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This plan reflects and has benefited from important contributions made by various County divisions, staff, and other partners, too numerous to identify here.
How to Use This Plan

This Sector Plan provides a vision and planning principles that provide an overarching guide for future development and policymaking, analysis that addresses key topics and research questions that arose during the planning process and community engagement, and policy recommendations that address four main areas: Land Use and Development, Transportation, Public Space, and Site and Building Form. The Sector Plan is intended to be implemented through redevelopment, County investment, and policy action over the next several decades. Finally, the Plan includes an Implementation Matrix that demonstrates how policy-related follow-up actions and public improvements can be accomplished.

The planning principles are the basis of all recommendations in the Plan, and help insure that the Plan can provide effective guidance even as new and unforeseen technologies, models of development, or challenges may arise in the future. Future programs and policies, as well as development proposals, should be evaluated against the planning principles.

The framework for Land Use and Development, as well as the design guidelines in Site and Building Form, will shape the physical form and character of new development. Pedestrian-oriented and biophilic design that has an indoor-outdoor relationship, particularly to public spaces, is emphasized throughout.

The policy guidance for Transportation sets out a flexible framework for new connections to be provided and accommodated by future development, as well as areas for County investment. It establishes a vision where transit, including bus transit services, walking, cycling, and micromobility are prioritized as modes.

The Public Space policy guidance provides recommendations for incorporating new parks, plazas, and other biophilic features into Pentagon City including an inter connected system of pathways called the Green Ribbon. This section also includes details on biophilic design approaches that will be deployed in public spaces.

Other Plans and Policies

During this process, staff reviewed the various elements of the Arlington County Comprehensive Plan, such as the General Land Use Plan (GLUP), the Master Transportation Plan (MTP), and the Public Spaces Master Plan (PSMP), and the Community Energy Plan, as well as recent County Board resolutions on Equity and Biophilia. The Pentagon City Sector Plan works in parallel with these existing County policies to advance the County’s goals. It also refers to many of these documents, which are revised and updated on a regular basis, to ensure that the Pentagon City Sector Plan can accommodate future County policymaking.

The Pentagon City Sector Plan provides predictable, consistent performance standards for changes on development parcels and in the public realm, with considerable flexibility as to how property owners, designers, and Arlington County agencies can achieve the planning principles over time.

The vision, planning principles, and regulatory framework included in the following pages will be most important for Site Plan Review Committees, Commissions, and other citizen review bodies in their future reviews. Creative responses that reasonably and adequately address community needs may diverge from the illustrations of potential outcomes in this document.
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Executive Summary

VISION

Pentagon City, together with Crystal City, will be a dynamic downtown for Arlington and the region, and a neighborhood where everyone is welcome and able to live regardless of race, income, age, and immigration status.

The redevelopment of Pentagon City will strengthen the entire 22202 community, diversify housing options, prioritize robust multi-modal transportation options, and embrace biophilic design that makes nature a universal part of the everyday experience of the area.

PLANNING PRINCIPLES

COORDINATING AT A DISTRICT SCALE
Complete the missing links—physical and over time—to become a cohesive neighborhood connected to the broader 22202 community.

EQUITY
Welcome everybody from throughout the County, region and world to live, work, learn, and share culture.

PLACES FOR PEOPLE
Fill streets and public spaces with people enjoying community.

PLACES FOR NATURE
Create space for nature to thrive so that biophilia is part of the everyday experience of the district.

TRANSPORTATION
Provide safe, inviting transportation choices that make driving unnecessary.

GREEN DEVELOPMENT
Advance global standards for sustainable design as part of development.

The Pentagon City Sector Plan is structured to encourage earlier development that can transform the character of the district. Early-to-develop sites will deliver public spaces, new mobility infrastructure, and affordable housing as high-priority community benefits. Contributions from longer-term redevelopment sites may come more in the form of funding than in-kind contributions. Longer-term community benefits allocations may be adjusted to align with future community priorities.

The Pentagon City Sector Plan provides predictable, consistent performance standards for changes on development parcels and in the public realm, with reasonable flexibility as to how property owners, designers, and Arlington County agencies may best respond to the planning principles over time. For instance, new public street and walking path corridors have recommended endpoints where they connect to the larger mobility network, but their alignment between endpoints is variable to accommodate a range of potential building and site configurations alongside. Likewise, building height and massing can take a variety of forms as long as certain guidelines for street relationship, site coverage, and façade articulation are met. This balance aims to achieve consistently outstanding, inclusive public spaces and mobility choices throughout the study area while inviting the creative response to future opportunities that will best serve community and investor goals.

FLEXIBILITY

CERTAINTY
Land Use and Development rules allow similar density to other County Metro areas. Limits on site coverage help provide adequate green space for biophilia, but flexibility on other elements—including a departure from the fixed land use allocations that have governed Pentagon City development from 1976 until recently—allows for development to respond to the market over time.

New performance-based Transportation Demand Management, along with multi-modal improvements, will allow for new technologies, new strategies, and enforcement of transportation goals. This will help Pentagon City’s remaining auto-oriented streets and land uses evolve to favor travel patterns that utilize walking, transit, as well as biking more, and driving less. This transition is already under way in 22202 and has been achieved very successfully over time in Arlington’s other metro areas.

New housing development will be expected to include on-site Committed Affordable Units (CAFs) serving households earning up to 60% Area Median Income.

The Green Ribbon connects new and existing public spaces with the full 22202 area and beyond, substantially improving park access while also serving some park and recreation functions itself. The Green Ribbon, other public access ways, and redevelopment sites will also make Pentagon City known as a place of biophilia—the everyday experience of nature. Added tree canopy and other plantings at ground level and upon buildings will enhance health and comfort of people and larger ecosystems while also mitigating and preventing climate change impacts.

The plan enables at least 5 new acres of new parks and plazas distributed across Pentagon City, in addition to at least one acre expansion of Virginia Highlands Park.

Design Guidelines continue Arlington’s strong tradition of pedestrian-oriented buildings and sites that shape safe, inviting sidewalks and public spaces. They also encourage innovative and biophilic design by allowing a degree of flexibility in façade placement and requiring increased levels of on-site plantings, some of which may be located on roof terraces and walls as well as the ground.
Process and Community Engagement

The Pentagon City Planning Study included extensive stakeholder and community engagement to develop planning principles, understand the most significant variables affecting future redevelopment scenarios, and develop a preferred plan alternative. The planning effort strived to consider citizen aspirations for Pentagon City while mediating stakeholder differences when they arose. The consensus achieved during the 18 months of discussions and conversations is
foundational to a Plan that will make Pentagon City thrive, and a place where people want to live, work and play.

Due to the ongoing Covid-19 pandemic, all engagement activities, unless otherwise noted, were held in a virtual format online to enable social distancing and recommended public health measures. There was some feedback from community members during the process that they prefer virtual meeting formats, as they make it more convenient to attend a workshop, particularly while balancing other needs. Simultaneously, other participants noted that online meetings and shifting technology can be quite frustrating to use and inhibit their participation.
Ensuring robust citizen engagement can be a daunting task. People approach issues with a wide diversity of preferences and opinions, and are often motivated by different, sometimes conflicting interests. To ensure the Plan represented a broad set of perspectives, key community stakeholders and property owners were interviewed early in the planning process to get a sense of context, key issues that would arise in the planning process, and interest in redevelopment. A monthly Focus Group was also established during this time, led by Planning Commission members James Lantelme and Jane Siegel, which consisted of many key stakeholders, including representatives of the Transportation and Parks and Recreation Commissions, National Landing BID, area property owners, civic associations, and renter organizations. The Focus Group met for the duration of the planning process, from September 2020 to July 2021, with detailed agendas and discussion of the planning analysis and findings in each phase of work.

A broader community kickoff meeting was held in September 2020 to begin the major public process of the Pentagon City Sector Plan, including a first phase from September to December 2020: Develop Guiding Principles. There were two public workshops held during this phase, in October and December 2020, to draft guiding principles and establish performance criteria. The second phase, Land Use Scenario Analysis, took place from December 2020 to May 2021 and tested alternative land use scenarios for the future development of Pentagon City. Based on the planning principles, this also meant a strong focus on public space, including developing ideas such as the Green Ribbon. Three public workshops were held in February, March, and April 2021. In the third phase of the plan, the focus was on assembling Draft 1 of the Pentagon City Sector Plan for public release and comment. Virtual public office hours were held throughout the summer of 2021 to address questions about the draft plan and initial comments, and a public comment period was held until September.

(Left) Signs were placed within Pentagon City to highlight virtual meeting opportunities and the project website. (Right) A walking tour to identify opportunities for further biophilia and connections within Pentagon City in June 2021.
2021. Draft 2 of the Plan, as well as responses to comments, was released in October 2021 as part of the final phase of the planning process. Beginning in September 2021, and continuing through February 2022, County staff continued to brief various advisory committees, commissions, and the County Board.

Like many County processes, the community engagement for the Pentagon City Sector Plan reached an audience that was generally more likely to be white, older, and homeowners than the current residents of Pentagon City. Multiple strategies were employed to reach a broader audience, while still abiding to public health guidelines, including: signs placed in public places in Pentagon City, signs placed in building elevators in Pentagon City, and engagement with the County’s black employee group and their networks. All of these strategies helped reach new participants.
The Pentagon City Vision
Pentagon City is ready for a new generation of Metro area development.

This document outlines a vision and updated development framework for the areas governed by the Pentagon City Phased Development Site Plan (PDSP) as well as the adjacent RiverHouse site.

Since 1976, the PDSP, in conjunction with Arlington County’s General Land Use Plan (GLUP) and Zoning Ordinance, has guided growth and development around the Pentagon City Metro Station. The PDSP established a vision of a “new town in town” on this formerly-industrial land, creating a regulatory framework that allows a wide range of uses, as well as shifting and converting of density between parcels. The PDSP also expanded Virginia Highlands Playfield into a much larger Park. Today, the Pentagon City PDSP has over 11 million square feet of approved mixed-use development within a 116-acre area, and anchors a larger Metro Station area serving the nearby neighborhoods.

RiverHouse is a 35.8 acre property with three apartment buildings constructed in 1957, 1960, and 1962, respectively. The site is located west of the Pentagon City PSDP along S. Joyce Street. While not part of the original PDSP, RiverHouse has been included in the Pentagon City Sector Plan because of the existing density of development, the potential for future infill development, and the desire to reimagine S. Joyce Street as a complete corridor. The PDSP, boundaries and the RiverHouse parcel are shown in the planning study area map on the opposite page.

In 2018, Amazon committed to establish a new East Coast headquarters with over 25,000 employees within the Pentagon City PDSP in new development at Metropolitan Park (under construction) and PenPlace (under review at the time of Sector Plan adoption).

As shown in the residential and employee density map on this page, once the Amazon buildings at PenPlace and MetPark are complete, Pentagon City will have an overall density of employees and residents similar to Crystal City today. These two Metro Station Areas are part of the broader 22202 area which encompasses the Richmond Highway corridor and its three Civic Associations.
Demand for Development

Six redevelopment projects in the 22202 area have recently been approved through Arlington’s special exception site plan review process. These include 2 million square feet of office use at Metropolitan Park block located within the PDSP area, as well as 235,000 square feet of office at 101 12th Street South, and over 1,877 units of housing in three projects at 1900 Crystal Drive, 2001 Richmond Highway, and 400 11th Street South located outside of the PDSP area. These projects all include varying amounts of neighborhood-serving retail. Crystal Houses (outside of the PDSP area) also received an approved site plan for further housing development which will now represent a significant contribution to affordable housing in the area. The PenPlace site (within the PDSP) is currently under review and its preliminary site layout is reflected throughout the Sector Plan.

The demand for mixed-use development, particularly housing, remains strong. Recent site plans, with the exception of Amazon HQ2, are predominantly proposed as residential uses with accessory retail.

Most importantly, property owners in the Pentagon City area have indicated that they are interested in redeveloping their sites through the County’s special exception site plan review process both in the near- and mid-term.

Livability 22202

Livability 22202 is a ongoing collaboration of three civic associations in the 22202 area (Arlington Ridge, Aurora Highlands, and Crystal City) to develop holistic strategies based on shared livability themes to create a better, more livable and stronger community. Livability 22202 responds to the large development and infrastructure changes occurring and contemplated in the 22202 area, aiming to leverage new investments to improve quality of life and prevent negative impacts on established communities. This includes emphasizing housing affordability, access to essential services, environmental sustainability, availability of arts and culture, and an improved multi-modal transportation network.

The Livability 22202 Framework, one of the group’s initial documents created in June 2019, is designed to work within existing County plans and policies, but aims to establish consensus-driven themes while allowing for creativity by residents, businesses, and developers. Livability 22202 has also developed an Action Plan in November 2019 with strategies to help implement their earlier Framework document while supporting several of its working groups focused on the Route 1 Corridor Study, the Future of the Crystal City Underground, Day Care and Schools, Housing, Open Space, and a Theatre Venue. As these working groups illustrate, the effort is focused on both long-term initiatives and desired short-term improvements.

Input and ideas from Livability 22202 directly informed the planning principles and concepts in this plan.
The Livability 22202 Open Space Workshop Report includes this diagram that demonstrates the opportunities to connect existing public and green spaces in 22202 into a broader network, directly informing ideas for the Green Ribbon.
Image courtesy of Laboratory for Architecture and Building for Livability 22202
National Landing

The Pentagon City Sector Plan represents much of the Pentagon City Metro Station Area, as defined on the County’s General Land Use Plan. Eastern portions of the Sector Plan area also fall within the boundaries of the Crystal City, Pentagon City, and Potomac Yard at National Landing Business Improvement District (BID), following its recent expansion. The National Landing BID continues to promote these individual neighborhoods alongside the area-wide National Landing brand.

In a broader sense, the term “National Landing” also frequently refers to a cohesive new brand for the inter-jurisdictional area in Northern Virginia created to attract Amazon’s HQ2. This area encompasses several neighborhoods located along Richmond Highway, extending beyond the County’s southern border:

1. Alexandria’s North Potomac Yard (including Virginia Tech Innovation Campus);
2. Arlington’s Potomac Yard;
3. Arlington’s Crystal City (including interim Amazon offices); and
4. Arlington’s Pentagon City (including permanent Amazon headquarters).

Broader National Landing boundary is contrasted with Arlington County’s Metro Station Area boundaries on the right.
Vision and Guiding Principles

The Pentagon City vision and guiding principles identify the core community values that should guide future decisions on major changes affecting the community. They represent a baseline for more specific County policies and regulations that will significantly influence real estate development, infrastructure, and County services.

VISION

Pentagon City, together with Crystal City, will be a dynamic downtown for Arlington and the region, and a neighborhood where everyone is welcome and able to live regardless of race, income, age, and immigration status.

The redevelopment of Pentagon City will strengthen the entire 22202 community, diversify housing options, prioritize robust multi-modal transportation options, and embrace biophilic design that makes nature a universal part of the everyday experience of the area.

GUIDING PRINCIPLES

Guiding principles are important fundamentals that inform future development, regulation, and capital investment. The six principles articulated on the following pages are a record of the intent and spirit of this planning effort.

Guiding principles are used by County planners to distinguish between numerous priorities in redevelopment, to better understand tradeoffs in instances where there are competing priorities, and to establish a basis for considering flexibility with future Sector Plan implementation to achieve overall goals.

These guiding principles were established through intensive community participation to guide the future of Pentagon City and site plan review at multiple levels. Guiding principles also inform other County initiatives, helping answer questions including:

- When and why should improvements to public facilities be considered?
- What future capital projects may be warranted?
- How best to coordinate with other agencies (local, state, and federal)?
- Should other adopted policies/plans be revisited?

Finally, guiding principles are a record of key priorities for not only future site plan processes but other planning efforts, including sector and areas plans like this one, as well as potential future revitalization districts/GLUP notes, Phased Development Site Plans (PDSPs), and zoning ordinance regulations.
The Pentagon City Planning Study established six guiding principles for future development and investment in the study area. Because of the importance of connecting and integrating future development in Pentagon City into the broader Richmond Highway Corridor and 22202 area, the principles also address the broader district as a whole. Supporting elements help further explain how the principles may apply. The performance metrics help evaluate progress towards the guiding principle; they may usefully inform review of individual projects, but are more importantly a measure of success for the study area as a whole.

**COORDINATING AT A DISTRICT SCALE**

Complete the missing links—physical and over time—to become a cohesive neighborhood connected to the broader 22202 community.

**EQUITY**

Welcome everybody from throughout the County, region and world to live, work, learn, and share culture.

**PLACES FOR PEOPLE**

Fill streets and public spaces with people enjoying community.

**PLACES FOR NATURE**

Create space for nature to thrive so that biophilia is part of the everyday experience of the district.

**TRANSPORTATION**

Provide safe, inviting transportation choices that make driving unnecessary.

**GREEN DEVELOPMENT**

Advance global standards for sustainable design as part of development.
This view of a proposed plaza and Green Ribbon segment at 12th Street S and S Hayes Street (illustrated at ground level on the next page), highlights potential strategies to achieve planning principles through features like biophilic plantings and structures, inclusive places for people, and improved multimodal transportation options.

DISCLAIMER: THIS RENDERING IS AN ARTISTIC RENDITION OF ONE WAY THE PENTAGON CITY SECTOR PLAN VISION AND RECOMMENDATIONS FOR THIS ELEMENT CAN BE ACHIEVED, FOR ILLUSTRATIVE PURPOSES ONLY.
COORDINATING AT A DISTRICT SCALE

Complete the missing links—physical and over time—to become a cohesive neighborhood connected to the broader 22202 community.

Supporting Elements

- Development in Pentagon City should connect to and strengthen the broader 22202 community and areas beyond.
- Large parcels and varied redevelopment timelines could create missing links in critical infrastructure and gaps in quality of the public realm.
- Improvements need to happen beyond the scale of the individual building or block—through larger coordinated efforts with the collaboration, financial, and planning tools needed to support them.

Performance Metrics

- Universally-accessible and/or improved connections from all surrounding neighborhoods, improved intersections, and gateways
- Achievement of new or improved community services, infrastructure, and cultural amenities

A new plaza at 12th Street S and S Hayes Street forms a major gateway to the Green Ribbon. The Green Ribbon is a district-wide network of paths that link public spaces, major destinations, and transit. The Green Ribbon should extend beyond the Pentagon City study area to the broader 22202 area.
The corner of 12th Street S and S Fern Street becomes a key node of the district, with new protected bike lanes along S Fern Street, the Transitway and an excellent pedestrian-oriented retail streetscape along 12th Street S, and new development at the Brookfield site. Long-term, additional sites including the northernmost block of S Fern Street at Army Navy Drive and the Costco site may also redevelop.
Welcome everybody from throughout the County, region and world to live, work, learn, and share culture.

Supporting Elements

- Development will help support a community of all ages and abilities, with increased affordable housing. A new walkable elementary school could become a center of the broader 22202 community.

- The design of spaces and mix of uses will help realize Arlington’s commitment to equity and welcome a diverse range of people and cultural practices.

Performance Metrics

- Number of residents, number of jobs, number of visitors, racial diversity of residents and workers (by Census/Longitudinal Employer Household Dynamics (LEHD) measures)

- Number of committed affordable housing units (CAFs) produced/retained

- Inclusion of County equity goals, policies, and/or programs within redevelopment review and County planning initiatives

- Equitable access to new or improved community facilities

- Broad awareness of local engagement opportunities (public and private) that encourages community integration and is supported by building management in multi-family complexes, through both digital and physical means.

PLACES FOR PEOPLE

Fill streets and public spaces with people enjoying community.

Supporting Elements

- Streetscapes, ground floor building design, and public spaces will encourage walking, outdoor activity, leisure, and services.

- New and improved public spaces, including the Green Ribbon, enhance connectivity and provide common places to enjoy.

- The design and programming of streets and public spaces should incorporate equity as a goal so that all persons feel like they belong in Pentagon City.

Performance Metrics

- Progress toward Public Space Master Plan goals

- Overall amount and quality of public space created

- Area and quality of privately-owned public spaces created

- Percentage of ground-floor street frontage with active uses
By identifying key public space investments like the Green Ribbon, expansion of Virginia Highlands Park, and Grace Hopper Plaza shown below, the Pentagon City Sector Plan lays out a framework to achieve places for people and nature. The design of spaces should help support a community of all ages and abilities, and welcome a diverse range of people and cultural practices to live, work, learn, and share culture in Pentagon City. The location and amenities shown below are at the nexus of connectivity, biophilia, and equity.

DISCLAIMER: THIS RENDERING IS AN ARTISTIC RENDITION OF ONE WAY THE PENTAGON CITY SECTOR PLAN VISION AND RECOMMENDATIONS FOR THIS ELEMENT CAN BE ACHIEVED, FOR ILLUSTRATIVE PURPOSES ONLY.
PLACES FOR NATURE

Create space for nature to thrive so that there is universal, everyday access to nature in the district.

Supporting Elements

- Biophilic design features will enable all residents, workers, and visitors to experience nature daily throughout Pentagon City.

- Incorporate biophilic approaches into all projects; use biophilia as a complement to interrelated goals for sustainability, equity, and places for people.

Performance Metrics

- Overall tree canopy, per capita and percent pervious surface throughout district

- Progress toward implementation of the Forestry and Natural Resources Plan goals
The corner of S Hayes Street and 12th Street S is a busy, functional access point for rail and bus transit and the Fashion Centre at Pentagon City, but community members have also long sought a public gathering space here to deepen social interaction and district identity. A rebalancing of street space could create an active public square at this important district center and gateway for visitors. In the near-term, vehicle access to the hotel on the site would need to be maintained. In the long-term, reconfigured access to the hotel may be possible. This public space concept could instead be located up to a block north or south along S Hayes Street, if alternate placement would enhance feasibility and provide similar public space benefit.
TRANSPORTATION

Provide safe, inviting transportation choices that make driving unnecessary

Supporting Elements

- Ridership of public transit, walking, and biking in Pentagon City will all increase.
- The pedestrian and bicycle network will be safe for all ages and abilities, protecting vulnerable users.
- There will be better walking, bicycling, and scooting connections to surrounding neighborhoods.
- Transit service frequency and access improvements will support local and regional travel.

Performance Metrics

- Number of bicycle trips, pedestrian counts, and number of transit trips (WMATA, ART, VRE)
- Overall mode split and increase in multi-modalism
- Number of crashes involving vulnerable road users
- Overall Average Daily Traffic (ADT) and congestion
- Number of car-free households

GREEN DEVELOPMENT

Development in Pentagon City will advance global standards for sustainable design

Supporting Elements

- New buildings will be energy efficient, low carbon, and biophilic.
- Building reuse and passive design strategies are encouraged.
- Development sites will address stormwater, heat island effect, and other climate adaptation.

Performance Metrics

- Progress toward Community Energy Plan goals
- Deployment of innovative new strategies to meet Community Energy Plan goals
Elements that could be part of a rebalanced S Hayes Street include protected bicycle facilities, Green Ribbon paths, and additional gathering space. The current median of S Hayes Street is located over the Metro tunnel and includes important ventilation and other equipment that can remain within a biophilic landscape.

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Looking west toward RiverHouse from Westpost at Pentagon Row Plaza on S Joyce Street, redevelopment could create a strong east-west connection to the Metro.

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Planning Analysis

Critical Questions and Strategies
How does the Pentagon City Sector Plan advance Arlington’s Commitment to Equity?

In September 2019, the County Board adopted an Equity Resolution. To further this commitment to equity, Arlington County Government and Arlington Public Schools participated in a 10-month racial equity cohort program convened by the Metropolitan Washington Council of Governments in partnership with the Government Alliance on Race and Equity. Racial equity, or closing race-based outcome gaps so race does not predict one’s success while improving outcomes for everyone, was specifically identified as a priority.

The County has established a vision that “an equitable Arlington is one where all are valued, educated, healthy and safe regardless of race” and a framework for the Racial Equity Action Plan, based on the including:

- **Normalize:** A shared understanding, knowledge and terminology around racial equity within the organization and among the community. Racial equity is accepted as an imperative and priority throughout the organization and within the community.

- **Organize:** A sustainable and supported structure to advance racial equity to include personnel and resources that become a defined and integral component of the organization and the system. Build the capacity of the organization and within the community and commit and dedicate resources to support identified areas of need.

- **Operationalize:** Racial equity is a matter of principle in developing and considering the impact policies, plans, and decisions have on all residents as well as employees. Use the racial equity lens, tools and disaggregated data to identify where systemic and institutional racism presents itself and make the changes needed to dismantle it.

- **Assess:** Every employee, resident and person who interacts with the County sees themselves in the work, the process, the system and structure. Evaluate where we are, what we have done and how we are doing, what things do we need to change, adjust and how we evolve over time to respond to changes in the workforce, culture, and community.

One of the first achievements of Realizing Arlington’s Commitment to Equity (RACE) was establishing two new demographic dashboards—the Race and Ethnicity Dashboard and the Census Tract Demographic Dashboard—that are available as tools to use data to better understand differences in Arlingtonians’ lived experiences, transparently document those differences, and make data-informed policy choices to promote equitable outcomes.

Based on Census data and other sources, the dashboards offer a snapshot of various levels of racial equity that can be found in Arlington. Some key findings are highlighted on the next pages.
A disproportionate share of people of color in lower-wage jobs persists in Arlington County, where the wage gap is stark compared to White residents.

Because of Arlington’s employment and wage disparity, People of Color are at a disadvantage in managing the County’s high cost of living, realizing long-term financial gains, and achieving economic security and purchasing power needed to manage a job loss, a disability, or alternate housing to accommodate life changes (e.g., a growing family, an older adult who may need care, or an adult child moving back home).

In Arlington, most—79%—of all land zoned for residential development allows only single-home, detached housing by-right (without special County approvals). Restrictive zoning that prioritizes low-density development at the exclusion of other types of housing not only increases housing prices, but contributes to segregation by limiting the housing options for households with lower incomes, overrepresented by People of Color. Analysis from the Missing Middle Housing Study shows that areas of Arlington zoned primarily for single-home, detached housing often overlap with Census Tracts where at least 70% of the population is White.

Educational attainment rates by race/ethnicity strongly mimic the wage disparity in the County where Black, Hispanic, and Other Persons of Color are nearly half as likely to graduate with a Bachelor’s degree than White residents.

More information on the dashboards, including findings, data sources, and links can be found on the County website at: https://projects.arlingtonva.us/data-research/arlingtons-race-and-ethnicity-dashboard/

What does the Dashboard tell us about Pentagon City?
The Pentagon City Sector Plan study area includes two Census tracts: 103501 and 103502. Key facts about the demographics of these tracts are shown in the graphic on the following page. A few takeaways from this data, as well as other County data sources:

- Pentagon City has greater racial diversity than Arlington County as a whole, with a greater percentage of Black (13% versus 9% countywide) and Asian residents (14% versus 10% countywide). The percentage of Hispanic or Latino residents of any race is equivalent, just over 15%. The Pentagon City Sector Plan sets a goal to continue to increase this diversity.

- A greater proportion of residents in Pentagon City do not speak English as their first language compared to the County overall—at 10% versus 7%. In Pentagon City, more of these residents speak Mandarin or Cantonese, followed by Korean and Spanish.
ARLINGTON COUNTY DASHBOARD FINDINGS FOR PENTAGON CITY

CRITICAL QUESTIONS AND STRATEGIES

- Population: 8,091
- Average Household Size: 1.5
- Median Household Income: $104.3k
- College Graduates: 5,717

Race
- White: 66.97%
- Black or African American: 10.03%
- Asian: 13.84%
- Other: 6.50%

Hispanic or Latino Origin
- Hispanic or Latino: 14.95%
- Non-Hispanic: 85.05%

Age Distribution
- Under 5: 2.55%
- 5 to 17: 13.62%
- 18 to 24: 6.97%
- 25 to 29: 45.99%
- 30 to 34: 11.20%
- 35 to 39: 6.39%
- 40 to 44: 27.97%
- 65 plus: 14.60%

Households: 5,172
Housing Units: 6,150

10% of the population does not speak English "Very Well".

Household Type
- Family: 1,131
- Non-Family: 4,041

Occupancy
- Owner Occupied: 702
- Renter Occupied: 4,411

Top Languages Spoken at Home by Those That Don't Speak English "Very Well"
Countywide, Spanish is the language most frequently spoken at home by those who do not speak English very well.

- **Average household size (1.5 persons) is smaller in Pentagon City than the County overall (2.15 persons), and median household income is lower.**
- **Pentagon City has a much higher percentage of college graduates than the County overall at 70%, versus 55% for the County.**

Pentagon City is also a significant employment center, attracting workers from throughout the region, and transportation center for transit riders. As a result, County-wide and regional equity analysis, such as that completed by MWCOG, will be particularly relevant to understanding how future changes in Pentagon City can affect equity for workers and transit riders.

Pentagon City does not contain any Equity Emphasis Areas based on the MWCOG methodology; there are two areas in the greater 22202 area that were identified. Census Tract 1036.02, along S Eads Street, was included because it has 3.4 times the regional average of Asian residents and 1.7 times the regional average of low income residents. Census Tract 1038, in the southwest corner of 22202, contained 1.7 times the number of low-income residents. Neighboring tracts just outside of 22202 are designated Equity Emphasis Areas because they include over two times more low income and Latino or Hispanic residents than the regional average.

The MWCOG Equity Emphasis Areas (EEAs) are based on demographic analysis of Census tracts. Areas with higher concentrations of low-income, Black, Asian, or Hispanic-Latino residents than the regional average are identified by the Transportation Planning Board (TPB) and used as a tool for analyzing any adverse impacts of its long-range transportation plan. The TPB is also using EEAs as selection criteria in all its grant programs that fund planning for access to transit stations, improving roadway safety, alternative modes of travel, and connecting land-use and the transportation system.

Racial Equity Lens

The racial equity lens is an analysis that should:

- Raise and/or increase awareness of racial inequities that may be either created or further perpetuated by a new or historical program, policy, project, or process;
- Determine whether there are detrimental outcomes or unintended consequences to certain groups (communities of color, immigrants (internal and external);
- Identify underlying patterns, barriers, and opportunities for leading to equity and racial justice; and
- Set a baseline from which to improve.

The areas of analysis for the racial equity lens include:

- **Underlying Assumptions:** Purpose and Anticipated Outcomes and Results
- **Potential Areas of Community Impact:** Areas where this policy is anticipated to have an impact on the community
- **Data:** What do we have? What do we need? What does it tell us? (Qualitative, Quantitative, any existing performance, department data also can be used)
- **Engaging the Most Impacted:** How will or have we engaged those most impacted and specifically people of color?
- **Benefits:** Positive impacts and decrease in racial disparities and inequities
- **Burdens:** Adverse impacts, disparities—new, increased or exacerbated; unintended consequences?
- **Mitigation Efforts:** Enhance positive impacts, reduce negative or adverse impacts, racial disparities and inequities.
- **Implementation Strategy:** Advance the mitigation efforts and the proposal inclusive of strategies to advance racial equity.

- **Assessment, Accountability, Communication:** Evaluating, tracking, reporting data and results; transparent communication—how much did we do, how well did we do, what was the community impact?

How does the Pentagon City Sector Plan incorporate strategies for equity?

Because the Pentagon City Sector Plan is a place-based document, covering a small area and accommodating a range of potential future outcomes, one of the most important strategies for equity is to ensure that it is considered as part of future programs, policies, projects, and processes that will implement the plan guidance.

The Plan incorporates equity as one of the core planning principles that guides the future of Pentagon City as a community of all ages and abilities.

- Require an equity lens to be part of the Site Plan Review Committee (SPRC) review process for future development, so that projects can identify innovative strategies that advance equity on their specific site and program, including for employment uses and as part of the development process.
- Incorporate the equity lens as part of County projects, policies, and programs in the Pentagon City area.

The plan also seeks to include equity as an element of the physical plan framework throughout. Specific recommendations include:

- Each residential project should provide committed affordable units on-site for households at or below 60% Area Median Income (AMI). This figure will at minimum represent 10% of new net residential density and may increase in value up to the residual value of additional density to be earned. Revisit this requirement over time to match evolving County needs, based on the Affordable Housing Master Plan.
Ensure that public spaces are accessible, designed, and programmed to welcome a diverse range of users. Ensuring spaces are safe and inviting to youth of color was identified as a key equity concern by stakeholders during this planning process.

Prioritize transportation investments in modes that disproportionately serve people of color, including bus service. The Pentagon City Sector Plan identifies that bus service is a priority for future transportation planning. MWCOG studies, including Regional Travel Surveys, have shown that bus ridership has been traditionally associated with minority groups, particularly among Hispanic/Latinx, African American/Black, and low-income households. This is consistent with other empirical studies that have supported this finding in the region and country.

Continue to improve and maintain access to amenities for the disabled and elderly, while pursuing opportunities and investments that help deliver affordable senior living to the area.

Pentagon City Population Growth Scenarios

The planning process created and analyzed development scenarios and their implications for population growth, transportation, urban design, economic development, and other factors. The table on the following page shows a general range of potential Pentagon City growth by phase and how it compares to the existing study area. Five development phases are indicated, with potential redevelopment sites. These are not definitive or required—actual development timing will be driven largely by property-owner decisions—but are meant to simulate potential scale and sequence of development over time.

The chart on this page indicates cumulative population if the phases were to occur in order from 1 to 5. Actual phase scale and sequence may be different. Within each phase, three levels of potential population are indicated. The middle level reflects the preferred development scenario that appears in illustrations and figures in this document; it includes approximately 68% residential and 25% office floor area. Adjacent rows show variations with lower and higher proportions of residential development. Columns on the right indicate the numbers of current and new households, to inform considerations on school capacity and other community service needs. Assumptions include: Average residential unit area 1,100 gross square feet; 1.54 residents per unit; 100% unit occupancy.
## Potential Resident Population Growth (New Population by Phase, Non-Cumulative)

<table>
<thead>
<tr>
<th>Example Timeframe</th>
<th>Example Redevelopment Sites</th>
<th>Total Existing &amp; Approved Floor Area as of Nov 2021 – All Uses</th>
<th>Land Use Mix</th>
<th>Total Residential Floor Area</th>
<th>Residential Share of New Floor Area for Phase</th>
<th>Dwelling Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing</strong></td>
<td></td>
<td>13,395,000</td>
<td></td>
<td>6,016,000</td>
<td>n/a</td>
<td>5,380</td>
</tr>
<tr>
<td><strong>Phase 1</strong></td>
<td>(exclusive of existing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Near-term</td>
<td>&gt; Brookfield</td>
<td>2,414,000</td>
<td>Future – less residential, more office</td>
<td>1,448,000</td>
<td>60%</td>
<td>1,320</td>
</tr>
<tr>
<td></td>
<td>&gt; RiverHouse south of 15th Street S</td>
<td></td>
<td>Future – as modeled</td>
<td>2,108,000</td>
<td>87%</td>
<td>1,920</td>
</tr>
<tr>
<td></td>
<td>&gt; Simon garage redevelopment on 12th Street S corridor</td>
<td></td>
<td>Future – more residential, less office</td>
<td>2,245,000</td>
<td>93%</td>
<td>2,040</td>
</tr>
<tr>
<td></td>
<td>&gt; Regency Care additional building</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Phase 2</strong></td>
<td>(exclusive of existing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Near-term</td>
<td>&gt; RiverHouse between 13th and 15th Streets S</td>
<td>2,261,000</td>
<td>Future – less residential, more office</td>
<td>1,289,000</td>
<td>57%</td>
<td>1,170</td>
</tr>
<tr>
<td></td>
<td>&gt; Simon infill sites along S Hayes Street, Army Navy Drive</td>
<td></td>
<td>Future – as modeled</td>
<td>1,402,000</td>
<td>62%</td>
<td>1,280</td>
</tr>
<tr>
<td></td>
<td>&gt; FRIT/Westpost parking lot infill development</td>
<td></td>
<td>Future – more residential, less office</td>
<td>2,103,000</td>
<td>93%</td>
<td>1,910</td>
</tr>
<tr>
<td><strong>Phase 3</strong></td>
<td>(exclusive of existing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-term</td>
<td>&gt; RiverHouse north of 13th Street S</td>
<td>2,531,000</td>
<td>Future – less residential, more office</td>
<td>1,443,000</td>
<td>57%</td>
<td>1,310</td>
</tr>
<tr>
<td></td>
<td>&gt; FRIT/Westpost parking lot infill development</td>
<td></td>
<td>Future – as modeled</td>
<td>1,631,000</td>
<td>64%</td>
<td>1,480</td>
</tr>
<tr>
<td></td>
<td>&gt; FRIT/Westpost parking lot infill development</td>
<td></td>
<td>Future – more residential, less office</td>
<td>2,354,000</td>
<td>93%</td>
<td>2,140</td>
</tr>
<tr>
<td><strong>Phase 4</strong></td>
<td>(exclusive of existing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-term</td>
<td>&gt; Infill or redevelopment on portions of Simon property</td>
<td>1,696,000</td>
<td>Future – less residential, more office</td>
<td>848,000</td>
<td>50%</td>
<td>770</td>
</tr>
<tr>
<td></td>
<td>&gt; Infill or redevelopment on portions of Simon property</td>
<td></td>
<td>Future – as modeled</td>
<td>908,000</td>
<td>54%</td>
<td>830</td>
</tr>
<tr>
<td></td>
<td>&gt; Infill or redevelopment on portions of Simon property</td>
<td></td>
<td>Future – more residential, less office</td>
<td>1,509,000</td>
<td>89%</td>
<td>1,370</td>
</tr>
<tr>
<td><strong>Phase 5</strong></td>
<td>(exclusive of existing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term</td>
<td>&gt; DEA site redevelopment</td>
<td>1,430,000</td>
<td>Future – less residential, more office</td>
<td>493,000</td>
<td>35%</td>
<td>450</td>
</tr>
<tr>
<td></td>
<td>&gt; DEA site redevelopment</td>
<td></td>
<td>Future – as modeled</td>
<td>660,000</td>
<td>46%</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>&gt; DEA site redevelopment</td>
<td></td>
<td>Future – more residential, less office</td>
<td>772,000</td>
<td>54%</td>
<td>700</td>
</tr>
<tr>
<td><strong>Combined Existing + Phases 1–5</strong></td>
<td></td>
<td>23,727,000</td>
<td>Future – less residential, more office</td>
<td>11,538,000</td>
<td>50%</td>
<td>10,400</td>
</tr>
<tr>
<td></td>
<td>Total floor area reflects demolition of some existing space</td>
<td></td>
<td>Future – as modeled</td>
<td>12,726,000</td>
<td>55%</td>
<td>11,470</td>
</tr>
<tr>
<td></td>
<td>Total floor area reflects demolition of some existing space</td>
<td></td>
<td>Future – more residential, less office</td>
<td>15,000,000</td>
<td>65%</td>
<td>13,540</td>
</tr>
</tbody>
</table>

Assumptions include: Average residential unit area 1,100 gross square feet; 1.54 residents per unit; 100% unit occupancy. Actual phasing of development may vary.
How does the Pentagon City Sector Plan balance the need for flexibility in the future with an enduring vision and expectations?

The Pentagon City Sector Plan establishes a clear framework for the physical development of the district, with a focus on assumed near-term redevelopment sites and community benefits that will begin the transformation. The Plan also strives to retain flexibility, to invite creative design solutions that respond to market opportunities and community priorities that emerge in the future, at site and district scale.

Over the course of the planning process, many property owners and community stakeholders stressed the need for flexibility over time, as redevelopment will respond to ever-changing market dynamics, technology, and community needs. For example, the format and needs of retail uses, or the desirability of residential compared to office uses could shift in the future. The Plan anticipates that the redevelopment environment will continue to evolve, and that the core principles and planning framework could guide many different outcomes on individual sites through the SPRC process.

Many community stakeholders also expressed frustration that many proposals feel “fully-baked” by the time they reach the public SPRC process, with limited opportunities for the SPRC process to shape redevelopment. An SPRC agenda that highlights the guiding principles may provide more opportunities for the community to meaningfully shape redevelopment projects and outcomes.

Flexibility over time is especially important with regard to sustainability and meeting the goals of the Community Energy Plan—the Pentagon City Sector Plan anticipates that regulatory requirements for sustainability, including stormwater regulations, energy code, and green building requirements, will continue to evolve in response to climate mitigation and adaptation needs. The Plan’s strategy is to refer to County standards and policies that will be continuously updated to regulate these elements in the future. This strategy is also appropriate for transportation standards, equity, and other County policymaking that applies to all large-scale redevelopment, not just projects in Pentagon City.

The Plan also anticipates that emerging strategies and technology, including new construction techniques for lower-carbon buildings,
may be possible in the future. By setting a strong guiding principle for green development, but allowing flexibility in responding to this principle in the future, the plan encourages innovative strategies now and in the decades to come.

The Plan provides a strong framework for the physical development of the district, with a focus on public spaces and pedestrian connections. While specific routing and design elements will be refined during the SPRC, the framework of desired connections and public spaces establishes a shared network for the district that all sites must respond to and incorporate.

Throughout the Plan, there is greater detail and more certainty provided for sites with near-term potential to redevelop, as determined by property owner interest. Redevelopment will likely occur sooner on these sites, under conditions and market dynamics most similar to the planning process. The Plan seeks to encourage near-term redevelopment in order to secure community benefits earlier, where they can help drive the transformation of the district and meet pressing community needs.
How is the amount of development related to transportation capacity?

The Pentagon City study area includes roughly 9.1 million square feet of existing occupied building development, with about 2 million square feet more under construction at Metropolitan Park and another 2.3 million square feet approved in 2013 for development at Pen Place, for a total of about 13.4 million square feet. These figures are inclusive of RiverHouse as well as the Pentagon City PDSP, but do not include Pentagon Centre property, which adds nearly 1.2 million square feet of existing building space. This development is part of the nearly 40 million square feet of development present within the greater 22202 area of Arlington, including the Crystal City, Aurora Highlands, and Arlington Ridge neighborhoods. While the transportation network impacts of this built and approved development have been studied or demonstrated to be acceptable, ambitions for future development raise the question of how the multi-modal transportation network may need to evolve to capably serve existing community members as well as future ones.

Community goals for transformative improvements to Pentagon City’s public realm, social equity, and environmental performance, and property owner goals for redevelopment or expansion of existing property to capture new market potential, can support each other. Arlington and its real estate development community have a strong track record of partnership by which new private investment helps Arlington invest in additional infrastructure, affordable housing, and other community development priorities. In Pentagon City, the scale of potential new development is significant, owing to the strong market position of its location, available redevelopment sites, high-capacity transit service, and the scale thresholds that influence whether a property owner will redevelop existing property. The development created at Met Park over the past 20 years, incorporating residential, office, and retail space in buildings rising nearly 20 stories around a park and approaching a floor area ratio of 6, demonstrates the potential scale and form of a next generation of development. Property owners have already proposed, at least informally, roughly 6 million square feet of new development beyond the 13.4 million existing and approved.

This study examined the possibility for further redevelopment at this scale on additional properties and over twenty or more years, and found potential for an overall net gain of nearly 10 million square feet (see charts on next page). But again the question emerges, how would development and the transportation network need to evolve together to make this feasible?

Successful urban districts of the densities contemplated at Pentagon City depend on:

- Street, block, and building forms that facilitate a high level of pedestrian accessibility and public realm interest, with capacity to accommodate significant amounts of mixed residential, commercial, and civic/institutional development;
- Robust multi-modal transportation infrastructure and services, with emphasis on pedestrian, transit, and bike access to minimize dependence on personal vehicles and their high space needs and costs; and
The full extent of new development modeled in the Pentagon City study area totals over 10.85 million square feet. Combined with an existing 13.4 million square feet, and reduced by about 1.2 million square feet of existing space that would be removed, the overall development would total about 23 million square feet.

Average weekday vehicle trips in 22202 decreased 18% between 2000 and 2019 while developed floor area increased 28%. Ongoing investments in high-quality, high-capacity rail and bus transit have helped shift travel behavior from driving toward transit.

CRITICAL QUESTIONS AND STRATEGIES
- A culture of transportation use that highly values and utilizes alternatives to driving, in ways that support community and economic development opportunity. This is measured in terms of mode share—the percentage of trips taken by different travel modes including single-occupancy personal vehicles, multiple-occupancy private vehicles, ride-hail, transit, biking, and walking. These elements have dynamic relationships with each other that cannot be fully predicted at this time, and that in fact will depend on ongoing study and working relationships among government, community, and private sector partners. Transportation modeling conducted during this planning study examined vehicle volumes and trips, but needs to be supplemented with analysis of other transportation modes for a full picture of how travel behavior may continue to change.

The vision for Pentagon City can and must provide an enduring framework within which these relationships can evolve—streets and other transportation corridors that together have the capacity and flexibility to accommodate significant growth in walking, transit use, and biking, while minimizing growth in driving. The specific configuration and mix of transportation modes along any given public access way may require additional transportation and design study beyond the scope of this effort, but the plan aims to ensure that adequate space and network connections are present along these corridors to accommodate a wide range of future conditions.

Toward this end, the planning effort utilized the following analysis steps, described further below:

- Review development and transportation trends in the study area;
- Working within current limitations of personal vehicle trip capacity, identify the changes in travel behavior, infrastructure and service needed to maintain balance;
- Identify priority changes to the boundaries of existing transportation corridors, and important new corridors, to provide clarity on what land area may be dedicated for development, and what land area should be dedicated to public access ways in order to equitably serve stakeholder transportation needs; and
- Identify transportation questions that require further study over time, addressing more specific projects, sites, information, and community priorities (see transportation portion of the Sector Plan’s Implementation section).
Further Transportation Analysis and Study

This study has indicated a number of follow-up transportation studies that are merited to further explore improvements related to certain travel modes, locations in the study area, or potential development projects. Future studies will gain the benefit of more information and/or community engagement that will help mature and sharpen the decision-making on transportation needs. This continued work covers travel technology, Covid-19 impacts, forthcoming development proposals, and future traffic and mode share data. Example studies include:

- An analysis of Pentagon City’s bike network, including integration with Crystal City’s bike network and Arlington’s broader bike infrastructure.
- Potential reconfiguration of South Hayes Street, with attention to goals and issues including:
  - Implementing separated bikeways;
  - Removing traffic lanes;
  - Further improvement of bus facilities beyond the planned Transitway;
  - Reconsider design of the median for opportunity to enhance certain transportation modes and/or usable public open space while working within constraints imposed by the Metro tunnel below; and
- Inform character and design of long-term improvements needed on adjacent private properties, including ultimate configuration of the Green Ribbon segments.
- Multi-modal transportation analysis and potential new infrastructure associated with future development proposals
- Curbside management addressing increased demand for pick-up/drop-off space, reduction in parcel driveway space, and trade-offs where curb space, vehicle lanes, bike facilities, sidewalks, transit, and streetscape compete for limited corridor width.
- Performance standards for Transportation Demand Management (TDM)

A full implementation matrix, with implementation actions, timing, implementing agencies, and mechanisms and/or funding source can be found beginning on page 131.
How does economic feasibility shape what could be developed? When will change happen?

Development Feasibility

Redevelopment happens because of a number of factors, including:

- economics, where there is a higher and better economic use for the property that will generate a return on the investment;
- long-term economic development, where redevelopment will unlock significant additional opportunities; and
- civic or social motivation, where removing a negative influence or creating a landmark is important (such as improvements to the existing Pentagon City Metro access/connection through the mall).

A general rule of thumb for when redevelopment may make sense is when the redeveloped project’s value is three to four times the value of the existing asset—this is particularly relevant in Pentagon City where most sites have existing buildings generating revenue, and thus have higher values than vacant land. When a project’s yield, or the Net Operating Income of the redevelopment project divided by the Cost of the project, satisfies a developer’s minimum investment threshold, redevelopment is feasible.

Minimum investment thresholds change over time. The minimum yield depends on many factors including the cost of money, the land use, the market, and perceived risk. Different developers also have different investment thresholds that largely depend on their tolerance for risk.

Office development generally has a higher investment threshold than residential. Right now in Pentagon City, an investment threshold for a residential project of apartments may be 5.5%–6.5% and office 7.5%–8.5%. When a redevelopment project’s yield is above the minimum investment threshold there is an opportunity for developer contributions towards infrastructure and community benefits. Again, yields and investment thresholds are dynamic and will change.

The condition of existing property—whether it is under-utilized property, obsolete, or still functional—highly impacts the economics of redevelopment in Pentagon City and potential community benefits.

- Under-utilized property includes sites like RiverHouse, Regency Care, and PenPlace where vacant land—including surface parking lots—can be developed. The redevelopment cost of these sites is lower, and mostly includes replacing surface parking as needed. Redevelopment of these sites is feasible at a lower allowable density, although there is higher developer contribution potential with higher density which can help achieve a number of goals established in this Sector Plan.
CRITICAL QUESTIONS AND STRATEGIES

- **Obsolete property include sites like Brookfield.** Redevelopment costs on these sites are moderate and include the cost of existing land, the value of an existing building, and the cost to demolish the site and make it ready for redevelopment. As a result, redevelopment of these sites, including developer contribution potential, is not feasible without significant increases in density.

- **Functional property include sites like the Fashion Centre, Westpost at Pentagon Row, and while not in the PDSP, the Pentagon Centre Costco, that contain viable and valuable land uses with long-term leases.** To redevelop these sites may require buying out of those lease terms, or delaying redevelopment until the lease term ends. Lease buy-outs, high acquisition prices and demolition costs make redeveloping improved and functional property economically challenging, if not infeasible. Rather than realizing community benefits, the County would likely need to participate in a public-private partnership to incentivize redevelopment of improved and functional properties.

Redevelopment Phasing

The planning process included multiple rounds of stakeholder interviews with property owners as well as market analysis to help identify properties that are likely to redevelop and their potential timing. While the timing assumptions are somewhat speculative, the stakeholder interviews informed the plan, with a high-level focus on sites assumed likely to redevelop in the near-term that could deliver near-term community benefits and infrastructure.

Sites with assumed **near-term potential** include:

- RiverHouse;
- Brookfield;
- Some portions of the Fashion Centre site; and
- Re-tenanting of spaces at Westpost Pentagon Row (potentially requiring a Site Plan Amendment).

Sites with assumed **mid-term potential** include:

- Some portions of the Fashion Centre site;
- Regency Care; and
- Possible redevelopment at Westpost at Pentagon Row, including existing parking lots.

Sites with assumed **long-term potential** include:

- Remainder of Fashion Centre Site; and
- The Costco site within the Pentagon Centre PDSP.
What public space improvements are needed for Pentagon City to thrive?

From the beginning of the Pentagon City Planning Study process, the expansion and improvement of public space gained a groundswell of consensus as a necessary foundation for further development in Pentagon City. High quality public spaces not only serve practical needs supporting quality of life and economic development, but also are poised to emerge as a signature defining feature for Pentagon City and the broader 22202 area. From a combination of County-led plans and the grassroots Livability 22202 initiative, these six priorities emerged to shape the public realm recommendations described later in this document:

- **Virginia Highlands Park** already serves as one of the study area’s most important assets. This relatively large park, tripled in size by the original 1976 Pentagon City Master Plan, has significant recreational facilities as well as casual use spaces; helps transition between the larger scale development of Pentagon City and the smaller-scale development of the Arlington Ridge and Aurora Highlands neighborhoods to the south and southwest; and accommodates significant daily pedestrian movement between Pentagon City and those neighborhoods. Because a dedicated County-led community planning process for updating Virginia Highlands Park is planned, this planning process anticipates the potential for updates and reinvestments in the park without pre-defining what those should be.

- A need for **additional public space** not only to serve the growing numbers of Pentagon City residents, workers and visitors, but to provide types of park spaces not sufficiently present, such as spaces serving families living in multifamily buildings. Much of this new space may be more urban in character than conventional park space, shaped as “outdoor rooms” by buildings and mature trees, with paved areas mixed in with low plantings and tree canopy, to accommodate intensive and varied uses within a set of relatively small parks, squares, and plazas dispersed across blocks with high-density mixed-use development. These spaces can be well suited to serve the Arlington Public Spaces Master Plan’s goal of adding spaces for casual, impromptu use and connection to nature, as well as other types of park uses.

- **Green path connections to parks** within and beyond Pentagon City would offer particular value, as emphasized in the Livability 22202 Action Plan. Pentagon City and 22202 are located near important County and regional park resources like Long Bridge Park and the Potomac riverfront; safe, landscaped path connections to these resources would provide great value not just to people in Pentagon City but also those throughout 22202. Path connections for walking and/or biking would serve this plan’s goals of expanding quality multi-modal transportation choices.

- **Equity of public space access** for all people in and around the study area is a fundamental County priority. Features that help promote equitable access include wide distribution of public spaces and path connections across the study area, programming and design supporting activities serving a broad range of cultures, races, ages, and other demographic characteristics; and public control (by easement or ownership) of public spaces to ensure free public access.
Tree canopy. This Sector Plan seeks to achieve at least 20% tree canopy across the district to be consistent with standards of Arlington’s Urban Forest Master Plan for urban corridors. This minimum is higher than current standards for Rosslyn (15%) and Crystal City (17.6%). Added tree canopy will provide diverse benefits including more comfortable microclimate for outdoor activities, reduced energy use and carbon impact for buildings and transportation, improved personal connection to nature, and strong sense of place. Tree canopy throughout the district is measured on development sites, public right-of-way, and public spaces.

Biophilia, or the experience of nature, is a strong theme in the Livability 22202 recommendations and a priority for Arlington as a whole. This Sector Plan seeks to provide people the wellness benefits of biophilia in a variety of means and forms—not only via trees and plantings in public streets and parks, but through plantings on ground and upper levels of development sites, and through architectural features that incorporate natural patterns.

Important sources for these priorities include:

- Arlington Public Spaces Master Plan (PSMP)

The Pentagon City Sector Plan can particularly help advance these PSMP Priority Actions:

- Action #1 (add at least 30 acres of new public space in 10 years)
- Action #2 (secure or expand the public spaces envisioned by sector, corridor, and other plans...)
- Action #5 (ensure access to spaces that are intentionally designed to support casual, impromptu use and connection to nature)
- Action #7 (develop park master plans ... when renovation of an existing park requires a major rearrangement of park amenities)
- Action #8 (ensure and enhance access to the Potomac River, Four Mile Run and their tributaries...)
- Action #9 (expand Arlington’s network of connected multi-use trails)

- Urban Forest Master Plan
- Livability 22202 Framework, Action Plan, and Open Space Final Report
- Community engagement conducted during this planning process. Public realm planning was an early focus of conversation and draft concepts.
Pentagon City Development Framework
1. Land Use and Development

The proposed future land use and development framework will guide future development to create a welcoming, walkable Pentagon City with a thriving, biophilic public realm.

- The General Land Use Plan and this Plan’s Land Use Mix allow for greater flexibility of uses than previously allocated under the Pentagon City Phased Development Site Plan (PDSP). When combined with the Sector Plan’s other requirements for density and site coverage, this will allow for a finer-grain of mixed-use development throughout Pentagon City.

- The future Distribution of Density and Community Benefit Value helps ensure that future development and density achieves the Pentagon City Planning Principles, establishing a framework for the public realm improvements and other community benefits that must accompany future density. The framework establishes how density can be distributed to facilitate the planning principles by:
  - facilitating desired redevelopment
  - maximizing activity and vitality near major transit resources like the Metro, 12th Street Transitway, and major bus service on Hayes Street and Army Navy Drive
  - supporting a walkable and active public realm.

- **Buildable Site Boundaries** establish desired new connections and public access to allow the block network to evolve as redevelopment occurs.

- Recommendations for future Site Coverage ensure that future development will include additional open space and tree canopy. Standards establish a minimum for landscaped area, while allowing for additional flexible open space that may be landscaped or hardscaped with amenities.
Near-term opportunities include projected phases 1 and 2 of development. See appendix for illustrative plans of longer-term possibilities in later phases.

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Multi-family residential development on the northern end of the RiverHouse site creates two-sided S Joyce Street.

Development along the southern border of RiverHouse should be the lowest in scale to transition to Aurora Highlands and Arlington Ridge, and may offer opportunity for townhouses or other desired housing types.

Redevelopment of private properties within the study area will contribute to strategic public realm improvements, sustainability, and affordable housing. As a result, subsequent processes to identify a potential school site should focus on County-owned properties within 22202 such as the Virginia Highlands Park/Aurora Hills Library/Community Center site (as one example).

Multi-family residential development on the southern end of RiverHouse is lower in scale. Infill buildings frame new public spaces, including an expanded Virginia Highlands Park and Green Ribbon pathways.

12th Street S includes ground-floor retail and mixed-use destinations that support high level of pedestrian activity and transit ridership.

Largest scale of development is located in blocks along and north of 12th Street S.
1.1 Future Land Use

GENERAL LAND USE PLAN AND LAND USE MIX

The future land use plan encourages a mix of residential and commercial uses throughout Pentagon City to maintain activity throughout the day and week, enhance economic resiliency, and gain the efficiency benefits that mixed uses offer for mobility infrastructure and energy use. Residential development is particularly important to establish a more transit-oriented neighborhood as it increases the ridership of local transit systems. The Sector Plan also allows for flexibility to encourage more timely reinvestment and redevelopment of property by reducing land use permitting constraints, including for re-tenanting of existing retail and commercial spaces.

Community-serving uses, such as a library or community center, are encouraged throughout the district, including as an accessory use in a larger building, and may be particularly appropriate near transit services, the Green Ribbon, and other major public spaces where such uses can augment retail as an active ground level use option.

Policy Approach

- In the Pentagon City PDSP area currently zoned C-O-2.5, the GLUP category of High Office-Apartment-Hotel indicates a land use vision like Crystal City, Rosslyn, and other high-density, mixed-use Metro areas.
- At the RiverHouse parcel, the GLUP is increased from its current medium density residential to high density residential on the northern portion of the site and high-medium residential on the southern portion. Redevelopment at RiverHouse is envisioned to be predominantly residential, retaining the existing buildings on site, with accessory retail and amenities at key locations.
- Along South Fern Street between 15th Street South and 18th Street South, the GLUP is increased from medium to high-medium density residential to enable infill redevelopment of parking lots at the Regency Care site and others bordering the S Fern Street corridor.
- See the next page and the appendix for detailed GLUP Map.
- On any development parcel throughout the study area which will likely have multiple new buildings the land use mix is unconstrained within this Plan’s allowable uses as such flexibility will enable property owners strategically respond to future market conditions or other factors. An exception to this may include ground level retail or other active use which may be expected per Section 4.5. of the Sector Plan:
  - Where multiple office buildings are proposed, at least one additional building with a significant residential, hotel or weekend/evening destination use should be already present or proposed.
  - Encourage broader dispersal of community-serving uses across the district, including as accessory ground level use in mixed-use buildings. Community-serving uses include those present today at the Aurora Hills Community Center (library, recreation, and senior services) as well as others such as daycare, youth center, medical services, education, social services, and others that may emerge to meet the needs of neighborhood residents.
The land use mix allocated in the original Pentagon City PDSP, combined with the pre-existing RiverHouse development, was composed of more than 70% housing, and more hotel space than office or commercial. Over decades, entitlements to develop specific amounts of specific land uses were exchanged among uses and parcel owners, and some additional development rights were transferred into the PDSP, resulting in the currently built and approved mix. The anticipated scenario for new development is about two-thirds housing, one quarter office, and the balance hotel and commercial, informed by current market conditions, but is intended to be flexible to accommodate changing markets. Combining existing approved development with the scenario yields a mix with ranges for each land use. At least half of developed area would be housing, and at least a quarter office.

Approximately 23 million SF (after removal of about 1.2 million existing SF)

Future potential range informed by modeling, stakeholder proposals

Modeled new development scenario

Existing & approved development

Pentagon City PDSP plus RiverHouse

Pentagon City PDSP becomes High Office-Apartment-Hotel like other Metro areas, including much of Crystal City

Virginia Highlands Park and Playfields

RiverHouse future land use of high density residential to north, high-medium density residential to south

GLUP note “4” indicates the Pentagon City PDSP was designated a “Coordinated Development District” on 2/9/74. This plan expands that designation to include the RiverHouse parcel.
1.2 Density and Value

Due to the variety of sites, existing uses, and property owner goals, there is significant variability in the feasibility and the likely phasing of reinvestment across Pentagon City. The Sector Plan focuses in greatest detail on near-term redevelopment sites that would provide new physical improvements, including new public spaces and infrastructure, that help enable redevelopment that fulfills the planning principles and vision. Near-term opportunities will also help implement sustainability and affordable housing goals, and could help identify new locations for expanded community facilities such as a library or community center. Sites that redevelop in later phases would be responsible for greater funding contributions towards community benefits and future infrastructure needs to achieve the planning principles, including future resiliency needs.

All increased density must mitigate its impacts, including on transportation and utility infrastructure. Impacts are evaluated as part of the site plan process.

Policy Approach

- Where redevelopment of sites with existing buildings is proposed, allow significant increases in existing site density through the special exception site plan process in order to make redevelopment feasible and achieve significant land use, community benefit, urban design, and transportation goals. Achieving additional density requires a mode split and transportation plan, analyzed and reviewed as part of the Multi Modal Transportation Analysis (MMTA) process, that fulfills the transportation planning principle for the area.

- In the Pentagon City PDSP area, properties that provide significant community benefits that achieve the goals of this Sector Plan may be able to achieve density of FAR 7-9. Floor Area Ratio (FAR) is a measure of the total building floor area on a site, including each floor, compared to the size of the site.

- At the RiverHouse parcel, future density should be reduced along the southern boundary of the site to transition to the Aurora Highlands neighborhood. Density and building height should be lower in the southern portion of the site, and highest in the northern portions of the site along the S Joyce Street corridor.

- Allowable density is also affected by the interaction of multiple levels of guidance in this plan, including:
  - Recommended F.A.R. and/or dwelling unit/acre range indicated in GLUP;
  - The development proposal’s projected Multimodal trip generation, mode split, and transportation capacity to be evaluated through the MMTA process;
  - New and improved public spaces and access ways, including easements;
  - An individual site’s recommended coverage requirements, including minimums for tree canopy and landscaped area and maximums for building coverage; and
  - Building height and massing guidelines for an individual site within the Sector Plan as well as additional requirements for massing and height outside of the plan, including FAA regulations, fire lane requirements, and building separation requirements.

Site by site summaries, which detail specific future redevelopment recommendations of this Sector Plan, are included on the following pages.
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RiverHouse Parcel
Future land use of high-density and high-medium-density residential; overall increase in density from 47 units/acre to up to 150 dwelling units/acre as part of special exception site plan process that achieves the community benefits and infrastructure detailed in this plan, including new and improved public spaces.

The tallest buildings should be located north of the Green Ribbon; buildings in the southern portion of the site should transition to surrounding neighborhoods.

Pentagon City PDSP
Future land use of High Apartment (4.8 FAR)-Office (3.8 FAR)-Hotel (3.8 FAR)
Redevelopment achieves a range of Floor Area Ratio (FAR) of 7-9 as part of special exception site plan process that achieve the community benefit goals of the plan.

S Fern St (15th - 18th Street)
Future land use of high-medium-density residential.
Redevelopment may achieve Floor Area Ratio (FAR) 5-6 as part of special exception site plan process at Regency Care site.
RiverHouse Summary (South of Green Ribbon/15th Street)

- Density limited to ≤150 dwelling units/acre across entire site
- Required submission of a MMTA to consider appropriate Multimodal trip generation, mode split, and transportation capacity
- Public realm recommendations and access ways include:
  - Expansion of Virginia Highlands Park and interim improvements to Grace Hopper Park to coincide with South Joyce Street realignment (Pavilion structure is not anticipated with redevelopment but its presence, location, and/or configuration should be considered further as part of the VHP Park Master Planning effort);
  - Creation of Green Ribbon segments throughout the site; and
  - Easement up to 30 feet wide for South Joyce Street streetscape and separated bikeway.
- Site coverage recommendations for each phase of development:
  - 55% maximum building coverage at and below 5 stories, 40% maximum building coverage over 5 stories with varied design strategies
  - 30% minimum planted area, comprised of 20% minimum tree canopy, within the limits of disturbance for new projects
- Building height and massing should be lowest along southern boundary of site and transition to single-home neighborhoods to south and west, making use of topography, landscaping, and lower building heights including the following:
  - Within 75 feet of R2-7 zone, height limited to 5 stories; form should transition to 3-4 stories where abutting the R2-7 zone;
  - In other areas within 150 feet of R2-7 and R-10 zones, height limited to 8 stories; form should transition at least one story down where it faces the adjoining zones; and
  - In other areas south of 15th Street South not addressed above, height should not exceed that of the existing RiverHouse Ashley Building (16 stories).
RiverHouse Summary (North of Green Ribbon/15th Street)

- Density limited to no more than 150 dwelling units/acre across site
- Required submission of a MMTA to consider appropriate Multimodal trip generation, mode split, and transportation capacity
- Public realm recommendations and access ways include:
  - Expansion of Virginia Highlands Park and interim improvements to Grace Hopper Park to coincide with South Joyce Street realignment (Pavilion structure is not anticipated with redevelopment but its presence/location should be considered further as part of the VHP Park Master Planning effort);
  - Creation of Green Ribbon segments throughout the site;
  - Creation of additional public space across the overall site totaling at least 3 acres (excluding new VHP area noted above); and
  - Easement up to 30 feet wide for South Joyce Street streetscape and protected bicycle facility.
- Site coverage recommendations for each phase of development:
  - 55% maximum building coverage at and below 5 stories, 40% maximum building coverage over 5 stories with varied design strategies
  - 30% minimum planted area, comprised of 20% minimum tree canopy, within the limits of disturbance for new projects
  - Building height should be varied and arranged to provide solar access (unobstructed daylight) to new and existing public spaces
  - Building height and massing should be lower along western boundary of site, making use of topography, landscaping, and to provide an appropriate height transition to adjacent, existing lower building heights. Within 150 feet of the western property line abutting South Lynn Street, height should be limited to 10-12 stories, depending on grade. In areas north of 15th Street S. not addressed above, height should not exceed 250 feet.
Brookfield Summary

- Density limited to 9 FAR
- Required submission of a MMTA to consider appropriate Multimodal trip generation, mode split, and transportation capacity
- Public realm recommendations and access ways include:
  - Creation of Green Ribbon through site, including public plaza space accessible from Metro totaling at least 0.5 acre;
  - Public access route along the 11th Street S alignment;
  - Southbound separated bicycle facility along S. Fern Street with easement up to 12 feet wide.
- Building coverage recommendations:
  - 75% maximum building coverage at and below 5 stories
  - 55% maximum building coverage over 5 stories
  - 25% minimum planted area, comprised of 20% minimum tree canopy, within the limits of disturbance for new projects
- Appropriate location for tallest building heights
  - If a multi-building development is pursued, 10–20% height difference between at least two buildings
  - Follow design guidelines for building height in Section 4.2
Fashion Centre Summary

- Density limited to 9 FAR across the site
- Required submission of a MMTA to consider appropriate Multimodal trip generation, mode split, and transportation capacity
- Public realm recommendations and access ways include:
  - Improvements to the pedestrian passageway through the Mall and connecting to Metro; and
  - For longer-term development, new public spaces and new access ways throughout the site in accordance with plan, including new public space along S Hayes Street.
- Building coverage recommendations for each phase of development:
  - 75% maximum building coverage at and below 5 stories
  - 55% maximum building coverage over 5 stories
  - 25% minimum planted area, comprised of 20% minimum tree canopy, within the limits of disturbance for new projects
- Appropriate location for tallest building heights, when along/north of 12th Street
- Follow design guidelines for building height in Section 4.2 of the Sector Plan
Other sites, including FRIT (Westpost/Pentagon Row), DEA, and Regency Care

- Density limited to 9 FAR, limited to 6 FAR at Regency Care site
- Required submission of a MMTA to consider appropriate Multimodal trip generation, mode split, and transportation capacity
- Public realm recommendations and access ways include:
  - Retention or replacement of public space exceeding existing spaces like the Pentagon Row/Westpost plaza along S Joyce Street. Official dedication of existing public spaces as publicly-accessible; and
  - For longer-term development, new public space and new access ways throughout the site in accordance with Sector Plan guidelines.
- Building coverage recommendations for each phase of development:
  - 75% maximum building coverage at and below 5 stories
  - 55% maximum building coverage over 5 stories
  - 25% minimum planted area, comprised of 20% minimum tree canopy, within the limits of disturbance for new projects
- Appropriate location for highest building heights north of 12th Street.
  - If a multi-building development is pursued, 10–20% height difference between at least one building.
  - Follow design guidelines for building height in Section 4.2 of the Sector Plan
AFFORDABLE HOUSING IN PENTAGON CITY

Currently, there are 342 approved and existing Committed Affordable Units (CAFs) within the study area. These include 300 CAFs at the Claridge House, which is an age restricted property that utilizes a HUD Housing Assistance Payments (HAP) contract. Similar to the Housing Choice Voucher program (formerly Section 8), the HAP program is an income-based rental subsidy to the tenant. The remaining 42 CAFs will soon be located within the existing RiverHouse James building. These include 35 CAFs that were approved as part of the 1900 Crystal Drive site plan and 7 CAFs approved as part of the 2000/2001 Richmond Highway site plan. Per the Crystal City Phased Development Site Plan (PDSP), another 35 CAFs are anticipated to be included in the RiverHouse James building as part of the redevelopment of the 223 23rd Street South final site plan.

Affordable housing contributions should advance current County housing goals. Currently, this is prioritized as on-site units, off-site units, and cash contribution to the Affordable Housing Investment Fund in order of priority. Other priorities include securing more family-sized units (which can house families with children), including 3-bedroom units, affordable ownership opportunities, and physically accessible units.

Policy Approach

To help achieve the provision of affordable housing within the study area, this Sector Plan includes the following recommendations:

- In order to maintain a mix of new and existing affordable CAF units within the study area, on-site affordable housing contribution should be located in the newly developed buildings. However, locating all or a portion of the affordable housing contribution in the existing buildings may be considered if at least 20% of the net new residential density is contributed as CAF units. The total target is subject to negotiation with County staff for project feasibility.

- The CAF unit mix resulting from the provided square footage should be finalized on a case-by-case basis, with family-sized units and Type A accessible units encouraged, to ensure Pentagon City can maintain a sufficient supply of committed affordable housing that is accessible to persons with physical or sensory disabilities.

- The CAF units should be rent- and income-restricted to households earning up to 60% Area Median Income (AMI) for a period of 30 years.

- CAF units provided in new condominium projects should be income-restricted to households earning up to 80% Area Median Income (AMI) for the life and use of the residential dwelling unit.
The Affordable Housing Master Plan established a goal that by 2040, 17.7% of the County’s housing stock should represent affordable units to meet the needs of renter households with incomes at or below 60% AMI. As of 2021, there were 9,488 CAFs Countywide, shown on this page, of which 8,239 were at 60% AMI. Combined with 5,912 Market Rate Affordable Units (MARks), 11.6% of the County’s total 120,872 units were affordable at 60% AMI in 2021.
COMMUNITY BENEFIT FUNDING POTENTIAL AND PRIORITIES

All sites within the Sector Plan study area have nearly reached the limits of what their existing zoning district or PDSP allocation(s) would permit; however, those that have not should be able to achieve utilization of that residual development without triggering the requirement to achieve Sector Plan goals associated with major redevelopment.

Sites that do seek to redevelop in accordance with the recommendations of the Sector Plan will be expected to earn the amount of additional density permitted by this Sector Plan through providing the community benefits expressed by the Plan. For purposes of calculating the base of any amounts of additional density to be earned, the existing PDSP allocation for properties within the Pentagon City PDSP will be used and the existing GLUP designation (72 dwelling units/acre) for the RiverHouse property that is located outside of the PDSP boundary will be utilized. Regardless, any redevelopment proposal that seeks to exceed either the density permissions of their zoning district, in the case of RiverHouse, and the PDSP allocations for all other properties within the Sector Plan study area, will be expected to redevelop, and earn additional density, in a manner consistent with the recommendations of the Plan.

Increased density is only appropriate where it achieves the goals of this plan, including goals for community benefits. Community benefits may include the value of relevant on-site improvements, including public spaces and affordable housing units, or cash contributions to provide certain benefits off-site, such as Green Ribbon segments on County property. In general, public realm infrastructure improvements deserve high priority. Providing space for public facilities such as an expanded library or community center in the ground story of new buildings could also represent a qualifying community benefit that helps achieve the Sector Plan goals.

All redevelopment will have to mitigate its own impacts and include any necessary infrastructure improvements, including rebuilt streetscapes, new sidewalks, and utility infrastructure as needed.

As a planning principle, green building is an expected feature of new development for each site. Exceptional green building performance may be considered a community benefit during the SPRC process.

Policy Approach

This Sector Plan establishes core community benefits as a baseline for redevelopment. There is greater certainty on these required benefits for near-term sites, whereas later-to-develop sites will likely provide more benefits by way of funding, as opposed to in-kind contributions. Large sites such as RiverHouse, Westpost (Pentagon Row), and Fashion Centre should be required to submit a Phased Development Site Plan (PDSP) for community benefits, concurrently with their site plan applications, which would help track the gradual implementation of the Sector Plan and incremental establishment of required community benefits. All applications will be reviewed by staff and the County Board approves site plans with any conditions of approval.

Large Sites with Near-Term Redevelopment Potential

- At the RiverHouse site, site plan conditions and targeted community benefits to enable higher density development should include:
  - Expansion of Virginia Highlands Park through land dedication, construction of realigned segment of S. Joyce Street, and interim improvements to Grace Hopper Park associated with the new street alignment;
  - Creation of Green Ribbon segments throughout the site;
  - Creation of additional public space on the site totaling at least 2.5 acres;
Easement up to 30 feet wide for S Joyce Street streetscape and protected bicycle facility; and

At least 10% on-site committed affordable housing units.

At the Brookfield site, site plan conditions and targeted community benefits to enable higher density redevelopment should include:

- Creation of Green Ribbon through site, including public plaza space accessible from Metro totaling at least 0.5 acre;
- Public access route along the 11th Street S alignment;
- Southbound separated bicycle facility along S. Fern Street with easements up to 12 feet wide; and
- At least 10% on-site committed affordable housing units.

The phasing of the Fashion Centre site is challenging to determine. At the Fashion Centre site, site plan conditions and targeted community benefits to enable higher density and redevelopment in the near-term should include:

- Improvements to the pedestrian passageway through the Mall and connecting to Metro, including access along the west side of the mall;
- Interim improvements to Green Ribbon segments along S. Hayes Street (while still accommodating a reduced service drive); and
- At least 10% on-site committed affordable housing units.

Large Sites with Mid-Term Redevelopment Potential

- At the Fashion Centre site, site plan conditions and targeted community benefits to enable higher density and redevelopment in the mid- and longer-term should include:
  - Expansion of Green Ribbon and creation of public space on S. Hayes Street;
  - For longer-term development, new public spaces and new public access ways internal to the block as indicated by the Plan; and
  - At least 10% on-site committed affordable housing units.

Large Sites with Longer-Term Redevelopment Potential

- At other sites, site plan conditions and community benefits to enable higher density should include:
  - Multi-modal infrastructure or public space enhancements as indicated in this framework, and as may be identified through future planning processes, such as a new Master Plan for Virginia Highlands Park;
  - Increased contributions to affordable housing;
  - Exceptional green building performance; and
  - Other needs identified through future County planning processes, including the SPRC process.
**Approach to Re-tenanting, Improvement, and Renovation of Existing Developments**

Throughout the PDSP, there may be projects that require site plan amendments for re-tenanting of spaces, updates to the public realm or indoor-outdoor spaces, or renovation of existing structures that fall well short of redevelopment. Any such site plan amendments should advance the planning principles and framework in this plan, and must add biophilic features noted in Section 3.1.

When such projects add additional floor area through minor additions, they should include new community benefits commensurate in value to the addition. In all instances, improvements to existing conditions which do not entail full redevelopment should avoid impeding areas designated in the Sector Plan for future public space or right-of-way connection.
1.3 Buildable Site Boundaries

New and improved access routes that establish buildable site boundaries will help subdivide the oversized blocks of Pentagon City and ensure that redevelopment increases the overall connectivity of the district.

This framework will help achieve the goal of the 1997 Pentagon City Task Force Report to insert a finer-scale network of streets designed for pedestrians. This has begun to materialize in recent projects. The framework will help ensure that connections are made across parcels, allowing for shared access and adequate space to achieve the recommended pedestrian and bicycle facilities and their corresponding biophilic streetscapes.

Policy Approach

- The diagram on the facing page shows desired new streets or pathways and connections. Due to the specific alignment of these routes may vary upon a site, and because as redevelopment of neighboring sites may proceed on varying timelines, redevelopment should prioritize shared access between neighboring sites for purposes of achieving a cohesive block network that provides inter-block connectivity. Public access way width will be guided by Arlington’s Master Transportation Plan standards, as well as further guidance in the Transportation section of this plan.

- Clear sightlines and easy navigation for pedestrians are the priority for all new access routes.

- New easements along existing streets, particularly S Joyce Street and S Fern Street, provide space for additional pedestrian and bicycle facilities and biophilic streetscape. If after further transportation analysis, reallocation of the existing right-of-way is possible, than the full width of these easements may not be necessary to provide expanded pedestrian and bicycle facilities and biophilic streetscape, and may be reduced.

- In addition to these expectations, redevelopment of most large parcels should include dedication of some parcel area to new public access ways and/or park/plaza space. Further guidance on this network is provided in the Public Space chapter of this Plan.

Both the 1976 Pentagon City Master Development Plan and the 1997 Pentagon City Task Force Report identified new public access corridors needed to transform the area’s large parcels into a high-value, mixed-use, multi-modal district.
New access ways, including pedestrian access ways, created through redevelopment ensure an inter-connected block network.

**DISCLAIMER:** THIS FRAMEWORK SHOWS DESIRED CONNECTIONS TO BE MADE ACROSS AND BETWEEN SITES AND THE EXISTING BLOCK NETWORK. IT IS NOT MEANT TO SPECIFY A SPECIFIC RIGHT-OF-WAY OR FINAL ALIGNMENT. THE SPECIFIC LOCATION OF CONNECTIONS MAY SHIFT BASED ON NEEDS AND PHASING OF REDEVELOPMENT.

**RiverHouse Parcel**
- Easement up to 30 feet wide along the S Joyce Street frontage to enable creation of biophilic streetscape, including protected bicycle facilities.
- New access ways should connect to Arlington Ridge and Aurora Highlands.
- Realignment of S Joyce Street provides space for expanded park and new buildable frontage.

**Fashion Centre and Westpost Block**
- Future access ways that provide connection through the site. Should align with future connections at Brookfield and Pentagon Centre.
- Emphasis on pedestrian access to Metro through and across the block.

**Brookfield and DEA Block**
- Easement up to 12 feet wide along the S Fern Street frontage to enable creation of biophilic streetscape, including southbound protected bicycle facilities.
- Shared accessway along northern boundary with DEA site that could connect to future Fashion Centre access ways. Must include at least one pedestrian access way into interior of the Brookfield site.
1.4 Tree Canopy and Planted Areas (Site Coverage)

Throughout Pentagon City, redeveloping sites will be expected to provide a minimum tree canopy and planted surface area alongside new buildings, access ways, and other groundcover. Meeting these expectations will help ensure that nature is present in Pentagon City, and help fulfill sustainability goals, such as stormwater retention and reduced heat island affect. Some sites may maintain existing planted areas and others may add new ones. Planted areas help support biophilic principles, as well as related goals for human and environmental well-being.

Policy Approach

The expectations for planted area are cumulative, must be achieved within the private property’s limits of disturbance (specific to each phase of development) and may rely on associated segments of the Green Ribbon delivered with each phase. To help achieve the larger Pentagon City and Arlington County Forestry and Natural Resources Master Plan goal of at least 20% tree canopy, sites may include adjacent right-of-way, Public plaza’s associated with each phase of development, or commitments to preserve existing tree canopy/add new tree canopy elsewhere on their property.

The figures below apply to the redevelopment site area, including right-of-way unless otherwise noted. Projects are encouraged to exceed these minimums.

- **15% minimum tree canopy on the legal lot of record or limit of disturbance.** Tree canopy selections must comply with the provisions of the Chesapeake Bay Protection Ordinance. At RiverHouse, at least 20% must be provided on the lot.

- **5% additional minimum planted surface area at or near grade**
  - Includes additional vegetation and biophilic planted areas

Redevelopment in Pentagon City will achieve at least **20% tree canopy** on the site and surrounding streetscape.

- An **additional 5% of the site should be covered by vegetation** in the form of one or more of one of these alternatives:
  - Additional planted area or tree canopy area provided at or near grade
  - Planters, trellises, and/or equivalent vertical green wall surface area upon a building/structure
  - Green roof or terrace

- Planted areas must comply with the County policy for **landscape quality and tree canopy** at the time of site plan application. Native species are encouraged.
The expectations for planted area are cumulative, must be achieved within the private property’s limits of disturbance (specific to each phase of development) and may rely on associated segments of the Green Ribbon delivered with each phase. To help achieve the larger Pentagon City and Arlington County Forestry and Natural Resources Master Plan goal of at least 20% tree canopy, sites may include adjacent right-of-way, public plaza’s associated with each phase of development, or commitments to preserve existing tree canopy/add new tree canopy elsewhere on their property.

RiverHouse should include greater than or equal to 20% tree canopy on-site, and then fulfill the recommendations for additional vegetation.

RiverHouse should include greater than or equal to 30% tree canopy and vegetation totals within the limits of disturbance for each phase of development.
1.5 Building Coverage

In addition to recommendations for a minimum tree canopy and planted areas, site coverage limits for the overall building site can ensure that there is adequate spacing and distribution of building massing across the site. Coverage refers to the portion of site area occupied by building mass at any given elevation above grade, not to the aggregate floor area of multiple floors. Lower maximum coverage above the fifth floor can help ensure building massing is sculpted and that views and daylight are provided between taller buildings.

The PDSP affords a higher maximum building coverage recommendation than the RiverHouse site, because of the existing character, residential program, and landscape contours of the RiverHouse site.

Policy Approach

The recommendations below apply to the site area that is redeveloped, exclusive of any public access ways or access easements that are provided as part of the redevelopment.

- **Maximum building coverage of site, fifth floor and below:**
  - PDSP area: 75%
  - RiverHouse: 55%

The diagrams on the opposite page represent recommended coverage by site, not by building. On sites with multiple buildings, the footprint and form of individual buildings may vary as long as the guidelines shown here are observed for the site as a whole and remain limited to the areas of disturbance in instances where infill is proposed. See 4.6, Upper Floor Stepbacks & Sculpting, for more guidance on building form.
Diagrams on this page represent recommended coverage by site, not by building. On sites with multiple buildings, the footprint and form of individual buildings may vary as long as the guidelines shown here are observed for the site as a whole. See 4.7, Upper Floor Stepbacks & Sculpting, for more guidance on building form.
1.6 Public Facilities

Policy Approach

- Redevelopment of private properties within the study area can contribute to strategic public realm improvements, sustainability, and affordable housing. As a result, subsequent processes to identify a potential school site should focus on County-owned properties within 22202 such as the Virginia Highlands Park/Aurora Hills Library/Community Center site (as one example). Further analysis by APS will be required to solidify the projected APS enrollment in this area and surrounding areas, timing for enrollment changes and the relationship to school capacity, and the further suitability of potential sites as part of a school siting process. Under the most likely development scenario, and considering full build-out of the study area over the coming decades, future growth could deliver as many as 299 new elementary students, 126 new middle school students, and 198 new high school students according to the analysis of student generation rates included in the appendix of this Plan. The diagram on the opposite page represents an amendment to the Public Facilities Map, part of the General Land Use Plan, to reflect the planned location of the Arlington Community High School which will be delivered with the redevelopment of the PenPlace block.

- Beyond a new elementary and community high school, Pentagon City’s existing library and community center will need to expand to accommodate its growing population. The Sector Plan encourages opportunistic pursuits of such community uses within the ground story spaces of near-term private redevelopment which may qualify as alternative means to achieving community benefits. However, should those efforts prove unsuccessful, (either due to economic feasibility or a willing partner) the park master planning effort for Virginia Highlands Park should include a commitment to siting these facilities in a coordinated approach that considers other uses VHP will also need to accommodate.

- Dominion Energy is currently making improvements to the Crystal City Substation, located at the intersection of S Hayes Street and S Fern Street. The project includes an expansion and remodel of the substation to address aging equipment and increase reliability for anticipated load growth in Crystal City and Pentagon City.

- Within the Pentagon City region, the Fire Department can provide emergency services under the National Fire Protection Agency’s four minute travel time standard. Station 5 is located at 1750 S Hayes Street. The medic unit, fire engine, and ladder truck respond to an average of 7,000 incidents each year. The Fire Department predicts an annual three percent increase of fire, rescue, and emergency medical service incidents. With the dense and growing population in the area, the frequency of simultaneous emergency incidents will increase. By 2030, there should be a need to staff and deploy an additional medic unit and fire engine. In order to provide additional emergency response services predicted to be needed by 2030, two options have been identified:
  - Expand the existing station at 1750 S Hayes Street in its current location.
  - Maintain the existing station at 1750 S Hayes Street and build a new station towards the east end of Columbia Pike.
General Land Use Plan - Public Facilities Amendment
Planned Arlington Community High School

Legend:
- Public Facilities
- Public Ownership
- Public Parks
- Federal Land

Table Addition:

<table>
<thead>
<tr>
<th>Public Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
</tr>
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</table>

B41. Planned Arlington Community High School

Map prepared by Arlington County, Va
GIS Planning Office December 2021
Map Scale 1" = 600'
2. Transportation

Pentagon City will continue to mature as a transit-oriented district—to become a place where walking, biking, micromobility, and transit are the predominant means of travel.

At traditional trip generation rates, streets in Pentagon City have limited capacity to accommodate significantly more automobile trips than currently planned. However, Arlington’s vision for Pentagon City, combined with the regional need for transit-oriented development, new housing, and sustainable economic development, calls for higher building densities than streets would be able to support at traditional suburban driving rates. Therefore, further development of Pentagon City will necessitate a greater mode shift to accommodate more trips in modes other than single-occupant vehicle. The goal is to maintain and/or improve the mobility and accessibility of the study area with increased development.

The following analysis identifies key issues to support such a shift and forms the framework for conditions necessary to support future building density. This analysis follows a separate report developed to focus specifically on traffic modeling. The Pentagon City Phased Development Site Plan Transportation Analysis Report was published in November 2021 and is available on the County website for the Pentagon City Sector Plan.

Throughout Pentagon City, new and improved infrastructure as well as County programs and policies will help ensure redevelopment serves the multimodal travel patterns in Pentagon City.

The Pentagon City Sector Plan proposes key strategies to maintain and improve mobility in ways that create value for property owners and community members alike:

- **County investment in transportation infrastructure and service improvements.**
- **Urban Design Approaches** to streets, blocks, and buildings designed to make walking, transit, and biking the preferred means of transportation for most needs, while continuing to accommodate necessary auto access.
- **Transportation Demand Management (TDM)** that requires proactive effort by building developers and managers to encourage walking, biking, and transit use through pricing, on-site features like bike parking, and other means. TDM requires investment, but delivers strong return on that investment by reducing private and public costs for parking and roadway infrastructure.
- **Multi-modal transportation analysis (MMTA)** for each large proposed development project. This detailed analysis reveals the ways a development project can invest in supportive transportation infrastructure to mitigate any negative impacts, based on its unique location, size, land use mix, and other considerations.

While beyond the scope of this Sector Plan and future development projects, the County will continue to advance its transportation goals as a part of regional transportation planning, projects, and policies.
The Pentagon City Metro rail and bus service on S Hayes Street reflect rich and growing transit access. It is among the highest-ridership rail stations in Virginia, and the S Hayes Street bus stops collectively serve more passengers per day than many Metro stations.

Building level transportation studies have shown that 79% of trips in Crystal City and Pentagon City are made by non-single occupancy vehicle modes—continuing to build out an excellent sidewalk and pedestrian realm will continue this trend.

The Sector Plan anticipates growing the use of bikeshare, scooters, and other micromobility options.

Army Navy Drive will soon undergo a transformation to remove vehicle lanes and add transit-only lanes, a separated bikeway, and new street trees to improve the corridor for transit riders, pedestrians, and cyclists.
2.1 Street & Path Network

Sidewalks, paths, and crosswalks utilized by pedestrians are the core of the multi-modal transportation network, providing for walking trips within Pentagon City and critical connections from other modes, particularly transit, without the need of or access to an automobile. The street and path network is designed to improve pedestrian access throughout Pentagon City. Coupled with design guidelines for first floor building spaces and site plans, Pentagon City’s network will put pedestrians first.

Existing Pedestrian Network

On the map at right, walkways within a ¼-mile radius of the Pentagon City Metro station, shown in green, illustrate the area of greatest potential to accommodate transit-oriented development. Walkways illustrated in beige are within ½-mile, and those greater than ½-mile are in red. Areas of Pentagon City near the edge of the green/beige transition will benefit most from direct walking paths. Improved sidewalks and the proposed Green Ribbon will be critical in connecting these areas to the Metro station.

Pedestrian Standards

The Arlington County MTP Pedestrian Element establishes countywide goals and policies for pedestrian pathways, including sidewalks. The Pedestrian Element defines three zones of the sidewalk: the landscape and utility zone (also known as street furnishings zone) generally located near the curb, the clear zone generally located in the middle, and the building shy or cafe zone along the interior where outdoor dining and other building elements may encroach. The Pedestrian Element defines the clear zone as “the portion of the public sidewalk where space is provided expressly for accessible pedestrian mobility...this space is unobstructed and constructed of materials and patterns that provide a relatively smooth surface and that complies with ADA accessibility standards.”

Gaps in the Street and Path Network

There are several gaps in the existing network of pedestrian infrastructure. These gaps should be filled using methods that fit the local context and may include sidewalk, curb and gutter, and accessible curb ramps. Work is being undertaken to fully inventory and map the presence and condition of this existing infrastructure across all of Arlington’s streets, including Pentagon City.

Completing this network to become a fully accessible, urban community is the goal of the Master Transportation Plan, and will remain crucial to the further development of the Pentagon City area. New private developments will also present opportunities to increase the quality of the pedestrian infrastructure, and augment the sidewalk provided alongside streets with additional pedestrian pathways through and across study area sites. Streets in adjacent neighborhoods outside of the study area also have missing pedestrian infrastructure. However, many constraints exist that will make completing those segments of sidewalk a challenge.
The Master Transportation Plan (MTP) is part of the County’s Comprehensive Plan. The MTP Street Typology Map classifies every street in the County, helping identify their role in the broader network, and provides a framework for the physical features of each block of roadway. Updates to standard street typology classifications and MTP recommendations will represent anticipated changes as a result of approved developments, update the MTP map in accordance with approved capital investments, and identify the potential need for new street segments where additional future development is identified.

Suggested revisions to the MTP Street Typology Map include:

- Reclassify 12th Street S between S Eads Street and S Hayes Street from neighborhood/non-arterial to Arterial Type A: Primarily Retail Oriented Mixed-Use. This would reflect both existing and proposed development patterns, and the travel characteristics of this stretch of 12th Street South associated with the planned transitway capital project; and

- Extend the areas planned for new streets (represented in dark blue with diagonal stripes) from S. Hayes Street west to S. Lynn Street, between Army Navy Drive and 15th Street S. to incorporate the Fashion Centre, Westpost (Pentagon Row) and RiverHouse development sites. Actual need and specific locations for any new streets can be identified later, likely through the site plan review process as new development are proposed.
2.1 Street & Path Network (continued)

The proposed street and path network will help ensure that connections are made across parcels, facilitating shared access between parcels and creating an easier to navigate grid.

Policy Approach

■ To facilitate convenient mobility and access to destinations on each block, public access ways should be present at intervals not exceeding 500 feet. Block lengths under 400 feet are preferred where feasible. Blocks exceeding 500 feet in length may be acceptable where topography or other factors limit the potential for connectivity.

■ The Street and Path Network diagram on the facing page indicates existing and planned public access ways. The combination of transportation modes permitted to use a given access way may vary according to the types of access ways shown. Dotted lines indicate planned access ways; the actual alignment of these can vary (may be straight, or curve to either side) as long as the indicated end point connections are achieved. All public access ways should comfortably accommodate pedestrians. See the following pages for priority considerations for updates to specific streets and other public access ways, with attention to street section widths, and 2.3, Bicycle Facilities, for locations of priority bike facilities.

■ Where future public access ways (streets, Green Ribbon, other walks) are shown upon development parcels, public access easements or dedication of land to the County should be required as a condition for redevelopment. This will ensure equitable access by nearby residents and other visitors who may wish to enjoy these spaces which can range from new corridors and/or widening of existing corridors. Corridors may accommodate pedestrian, bike, and vehicular modes as appropriate to location. See the Street and Path Network diagram for more detail on access way locations.

■ The diagram shows desired connections to be made across and between sites and the existing block network; it is not meant to specify a specific right-of-way or final alignment, and the specific location of connections may shift based on needs and phasing of redevelopment.

■ Throughout Pentagon City, all streets and paths should be designed to accommodate substantial pedestrian traffic with a minimum 8 foot clear zone provided along each sidewalk or pedestrian pathway. In some locations, particularly in places with significant transit service and other uses that will generate high volumes of pedestrians, a wider clear zone should be provided. Wider clear zones should be provided on S Hayes Street and 12th Street S.

■ The Pentagon City Sector Plan’s pedestrian recommendations exceed those listed in the Pedestrian Standards of the MTP in such locations as the future 11th Street S, where pedestrian accommodations may be provided alongside an alley condition before redevelopment of the site to the north. In such instances, the width of the clear zone may be reduced for an interim condition; the final sidewalk should achieve the minimum 8 foot clear zone.

■ Encroachment of the cafe zone into the clear zone is highly discouraged and should be avoided.
New access ways, including pedestrian access ways, created through redevelopment ensure an inter-connected block network.

DISCLAIMER: THIS FRAMEWORK SHOWS DESIRED CONNECTIONS TO BE MADE ACROSS AND BETWEEN SITES AND THE EXISTING BLOCK NETWORK. IT IS NOT MEANT TO SPECIFY A SPECIFIC RIGHT-OF-WAY OR FINAL ALIGNMENT. THE SPECIFIC LOCATION OF CONNECTIONS MAY SHIFT BASED ON NEEDS AND PHASING OF REDEVELOPMENT.
# RECOMMENDED MULTI-MODAL IMPROVEMENTS BY STREET

<table>
<thead>
<tr>
<th>STREET</th>
<th>TYPICAL WIDTH</th>
<th>PLANNED &amp; PRIORITY IMPROVEMENTS</th>
<th>BIKE IMPROVEMENTS</th>
<th>TRANSIT, CURBS, CARS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S Joyce Street</strong></td>
<td>100’ north of 15th Street</td>
<td><strong>Recommendation:</strong> add 30’ easement along western edge to accommodate broader sidewalk, physically separated bikeway, potentially two-way from Army Navy Drive to S Hayes Street. Relocate S Joyce Street to the west south of 15th Street S to enable contiguous expansion of Virginia Highlands Park.</td>
<td>Minimum 8’ clear zone for passage along sidewalks. Provide <strong>safer crosswalks</strong> at non-signalized crossing locations, including at Green Ribbon. Could reduce crossing distance through curb extensions, additional rapid flashing beacons where appropriate. Integrate green ribbon with <strong>sitting and design of new buildings</strong> to make walkways comfortable and inviting.</td>
<td>Consider adding <strong>separated bikeway</strong> through reallocation of lanes or associated with development at River House. Coordinate with improved bike facilities north of Army-Navy Drive connecting to Columbia Pike. Implement a low-stress bicycle route on realigned S. Joyce Street, or via a parallel off-street connection.</td>
</tr>
<tr>
<td><strong>S Hayes Street</strong></td>
<td>200’ existing (County and easements)</td>
<td><strong>Recommendation:</strong> S. Hayes Street study will determine specific long-term public easement needs along the western edge of the Green Ribbon, where the existing service drive is located. Near-term infill-development may result in interim improvements to the Green Ribbon if service drive is required for operation of existing tenants. As part of further transportation analysis, rethink how right-of-way is allocated. The volume of transit and other bus vehicles and competition for curb space are important factors to any reorganization of the S Hayes Street right-of-way.</td>
<td>Widen existing 8’ sidewalks to at least <strong>12’ clear zone for passage</strong> in conjunction with Green Ribbon walk.</td>
<td>Include <strong>separated bikeway</strong>. Options include utilizing the space in the existing median, which is currently underperforming as public and environmental space. Constraints due to the location of the existing Metro tunnel beneath the S Hayes Street median may make that infeasible. Other options include: separated two-way bikeway along the west side of S Hayes Street, separated bikeways on both sides of S Hayes Street, or others that may become possible through future study and/or roadway changes.</td>
</tr>
<tr>
<td>STREET</td>
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<td>BIKES</td>
<td>TRANSIT, CURBS, CARS</td>
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| S Fern Street | 75’ existing (wider north of 11th Street S) | **Recommendation:** 12’ public easement on along western edge (and/or east at PenPlace) to accommodate separated bikeways, Army Navy Drive to 18th Street S  
*The existing subterranean garage may possibly remain in place; the 12’ easement is intended to provide at-grade pedestrian passage and biophilic streetscape at grade, working around the constraints of the existing garage infrastructure.* | Enhanced bicycle facilities throughout study area (constraints from Army Navy Drive to 18th Street S may require allocation of additional right of way through redevelopment or other changes. Coordinate with improved bike facilities north of Army-Navy Drive linking to Pentagon and Potomac riverfront | |
| S Eads Street | 90’ existing | **Minimum 8’ clear zone** for passage along sidewalks. Many existing deficiencies in pedestrian facilities will be addressed through approved developments and capital projects in the pipeline  
Provide safe crossings at **Green Ribbon** and robust connections to public spaces in PenPlace, Met Park, and New Park at S Eads Street | Separated bikeways throughout study area | |
## Recommended Multi-Modal Improvements by Street

<table>
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<tr>
<th>STREET</th>
<th>TYPICAL WIDTH</th>
<th>PLANNED &amp; PRIORITY IMPROVEMENTS PEDESTRIANS</th>
<th>BIkes</th>
<th>TRANSIT, CURBS, CARS</th>
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</thead>
<tbody>
<tr>
<td>11th Street S and other new public access ways</td>
<td>60’ minimum typical</td>
<td>Minimum 8’ clear zone for passage along sidewalks. Safe, inviting pedestrian facilities should be provided along all public access ways.</td>
<td>Safe, inviting bike facilities should be provided along all public access ways.</td>
<td>Ultimate mix of transportation modes to be determined by corridor, but a mix of pedestrian, bike, and vehicular facilities is encouraged wherever possible. Some public access ways may accommodate motor vehicle travel while others accommodate solely pedestrians, or pedestrians and bikes. Between S Hayes and S Fern Streets, redevelopment of both the Brookfield and Lincoln Place (DEA Site) parcels should each include public passage of both pedestrians, cyclists, and vehicles along the 11th Street S corridor, and in a manner that accommodates a conventional “complete street” upon redevelopment of both parcels. An interim condition prior to redevelopment of both parcels may be necessary. Between S Fern Street and S Eads Street, public passage of both pedestrians and cyclists along the 11th Street S corridor at the PenPlace parcel should be accommodated.</td>
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</table>
### RECOMMENDED MULTI-MODAL IMPROVEMENTS BY STREET

<table>
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<th>BIKE IMPROVEMENTS</th>
<th>TRANSIT, CURBS, CARS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>12th Street S</strong></td>
<td>90’ west of S Fern Street; 110’ east of S Fern Street. <strong>Recommendation:</strong> 1 to 5 feet of additional width desirable both sides west of S Fern Street to enable minimum 10’ clear sidewalks and 6’ planting/furniture zone</td>
<td><strong>Minimum 10’ clear zone</strong> for passage along sidewalks. Provide safe crossings at <strong>Transitway</strong> median bus stops and <strong>Green Ribbon</strong> and robust connections to public spaces at Brookfield and PenPlace sites. Encourage allowance and facilities for public use of landscaped areas between existing Costco building and sidewalk.</td>
<td>Approved capital project includes a two-way cycle facility under the Richmond Highway bridge, linking the future two-way physically separated protected bike lane planned for Army Navy Drive to a planned off-street trail heading to Crystal City Metro Station. This cycle facility will provide a bike link to Long Bridge Drive.</td>
<td>Approved capital project will create bus <strong>Transitway</strong> between S Hayes Street and S Eads Street, primarily occupying center lanes. Bus stops to be located in median at S Hayes Street and S Elm Street. Review <strong>curbside management</strong> at Brookfield and PenPlace parcels as part of proposed redevelopment.</td>
</tr>
</tbody>
</table>

| **15th Street S** | 100’ existing | **Minimum 8’ clear zone** for passage along sidewalks. Many existing deficiencies in pedestrian facilities will be addressed through approved developments and capital projects in the pipeline. Provide safe crossings at **Green Ribbon** and robust connections to public spaces in Virginia Highlands Park, Met Park, and Pentagon Centre (future) | **Separated bikeways** throughout study area, although there are known constraints between S. Elm Street and S. Hayes Street. | The east-west connections across the Richmond Highway corridor at **15th Street S and 18th Street S** are pivotal to the connections between Pentagon City and Crystal City, as well as connecting to regional trails and rail systems. Improvements to the comfort of non-auto travelers will be pivotal to connecting Pentagon City to other areas without reliance on private auto. |
Network of Public Access Ways

The diagrams on the following pages indicate the layout and width of the principal existing streets and intersections.

In some cases, the framework calls for expanding the width of existing street corridors where necessary to accommodate potential sidewalk widenings and/or bike lanes that are physically separated from traffic. In most cases these also maintain or add space for additional street trees and/or public open space. These proposed widenings are kept to a minimum, since very broad streets can detract from the pedestrian experience—South Hayes and South Joyce Streets provide evidence of this. Where further analysis and study indicates that it is possible to achieve improved pedestrian and bicycle accommodation through reallocation of the existing right-of-way, instead of widening, that strategy should be pursued.

The proposed framework fills pedestrian and bike network gaps that have long been acknowledged. Some new connections may not come for decades due to existing obstacles, but many of the most important ones can be implemented within the coming five years as part of contemplated redevelopment and ongoing County investments.

One common measure of the capacity and resilience of public urban access networks is intersection density. Higher intersection densities—meaning more frequent crossings of streets—typically produce a higher quality walking environment due to more choices of potential paths for travel, more direct routes, greater number of streetfront destinations, and decreased vehicle speeds. A more comprehensive grid with frequent intersections also provides slower speeds than wider arterials, promoting a safer environment for all modes. Cyclists gain the benefit of smaller, slower streets with less fast-moving cars competing for space, as well as additional pathways on which to plan dedicated bikeways.

The LEED for Neighborhood Development sustainable design standard calls for at least 140 intersections per square mile as a prerequisite, and perimeter street connections at least every 800 feet. Today, the Pentagon City study area has under 90 intersections per square mile (using 0.3 square miles as study area size), and multiple intervals between streets exceeding 800 feet. Previously approved, but not yet implemented projects would increase intersection density to 107. The proposed framework adds public access ways (including streets with vehicular travel where possible, but also pedestrian-only or pedestrian/bike access ways) so that they are located no more than 500 feet apart where possible. New public access ways achievable in five to ten years would increase intersection density to 153 per square mile, exceeding the LEED-ND standard. Additional connections possible over the longer term would increase density to 170. This doubling of intersection density in Pentagon City will exponentially increase options and convenience for multi-modal travel in 22202.
**Intersection Density Analysis**

**Proposed Street and Path Network**

<table>
<thead>
<tr>
<th>Category</th>
<th>Category Count</th>
<th>Cumulative Count</th>
<th>Density (Over 0.3 Sq. Mi.)</th>
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<tbody>
<tr>
<td>Existing</td>
<td>26</td>
<td>26</td>
<td>87</td>
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</table>

**Right of Way**
- Less than 50’
- 50’ to 69’
- 70’ to 79’
- 80’ to 99’
- 100’ to 119’
- 120’ to 149’
- 150’ to 179’
- More than 180’

**Sources:** Arlington County CPHD Estimates as of January 1, 2020 at the Census block level.
### Intersection Density Analysis

**Proposed Street and Path Network**

<table>
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<tr>
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2.2 Transit

In order to achieve the Pentagon City planning principles, the Sector Plan recommends improving transit frequency, travel time, and capacity over time as conditions support.

Transportation planning centered around road traffic has historically followed the principle that more building density results in more traffic, leading to increased road congestion and thus decreasing the usability of the road system for drivers. In contrast, rapid transit makes possible, and benefits from, increased density in urban centers such as Pentagon City. Transit provides a space-efficient way to move large numbers of people, which provides the means for more development and density, which in turn generates more riders, which justify higher-quality service. Broadly speaking, more riders mean trains and buses may run more frequently, at a lower per-person cost that can then translate to lower fares or operating subsidies, thus increasing the usability of the transit system for riders and encouraging further growth. As Pentagon City redevelops over time, it will be important to continue to plan for and invest in a robust network of high-quality, high-capacity transit to support the increased number of trips to, from, and within the area.

Metrorail

In 2019, the Pentagon City Metrorail station at 12th Street S and S Hayes Street had an average of approximately 12,500 faregate entries per day. This number was down approximately by 4,000 from its peak in 2011, and further declined to just 1,900 during the first quarter of 2021 amid the global Covid-19 pandemic. At pandemic-related ridership levels, rail service is supported by emergency federal operating funds, and will not be sustainable unless riders return to the system. Simply put, Metrorail needs additional riders. Likewise, Pentagon City needs residents, workers, and visitors to use Metrorail in large numbers, in order to support Pentagon City’s regional destinations and potential scale of redevelopment.

This image shows the average daily Metrorail boardings at the Pentagon City station over the last decade.
Source: WMATA Rail Ridership Data Viewer
https://www.wmata.com/initiatives/ridership-portal/Rail-Data-Portal.cfm

Ridership at Pentagon City increased gradually from the station’s opening in 1977 until 2011, as the Metrorail system developed and as Pentagon City grew denser. From 2011 until 2018, ridership declined due to nationwide trends such as ride-hailing supplanting some transit trips, as well as service interruptions caused by WMATA’s attention to address long-term maintenance needs. By 2019 these trends were reversing, and ridership was growing once more. The Covid-19 pandemic caused a sharp decline in 2020 due to stay at home orders, the overall decrease in travel during that period, and reduced train frequency resulting in less convenient travel. Despite the overall decline, with traditional peak commuting in particular
decline, Pentagon City retained roughly 25% of its pre-pandemic ridership, indicating the station’s important role in providing service for essential workers, residents, and visitors.

Critically, these trends simultaneously indicate:

- the ongoing importance of providing service even without many traditional 9-5 office commute passengers;
- the need for more riders to financially support the system; and
- available capacity for Metrorail to accommodate significant increases in passengers.

Using WMATA’s SmartTOD Scenarios Module, the study team modeled the rail ridership impact of a new development scenario consisting of net increases of approximately 7,000 residential dwelling units, 540,000 square feet of office space, 20,000 square feet of educational space, and 83,000 square feet of retail. This development would generate about 8,600 additional average daily Metrorail trips, at pre-pandemic trip generation levels. These trips would add $6.6 million in fare revenue to WMATA annually.

As new development comes to Pentagon City, their review will need to focus on key issues that can support this anticipated increase in Metrorail usage. Many of them fall under the umbrella of Transportation Demand Management (TDM) which inside the Pentagon City area includes access to the Metrorail station for pedestrians, bicyclists, and bus riders, and the passenger capacity of the Metrorail tunnel.

The Metrorail system has adequate capacity to accommodate the ridership increases associated with this plan. However, if ridership increases significantly beyond 2011 levels across the region, the rail system’s constraint of 26 trains per hour per track segment could result in congestion. Such a scenario is beyond the scope of this plan, but in such an event capacity could be increased via strategies such as traction power upgrades facilitating more eight-car trains, railcar layout enhancements, rider shifts to modes such as commuter rail and regional bus, track geometry improvements, and ultimately even new Metrorail lines. Of the two Metrorail corridors in Virginia—Silver/Orange/Blue and Blue/Yellow—the Blue/Yellow corridor that is home to Pentagon City is significantly less crowded than the others, with more excess capacity available for future growth like that envisioned in this plan.

**Pentagon City Metro Station Improvements**

In the near-term, access to the Metro Station will be improved via a new elevator on the east side of S Hayes Street. In the longer term, an additional entrance may be considered if capacity is needed.
Public Bus System

The Pentagon City Planning Study incorporates near-term upgrades already underway to improve bus access to and within Pentagon City, including these critical projects:

- **Crystal City-Potomac Yard Transitway:** The existing bus-only lanes in Crystal City will be extended into Pentagon City, giving bus riders faster, more reliable, and more direct trips. With the completion of the segment through PC, this will provide a premium surface transit option from the Braddock Road Metrorail Station in the City of Alexandria to the Pentagon City Metrorail Station.

- **Pentagon City Center busbays projects:** Arlington is working with the Pentagon, WMATA, and other partners to convert the surface parking lot between S Joyce Street and Hayes Street along Army Navy Drive into a new bus station, providing convenient stops and layover space for key bus lines in Northern Virginia.

- **Columbia Pike Premium Transit Network:** Improved bus service along Columbia Pike will combine the existing 16G and 16H routes into a new 16M route, and extend service to Crystal City via the Transitway. Image provided by County DES.
Public transit buses function similarly to Metrorail, in the sense that increased visitor, population, and job density increases its ridership and usability. During the Covid-19 pandemic, ridership on buses did not decline nearly as significantly as it did on rail. Although bus stops are spaced throughout the Pentagon City study area, the bus stops at the corner of 12th Street S and S Hayes Street in particular serve most riders either entering or exiting the area.

Buses are a critical mobility method of accessing Metrorail and for trips between Pentagon City and nearby neighborhoods, including most prominently Crystal City, Potomac Yard, and communities along Columbia Pike, Old Town North, and Braddock East. Improved functionality of buses is therefore critical to supporting a denser Pentagon City with higher transit mode share. Increased ridership is expected as the transit system expands locations served and frequency.

Completion of the Transitway Extension to Pentagon City and the City of Alexandria, and the Columbia Pike Premium Transit Network, will improve bus service significantly. Over time, as densities in the Pentagon City-to-Potomac Yard corridor increase, Metroway service frequency is planned to increase as well. Buses operating in the Transitway will see speed and reliability improvements compared to current conditions, whereas buses operating in mixed traffic with cars are likely to face reduced speed and reliability. Over time, it may become necessary to add more bus priority improvements throughout Pentagon City.

With the Transitway and Columbia Pike network, the intensity of buses and riders using stops at 12th Street S and S Hayes Street is expected to increase further. It’s possible, though not yet known, that some bus routes currently using 15th Street S will shift to 12th Street S when the Transitway is open. Due to the volume of bus riders transferring to Metrorail, the bus stops located at 12th Street S and S Hayes Street already serve as many bus passengers as some Metro stations serve rail passengers. As a result, it is critical that transit buses can continue to stop as close to the Metrorail entrance at 12th Street S and S Hayes Street as possible.
As important as the corner of 12th Street S and S Hayes Street is for buses, both in terms of stopping and layover, the clustering of so many users and multiple modes of travel directly at this location also creates conflicts. Buses, private shuttle buses, motorcoaches, ride-hailing vehicles, and delivery vehicles all use the S Hayes Street curb, crossing over existing bike lanes to do so. Separating these users from each other to the greatest extent possible would improve safety and operations. However, due to the nature of bus riders using these stops to transfer to Metrorail, the bus stops cannot be moved further from the Metrorail entrance. There may be opportunities to use the median curb more effectively, perhaps with bus stops in the median, however feasibility of such options would require further study.

Average daily ridership boardings and alightings at bus stops in Pentagon City show the importance of S Hayes Street to bus service. There are more bus riders using the stops on S Hayes Street than there are riders at some Metrorail stations in the system. Prepared by County DES.
Private shuttle buses serving destinations such as nearby hotels, apartment buildings, and offices use the Hayes Street curb similarly to transit buses, and need close access to the Metrorail station at 12th and Hayes. These buses are important to riders’ ability to access Metro, but do contribute to the cluster of modes competing for curb space close to the Metro station. Larger private tour coaches carrying groups to and from the Fashion Centre mall also need dedicated boarding/alighting areas as close to the mall entrance as practical, with a secondary need for staging nearby. While staging activities do not need to be located directly on Hayes Street, they also cannot be located farther than a few-minutes drive, if coaches are expected to use them.

Although reliable statistics regarding ridership of private buses are difficult to obtain, interviews with tour stakeholders indicate that the coach bus parking area along the mall side of Hayes Street (north of 12th) is adequate for boarding/alighting. However, it should not be reduced, as it is currently inadequate to accommodate both boarding/alighting and staging. Additional consideration should be given to converting the Hayes Street coach parking lane into coach pick-up/drop-off only, with an off-site staging area to be identified nearby.
2.3 Bicycle Facilities

Pentagon City was not originally planned for bicycles. Street upgrades have added on-street bicycle facilities to streets including S Hayes Street and S Joyce Street. A protected bike facility is planned along Army Navy Drive, portions of which are currently under construction while others will be delivered through the PenPlace redevelopment.

The MTP Bicycle Element was most recently updated in 2019 and continues to improve the County’s network of bicycle trails by responding to the changing landscape for bicycling in urban areas, while guiding the County’s programs and policies. Concurrent with the Pentagon City Planning Study, Arlington County staff have also undertaken a study of the bike network in Crystal City, east of Richmond Highway, which will continue to remain inter-connected with the Pentagon City neighborhoods. Engagement on design alternatives has been ongoing, with an anticipated consideration by the Arlington County Board in fall 2021 and implementation goal of 2024. An implementation document is anticipated to be released in Spring 2022 that will outline project timelines as well as delivery methods for staff to track progress towards the 2024 goal.

The enhancements will improve the bicycle comfort level in the Crystal City area, while enhancing east-west connections to Pentagon City that are crucial to the success of the increased bicycle mode share in the Pentagon City area. Collectively, the bicycle network provides comfortable connections to activity centers, Metrorail and VRE, regional trail systems, and ease of access into DC and Alexandria.

Notable improvements proposed in the draft Sector Plan include a mixture of fully and partially buffered/protected bike lanes on 15th Street South and 18th Street S and a pair of protected bike lanes on Crystal Drive and Clark Street/Bell Street. Separated bikeways are current best-practice for providing safe, low-stress, all-ages, bike connections along arterial and connector streets, and should be incorporated wherever space physically permits.
The framework would provide over 2 miles of potential new separated bikeways in Pentagon City.

### Bicycle Comfort and Level of Traffic Stress

Level of Traffic Stress (LTS) is a rating given to a road segment indicating the traffic stress it imposes on bicyclists. In our analysis, levels of traffic stress range from 1 to 4, as shown on the previous page.

Increased development density in the study area will require increases to the non-auto share of travel in order to avoid over-reliance on automobiles for most trips, which would congest and exacerbate the street network. This shift can improve travel times of transit and other buses. To achieve this goal, a network of low-stress bicycle facilities will be needed and supported by safety measures within the road network.

This would include stronger connections to other bicycle facilities and destinations outside of the study area, and important regional trails located in these areas, particular emphasis can be made on connections crossing Richmond Highway to access Crystal City and Potomac Yard. Strategic investments in an improved, low-stress network of bicycle facilities will face constraints in certain locations due to existing patterns of development and availability of right of way. Build out of the Potential Bike Network, shown on the following pages, can also be facilitated by redevelopment of adjacent properties.

### Micromobility

Walking, bicycling, scooters, and other smaller-scale mobility devices are already considered critical modes for short-distance circulation trips within Pentagon City and other nearby neighborhoods, and will only take on greater importance as the community evolves. Likewise, as more travelers use transit for longer distance trips given the planned improvements in the Crystal City and Pentagon City areas, walking and micromobility modes will take on increased importance as “last-mile” access to transit. Accommodating increased density in Pentagon City will require walking and micromobility to be prioritized as convenient and safe options for travel, requiring improved sidewalks and bikeways, and potentially creating mobility hubs which combine several modes at a single location (such as bikeshare at bus stops). The proposed Green Ribbon is expected to contribute in this effort by doubling as a transportation network, helping to provide off-street travel arteries, and close the existing gaps within the on-street network.
2.3 Bicycle Facilities (continued)

To make travel by bike an attractive and safe option for more people, all development blocks in the study area should be accessible via separated bikeways that are protected from motor vehicle traffic. Separated bikeways are current best-practice for providing safe, low-stress, all-ages, bike connections along arterial and connector streets, and should be incorporated wherever space physically permits.

Policy Approach

- The diagrams on the following pages depict planned bike facilities as well as potential corridors for new or redesigned bike facilities. More study is required to verify the design of new bicycle facilities along these corridors, but this Plan recommends a reservation of easement area along S Joyce, South Hayes, and S Fern Streets to accommodate future separated bikeways. Final network design should be coordinated with the Crystal City Bike Network and bike facilities in other areas to achieve protected bike routes to destinations including Columbia Pike, Long Bridge Park, Mount Vernon Trail, and Four Mile Run Trails. These and additional bicycle network improvements should be guided by the goals for reduced level of traffic stress.

- Due to space limitations, not all parcels can likely be served by separated bikeways. Thus, the final approach to a destination may require a cyclist to ride less than a block on a slow speed, low volume comfortable street or along a sidewalk.

- Bicycle parking should be strategically located to provide safe access to routes and avoid conflicts with high-levels of pedestrian activity.

- The Green Ribbon (see 3.4) is principally a walking path. While it will accommodate slow-moving cycling/micromobility and may be used for final approach to a destination, it is not intended as a high-speed trail and will be designed to encourage slower speeds. In some locations, parallel bikeways alongside the Green Ribbon are indicated to accommodate higher volumes and speed of bicycle travel. Bike parking along the Green Ribbon is appropriate at destinations.

- Existing County standards for bike parking in new buildings will continue to be used as Pentagon City redevelops. New buildings should include both interior bike parking, such as bike rooms, and exterior sidewalk-adjacent bike racks, as part of site plan approval, following County standards. Interior bike parking will generally be used by building residents and workers, while exterior racks will be generally used by visitors and customers. County capital projects located in Pentagon City should continue to incorporate bike parking where needed. In addition to the current site plan conditions for bicycle parking, facilities should accommodate a wide range of users, including electric and cargo bikes. Covered bicycle parking for visitors is encouraged.
Separated Bikeway – An on-street, off-street, or trail facility that has been specifically developed or designated for bicycle use. Bikeways may be designed for the exclusive use of persons riding bicycles or shared with pedestrians and micromobility devices, such as electric bicycles and electric scooters.

Buffered Bicycle Lanes – Buffered bicycle lanes include a marked buffer area to provide greater separation between bicyclists and motor vehicles than the standard bicycle lane. The marked buffer space may be on one or both sides of the lane depending upon the street width and other conditions.

Local Streets – Some local streets provide a low-stress travel option for bikes, due to their design configuration, lower volumes and vehicle travel speeds. Though these routes are not indicated on the Potential Bike Network map, they also provide comfortable travel options for bicyclists.
**Mobility Hub** – Arlington County has begun locating mobility hubs to accommodate bike, scooters, and other mobility services that can be particularly important providing last mile connections to transit services (top: curbside mobility hub in Rosslyn). As part of site plans in Pentagon City, projects may locate mobility hubs with additional amenities, including signage, repair stations, and more secure parking like the example below (Berlin).
Bicyclists can safely use low-volume local streets without the need for dedicated bikeways. Some bike facility improvements shown here may be implemented by repurposing existing general travel lanes, while others may utilize additional right-of-way, depending on findings from further analysis.

DISCLAIMER: ROUTES ARE CONCEPTUAL AND PRECISE ALIGNMENTS MAY VARY.
2.4 Development and Transportation Trends

Arlington studied development and transportation trends in the 22202 area from 1980 to 2019. Important findings included:

- Since 2000, average weekday daily traffic dropped 18% even as developed building area increased 28%. This period included a time of high office space vacancy peaking at 24% in 2013 due to economic conditions and BRAC relocations, but by 2019 the area had its highest-ever amount of occupied office space owing to reduced vacancy and new construction. Traffic levels in 2019 registered a minor 1.4% increase over their lows in 2015, but remained far below their 2000 peak.

- Since 1980, average weekday daily traffic volume counted at five key points along Arlington Ridge Road and 23rd Street S decreased 3.2% even as developed building area in 22202 doubled. This in part reflects increased transit use since the 1976 opening of the Pentagon City and Crystal City Metro stations, and parallel reinforcement of bus services, both by occupants of new transit-oriented development and by residents of long-established neighborhoods. New and improved pedestrian and bike facilities have also reduced the prevalence of driving trips. All of Arlington’s Metro station areas have demonstrated comparable shifts in travel behavior according to data collected by Arlington County and its partners.

- There is significant untapped capacity on Metrorail. Weekday passenger boardings at the Pentagon City and Crystal City stations peaked in 2011, then dropped until 2016, and have increased again, registering only a 6% increase since 2000. Since approximately 2000 the Pentagon City and Crystal City stations have had similar daily usage, and their service has substantial capacity for additional riders. Preliminary analysis indicates that 10 million square feet of development could add roughly 8,000 weekday riders, representing an increase of about a third over the 2019 combined totals for Pentagon City and Crystal City, and a slight increase over the 2011 peak. Increased Metrorail ridership can benefit transit users by justifying additional service.

- 24% of households in the Pentagon City, Crystal City and Potomac Yard areas do not own motor vehicles, utilizing available walking, transit, biking, car-share and ride-hail opportunities instead. The number of car-free households in these areas grew by 1,100 between 2013 and 2018. This demonstrates that these areas already enable living without owning a vehicle. A 2017 survey of residents of Crystal City’s North Tract Lofts indicated that residents made only 21% of their trips by single-occupancy vehicle.

Several other conditions apart from the historical analysis demonstrate untapped potential for increasing the share of trips made by foot, transit, and bike:

- Pentagon City has extensive bus service, including Arlington’s heavily-used Columbia Pike corridor service and the Metroway service south to Alexandria, served by a dedicated Transitway that will be extended into Pentagon City along 12th Street to South Hayes Street. A new bus facility across Army-Navy Drive from the Fashion Centre will also supplement the heavily used bus bays at Pentagon and Pentagon City Metro stations.

- Arlington is investing $270 million in 22202 area transportation infrastructure through ongoing and planned capital projects. These include the 12th Street Transitway, reconfiguration of Army-Navy Drive, and new bike facilities on South Eads Street and 15th Street.

- Conditions along the existing pedestrian network are inconsistent. While portions of it are heavily used and/or of good quality, it
suffers from missing connections, inadequate width or quality, and challenging street crossings in many places. Correcting these gaps and inadequacies would significantly improve the convenience, appeal, safety, and capacity of the study area’s walking infrastructure.
2.5 Transportation Demand Management (TDM)

Mode Split Findings for Pentagon City/Crystal City

Every 10 years, Arlington County participates in the Regional Travel Survey (RTS) conducted by the Metropolitan Washington Council of Governments (MWCOG). The RTS collects information on household and individual travel behavior in order to guide transportation planning and update the travel demand model for the region.

Arlington County provides funding to collect data from additional households, as part of the Arlington Oversample, in order to provide data about planning areas, including: Rosslyn-Ballston, Columbia Pike, Pentagon City-Crystal City (Route 1 corridor), and Shirlington. The findings below are from Arlington County’s Oversample and Special Analysis of the 2017/2018 MWCOG Regional Travel Survey unless otherwise noted:

- Travel behavior of Arlington residents reflect a lower level of drive alone trips compared to the region. Drive alone trips account for 35% of all trips made by Arlington residents. Route 1 residents make even less: 25% of trips are by drive alone.
- Non-Single Occupancy Vehicle (SOV) modes account for high shares of trips made by Route 1 residents: 32% trips are made by walking, and 17% of trips are by transit.
- Aggregated building-level data from five residential buildings located in Pentagon City and Crystal City show that 25% of trips to work were SOV trips, while 24% of non-work trips were by SOV. These mode splits were taken from data aggregated for the following residential buildings in Pentagon City and Crystal City: Lofts 590 (2013 data), The Gramercy (2013 data), The Millennium (2013 data), The Bartlett (2019 data), and Crystal City Lofts (2015 data).

- Of the trips that Arlington residents make that end in the Route 1 corridor, 23% are drive alone.
- Employer-provided commuter assistance services (such as smarttrip Metro cards) are a valuable factor in promoting non-SOV travel among Arlington workers. According to data from the 2019 State of the Commute Arlington Analysis, 57% of respondents who worked in Arlington used employer-offered benefits or support services for commuting. Of Arlington workers who had access to these services, 59% used transit/vanpool subsidy.
- According to data from the 2019 State of the Commute Arlington Analysis, 43% of respondents who are Arlington residents commuted using transit modes (rail or bus), compared to 32% of respondents who are Arlington workers.
Policy Approach

- **Single-occupancy vehicle mode split maximums.** New development and significant renovations of existing buildings should include adoption of new performance standards for mode splits and trip generation. In the near-term, single-occupancy vehicle trips can make up no more than 30% of trips for office and residential uses, with the goal of reducing the mode share even further to 25% for office and residential uses with mid-term redevelopments. Single-occupancy vehicle trips should also make up no more than 20% of trips for hotel uses, and 5% of trips for neighborhood retail/commercial uses associated with any future redevelopment. These percentages reflect recently-approved developments in the area, and may be monitored and adjusted in the future through the MMTA and TDM monitoring process.

Generally, office uses are more challenging to reduce single-occupancy vehicle trips than residential because of their reliance on regional transportation infrastructure. Residential mode split is easier to affect because site plans and County plans more directly affect the built environment related to the transportation infrastructure and use mixes in the immediate vicinity that influence the mode choice of residents. As a result, lower mode split for residential projects may be achievable with significant TDM. The MMTA process will establish acceptable mode splits for any given development.

- **Performance monitoring.** Mode split and trip generation for existing uses and new development will evolve over time—to decrease or hold steady vehicle trips and increase transit, walking, biking, and micromobility trips. Changes to the performance requirement in the future can be calibrated based on the Household Travel Survey, TDM reporting, and other analysis by DES. Annual monitoring may be required at the district level to collect sufficient data to gauge and address performance issues.

- **Telework support.** While long-term effects of the Covid-19 pandemic are still emerging, rates of telework and/or modified schedules will continue to be an important factor in TDM.

- **Employer strategies.** Employers will need to work with Arlington Transportation Partners to implement the most effective TDM strategies, including parking cash out programs and shared vehicle parking.

- **Parking management strategies.** In addition to the investments in the multi-modal network detailed in the plan, future changes to parking requirements and operations may be required to support performance-based TDM. Parking strategies that may be appropriate, pending further study, include parking maximums as well as conversion of underutilized parking to other uses.

- **School opportunities.** Potential development of a new elementary school in the 22202 area should include TDM and bike parking in line with County use permit requirements, as well as safe routes for walking and biking to school by students.

**CHANGE FROM PAST POLICY?**
Builds on existing policy—including TDM monitoring and the success of the County’s multimodal transportation planning—to emphasize performance standards for new development. In order to implement performance-based TDM, a new standard site plan condition for Pentagon City should be developed, including vehicle mode split maxima tied to the development approval, performance monitoring, and the ability to revise standards over time.
2.6 Parking & Servicing

PARKING

Policy Approach

- **Parking for Office Development:** The County’s office parking policy was adopted by the County Board in 2013 and is applicable for office uses developed through site plans within Arlington’s Rosslyn-Ballston and Richmond Highway planning corridors. Currently, minimum parking ratios are proposed for different areas with mitigation expected where less parking is proposed than is required by the policy. In the Pentagon City area the ratio is currently 1 space for every 975 square feet of office space. Mitigation takes the form of a monetary contribution to the County to support TDM programs for a specific property, and/or operating costs for transit and/or transportation infrastructure that supports transit, biking, and walking to/from the site. Each site is evaluated individually based on the site characteristics and proposal. Should a parking ratio higher than the established County policy be proposed, no mitigation would be expected in that scenario.

- **Parking for Residential Development:** Residential parking guidelines were adopted by the County Board in 2017 and are applicable for residential uses developed through site plans within Arlington’s Rosslyn-Ballston and Richmond Highway planning corridors; the guidelines recommend parking minimums based on distance to Metro and the type of dwelling units, with reduced parking minimums for Committed Affordable Units (CAFs) compared to market-rate units. The Pentagon City area has a minimum recommendation for market-rate units between 0.2 and 0.4 spaces per unit and for CAFs between 0.1 and 0.2 spaces per unit. Developers may choose to provide less parking than the requirement if they propose mitigation measures such as providing bikeshare stations and operating costs, additional bike infrastructure, or other transportation improvements.
parking beyond the minimum required by the site plan condition, and carshare spaces with a documented service agreement. The guidelines also recommend separate visitor spaces and provide recommended options for on-site and off-site sharing of spaces and mitigation for excess parking greater than 1.65 spaces per unit.

- Recommend no new structured parking above street level. Above-grade parking that is terraced into sloped topography, and screened from public access ways by occupied uses may be acceptable on a case-by-case basis. Consider applying a disincentive for above grade parking, such as requiring additional Transportation Demand Management (TDM) contributions.

- As part of the analysis of performance-based TDM, consider requirements for parking cash outs, and other strategies that address parking as a component of trip generation and mode split.

### SERVICING, PICK-UP & DROP-OFF

**Policy Approach**

- Service access (for loading/garbage pickup) should be located in areas where its presence is minimized on the main pedestrian networks, including by providing underground and interior loading. Service drives for pick-up and drop-off of passengers and packages should not be located between a building and the sidewalk.

- Curb space is managed by the County and uses may change over time based on demand. Curb space should be allocated appropriately based on uses and needs along street frontages including space for bus stops, shuttle stops, passenger pick-up and drop-off activities, loading zones, short-term parking, bikeshare stations, and micromobility corrals. Curb management includes enforcement.
2.7 Vision Zero

In 2019, the Arlington County Board adopted the principles of Vision Zero, which is “a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.” The Vision Zero Action Plan was subsequently approved in 2021, and provides a framework to achieve that vision using a data-based approach that includes historic data of known auto collisions. Within the Pentagon City Planning Study area, there are known “Vehicle Hot Spot” locations at the intersections of Army Navy Drive and S Joyce Street, and Army Navy Drive and S Hayes Street, and a known “Bicycle Hot Spot” location at the intersection of S Fern Street and 15th Street S. Additionally, S. Hayes Street between Army Navy Drive and 15th Street S is a known “High Injury Network Corridor.”

A range of capital projects which are currently in various planning, design and implementation stages will improve the hot spot locations, and will be studied for pre- and post-implementation effectiveness. Additionally, S Hayes Street, which has a high intensity of activity across all modes of travel, should be further studied for changes and improvements that could increase travel safety and improve the non-personal auto mode share. Such an analysis would be consistent with the County’s commitment to eliminate all travel related deaths and serious injuries.

Arlington County is currently undergoing a safety study of streets in the Pentagon City area, which will result in detailed, specific recommendations for transportation infrastructure investments to improve safety. Recommendations may include protected intersections for bicyclists, pedestrian refuge islands, curb extensions, improved street lighting, etc. This study is underway as of this writing. The eventual recommendations from the study should be implemented to promote a safer multimodal network.

The Vision Zero analysis provided by County DES staff indicates hot spots in the high injury network, as well as high injury corridors.
3. Public Space

The public space framework calls for increasing and improving the parks, plazas, green connections, and casual uses spaces throughout Pentagon City. The Green Ribbon serves as a connective thread, a biophilic experience, and a landmark for Pentagon City in its own right.

Throughout the planning process, Arlington community members stressed the importance of achieving an excellent public space network that fulfills the Pentagon City planning principles which are noted earlier in this Sector Plan. This involved the creation of a cohesive district, welcoming everyone to Pentagon City, creating places for people and nature, achieving global standards for sustainability, and offering safe walking, biking, micromobility, and transit options so that driving is unnecessary. Public space is critical to achieving all of these planning principles. The following pages include multiple strategies to increase and improve the public space network throughout Pentagon City, including:

- **Biophilia and Biophilic Design Approaches in Public Spaces** should reflect similar efforts within private properties to create more nature-based experiences in Pentagon City for all of who live, work, visit, and share culture here. Greening the boulevards of Pentagon City and improving streetscapes can help ensure biophilia is integral to the daily life and navigation of the district;

- Creating **New Parks, Plazas, and Casual Use Spaces** as part of redevelopment so that every person in Pentagon City can access a public space within a two block walk; and

- The **Green Ribbon**, a new signature network of biophilic walking paths connecting public spaces, destinations, and transit throughout Pentagon City and greater 22202.

This framework identifies opportunity for almost 10 acres of new public park, plaza, and green space as privately-owned public spaces, expanded parks, and Green Ribbon, helping people enjoy much more of Arlington’s public space system.
This illustration shows conceptual ideas for improvements to the corner of S Hayes Street and 15th Street S, including the Green Ribbon, streetscape elements, and a new gateway for Virginia Highlands Park. Specific improvements to Virginia Highlands Park, including design and activities, will be determined as part of a future park master plan process; elements labeled here represent potential examples. Improvements to the right-of-way, including intersection improvements and separated bikeways, must meet County standards. The ultimate design may not match illustration.

DISCLAIMER: THIS RENDERING IS AN ARTISTIC RENDITION OF ONE WAY THE PENTAGON CITY SECTOR PLAN VISION AND RECOMMENDATIONS FOR THIS ELEMENT CAN BE ACHIEVED, FOR ILLUSTRATIVE PURPOSES ONLY.
3.1 Biophilic Design

Biophilic design is architectural and environmental design that prioritizes human connection with nature. It applies to all scales of design, from a single site to a neighborhood to a region, but is most relevant and transformational in preserving, introducing, or re-introducing nature and natural analogues into higher density settings where nature is often less present.

The goal is to have regular, frequent interactions with nature because it is omnipresent, rather than a destination one occasionally visits to escape places that are devoid of nature.

Biophilic design is related to, but distinct from sustainable and resilient design approaches. Simply put, biophilic design is experiential, primarily focused on human interaction with nature. Sustainable design and resilient design have many overlapping tools and principles, but they tend to focus on quantitative measures of how systems perform and do not have to be experienced to meet those performance criteria.

While each approach to design and sustainable performance is slightly different, they are complementary and are often used together to create a healthy environment for the people, vegetation, and wildlife inhabiting them. Design in Pentagon City may include biophilic, sustainable, and resilient elements based on site conditions and priorities.
As illustrated in these examples provided by Arlington community members, biophilic design approaches should be part of the design of public space and transportation infrastructure.
Terrapin Bright Green’s “14 Patterns of Biophilic Design” offers a series of tools for understanding biophilic design opportunities and potential strategies for seizing those opportunities without identifying prescriptive design solutions. The patterns are organized into three categories:

**NATURE IN THE SPACE**

*the direct integration and experience of nature in a space*

- visual + non-visual connection with nature
- non-rhythmic stimuli
- thermal + airflow variability
- presence of water
- dynamic + diffuse light
- connection with natural systems

**NATURAL ANALOGUES**

*design that indirectly mimics or evokes nature*

- biomorphic forms + patterns
- material connection with nature
- complexity + order

**NATURE OF THE SPACE**

*spatial configurations that create interest as they are experienced*

- prospect
- refuge
- mystery
- risk/peril
Countywide Policy

On December 17, 2019, the Arlington County Board adopted the Biophilic City Resolution and in 2020 officially joined the Biophilic Cities Network, a network of cities from around the globe dedicated to improving the connection between residents and urban nature.

Arlington’s Biophilic Cities application listed five indicators for gauging success in reaching biophilic design goals:

1. Expanded **natural elements** within Arlington’s built environment, as well as **conservation of our natural resources**.

2. **Equitable access** to green spaces, parks, and other natural elements

3. Creation of publicly accessible **urban nature projects**

4. **Educational opportunities** for the community, including residents and development stakeholders, about the benefits of biophilic principles to further the presence of nature in our buildings, facilities, homes, and public spaces

5. Expanded **biophilic planning and design principles** throughout existing policies and processes, such as [Comprehensive Plan](#) elements, sector plans, site plans, park master plans, and multimodal transportation plans and projects
3.2 Tree Canopy and Biophilic Plantings in Public Spaces

**Principles for Pentagon City Public Spaces**
- Maximize plantings or other natural features across public and private properties in areas that are not heavily programmed with activities or events.
- Prioritize pedestrians and cyclists to provide generously sized, inviting design elements that contribute to a biophilic environment.
- Make public spaces welcoming and engaging from the street by relying on a nature to establish an inviting transition.
- Encourage casual use spaces for impromptu use and connection with nature.
- Create biophilic and diverse activity spaces that fit different age groups, needs, and experiences.

**Biophilic Design Guidelines**

The design of the Green Ribbon, public spaces, and streetscapes that make up the public space network framework—as well as private development sites—should employ the previously referenced biophilic design patterns. The success of biophilic design depends on the integration of patterns in the design of spaces rather than using singular elements. **This integration could mean:**

- Intentionally creating dynamic experiences that change by time of day or time of year
  *for example: activation of surrounding uses during the day and quiet in the evening; the color changes of flowers blooming and leaves changing color*

- Employing multiple patterns in concert, particularly combining patterns across the three pattern categories
  *for example: combining dynamic light with biomorphic forms and patterns; combining the presence of water with prospect*

- Engaging multiple planes (ground plane, wall, canopy, terrace, rooftop)
  *for example: ground cover, tree canopy, and intermediate vertical planting layers; sidewalk planters and green walls*

- Creative use of modest topographic variation, proportionate to the size of spaces, that assist in naturalizing otherwise flat areas, managing water, providing protection for plantings, and better defining spaces.
  *for example: surface contours, mini-berms, small mounds or ridges, natural boulders, and stone outcroppings*
Tree Canopy
This plan seeks to exceed 20% tree canopy across Pentagon City to be consistent with standards of Arlington’s Urban Forest Plan for urban corridors, as defined below. This minimum is higher than current standards for Rosslyn (15%) and Crystal City (17.6%) and reflects the most current County policy goals, as well as analysis developed by the Metropolitan Washington Council of Governments (MWCOG) to develop an integrated Urban Tree Canopy management approach for the region.

Tree canopy throughout Pentagon City is measured on development sites, public right-of-way, and public spaces. Redevelopment projects will be required to provide at least 20% tree canopy, including public right-of-way. Public spaces should provide additional tree canopy, based on the context of the space.

Policy Approach
- Provide at least 30% tree canopy in all public spaces.
- Provide at least 40% tree canopy in larger public spaces (those 1 acre in size or greater). This is comparable to the tree canopy achieved in Virginia Highlands Park as currently configured, as well as part of the redesign of Metropolitan Park.
- Planted areas must comply with the adopted County policies for landscape quality and tree canopy at the time of site plan application. Native species are encouraged. The desired species list will continue to be updated to reflect adaptation to climate change.
- Retain existing large caliper trees where possible.
- Include biophilic plantings, involving layering strategies, as part of the design of public spaces.
- Minimum tree canopy requirements may be adjusted for limited areas located directly above Metro Station entrances where necessary soil depth may be restricted by WMATA.

Tree canopy can be successfully incorporated into casual use public spaces.
3.3 Parks and Plazas

New parks and plazas will significantly increase the amount and quality of public space available and will make Pentagon City a more cohesive neighborhood that is better connected to the 22202 community, as well as a destination in its own right.

New parks and plazas create additional opportunities for enhancing biophilic qualities and low-impact stormwater management.

Policy Approach

- **Locate new public park or plaza spaces** so that everyone in the study area has convenient walking access to one within a ten-minute walk, per established Arlington policy. These spaces should generally be urban in character, with a mix of paved and planted areas and tree canopy designed to support intensive use by diverse users. See the facing page for priority destination park or plaza locations and minimum areas. Most of these locations are on private land, and their creation would be strongly encouraged and negotiated as a condition for increased development entitlements. Locations and areas are generally flexible in order to benefit from creative input from property owners, designers, and community members, as long as minimum amounts of public spaces are achieved. Most of the spaces will be designated as privately-owned public spaces (POPS) although some may become Arlington County property. Design of these spaces should occur through a park master planning process held concurrently with the review of the associated site plan. The design, program, and facilities of public parks and plazas should be consistent with Arlington’s Public Spaces Master Plan.

- **Ensure an adequate management plan and maintenance funding** is in place for all public parks and plazas, including the Green Ribbon. The initial integration of nature into all spaces will have a positive result, but one which may be compromised if ongoing maintenance and attention is not regularly provided. The County, property owners, the National Landing BID, and/or other stakeholder organizations will have a shared responsibility to ensure this urban habitat has ongoing benefits for all.

The Sector Plan enables over **5 acres of new parks and plazas** distributed across Pentagon City, including a more than **1 acre expansion of Virginia Highlands Park**.

- Improve walking, transit, and biking access to public spaces in conjunction with other Sector Plan objectives such as 2.1, Street and Path Network, 3.4, The Green Ribbon, and 3.5, Connections: 22202 and beyond. The connection to **Long Bridge Park**, Arlington’s fourth largest park and located about ½ mile walk from the study area, is particularly important.

Public Park Improvements

- **Virginia Highlands Park** is a well-established public park that should be expanded and updated. See diagram on the opposite page which displays the proposed expansion of Virginia Highlands Park onto a portion of the RiverHouse property, made contiguous through a relocation of S Joyce Street, resulting in a net park expansion at least 1 acre. Virginia Highlands Park may also be impacted by potential school development at the Aurora Hills Community Center site. Any future updates to the Virginia Highlands Park through a Park Master Plan should update the park’s design, programming, and facilities, taking these considerations into account.

- **Grace Hopper Park** should be improved to be more visible, more visibly public, and function better as a public space and center of place identity around the intersection of 15th Street S. and S. Joyce Street with the addition of a plaza. The diagram at right demonstrates a recommended swap of land area with the RiverHouse property and new pavilion building within the park as a means to advance this goal. The pavilion building could contain publicly-accessible amenities, community uses, and provide public restrooms. It’s ultimate need, function, and location should be confirmed as part of the Virginia Highlands Park master planning effort which would include the expanded park area secured through the RiverHouse land swap.
Potential dedication of existing green space coupled with County land on the northern edge of RiverHouse along Army Navy Drive, connecting to Prospect Hill Park.

Additional casual use space connecting S. Joyce Street and Pentagon Row Plaza to Green Ribbon network and forested open space fronting S. Lynn Street. Final open space configuration and balance between casual use and forested spaces will be considered in conjunction with the proposed development. As depicted on this map, the tower separation reflects maximum building heights permitted in this Plan and may decrease if proposed site plan represents significantly lower building heights.

Existing RiverHouse tree canopy should be preserved (generally up to 60 feet from western lot line and generally up to 40 feet from southern lot line).

Vehicular access to be maintained on 15th Street (south of Lynn Street).

A redesigned Grace Hopper Park could include a building with amenity uses, casual use spaces, and public art commemorating the legacy of Grace Hopper. The relocation of S Joyce Street could enable expansion of Virginia Highlands Park. A future master planning process for the park could identify needed facilities and amenities.

New plaza space provided as part of long-term redevelopment should create a variety of public green spaces along S Hayes Street, particularly when combined with the opportunity for linear park space along the Green Ribbon.

Long-term redevelopment will provide additional public spaces.

1/2 acre public plaza is inclusive of the Green Ribbon pathway in this location.

DISCLAIMER: THIS FRAMEWORK SHOWS DESIRED NEW PUBLIC SPACES. THE SPECIFIC LOCATION OF CONNECTIONS MAY SHIFT BASED ON NEEDS AND PHASING OF REDEVELOPMENT.
3.4 The Green Ribbon

This new signature public space element for Pentagon City responds to the strong community desire for safe, pleasant, and biophilic ways to walk throughout the broader 22202 area. The Green Ribbon will represent a dynamic and connective urban thread that will increase the amount of quality public space available in the study area. Additionally, the Green Ribbon will:

- Add areas for planting, enhancing biophilic qualities and low-impact stormwater management.
- Extend and enhance Pentagon City’s multi-modal network to be consistently safe and inviting for pedestrians and for other modes as appropriate to location. New access ways that fill gaps, and additional intersections that expand choice of route, would significantly improve access.

Policy Approach

- Create a connected network of generous, biophilic walking paths that achieve multiple goals:
  - A recreational path network connecting all people in and around Pentagon City with park facilities and other destinations in 22202 and beyond
  - New casual use spaces along the network, in various settings ranging from parks to active retail frontage
  - Increasing tree canopy and permeable, planted ground surface
  - Filling gaps in the study area’s pedestrian network where conventional streets would be difficult or inappropriate, with special attention to crossings
  - Unique sense of place, identity, and community through distinctive design and enthusiastic community use

The precedent images on the following pages illustrate examples of components designed to achieve the multiple goals of the Green Ribbon. These examples are meant to be inspirational, and should not constrain future design responses that achieve the goal of a biophilic experience.
The design of the Green Ribbon will vary by site and context, including whether the segment is part of a redevelopment project, pursued by the County on public property or right-of-way, or established on an existing site or access way in advance of redevelopment to enable greater connectivity. This example shows how the Green Ribbon could be integrated into development with interspersed frontage zone (including building access and outdoor spaces) and continuous, layered planting areas on both sides of the pedestrian path.

The section above shows a conceptual section of the Green Ribbon, including the pedestrian path and planting areas that make up the Green Ribbon, as well as adjacent frontage zones. These are not strict divisions—in most places, planting zones may intersperse within frontage area, or even into the pedestrian path. The frontage zone will vary by context; it may include further plantings, access to retail and services, outdoor dining, entrances or amenity spaces to residents, or other uses that help achieve an indoor-outdoor transition in redevelopment and help create a safe walking path. In some cases, the Green Ribbon may be located along right-of-way where there is a frontage zone on only one side. The design of the Green Ribbon through a site, and how redevelopment responds to it, should be an important topic for SPRC review.
Green Ribbon Design Guidelines

- Additional Design Guidelines for the Green Ribbon are attached in the Appendix, incorporating different design strategies appropriate for the varied contexts and sites the Green Ribbon will pass through in order to create a continuous, cohesive network.

- The clear pedestrian path should have a width of 8 to 12 feet, although wider areas may be possible or needed where the Green Ribbon comes to a plaza, Metro entrance, or other high-volume pedestrian space. Narrower widths may be possible on limited segments. On private property, the pedestrian path should incorporate biophilic features such as permeable pavers, natural analogues, or others that respond to the development context. On public right-of-way, the path must comply with County standards.

- Planting areas should be generous and layered to fulfill biophilic principles. The approach to planting should take into account seasonal variation, native species, and environmental benefits such as stormwater as appropriate to a site.

- Tree canopy is prioritized wherever feasible. The Green Ribbon will contribute to achieving over 20% tree canopy throughout Pentagon City.

- Planting can be provided in many formats, whether in-ground or in planters. Planters may integrate seating or delineate outdoor dining areas.

- Lighting, wayfinding, and amenities like drinking fountains help support safe, easy to navigate travel along the Green Ribbon.
Initial development proposals should coordinate closely with the National Landing BID to ensure wayfinding signs are consistent and help link unique segments the Green Ribbon network. Once established, subsequent proposals should match earlier designs.

The Green Ribbon should include periodic public seating, either at the edge of the pedestrian path or within the planting zone. Seating and other furnishings should be designed as part of biophilic design approaches.

Throughout the Green Ribbon, other elements and amenities, such as public art and interpretive signage can help enrich the biophilic experience and provide additional opportunities for cultural interpretation.

Where topography creates views, the Green Ribbon design should provide moments to enjoy them. In most locations, the Green Ribbon should be universally accessible. In limited locations, including navigating the rise to Arlington Ridge, stairs may be incorporated as part of Green Ribbon segments.

When providing tree canopy is not feasible, other appropriate vertical features could include shade structures, living walls, water features, murals, or architectural fences (or screens) with biophilic features.
3.4 The Green Ribbon (continued)

Green Ribbon Routing

- The diagram on the facing page identifies **priority Green Ribbon routes**, as well as potential locations for future extension throughout Pentagon City and connecting to surrounding areas. The routes utilize a mix of private land and existing public access ways and parks. Actual route alignment is flexible as long as key intersection points or destinations are linked.

- The Green Ribbon will be expected to be accommodated on sites undergoing redevelopment through the site plan process. On public property, the County can lead development of the Green Ribbon. Where there are opportunities to extend the Green Ribbon on private property not undergoing redevelopment, the County can coordinate with interested property owners to achieve desired connections.

- The Green Ribbon links together other public spaces that can contain other elements and amenities which may not typically be found within the Green Ribbon design guidelines. In these locations, easy access to and from the Green Ribbon will help link the public space network in Pentagon City, a goal of Arlington County’s **Public Space Master Plan** as well as **Livability 22202** planning.

- At a **typical width of at least 16 feet along the Green Ribbon**, the more than three miles of new walks shown in the diagram would represent more than four acres of net new public space in Pentagon City. This is exclusive of the parks, plazas, and existing sidewalk areas the Green Ribbon passes through.

- **At full build-out of the highest priority routes**, **the Green Ribbon would create approximately three miles of new and improved pedestrian walks providing over four acres of new public space** along the Green Ribbon, exclusive of other park and plaza spaces it connects together.

- Throughout Pentagon City, the Green Ribbon, while accommodating slower-moving cyclists, can be designed to **discourage higher-speed bicycle travel**. Therefore, concurrent improvements to on-street bicycle facilities are essential.

- The Green Ribbon includes a segment—along the incline from Grace Hopper Park to Lynn Street—which can safely accommodate different modes of travel given the grade of the path.
The route of the Green Ribbon through Virginia Highlands Park will be determined through a park master plan process, but connections along 15th Street S are prioritized.

The Green Ribbon along S Hayes Street and through the Brookfield site provides a linear park experience, linking larger plaza and casual use spaces. Green ribbon strategies can also be deployed in constrained environments to improve the visibility and experience of walking to Metro from Virginia Highlands Park.

The existing stairs behind the Hume School building could be incorporated into another expansion of the Green Ribbon.

This map shows other potential connections the Green Ribbon could make through the Costco site, to Long Bridge Park, and connecting other public spaces such as the future New Park at S Eads Street. The potential routing and alignment of possible future sections requires further study.

DISCLAIMER: THIS FRAMEWORK SHOWS DESIRED NEW PUBLIC SPACES. THE SPECIFIC LOCATION OF CONNECTIONS MAY SHIFT BASED ON NEEDS AND PHASING OF REDEVELOPMENT.
3.5 Green Connections: 22202 and Beyond

This section responds to connectivity goals expressed through the Livability 22202 initiative and Biophilic Arlington, and leverages county-scale trail loop opportunities identified in the Public Spaces Master Plan. It will extend the benefits of the Green Ribbon and create a more cohesive, connected district beyond Pentagon City.

Policy Approach

- Extend Pentagon City’s pedestrian, bike and trail network— including Green Ribbons, sidewalks, and bike facilities—beyond the study area to make valuable connections between Pentagon City and the greater 22202 zip code, Columbia Pike, Reagan National Airport, other existing and planned expansions of these networks throughout the County and the region. Within the study area, locate these corridors to facilitate internal and external continuity.

- Implement physical and aesthetic improvements at highway crossings and other formidable barriers to achieve safe, comfortable routes to the Columbia Pike corridor, Inner Loop, Pentagon Lagoon, Long Bridge Park, Crystal City, and Mount Vernon Trail. Connections south and west through Arlington Ridge and Aurora Highlands will also require special attention to be compatible with neighborhood streets.

- Design trail connections to be consistent with the Arlington Public Spaces Master Plan.

An extension of the Green Ribbon to Long Bridge Park would greatly improve 22202 access to Arlington’s fourth largest park, and could become a gateway to the Mount Vernon Trail.
Potential connections to trails shown in green, upon the Conceptual Protected Trail Loops map in Arlington’s Public Spaces Master Plan, indicate important opportunities for the Pentagon City study area (blue) to contribute recreational facilities that benefit all Arlingtonians and the region. The potential green connections would not necessarily provide the same level of facilities as Arlington’s highest-level trails shown in the diagram.
4. Site + Building Form

Pentagon City is at a midpoint in its evolution from a landscape of large individual sites with detached buildings to a cohesive network of public streets and public open space lined consistently with active, attractive architecture. The Site + Building Form framework provides vision and guidance for completing this evolution, shaping buildings and landscape that make Pentagon City’s public realm a delightful place for people, that delivers enduring value to all stakeholders.

This framework focuses especially on elements that shape the transition between public space, sidewalks, and development sites. Successful urban neighborhoods typically feature many gradual transitions between public and private spaces that invite the public into a commercial business, or provide a layer of privacy between public and private space while still creating attractive sidewalks. They also feature design and land use that contribute to the sustainability of the broader community in environmental, social, and economic dimensions. Strategies in this framework include:

- **Sustainable design standards** that apply Arlington County’s evolving standards to the unique context of Pentagon City. The large scale of change anticipated in Pentagon City elevates the opportunity and need for ambitious, innovative sustainability approaches.

- **Building height guidelines** that are flexible, given the relatively few portions of Pentagon City’s context that are highly sensitive to height or shadow impacts. Height limitations are primarily merited at transitions to lower-scale adjacent neighborhoods, and where significant shadows would diminish the quality of public spaces.

- Several measures that support **strong relationships between sidewalks and the buildings and outdoor site areas** adjoining them. These touch on façade placement, building design, and the use of ground floor building spaces.

- Several measures that guide **composition of upper floors of buildings**, whether they rise three stories or 30. These aim to encourage human-scale elements near the ground plane, an interesting variety of building form, and opportunities for plantings and views at upper levels.
ILLUSTRATIVE PLAN: NEAR-TERM OPPORTUNITY

See appendix for illustrative plans of longer-term possibilities.

DISCLAIMER: THIS ILLUSTRATIVE PLAN IS AN ARTISTIC RENDITION OF ONE WAY THE PENTAGON CITY SECTOR PLAN VISION AND RECOMMENDATIONS FOR THIS ELEMENT CAN BE ACHIEVED, FOR ILLUSTRATIVE PURPOSES ONLY.
4.1 Sustainable Design

Achieving global standards for sustainable, resilient, and biophilic design is one of the planning principles for Pentagon City. Sustainability, within the context of redevelopment, involves a strategic coordination of mutually reinforcing design features that effectively address issues such as energy conservation, bird safety, and storm water management. Beyond just buildings, creating biophilic pathways and incorporating nature into each development site provides cross-benefits that address multiple Planning Principles. Site context will need to inform unique approaches for each site plan resulting in a customized micro-environment that properly responds to airflow between buildings, direct and indirect sunlight, and need for successful robust natural spaces (delivered at grade, utilizing practices such as elevated terraces or green walls).

Future site plans in Pentagon City are expected to address the goals of the Arlington County’s Community Energy Plan. New buildings should maximize energy efficiency, lower carbon impact, and include elements of biophilic design. Development sites should address stormwater, heat island effect and needed climate adaptation. Innovative strategies specific to the site and program of development are encouraged, and continual improvement in stringency of green standards is part of the plan. All site plans must comply with all appropriate environmental regulations, including stormwater mitigation.

Policy Approach

- Site plans in Pentagon City should utilize the most appropriate strategies for their site, and consider innovative strategies that respond to their unique site opportunities.

- Site plans should achieve at least LEED Gold as a baseline. Site plans may opt to use a more stringent building certification than LEED or Earthcraft for Multifamily Uses, such as Passive House, Net Zero Energy or Zero Carbon certifications and/or pursue strategies from the Green Building Incentive Policy’s Extra List. Energy Star Building Certification (or equivalent) post-occupancy is also encouraged.

- Electric buildings are encouraged as feasible; buildings may utilize electric or induction cooktops to increase indoor air quality and reduce carbon emissions. Strategies can also include ensuring the building’s infrastructure is designed to accommodate future energy needs such as electric vehicle charging within garage spaces.
Top: The Community Energy Plan is the County’s integrated framework for energy policy and climate action. Redevelopment must further the goals of the Community Energy Plan.

Left: Emerging building techniques like cross-laminated timber can offer new building typologies and sustainability strategies, reducing the embodied carbon of new development. This image shows Carbon12, an 8-story cross-laminated timber project in Portland, OR.
4.2 Building Height

Policy Approach

- Generally within the study area, locate greatest building heights to the north, including opportunities to the northeast and northwest. Except as noted below for areas adjacent to R2-7 and R-10 zones and along S Lynn Street, building height will not exceed 350 feet, exclusive of mechanical penthouses, parapet walls, or non-occupiable, exceptional architectural features.

- In addition to the Sector Plan guidance, building height is subject to FAA regulations in this area as well as building separation recommendations and fire code requirements.

- In the southern portion of RiverHouse, where new development is adjacent to R2-7 and R-10 zones, building height should be limited to:
  - Within 75 feet of R2-7 zone, height limited to 5 stories; form should transition to 3-4 stories where it faces the R2-7 zone.
  - In other areas within 150 feet of R2-7 and R-10 zones, height limited to 8 stories; form should transition at least one story down where it faces the adjoining zones.

- In other areas south of 15th Street S not addressed above, height should not exceed that of the existing RiverHouse Ashley Building (17 stories). Varied height encouraged: on parcels with multiple buildings, target 10-20% height difference between some of them.

- In areas within 150 feet of S Lynn Street not addressed above, height should not exceed 10–12 stories, dependent on grade.

- In areas north of 15th Street S. not addressed above, height should not exceed 250 feet.

- Where a scale transition is needed to a lower density/height area, consider the benefits of a variety of building form options, not just tapered height, such as:
  - Tall but slender buildings whose narrower side faces the neighboring lower density/height area;
  - Preserving specific view corridors from public streets/parks; and
  - Increased tree canopy/plantings, and less building footprint, in transition area.

- Minimize shadow impacts of buildings on priority public spaces, such as by limiting height of buildings immediately south of these spaces. Potential performance targets for priority public spaces:
  - On the summer solstice, at least 50% of the space should have shade from buildings or foliage for most of the day.
  - On the spring and fall equinox, at least half the area should have access to sun at least 75% of the time between 9am–3pm.
  - On the winter solstice, at least 25% of the space should have at least two hours of sun.

- These targets may not be achievable in all locations, such as along the 12th Street S corridor or along the Green Ribbon north of 12th Street S, due to the placement of neighboring buildings, circulation needs, or other mitigating factors. Shadow impacts on priority public spaces should be included as part of the SPRC review and aeronautical study, and County issuance of building permits require FAA’s Determination of No Hazard.

Intended benefit responding to Guiding Principles

- Locate tall buildings where they will benefit from views to and from the Potomac River, Washington, DC, and adjoining areas

- Locate tall buildings where shadow impacts on public realm and sensitive developed areas are relatively minor

- Vary skyline for interest

- Taller buildings in Pentagon City unlock opportunities to increase amount and quality of public space available in the study area.
Sites with multiple buildings should have a variety of building heights and forms for visual interest and a variety of views.

Building heights of 20 stories or more are appropriate along 12th Street and to the north (which is to the left in this view).

New buildings should be placed to help shape public streets, walking corridors, and squares.

Choose building heights and massing that minimize casting significant shadow on public spaces during cooler times of the year.

Buildings close to lower-density zoning districts should transition down in height.

The potential new buildings shown in this illustration in the lighter color are intended to demonstrate possible building forms and layout, but do not represent required building form and layout. Successful site plans may differ from this depiction.
4.3 Building/Public Realm Edge

Policy Approach

■ Locate building façades to form a consistent edge along public streets, walks, and plazas, shaping these as outdoor rooms. Building façades should be present within an approximate “build-to band” within 8 feet of the public sidewalk passage along approximately 55% or more of the length of each parcel edge along a street. One or more buildings may help form this continuous edge.

■ A larger build-to-band of 12 feet may be permitted when used to provide public space, pedestrian access, biophilic features, or other amenities such as outdoor dining or public art that help shape and improve public streets, walks, and plazas.

■ No specific setbacks are recommended except in desired areas per the Sector Plan to accommodate a public easement, or to transition height toward adjoining R-2.7 and R-10 zoning districts.

■ Build-to-band is intended to regulate the base section of future buildings (generally first 1-5 stories), recognizing other architectural treatments, step-backs, and façade articulation will occur above, which could place upper sections of the buildings outside of this band.

Intended benefit responding to Guiding Principles

■ Enhance pedestrian experience

■ Create a more continuous network of pedestrian-friendly streets and walks

■ Shape streets and public spaces that have distinctive sense of place and, in turn, contribute to identity of Pentagon City and the broader 22202 area

\[
a \leq 0.45b
\]

\[a = \text{frontage without building edge}\]
\[b = \text{overall site frontage}\]

■ Multiple options for placing façade within 8’ build-to-band

■ Occupy at least 55% of site frontage per block

■ Accessible public space is excluded from overall site frontage
Existing RiverHouse tree canopy should be preserved (generally 60 feet from western lot line and generally 40 feet from southern lot line).
Throughout Pentagon City, the Sector Plan continues Arlington County’s goal of maximizing the presence of active ground floor uses along primary pedestrian streets and walks. See 4.5, Retail and Active Edges, for more guidance in coordination with the Arlington County Retail Plan on priority locations for future retail.

As the Arlington County Retail Plan highlights, the format and needs of successful retail continues to evolve and concentrate. Ground floor design cannot only depend on retail uses to be successful and attract pedestrians. For areas designated “Green” in the Arlington County Retail Plan—free from retail use and design standards—buildings should meet these design standards that aim to build strong indoor-outdoor connections while also respecting privacy needs of different uses. These design guidelines are meant to help enable long-term flexibility for a variety of retail, community-serving, and other uses at the ground level of mixed use buildings. While there are recommended dimensions included in these guidelines, they are meant to establish a range; the dimensions and circulation of a given site may require going outside these dimensions, but should still advance the guiding principles, including pedestrian-oriented and biophilic design.

### Policy Approach

- Include building entrances frequently, aiming for every 50 to 75 feet. Where residential uses front the street, individual entrances are encouraged. Where there is a significant entryway for non-residential or retail uses, such as a hotel lobby, major office lobby, or cultural space, longer spacing is appropriate.

- Provide transparent glazing that allows for views in and out of space (following recommendations in the County Retail Plan) while addressing bird safety challenges to the maximum extent.

- When facing primary pedestrian streets, public parks/plazas or the Green Ribbon, ground floor facades should not extend more than 20 feet horizontally without transparent glazing, public art, or a significant biophilic feature like a planted green wall. When a biophilic feature or public art is provided, the remaining ground floor facade should have increased levels of transparency and high-quality design.

- Buildings should be sited to provide intermittent transitional space between the public streetscape (sidewalk) environment and new building façades for at least half of their frontage. This space can usefully serve dining or other program at active uses, and provide occupiable landscape (gardens, patios, stoops, and porches) at passive uses (residential, office, education, institution), adding amenity and flexibility for ground level uses. For residential uses, stoops, porches, or front gardens of at least 4 feet deep should be provided, including along the Green Ribbon, to provide a transition zone, more opportunities for biophilia, and more space for community interaction.
Examples of pedestrian-friendly non-retail ground floor frontage along streets and pedestrian walks incorporating biophilia.
4.5 Retail and Active Edges

Policy Approach
- Design and occupy designated ground level building spaces along sidewalks in order to support a pedestrian-friendly urban environment and successful variety of pedestrian-oriented retail and service uses and retail equivalents. The diagram on the facing page identifies four types of locations with differing requirements, per the color categories in the Arlington County Retail Plan:
  - **RED** Highest priority locations for active retail, usually clustered in nodes or corridors. Exterior and interior design recommendations apply. Limited range of non-retail uses acceptable.
  - **GOLD** Secondary priority locations for retail or other active uses. Exterior and interior design standards apply. Broader range of non-retail uses acceptable.
  - **BLUE** Secondary priority locations for retail or other active uses. Exterior (not interior) design standards apply. Broader range of non-retail uses acceptable.
  - **GREEN** No retail design or occupation requirement, but frontage may be subject to other Sector Plan design guidelines such as for ground level residential and office use.

Intended benefit responding to Guiding Principles
- Enhance the pedestrian experience
- Make a broad range of commercial and community services available to support principal land uses
- Provide appropriate space opportunities for businesses
- Provide Pentagon City the resiliency to accommodate a changing range of retail and service needs and opportunities over time.
CHANGE FROM PAST POLICY
Focus on corners for retail and retail equivalent uses, with mid-block ground-floor frontages subject to non-retail design requirements

Anticipate that redevelopment of shopping center properties may concentrate and change retail mix, requiring greater flexibility

Focus retail frontage in highly-visible, high-pedestrian volume locations, including at 12th Street S and S Hayes Street and along larger public spaces of the Green Ribbon

* Other uses as permitted in the Zoning Ordinance may be approved, on a case-by-case basis, by the County Board. | ** Other adopted design standards may apply.
4.6 Upper Floor Stepbacks & Sculpting

Building composition is encouraged to include a base section rising one or more stories that primarily influences the street experience, and an upper section with more flexible form options. The transition between base and upper levels offers important opportunities for terraces or other intermediate surfaces that can provide useful outdoor space, advance sustainability and biophilia goals, mitigate scale and/or shadow impacts, and/or contribute to attractive architectural composition.

Policy Approach

■ Compose façades facing public rights of way to include a “base” of one to five stories, distinct from any upper floor massing. The base may be distinguished by material, changes in plane, differences in extent of transparency, or other compositional approaches. At ground level, include transparency, entrances, and other features as per 4.4 and 4.5.

■ Encourage stepbacks of upper stories from the street façade and/or other edges especially at lower levels (approx. 2–5 stories above grade) to support:
  ■ Direct sun access to public realm
  ■ Reinforce human scale of street
  ■ Planted roof surfaces with vegetation visible from street level and/or upper floors

■ Green roofs or other facilities managing stormwater and preventing solar heat gain
■ Dispersal of downward windflow away from sidewalks
■ Occupiable outdoor space
■ Space intervals between building towers that preserve views
■ Stepbacks at higher levels are also welcome for usable outdoor space, green roofs, architectural composition, or other purposes
■ Stepbacks count toward façade plane variation called for in 4.7.
■ See also Building Coverage section 1.5 for limitations on floor area above 5th floor
Example apportioning of massing among one or more buildings on site.

- Multiple options for allocating volume up to five stories and above five stories
- Allocation can be distributed among multiple buildings on common site

Built examples of ways to include upper floor stepbacks, including creative use of lower roof surfaces.
Examples of buildings with a base distinct from upper floors.
4.7 Upper Floor Façade Variation

Variations in building façade plane are encouraged for compositional interest and human scale. Such variations also expand opportunities for usable outdoor space, plantings, and shading that contribute to biophilia and sustainability. Building stepbacks described in 4.6 contribute to these goals, but this guideline applies a further level of variation at finer scale. Prominent vertical composition lines—which may be marked by variations described above, and/or variations in material—are also required periodically to help transition large scale building volumes to human scale.

Terraces and balconies are examples of useful means to accomplish this variation, whether recessed into or projecting beyond a primary façade plane.

Policy Approach

- For building façade area up to six stories above grade, some of the façade area should be displaced at least six inches from the prevailing adjacent façade plane(s) to provide relief. Design strategies such as enclosed projecting bays, open projecting balconies, recessed balconies, window surrounds, exterior building shading, stepbacks per guideline 4.6, and other variations of façade surface are all appropriate to achieve this goal.

- Terraces, balconies, and other upper floor outdoor areas help provide amenities for building occupants and biophilic experiences. These design elements can also be a feature of building design, and are encouraged throughout the district. These elements are encouraged within the footprint of the building site, with no limitation on size where they do not encroach into the public right of way.

- Limit overall façade length to approximately 250 feet for buildings under eight stories, and 300 feet for taller buildings. Follow design guidelines to break up massing, including introducing prominent vertical composition lines, providing mid-block connections, shifting building materials or design, and/or providing major building entrances.

- On first five stories of residential buildings, include additional vertical composition lines.

- Buildings should incorporate and utilize bird-aware design to mitigate the threats of fatal bird strikes on building glass. Areas of particular emphasis involve spaces where reflectivity and invisibility can present threats including:
  - building glass below 50 feet on most facades,
  - glass on building corners, and
  - glass throughways.
Examples of buildings with prominent vertical composition lines that prevent excessive horizontal scale.
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Implementation
## IMPLEMENTATION

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Implementation Actions</th>
<th>Timing</th>
<th>Implementing Agency</th>
<th>Mechanism</th>
<th>Funding Sources</th>
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<tr>
<td>PLAN ADOPTION</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>1</td>
<td>Adopt the Pentagon City Plan.</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
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<tr>
<td>LAND USE &amp; ZONING</td>
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<tr>
<td>2A</td>
<td>Amend the General Land Use Plan (GLUP) map to update Note #4 to reflect the new &quot;Pentagon City Coordinated Redevelopment District.&quot;</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
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<tr>
<td>2B</td>
<td>Amend the GLUP map within Note #4 boundaries to replace areas where existing striping is shown with &quot;High&quot; Office-Apartment-Hotel designation.</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
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<td>2C</td>
<td>Amend the GLUP map to expand the Note #4 boundary to include the entire RiverHouse property located west of S. Joyce Street.</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
<td>N/A</td>
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<tr>
<td>2D</td>
<td>Amend the GLUP map to replace &quot;Medium&quot; residential on the RiverHouse property with &quot;Medium-High&quot; residential and &quot;High&quot; residential designations.</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
<td>N/A</td>
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<tr>
<td>2E</td>
<td>Amend the GLUP map to add eight (8) triangular symbols (used to symbolize the general locations of open space) within the expanded note #4 boundary, to reflect planned open spaces identified in the Pentagon City Plan.</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
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<tr>
<td>3A</td>
<td>Amend the Zoning Ordinance to establish a new Special Planning Area under Article 9.6, &quot;Pentagon City Coordinated Redevelopment District&quot; to help facilitate the achievement of the future vision as described in the Pentagon City Plan.</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
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<td>3B</td>
<td>Amend the Zoning Ordinance Articles 6.5 (RA6-15) and 7.12 (C-O-2.5) to establish site eligibility for properties located within the new &quot;Pentagon City Coordinated Redevelopment District&quot; as shown on the GLUP.</td>
<td>Immediate</td>
<td>CPHD</td>
<td>County Board Action</td>
<td>N/A</td>
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Key: Short-term: 1–3 years; Mid-term: 4–9 years; Long-term: 10 years or longer
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<th>Mechanism</th>
<th>Funding Sources</th>
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<tbody>
<tr>
<td>4</td>
<td>Ensure that at least 10% of net new residential density (which may increase up to the residual value of additional density to be earned) in Pentagon City projects goes toward creating on-site affordable housing and is consistent with the goals, objectives, and policies of the Affordable Housing Master Plan.</td>
<td>Ongoing</td>
<td>CPHD</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>5</td>
<td>Monitor performance of initial development projects to ensure they are achieving housing, biophilia, public space, transportation, and sustainability objectives, and use lessons learned to inform improved approaches to achieving such objectives in mid-term/long-term development proposals.</td>
<td>Ongoing</td>
<td>CPHD, DPR</td>
<td>N/A</td>
<td>N/A</td>
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<td>6</td>
<td>Ensure private development and future County projects and policies for Pentagon City are evaluated through the equity lens.</td>
<td>Ongoing</td>
<td>CPHD, DES, DPR</td>
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**SUSTAINABILITY**

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<th>Funding Sources</th>
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<tr>
<td>7</td>
<td>Ensure site plan applications address the goals of the Community Energy Plan and help achieve biophilic goals outlined in the Pentagon City Plan.</td>
<td>Ongoing</td>
<td>DES, CPHD</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>8</td>
<td>Monitor tree canopy on public and private land, taking actions if needed to maintain progress toward plan target of at least 20% tree canopy and overall health of canopy in Pentagon City.</td>
<td>Ongoing</td>
<td>DPR, CPHD</td>
<td>N/A</td>
<td>Local, Site Plan Contributions</td>
</tr>
<tr>
<td>9</td>
<td>Continue to investigate the feasibility of emerging building technologies, encourage electric buildings as feasible, and explore opportunities to ensure new buildings’ infrastructure is designed to accommodate future energy needs such as electric vehicle charging in the garage.</td>
<td>Ongoing</td>
<td>DES, CPHD</td>
<td>N/A</td>
<td>N/A</td>
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</table>

Key: Short-term: 1–3 years; Mid-term: 4–9 years; Long-term: 10 years or longer
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<th>Mechanism</th>
<th>Funding Sources</th>
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<tr>
<td>10A</td>
<td>Amend the Master Transportation Plan (MTP) as indicated in the Pentagon City Sector Plan to designate areas for future connectivity.</td>
<td>Immediate</td>
<td>DES</td>
<td>County Board Action</td>
<td>N/A</td>
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<tr>
<td>10B</td>
<td>Amend the Master Transportation Plan (MTP) as indicated in the Pentagon City Sector Plan to change the designation of a segment of 12th Street S between S Eads Street and S Hayes Street.</td>
<td>Immediate</td>
<td>DES</td>
<td>County Board Action</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>Develop performance-based TDM Site Plan Conditions, which could be piloted in Pentagon City and potentially applied Countywide.</td>
<td>Short-Term</td>
<td>DES</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>12</td>
<td>Monitor site-based trip generation in Pentagon City over time to evaluate the influence of new developments, expanded transit service, new pedestrian/bike infrastructure, and other factors on the transportation network. Results may inform revised TDM strategies, mode split targets, and future infrastructure investment.</td>
<td>Ongoing</td>
<td>DES</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>13</td>
<td>Study the S Hayes Street corridor to determine appropriate multimodal improvements and reconfiguration of the right-of-way, as well as the associated timing for any changes.</td>
<td>Short-Term</td>
<td>DES</td>
<td>County Board Action</td>
<td>CIP</td>
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<tr>
<td>14</td>
<td>Expand separated bike facilities throughout Pentagon City and Crystal City.</td>
<td>Ongoing</td>
<td>DES</td>
<td>County Board Action</td>
<td>CIP, Site Plan Contributions</td>
</tr>
<tr>
<td>15</td>
<td>Study curbside management needs in Pentagon City and implement appropriate changes prioritizing bus operations and safe pedestrian and bicycle travel. Review Site Plan Conditions for loading hours and implementation of various loading strategies including shared loading zones throughout the area. Curbside management and loading changes could be piloted in Pentagon City and potentially applied Countywide.</td>
<td>Short-Term</td>
<td>DES, CPHD</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>16</td>
<td>Complete new multi-modal infrastructure as indicated by multi-modal transportation analysis during site plan review. Utilize County resources where needed to provide necessary connections or services where redevelopment may not occur.</td>
<td>Ongoing</td>
<td>DES</td>
<td>Special Exception</td>
<td>Local, Site Plan Contributions</td>
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Key: Short-term: 1–3 years; Mid-term: 4–9 years; Long-term: 10 years or longer
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<th>Implementing Agency</th>
<th>Mechanism</th>
<th>Funding Sources</th>
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</thead>
<tbody>
<tr>
<td>17</td>
<td>A follow-up park master plan of the Virginia Highlands Park (VHP) will need to utilize its recommended expansion to the west and the resulting potential for a reconfigured Grace Hopper Park to address the general vision of the Sector Plan and community input received during the master planning process. The VHP park master plan should also occur in conjunction with an elementary school siting process, given the consequential impacts of such a facility on future availability of VHP public space and amenities. This resulting process must also consider how necessary expansions of the library and community center uses can be accommodated as independent facilities from the new elementary school.</td>
<td>Short-Term</td>
<td>DPR, CPHD, APS</td>
<td>Park Master Plan &amp; School Siting Process</td>
<td>CIP</td>
</tr>
<tr>
<td>18</td>
<td>Once the VHP master plan is implemented, regularly evaluate the use of public spaces, using an equity lens, to determine where adjustments to operations, programming, maintenance, or overall system of spaces is needed, consistent with the recommendations from the Public Spaces Master Plan (PSMP).</td>
<td>Long-term</td>
<td>DPR, CPHD</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>19</td>
<td>Develop a maintenance, operations, and programming plan for the Green Ribbon, working with property owners, the BID, and other stakeholders.</td>
<td>Mid-term</td>
<td>CPHD, DPR, AED, DES</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>20</td>
<td>Review the design of Green Ribbon segments as they are proposed on private property with site plan applications.</td>
<td>Ongoing</td>
<td>CPHD, DPR, DES</td>
<td>Special Exception</td>
<td>Site Plan Contributions</td>
</tr>
<tr>
<td>21</td>
<td>Examine potential to reinforce biophilic walking and biking corridors beyond Pentagon City study area throughout the 22202 community.</td>
<td>Mid-term</td>
<td>CPHD, DPR, DES</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>22</td>
<td>Design and build Green Ribbon segments on public right-of-way and property that would not be implemented through redevelopment.</td>
<td>ST/MT</td>
<td>CPHD, DPR, DES</td>
<td>N/A</td>
<td>CIP</td>
</tr>
</tbody>
</table>

**Key:** Short-term: 1–3 years; Mid-term: 4–9 years; Long-term: 10 years or longer
Appendix
Green Ribbon Design Guidelines

The following pages show a series of elements that can be combined, interpreted, and installed on site to form the Green Ribbon. These elements can help ensure that the Green Ribbon achieves an excellent biophilic experience while enabling a variety of designs appropriate to the diversity of contexts and locations in Pentagon City. By establishing guidelines that allow for flexibility, it will be easier to build out and implement the Green Ribbon across the district earlier and provide connections through constrained areas.

The most important design element of the Green Ribbon across all sites is the quality and continuity of the connection—ensuring sightlines, the pathway, and the experience are continuous, easy to navigate, and visible.

Some design options that are possible on private sites are not possible in the public right-of-way in order to meet County safety and maintenance standards. In any location, the Green Ribbon should follow Arlington Stormwater Master Plan guidance for planted, pervious, and impervious surfaces.
Pedestrian Path

*Width varies; generally 8’ to 12’*

The pedestrian path itself can incorporate biophilic features, including materials and patterns that include natural analogues or provide environmental benefits like permeable pavers. While the Green Ribbon should provide clear sightlines for pedestrians and have a sufficient clear width for two-way travel, the borders of the path or its pattern may visually breakup long straight sections.

In County-owned right-of-way, the Green Ribbon will need to meet County construction and maintenance standards.

---

 APPENDIX: GREEN RIBBON DESIGN GUIDELINES

**Pedestrian Path**

**Width varies; generally 8’ to 12’**

The pedestrian path itself can incorporate biophilic features, including materials and patterns that include natural analogues or provide environmental benefits like permeable pavers. While the Green Ribbon should provide clear sightlines for pedestrians and have a sufficient clear width for two-way travel, the borders of the path or its pattern may visually breakup long straight sections.

In County-owned right-of-way, the Green Ribbon will need to meet County construction and maintenance standards.

---

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In County-owned right-of-way, the Green Ribbon will need to meet County construction and maintenance standards.
Pedestrian Path

*Width varies; generally 8’ to 12’*

**BRANDING & WAYFINDING**

Signage or branding should also be located as part of paving in select locations. Early site plan applications utilizing this Plan should coordinate closely with the National Landing BID to ensure consistency between otherwise unique segments of the Green Ribbon network.
Tree canopy is the preferred vegetation for the planting zone in the Green Ribbon, but will not be possible in all locations due to space, solar access, sightlines, or other factors. Where possible, tree pit designs should consider more organic shapes and lines, as well as other surface connections to adjacent Green Ribbon features.

Planting along the Green Ribbon should be layered, maximize native species, and include seasonal variation.
Planting Zone

*Width varies; generally 4' to 10'*

RAISED PLANTERS

Where in-ground planting is not feasible, due to the location of underground utilities, lack of soil volume, or to provide for greater pedestrian and mobility device access, raised planters can be deployed. Planters can also include small trees, as feasible.

When the planting zone is provided in planters, there should be a clear plan for non-growing season maintenance and appearance.
Planting Zone

*Width varies; generally 4' to 10'*

**CANOPY**

Tree canopy is the preferred strategy to providing vertical elements and shade to the Green Ribbon. Shade structures may also be appropriate in limited locations, particularly as a way to provide an accent and locate other amenities like signage, drinking fountains, or others.
Planting Zone

Width varies; generally 4’ to 10’

VERTICAL ELEMENTS

Where the Green Ribbon width is limited, such as when connections are provided before major redevelopment occurs, vertical elements can help provide a biophilic experience in a narrower space. These may also be appropriate in locations where other plantings are unlikely to thrive, or where sound or privacy screening may be necessary.
The National Landing BID is planning to launch a wayfinding planning and design effort covering Crystal City and Pentagon City. Developing wayfinding for the Green Ribbon may be included in this effort; the examples included here are meant as inspiration and do not preclude any design outcomes arising from future outreach and planning on this topic.

Signage can also include educational material, including about history of the area, natural elements, or biophilic strategies.
Planting Zone

*Width varies; generally 4’ to 10’*

**REFUGE**

Public seating is an important component of the Green Ribbon, and should be located based on the activity level and surrounding uses of a Green Ribbon segment to provide casual use spaces. Seating is particularly appropriate where it can take advantage of significant views or prospect.
Planting Zone

*Width varies; generally 4’ to 10’*

**FURNISHINGS**

The planting zone can accommodate seating and casual use spaces throughout the Green Ribbon. Seating may be integrated as part of planters or platforms, as well as independently.
Planting Zone

Width varies; generally 4’ to 10’

LIGHTING

Lighting will be needed throughout the Green Ribbon to ensure safe access and use throughout the evening. Lighting may be deployed as a design feature to enhance the Green Ribbon experience and, in some cases, may be accommodated through lighting proposed with adjacent buildings. Green Ribbon segments should rely on downward facing outdoor lights which avoid high intensity/high temperature lights which are problematic for wildlife and for humans.

Lighting placed upon tree or other vegetation must be removed and re-mounted annually where necessary to prevent plant damage. Primary sections of the Green Ribbon should utilize consistent approaches to lighting.

In the public right-of-way, lighting will need to meet County standards for construction and maintenance.
Example Illustrative Plan Evolution Over Time

Future General Land Use Plan (GLUP)

Future Master Transportation Plan (MTP)
ILLUSTRATIVE PLAN: NEAR-TERM OPPORTUNITY (PHASES 1-2)

DISCLAIMER: THIS ILLUSTRATIVE PLAN IS AN ARTISTIC RENDITION OF ONE WAY THE PENTAGON CITY PLAN VISION AND RECOMMENDATIONS FOR THIS ELEMENT CAN BE ACHIEVED, FOR ILLUSTRATIVE PURPOSES ONLY.
DISCLAIMER: THIS ILLUSTRATIVE PLAN IS AN ARTISTIC RENDITION OF ONE WAY THE PENTAGON CITY PLAN VISION AND RECOMMENDATIONS FOR THIS ELEMENT CAN BE ACHIEVED, FOR ILLUSTRATIVE PURPOSES ONLY.

ILLUSTRATIVE PLAN: MID-TERM OPPORTUNITY (PHASE 3-4)
ILLUSTRATIVE PLAN: LONG-TERM OPPORTUNITY (PHASE 5)

DISCLAIMER: THIS ILLUSTRATIVE PLAN IS AN ARTISTIC RENDITION OF ONE WAY THE PENTAGON CITY PLAN VISION AND RECOMMENDATIONS FOR THIS ELEMENT CAN BE ACHIEVED, FOR ILLUSTRATIVE PURPOSES ONLY.
Future General Land Use Plan Map

The proposed future GLUP map to implement the plan includes changes to land use categories throughout the PDSP and RiverHouse sites, as well as designation of general locations for public space. The Pentagon City Sector Plan Area is labelled as a planning district (Pentagon City Coordinated Redevelopment District), indicated by the dashed black line.

Notes:
1. This area was designated the “Crystal City Coordinated Redevelopment District” on 9/28/10, to permit heights and densities called for in the Crystal City Sector Plan where Sector Plan goals are otherwise generally met.
4. This area was designated a “Coordinated Development District” on 2/9/74.
Future Master Transportation Plan Map

The proposed MTP for Pentagon City extends the areas planned for new streets to cover the entire Pentagon City Sector Plan. 12th Street is reclassified as a Type A arterial.
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Analysis of Student Generation Rates

If current enrollment trends continue, including Census trends showing lower birth rates, then a new school may not be necessary to meet APS capacity, even under the growth envisioned in the Pentagon City Plan. Factors that determine the timing of new school investments include existing capacity, projected enrollment, and allocations for the capital improvement plan.

If and when, in the future, APS capacity is exceeded, decisions on siting such a school should reflect the findings of the Virginia Highlands Park master planning effort which will consider its existing uses, western expansion, the siting of the community center and library, and involve close coordination with APS on potential school siting opportunities within the broader VHP geography. Based on the Pentagon City planning principles, any future school will operate as a community facility, including looking for opportunities to share recreational assets between schools and park space during different times of day and year as appropriate.
### Dwelling unit size & occupancy assumptions

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<tr>
<td>Average floor area (new units)</td>
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<tr>
<td>Assumed residents/unit (all units)</td>
</tr>
<tr>
<td>Assumed unit occupancy rate (all units)</td>
</tr>
<tr>
<td>Residents per square feet</td>
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</table>

### Notes:
- Student counts in the current conditions is for September 30, 2021. **K-12 students that reside in the Pentagon City PSA. Some of these students attend schools other than Hoffman-Boston, Gunston, or Wakefield.**
- **Fall 2021 Student Generation Rates are used for this analysis, these rates can be found on Attachment C of the Fall 2021 10-Year enrollment Projections Report, see https://www.apsva.us/statistics/enrollment-projections/
**Student Generation Rates (SGR) for Multifamily Elevator Units**

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<th>CAF Dwellings</th>
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<th>CAF SGR</th>
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<th>CAF SGR</th>
<th>SGR in CAF Units</th>
<th>SGR in Market Units</th>
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**Student Estimates**

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<th>Middle School (6–8)</th>
<th>High School</th>
<th>Total Residential Floor Area</th>
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* SGR rate not available for this housing type and attendance zone. Default to county-wide rate for this housing type.
Feasibility of Redevelopment in Pentagon City
Redevelopment Feasibility: When and Where Should We Expect Redevelopment?

Why Redevelop?

Economics
- There is a higher and better economic use for the property

Long Term Economic Development
- Redevelopment will unlock significant additional opportunities

Civic or Social Motivation
- Removing a negative influence or creating a landmark

Economics 101
- Rule of Thumb: Redevelopment makes sense when the Redevelopment Project’s value is 3- to 4-times the value of the existing asset.
- Yield Metric: The Net Operating Income of the Redevelopment Project divided by the Cost of the Project satisfies a minimum Investment Threshold.

Sample Yields

<table>
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<th>Land Use</th>
<th>Yield</th>
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<tr>
<td>Office Market</td>
<td>7.5% - 8.5%</td>
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Economics 101
- When a Redevelopment Project’s Yield is above the minimum Investment Threshold there is an opportunity for Developer Contributions toward Community Benefits.
- Investment Thresholds change and depend on the cost of money, the land use, the market, and perceived risk.
- Different Developers have different Investment Thresholds.
What We Know About the Economics of Redevelopment in Pentagon City

- **Existing property conditions** strongly impact Redevelopment Economics.
- Most property is improved, so higher FARs and height are necessary for redevelopment to occur.
- It is not always true that a taller building is more valuable.
- Market dynamics change over time and these changes impact redevelopment economics.

### Existing Property Conditions Impact Redevelopment Economics: Three Typologies

- **Underutilized**
- **Improved and obsolete**
- **Improved and Functional**

### Site redevelopment possibilities

- Redevelopment anticipated and/or critical for selected scenarios (approximately 2x existing PDSP GFA)
- Other possible near/mid-term redevelopment
- Longer-term redevelopment independent of scenarios

---

### ALL SCENARIOS

- **Site redevelopment typologies**
  - Underutilized
  - Improved and obsolete
  - Improved and Functional
  - Aurora Hills County site

### Existing Property Conditions Impact Redevelopment Economics: Three Typologies

- **Under-Utilized**
- **Improved & Obsolete**
- **Improved & Functional**

- **Redevelopment Cost:**
  - Low
  - Moderate
  - High
Existing Property Conditions Impact Redevelopment Economics

**Under-Utilized**
Redevelopment cost includes:
- Cost to demolish existing improvements
- Cost to replace improvements like surface pkg

Redevelopment Cost:
- **Low**

Existing Property Conditions Impact Redevelopment Economics

**Improved & Obsolete**
Redevelopment cost includes:
- Existing land cost
- Minimal building value
- Demolition costs

Redevelopment Cost:
- **Moderate**

Existing Property Conditions Impact Redevelopment Economics

**Under-Utilized**
Redevelopment Cost:
- **Low**
  - Redevelopment feasible at lower FARs
  - High developer contribution potential

Existing Property Conditions Impact Redevelopment Economics

**Improved & Obsolete**
Redevelopment Cost:
- **Moderate**
  - Redevelopment not feasible at lower FARs
  - With 7.0 and 8.0 FAR and height over 15 stories, there is developer contribution potential
**Existing Property Conditions Impact Redevelopment Economics**

**Improved & Functional**

Redevelopment cost includes:
- Existing land cost
- Building value
- Lease buy-outs
- Demolition Costs

**Redevelopment Cost:**

- High

**Most Property is Improved, so Higher FARs and Height are Necessary for Redevelopment**

- Higher Floor Area Ratios (7.0 – 8.0 FAR) create value by allowing more intensive use of the land – more productive.
- Height allows for views and cache, both of which increase rental rates.

**Existing Property Conditions Impact Redevelopment Economics**

**Improved & Functional**

Redevelopment Cost:

- High

- In today’s market, redevelopment infeasible even at an 8.0 FAR and 20+ stories
- Today, no developer contribution potential
- County would need to incent redevelopment

**It is not always true that a Taller Building is More Valuable**

- Development costs can increase as buildings get taller.
- A building can become less efficient as it gets taller.
- There can be a market limit on rental rates/view premiums.
- Developers attempt to optimize height value by balancing revenue potential with cost.
Markets are Dynamic: Redevelopment Feasibility Can Change over Time

Today, 0.6 parking spaces per dwelling unit is the market. For the same project, if the parking ratio were 0.3, the potential developer contribution would increase significantly.

Today, base residential rents are $3.58 per square foot per month. A 3% bump in market rents would increase developer contribution potential significantly.

Land Use Scenario Elements

• What are your biggest hopes & concerns about building massing and design in future Pentagon City?
• Are there alternative ways buildings can support great pedestrian experiences throughout the area?
• What will make the public spaces, green ribbon, and overall area feel welcoming to you?

Building Typologies are driven by variations in feasibility, program, and massing of new development.
Construction costs, building efficiency, and view premiums shape building height.

- Podium/stick model currently optimizes at 7 (maybe 8) stories
- Concrete construction optimizes at over 20 stories
- Construction cost and technology is variable and evolving

Program – overall building use and the extent of ground-floor uses – drive building floorplates and massing.

- The most efficient floorplate for a developer varies by use.
- Residential floorplates can generally be smaller and viable: 10,000 -15,000 sf
- Office floorplates generally need to be larger to be viable: ~25,000 sf

Example Residential Typology – Stick-Built Typology

- Lobby location connected to open space
- Upper Stick Construction 5 levels
- 2 to 8 story parking
- Concrete/Podium 3 levels
- Groundfloor units with independent entrances
- Underground parking 2 levels
- Upper level terraces
- Outdoor terraces
- Lobby location connected to open space
- 3 to 6 levels
- Enhance Walkability
- Ground level retail or other use/design strategy
- Streetwall
Example Residential Typology – Tower Typology

Minimum floorplate: 10,000SF to 15,000SF

Ground level units with independent entrances

Upper level terraces and balconies

Underground parking 2 levels

Example Residential Typology – Tower Typology

Minimum floorplate: 20,000SF to 25,000SF

Upper level terraces and balconies

Min spacing for towers At least 45 Ft Typically 60 Ft

Underground parking 2 levels

APPENDIX