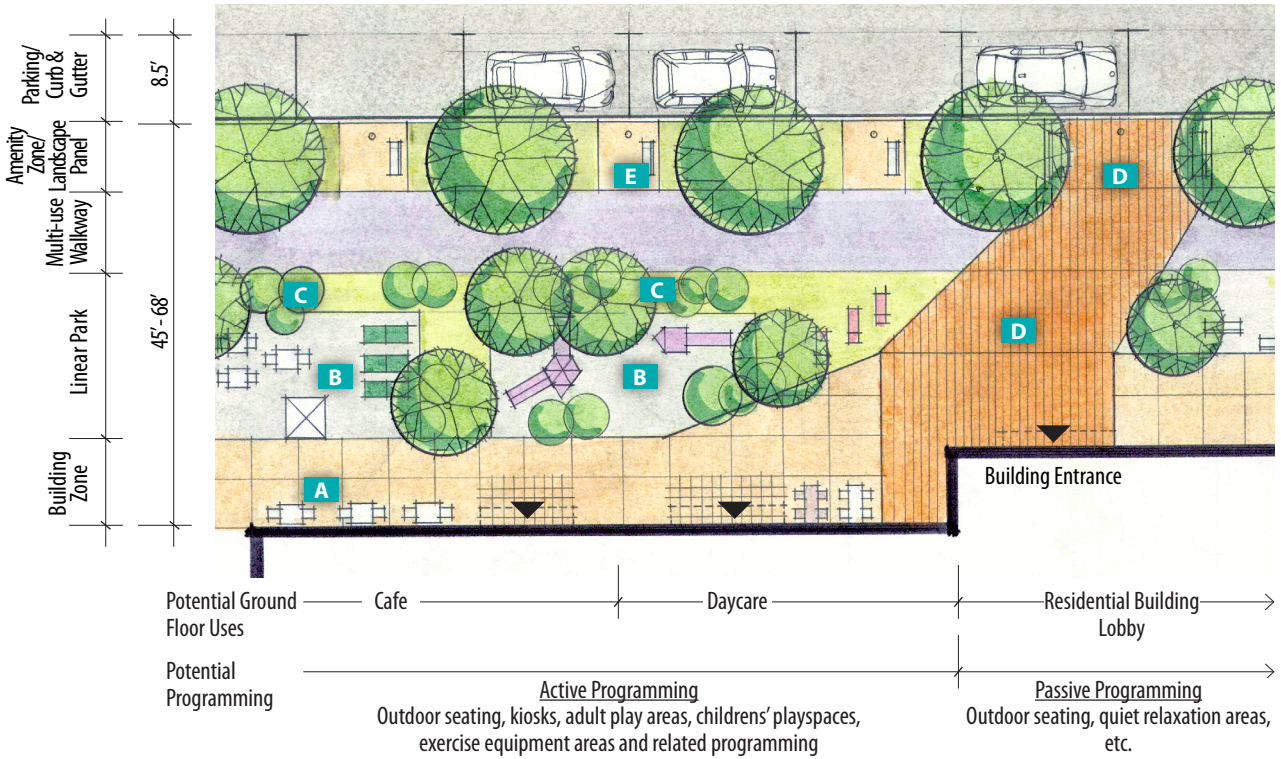
C. The multi-use walkway, linear park, and Building Zone should work together to create a unified environment in which activities within the three zones can intermingle and people can easily move readily among the zones as desired. The multi-use walkway should incorporate frequent connections between the Building Zone area and the sidewalk in each block, as follows:

   i. Depending on the size of the block, two to four connections between the Building Zone and the Amenity Zone, through the multi-use walkway, are recommended along each block.

Sydney, Australia

RIGHT
Adult play programming along a linear open space with outdoor "rooms" for different activities, similar to the Livability Spine
Image Credit: Florian Groehn,Simon Whitbread

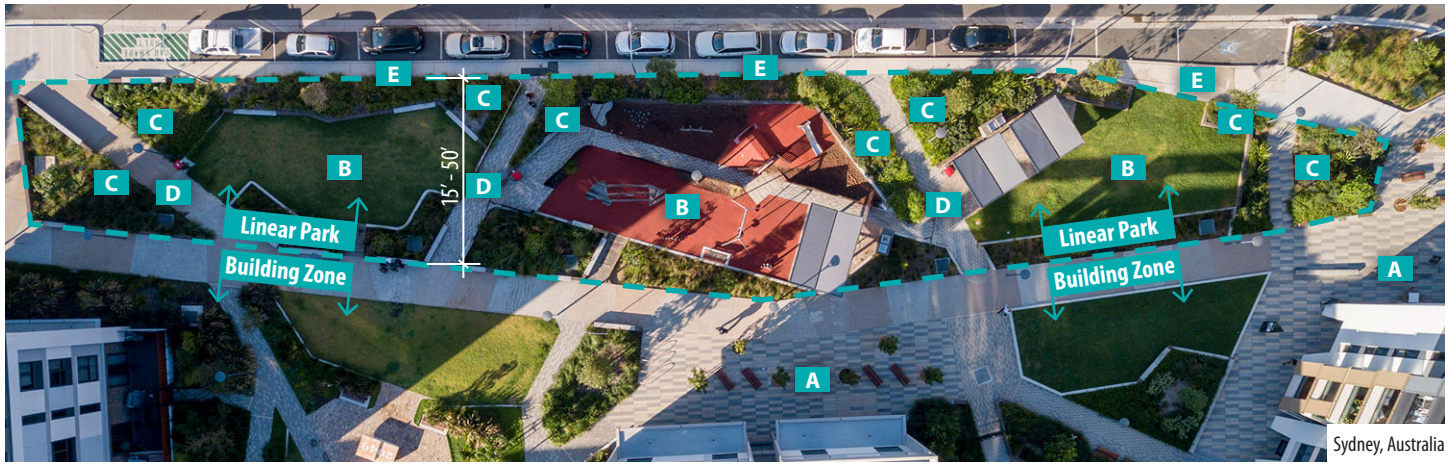
GRAPHIC 16: LIVABILITY SPINE PROGRAMMING ADJACENCY AND CONTEXT



KEY

- **A** Outdoor dining / seating / planters / etc. along a building façade
- **B** Programming clusters ("rooms")
- **C** Appropriate landscape buffers (trees, low understory planting, etc.) and architectural screens between each "room", adjoining walkways, and Building Zone areas
- **D** Paths that connect Building Zones, linear parks, walkways and Landscape Panel using special paving treatments
- **E** Hardscape areas/Amenity Zones provide pedestrian connections between on-street parking and walkways / linear parks / Building Zones

NOTE:
Key applies to the graphic and image on this page



Sydney, Australia

LEFT
Example of a linear park with Livability Spine features. These include outdoor dining along the building façade, programming clusters, and connections between Building Zones, linear parks, and parked vehicles
Image Credit: Wesley Nel

DESIGN STRATEGIES (CONTINUED)

D. Understory plantings, such as hedges or shrubs, should be utilized to define and buffer distinct spaces, or "rooms," within the linear park portions of the Livability Spine. (see *Graphic 16*).

E. Fencing should be utilized only when necessary to separate children's playspaces or spaces for off-leashed pets from other uses, such as multi-use walkways.

   i. Fencing should be no more than 4-feet high, unless needed for off-leashed pets.

   ii. Fencing materials that provide transparency, such as powder-coated aluminum, are encouraged.

F. Stormwater management facilities, including green stormwater infrastructure, should be integrated into the Livability Spines. In addition to capturing and treating stormwater, these features can serve as distinctive landscape elements that lend character to the Livability Spine. See Section 3B.3 of this chapter for additional guidelines pertaining to stormwater management and 3A.4 for tree planting in these facilities.

3 PAVING MATERIALS

A. Poured-in-place concrete should serve as the primary paving material for multi-use walkways within Livability Spines.

B. Within the Amenity Zone, special precast concrete pavers, consistent with those suggested for Amenity Zones along other streetscape types, should be used for paving.

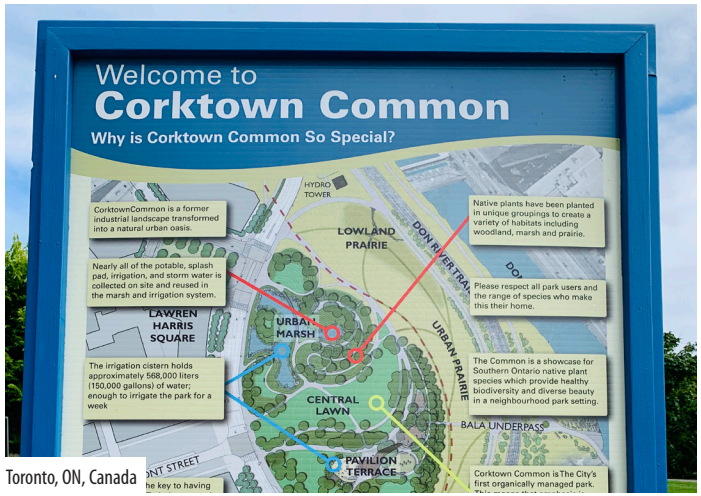
C. Special paving and patterns should be incorporated to highlight locations where transitions from the Building Zone to the Amenity Zone occur. At connection points between the Building Zone and the Amenity Zone, creativity in paving materials is encouraged to highlight these connections for pedestrians and bicyclists. Paving materials are not limited to those suggested for streetscapes and plazas and may include other materials and colors compatible with the overall paving palette for the area, as described in section 3A.1.

4 CONTINUITY BETWEEN BLOCKS

A. Each Livability Spine should incorporate common, identifiable, and recurring visual elements that make it read as a whole, even when uses and programming vary from segment to segment. Potential visual elements could include a family of signage and/or distinctive paving treatments, such as branded markings or colors.

B. Along the length of the Livability Spine, transitions between blocks and across streets should be highlighted by visual elements such as signage that signal the continuation of the Livability Spine while alerting motorists to crossing pedestrians and bicyclists.

C. At street intersections, curb ramps should be designed for both bicycles and pedestrians, see Chapter 8 of the PFM.



Toronto, ON, Canada

RIGHT
An example of interpretive signage within a park
Image Credit: Fairfax County

Washington, DC

TOP
An example of connections between the Sidewalk and the Building Zone within a linear park; stormwater management facilities are integrated into other landscape elements to provide environmental benefits
Image Credit: Rhodeside & Harwell

Northampton, MA

BOTTOM
A passive trail connecting adjoining sidewalk spaces flanked with seating and plantings: an example of passive outdoor activities that could occur along the Livability Spine that also provide habitats
Image Credit: Ty Cole Studio, Stimson

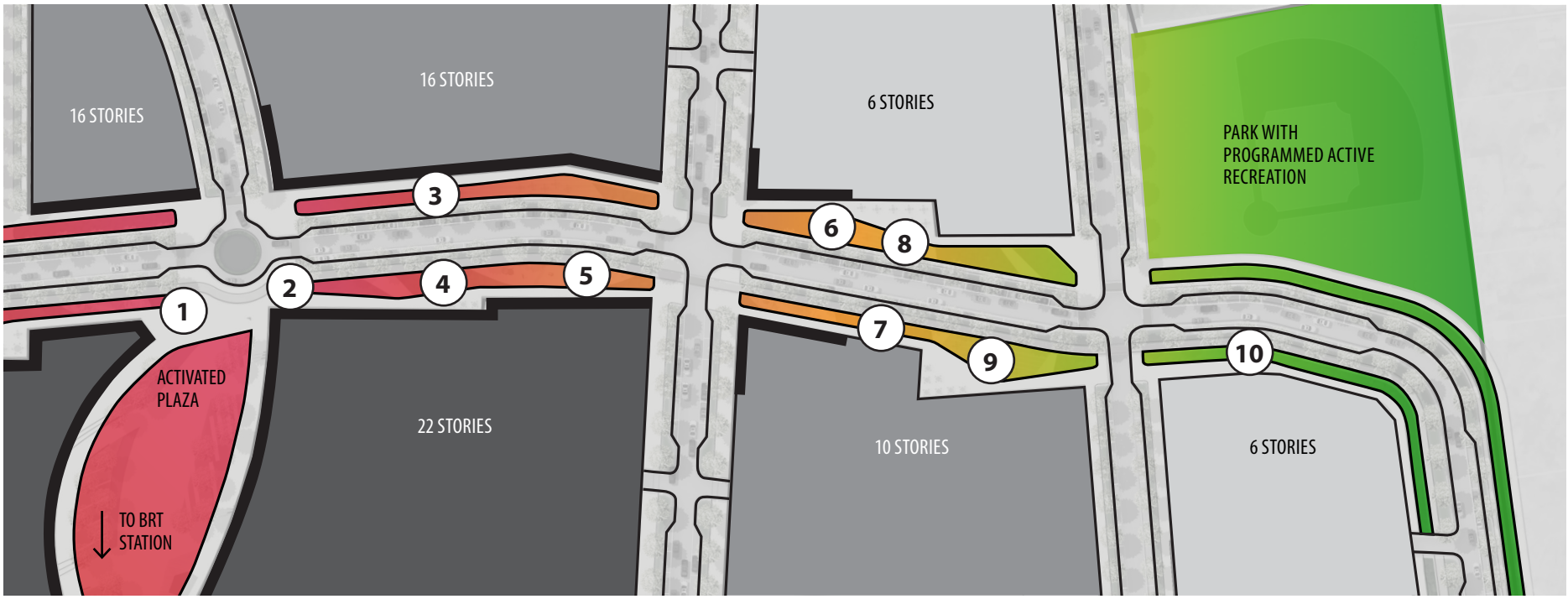
GRAPHIC 17: LIVABILITY SPINE PROGRAMMING CONTEXT ACROSS MULTIPLE BLOCKS (PROTOTYPE)

ACTIVE GROUND FLOOR USE

HIGH RISE BUILDING — LOW RISE BUILDING

ACTIVE PROGRAMMING — PASSIVE PROGRAMMING

PROGRAMMING SHOULD BE COORDINATED WITH THE SPECTRUM OF USES ILLUSTRATED ON THE NEXT PAGE.



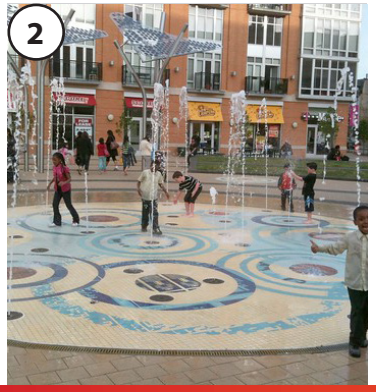
DEVELOPMENT DENSITY

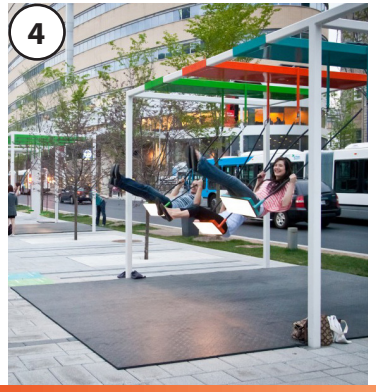
MORE ACTIVE PROGRAMMING IS LOCATED NEAR RETAIL/COMMERCIAL USES, HIGHER-DENSITY DEVELOPMENT, HIGHLY- ACTIVE ADJACENT PUBLIC SPACES, AND BRT STATIONS

MORE PASSIVE PROGRAMMING IS LOCATED NEAR LOWER-DENSITY DEVELOPMENT, PASSIVE ADJACENT PUBLIC SPACES, AND EXISTING SINGLE FAMILY RESIDENTIAL NEIGHBORHOODS

GRAPHIC 18: PROGRAMMING EXAMPLES

ACTIVE PROGRAMMING





MORE ACTIVE — **LESS ACTIVE**

MARKETS, FOOD TRUCKS, FESTIVALS

Permanent hardscape or structures that accommodate recurring markets or festivals
Image Credit: Stephen Elliot

ACTIVE PLAY

Water features and fixed or movable games that invite interaction, play, and gathering
Image Credit: Elisa Murray

Permanent climbing walls or rope courses for safe play of all age groups
Image Credit: Gehl

Swings, seesaws or movable objects whose movements activate sounds and lights. May accommodate small-scale performances
Image Credit: Olivier Blouin, Arlington Now

INFORMAL PLAY

Permanent or temporary large-scale board games that do not require specialized play equipment
Image Credit: Gehl

PASSIVE PROGRAMMING

LESS PASSIVE — **MORE PASSIVE**

OUTDOOR FITNESS

Permanently placed fitness equipment stations that allow for self-guided fitness routines
Image Credit: PUPN Magazine

MOVEABLE SEATING AREAS

Hardscape areas with movable chairs, tables and plantings to allow for informal lingering
Image Credit: Copley Wolff

LAWNS FOR OCCASIONAL EVENTS

Flexible lawns that can accommodate occasional special events, but primarily host solitary activities or small, organic gatherings
Image Credit: Gehl

GARDENS, TREE ALLÉES, NATURALISTIC PLANTINGS WITH SEATING

Soft and hardscaped areas that invite respite and contemplation
Image Credit: Ty Cole Studio, Scape

Heavily-planted areas with seating. Plantings might include dense tree canopies or special habitats for fauna and pollinators
Image Credit: Ty Cole Studio, Stimson

LIST OF POTENTIAL ACTIVE AND PASSIVE PROGRAMMING ACTIVITIES/FEATURES

Following is a list of potential active and passive programming activities/features for public spaces, including Livability Spines, Ecological Spines, neighborhood parks and plazas, and related open space areas. While not an exhaustive list, these programming activities/features are intended to be used as suggestions and inspiration for public space design. The applicability of specific programming within a particular public space should be carefully considered based on factors such as location and surrounding land uses, available area, adjacency to ground floor uses, etc.

ACTIVE USES AND EVENTS:

- Markets (e.g., farmers, specialty market, etc.)
- Performances (e.g., music, dance, theater, etc.)
- Stage/Amphitheater
- Carousel
- Skating rink
- Water park
- Splash pad
- Bike safety course/traffic garden
- Obstacle course
- Beer/wine tastings
- Food festivals/Food trucks
- Ethnic festivals/Cultural fairs
- Carnival with rides
- Petting zoo
- Winter tree lighting ceremony
- Pumpkin patch
- Coffee shop
- Fitness classes (e.g., yoga, bootcamp, aerobics, martial arts)
- Track & field day
- Multi-Sport court
- . . .and more.

ACTIVE-LITE / SOCIAL RECREATION USES AND EVENTS:

- Outdoor movie nights
- Watching major sporting events like World Cup
- Educational classes or clubs (e.g., scouts, environment, science, hobbies, arts and crafts, etc.)
- Large-scale chess and/or checkers games
- Table or life-size games like Kerplunk, Jenga, Connect4
- Equipment/games like jump ropes, frisbees, soccer balls, wiffleball, hula-hoop
- Lawn/ground games like four square, bocce ball, cornhole, hop-scotch, Twister
- Chalk art
- Playgrounds (climbable facilities, swing, slide, see-saw, sand pit, bouncy animal, monkey bars, etc.)
- Dog park
- Fitness stations
- Outdoor gym
- Swings
- Children's maze
- Sound sculptures
- Interactive art
- Interpretive programming
- Climbing structure/wall/trees/rocks
- Rope skills/tightrope
- Ping pong
- Public piano
- One-person stage/puppet theatre/magician/poetry reading
- Giant LEGOS
- Tai Chi
- Meditation
- Citizen science
- Volunteer landscape maintenance
- . . .and more.

PASSIVE USES:

- Trails/walking paths
- Green spaces
- Seating areas
- Bike share station
- Kayak/Canoe launch
- Hammock
- Public Art
- Gathering spaces
- Gardening spaces/Community garden
- Creek/River walks
- Geocaching
- Butterfly garden
- Native-species garden
- Nature paths / nature walks
- Recreational trail
- Heritage trail / history trail
- Bike-repair
- Fountain
- Educational signage
- Lounge / Adirondack chairs
- Birdwatching
- Wildlife viewing
- Display space for youth art
- . . .and more.

IMPLEMENTATION STRATEGIES

The implementation of Livability Spines will involve coordination among the Departments of Planning and Development, Public Works and Environmental Services, and the Fairfax County Park Authority. Specific considerations during the implementation process include the following:

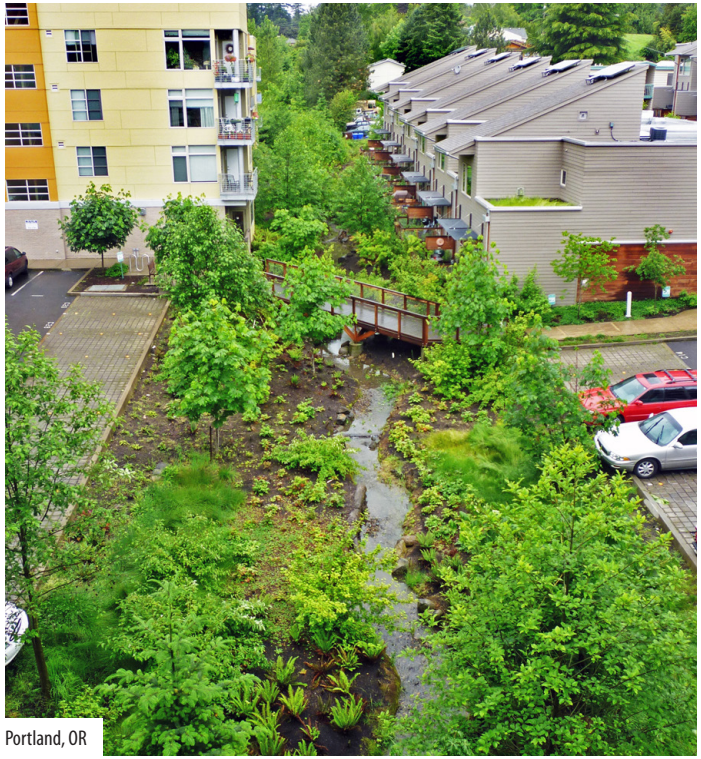
A. Prior to submitting a plan that includes a potential Livability Spine alignment, a property owner should **coordinate with County staff** on an appropriate plan for Livability Spine design and development, including more specific strategies for site programming based on factors such as available space, adjacent land uses, and coordination with other programming existing and planned for the Livability Spine.

B. Each developer should implement the portion of the Livability Spine that aligns with a development's property lines. The first developer to construct a portion of the Livability Spine should set the tone for future additions to it. Subsequent developments should coordinate with other developers and with the County to ensure that factors such as space needs and programming are well-coordinated, cohesive, and not duplicative.

C. The Livability Spine can be used to meet **Urban Park Space Requirements**. If park space credit is pursued, these facilities should be privately maintained. See the Urban Street Network Design section of the Comprehensive Plan for details regarding the Livability Spine (Avenue).

3B.2 ECOLOGICAL SPINES

Ecological Spines are linear parks and enhanced riparian corridors for select locations in the Richmond Highway area where there are surface or buried streams. Formed by "daylighting" covered streams or by enhancing existing streams and riparian buffer areas, Ecological Spines can serve a range of ecological, recreational, and educational purposes while connecting people with nature. Ecological Spines function as critical green corridors that augment downstream health and offer the potential for habitat creation through the modeling of natural systems and the integration of native plants. They may include local streets and/or stormwater management facilities. As passive linear parks with recreational amenities along stream valleys, Ecological Spines function as primary components and organizing elements of the open space and street networks.



Portland, OR

RIGHT
A restored and "daylit" stream running through a new development project
Image Credit: Headwaters at Tryon Creek

DEFINITIONS

Active Channel: The stream area occupied by typical flood events (i.e., comparable to the two-year recurring flood). The active channel generally coincides with the ordinary high-water mark. *(Source: Washington DNR)*

Bankfull: A flow event that fills the stream cross-section, just before it overtops the banks. *(Source: Virginia Department of Conservation and Recreation)*

REFERENCES FOR ECOLOGICAL SPINES

RPA designation: Code of Virginia: Chesapeake Bay Preservation Act (§ 62.1-44.15:72.F); Fairfax County's Stormwater Management (SWM) Ordinance (Section 118-1-5 and 118-1-6); and Fairfax County's Public Facilities Manual (Chapter 6 and 12)
SWM Quality and Quantity Standards: Fairfax County SWM Ordinance (Chapter 124); Chesapeake Bay Preservation Ordinance (Chapter 118); and Fairfax County's Zoning Ordinance (Part 2-900 Floodplain Regulations)
Other Design and Environmental Considerations: Virginia Department of Conservation and Recreation (Chesapeake Bay Local Assistance) Riparian Buffers Modification & Mitigation Guidance Manual
US EPA Natural Channel Design: Review Checklist
Fairfax County's Comprehensive Plan - Policy Plan: Environmental Section, Objective 9, Policy a
Northern Virginia Soil and Water Conservation District: Water Quality Stewardship Guide
Department of Conservation and Recreation: The Virginia Stream Restoration and Stabilization Best Management Practices (BMP) Guide
USDA Natural Resources Conservation Services: Federal Stream Corridor Restoration Handbook
Design and Planning for Flood Resiliency: Guidelines for NYC Parks
Fairfax County's Urban Stormwater Concepts for Tysons Corner: Compliance Flowchart
Fairfax County's Comprehensive Plan Area IV: Richmond Highway Corridor - Overall Vision Elements and Strategies
Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers - Appendix 7: Native Plant Guide for Planting Along Streams and Ponds

Bankfull Bench: A flat or shallowly sloped area above bankfull that dissipates energy during flows above bankfull. *(Source: US Army Corps of Engineers)*

Constrained Section: A section of an Ecological Spine that has limited space due to conditions such as the presence of structures or other development. These sections may have constructed, rather than natural banks.

Constrained Waterway: A portion of the Ecological Spine where the width of the waterway is limited by adjacent structures and development, and where the floodplain is typically contained within its constrained portions.

Daylighted Stream: A stream that had been previously diverted into an underground drainage system, has been redirected into an aboveground channel using natural channel design concepts (as defined in § 62.1-44.15:51), and would meet the criteria for being designated as a Resource Protection Area. *(Source: Commonwealth of Virginia, Chesapeake Bay Preservation Act)*

Resource Protection Area (RPA): A component of the Chesapeake Bay Preservation Area comprised of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation of the quality of state waters. In their natural condition, these lands provide for the removal, reduction, or assimilation of sediments, nutrients, and potentially harmful or toxic substances from runoff entering the Bay and its tributaries, and minimize the adverse effects of human activities on state waters and aquatic resources. (*Source: Chapter 118, Fairfax County Code of Ordinances - Chesapeake Bay Preservation Ordinance)*

Riparian Area: A vegetated or partially vegetated area adjacent to rivers and streams including but not limited to river and stream beds and banks. Riparian areas are the "ribbons of vegetative green" adjacent to and including rivers and streams. Riparian areas are often flooded or subject to high ground water. *(Source: Jon Kusler, Association of State Wetland Managers)*

Riparian Corridor (Urban): A management prescription area designed to include much of the riparian area. Within the urban riparian corridor, management practices are employed to maintain riparian functions and values, when possible. This can include corridors along defined perennial and intermittent stream channels that show signs of scour, and around wetlands and springs. *(Source: USDA)*

Stream Bank: The sides of a stream channel between which water flow is confined. *(Source: Wikipedia)*

Stream Enhancement: An intervention that improves the value of particular aspects of a stream and related land resources. *(adapted from Craig Fischenich, USACE)*

Stream Restoration: An intervention that returns a stream ecosystem to a close approximation of its condition prior to disturbance. *(adapted from Craig Fischenich, USACE)*

Unconstrained Section: A section of an Ecological Spine that allows for natural banks and typically has Riparian Area outside the bankfull elevation. It typically has floodplain and Riparian Area outside the channel.

Unconstrained Waterway: A place where the width of the waterway is not limited by adjacent structures or development, has a floodplain, and can accommodate more recreational uses.

Waterway: A broad term used to encompass many types of perennial and intermittent bodies of water.

DESIGN PRINCIPLES

Ecological Spines should function as resilient and ecologically sound riparian corridors. These corridors should support natural hydrological processes, such as infiltration and evapotranspiration, and withstand expected stormwater flows under normal conditions as well as more extreme weather patterns. Native plantings should be integrated into the corridor to create and support habitat for a variety of plants and wildlife.

Ecological Spines should serve as open space amenities that enhance community character, identity, and mobility. Through high-quality design, materials, and plantings, Ecological Spines should create experientially rich landscapes that provide places for respite, gathering, passive recreation, and access to nature. These areas should enhance community aesthetics; serve as visual focal points within the community; provide scenic pedestrian and bicycle connections; and allow for low-volume vehicular access in certain locations. Minimizing the amount of impervious surface and avoiding disruptions to certain environmentally sensitive areas are important considerations.

Ecological Spines should foster strong connections between people and nature by providing immersive natural experiences and learning opportunities. Ecological Spines should be designed to facilitate physical and visual access to waterways so that users can appreciate and interact with natural features. As living demonstrations of ecological processes, they should celebrate, interpret, and increase the public's understanding of ecology, hydrology, cultural resources/heritage, and their community's natural resources.

DESIGN STRATEGIES

1 FLOOD RESILIENT DESIGN

A. Ecological Spines should be designed for resilience, incorporating diverse plantings that are able to respond to environmental stressors and recover after significant disruptions such as major storm events.

B. Buildings proposed near restored waterways should not be constructed within areas that are subject to flooding by 100-year storm events (e.g., within the floodplain). Floodproofing of buildings and structures should be considered when they are located in proximity of floodplain.

C. Except for necessary crossings, roadways should be located outside the floodplain wherever possible.

D. As the County adapts to climate changes, modifications, policies and designs, such as the design storm, may be necessary to adjust to new county planning requirements.

2 RIPARIAN ENHANCEMENT AND RESTORATION

A. Urban riparian corridors and buffers should be preserved and reconstructed as needed to manage and convey the quantity, and improve the quality, of stormwater entering the waterways in accordance with the Chesapeake Bay Preservation Ordinance.

B. Historical and archaeological analyses of a waterway's evolution over time should inform the design of Ecological Spines by providing an understanding of historical flow patterns, waterway alignments, and meanders.

C. Ecological Spines can be augmented to treat on-site runoff using constructed wetlands or other stormwater management features within the corridor. (See the Ecological Spine Type 2 cross-section in *Graphic 20*)

D. The slopes along waterways may be stabilized using both natural and built elements. Such techniques may include natural channel design, planting native vegetation, or by using concrete steps that retain soil and also provide access to water while withstanding stream bank erosion resulting from flooding and fast-moving water.

E. During implementation of Ecological Spines, measures to stabilize stream banks should be employed using natural cover (such as coir matting, soil lifts, and clay plugs), when possible. Application of materials such as mulches, which are susceptible to being washed away during storm events, are discouraged.

3 ENVIRONMENTAL HEALTH AND HABITAT CREATION

A. As green corridors, Ecological Spines should provide for the habitat needs of local flora and fauna by:

i. Preserving existing native trees and vegetation where feasible;

ii. Creating a continuous, well-connected system of riparian corridors;

iii. Using native plant species to stabilize the area and enable local fauna to access shelter, water, and food sources year-round;

iv. Ensuring natural bottoms to support the passage of anadromous (migratory) fish; and,

v. Employing restoration strategies and incorporating native plant and seed mixes that take into account the ability of desirable plants to spread and reseed, while minimizing the ability of invasive plants to overpopulate an area.

4 LINEAR PARK CHARACTER AND AMENITIES

A. Park spaces should be publicly accessible to the extent feasible and desired by the community. However, the design of park spaces should deter pedestrian access to environmentally sensitive areas.

B. Linear parks should integrate a variety of amenities to enhance visitor comfort, including seating and gathering spaces, bike racks, and signage.

C. Where appropriate and where space allows, Ecological Spines should accommodate a range of activities and experiences, including programmed activity spaces, water access points, viewing platforms, interpretive elements, public art installations, play spaces, fitness facilities, and performance areas while maintaining and protecting existing natural resources.

5 EDUCATION AND CONNECTION TO NATURE

A. The design of stream channels should enable easy access to the water's edge to allow for maintenance and provide opportunities for visitors to interact with the water (see Section 3B.3 on stormwater management).

B. Ecological Spines should foster tactile and immersive experiences that encourage connection with nature and interaction with water. Elements such as stepping stones, viewing platforms, and bridges should draw park users into these places.

DESIGN STRATEGIES (CONTINUED)

C. Ecological Spines should be designed to educate park users, instill an appreciation for nature and share the value of green infrastructure. Elements such as signage and art should incorporate interpretive elements that explain, celebrate, and make visible the ecological functions, cultural resources, and seasonal variations occurring within the corridors as well as describe the various public health benefits that are afforded through the creation of these areas.

D. In combination with interpretive elements, the design of Ecological Spines should visibly demonstrate natural processes at work, including the value of rainwater as a resource and how it is being managed. Ecological Spine design should reveal, rather than conceal, restoration techniques (e.g., naturalized stormwater outlets and on-site stormwater systems), while accompanying interpretive elements should highlight and explain the natural processes occurring.

TYPES OF ECOLOGICAL SPINES

This section describes the different types of Ecological Spines, highlights locations where the spine types may be applied, and provides sample cross-sections of different Ecological Spine applications.

There are four distinct types of Ecological Spines designed to fit a range of site-specific conditions and constraints. Some types of Ecological Spines have local streets with buildings along one or both sides, while others feature an adjacent linear park with a shared-use path.

Ecological Spines may be characterized as constrained or unconstrained, depending on the amount of space available for development, stream banks, and amenities. Unconstrained Ecological Spines typically include naturalized banks, while constrained Ecological Spines generally require constructed banks.

Implementing Ecological Spines requires balancing the desired ecological functions of waterways with the constraints of the Richmond Highway area's urban environment and the Chesapeake Bay Preservation Ordinance (CBPO).

Table 5 shows recommended Ecological Spine locations along existing surface and channeled streams, as well as along estimated piped waterway alignments identified using Fairfax County GIS data. However, Ecological Spine applications are not limited to the demarcated locations or to stream daylighting or bank restoration projects.

The four Ecological Spine types and cross-sections present conceptual design recommendations, and may be subject to modifications based on more detailed environmental analysis during the development process. Typical cross-sections for the four types of Ecological Spines are illustrated in *Graphics 19-22*.

TYPES OF ECOLOGICAL SPINES (CONTINUED)

- **Ecological Spine Type 1**: Type 1 demonstrates a condition where the waterway has a local street on one side. Its components should be sized according to the following dimensions:
  - Waterway = 44-feet to 64-feet wide
  - Right-of-way = 61-feet wide (includes 6-feet wide Sidewalk)
  - Total = 111-feet to131-feet wide (not including the Building Zone)
- **Ecological Spine Type 2:** Type 2 combines the waterway with a local street and has a shared-use path in a linear park on the other side. There are opportunities for pedestrian connections from the Ecological Spines to existing residential neighborhoods. Its components should be sized according to the following dimensions:
  - Waterway = 50-feet to 70-feet wide
  - Shared Use Path (along Waterway) = 10-feet wide
  - Right-of-way = 54-feet wide (includes 6-feet wide Sidewalk)
  - Total = 114-feet - 134-feet wide (not including the Building Zone)
- **Ecological Spine Type 3:** Type 3 combines a waterway with a linear park and shared use path on one side and a walkway on the other side. There is no adjacent roadway in Type 3 Ecological Spines. There are opportunities for pedestrian connections from the Ecological Spines to existing residential neighborhoods. Its components should be sized according to the following dimensions:
  - Waterway = 30-feet to 40-feet wide
  - Walkway (along Waterway) = 10-feet wide
  - Path (along Waterway) = 6-feet wide
  - Right-of-way = N/A
  - Total = 54-feet to 64-feet wide (not including the Building Zone)
- **Ecological Spine Type 4:** Type 4 combines a linear park and bioswale/waterway with pedestrian and bicycle facilities along one side of the waterway. A roadway along this type of Ecological Spines is not included. Its components should be sized according to the following dimensions:
  - Waterway = 30-feet to 40-feet wide
  - Walkway (along Waterway) = 10-feet wide and is intended for use by both pedestrians and bicyclists
  - Right-of-way = N/A
  - Total = 40-feet to 50-feet wide

ECOLOGICAL SPINE DIMENSIONS

For more detailed dimensions of the Ecological Spines, see the Urban Street Network Design and CBC sections of the Comprehensive Plan Area IV: Richmond Highway Corridor.

TABLE 5: ECOLOGICAL SPINE LOCATION EXAMPLES

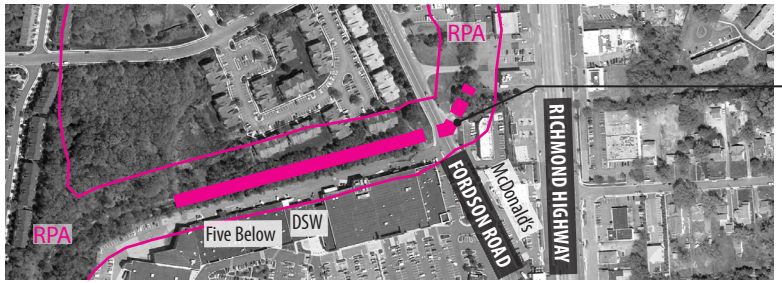
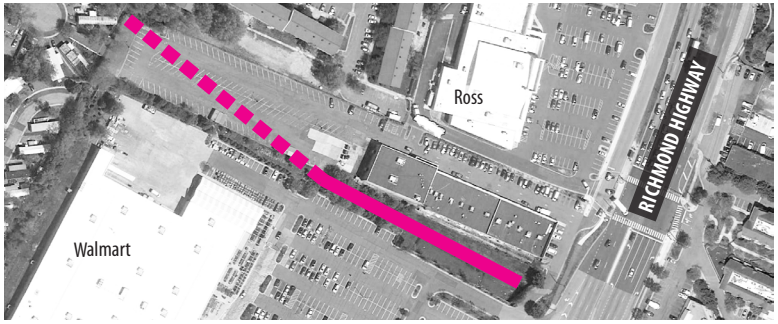
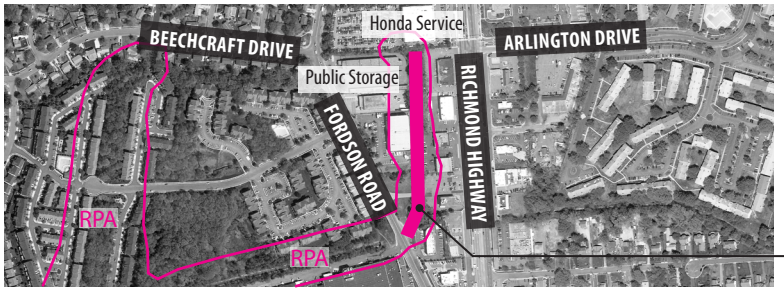
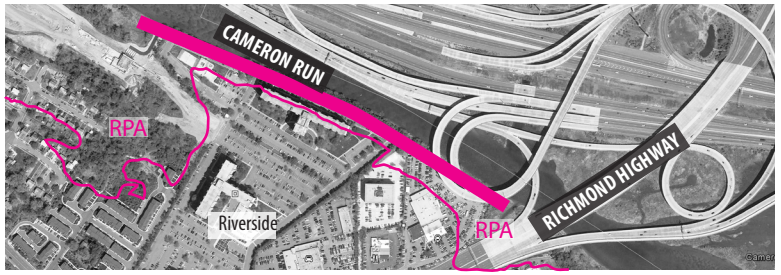
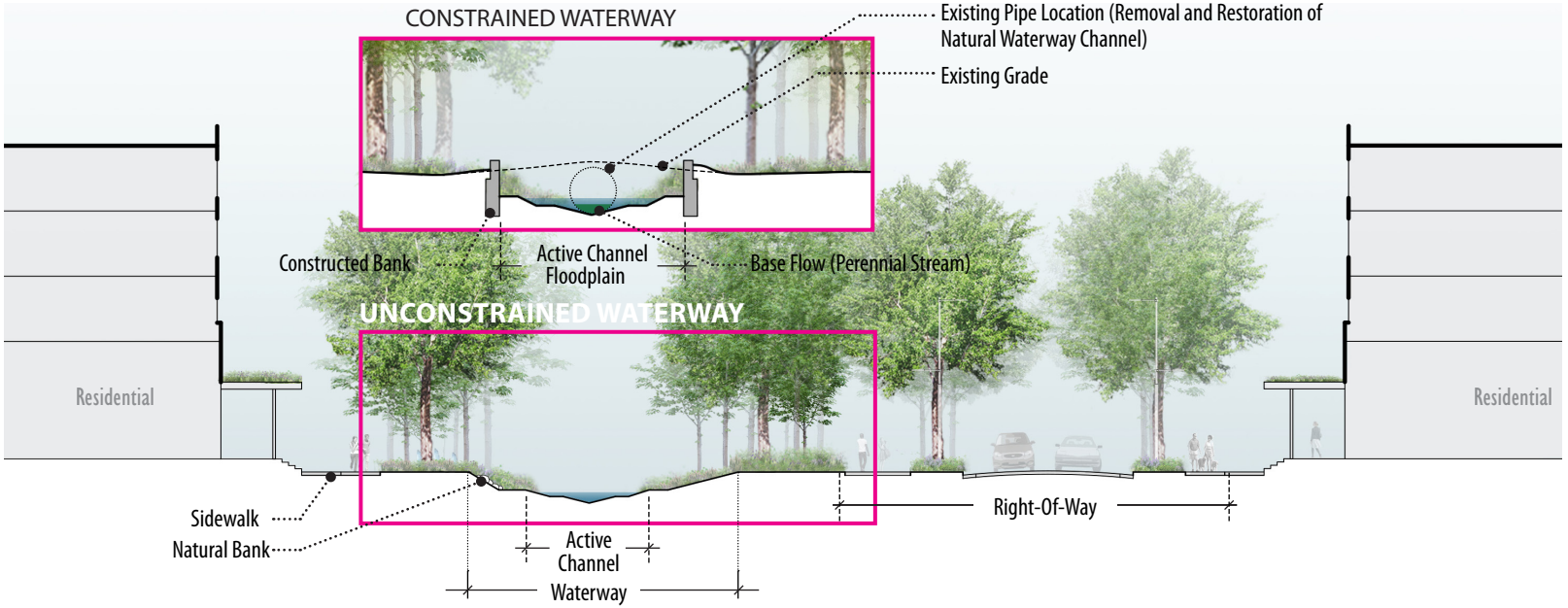
TYPE	EXAMPLE LOCATIONS & RECOMMENDED APPROACH	
TYPES 1 & 2	**A. HYBLA VALLEY-GUM SPRINGS** Shopping Center off of Fordson Road – Daylighting of partially buried tributary of Little Hunting Creek – Restoration of existing surface portion of the stream – Within existing Resource Protection Area	 This section connects to example "D" (see next page)
	B. HYBLA VALLEY-GUM SPRINGS Home Depot Parking Lot to Richmond Highway – Daylighting of partially buried tributary of Little Hunting Creek – Restoration of existing surface portion of the stream – Minimal to no existing Resource Protection Area	
	C. HYBLA VALLEY-GUM SPRINGS Walmart parking lot to Richmond Highway – Daylighting of partially buried tributary of Little Hunting Creek – Restoration of existing surface portion of the stream – Minimal to no existing Resource Protection Area	 KEY Existing Piped Streams Existing Surface Streams Existing RPA Note: Many locations are a combination of piped and surface streams

TABLE 5: ECOLOGICAL SPINE LOCATION EXAMPLES

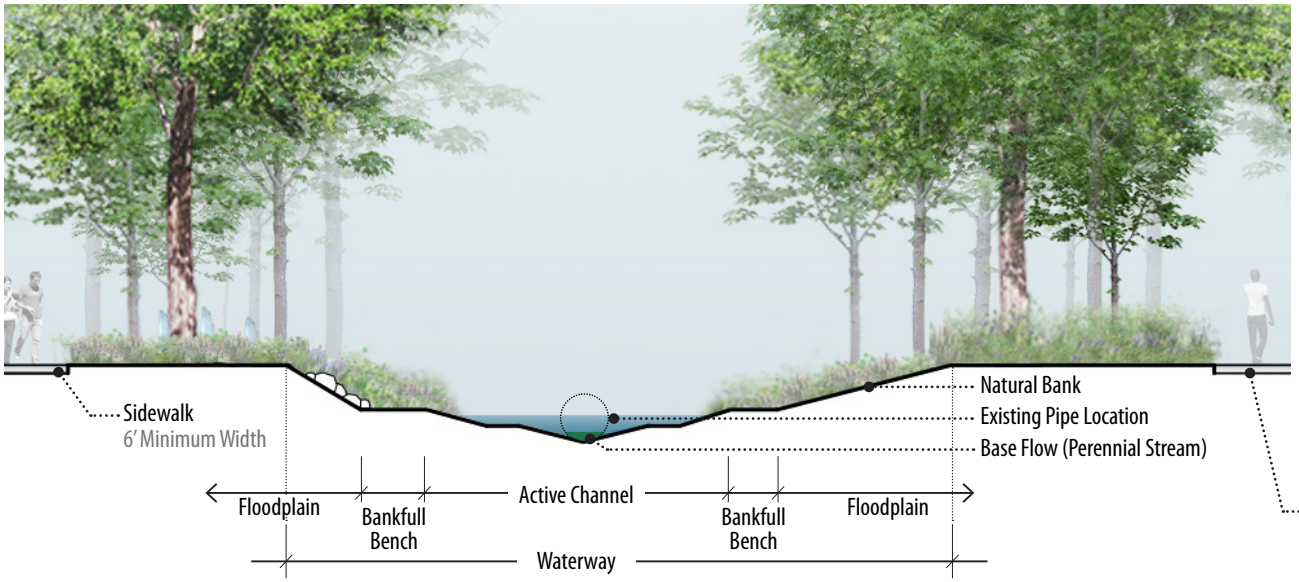
TYPE	EXAMPLE LOCATIONS & RECOMMENDED APPROACH	
TYPE 3	**D. HYBLA VALLEY-GUM SPRINGS** Corner of Fordson Road and Richmond Highway connecting Beechcraft Drive and Arlington Drive – Restoration of existing surface portion of the stream – Within existing Resource Protection Area	 This section connects to "A" (see previous page)
	E. HYBLA VALLEY-GUM SPRINGS Left Image: Sherwood Hall Lane to Richmond Highway Right Image: Vernon Square Drive to Richmond Highway – Daylighting of buried tributary of Little Hunting Creek – Minimal to no existing Resource Protection Area	
TYPE 4	**F. NORTH GATEWAY** Along Cameron Run – Enhancement of Cameron Run shoreline – Significant floodplain and Resource Protection Area in the vicinity of Cameron Run	
	G. WOODLAWN Crossing Richmond Highway in residential area near Woodlawn Court and Lukens Lane – Tributary of the North Fork of Dogue Creek – Restoration of existing surface portion of the stream – Significant floodplain and Resource Protection Area in the vicinity of North Fork of Dogue Creek	 KEY Existing Piped Streams Existing Surface Streams Existing RPA Note: Many locations are a combination of piped and surface streams

GRAPHIC 19: TYPE 1 ECOLOGICAL SPINE - TYPICAL WATERWAY CROSS-SECTION DIAGRAM



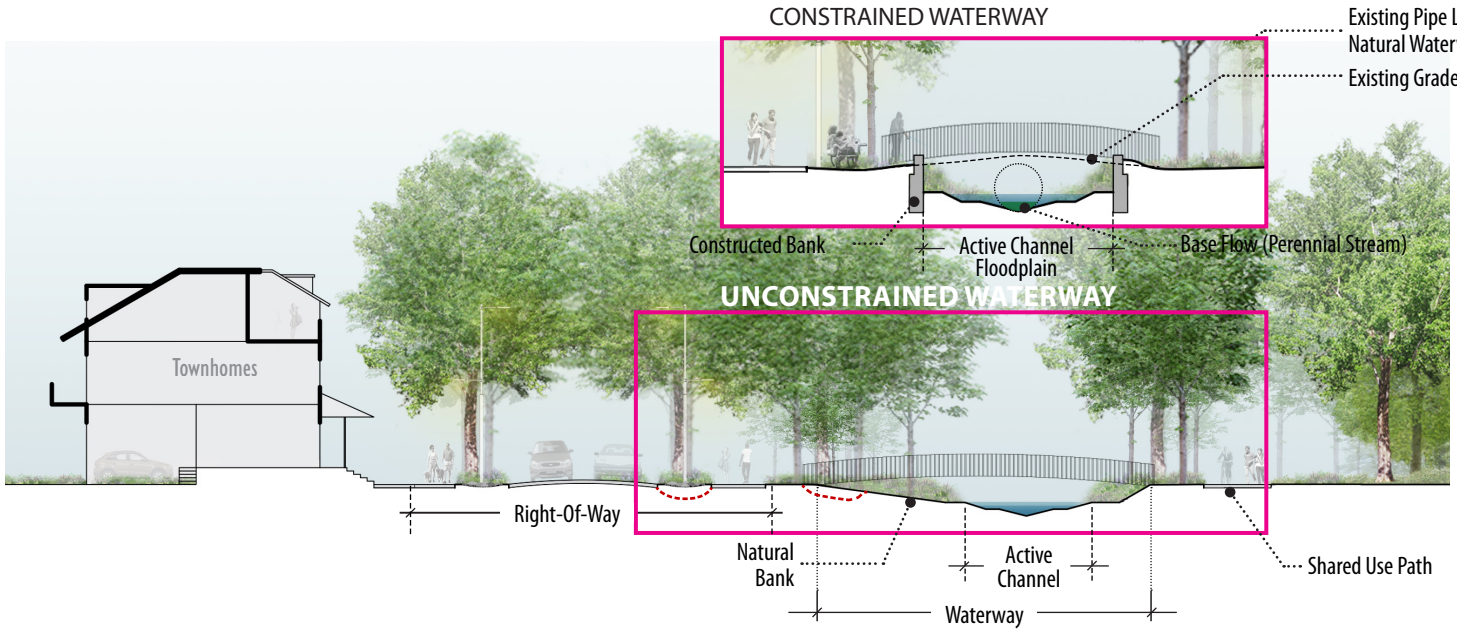
NOTE:
For constrained waterways, it is generally expected that the floodplain is within the active channel.

PREFERRED OPTION (UNCONSTRAINED WATERWAY)



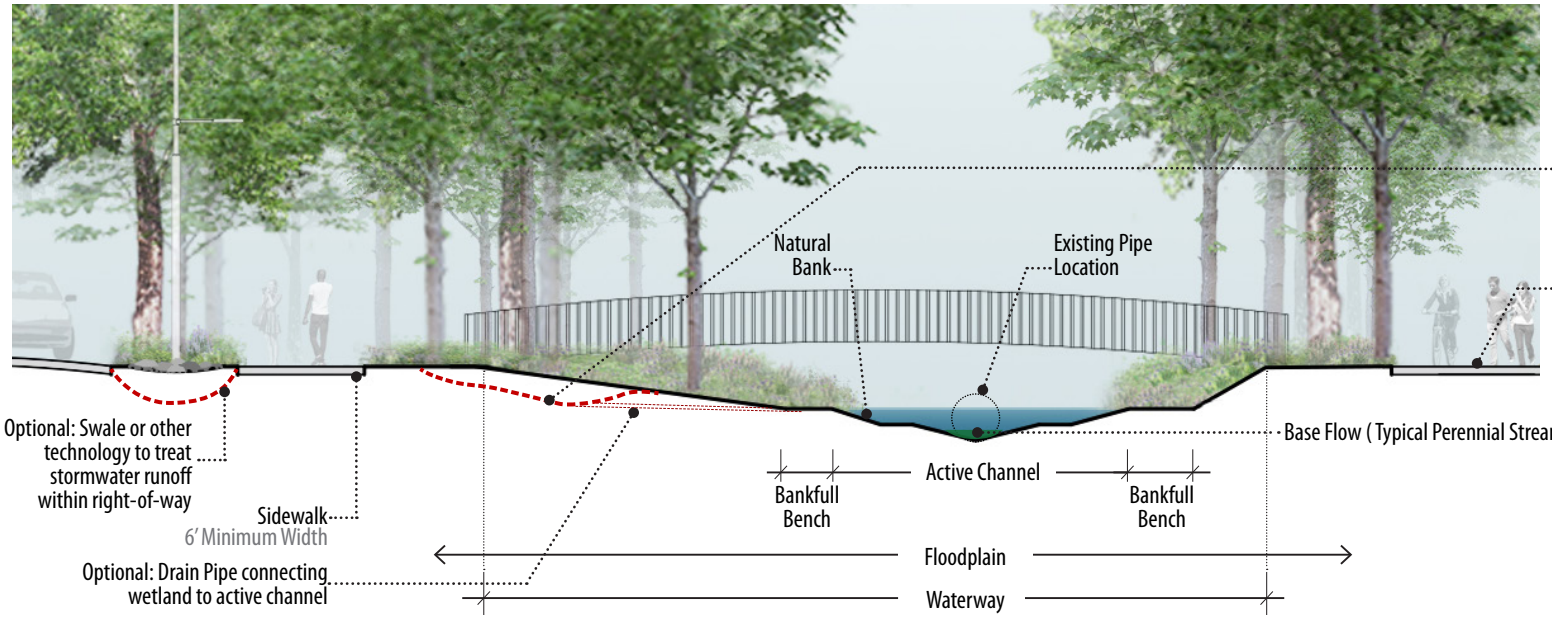
NOTE:
These cross-sections are intended as examples of potential waterway design options under certain urban conditions. The actual design of the waterway will depend on many factors, including: the drainage area, the volume and velocity of flow, pollution contribution, proximity to outfalls, the condition of the surrounding environment, the size of existing pipes, etc. Further feasibility studies should be performed to determine accurate cross-sections with appropriate dimensions.
Trees should be located outside the active channel and bankfull bench. The illustrations show mature tree canopy.
In the Types 1 and 2 cross-section examples (this page and the next), a 6'-diameter existing stormwater pipe is shown. The existing pipe is recommended for removal to restore the active channel.
A constructed bank could be used on one or both sides if a natural bank is not feasible.

GRAPHIC 20: TYPE 2 ECOLOGICAL SPINE - TYPICAL WATERWAY CROSS-SECTION DIAGRAM



NOTE:
For constrained waterways, it is generally expected that the floodplain is within the active channel.

PREFERRED OPTION (UNCONSTRAINED WATERWAY)

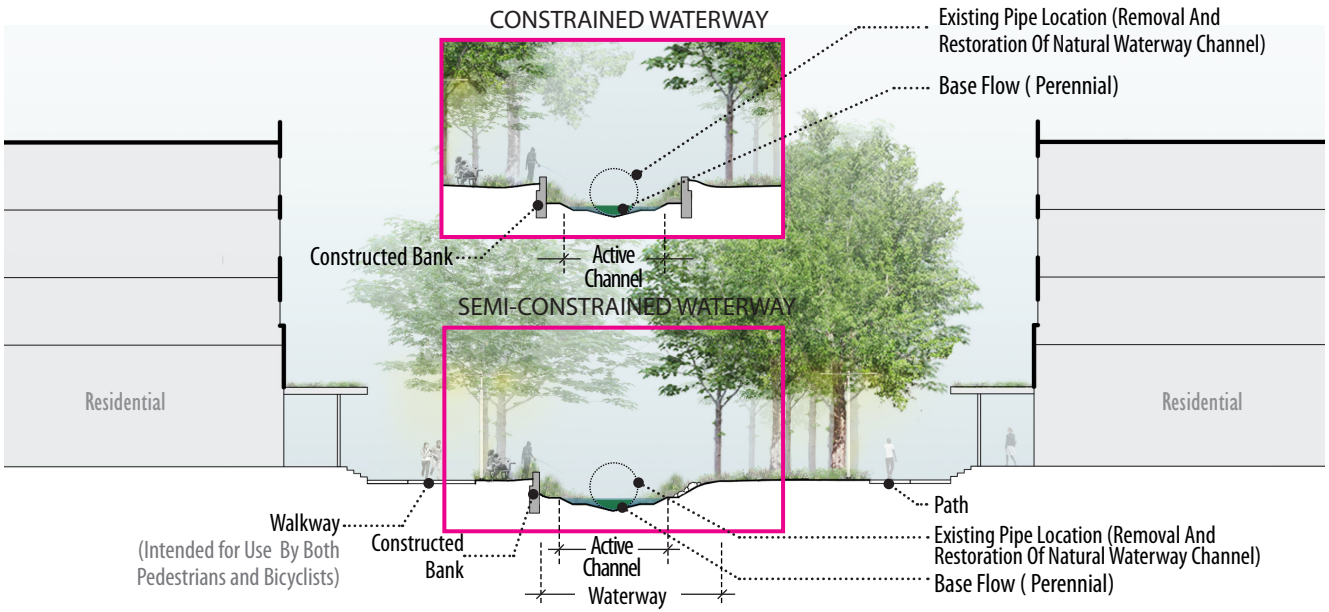


NOTE:
Refer to Note on Graphic 19

Optional: Wetland, swale or other technology to capture on-site stormwater runoff (if development needs on-site stormwater management - *refer to section 3B.3 : Stormwater Management*)

Shared Use Path
10' Minimum Width

GRAPHIC 21: TYPE 3 ECOLOGICAL SPINE - TYPICAL WATERWAY CROSS-SECTION DIAGRAM



NOTE:

These cross-sections are intended as examples of potential waterway design options under certain urban conditions. The actual design of the waterway will depend on many factors, including: the drainage area, the volume and velocity of flow, pollution contribution, proximity to outfalls, the condition of the surrounding environment, the size of existing pipes, etc. Further feasibility studies should be performed to determine accurate cross-sections with appropriate dimensions.

In the Type 3 cross-section example, a 6'-diameter existing pipe is shown. The existing pipe is recommended for removal to restore the natural waterway channel.

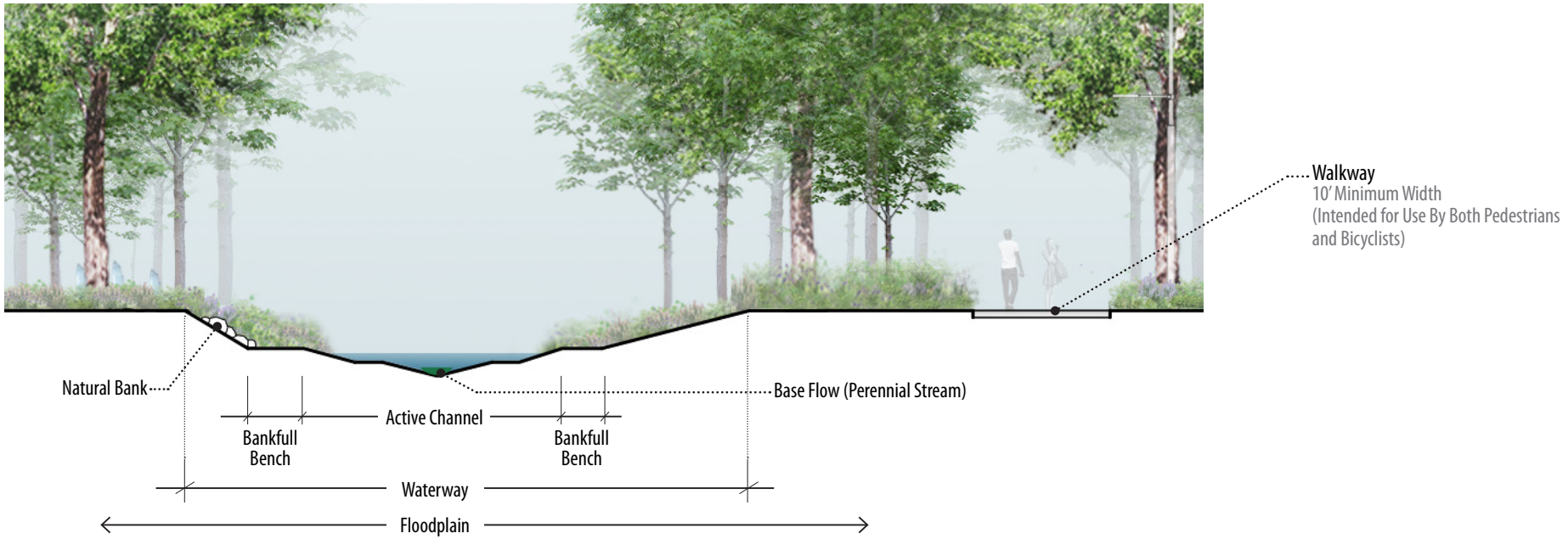
Trees should be located outside the active channel and bankfull bench. The illustrations show mature tree canopy.

A constructed bank could be used on one or both sides if a natural bank is not feasible.

For constrained waterways, it is generally expected that the floodplain is within the active channel.

GRAPHIC 22: TYPE 4 ECOLOGICAL SPINE - TYPICAL WATERWAY CROSS-SECTION DIAGRAM

UNCONSTRAINED WATERWAY



NOTE:

These cross-sections are intended as examples of potential waterway design options under certain urban conditions. The actual design of the waterway will depend on many factors, including: the drainage area, the volume and velocity of flow, pollution contribution, proximity to outfalls, the condition of the surrounding environment, the size of existing pipes, etc. Further feasibility studies should be performed to determine accurate cross-sections with appropriate dimensions.

Trees should be located outside the active channel and bankfull bench. The illustrations show mature tree canopy.

Type 4 can include an optional wetland between development and waterway to capture and treat on-site stormwater runoff (also, see Graphic 23).

DESIGN FEATURES

I POTENTIAL AMENITIES WITHIN LINEAR PARK SPACES

A. AMENITIES ALONG CONSTRAINED PARK SPACES

Due to the limited space available, programming along constrained park spaces is likely to be passive in nature and include elements such as:

i. Walkways and shared use paths that connect the surrounding pedestrian network and sidewalks

ii. Seating and gathering spaces

iii. Pedestrian bridges to connect both sides of the waterway

iv. Interpretive signage to highlight local history and ecology

v. Small public art installations

vi. Stepping stones or places where people can interact with the water

vii. Overlooks for viewing wildlife.

Montgomery County, MD

Berlin, Germany

Steamboat Springs, CO

TOP
An asphalt trail with a pedestrian bridge crossing over an ecologically sensitive waterway
Image Credit: Go Montgomery

BOTTOM LEFT
An interpretive wayfinding cluster with seating along trail
Image Credit: Winkelmeier

BOTTOM RIGHT
A nature-themed art Installation along a waterway
Image Credit: Tampa Valley Community Foundation

DESIGN FEATURES (CONTINUED)

B. AMENITIES ALONG UNCONSTRAINED PARK SPACES

Amenities along unconstrained Ecological Spines can be more flexible, with opportunities for appropriate active uses, such as the following:

i. Playspaces and structures
ii. Climbing structures
iii. Fitness stations and equipment along trails
iv. Small-scale sports facilities, such as bocce ball courts
v. Larger public art installations
vi. Performance areas or pavilions

C. AMENITIES WITHIN RESOURCE PROTECTION AREAS (RPA)

Passive recreation within RPAs may be permitted under the Chesapeake Bay Preservation Ordinance. Passive recreation refers to casual and non-competitive recreational activities such as picnicking, bird watching, kite flying, bicycling, and walking. To support such activities, site amenities can be incorporated and include elements such as picnic tables, photo stands, open play areas where substantial clearing is not required, rest rooms, tot lots, boardwalks, paved paths, pathways, benches, and pedestrian bridges. Applicable sections of the Chesapeake Bay Preservation Ordinance include sections 118-5-3 (Additional Exemptions) and Section 118-1-6 (Definitions).

2 MATERIALS AND SPECIAL DESIGN FEATURES

A. WALKWAYS/SIDEWALKS/SHARED-USE PATHS

i. Walkways, sidewalks, and shared use paths should be included in Ecological Spines where desired by the community and where they do not adversely impact the environment.

Essex County, NJ

TOP
A trail that incorporates multi-generational play and fitness activities
Image Credit: Rhodeside & Harwell

Bee Cave, TX

BOTTOM
Expansive playspaces along a trail
Image Credit: Wild Kitchen + Bar

Auckland, New Zealand

DeKalb County, GA

Champaign, IL

TOP IMAGE
A wooden path and boardwalk along a restored waterway
Image Credit: Boffa Miskell

MIDDLE IMAGE
Wayfinding along an asphalt nature path
Image Credit: DeKalb County

BOTTOM IMAGE
A stream path with lighting and seating clusters
Image Credit: Hitchcock Design Group

DESIGN FEATURES (CONTINUED)

ii. Concrete, wood, composite wood or flexible porous pavements (e.g. Flexi-Pave®) are recommended materials. Asphalt may also be an acceptable material, but less desirable.

iii. Use of compacted soil, mulch, gravel, or any other easily eroded material should be avoided on walkways and shared use paths.

B. LIGHTING

i. Pedestrian-scale pole-mounted or bollard light fixtures should be provided.

ii. Lighting should be appropriate so as to not disturb wildlife while recognizing the need for safety.

C. FURNISHINGS AND TRASH

i. Furnishings should correspond to North and South Area CBC furnishing palettes listed in Section 3A.3, as applicable.

ii. Any furnishings located along Ecological Spines should be securely anchored and water-tolerant to withstand flooding and wet conditions.

iii. Seating areas should be clustered and placed strategically at increments of at least two seating areas every 300-feet.

iv. Seating should be clearly lit and located along paved areas connected to Ecological Spine walkways, sidewalks, and shared use paths.

v. Trash and recycling bins should not be located within waterway or floodplain portions of the Ecological Spine. Frequent collection should be planned to prevent trash from overflowing and entering the stream. Signage should be used to educate the community about the impacts of litter on streams.

DESIGN FEATURES (CONTINUED)

D. PLAYSPACES AND EXERCISE AREAS

i. Playspaces or exercise equipment should be designed in small clusters and placed within the linear parks.

ii. Playspaces should be designed for a wide range of users, abilities and age groups. Playspaces can be combined with adult exercise areas to accommodate multi-generational activities so long as it is communicated, via signage or other means, that exercise equipment is for adult use only.

E. PERFORMANCE AREAS AND PAVILIONS

i. Performance areas placed in Ecological Spines should be designed to accommodate and withstand flooding.

ii. Performance areas should be located in or near prominent, high-activity land uses.

iii. Performance areas should be equipped with exterior-grade, water-resistant electrical connections.

iv. Pavilions should be designed with structural and roof components with slim profiles to minimize visual obstructions to the natural landscape.

F. TREES AND LANDSCAPING

i. Trees, shrubs, and understory plantings should be densely planted to create a layering effect that supports ecological characteristics, species diversity, prevents stream bank compaction, and improves the aesthetic quality of the riparian corridor.

ii. Tree species within Ecological Spines should include those species listed in Table 4 as well as the list of recommended plants for riparian buffers included in Appendix 7 of the Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers.

Charlotte, NC

Malmo, Sweden

Toronto, Canada

TOP
A playspace designed for all age groups.
Image Credit: North Carolina Parks and Recreation

MIDDLE
A small pavilion located along a waterway
Image Credit: Ellen Manskaya

BOTTOM
Small performance area with seating embedded into the landscape
Image Credit: Rhodeside & Harwell

DESIGN FEATURES (CONTINUED)

A. PEDESTRIAN BRIDGES

i. Pedestrian bridges crossing Ecological Spine waterways should be designed to minimize environmental disturbances and accommodate flooding or occasional strong stream currents.

ii. Bridges should look "lightweight," with a slim profile and visually-unobtrusive piers.

iii. Bridges may be incorporated into boardwalks or include boardwalk-like designs with wooden planks.

iv. A bridge whose walkway is elevated 3-feet or more above grade should include hand rails for safety.

v. Locations of new pedestrian bridges should be coordinated with adjacent or impacted communities. Bridges should generally be placed at intervals of approximately every three blocks along the Ecological Spine, unless certain locations are not desired by the adjacent/impacted community.

B. WATER ACCESS

i. Opportunities to access the water's edge should be provided in residential areas or high-activity areas where feasible.

ii. Access points should be creatively designed with elements that blend into the natural character of the riparian corridor.

iii. Steps leading to water should be constructed of concrete or gabions. Wood steps are not recommended due to maintenance requirements. The width of steps should be limited in order to minimize the visual contrast with natural features along the waterway.

For additional ideas regarding potential amenities and passive recreation opportunities, refer to the list of programming ideas at the end of Section 3B.1.

IMPLEMENTATION STRATEGIES

The Comprehensive Plan envisions that Ecological Spines will be implemented incrementally over time, with each new development creating the portion of the facility adjacent to their development.

The implementation of Ecological Spines should involve coordination with the Department of Planning and Development, the Department of Public Works and Environmental Services, the Department of Land Development Services, and the Fairfax County Park Authority. The design and implementation of Ecological Spines should be determined by factors such as the extent of available land adjacent to the waterway, the presence of floodplain and Resource Protection Areas (RPAs), drainage area, volume and velocity of flow, pollution contribution, proximity to outfalls, condition of the surrounding environment, size of existing pipe, etc.

Communities that are adjacent to or impacted by proposed Ecological Spines should be consulted during the design process to minimize neighborhood impacts, identify desired programming, and determine where appropriate pedestrian connections should be located.

Some considerations include the following:

A. Opportunities for partnerships with Fairfax County to realize Ecological Spines should be explored to help address any economic and technical challenges.

B. For streams that are daylighted, a Water Quality Impact Assessment may be required to ensure that proposed development on properties adjacent to the daylighted stream does not contribute to the degradation of the stream and ensure that practices are effective in retarding runoff, preventing erosion, and filtering pollution.

IMPLEMENTATION STRATEGIES (CONTINUED)

C. The potential exists for the creation of new RPAs and possibly altering floodplain boundaries when daylighting existing buried pipe systems. Designating new RPAs will be done in accordance with the Chesapeake Bay Preservation Ordinance (CBPO).

D. Many of the proposed Ecological Spine locations are in heavily developed areas. Redevelopment projects may qualify as an allowed use within the RPA, as long as there is no increase in impervious surface and there is no additional encroachment of development into the RPA, and the performance criteria are satisfied. However, a Water Quality Impact Assessment will be required per Article 3 of the CBPO.

E. The Comprehensive Plan encourages the creation of Ecological Spines. A development may provide an Ecological Spine as a means to satisfy the stormwater management performance targets that are listed in the Comprehensive Plan.

F. The linear park portions of Ecological Spines may qualify as park space under County criteria, even if these areas fall within the floodplain; however, the extent to which these areas qualify will be determined on a case-by-case basis in consultation with County staff.

G. Through-drainage systems, such as open channels and streams that are within the waterway portion of the Ecological Spine, are generally maintained by the Maintenance and Stormwater Management Division of the Department of Public Works and Environmental Services. A storm drainage easement, stormwater management easement, or floodplain easement will be required for portions of Ecological Spines that are maintained by Fairfax County. A property owner should work with The Department of Land Development Services to determine maintenance responsibly and the extent to which easements should be drawn. Wider easements may be required for proper maintenance of the waterway.

H. A maintenance agreement between the developer and Fairfax County should be established for Ecological Spines, or portions of, to ensure that maintenance responsibilities are clear and that the use of the linear park spaces does not contribute to environmental degradation of the stream corridor resulting from litter or other pollutants.

Lille, France

Nantes, France

TOP IMAGE
Pedestrian bridges with handrails crossing over a small waterway
Image Credit: Bruel Delmar

BOTTOM IMAGE
A crossing within a restored stream, providing access to the water
Image Credit: Bruel Delmar

3B.3 STORMWATER MANAGEMENT

Developments must meet quality and quantity requirements per the County's Stormwater Management Ordinance (Chapter 124). In addition, the Comprehensive Plan recommends that, within Richmond Highway area, additional stormwater management strategies be used to minimize the amount of impervious cover and further reduce stormwater runoff. Stormwater management is needed to counteract issues related to increasing imperviousness through the use of green stormwater infrastructure (GSI) principles. GSI generally refers to plant or soil systems, permeable surfaces or substrates, stormwater harvest and reuse systems that are designed to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters. It is a cost-effective, resilient approach to managing wet weather impacts that provides many community benefits.

The Comprehensive Plan envisions stormwater management strategies that are integrated into the design of individual developments or phases of development. For projects that result in a development intensity of 1.0 Floor Area Ratio (or equivalent residential density) or greater and/or those that result in a 20 percent or more increase in impervious cover on the site, the Plan offers three potential approaches within the Richmond Highway area:

1. Developers may select from the recommendations contained in the Comprehensive Plan, along with performance targets;
2. Developers may use the most current LEED stormwater credit or equivalent based on an alternate rating system; or
3. Developers may use alternative proposals to optimize site-specific stormwater management and/or stream protection/restoration consistent with the adopted watershed management plan(s) that is/are applicable to the site.

These efforts should emphasize the application of GSI techniques for addressing both quality and quantity such as:

- Bioretention/biofiltration facilities along streetscape areas, within parking areas, and/or along paths connecting sidewalks to rear parking areas
- Vegetated swales
- Vegetated green roofs and terraces on the upper floors of buildings or on commercial canopies (e.g., service stations)
- Tree box filters or structural cell systems that are designed to manage stormwater.

In addition to achieving their intended stormwater management function, strategies should also maximize opportunities to create community amenities, educate the public about stormwater processes, and contribute to the overall sense of place. Stormwater management approaches should also complement and support the network of Ecological Spines described in the previous section.

DESIGN PRINCIPLES

Developments should follow the Stormwater Management guidance provided in the Comprehensive Plan using creative, urban approaches. Integrating stormwater management into parks, streetscapes or as part of Ecological Spine systems is a means to provide high-quality infrastructure that serves multiple purposes.

Stormwater management approaches should provide placemaking and quality-of-life benefits in addition to stormwater management functions. When creatively integrated into streetscapes, parks, Ecological Spines, Livability Spines, other public spaces, and new development, stormwater management facilities can enhance one's experience of the built environment by functioning as community amenities and adding visual interest.

Stormwater management facilities provide an opportunity to educate the public about hydrology, ecology, and the health of our region's waterways. By demonstrating, revealing, and highlighting these processes and incorporating interpretive elements, stormwater management facilities can help explain and illustrate processes such as capturing, treating, and infiltrating runoff; habitat creation; and water reuse.

DESIGN STRATEGIES

1 FUNCTIONAL AND LOCATIONAL CRITERIA

A. Stormwater management facilities should capture and treat stormwater runoff from development sites before the runoff enters the hydrological system. (See *Graphic 23* for an illustration of a prototypical scenario in which stormwater is captured and treated on-site before it enters the hydrological system.)

B. Building roofs and upper-floor building terraces should be utilized for green roofs and related plantings and soil that capture and infiltrate stormwater.

C. Ability to add appropriate urban stormwater monitoring systems should be explored. Such monitoring systems can be in the form of structures that can be retrofitted within buildings or stormwater management systems.

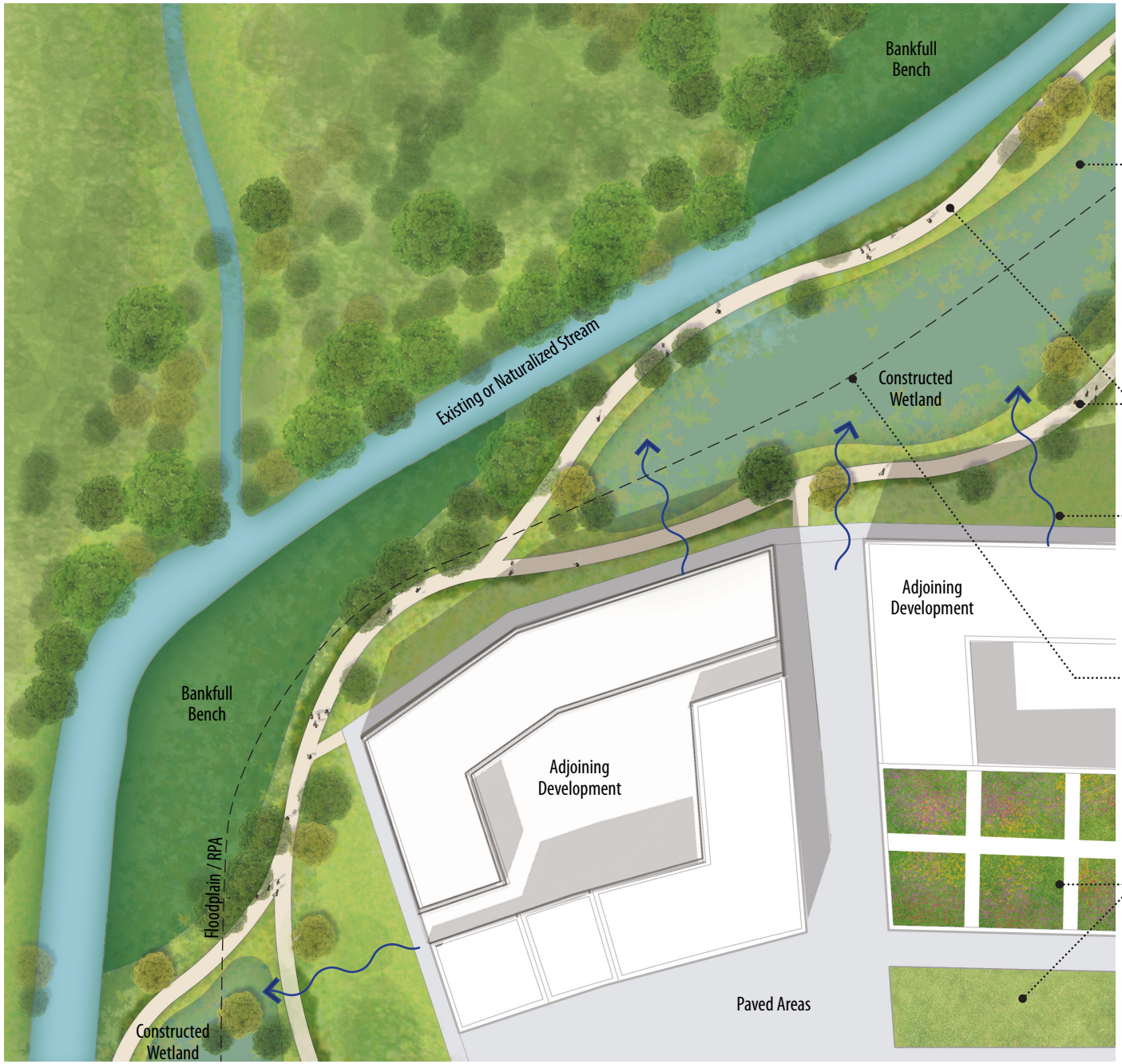
D. Opportunities should be explored for functional synergies, such as reusing stormwater runoff for irrigation or integrating stormwater management and gray water systems strategies.

Note: Stormwater management facilities are not the same as Ecological Spines, and are not included in the definition of Ecological Spines. Ecological Spines should include daylighted streams or enhanced or restored existing streams.

TOP
Example of on-site stormwater management utilizing courtyard and rooftop spaces
Image Credit: multifamilyexecutive.com

BOTTOM
Bioretention facilities and furnishings integrated within streetscapes help to create an enhanced pedestrian environment
Image Credit: Rhodeside & Harwell

GRAPHIC 23: ILLUSTRATIVE ON-SITE STORMWATER TREATMENT



Wetland basins that can capture and treat on-site stormwater. Water quality is improved, and quantity and velocity are reduced, before stormwater enters naturalized or restored streams (Ecological Spines). Refer to *Graphic 20*, which shows the cross-sections of Ecological Spines and adjacent wetlands

10'-wide walkways provide access to the natural areas along wetlands and natural stream channels from adjoining development sites

On-site stormwater from development sites

Floodplain and RPA: flexibility may be offered to incorporate portions of constructed wetlands to retain and treat water from small storms within existing floodplain

Green stormwater infrastructure techniques integrated into building terraces, roofs, and exterior paved areas (such as roads, parking areas, etc.) help to treat stormwater on-site as close to source, as possible

DESIGN STRATEGIES (CONTINUED)

2 APPEARANCE AND SITE INTEGRATION OF AT GRADE FACILITIES

A. Stormwater management facilities should be creatively integrated into the design of public spaces, including neighborhood parks, such that they serve as amenities and attractions that increase the appeal of the space.

B. Surface stormwater management facilities should be accessible and usable as open space to the maximum extent feasible.

   i. Surface stormwater management facilities should incorporate pedestrian and bicycle paths and walkways that connect the stormwater management facilities to surrounding communities. Pedestrian and bicycle connections may include such facilities such as asphalt or concrete paths/walkways, boardwalks along or through a stormwater management facility, or other accessible connections.

   ii. Perimeter fencing of any surface stormwater management facilities should be avoided unless required for safety.

C. Stormwater management facilities should be designed as attractive features that include native pollinator meadows. These offer the opportunity to further enhance native planting opportunities, provide wildlife habitat, and promote improved public health benefits.

3 GREEN STORMWATER INFRASTRUCTURE (GSI) IN STREETSCAPES AND LIVABILITY SPINES

A. Streetscape design (including sidewalks and public spaces and plazas along the streetscape) should incorporate multi-functional and space-efficient GSI techniques so that Richmond Highway and CBC street networks can serve as functional components of the County's urban ecosystems. Potential strategies are described in Section 2L and Appendix A2 of the *Volume I* guidelines.

B. GSI in streetscape areas should enhance the visual appeal and comfort of streetscapes, making them desirable places to walk, rest, and linger. Wherever possible, stormwater management strategies should incorporate the planting of trees and other plantings in order to increase pedestrian comfort and expand the tree canopy. Stormwater management facilities in streetscapes should incorporate recreational and artistic elements, particularly in prominent and/or highly-traveled locations.

C. While GSI can be located within the Landscape Panels, the preferred location is in the Planting or Building Zones. This is to ensure that Category IV deciduous trees can grow along the street and GSI can be located within supplemental landscape areas. Streetscape GSI that are incorporated into the Landscape Panels may require short fencing,

D. In the Livability Spines, features such as bioswales should be incorporated where feasible, in lieu of traditional buried pipes, to capture stormwater runoff from adjacent development sites and create a visual and/or recreational amenity.

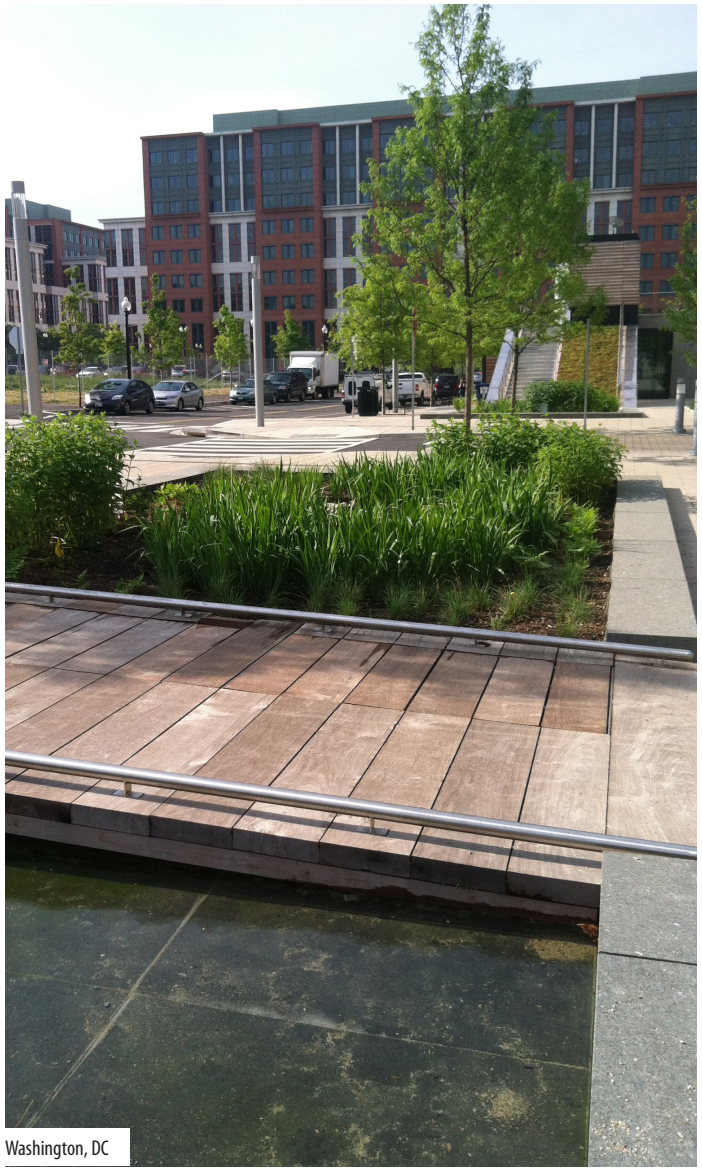
DESIGN STRATEGIES (CONTINUED)

4 EDUCATION AND INTERPRETATION OF AT-GRADE STORMWATER MANAGEMENT FACILITIES

A. Stormwater management facilities can be used to educate the public about hydrological and ecological processes, and the health of regional watersheds. Stormwater management facilities should be designed to increase the public's awareness and understanding of the Richmond Highway area's natural resources and its place within the region's ecological systems.

B. Where possible, stormwater management facilities should be easy for the public to access and view, in order to maximize opportunities to observe and learn from stormwater management facilities. Stormwater management design should highlight the importance of rainwater, techniques for managing water quality and quantity, and how stormwater management facilities can create habitat.

C. Interpretive displays and signage should be incorporated into stormwater management facilities where possible to explain stormwater management functions and the significance of these facilities for local communities and the greater region.



Washington, DC

RIGHT
Integration of bioretention facilities within public space design provides stormwater management functions and visual appeal
Image Credit: Nitsch Engineering

REFERENCES FOR STORMWATER MANAGEMENT

Fairfax County Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas - Chapters 2L, 4H, Appendix A2
Virginia Department of Transportation (VDOT) Drainage Manual
Comprehensive Plan Area IV: Richmond Highway Corridor - Corridor-Wide Guidelines Environment Section
Fairfax County's Policy Plan Environment Element, Objective 13
Sustainable Sites Initiative (SITES)
Leadership in Energy and Environmental Design (**LEED**) rating system (US Green Building Council)
National Association of City Transportation Officials (NACTO) Urban Street Stormwater Guide
Fairfax County's Stormwater Management Ordinance

San Antonio, TX

Falls Church, VA

Howard County, MD

TOP LEFT & RIGHT
Interpretive elements tell the story of site-wide rainwater capture system, green stormwater infrastructure, and reduced site disturbance thereby explaining the valuable benefits to ecosystems
Image Credits:
Top Left Image - Rhodeside & Harwell
Top Right Image - Casey Dunn

BOTTOM
Boardwalk above stormwater basin helps to provide access from adjoining development to natural areas
Image Credit: Rhodeside & Harwell

Image Credit: SKI Architecture

4 BUILDING DESIGN

The Comprehensive Plan envisions a visually cohesive built environment. Central to implementing this vision is the manner in which buildings are designed - how buildings relate to the street and public spaces, how they integrate with and transition to surrounding land uses, and how multiple buildings combine to create a distinctive skyline and contribute to the character of the CBCs.

This chapter addresses building form and massing as well as transitions in height and scale. Included are strategies for integrating taller buildings into CBCs and techniques for fostering visual interest and variety through building form and massing. The chapter also includes guidance for façades and roof lines that are appropriate to the context of each CBC.

Unless otherwise stated, all building design recommendations for townhomes and stacked townhomes are located in Section 4H of this chapter.

REFERENCES FOR BUILDING DESIGN

Volume I Urban Design Guidelines (Sections 4A, 4C; see also 2E, 2H, 5A, 5C)
American Bird Conservancy, Bird Friendly Building Design Guidelines
US HUD Noise Abatement and Control
Fairfax County's Policy Plan Environment Element, Objective 4

DESIGN PRINCIPLES

Architecture should be context-sensitive and character-defining. In general, architecture in North Gateway, Penn Daw, and Beacon/Groveton CBCs and adjoining SNAs should reflect a more contemporary aesthetic, while architecture in Hybla Valley-Gum Springs, South County, and Woodlawn CBCs, and adjoining SNAs, should have a more traditional style compatible with nearby historic resources (see Chapter 2 for a description of the North and South Areas). Building design should incorporate distinctive façade treatments, roof types, roof lines and building forms to reinforce and respond to these differences in character between the North and South Areas.

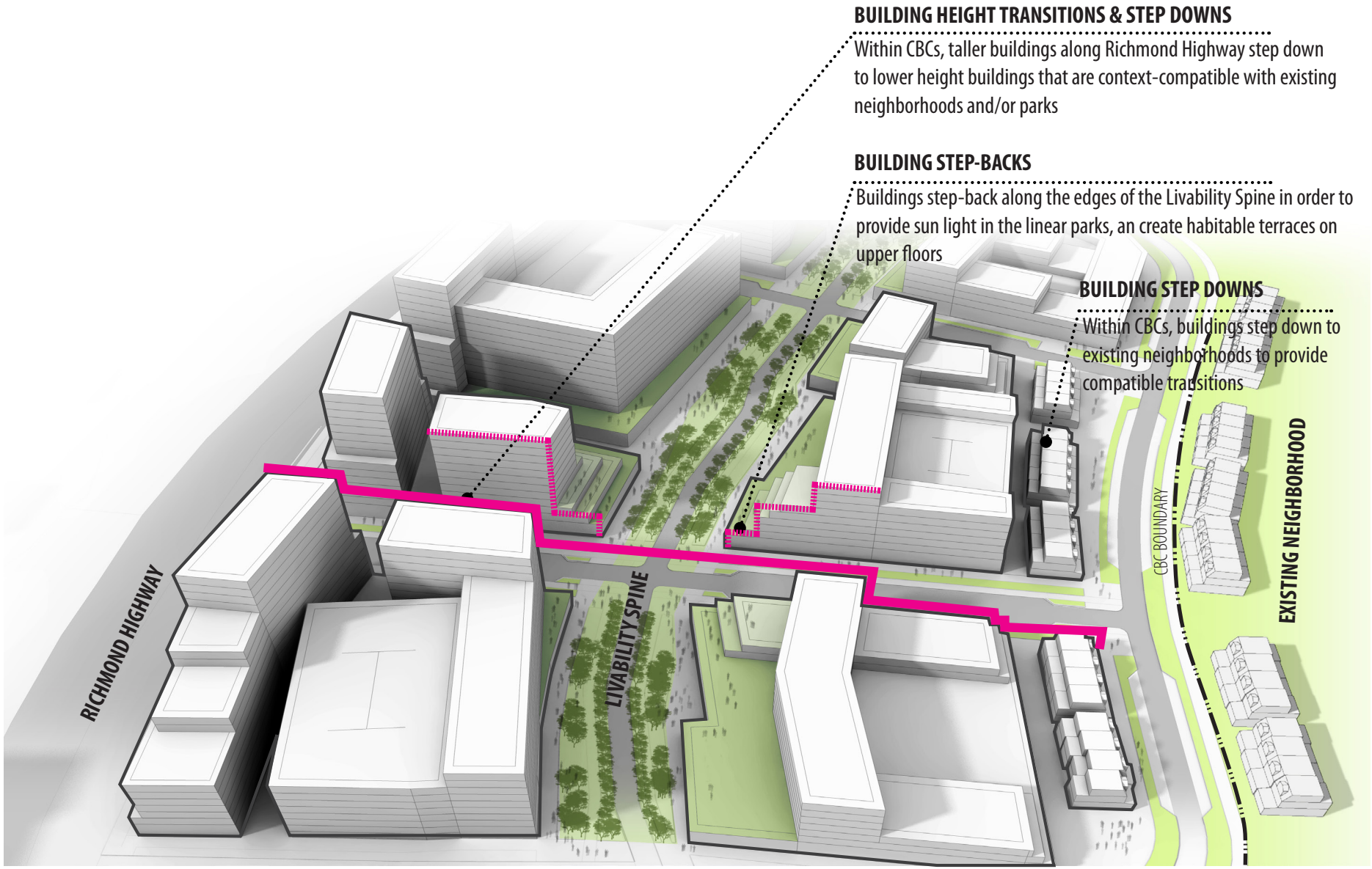
Buildings should "step down" in height and scale the closer they are to existing, smaller-scale residential neighborhoods. Step downs can help improve transitions between higher-density redevelopment and lower-density neighborhoods.

Buildings should incorporate variations in form and massing, including step-backs and terracing. These variations create visual interest and variety, allow light to permeate down to the street, and create usable outdoor terraces.

Design should break up the large horizontal and vertical massing of buildings. Techniques such as façade breaks, roof line modulation, balconies, and variations in materials can be used to break up the large vertical and horizontal massing of buildings. On particularly long blocks, multiple buildings should be considered in place of a single building mass.

Ground floors should engage the street and have active uses. Buildings along Richmond Highway and internal CBC streets should adhere to a designated build-to line, or build-to range, along most of their frontage to create a consistent street wall. The urban design framework maps in Chapter 6: Distinguishing Elements identify locations of activated ground floor uses in each CBC. Uses or façade treatments that activate their respective streetscapes and public spaces should be provided in these locations.

GRAPHIC 24: BUILDING STEP DOWNS FROM RICHMOND HIGHWAY AND BRT STATIONS TO ADJACENT NEIGHBORHOODS



DESIGN STRATEGIES

4A BUILDING STEP DOWNS

A. The tallest buildings in a CBC should be located adjacent to the BRT stations on Richmond Highway and should decrease in height ("step down") closer to existing residential neighborhoods (see *Graphic 24*) to ensure compatibility with residential uses. For building heights and transitions within each CBC, see building height maps in the Comprehensive Plan (Figures 27, 36, 46, and 61).

4B BUILDING STEP-BACKS

Step-backs are emphasized in order to create a distinctive façade design, activate space on upper floors to enliven the public realm, ensure light and air reach the ground, and can be part of greening the environment. They are recommended based on the number of floors in a building, the adjacent street type, or the presence of existing buildings.

A. Step-backs are recommended when buildings are located along Livability Spines and along Richmond Highway according to the following criteria (see *Graphic 25*):

   i. For building heights up to 6 floors: a step-back should occur at the second or third floor.

   ii. For building heights of 7 floors or greater: a step-back should occur at the second, third, or fourth floor.

   iii. Additional step-backs are encouraged for buildings above 10 stories.

B. Building step-backs should be considered for properties adjacent to existing neighborhoods. Such step-backs are encouraged along the side of the building facing the existing neighborhood.

C. The terrace areas that result from building step-backs should be occupiable, where possible, and should be used to increase activity along the street.

   i. Step-backs do not need to be continuous along the entire building frontage.

   ii. The depth of step-backs should be at least 10-feet in width.

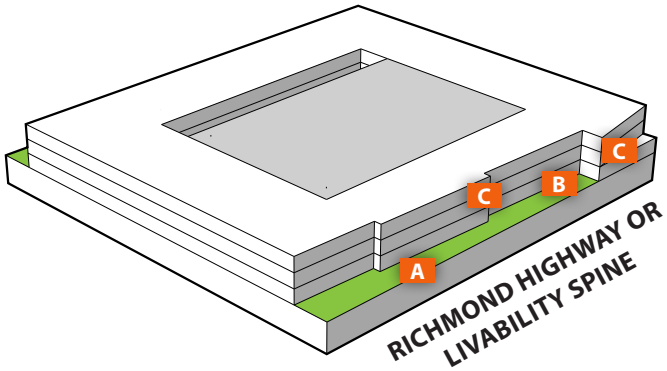
   iii. For building heights of 7 floors or greater, step-backs are encouraged to be wider than 10-feet.

   iv. Terrace areas created as a result of step-backs should be accessible from the adjoining floor or portion of the building.

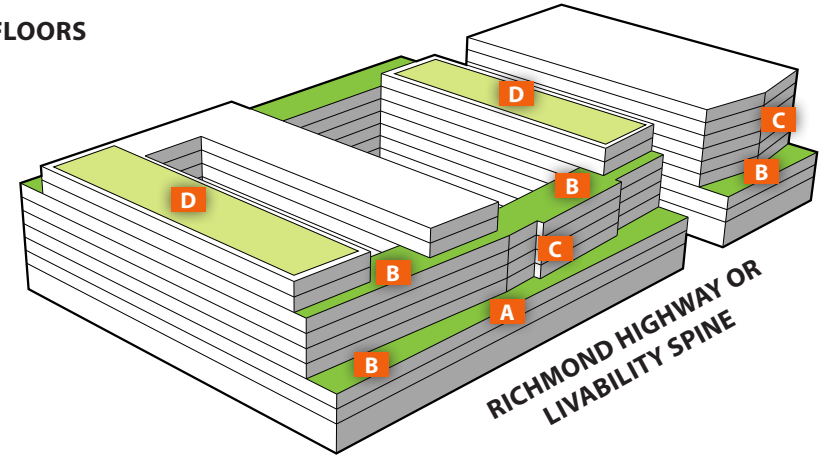
   v. Incorporation of green roof elements on terraced areas such as trees and other plantings, is encouraged.

GRAPHIC 25: STEP-BACKS AND TERRACES ALONG RICHMOND HIGHWAY OR LIVABILITY SPINE

UP TO 6 FLOORS

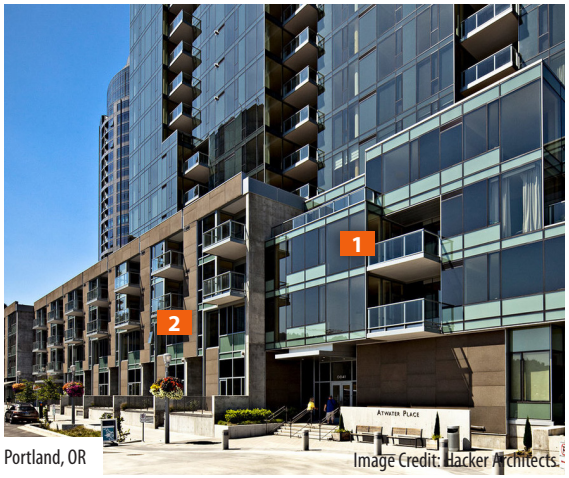


7+ FLOORS



KEY

- Green roof
- Habitable terrace
- Internalized parking
- **A** Building step-back
- **B** Habitable terrace created by building step-back
- **C** Breaking up of building mass to avoid flat façades (refer to Sections 4C & 4D)
- **D** Green roof, where possible

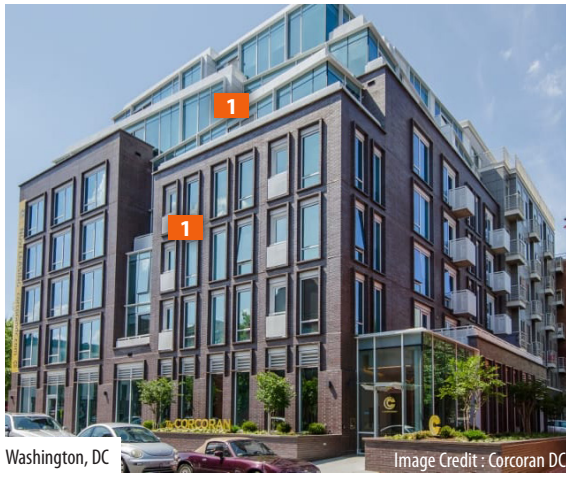


Portland, OR

Image Credit: Hacker Architects

1 Modulation of building form on upper floors

2 Ground floor building elements create a consistent street wall parallel to sidewalk area



Washington, DC

Image Credit : Corcoran DC

1 Differing building heights and a variety of building edges along a façade

Falls Church, VA

Image Credit: Bozzuto

1 Building modulation on upper floors (residential building wings)

2 Consistent street wall along ground floor

Portland, OR

Image Credit: Hacker Architects

1 Building façade modulation and step-back, while maintaining consistent street frontage

DESIGN STRATEGIES

4C BUILDING MODULATION ALONG RICHMOND HIGHWAY

A. At least 75% of each ground floor façade should be located at the build-to line.

B. If the entire length of a block is developed, then there should be at least two breaks in the façade, and a maximum of 4 breaks along the length of a block to create variety in the building façades.

C. Breaks can occur along ground floors, upper floors, or both.

   i. *Along Ground Floors*: Building modulation should occur within the dimension range of the Building Zone.

   ii. *Upper Floors*: Greater flexibility should be allowed for the design of façade modulation on upper floors, where the depth of the façade breaks and setback from the designated build-to line may be greater than those at ground level.

D. Blocks longer than 350-feet in length should incorporate multiple freestanding buildings, rather than a single building mass along the length of the block.

E. Corner and edge treatments should be used to distinguish a building from other nearby buildings. For example, while one building may have rectilinear or angular edges, another may incorporate curvilinear edges.

DESIGN STRATEGIES

4D BUILDING MODULATION ALONG LIVABILITY SPINE

A. Between 25% and 75% of each ground floor façade should be located at the build-to line. Any additional Building Zone space should be designed to support its adjacent ground floor uses and park spaces.

B. Breaks can occur along ground floors, upper floors, or both.

   i. *Along Ground Floors*: Building modulation should occur within the designated Building Zone to maintain consistent street frontage.

   ii. *Upper Floors*: Greater flexibility should be allowed for the design of façade modulation on upper floors, where the depth of the façade breaks and setback from the designated build-to line may be greater than those at ground level.

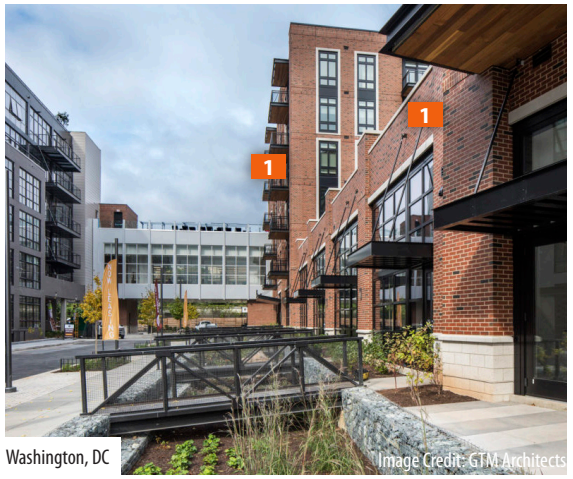
C. Blocks longer than 350-feet in length should incorporate multiple freestanding buildings, rather than a single building mass along the length of the block, to foster architectural variety and pedestrian connectivity.

D. Habitable balconies are strongly encouraged, particularly along the Livability Spine, because they contribute to street vibrancy and create usable exterior spaces.

E. Corner and edge treatments should be used to distinguish a building from other nearby buildings. For example, while one building may have rectilinear or angular edges, another may incorporate curvilinear edges.

Dallas, TX — Image Credit: Fairfax County

1 Public access to upper floor commercial uses directly from street level plaza



Washington, DC — Image Credit: GTM Architects

1 Differing building heights along a façade

Bainbridge, WA — Image Credit: Village of Shorewood

1 Building modulation and terracing

New York, NY — Image Credit: ShoP Architects

1 Residential balconies provide relief to building form and create extensions of habitable spaces

2 Multiple step-backs create a downward transition in height through a series of terraces

DESIGN STRATEGIES

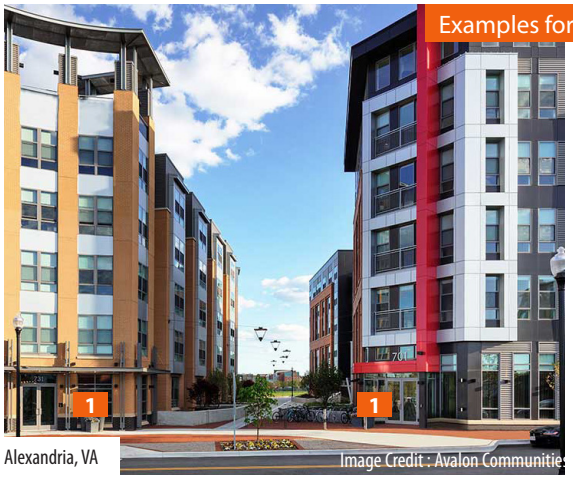
4E CHAMFERED CORNERS AT TRANSIT PLAZAS

A. Building edges facing Transit Plazas should be chamfered *(see Chapter 5E)* to provide spaces along ground floor level for a variety of programmed uses, such as outdoor seating, information kiosks, play areas, etc.

B. Along chamfered building corners, some variation in building form is acceptable (for example, curved or modulated façades), as long as an approximately 30-degree angle is achieved.

C. Building corner treatments should follow the *Volume I* guidelines, *Chapters* 2E, 2H, and 4.

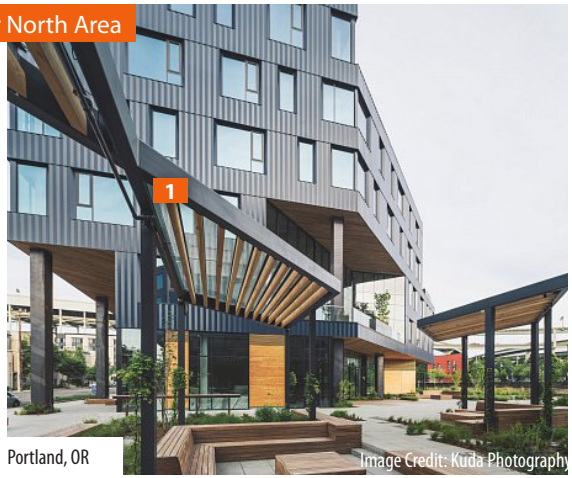
Examples for North Area



Alexandria, VA

Image Credit : Avalon Communities

1 Building chamfers at major intersection frame the entry plaza (contemporary setting)



Portland, OR

Image Credit: Kuda Photography

1 Angular building forms at corners create opportunities for programmed spaces at public plaza level, such as, landscaped outdoor seating areas, performance platforms, etc.

Examples for South Area

Barcelona, Spain

Image Credit: Bonavidabcn.com

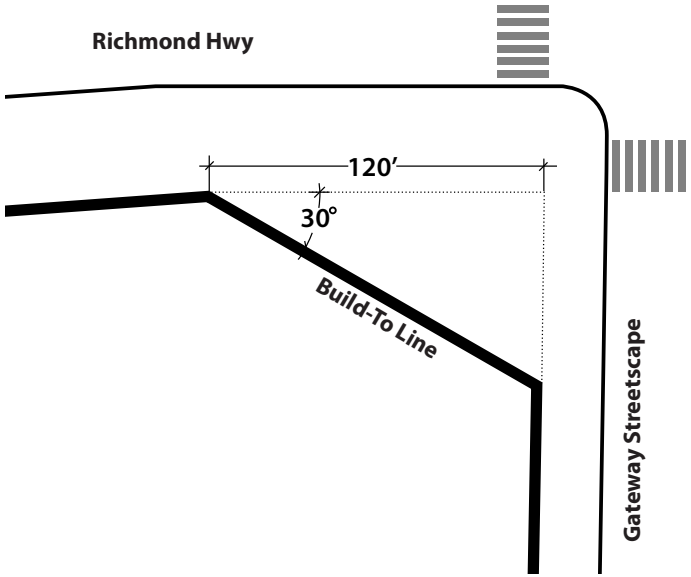
1 Chamfered corners at major intersections (traditional built-form setting)

Barcelona, Spain

Image Credit :Google Maps

1 Variety of programming along chamfered building corners at an intersection, such as, outdoor dining, information kiosks, bicycle and scooter parking, etc.

GRAPHIC 26: BUILDING CHAMFERS



DESIGN STRATEGIES

4F ROOF LINES

A. In general, roof lines in the North Area should reflect more contemporary roof types and rectilinear forms, while those in the South Area should reflect a variety of roof types and forms that are compatible with the architecture of nearby historic resources. Roof line recommendations apply to all building types, including townhomes. Specific criteria for buildings in each area include the following:

North Area (North Gateway, Penn Daw, Beacon/Groveton)

i. Contemporary roof types and forms are recommended. Roof lines should incorporate simple, primarily flat and/or angled lines.

ii. The use of horizontal elements above fenestrations is encouraged as a means of breaking up vertical massing.

South Area (Hybla Valley-Gum Springs, South County, Woodlawn)

i. Traditional roof types and forms that are context-sensitive to nearby historic resources are recommended.

ii. A mix of roof forms and elements are encouraged, including flat roofs, roof pitches, side gables, dormers, and similar architectural roof treatments.

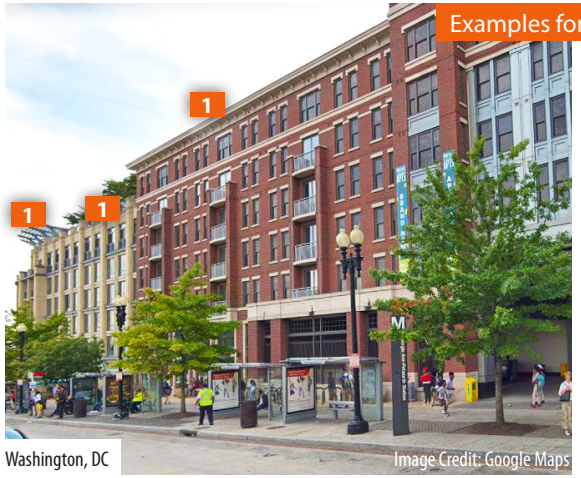
iii. Roof overhangs are recommended to promote visual interest and variations in roof form, but should be proportional in size to other architectural features.

Examples for North Area

1 A building with horizontal roof elements that break up vertical massing

1 A building with a contemporary roof line that creates rectilinear forms

Examples for South Area



1 Varied roof lines create visual interest along a streetscape

1 Example of a building with a traditional roof line and form, incorporating the architectural roof treatments that reflect the style of historic architecture in the area

DESIGN STRATEGIES

4G FAÇADES AND MATERIALS

Façade treatments and material recommendations apply to all building types, including townhomes. Specific criteria for each area follows below.

A. Façade treatments that highlight and distinguish the bottom, middle and top sections of buildings are encouraged. Differentiation of building sections can be achieved through a combination of materials and massing.

B. The use of multiple materials on façades is encouraged; changes in materials are recommended to occur in conjunction with step-backs and/or other changes or modulation in wall planes.

   i. Vinyl siding should be avoided.

   ii. Expanses of glass façades, such as glass curtain walls, should be avoided to be consistent with the desired character and to ensure bird-friendly building design.

1 Exterior cladding and materials highlight bottom, middle and upper parts of a building and different façade elements

1 Example of contemporary form combined with traditional materials (stucco, brick) that are applied in a contemporary style

North Area (North Gateway, Penn Daw, Beacon/Groveton

i. Façades should generally reflect a greater variety of materials and a creative use of color.

ii. Materials should be compatible with contemporary architectural features and may include stone, metal, wood, stucco, brick and related claddings.

iii. Façade treatments can incorporate limited use of motifs and ornamentation on building façades provided that such use fits with contemporary architectural styles and elements.

South Area (Hybla Valley-Gum Springs, South County, Woodlawn)

i. Materials should be compatible with the architectural cladding of existing landmarks and the historic context of Mt. Vernon, Woodlawn Estate, historic Gum Springs, and related historic neighborhoods and places.

ii. Façade treatments may utilize contemporary materials as long as they are compatible with the history of the area and historical building design.

iii. Façade treatments should utilize warm color materials, such as red brick, stone, wood, stucco (as accent), and metal cladding/fascia.

iv. Façade treatments can incorporate the use of motifs and ornamentation on building façades, such as architectural accents, provided that it fits with traditional architectural styles and elements.

DESIGN STRATEGIES

4H TOWNHOME DESIGN

Townhomes are residential buildings that are typically two to four floors in height, where units are placed side-by-side and share adjoining firewalls. "2-over-2s" are townhome variations in which two, two-story units are stacked on top of one another.

A. TOWNHOME SETBACKS AND BUFFER AREAS ON RICHMOND HIGHWAY

i. There are two distinct types of townhomes with associated criteria, depending on the location.

- **a. Within Community Business Centers**: The setback from the right-of-way should be between 16-feet and 25-feet. An exception to this setback may be needed if noise levels exceed 65dBA and are not effectively mitigated through other design measures.
- **b. Within Suburban Neighborhood Areas**: The setback from the right-of-way should be minimum of 30-feet. Setback areas create opportunities for linear green spaces and additional buffering in a more suburban environment, in contrast to higher density, more urban CBCs. Linear green spaces may help meet open space needs for rear-loaded units (see design strategy 4H.B.vi).

ii. 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.

iii. Grade separation should also be used to separate primary entrances from adjoining sidewalk areas, where feasible. This is particularly important along Richmond Highway.

Examples for CBCs

Toronto, Canada — Image Credit: Urban Capital

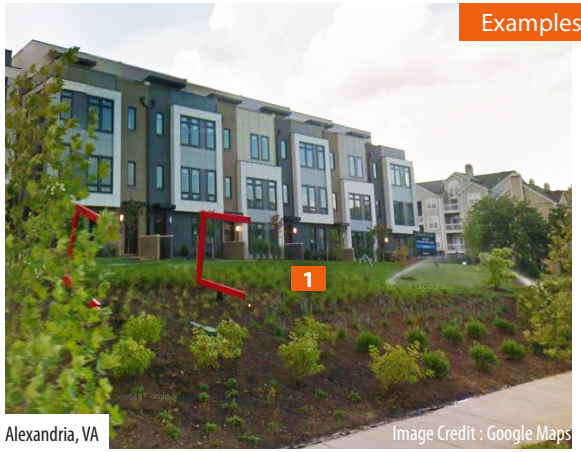
1 Grade-separated entries provide privacy from street

2 Landscaped setback areas create an attractive streetscape environment

Portland, OR — Image Credit : Liveinthepearl.com

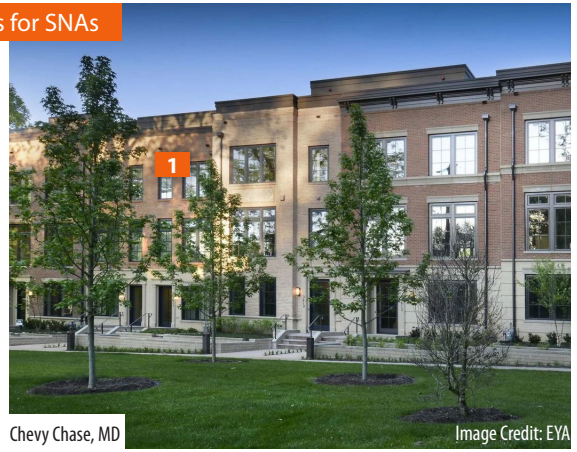
1 High-quality architectural walls and plantings screen service areas and provide privacy

Examples for SNAs



Alexandria, VA — Image Credit : Google Maps

1 Large setback areas can include mounds, shade trees, planting beds, lawn, public art, and street furniture



Chevy Chase, MD — Image Credit: EYA

1 Lawn spaces with planting and walkways in front of townhome units

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

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

1 Townhomes sited around quality open space serving all residents

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

B. TOWNHOME PLACEMENT AND ORIENTATION

i. Building façades should be oriented toward primary streets and open spaces. Primary streets include Richmond Highway, Livability Spines, and Ecological Spines.

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

iii. 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.

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

v. 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.

vi. 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. The Planting Zone (as depicted in Chapter 5) should be considered as a location for meeting quality open space requirements.

vii. Internal roadways should not terminate at public rights-of-way.

viii. Drive aisles for parking lots should not be used for circulation other than accessing parking spaces.

DESIGN STRATEGIES

C. TOWNHOME MODULATION

i. Building step-backs, modulations and materials for townhomes should be consistent with design strategies 4A - 4D, 4F, and 4G in this section. 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.

ii. 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.

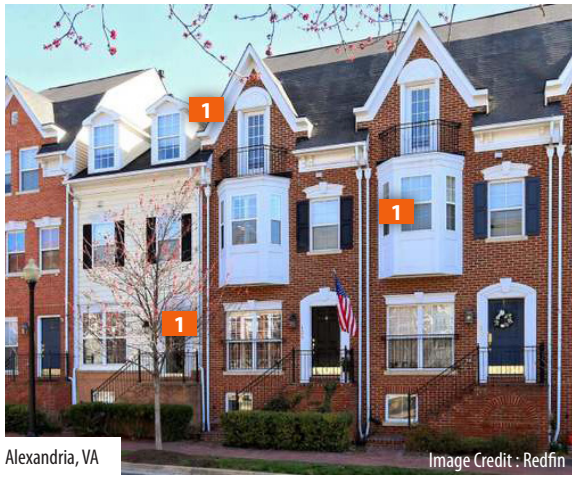
D. TOWNHOME PARKING / GARAGES

i. Exposed garage doors on the front façades of buildings should be avoided.

ii. Garage and service access should be located behind buildings, with access from secondary streets or alleys.

iii. 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.

iv. 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

1 Example of building façade modulation along alley/service areas

Image Credit: BCT Architects

5

RICHMOND HIGHWAY TRANSIT BOULEVARD STREETSCAPE & FRONTAGE

The Richmond Highway Transit Boulevard serves as the "ribbon" that ties together the Richmond Highway area. It links the distinct Community Business Centers (CBCs) to each other while also fostering a visual and physical cohesiveness of its own. As the area's only Transit Boulevard, the cross-section (see *Graphic 27*) is unique from other streets. Strategies are provided for addressing the Richmond Highway Transit Boulevard design in a cohesive manner while responding to the range of conditions in land use and built form that exist in the Richmond Highway area.

This chapter emphasizes conditions along the Richmond Highway Transit Boulevard within the CBCs, as well as frontage and setback design along the Suburban Neighborhood Area (SNA) portions of Richmond Highway.

The cross-section of the Richmond Highway Transit Boulevard includes the following elements:

REFERENCE FOR STREETSCAPE DESIGN

Fairfax County Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas Chapter 2 - Street and Streetscape Design

College Park, MD

RIGHT
A streetscape along a suburban roadway that incorporates distinct zones for pedestrian travel and plantings
Image Credit: Rhodeside & Harwell

A. Roadway and Median (within the Right-of-Way):

The roadway and median are devoted to moving all motorized vehicles. They include the following zones:

- *Median*: Dedicated lanes for BRT in the center of the roadway. The median also includes buffer areas for the BRT stations, turn lanes, and trees/landscaping. The median includes a 1-foot shy distance separating it from the abutting drive lane.
- *Drive Lanes*: Routes for all motorized vehicles except BRT (in limited instances BRT may utilize drive lanes).

B. Public Streetscape (within the Right-of-Way)

As the primary area for pedestrian and bicycle travel, the portion of the public streetscape within the right-of-way includes four distinct zones that are consistent on both sides of the Transit Boulevard:

- *Landscape Panel*: An area reserved for street lights, street trees and understory planting. Along Richmond Highway, it serves as a green buffer separating the Transit Boulevard's drive lanes from its more pedestrian- and bicycle-oriented areas. There is no Amenity Zone in the Landscape Panel.
- *Bi-Directional Cycle Track*: A dedicated route for two-way bicycle travel.
- *Buffer Strip*: A hardscaped or vegetated area that delineates pedestrian areas from bicycle areas and provides space for utilities.
- *Sidewalk*: The primary area of pedestrian travel. A small maintenance buffer adjacent to the sidewalk allows VDOT access to perform work, when necessary.

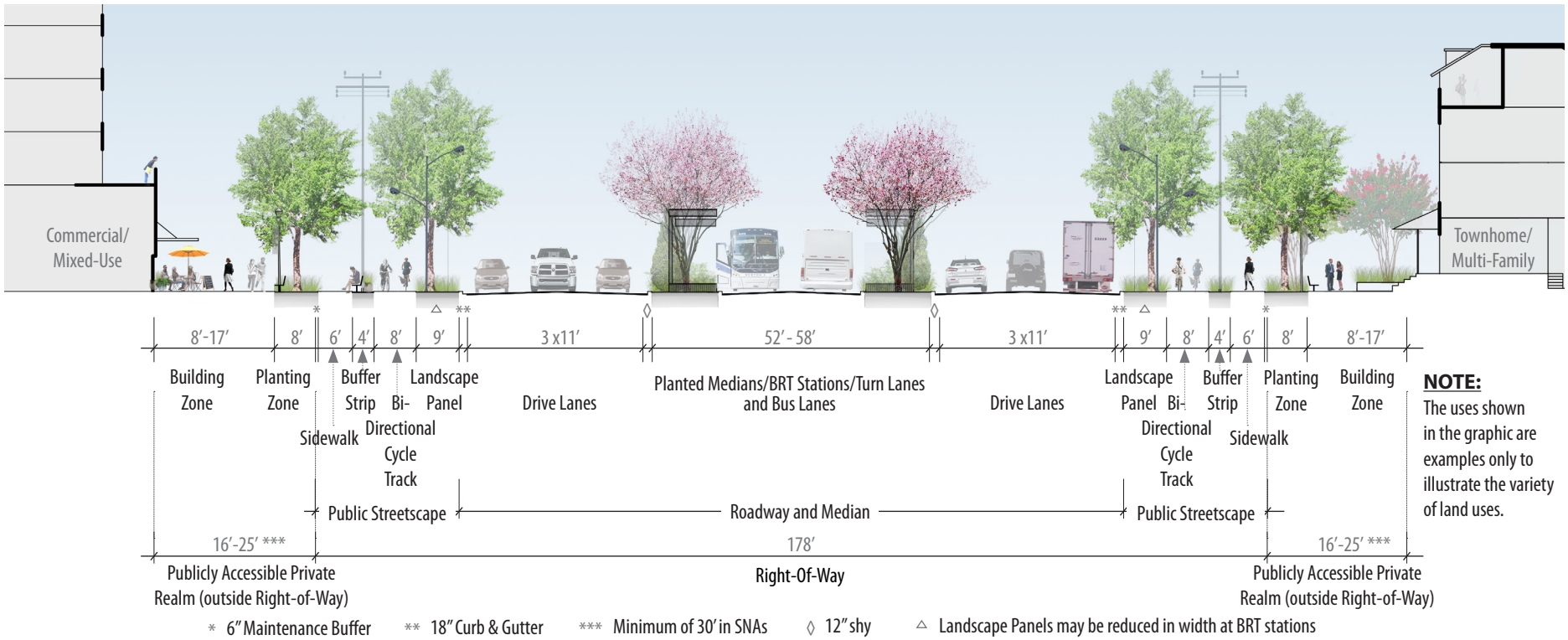
C. Publicly Accessible Private Realm Streetscape (Outside the Right-of-Way)

Comprising the area between the sidewalk and the building façade, the publicly accessible private realm includes the following components:

– *Planting Zone*: A streetscape area reserved for trees and other landscaping, and may also include bioretention facilities and seating. The width of the Planting Zone varies along Richmond Highway and is widest in the SNAs.

– *Building Zone*: The area between the Planting Zone and building face. This zone accommodates continuous pedestrian circulation and may also include elements such as commercial and residential entrances, outdoor seating areas, bike racks, signage, and space for browsing or displaying merchandise outdoors, or additional landscaping. The width and design of the Building Zone will vary depending on the location and building use.

GRAPHIC 27: RICHMOND HIGHWAY (TRANSIT BOULEVARD) CROSS-SECTION



NOTE:
The uses shown in the graphic are examples only to illustrate the variety of land uses.

D. Transit & Intersection Plazas

The Richmond Highway Transit Boulevard includes two types of plazas:

– *Intersection Plazas*: Plazas located at signalized intersections within the right-of-way. These areas accommodate pedestrian and bicycle circulation as well as amenities such as bus stops, bike racks, bike share stations, and wayfinding signage.

– *Transit Plazas:* Special plazas located at street corners outside the right-of-way and adjacent to BRT stations that provide gathering space and a range of amenities for transit riders and the public. These plazas are formed by the chamfered corners of buildings and are located within private property.

Graphic 33 shows the prototypical location and boundaries of both Transit Plazas and Intersection Plazas.

Indianapolis, IN

RIGHT
An Intersection Plaza with paving variations that distinguish areas where bicyclists and pedestrians mix
Image Credit: Indianapolis Cultural Trail

DESIGN PRINCIPLES

The design of the Richmond Highway Transit Boulevard should serve as the "ribbon" that ties together and unifies distinct CBCs and SNAs. Richmond Highway should incorporate consistent design elements to visually tie the corridor's sub-areas together. Meanwhile, other design elements should be used to distinguish individual CBCs and SNAs from each other.

Building frontages along Richmond Highway should foster active streetscape environments and emphasize Richmond Highway as the "front door" for activity. To support an active streetscape and Building Zone, buildings should incorporate urban design strategies to bring people to the fronts of buildings. While some developments may also include building entrances on other major streets such as Livability Spines, buildings should always have their primary pedestrian entrances on Richmond Highway. The Richmond Highway façade should not be perceived as the rear of the building.

Within SNAs, Richmond Highway should be characterized by a wider and greener feel by incorporating an expanded buffer. To respond to the lower density and intensity of land uses within SNAs, developments are encouraged to have a larger, green buffer in the building frontage area of the Richmond Highway Transit Boulevard. This buffers land uses from the BRT and vehicular traffics, and accommodates a more heavily-planted environment.

At BRT stations, Transit Plazas and Intersection Plazas are distinctive public gathering spaces that highlight the station areas. These plazas act as entrances to the CBCs, highlight station areas, and provide a sense of arrival, while also signaling a transition to a more pedestrian-oriented experience. The experience should consider the complete station area, including the median platform and the entire intersection for transit riders and other pedestrians.

5A RICHMOND HIGHWAY STREETSCAPE ZONES

DESIGN STRATEGIES

1 LANDSCAPE PANEL

A. The Landscape Panel should include a mix of trees and understory plantings that create a continuous vegetated appearance along the roadway, to form a green corridor that serves multiple ecological functions.

B. The planting of trees along Richmond Highway should follow the guidance for tree planting and species selection in Section 3A.4. Tree canopies should be pruned at a sufficient height, typically 14-feet, to accommodate buses and other large vehicles passing beneath tree branches.

C. A lateral clear zone of 6-feet from the curb to street trees, street lighting or other vertical obstructions is required by VDOT.

D. A lateral clear zone of 2-feet adjacent to the cycle track is necessary for the safety of cyclists.

E. Given the volume of traffic on Richmond Highway, larger understory plantings, such as ornamental grasses, should be incorporated as a buffer between bicyclists on the cycle track and passing vehicles. Proper care and maintenance is needed to ensure that these plantings do not infringe on or obstruct the cycle track.

F. Turf grass should be avoided, where possible.

2 BUFFER STRIP

A. The ground surface within the buffer strip may include either paving or planted ground cover.

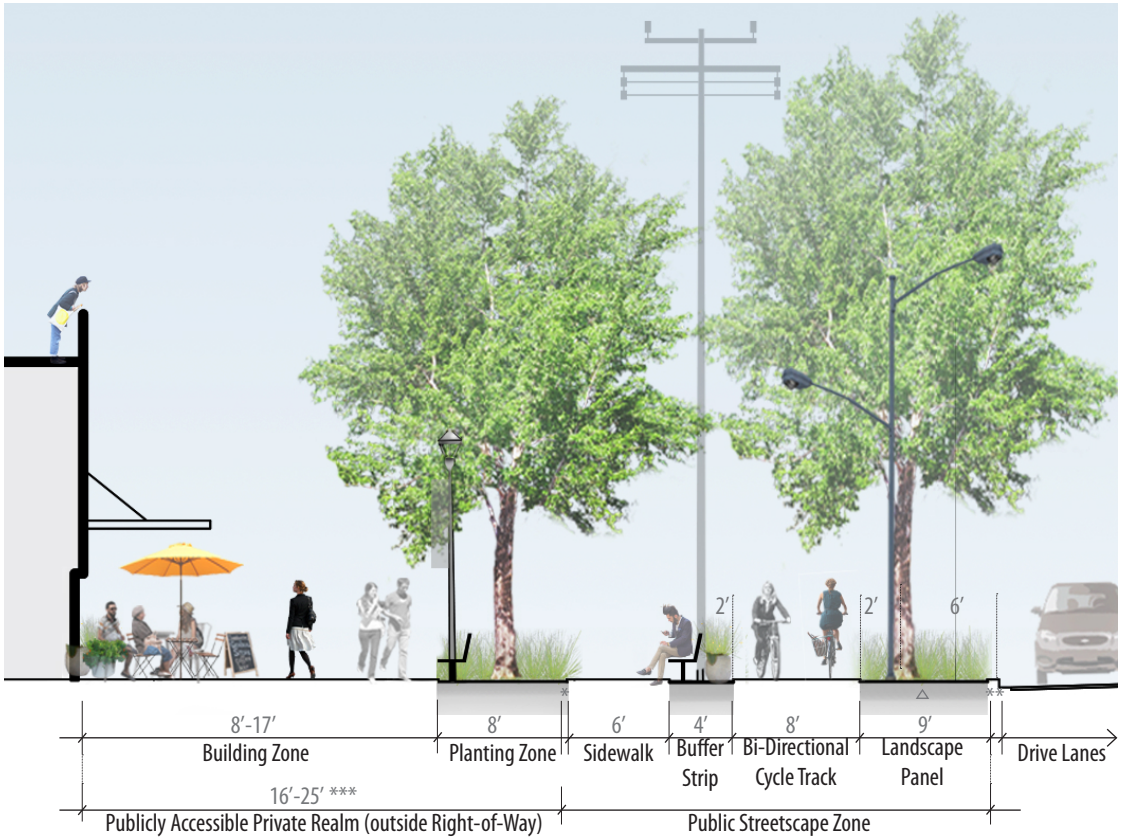
   i. If vegetated, it should have frequent paved crossings for bikes to access adjacent building entrances. Paved areas should utilize precast concrete pavers. See *Table 1* in Chapter 3 for material specifications.

B. Furnishings and planters should be integrated into the buffer strip to delineate bicycle and pedestrian areas.

C. A lateral clear zone of 2-feet adjacent to the cycle track is necessary for the safety of cyclists.

   i. Vegetation should be planted in alignment with other vertical elements so that it does not encroach on the cycle track or sidewalk.

GRAPHIC 28: RICHMOND HIGHWAY STREETSCAPE ZONES



* 6″ Maintenance Buffer ** 18″ Curb & Gutter *** 30′ (minimum) in SNAs △ Landscape Panels may be reduced in width at BRT stations

5B CBC BUILDING ZONE, PLANTING ZONE, AND BUILDING FRONTAGES

DESIGN STRATEGIES

1 CBC BUILDING & PLANTING ZONES - COMMERCIAL

A. The Building Zone should include a 6-foot-minimum, continuous, and unimpeded walkway.

B. The Building Zone should incorporate elements to generate street activity and pedestrian traffic. Potential elements include outdoor seating oriented toward the streetscape, displays, kiosks, and related elements.

C. Planters may be incorporated to demarcate and enhance outdoor dining spaces and storefronts. Larger strips of plantings may be incorporated along the fronts of free-standing commercial buildings (see *Graphic 29*).

D. In limited instances where there may be a small amount of off-street surface parking or portions of drive lanes, these auto-oriented areas should be shielded from view. Both plantings and structural elements should be used to visually screen these areas from the pedestrian environment, as follows:

   i. A row of trees and understory landscaping should be provided between the sidewalk and parked vehicles.

   ii. Structural elements should include screens, berms, raised bed/planters, high-quality fences, or low walls no greater than 4-feet in height.

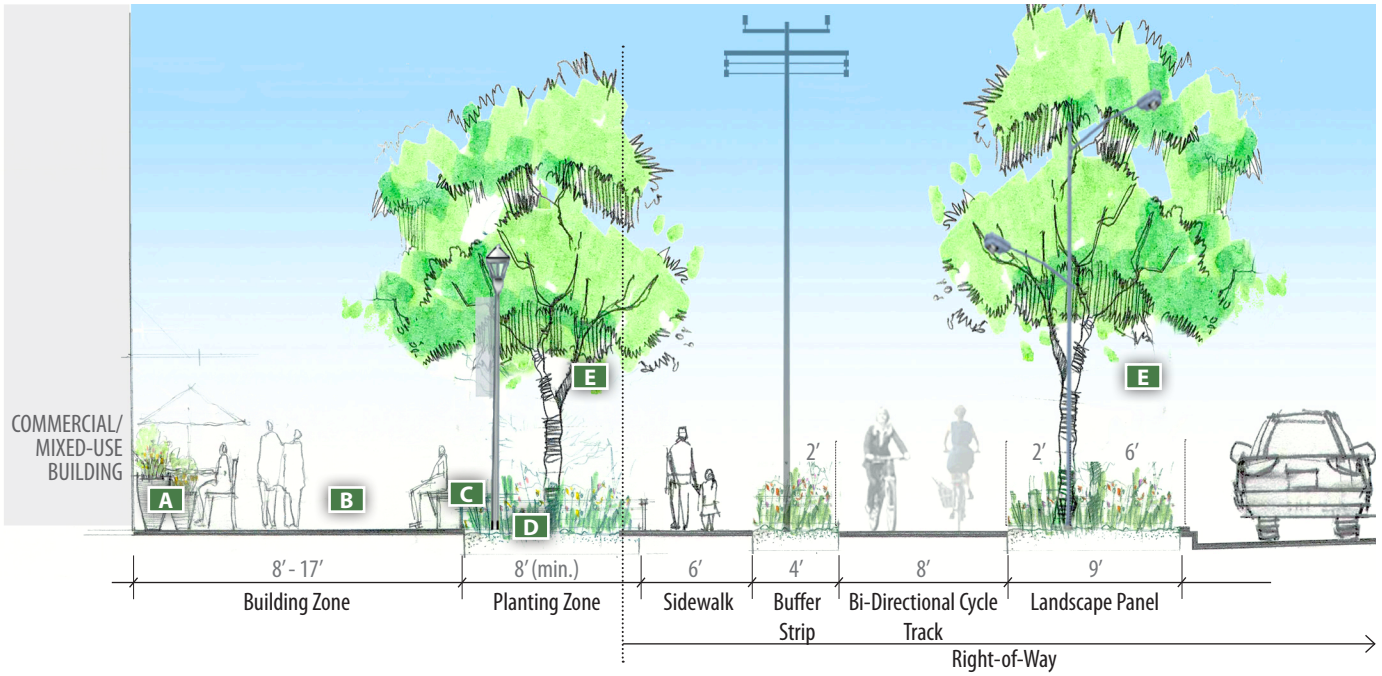
SURFACE PARKING REFERENCE
Fairfax County Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas Section 5A.3

GRAPHIC 29: CBC BUILDING ZONE ALONG COMMERCIAL USES

KEY

- A Planters, displays and outdoor dining along building frontage
- B Building Zone walkway
- C Seating integrated with Planting Zone
- D Planting Zone: Trees with understory landscaping with pedestrian connections between sidewalk and Building Zone. This Zone can be used as bioretention to capture and treat on-site stormwater, if feasible
- E Trees with maintained canopy to provide visibility to retail/commercial storefronts from sidewalk and roadway

NOTE:
Landscape Panels may be reduced in width at BRT stations



DESIGN STRATEGIES (CONTINUED)

2 CBC BUILDING & PLANTING ZONES - RESIDENTIAL

A. A landscaped area should be included between the building face and the walkway within the Building Zone. Plantings may include low-height planters or at-grade plantings demarcated by high-quality architectural treatments. Ornamental trees and shrubs may be utilized to provide privacy for ground-floor residences (see *Graphic 30*).

i. The Building Zone may include a walkway, a planted buffer, or both. Planted buffers can be designed as front yards for residential unit with frequent pedestrian connections between the sidewalk and building entrances.

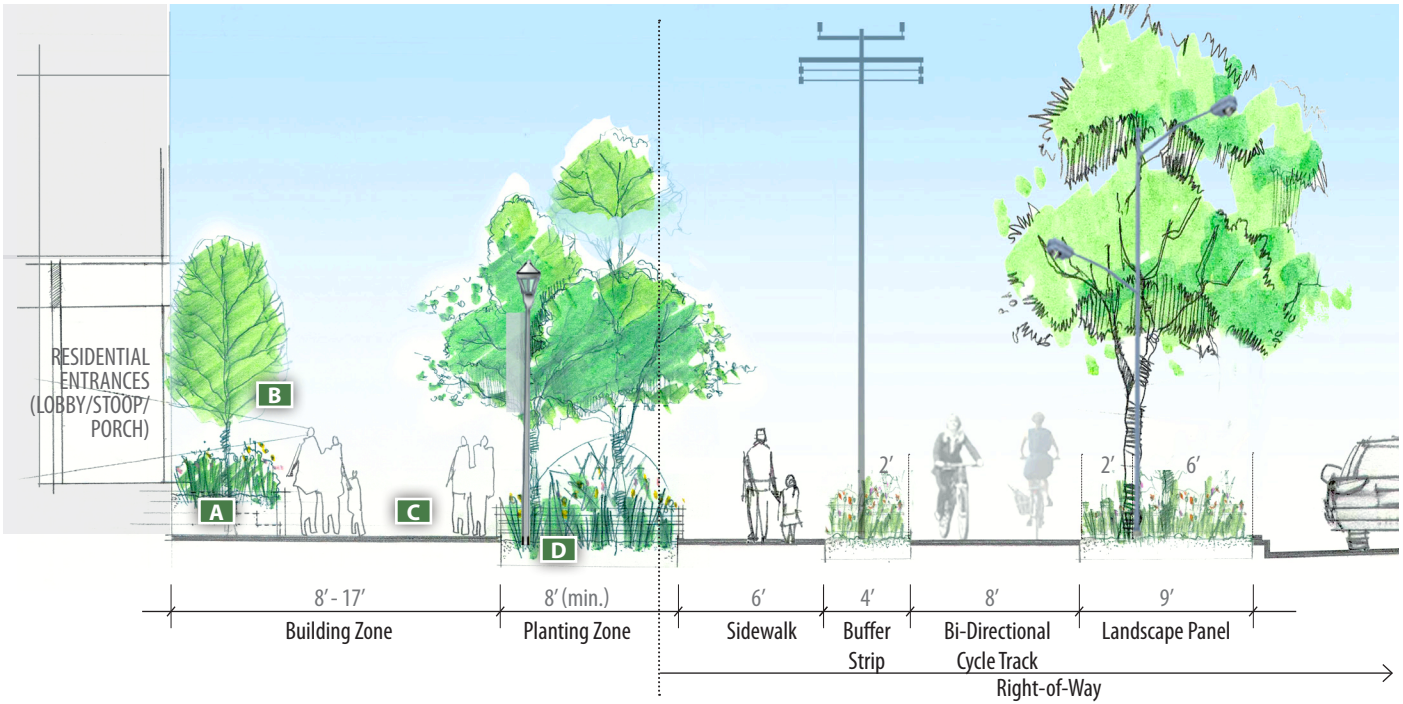
ii. If the minimal amount of Building Zone is provided (8-feet), then the entire area should be planted and pedestrian connections to residential units should be provided from the sidewalk in the right-of-way.

KEY

- **A** Low height walls (4-feet or less), architectural screens, shrubs and ornamental trees provide privacy to ground level residential uses while maintaining visibility of porches/ stoops/etc. from pedestrians
- **B** Ornamental trees feature shade and privacy for residential ground floor uses
- **C** Building Zone walkway (or planted buffer).
- **D** Planting Zone: Trees with understory landscaping with frequent pedestrian connections between the sidewalk and the Building Zone. This Zone can be used as bioretention to capture and treat on-site stormwater, if feasible

NOTE:
Landscape Panels may be reduced in width at BRT stations

GRAPHIC 30: CBC BUILDING ZONE ALONG RESIDENTIAL FRONTAGE



DESIGN STRATEGIES (CONTINUED)

3 PLANTING ZONE - GENERAL CRITERIA

A. Trees and landscaping should be the primary functions of the Planting Zone. As illustrated in *Graphics 29 and 30*, landscape features - including plantings and ornamental trees - should be integrated in creative ways that enable these facilities to serve as streetscape amenities and contribute to Richmond Highway's visual appeal. Bioretention swales and furnishings may be incorporated into the Planting Zone.

B. Breaks in Planting Zone plantings should be incorporated at intervals along each block to provide connections from the Building Zone to the sidewalk and cycle track.

   i. At least one, but not more than four, breaks in the Planting Zone should occur along the length of each block.

   ii. Breaks may be either at-grade paved connections or bridged connections over bioretention areas.

C. Plantings should be located so that they do not encroach on the sidewalk or impede pedestrian travel within the Building Zone.

D. Planting areas should be linked below ground to create continuous ribbons of soil and support root growth.

   i. Suspended pavements and structural cells below sidewalks and other hardscape surfaces are encouraged to preserve uncompacted rooting space, create greater rooting areas, and enhance the viability of the plantings.

Waterloo, ON, Canada

RIGHT
Planting, walkways, and connections to mixed-use building entrances
Image Credit: Ontario Growth Secretariat, Ministry of Municipal Affairs

DESIGN STRATEGIES (CONTINUED)

4 FRONT ENTRANCES AND GROUND FLOOR - GENERAL CRITERIA

A. Buildings along Richmond Highway should have their primary entrances oriented toward Richmond Highway.

B. Where rear parking areas are provided, pedestrians should be directed to front entrances via paved pedestrian pathways connecting rear parking areas to primary building entrances on Richmond Highway.

   i. Pathways should be landscaped on both sides to make these routes welcoming and comfortable for pedestrians.

   ii. Adequate pedestrian-scale lighting should be incorporated to ensure safety and security at night.

   iii. Murals and environmental graphics are encouraged along the sides of buildings facing pedestrian pathways, in order to enliven these spaces and make them welcoming to pedestrians.

C. Service access should be provided to the rear and/or side of buildings via alleys, neighborhood streetscapes, off-street parking areas, and/or parking garages.

D. For commercial buildings, at least 60% of ground floor building frontage facing Richmond Highway should be transparent to provide views into interior spaces.

   i. Non-transparent walls along the ground-floor should incorporate architectural elements, public art or environmental graphics. These may include contextual content pertaining to the surrounding area or its history.

Washington, DC

LEFT
Streetscape with dual walkways separated by a Planting Zone. The outer sidewalk is for through-movement while the inner walkway is for retail browsing and building access
Image Credit: Rhodeside & Harwell

5C SUBURBAN NEIGHBORHOOD AREAS

DESIGN STRATEGIES

1 ALONG COMMERCIAL FRONTAGES IN SNAs

A. A Planting Zone of at least 8-feet should be included. Wider planted buffers should be provided wherever feasible.

B. The Planting Zone within the setback area may include a variety of treatments, ranging from low-height walls to the planting of shrubs and trees on mounds, flat terrain, or sloping terrain.

C. A portion of the Building Zone should be paved to provide access to building entrances and encourage browsing along the fronts of buildings.

See *Graphic 31.I.*

OFF-STREET PARKING AND TREES/LANDSCAPING REFERENCES
Fairfax County Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas Sections 2F.1 and 5A.3

2 ALONG COMMERCIAL FRONTAGES WITH OFF-STREET TEASER PARKING OR DRIVE AISLES IN SNAs

A. The design of off-street teaser parking should follow the guidance for off-street parking in *Volume I* (Section 5A.3, "Off-Street Parking")

B. Parking or drive aisles in front of buildings should be screened from streetscape areas and pedestrian walkways by trees, landscaping and/or architectural walls located within the Building Zone or Planting Zone.

   i. Architectural walls should be a maximum of 4-feet tall and be made of masonry or designed to be compatible in style with site architecture. They should be located along the edge of the Planting Zone and sidewalk, and incorporate stormwater flow-through design.

C. Walkways should be provided from the sidewalk in the Richmond Highway Transit Boulevard right-of-way to commercial building entrances.

See *Graphic 31.II.*

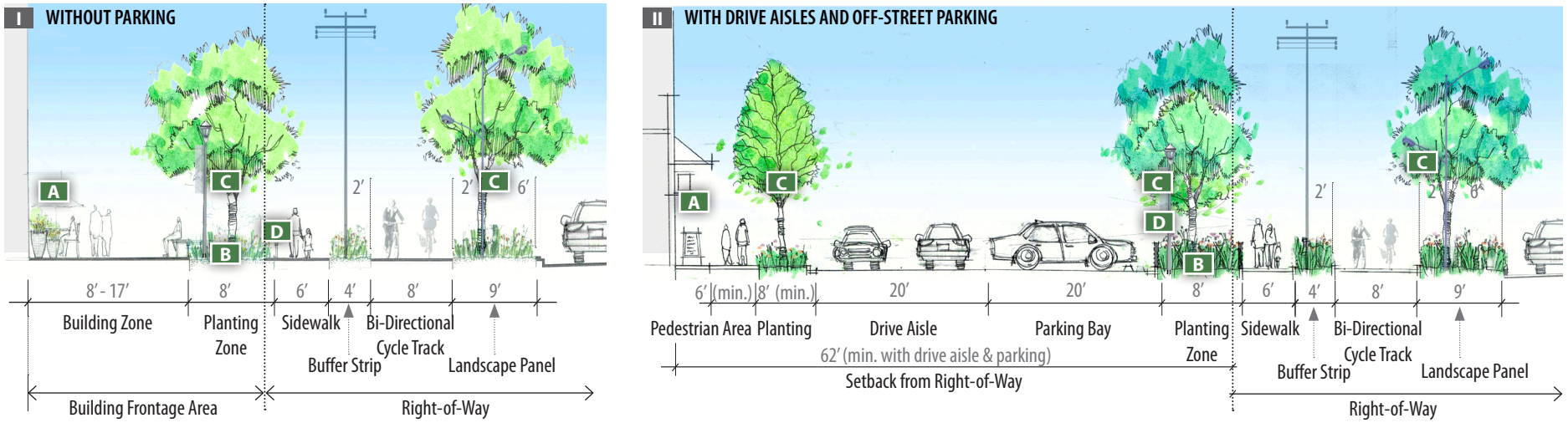
LEFT
Streetscape with planted buffer, walkway and amenities along commercial frontage
Image Credit: Rhodeside & Harwell

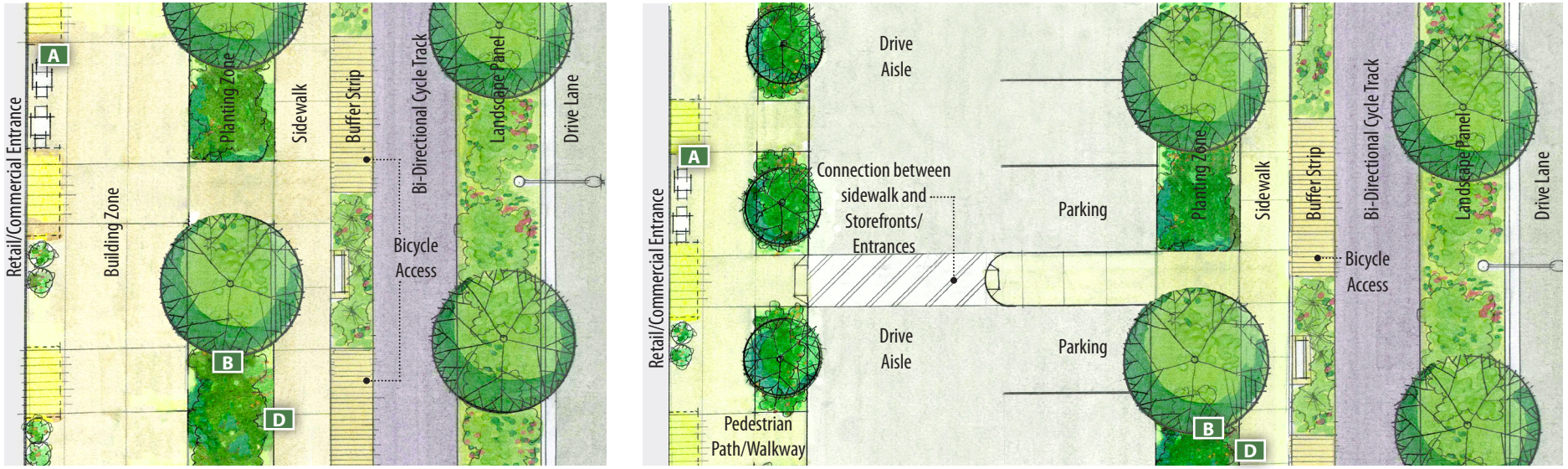
Rockville, MD

RIGHT
Teaser parking and wide planted area, along streetscape
Image Credit: Rhodeside & Harwell


Riverdale Park Station, MD

GRAPHIC 31: COMMERCIAL FRONTAGE IN SNAs ALONG RICHMOND HIGHWAY

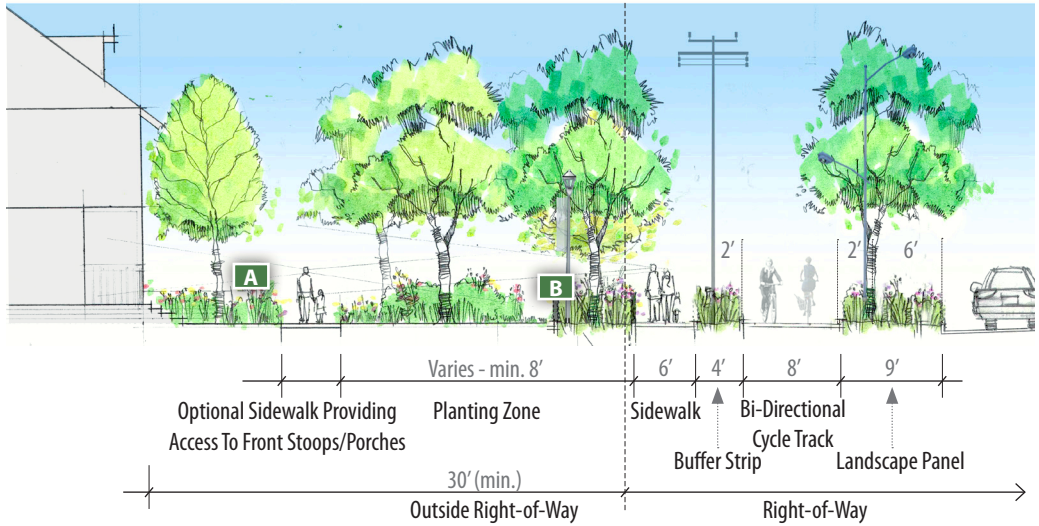


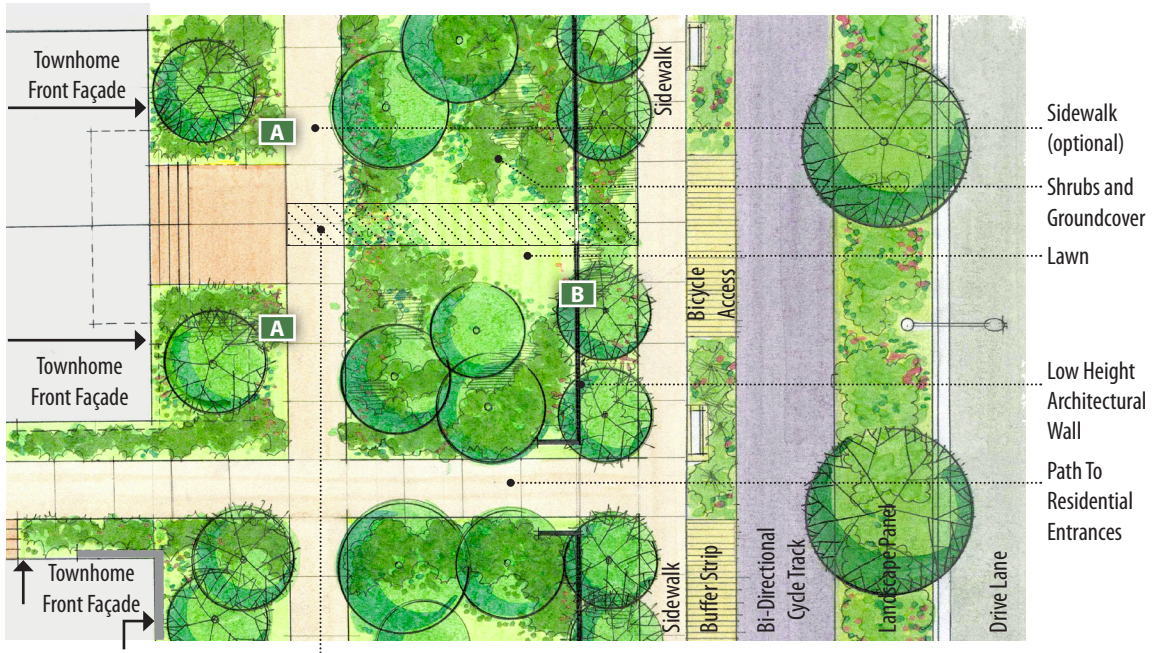


KEY

- **A** Planters/outdoor dining along building frontage
- **B** Landscape and buffering (bioretention can be incorporated within the Planting Zone)
- **C** Trees with maintained canopy to provide visibility to retail/commercial storefronts from sidewalk and roadway
- **D** Low height architectural screen/wall

GRAPHIC 32: RESIDENTIAL FRONTAGE IN SNAs ALONG RICHMOND HIGHWAY





DESIGN STRATEGIES (CONTINUED)

3 ALONG RESIDENTIAL FRONTAGES IN SNAs

A. The setback from the edge of right-of-way to a residential building should be a minimum of 30-feet.

   i. The Planting Zone within the setback should include trees and landscaping that help buffer residences from the Richmond Highway Transit Boulevard.

   ii. An optional 6-foot sidewalk may be incorporated in the Building Zone to provide access to front doors. If a sidewalk is not provided, a connection should be provided from the sidewalk within the right-of-way.

B. Along townhouse frontages, guidelines for the treatment of the fronts, corners, and sides should be followed, as described in Chapter 4 ("Building Design").

   i. The base floor elevation for townhomes should be higher than the sidewalk to provide a sense of privacy to residents.

Recommended conditions along residential frontages in SNAs are illustrated in *Graphic 32*.

KEY

A Grade changes, walls, architectural screens, shrubs and ornamental trees provide privacy to ground floor residential uses while maintaining visibility of porches/stoops/etc. to pedestrians

B Low height architectural walls, screens or public art elements along with trees and plantings provide a buffer between the sidewalk and Planting Zone

5D HARDSCAPE, FURNISHINGS, AND SIGNAGE

DESIGN STRATEGIES

1 STREETSCAPE PAVING

A. Paving along the Richmond Highway Transit Boulevard should follow the guidance in Sections 3A.1 and 3A.2.

B. At intersections with Gateway Streetscapes, the same precast concrete paving elements from the Transit Plaza should be incorporated into the Amenity Zone of the Gateway Streetscape in order to provide a visual connection to the Transit Plaza (See Table I in Chapter 3 for material specifications).

C. Cycle tracks should be paved with asphalt.

2 LIGHTING

A. A specialized combination pedestrian and street light fixture should be provided in the Landscape Panel along the Richmond Highway Transit Boulevard. The fixture should be designed to illuminate both roadway and streetscape areas.

B. On-site lighting that follows the guidance and specifications included in Section 3A.3 should be provided in the Building Zone to illuminate building frontage areas and match the style of street lights provided within the CBCs.

Saint Paul, MN

3 FURNISHINGS

A. All furnishings along the Richmond Highway Transit Boulevard should follow the furnishings palette described in Section 3A.3.

4 BUSINESS SIGNAGE

A. Signage should be incorporated into building architecture, rather than be free-standing.

B. If free-standing, signage should be ground-mounted; pylon or post signs should not be used.

C. Signage should cater to both pedestrian and vehicular traffic, while striking a balance in scale between the two.

   i. The height of signage should be limited to 16-feet to the top of the sign structure.

   ii. Pedestrian blade signs should be incorporated so that they are visible from sidewalk areas in the Building Zone.

   iii. Given the distance between building frontages and vehicular travel lanes, signs should incorporate lettering that is big enough to be visible from passing vehicles yet not visually dominating or out of proportion with the pedestrian environment.

D. Signage placement should be coordinated with placement of trees when determining the location of signs.

E. Signage should be consistent with Fairfax County ordinances.

BUILDING SIGNAGE REFERENCE
Fairfax County Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas Section 4E

LEFT
A streetscape with concrete sidewalks, asphalt cycle tracks and pedestrian scaled lighting
Image Credit: Toole Design

5E TRANSIT AND INTERSECTION PLAZAS

DESIGN STRATEGIES

1 INTERSECTION PLAZAS (INSIDE THE RIGHT-OF-WAY)

A. Special concrete pavers that match the paving of Transit Plazas should be used in Intersection Plazas that are adjacent to BRT stations.

A. Bus stops, bike share stations, and other micro-mobility options may be included in the Intersection Plazas.

B. Signage at the edge of Intersection Plazas should alert bicyclists on the cycle track and pedestrians on the sidewalk of the transition to a combined bicycle and pedestrian facility.

C. Informational signage and kiosks should be included that provide area information, events/announcements, and BRT/local bus route maps. Real-time information on bus arrivals should be provided, if feasible.

   i. Wayfinding signage for pedestrians, bicyclists, and vehicular traffic should be provided that communicates information such as the location and distance to nearby destinations and bicycle routes (See Section 3A.5 for additional guidance regarding wayfinding and interpretive signage).

   ii. Signage location and quantities should be minimized to ensure pedestrian safety and reduction of visual clutter.

Arcadia, CA

RIGHT
A transit plaza with special paving, landscaping and outdoor seating
Image Credit: The Source

2 TRANSIT PLAZAS (OUTSIDE THE RIGHT-OF-WAY)

A. The design of Transit Plazas should be coordinated with each BRT station's identity and branding, including paving treatments and signage.

B. As detailed in Chapter 4 ("Building Design"), the shape and size of Transit Plazas should be defined by their adjacent chamfered building corners (at approximately 30-degree angles) and by an approximately 120-foot length facing Richmond Highway.

   i. Transit Plazas may be delineated with elements such as planting, seating, kiosks, etc.

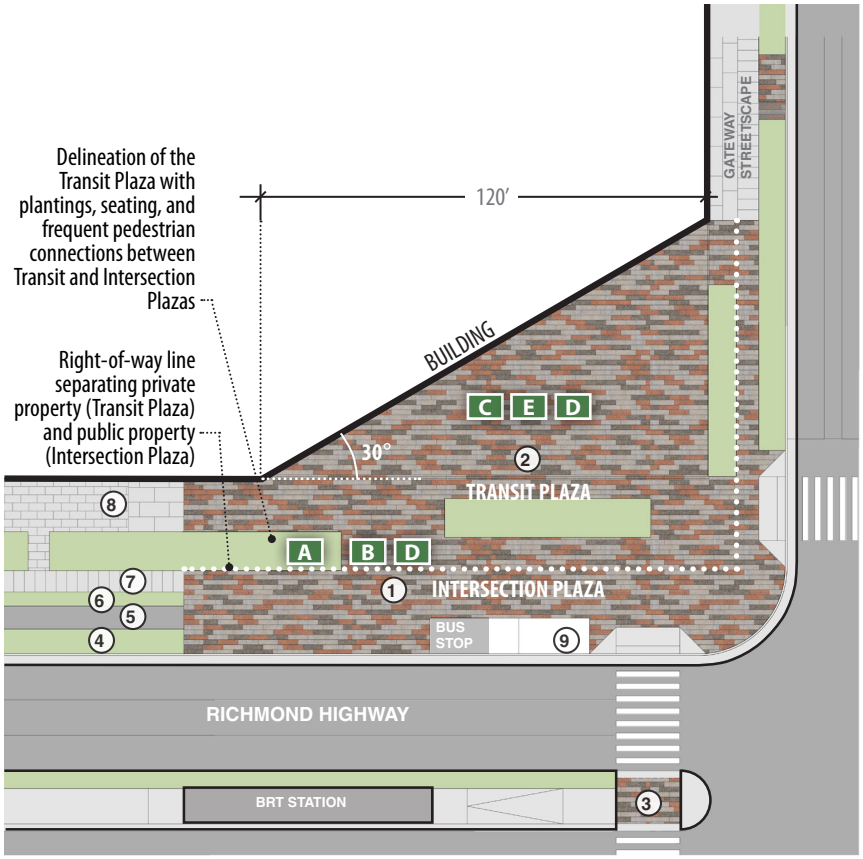
C. Transit Plazas should be flexible spaces that incorporate a mix of landscaped and hardscape areas. Trees and other plantings should provide for a mix of shade and open areas, while maintaining the flexibility to accommodate a range of activities.

D. Transit Plazas should provide a range of amenities that increase visitor comfort and encourage their use for relaxation, small gatherings, waiting for transit, outdoor dining, and other activities. Potential amenities include, but are not limited to: shade (provided by trees as well as shade structures), seating, gathering spaces, digital displays, bike storage facilities, wayfinding and interpretive signage, bathrooms and changing stations, small performance areas, outdoor dining spaces for adjacent businesses, and public art.

E. To increase the level of activity and functionality of each Transit Plaza, active ground floor uses - such as cafés, restaurants, or retail - and primary building entrances should be incorporated into the portions of buildings fronting the plaza.

See *Graphic 33* illustrating a prototypical example of a Transit and Intersection Plaza.

GRAPHIC 33: TRANSIT AND INTERSECTION PLAZAS - COMPONENTS AND POTENTIAL PROGRAMMING



KEY

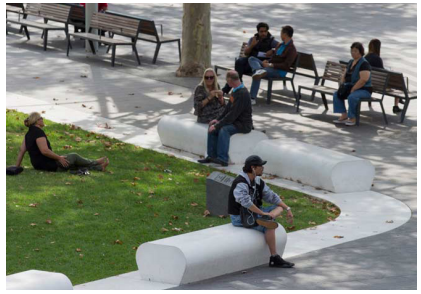
1. Intersection Plaza
2. Transit Plaza
3. BRT Station Crosswalk
4. Landscape Panel
5. Bi-Directional Cycle Track
6. Buffer Strip
7. Sidewalk
8. Building Zone
9. Informational Signage for Transit Riders

LANDSCAPING

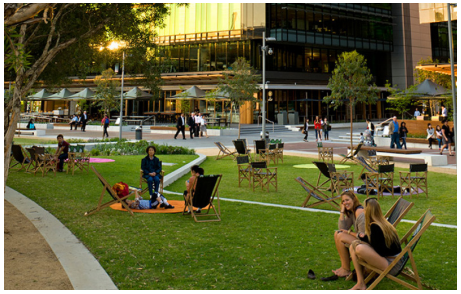
A Planted buffer with connections between plaza and sidewalk spaces

A Linear planted buffer, with shaded seating spaces, to organize and highlight separate spaces within plaza

OUTDOOR SEATING & DINING



B Outdoor seating along edges of lawn and hardscape plaza spaces with connections between spaces



C Hardscape plaza/lawn with movable seating

AMENITIES

D Kiosks (food, information, etc.)

E Kids' playspaces, adult play areas

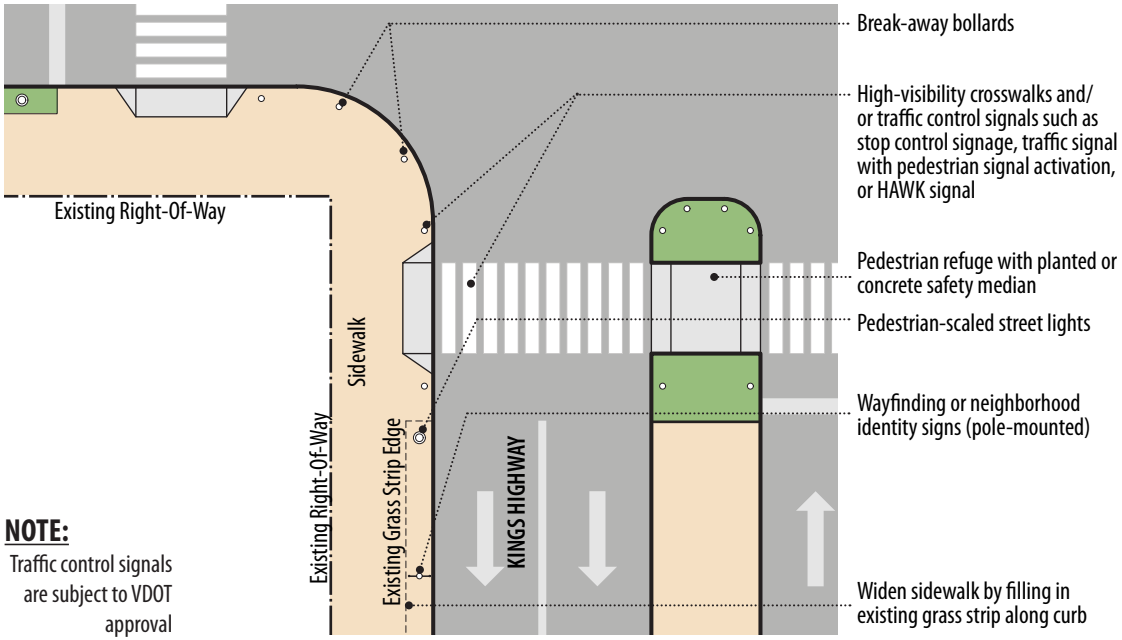
Bike share stations. Planned locations are on the opposite side of the intersection of Richmond Highway and Gateway Street

5F NORTH KINGS HIGHWAY STREETSCAPE

NORTH KINGS HIGHWAY, BETWEEN THE HUNTINGTON METRORAIL STATION AND JAMAICA DRIVE

High quality, safe and comfortable multimodal connections along North Kings Highway to destinations such as the Huntington Metrorail Station and Mount Eagle Elementary School are important. The BRT system is anticipated to run in the travel lanes of North Kings Highway from the Huntington Metrorail station to Richmond Highway. The roadway has narrow sidewalks, building setbacks are minimal, and there is limited available right-of-way outside of the curb. There is also high pedestrian activity due to the proximity of the Huntington Metrorail station and Mount Eagle Elementary. Despite the limited right-of-way on North Kings Highway, some multimodal improvements are possible that could enhance pedestrian safety and comfort, manage the speed of vehicles, and encourage drivers and pedestrians to be more alert.

GRAPHIC 34: KINGS HIGHWAY IMPROVEMENTS



NOTE:
Traffic control signals are subject to VDOT approval

DESIGN STRATEGIES

1 PEDESTRIAN AND MULTIMODAL IMPROVEMENTS

A. A prototypical example of multimodal enhancements to North Kings Highway that could improve the pedestrian experience and level of comfort without requiring additional right-of-way is shown on *Graphic 34*. Following is a list of potential improvements for North Kings Highway:

   i. High-visibility crosswalks and/or HAWK/RRFB traffic signals to provide safe pedestrian crossings.

   ii. Break-away bollards at intersections to slow traffic.

   iii. Wayfinding and/or neighborhood identity signs along the sidewalk.

   iv. Pedestrian refuges within medians to promote safe and comfortable crossings.

   v. Existing grass strip between the sidewalk and curb may be replaced with paving to increase sidewalk width.

   vi. Planted or concrete medians, where appropriate, to reduce crossing distance and promote traffic-calming.

B. Multimodal improvements to provide a complete street design approach should also be considered. These improvements may include innovative strategies that are intended to test enhancements as a pilot project.

REFERENCES FOR HAWK & RRFB TRAFFIC SIGNALS
HAWK Traffic Signal: Fairfax County User's Guide
RRFB Traffic Signal: Federal Highway Administration Guide

Arlington County, VA

Fort Lauderdale, FL

TOP LEFT
A street intersection with breakaway bollards for pedestrian safety
Image Credit: Google

TOP RIGHT
A pedestrian refuge area within planted median
Image Credit: City of Fort Lauderdale

Los Angeles, CA

Riverdale Park Station, MD

BOTTOM LEFT
Directional signage for Metrorail via creative integration within existing streetscape elements, including wrapping utility boxes
Image Credit: Rios Clementi Hale Studios

BOTTOM RIGHT
Pedestrian-scaled lighting along streetscape
Image Credit: Rhodeside & Harwell

Image Credit: Federal Realty

6 CBC-SPECIFIC GUIDELINES

6 CBC-SPECIFIC GUIDELINES

Each CBC should express its distinct identity and character through its built environment, while still fitting into a coordinated and cohesive urban design framework for the larger Richmond Highway area. The urban design vision for each CBC builds upon the vision of the Comprehensive Plan, while adding a greater level of urban design detail. There are urban design features and characteristics - or "distinguishing elements" - that make each CBC unique. These distinguishing elements include features such as signature open spaces or buildings; commemorative streetscapes or shared-use path networks; significant environmental assets; infrastructure; or, historic resources.

This chapter offers strategies for incorporating each CBC's distinguishing elements and builds upon the strategies by capturing the envisioned existing or future conditions in each CBC.

CBC Urban Design Frameworks

An urban design framework and Distinguishing Elements map is provided for each CBC that identifies the key aspects of the street layout, built form, and open space network envisioned for each CBC based on the Comprehensive Plan. Common elements of these maps include the following:

- **Street Grid and Multimodal Streetscapes:** A street grid system enables walkable and bikeable connections within a network of existing and new streets. All streets within the network provide pedestrian connections via sidewalks. Where pedestrian connectivity is noted on the CBC urban framework maps, the purpose is to highlight key pedestrian connections, such as those connecting to destinations, along Ecological Spines, and across signalized intersections.
- **Focal Points and Gateways:** Areas of concentrated activity (focal points) or primary entry points (gateways) into a CBC provide visual and physical connections to destinations within the CBC. They occur primarily at street intersections, significant open spaces, and BRT stations, where activity is likely to occur, or where the visitor experience begins and is shaped. The critical role these locations play requires greater attention to design. Focal points and gateway areas can include public art, wayfinding or entry signage, landscaping, and/or signature buildings to highlight their significance.
- **Open Space Network:** Each CBC includes an open space system with large open spaces - such as Livability Spines and neighborhood parks and plazas - that serve as the primary gathering places and hubs of activity. The uses and character of these open spaces should reflect the unique conditions of the CBC.
- **Building Heights:** Building heights are noted on the framework maps and are divided into three categories: high (10+ floors), medium (5-9 floors) and low (1-4 floors). The tallest buildings are located closest to BRT stations, with building heights stepping down closer to existing adjacent neighborhoods and natural areas. The Comprehensive Plan provides more detailed building heights maps for each CBC.
- **Activated Ground Floors:** Framework maps depict the locations where activated ground floor design should be employed. Activated ground floors occur along the most important building facades. Each building's ground floor design should foster a relationship between the building, its uses, and the street or public space it faces. A building face may be activated by commercial, public, and retail uses as well as by built elements, such as porches and stoops. The Comprehensive Plan provides strategies for activating floors when retail uses are not feasible.

Note on Heritage Resources

Developers are encouraged to obtain guidance and information from County Heritage Resources Staff and community groups that relate to local history to incorporate into projects. Projects should consult the Inventory of Historic Sites and contact the Heritage Resources section of DPD for more information.

REFERENCES FOR CBC-SPECIFIC GUIDELINES

Fairfax County Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas Sections 2, 3 and 4C
The Fairfax County Inventory of Historic Sites
Fairfax County Department of Planning and Development: Historic Preservation and Heritage Resources

6A NORTH GATEWAY

North Gateway is the northern entry point into Fairfax County's portion of Richmond Highway. Since the CBC provides the initial impression of the County, urban design principles are especially important. Public realm features should enhance the sense of arrival and movement within the CBC's streetscapes, open spaces and building design to serve as a gateway into the corridor.

The urban design framework for North Gateway reflects the area's role as the visual and physical entry point to the Richmond Highway corridor from the City of Alexandria. A large gateway sign or public art installation should function as an entrance and may include kinetic elements that reinforce a sense of movement through the CBC. The creation of a linear park along the environmentally sensitive Cameron Run should provide park amenities and include the revegetation and restoration of the shoreline to a more natural condition. The underpass area beneath the I-495 ramps should become an active, inviting urban space with programmed activities. Building design may reflect the mid-century design that influenced the corridor's early developments and can provide a clear delineation between Old Town Alexandria and Fairfax County.

Graphic 35 shows the urban design framework and distinguishing elements of the North Gateway CBC.

KEY DESIGN THEMES

The following key themes should be considered when designing architecture, public space, public art, and other physical elements of a project:

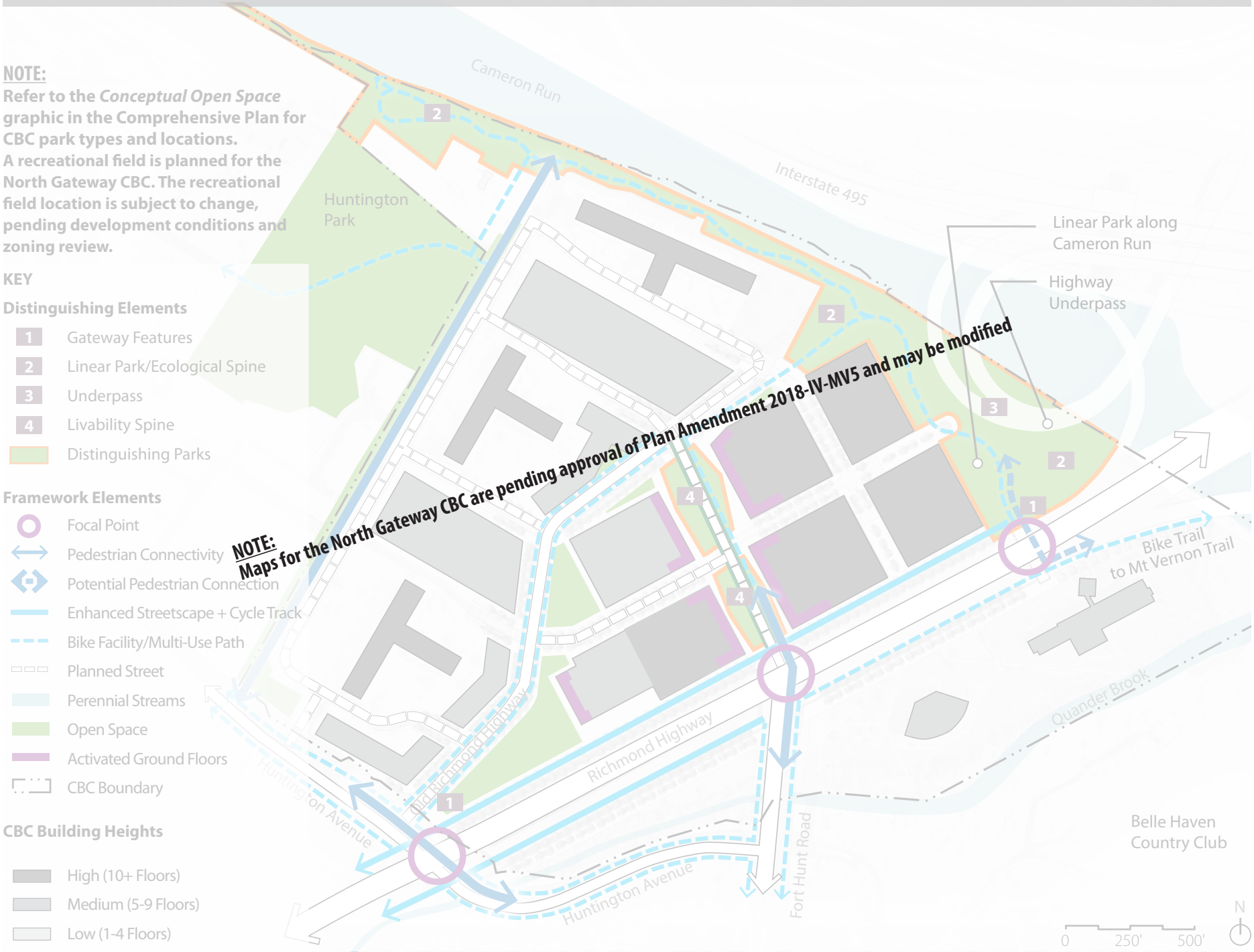
- Entry point, gateway to Richmond Highway area
- Sense of rhythm and movement
- Greening and restoration of Cameron Run
- Contemporary aesthetic


Fairfax County, VA


Fairfax County, VA

LEFT & RIGHT
Views of North Gateway CBC, I-495 and Cameron Run
Image Credit: Rhodeside & Harwell, Creative Commons

GRAPHIC 35: NORTH GATEWAY CBC - URBAN DESIGN FRAMEWORK AND DISTINGUISHING ELEMENTS MAP



NORTH GATEWAY DISTINGUISHING ELEMENTS

1 GATEWAY FEATURES

Urban design features should highlight and reinforce North Gateway's role as the entry point and "front door" to the Richmond Highway corridor. Gateway elements such as public art, signage, and landscaping should evoke a sense of movement, transition, and arrival to reflect the shift in character between the City of Alexandria and Richmond Highway. Gateways should be reinforced through the design and construction of signature buildings that both frame and announce the beginning of the Richmond Highway corridor. Gateway elements, such as public art, should be located in areas that are visible from Richmond Highway, such as at the intersection of Huntington Avenue and Richmond Highway.

Dublin, Ireland

2 LINEAR PARK AND ECOLOGICAL SPINE ALONG CAMERON RUN

Urban design in North Gateway should prioritize both visual and physical access to the water. Design features such as overlooks and boat launches should be located adjacent to the waterway with the creation of a linear park or Ecological Spine along Cameron Run. Landscaping should define spaces along the linear park and provide shade while still maintaining views to Cameron Run.

The linear park should be activated by special programming that attracts visitors. It should be designed to incorporate a spectrum of active and passive uses, with the most active uses concentrated at entry points to the park. Potential uses and activities range from public gatherings and events to temporary or rotating programming and installations, family-oriented activities, and places for respite and quiet reflection. Interpretive elements, such as signage and elements embedded in the paving, should be considered along walkways to highlight the stream's ecology.


Portland, OR

LEFT
Example of a physical installation that incorporates public art and landscaping to create a distinctive gateway along roadway corridors. Such features could reinforce the transition in character and sense of arrival as one enters the Richmond Highway Corridor from Old Town, Alexandria
Image Credit: Ros Kavanagh, Devin Laurence Field

RIGHT
Example of a floating shared-use path connecting shoreline parks that are physically disconnected by physical barriers, such as a large roadway
Image Credit: John Wachunas

NORTH GATEWAY DISTINGUISHING ELEMENTS (CONTINUED)

3 UNDERPASS

The underpass located at the intersection of Richmond Highway and the I-495 ramps should be transformed into a distinctive, welcoming, and active urban park. Programmed activities along with vibrant lighting effects, public art, and visitor facilities should activate the underpass by creating inviting spaces to gather and linger. Signage and interpretive elements should be integrated in a manner that creates a consistent visual rhythm as visitors move through the underpass. The design and programming of underpass elements should be coordinated with the those of the linear park along Cameron Run to create a cohesive visitor experience.

4 LIVABILITY SPINE

The Livability Spine should provide spaces for play, recreation, and passive use. It should accentuate the North Gateway CBC's role as a gateway into the Richmond Highway area. The Livability Spine should be highly visible from Richmond Highway to welcome visitors to the area. For example, the entrance to the Livability Spine could incorporate a signature gateway element, such as art or sculpture, open spaces, signature architecture at corners, or lighting. Given this Livability Spine's relatively short length, the design should strive to extend the experience by providing strong visual and physical connections to nearby attractions, such as the Cameron Run linear park and the underpass park.

For detailed guidance regarding Livability Spine design and programming, see Section 3B.1.

Toronto, Canada

Washington, DC

TOP RIGHT
Public art that incorporates vibrant lighting, murals and sculptures can transform underutilized highway underpasses into inviting places for people to gather and linger
Image Credit: Azure Magazine

BOTTOM RIGHT
An open space framed by buildings and anchored by a signature gateway element
Image Credit: Bozzuto

6B PENN DAW

The Penn Daw CBC is envisioned as the intersection of Richmond Highway's businesses, transportation, recreation and is distinguished by its role as the multimodal "crossroads" for the area. Penn Daw is the location where Kings Highway and Richmond Highway come together, and where the first Richmond Highway BRT station will be located, traveling south from the Huntington Metrorail Station. The crossroads theme may be symbolized through the incorporation of a compass motif or other navigation symbols within public spaces and streetscapes. As the CBC is redeveloped, its buildings should reflect an eclectic mix of designs and materials but should be unified by visually consistent streetscapes and high-quality open spaces with a contemporary aesthetic.

The name Penn Daw is derived from two men who built and operated the Penn-Daw Motor Hotel beginning in the 1920s. The name should be incorporated and celebrated as part of new developments to build the sense of place. More information on the history of the name Penn Daw can be found in The Virginia Room at The City of Fairfax Regional Library.

Graphic 36 shows the urban design framework and distinguishing elements of the Penn Daw CBC.

KEY DESIGN THEMES

The following key themes should be considered when designing architecture, public space, public art, and other physical elements of a project:

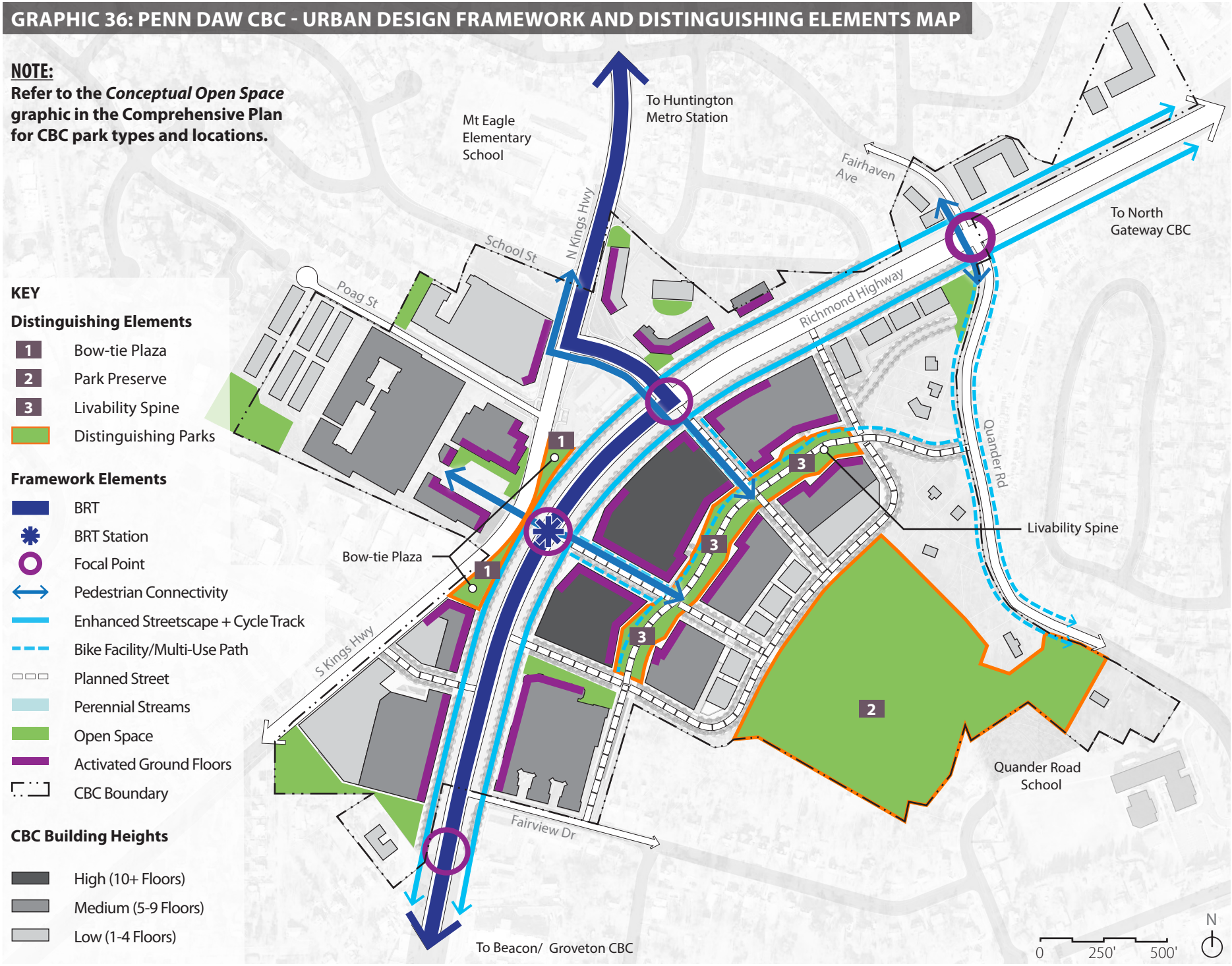
- Crossroads and navigation
- Transportation gateway
- Eclectic, colorful design
- Contemporary aesthetic

LEFT
Intersection of Richmond Highway and Kings Highway
Image Credit: Rhodeside & Harwell

RIGHT
Entrance block at Kings Crossing Shopping Center in Penn Daw
Image Credit: Rhodeside & Harwell

GRAPHIC 36: PENN DAW CBC - URBAN DESIGN FRAMEWORK AND DISTINGUISHING ELEMENTS MAP

NOTE:
Refer to the *Conceptual Open Space* graphic in the Comprehensive Plan for CBC park types and locations.



PENN DAW DISTINGUISHING ELEMENTS

1 BOW-TIE PLAZA

Penn Daw's Bow-Tie Plaza is planned to be located at the Penn Daw BRT station, and will be comprised of two triangular spaces created by abutting roadways. The plaza's design should emphasize and support its function as a connector, providing pedestrians and bicyclists with multiple routes to and through the space, as well as safe crossings of adjacent roadways. The plaza should offer an experience that provides both a sense of arrival and respite from surrounding roadways.

If the opportunity arises, the Bow-Tie Plaza could be expanded beyond the area shown in Graphic 36. The expansion could include BRT facilities, plaza programming, or stormwater management facilities if co-located with other amenities.

Signature buildings and landscaping should frame the plaza and announce the beginning of the Richmond Highway area. The plaza's north side, moreover, should incorporate a visual landmark, such as public art or a landscaped element, on axis with the Richmond Highway Transit Boulevard to further reinforce the sense of arrival.

LEFT
A plaza at the crossing of two major roadways. Unique landscaping, shading devices, and paving help to make the plaza a destination while also buffering people from moving cars
Image Credit: 2.ink Studio

TOP RIGHT
Example of an urban park entrance that utilize special paving, landscaping, and wayfinding to welcome and transition visitors from a street to a playground and then to a natural setting
Image Credit: MKW + Associates

New York City, NY

MIDDLE RIGHT
Example of an urban park entrance that utilize special paving, landscaping, art, and wayfinding to welcome and transition visitors from a more urban setting to a natural setting
Image Credit: Sue Choi

Nashville, TN

BOTTOM RIGHT
Example of linear park that allows for pedestrian movement while dedicating space for flexible play and social activities for all users
Image Credit: Tom Fox

Gubei, China

PENN DAW DISTINGUISHING ELEMENTS (CONTINUED)

2 PARK PRESERVE

The Park Preserve, located at the easternmost edge of the Penn Daw CBC, is managed by the Park Authority and includes large portions of Resource Protection Areas and Environmental Quality Corridors. It should be used for passive recreation such as a system of walking trails. Overlooks at the ends of streets should provide views into the Park Preserve. To create a welcoming entrance, the main entrance may be designed to include a small public plaza space with interpretive elements and informational signage. Any programming, which might include small play spaces and exercise stations, should be clustered strategically throughout the trail system, where appropriate so that natural resource preservation remains a high priority.

3 LIVABILITY SPINE

The Penn Daw Livability Spine should have a primarily active character and should serve as a center of activity in the CBC. It should act as the primary community gathering space and as a hub for recreational and social activities, such as playspaces, outdoor dining, and festivals and events. These active uses should be predominantly located in the portions of the Livability Spine closest to the BRT station. Pockets of passive recreational amenities should be included to diversify the experience of this Livability Spine.

For detailed guidance regarding Livability Spine design and programming, see Section 3B.1.

6C BEACON/ GROVETON

Beacon Hill is one of the highest points in the metropolitan area, affording views of the Washington Monument, Old Town Alexandria, and surrounding natural features. The Beacon/ Groveton CBC's elevation relative to the rest of corridor, aviation history, and the amount of planned commercial and residential development distinguish it as Richmond Highway's town center. Its name and aviation roots stem from an airway beacon that was used to guide airmail pilots. It was also the location of one of the nation's first private airports, dating back to the 1920s. This history instills a sense of innovation and discovery in the CBC that should be reflected in future redevelopment.

The CBC will be anchored by a signature Central Civic Plaza fronting on Richmond Highway and by the Beacon/Groveton BRT station. The Plaza should connect the BRT station into the heart of the CBC and be designed to support a wide range of active uses. In addition to the Plaza, a Livability Spine will run parallel to Richmond Highway along interior blocks. Additional green spaces will connect to the Livability Spine, providing for a diversity of park types and recreational uses.

Beacon/Groveton is anticipated to contain some of the tallest buildings within the Richmond Highway area. These buildings should be designed to maximize the distinctive views afforded by the CBC's topography. Their designs should embrace the use of building step backs, terraces and balconies to create unique private outdoor spaces and variations in building form and height to help mitigate the scale of the buildings.

Graphic 37 shows the urban design framework and distinguishing elements map for the Beacon/Groveton CBC.

KEY DESIGN THEMES

The following key themes should be considered when designing architecture, public space, public art, and other physical elements of a project:

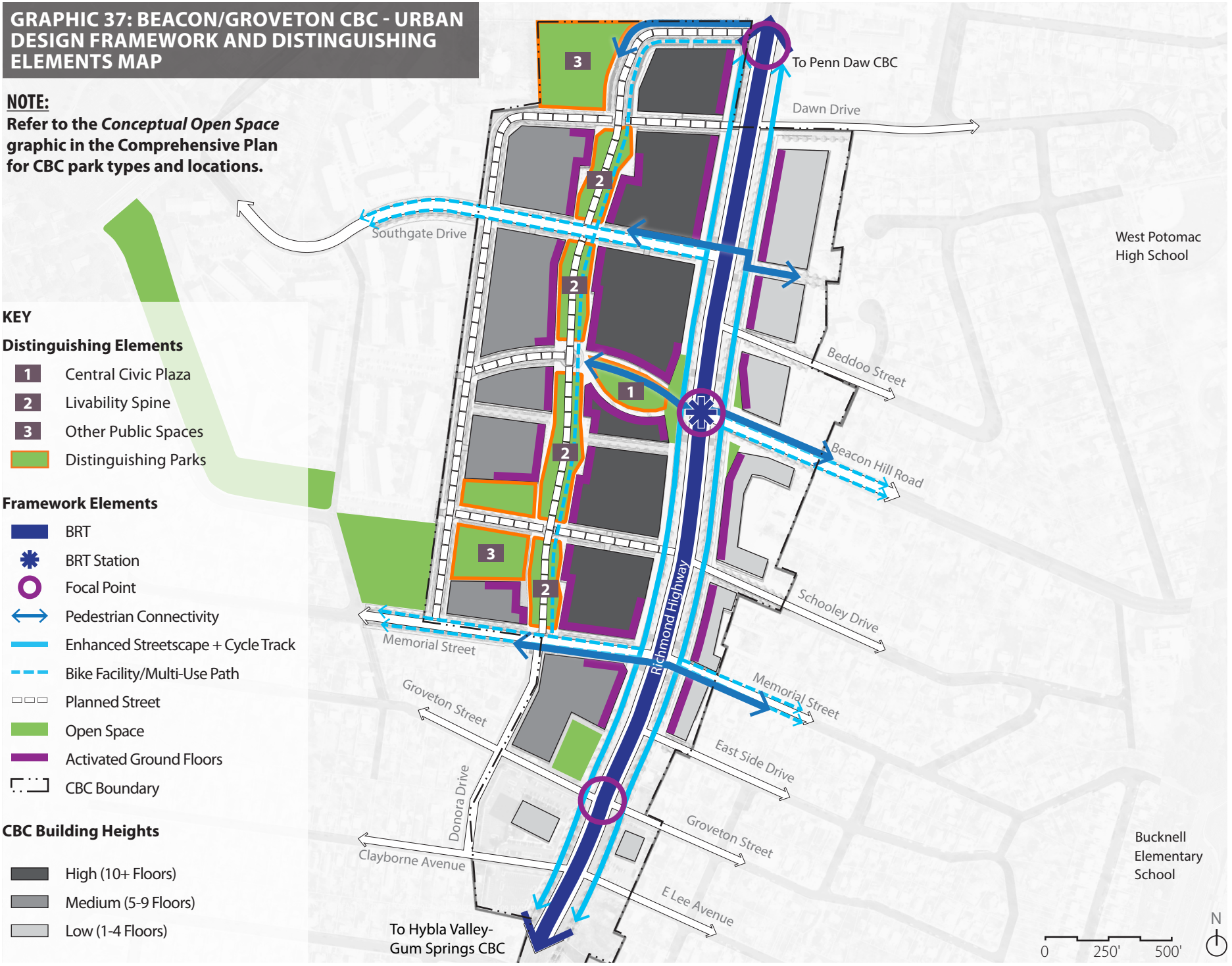
- Topographic high point with views
- History of innovation and discovery
- Town center
- Contemporary aesthetic

Fairfax County, VA

LEFT
Existing Beacon Center
Image Credit: Rhodeside & Harwell

GRAPHIC 37: BEACON/GROVETON CBC - URBAN DESIGN FRAMEWORK AND DISTINGUISHING ELEMENTS MAP

NOTE:
Refer to the *Conceptual Open Space* graphic in the Comprehensive Plan for CBC park types and locations.



BEACON/GROVETON DISTINGUISHING ELEMENTS

1 CENTRAL CIVIC PLAZA

The signature Central Civic Plaza should emphasize Beacon/Groveton's role as the primary focal point and a town center for the Richmond Highway area. The plaza should be directly connected to Beacon/Groveton's BRT Transit Plaza, act as the "front door" to the CBC, and function as a primary gathering space in the Richmond Highway area. The Civic Plaza should be designed for high levels of pedestrian activity and should be flexible enough to accommodate a wide array of programming, with a heavy emphasis on commercial and entertainment uses. Areas of the plaza adjoining commercial uses should function as extensions of building uses with features such as dedicated dining areas or movable retail racks and displays. It should also be flexibly designed to accommodate vehicular travel if the connection is necessary.

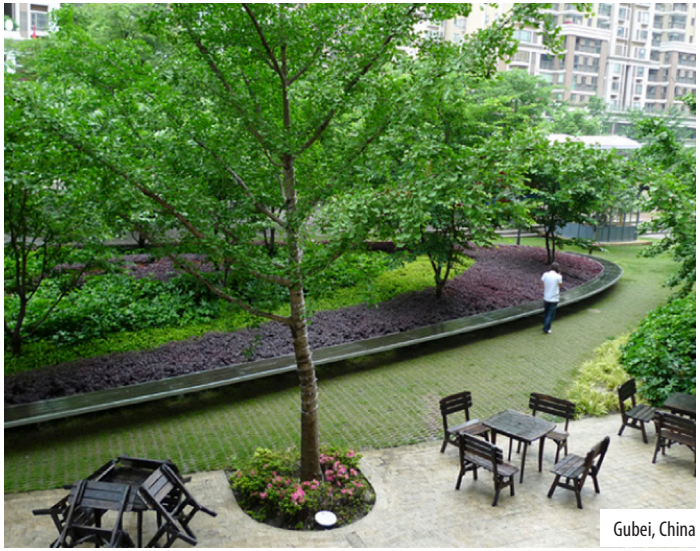
The Civic Plaza's design should include a mix of hardscape and softscape areas and should incorporate features such as water elements, shade structures, pavilions, and public art. The design should also incorporate spaces and utility hook-ups to host events such as concerts, movie nights, farmers markets, etc. For example, the plaza could incorporate a small, amphitheater-like seating area as a venue for events.

Tysons, VA

2 LIVABILITY SPINE

The Beacon/Groveton Livability Spine should complement other parks and plazas in the CBC by serving as the connector that links these public spaces. Through a series of garden landscapes that emphasize passive recreation and respite from the urban environment, the Livability Spine should bring more greenery into an area where it has historically been lacking. Like other parks and plazas in the CBC, the Livability Spine can accommodate a range of passive and active uses. However, relative to other Livability Spines, this Livability Spine is characterized by a more passive character, defined by its naturalistic landscaping, dense clusters of trees and greenery, high concentrations of meadow-like plants, and lawn spaces.

For detailed guidance regarding Livability Spine design and programming, see Section 3B.1.



Gubei, China

LEFT
A special plaza, framed by buildings, that serves as a vibrant neighborhood center and gateway to adjacent transit
Image Credit: Macerich, Dwellus

RIGHT
A wide streetscape with generous landscaping and street furnishings creates a linear park environment that unifies and connects a series of nearby parks
Image Credit: Tom Fox, Landezine

BEACON/GROVETON DISTINGUISHING ELEMENTS (CONTINUED)

3 OTHER PUBLIC SPACES

Public spaces, including streetscapes and open spaces as well as BRT stations and plazas, should celebrate the area's aviation history and associated heritage resources such as Beacon/Groveton's former airfield. Opportunities include incorporating aviation-themed interpretive signage, plaques, memorials, and embedded elements in paving; incorporating references to aviation history incorporated into public art and play installations; and repurposing infrastructure remnants.

Open spaces that anchor each end of the Livability Spine provide two prime opportunities for new recreation facilities within the Richmond Highway area; as such, these facilities should be considered as potential locations for sports fields or other athletic facilities.

Orange County, CA

Emsdetten, Germany

LEFT & RIGHT
Examples of how aviation themes can be embedded in the design of public spaces. A playspace and a bus shelter reference aviation themes and forms
Image Credit: Earthscape Play (left), OX2architekten (right)

6D HYBLA VALLEY -GUM SPRINGS

Hybla Valley-Gum Springs is distinguished by the convergence and intermingling of the area's ecology and history, which together add richness to the built environment. The area's ecological resources include streams that traverse the area as well as the woodlands and wetlands of nearby Huntley Meadows Park. Heritage resources include many sites within Gum Springs, the historical alignment of Route 1, the former Hybla Valley Airport, the nearby Huntley Estate, and the historical location of a former drive-in movie theater. Gum Springs is an especially important part of the history of the corridor as Fairfax County's first community of freed African Americans. Refer to the Gum Springs Historical Society and Museum for maps and information about the community's history since its founding by West Ford.

The historical alignment of Route 1 (now Fordson Road) presents an opportunity to create a distinctive path that links many of the area's assets, from Gum Springs to Huntley Meadows Park, together through the creation of a "Legacy Corridor." The Legacy Corridor may include elements such as special paving treatments, distinctive trees and landscaping, wayfinding signs and educational markers that mark each important site along its path. The Legacy Corridor should help tell the story of Richmond Highway through different stages of its history.

Flight is also an important theme to the CBC's identity. From the 1920s to 1950s, it was the site of the Hybla Valley Airport. Today, migratory birds cross over the CBC while using Huntley Meadows Park as a resting place. The idea of flight, aviation, and birds should be reflected in the motifs of public spaces and streetscapes. Buildings should be designed to be sensitive to migratory birds by employing bird-friendly design techniques.

Graphics 38A and 38B shows the urban design framework and distinguishing elements map for the Hybla Valley-Gum Springs CBC.

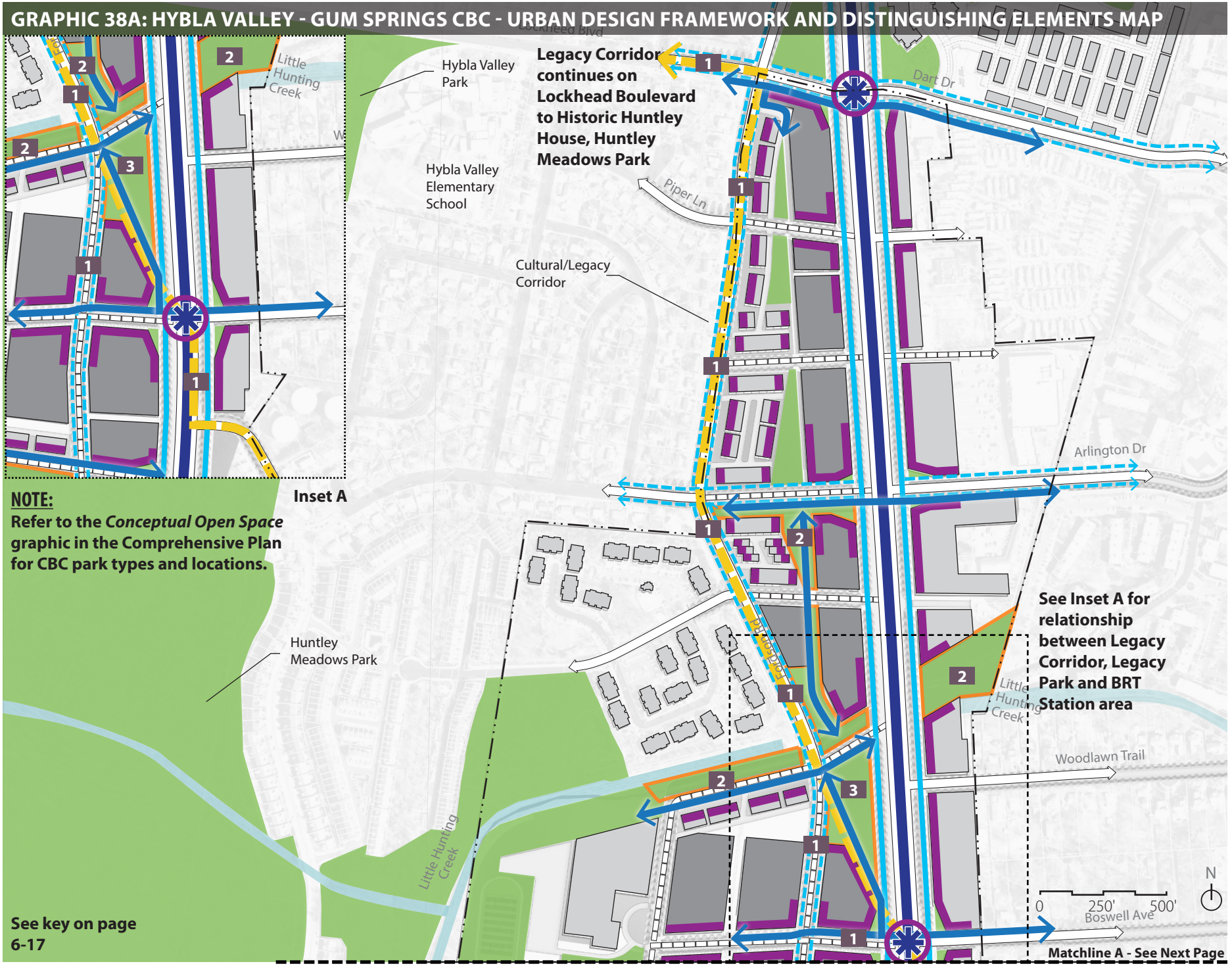
KEY DESIGN THEMES

The following key themes should be considered when designing architecture, public space, public art, and other physical elements of a project:

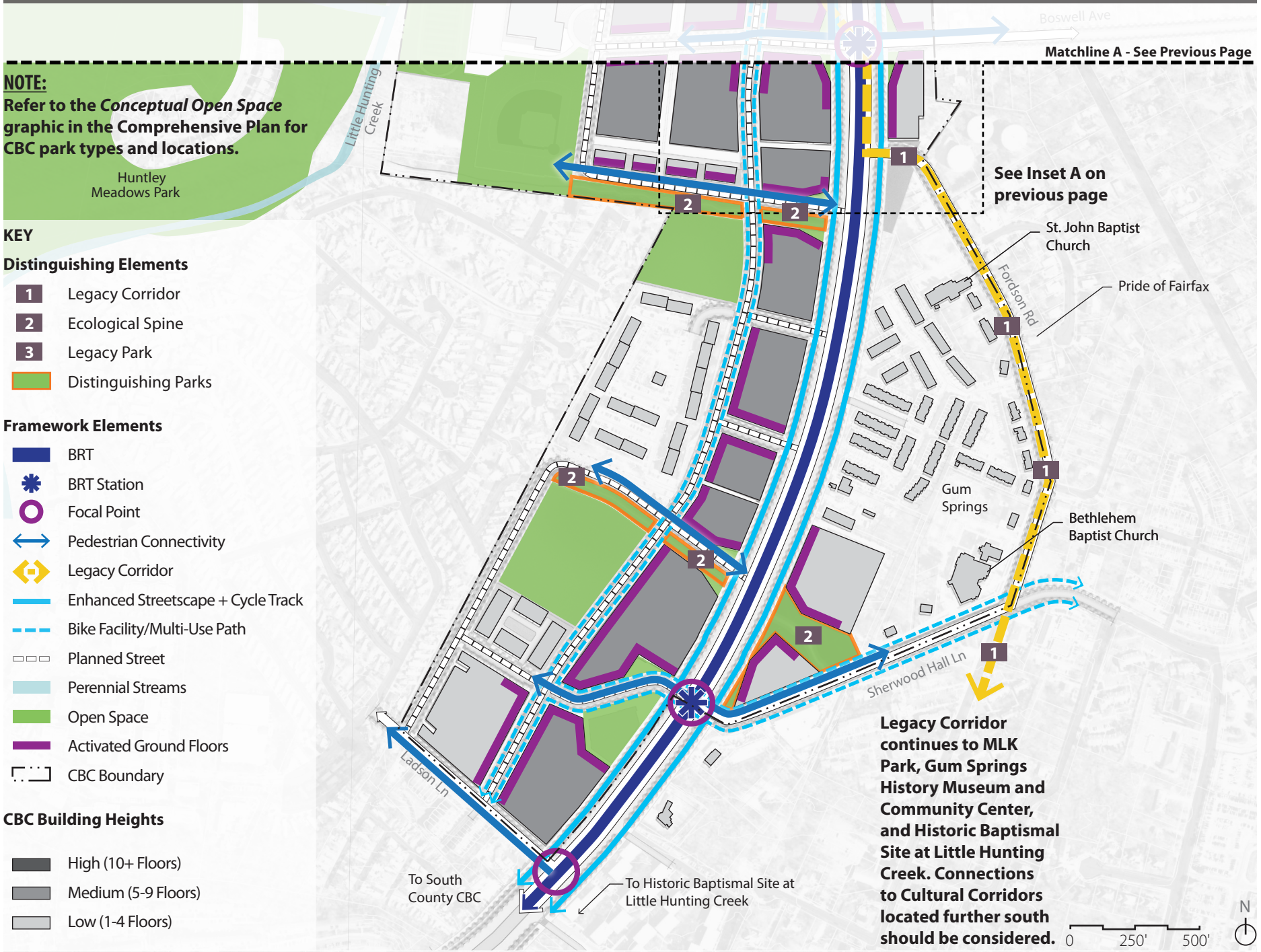
- History: Gum Springs community, aviation history, former Route 1 alignment
- Green: Stream corridors, sustainable and environmentally conscious design
- Aviation and flight
- Traditional aesthetic

RIGHT
Bethlehem Baptist Church in Gum Springs
Image Credit: Fairfax County

GRAPHIC 38A: HYBLA VALLEY - GUM SPRINGS CBC - URBAN DESIGN FRAMEWORK AND DISTINGUISHING ELEMENTS MAP



GRAPHIC 38B: HYBLA VALLEY-GUM SPRINGS CBC - URBAN DESIGN FRAMEWORK AND DISTINGUISHING ELEMENTS MAP



HYBLA VALLEY-GUM SPRINGS DISTINGUISHING ELEMENTS

1 LEGACY CORRIDOR

The Legacy Corridor is a commemorative route, extending from Huntley Meadows to historic Gum Springs, that connects and highlights numerous heritage resources. The Legacy Corridor celebrates the historical alignment of Route 1, while connecting and commemorating other heritage resources throughout Hybla Valley and Gum Springs - such as the Gum Springs community and the former airfield. While the Legacy Corridor is not a street or streetscape, it generally follows the alignment of Fordson Road, except for a short segment along Richmond Highway near Boswell Avenue. It should cross Richmond Highway at the BRT station.

A. The Legacy Corridor should include dedicated commemorative spaces - at intervals of at least one per block - for special treatments that commemorate heritage resources, and that tell the story of Hybla Valley and Gum Springs' development and the area's heritage resources. Such treatments might include special paving treatments, plaques, interpretive signage, or public art.

Cumberland, MD

BOTTOM
A heritage trail that integrates and celebrates legacy with special wayfinding embedded in the pavement of a streetscape
Image Credit: Chris Tolton

B. The Legacy Corridor should be organized into three zones (See *Graphic 39*) that highlight and interpret heritage resources located in an around each zone.

C. The Legacy Corridor should incorporate distinctive precast concrete pavers and signage treatments at regular intervals to distinguish the Legacy Corridor, as described in Chapter 3 (Section 3A, "Streetscapes").

   i. Commemorative elements along the streetscape, specifically in the Amenity and Building Zones, may include interpretive panels, interpretive elements embedded in the pavement, commemorative plaques, special tree planting and placement, and other features that highlight the area's history and heritage resources.

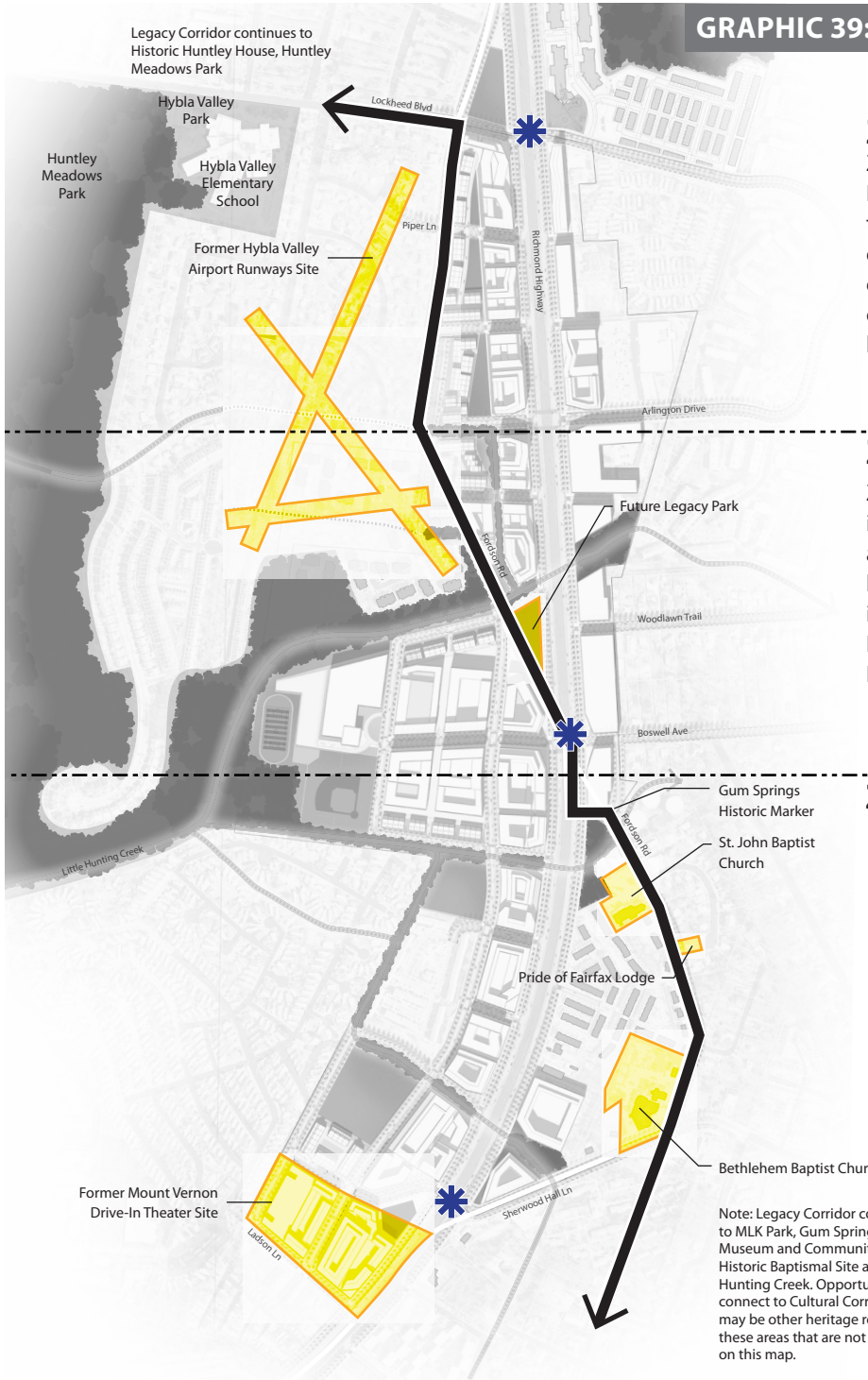
   ii. Dedicated spaces along the Legacy Corridor to accommodate commemorative elements should be large enough to draw attention to heritage resources, but should not impede pedestrian mobility and access along the sidewalk.

   iii. Additional streetscape amenities, such as benches and lighting, should be located near commemorative spaces in order to increase pedestrian comfort and visual interest.

D. The form, character, and placement of buildings along the Legacy Corridor should highlight the area's history and reinforce the character of the Legacy Corridor. Corner buildings should express and commemorate the area's history through treatments such as plaques, signage, public art, and other interpretive elements.

E. Implementation of the Legacy Corridor should explore locations to connect the Legacy Corridor to the Cultural Corridor in the Woodlawn CBC.

GRAPHIC 39: HYBLA VALLEY-GUM SPRINGS CBC - LEGACY CORRIDOR MAP



Note: Legacy Corridor continues to MLK Park, Gum Springs History Museum and Community Center, Historic Baptismal Site at Little Hunting Creek. Opportunities to connect to Cultural Corridors. There may be other heritage resources in these areas that are not identified on this map.

ZONE 3 (.8 MILES/ 17 MINUTE WALK)

Zone 3 (located between Arlington Drive and Lockheed Boulevard and terminating at Huntley Meadows Park entrance) focuses on the importance of the former airfield, the Lockheed company, and the area's aviation history in general.

Image Credit : West8

Toronto, ON, Canada

ZONE 2 (.4 MILES/ 8 MINUTE WALK)

Zone 2 (between the Fordson Road intersection with Richmond Highway and Arlington Drive) honors the historical development of Route 1, including its former alignment along Fordson Road, and contains the future Legacy Park.

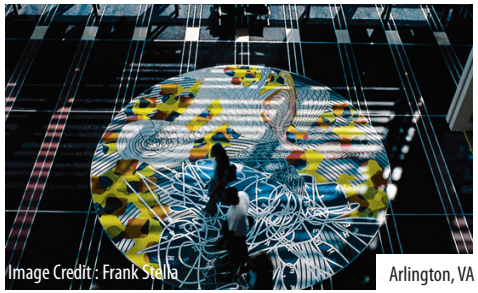


Image Credit : Frank Stella

Arlington, VA

ZONE 1 (.8 MILES/ 17 MINUTE WALK)

Zone 1 (between Little Hunting Creek and Fordson Road intersection with Richmond Highway) celebrates the history of the Gum Springs community. This area includes Martin Luther King Jr. Park, the History Museum, and other important places along Little Hunting Creek.

Image Credit : Echo Makes

Syracuse, NY


Vancouver, Canada


Yonkers, NY

TOP & MIDDLE RIGHT
Examples of urban development and streetscapes that incorporate restored stream corridor parks. The design of each space encourages interaction with water and creates recreational opportunities
Image Credit: Rodriguez Ravelo Architects, Groundwork USA


Portland, OR

BOTTOM RIGHT
Vibrant civic plaza that incorporates water features and programmed recreational spaces
Image Credit: PWP Landscape Architecture, Andropogon Associates

HYBLA VALLEY-GUM SPRINGS DISTINGUISHING ELEMENTS (CONTINUED)

2 ECOLOGICAL SPINES

Ecological Spines are linear parks along enhanced or daylighted streams. They will function as a primary organizing element of this CBC, integrating restored natural systems into redevelopment while providing a range of open space and recreational amenities. The development of Ecological Spines in the Hybla Valley-Gum Springs CBC should follow the guidelines for the Ecological Spine Types 1, 2, and 3 highlighted in Section 3B.2.

3 LEGACY PARK

Legacy Park, a civic plaza/common green, will serve as a signature public space and central gathering place in the CBC. The Park should include an open lawn area for community gatherings. Buildings with front entrances opening directly onto the park should line the perimeter of the space providing a sense of enclosure and safety without obstructing views into the park from Richmond Highway. The park's design should both maintain and accentuate views along the Legacy Corridor on both sides of Richmond Highway, incorporating elements such as an allée of trees and distinctive paving treatments to highlight the Legacy Corridor.

The design of the park should reflect the convergence, or intermingling, of ecological and heritage resources. Interpretive elements, such as those embedded in the pavement or in signage and plaques, should highlight the historical alignment of Richmond Highway and elements of Gum Springs' history. Moreover, the design should integrate some elements of the Ecological Spines to provide opportunities for passive recreation, access to nature, and awareness of hydrological processes.

HYBLA VALLEY-GUM SPRINGS DISTINGUISHING ELEMENTS (CONTINUED)

4 OTHER PUBLIC SPACES

Public spaces, including streetscapes and open spaces, should pay tribute to the area's rich history. Where applicable, public spaces should memorialize the legacy of the Gum Springs community and Hybla Valley's aviation and drive-in movie theater history through public art installations and other interpretive elements.

5 SIGNATURE GREEN BUILDINGS

Given Hybla Valley's unique location and major ecological assets, the design of buildings and building façades should visibly incorporate sustainable materials and design treatments in a manner that demonstrates its sustainability. Façade treatments should utilize durable and sustainably-sourced materials and technologies. Buildings should also incorporate features such as green walls or roofs, alternative energy generation via district energy systems, geothermal systems, solar panels, and building-integrated wind turbines.

Graphics 38A, 38B, and 39 show the urban design framework and distinguishing elements map for the Hybla Valley-Gum Springs CBC.

6 OTHER PUBLIC SPACES

Northern Gateway to Mount Vernon: South of the Hybla Valley-Gum Springs CBC at the intersection of Richmond Highway and Old Mt Vernon Rd is one of two routes that visitors will use to travel to Mount Vernon from Richmond Highway. This gateway should be celebrated with signage, lighting, public art, landscaping, and other public realm features.

Note on Hybla Valley- Gum Springs Heritage Resources
Developers should consult community groups such as the Gum Springs Historical Society when creating features within the Legacy Corridor and other public spaces that relate to local history.

Rochester, NY

Vancouver, BC


Brooklyn, NY

TOP & MIDDLE
Examples of public spaces and buildings that commemorate local history with public art
Image Credit: The Republiq, City of Vancouver

BOTTOM
A building that visually expresses sustainable elements along façades and roofs
Image Credit: Tim Fisher

6E WOODLAWN

Woodlawn is poised to become a village center and tourism hub that is tied to the planned "Cultural Corridor" connecting the CBC to key cultural destinations. It is distinguished by the abundance of nearby historic sites and regionally significant cultural resources, including the Mount Vernon Estate, George Washington's Gristmill, the Woodlawn and Pope-Leighey House, and the National Army Museum. It also has distinctive environmental assets such as Dogue Creek and is proximate to the Potomac River.

As a village center, the CBC should provide commercial uses to support the Woodlawn community as well as amenities to complement the visitor experience. Hotels, restaurants, and shops should line the Livability Spine along the realigned Sacramento Drive-Cooper Road. The Livability Spine should elicit the feel of a traditional Main Street with smaller scale buildings, architectural detailing, and traditional building materials such as brick.

The Cultural Corridor includes a series of existing and planned trails that connect various points of interest together along the path. The trails are designed along roadways and stream valleys and may include features such as wide paved areas for shared use by cyclists and pedestrians, wayfinding and educational signage to describe the various destinations along the routes, lighting, special paving, and other features that help build a sense of identity for the trail.

Graphic 40 shows the urban design framework and distinguishing elements map for the Woodlawn CBC.

KEY DESIGN THEMES

The following key themes should be considered when designing architecture, public space, public art, and other physical elements of a project:

- Village center feel
- Main Street character
- Celebration of nearby ecological resources
- Traditional aesthetic, including the use of traditional architectural details and brick

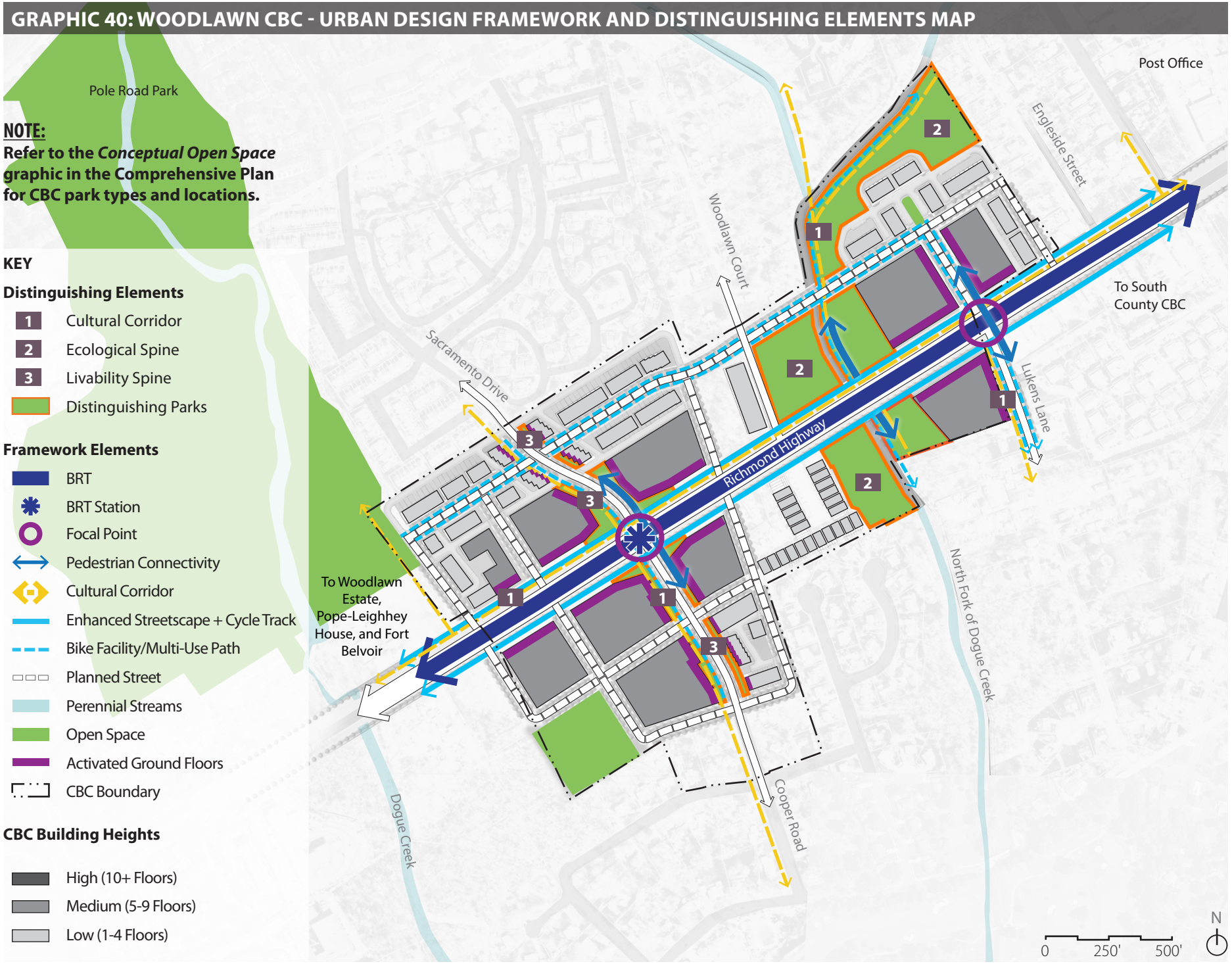
LEFT
Sacramento Center
Image Credit: Rhodeside & Harwell

Fairfax County, VA

RIGHT
View of Towneplace Suites from the south side of Richmond Highway
Image Credit: Rhodeside & Harwell


Fairfax County, VA

GRAPHIC 40: WOODLAWN CBC - URBAN DESIGN FRAMEWORK AND DISTINGUISHING ELEMENTS MAP



DISTINGUISHING ELEMENTS

1 CULTURAL CORRIDOR

The Cultural Corridor is a proposed system of shared-use paths that links the CBC to key destinations such as Mount Vernon Estate and Woodlawn Estate & Pope-Leighey House. The Cultural Corridor's shared-use paths should be designed to encourage exploration of the area and its history through wayfinding features. Shared-use paths should connect, highlight, and interpret local heritage destinations by incorporating special locational and interpretive markers. Consistent branding and visual elements should be utilized throughout the Cultural Corridor to make the shared-use paths identifiable. History and historical narratives should be highlighted in special locations. Interpretation might include the use of plaques, maps, and signage as well as embedded pavement markers.

The implementation of the Cultural Corridor should also explore potential connections to the Legacy Corridor in the Hybla Valley-Gum Springs CBC.

Developers should consult County Heritage Resources Staff, The National Trust for Historic Preservation and community groups when creating features within the Cultural Corridor that relate to local history.

2 ECOLOGICAL SPINE

As a Type 4 Ecological Spine, Woodlawn's Ecological Spine should have a relatively consistent natural character, as compared to other Ecological Spines in the Richmond Highway area that abut or intersect with transportation infrastructure and development. The guidelines for the Type 4 Ecological Spine (see Section 3B.2) provide additional design guidance and special landscape applications along the North Fork of Dogue Creek. A linear park should run along the Ecological Spine to provide recreational opportunities and connect people to the environment.

LEFT
Shared-use paths can connect and highlight local heritage destinations by incorporating clear wayfinding and special markers along the route
Image Credit: Indianapolis Cultural Trail

RIGHT
Examples of parks that incorporate natural waterways as part of the design. Such parks support hydrological resources while accommodating a variety of recreational activities
Image Credit: Boffa Miskell Landscape Architecture

Indianapolis, IN


Auckland, New Zealand

WOODLAWN DISTINGUISHING ELEMENTS (CONTINUED)

3 LIVABILITY SPINE

Woodlawn's Livability Spine is intended to function as a village main street and should provide amenities for both visitors and residents. The Livability Spine should pay tribute to Woodlawn's history by incorporating traditional architectural features and interpretive elements (plaques, signs, and art) that highlight aspects of the area's history. The design of the Livability Spine should incorporate flexible spaces that support a wide range of community gatherings and programming; in particular, local programming that appeals to tourists. For example, these spaces should accommodate temporary vendors and opportunities to feature local products and crafts for sale (e.g. "Made in Fairfax").

For detailed guidance regarding Livability Spine design and programming, see Section 3B.1.

4 OTHER PUBLIC SPACES

Southern Gateway to Mount Vernon: South of the Woodlawn CBC at the intersection of Richmond Highway and Mt Vernon Memorial Hwy is one of two routes that visitors will use to travel to Mount Vernon from Richmond Highway. This gateway should be celebrated with signage, lighting, public art, landscaping, and other public realm features.

Nantucket, MA


Beaufort, SC

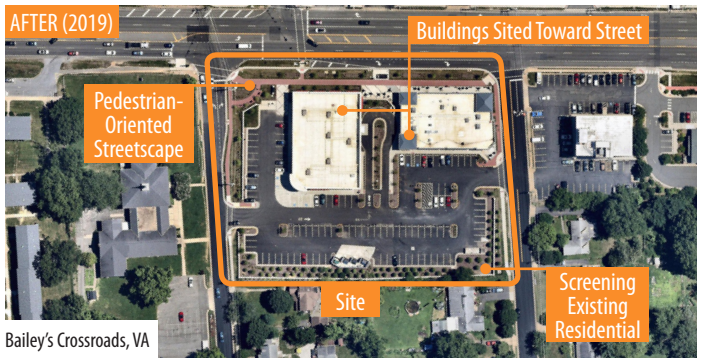
TOP & BOTTOM
Examples of village main streets with active ground floors, generous landscaping, and flexible spaces for community gatherings
Image Credit: Nantucket Island Resorts, Enjoy Miami Beach, Habersham Land Company

Image Credit: MVA Architects

7 USES REQUIRING SPECIAL CONSIDERATIONS

As the Richmond Highway area transitions 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. The Corridor-wide Guidelines section of the Comprehensive Plan has specific recommendations for freestanding uses with drive-through facilities and uses that generate high traffic volumes and contribute to the strip commercial character of the area. It states that these uses may be acceptable only when they are consistent the desired form and character and are coordinated with adjacent or desired building and site design.

This chapter provides design strategies and tools for these uses so that may be consistent with the vision for the corridor. It provides ideas for how these uses can be sited within developments to minimize impacts of parking and drive aisles while encouraging an urban form. Recommendations in this chapter apply to CBCs and, to the extent feasible, to SNAs.



TOP & BOTTOM
An example of an infill shopping center that accommodates more auto-oriented uses within a more compact urban form
Image Credit: Nearmap

DESIGN PRINCIPLES

Auto-oriented uses and large retail establishments 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, should utilize as much street frontage as possible, and should be sited in prominent locations such as street corners. Facilities such as gas pumps, car washes, and parking areas should be shielded from view and located to the rear of a site, wherever possible. Generally, such uses should also minimize corporate-branded architecture.

New developments should incorporate landscape and architectural screening to ensure compatible transitions between uses and densities. Screening techniques can be adapted for smaller and narrower sites as long as development-related impacts are addressed. The County's Zoning Ordinance typically requires a barrier, such as a wall or fence, an unbroken strip of open space alongside the barrier, and landscaping (e.g., trees or shrubs) at the property's boundaries.

NOTE: Some of the guidelines in this chapter include strategies that are listed in order of preference. In such instances, developers should first pursue the strategy listed as "Preference #1." If the developer can demonstrate that the preferred strategy cannot be achieved, other listed strategies may be explored, starting with "Preference #2". Recognizing that needs and conditions will vary from development to development, these guidelines provide developers with a range of options, and emphasize preferred design approaches and techniques whenever possible.

7A DRIVE-THROUGHS

Drive-through uses are those which 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. These uses are common along Richmond Highway today. The design and placement of future drive-through uses should employ strategies that provide a more cohesive, efficient, safe, and visually-pleasing environment consistent with the Comprehensive Plan vision. Auto-oriented uses such as drive-throughs are discouraged in the Comprehensive Plan unless they can meet certain design objectives.

DESIGN STRATEGIES

1 ALTERNATIVE APPROACHES

A. Instead of dedicated drive-through lanes and drive-up windows, designated delivery or pick-up areas should be provided, where possible. 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 at the edges of strip commercial center buildings.

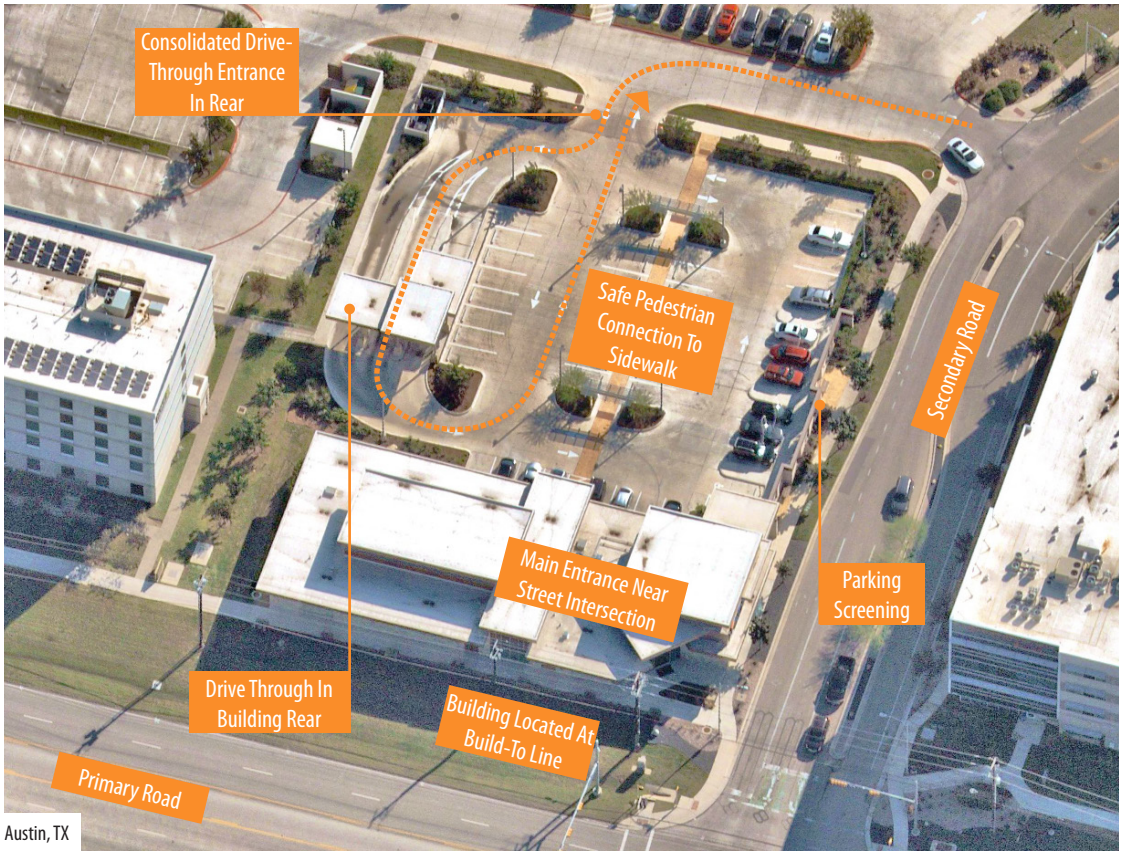
   iii. Preference #3: Integrate with at least one additional commercial use rather than as a single, stand-alone use.

B. Stand-alone drive-through uses are discouraged in the Comprehensive Plan.

Birmingham, AL

Birmingham, AL

LEFT & RIGHT
A restaurant (Chick-fil-A) located at a near the street, with a plaza space screening the parking lot. Dedicated pick-up spaces in the parking lot replace the need for a drive-through
Image Credit: Google Streetview, CCR Architecture & Interiors



Austin, TX

Austin, TX

TOP & BOTTOM
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 (CONTINUED)

3 SITE LAYOUT/ORGANIZATION

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

B. Pick-up windows, order boxes, trash receptacles, and service areas should not visible from Richmond Highway. 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.

   ii. Should not be visible from Richmond Highway or Livability Spines.

   iii. Should not be visible from neighborhood parks or similar public plazas and open spaces.

   iv. Should be separated from vehicle drive lanes/aisles via a curbed median or painted buffer.

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. Corporate branded architecture should be minimized.

B. 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.

C. 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.

DESIGN STRATEGIES (CONTINUED)

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.

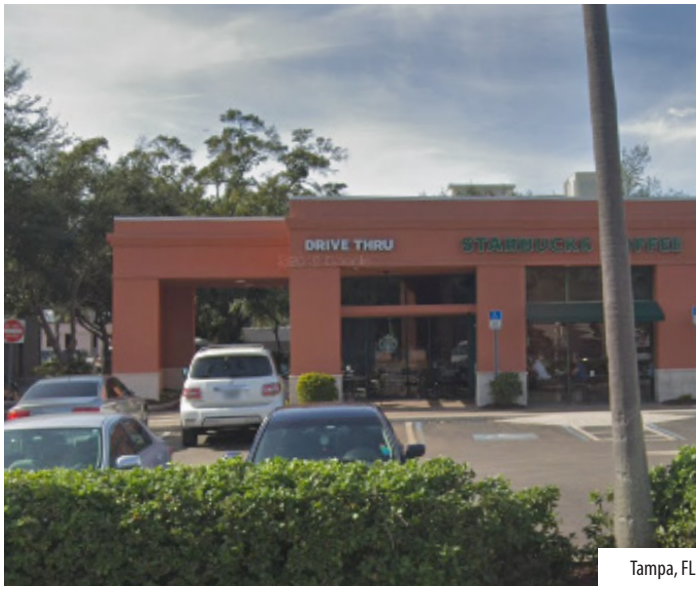
D. Where possible, pedestrian crosswalks should be raised to match sidewalk grades.

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") and 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.

Charlottesville, VA



Tampa, FL

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

RIGHT
A drive-through facility incorporated on one end of a strip commercial center with canopies above drive-through lanes; the canopy is context-compatible with the primary building
Image Credit: Fairfax County

7B SERVICE STATIONS

Service stations and associated convenience stores are a necessary part of the Richmond Highway area. However, if not designed well, these sites can be inconsistent with the Comprehensive Plan vision; as such, the design of service stations and related structures should consider the strategies detailed in this chapter.

Convenience stores and service stations should be integrated into other uses to the extent feasible; stand-alone buildings should be minimized. The design of buildings and site elements should mimic the form and materiality of nearby buildings, or the future character of the area, and minimize corporate branded architecture. Landscaping/screening, canopy design, lighting, and signage should complement the surrounding areas.

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 mixed-use buildings.

   ii. Preference #2: Locate associated buildings along the primary road's frontage or at street intersections, with the service station canopy areas located in a less conspicuous location, such as the side or rear of the convenience store building.

B. Locate service bay garage doors at the building rear or in less conspicuous places.

2 LANDSCAPING, SCREENING, AND BUFFERS

A. A combination of hardscaping and a constructed screen should be included as an effective means of visually screening vehicle areas.

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

Washington, DC


Milwaukee, WI

DESIGN STRATEGIES (CONTINUED)

B. Landscaped screens should be applied along the edges of the build-to line particularly where the gas pumps and canopies are located. Such landscaping should blend in with the predominant plant materials of adjoining properties, be high-quality, and should include groundcover, shrubs, and mature trees to soften the harsh appearance of the service stations.

C. Service areas, utility boxes, trash enclosures, etc. should be screened by dense plantings.

D. Low-height architectural walls (30"-48") and decorative fencing should be integrated with landscaping to further create an edge and buffer between adjoining properties as well as public roads/streetscapes.

E. Raised planters can be used to soften the visual appearance of the site.

F. Fuel truck maneuvering area should be considered when service stations are integrated into mixed-use developments.

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.

ii. Canopy columns should be made of a material similar to the building. The integration of green roofs and similar green features is encouraged.

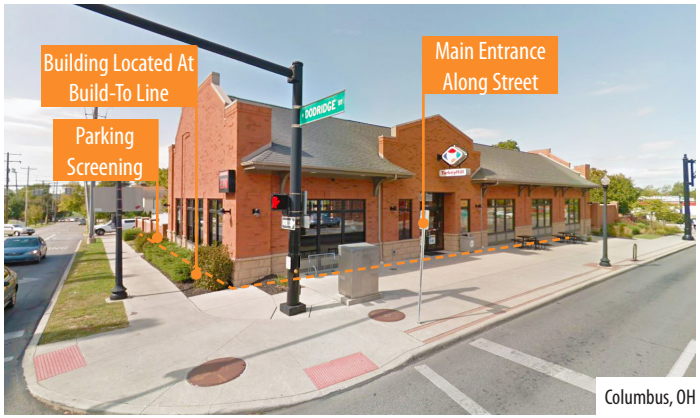
iii. Alternative technology within canopy design should be creatively integrated. For example, the roof of the canopy can be utilized for the location of solar panels.

iv. Lighting and signage on the canopy fascia should be minimized. Application of corporate colors should also be minimized.

v. Breaking down monolithic canopy structures into a series of smaller canopy structures is encouraged. Example approaches include variations in roof form and pillars supporting the canopies. Such canopies could incorporate public art where opportunities exist.

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.

Columbus, OH



Columbus, OH

TOP & BOTTOM
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 (CONTINUED)

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

i. 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.

ii. Service bay locations for car wash and auto-repair buildings should not front Richmond Highway, Livability Spines, or Ecological Spines. Service bay doors should include high-quality materials with architectural details that complement adjoining commercial/mixed-use buildings.

iii. Site and building design associated with auto-repair uses and car washes should provide shaded waiting areas for patrons.

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.

Riverdale Park, MD

LEFT
A ground-mounted monument sign with cladding that is consistent with the development's buildings
Image Credit: BrightMLS

REFERENCE FOR INTERNATIONAL DARK SKY PLACES (IDSP) PROGRAM:
https://www.darksky.org/

7C RETAIL SALES ESTABLISHMENT -LARGE

"Retail Sales Establishment-Large" applies to retail establishments over 80,000 gross square feet. To the extent feasible, guidance should apply to other these large format retail uses that fall under this size. Large retail sales establishments are convenient but often are large-footprint, sprawling, single-story, warehouse-style formats. However, more urban footprints have begun to emerge. As the Richmond Highway area redevelops, large retail that is new or relocated should have a more urban-format and high-quality design that responds to each CBC's planned design character.

DESIGN STRATEGIES

1 LOCATION AND INTEGRATION

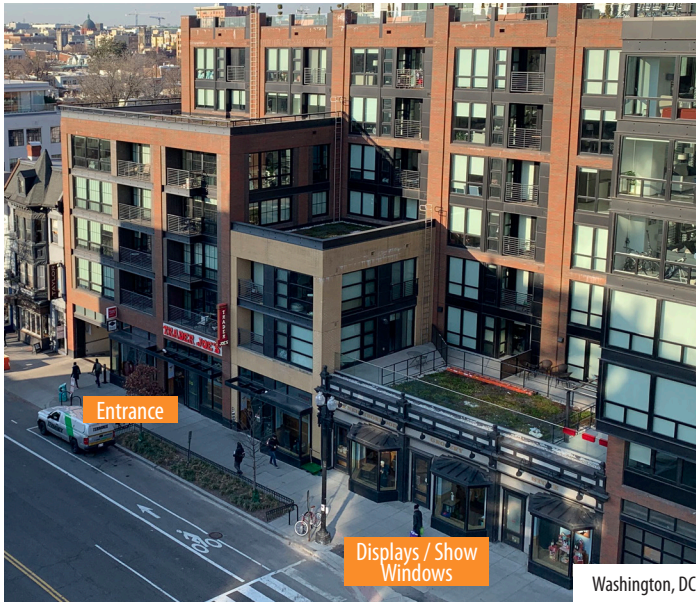
A. Large retail structures should be located using the following in order for preference:

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

   ii. Preference #2: Locate 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.

Washington, DC



Washington, DC

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)

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. Refer to *Volume I*, Chapter 4: Building Design, for building placement and form.

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, when possible. See Chapter 4 for more specific Richmond Highway building design guidance. Refer to *Volume I* for additional Countywide Commercial Revitalization Area/District building design information.

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.

Alexandria, VA

Alexandria, VA

TOP & BOTTOM
Parking access for a large retail establishment located along a secondary street
Image Credit: Rhodeside & Harwell

7D LANDSCAPING AND TRANSITIONING BETWEEN USES

Within the CBCs, the Comprehensive Plan calls for a range of medium- to high-density buildings that include a mix of residential and non-residential uses. Surrounding the CBCs, residential neighborhoods are intended to remain. Providing effective transitions between different uses and varying densities and intensities, and limiting visual impacts to adjacent residential properties, is key to creating well-designed urban environments.

The guidelines are not intended to supersede Chapter 13 of the Zoning Ordinance, which regulates transitional screening. However, more urban strategies for screening between uses may be appropriate because of the dense conditions planned for the CBCs. **This section provides unique design strategies for transitioning between uses that can be used in conjunction with the requirements in the Zoning Ordinance, depending on site conditions.**

REFERENCE FOR LANDSCAPING AND TRANSITIONING
Fairfax County Zoning Ordinance Article 13-330 Transitional Screening And Barriers

DESIGN STRATEGIES

1 FEATURES AND AMENITIES

A. Certain features may serve as effective transitions by providing space between uses while also offering amenities or encouraging the space to be multi-purpose and functional. They should be considered as a supplement to other screening measures. These features or amenities may include:

i. Streetscapes with landscaping in both the landscape panel and behind the sidewalk
ii. Public art
iii. Linear parks and trails
iv. Pedestrian connections between buildings
v. Pocket parks
vi. Decorative walls and fences
vii. Other amenities as deemed appropriate or contributing to the vibrancy of the CBC or adjacent community.

2 LANDSCAPE DESIGN

A. Preserve existing mature or canopy trees and wooded areas within buffers.

LEFT
Stepped walls with high-quality materials, landscaping and public art provide screening for an adjacent residential community
Image Credit: Google Streetview

RIGHT
Trees maintained at an appropriate height along with a masonry wall provide screening between different land uses
Image Credit: Fairfax County


Bethesda, MD


Bethesda, MD

DESIGN STRATEGIES (CONTINUED)

B. Landscaping should be provided on both sides of the barrier to soften its visual impact.

3 DESIGN OF WALLS AND FENCES

A. A masonry wall or powder-coated aluminum fencing is recommended. Cladding materials that match the design of buildings within the new development or are context-sensitive to the neighboring properties should be incorporated, as appropriate.

B. Wood and/or PVC fencing should generally be avoided unless combined with other high quality materials.

C. The creative design of barriers, such as serpentine walls, should be considered.

D. Barriers should work around existing, healthy trees and established landscaping. Wall foundations should be designed to avoid impacts from established and future tree root systems. In areas where existing trees and vegetation are to be preserved, or where the transitional screening area is limited in width, masonry walls should be constructed with a 'pile and grade beam' design.

E. Barriers should not inhibit nor obstruct stormwater flow.

4 PEDESTRIAN ACCESS

A. Pedestrian access points should be provided between screening areas in locations where connections between buildings or developments are desired.

B. Pedestrian access points from adjacent areas should connect to sidewalk areas in the CBC streetscape network.

North Bethesda, MD

TOP
Landscaping design that includes ornamental trees, shrubs and understory planting provides a consistent buffer along off-street parking areas and the sidewalk (Note: tree planting techniques shown in this image do not meet certain Fairfax County tree-planting standards)
Image Credit: Fairfax County

Bethesda, MD

BOTTOM
Trees and understory planting on both sides of an alley provide enhanced access and transitional screening between different land uses
Image Credit: Fairfax County

7E INTERIM STREET CONDITIONS

Achieving the vision of the Comprehensive Plan will occur over time, and therefore, interim street conditions may occur as the "grid of streets" is established. "Interim street conditions" refer to a portion of a street's ultimate cross-section being completed with redevelopment, including the typical two travel lanes and the streetscape (Landscape Panel, Sidewalk, and Building Zone) on the side of the street that is being redeveloped. The construction of the remainder of the street will occur with future development/ redevelopment on the other side of the street to create the ultimate condition. This allows abutting property owners to share to share in the provision of the ultimate roadway. The interim street condition should ensure two-way vehicle travel and establish the permanent location of the curb and street trees on the property of the side being redeveloped so that these features do not have to be replaced as part of future projects. See *Volume I* for additional guidance on interim streets and streetscapes.

Tysons, VA

RIGHT
A development site that includes "interim street" grid segments (travel lanes and streetscape) on the side of the street being redeveloped. Future adjoining development projects convert these "interim" streets into ultimate "complete streets" as they are implemented
Image Credit: Nearmap

DESIGN STRATEGIES

1 PLACEMENT AND CHARACTER

A. Interim street conditions should be consistent with the streetscape zones, paving, furnishings, trees, and signage in the public realm of the ultimate street and streetscape design.

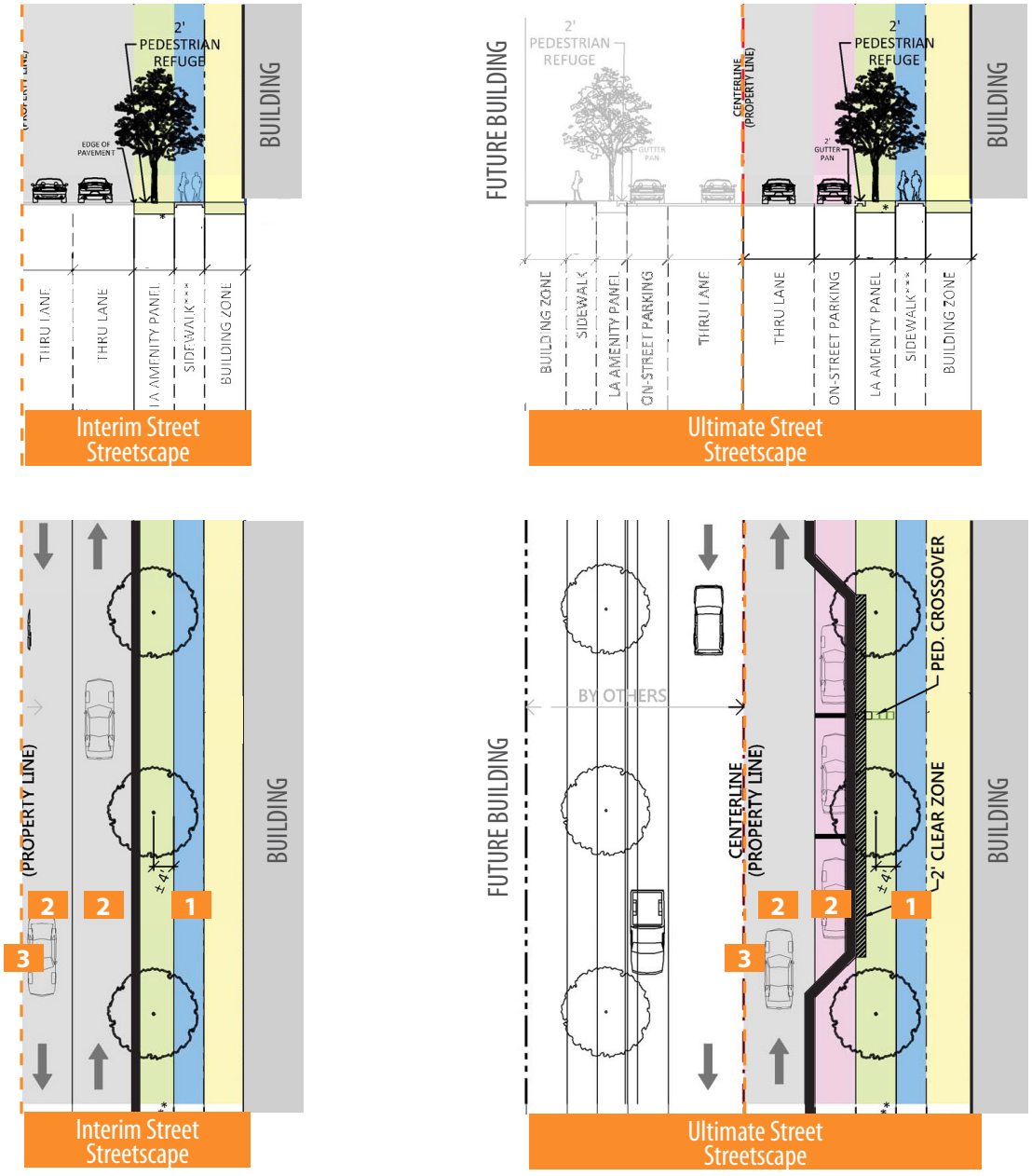
B. The cross-section should establish minimum travel lanes, and streetscape design and curb/gutter on the redeveloping side of the street.

C. Gateway Streetscapes should avoid being developed as half streets, where possible.

The following description and the illustrations provide an example of dimensional requirements for interim street implementation on two lane streets. The transportation needs of each street should be evaluated on a case-by-case basis.

- An interim street cross-section should:
  - Set the curb, and everything behind the curb, as the permanent condition on the redeveloping side
  - Accommodate two-way travel
  - Accommodate bicycle facilities as appropriate on the side of the street being redeveloped
  - Install street trees in the permanent locations on the side of the street being redeveloped
- The ultimate cross-section should:
  - Provide the remaining street elements needed to achieve the ultimate street cross-section
  - Set the curb and the accompanying streetscape for the remainder of the street
  - Re-stripe the interim street portion as appropriate

INTERIM 2-LANE STREET SECTION AND ULTIMATE 2-LANE STREET SECTION



1. Interim streets incorporate the permanent construction of one side of a street's curb and should include a complete streetscape on the redeveloping property
2. Interim streets require at least two travel lanes, one of which can be converted into on-street parking with bulb-outs when the ultimate street is built
3. Property lines can function as roadway centerlines for a future ultimate street

KEY

- Building
- Building Zone
- Sidewalk
- Landscape Panel / Amenity Zone
- Travel Lane
- On-street Parking / Bulb-out
- Curb line
- Roadway Centerline

NOTE: Some interim streets may include bicycle facilities.

LEFT
Example sections and plans depicting the design and potential phasing of half and full streets
Image Credit: Gordon Civil Engineering

FAIRFAX COUNTY REFERENCE MATERIALS

Fairfax County's Comprehensive Plan Area IV: Richmond Highway Corridor - Overall Vision Elements and Strategies, Urban Street Network Design and CBC Sections and Corridor-Wide Guidelines Environment Section https://www.fairfaxcounty.gov/planning-development/comprehensive-plan/area-iv

FCDOT Bicycle Parking Guidelines: Bicycle Parking Requirement for Urban Centers and Transit Station Areas https://www.fairfaxcounty.gov/transportation/sites/transportation/files/assets/documents/pdf/bikeprogram/fcdot_bicycle_parking_guidelines_final2.pdf

Fairfax County Department of Planning and Development, Community Revitalization Section http://fcrevit.org/default.htm

Fairfax County Department of Planning and Development: Historic Preservation and Heritage Resources https://www.fairfaxcounty.gov/planning-development/historic

The Fairfax County Inventory of Historic Sites https://www.fairfaxcounty.gov/planning-development/historic/inventory-historic-sites

Fairfax County's Policy Plan Environment Element, Objective 4, Objective 9 Policy a, and 13 https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/compplan/policy/environment.pdf

Fairfax County's Public Facilities Manual (Chapter 6, 7, 8, and 12) https://www.fairfaxcounty.gov/landdevelopment/public-facilities-manual

Fairfax County's Stormwater Management Ordinance Section 118-5-1 and 118-6-1, and Chapter 124 https://www.fairfaxcounty.gov/landdevelopment/stormwater-management-ordinance

Fairfax County Volume I: Urban Design Guidelines for Fairfax County Commercial Revitalization Districts and Areas https://www.fcrevite.org/volume-i-urban-design-guidelines

Fairfax County's Urban Stormwater Concepts for Tysons Corner: Compliance Flowchart https://www.fairfaxcounty.gov/tysons/stormwater-management

Fairfax County's User Guide for HAWK Pedestrian Beacon https://www.fairfaxcounty.gov/transportation/sites/transportation/files/assets/documents/pdf/pedestrianprogram/hawk-signal-backlick/8.5x11hawkbrochure-1.pdf

Fairfax County's Zoning Ordinance, Part 2-900 Floodplain Regulations, Article 2 Part 5 Qualifying Use Structure Regulations, Overlay and Commercial Revitalization District Regulations, and Article 13-330 Transitional Screening And Barriers https://www.fairfaxcounty.gov/planning-development/zoning-ordinance

ADDITIONAL REFERENCE MATERIALS

American Bird Conservancy Bird Friendly Building Design https://abcbirds.org/wp-content/uploads/2019/04/Bird-Friendly-Building-Design_Updated-April-2019.pdf

Federal Highway Administration (FWHA) Rectangular Rapid Flash Beacon (RRFB) https://www.fairfaxcounty.gov/transportation/sites/transportation/files/assets/documents/pdf/pedestrianprogram/hawk-signal-backlick/8.5x11hawkbrochure-1.pdf

Gum Springs Historical Society and Museum http://gumspringsmuseum.blogspot.com/

International Dark-Sky Association www.darksky.org/

Toronto 360 Wayfinding https://www.toronto.ca/services-payments/streets-parking-transportation/walking-in-toronto/wayfinding/to360-wayfinding-products/

United States Access Board, Public Rights-of-Way Accessibility Guidelines (PROWAG) https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines

US HUD Noise Abatement and Control https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control/

Virginia Trees and Plants Reference Materials

Arlington County, Large Street Tree Recommendations https://environment.arlingtonva.us/trees/plant-trees/recommended-trees/

Northern Virginia Regional Commission Native Plant Guide https://www.novaregion.org/1315/Native-Plant-Guide

Plant NOVA Natives http://www.plantnovanatives.org/

Tree Conservation Ordinance (Chapter 122) https://library.municode.com/va/fairfax_county/codes/code_of_ordinances?nodeId=THCOCOFAVI1976_CH122TRCOOR

Trees in the City of Falls Church, Virginia https://www.fallschurchva.gov/1573/Trees-and-Development

Virginia Department of Conservation and Recreation, Chesapeake Bay Local Assistance, Riparian Buffers Modification & Mitigation Guidance Manual https://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/RiparianBufferManual.pdf

Virginia Department of Conservation and Recreation, Natural Landscaping Strategies https://www.dcr.virginia.gov/natural-heritage/nativeplants

Virginia Department of Transportation's Northern Virginia Planting Guidelines http://www.virginiadot.org/business/landscape_and_or_irrigation_in_state_right_of_way.asp

US Fish and Wildlife Service - Native Plants for Wildlife Habitat and Conservation Landscaping - Chesapeake Bay Watershed https://www.fws.gov/Chesapeakebay/pdf/NativePlantsforWildlifeHabitatandConservationLandscaping.pdf

Ecological Spines and Stormwater Management Reference Materials

SWM Quality and Quantity Standards: Chesapeake Bay Preservation Ordinance (Chapter 118) https://library.municode.com/va/fairfax_county/codes/code_of_ordinances?nodeId=THCOCOFAVI1976_CH118CHBAPROR

Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers - Appendix 7: Native Plant Guide for Planting Along Streams and Ponds https://www.chesapeakebay.net/content/publications/cbp_13019.pdf

RPA designation: Code of Virginia: Cheseapeake Bay Preservation Act (§ 62.1-44.15:72.F) https://law.lis.virginia.gov/vacode/title62.1/chapter3.1/section62.1-44.15:72/

Department of Conservation and Recreation: The Virginia Stream Restoration and Stabilization Best Management Practices (BMP) Guide https://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/BMPGuide.pdf

Design and Planning for Flood Resiliency: Guidelines for NYC Parks https://www.nycgovparks.org/planning-and-building/planning/resiliency-plans/flood-resiliency

National Association of City Transportation Officials (NACTO) Urban Street Stormwater Guide https://nacto.org/publication/urban-street-stormwater-guide/

Northern Virginia Soil and Water Conservation District: Water Quality Stewardship Guide https://www.fairfaxcounty.gov/soil-water-conservation/water-quality-stewardship-guide

USDA Natural Resources Conservation Services: Federal Stream Corridor Restoration Handbook https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/manage/restoration/?cid=stelprdb1043244

US EPA Natural Channel Design: Review Checklist https://www.epa.gov/sites/production/files/2015-07/documents/ncd_review_checklist.pdf

US Green Building Council's Sustainable Sites Initiative (SITES)www.sustainablesites.org/

US Green Building Council's Leadership in Energy and Environmental Design (LEED) https://new.usgbc.org/leed

Virginia Department of Transportation (VDOT) Drainage Manual http://www.virginiadot.org/business/locdes/hydra-drainage-manual.asp

A Fairfax County, Virginia Publication
March 2020

Department of Planning and Development
12055 Government Center Parkway, Suite 1048
Fairfax, Virginia 22035
www.fcrevite.org