Howard County
Department of Planning & Zoning

Gateway Master Plan

LEGISLATIVE DRAFT – JULY 2025

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Figure 1: Existing Conditions—Aerial photo looking south from the intersection of Eli Whitney Drive and Columbia Gateway Drive

Figure 2: Existing Conditions – Aerial photo looking north from the intersection of Robert Fulton Drive. and Columbia Gateway Drive

FORWARD

Abstract

This Master Plan document presents a comprehensive, actionable roadmap to guide the long-term transformation of Gateway into a thriving innovation district, a major hub for employment, entertainment and innovation in Howard County. The master plan addresses multiple elements in addition to innovation, including economic development, housing and employment opportunities, development pacing, environment and sustainability, urban design, transportation and mobility, and land use and public facilities. The master plan is informed and builds upon the policies and recommendations outlined in the general plan—HoCo By Design.

How to use this document

Howard County master plans reflect a vision for the future that responds to the local community within the context of a countywide perspective. These plans offer guidance and recommendations for defined geographic areas. Master plans are designed to “look ahead” through a shared vision. As communities and markets change and unexpected events occur, the approach to implementation of a master plan needs to be flexible over time. Generally, graphics provided in an adopted plan are for illustrative purposes only; they are intended to convey a general approach or character rather than an obligation to a specific detailed outcome, land use, or development timeframe.

Report Structure

The Master Plan document is organized into the following chapters:

Chapter 1: Introduction

This chapter provides an overview of the purpose of the document, including background and contextual information. It outlines the Gateway Master Plan's relationship with other plans, presents its vision and guiding principles, and describes the planning process including stakeholder and community engagement efforts.

Chapter 2: Innovation Districts and Market Opportunities

This chapter highlights the advantages of innovation districts, identifies areas of strength, and explores growing and emerging industries in the region. It also provides a summary of the analysis of market indicators that informs the 30-year vision. A detailed market analysis helped inform this plan and its recommendations and is cross referenced throughout this document.

Chapter 3: Recommendations and Policies

This chapter presents recommendations and strategies to guide the transformation of Gateway into an innovation district. It outlines frameworks to inform the redevelopment approach, including subareas and land use mix, zoning recommendations, public infrastructure phasing, open spaces and public amenities, and a vision for the urban form and character of the planned subareas. Additionally, it includes guidance on sustainable design, as well as transportation and mobility strategies.

Chapter 4: Implementation

The Implementation Chapter covers a list of actions that will help to realize the vision set forth by the Master Plan. It includes a multi-phased implementation approach, a list of immediate priorities, and potential capital projects. This chapter also offers options for financing infrastructure improvements.

LIST OF TABLES AND FIGURES

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Acronyms

This document includes numerous acronyms for departments, agencies, programs, and planning terms, and each acronym will be defined when they are introduced.

Photo Credits

Unless otherwise noted, all graphic and materials are prepared by Howard County and/or the Master Plan Consultants Team.

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CHAPTER 1 – INTRODUCTION

1.1 Origin of the Plan

Gateway, with Downtown Columbia, has been identified in previous studies as one of Howard County's last remaining large areas with potential for regional growth — often referred to as "the last frontier" for significant development in the County. The Gateway area comprises about 1,100 acres of land, most of which is already developed with industrial, office, retail, and other business uses. As an existing employment hub, Gateway already has a strong foundation of workers in key industries like cybersecurity, defense, and technology.

The long-term transformation of Gateway into an "innovation district" began with the vision and recommendations outlined in the general plan, HoCo By Design. The general plan envisioned Gateway as a Regional Activity Center that would offer significant opportunities for employment, entertainment, and innovation in the County. HoCo By Design emphasized that a full redevelopment of Gateway into an activity center would extend well beyond 2040 (the long-term timeframe of the general plan); therefore, HoCo By Design recommended a master plan to further evaluate the general plan's early concepts, recommendations, and ideas for Gateway.

In 2024, the County initiated the master planning process to guide Gateway's transformation into a regional hub for research and innovation—positioning it as a new dynamic anchor for the Baltimore-Washington region. A master plan team, led by the Department of Planning and Zoning (DPZ) and a consultant team, actively engaged with property owners, business owners, and the broader community in an ongoing dialogue to shape a 30-year vision for Gateway.

Figure 3: Existing Conditions — Aerial photo looking south from Columbia Gateway Drive

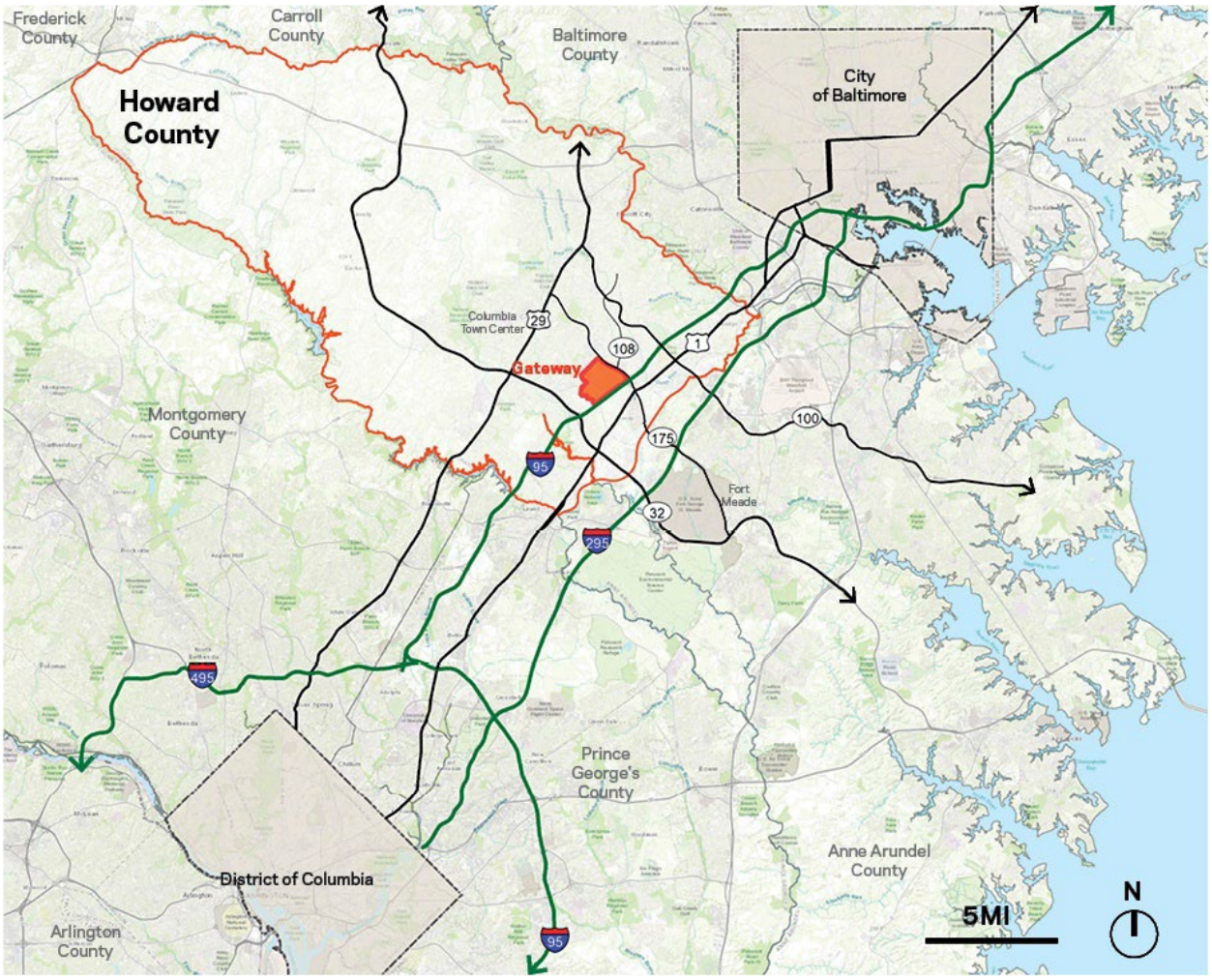
1.2 Plan Location and Context

The Gateway area is an existing 1,100-acre suburban business park located in the southern part of Howard County, within the Washington-Baltimore region. The site is generally bound by Interstate 95 to the east, Maryland Route 175 to the north, Snowden River Parkway to the west and a Federal Communications Commission (FCC) site to the south. It is approximately 3-4 miles southeast of Downtown Columbia.

With its location adjacent to Interstate 95 and Route 175, Gateway benefits from major road access to Washington DC (approximately 60 minutes), Fort Meade, Baltimore/Washington International Thurgood Marshall Airport and Baltimore (all less than 20 miles away). However, these major roadways isolate the business park from its immediate surrounding communities.

As a business park planned over 40 years ago, Gateway's physical environment reflects a car-oriented configuration, with almost 300 acres (26% of the total land area) covered by surface parking lots. Most of Gateway is zoned for manufacturing, which has limited the types of buildings and uses present in the area. The area comprises 140 individual properties, mostly featuring freestanding large-format buildings or clusters of 1-2 story buildings. There are 13 buildings ranging from 3 to 7 stories tall. About 85% of the properties are 15 acres or less and only two parcels exceed 50 acres. Nearly the entire 1,100 acres are privately owned, with 70% of the land owned by multi-property landowners. With a variety of existing buildings, including those already catering to key industries, not all sites in Gateway will need to be redeveloped.

Despite its proximity to major vehicular transportation corridors, the site lacks convenient multi-modal connections to surrounding communities such as Owen Brown, Waterloo, or Kendall Ridge. The site has two grade-separated main access points: one along Route 175 between Snowden River Pkwy and Route 108, and another at the intersection of Robert Fulton Drive and Snowden River Parkway. The County's General Plan, HoCo By Design, recognized the need to create a comprehensive and connected network of mobility options within and leading to Gateway. A network of walkable streets aligned with the County's Complete Streets Policy was envisioned. Further, HoCo By Design suggested additional connections between Gateway and the regional transportation system be considered.



Map 1: Regional Context

1

Map 2: Site Context

2

Figure 6: Existing industrial and manufacturing uses in Gateway

Figure 5: Existing low-rise, low-density buildings

Figure 4: Existing office buildings in Gateway

1.3 Relationship to other plans

The following list provides a variety of Howard County's topic-specific plans relevant to the Gateway Master Plan:

1 - HoCo By Design

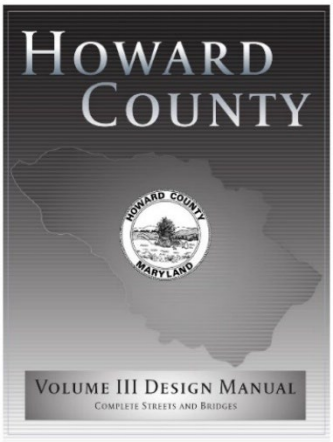
The County's General Plan, HoCo By Design, was adopted in 2023 and outlines a long-term vision for Howard County's development and growth over the next 20 years. It addresses evolving land use, conservation, economic, environmental, and social conditions. HoCo By Design includes specific recommendations and policies for Gateway.

The following general considerations from *HoCo By Design* align with and support the vision for the Gateway Master Plan:

1. Plan for significant growth and development in Gateway
2. Showcase industrial uses in a reimagined Gateway
3. Create a public realm framework for organizing new development and open space in Gateway
4. Consider impacts of flight paths for Baltimore/Washington International Thurgood Marshall Airport in the design of Gateway
5. Take green design to the next level
6. Emphasize civic uses, educational facilities and infrastructure, and community facilities
7. Increase mobility options leading to and in Gateway
8. Build an interconnected street network that follows existing property lines and creates walkable blocks
9. Phase development with consideration for existing development patterns and property ownership
10. Provide a mix of housing options in Gateway
11. Showcase innovative design and insist on high-quality building architecture throughout Gateway

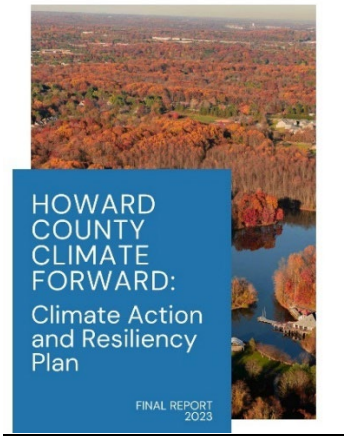
2 - Howard County Design Manual

The Howard County Design Manual Volumes III and IV (Complete Streets and Bridges, Standard Specifications and Construction Details) provides criteria and planning, public engagement, design and construction guidance as directed by the County's Complete Streets Policy. These guidelines aim to enhance, prioritize and incentivize the use of a range of modal choices in Howard County, including walking, bicycling, and public transit, while ensuring accessibility for all users. Increased use of transportation alternatives may improve the health, wellbeing and sustainability of the County. All new and reconfigured streets proposed by the master plan align with the street types defined in the Howard County Design Manual, to build a connected street network that is safe and comfortable, and will inform the design, construction, and maintenance of a transportation network that serves Gateway.



3 - Howard County Climate Forward

Issued in 2023, the County's Climate Action and Resiliency Plan, Howard County Climate Forward, is a comprehensive, science-based and community-focused roadmap addressing climate action and resiliency. It identifies goals and strategies to reduce greenhouse gas (GHG) emissions across all sectors, public and private. The plan organizes actions into mitigation — focusing on energy, transportation, waste, and nature-based solutions — and resiliency strategies. The Gateway Master Plan's sustainability vision and goals are consistent with the strategies, recommendations and actions established by this plan.

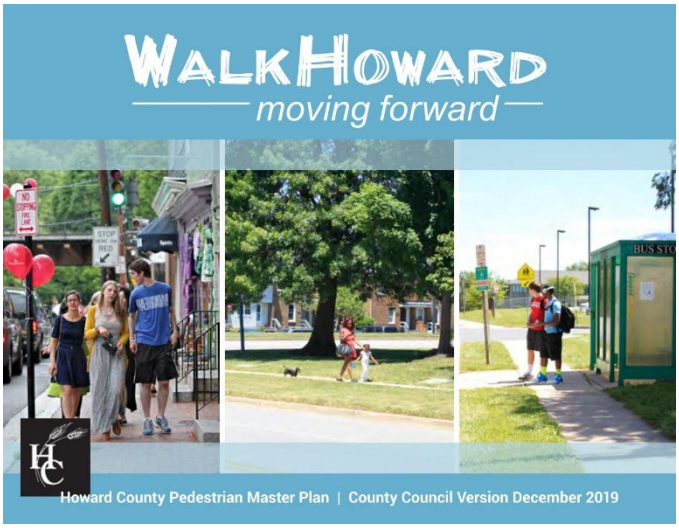


4 - Bike Howard

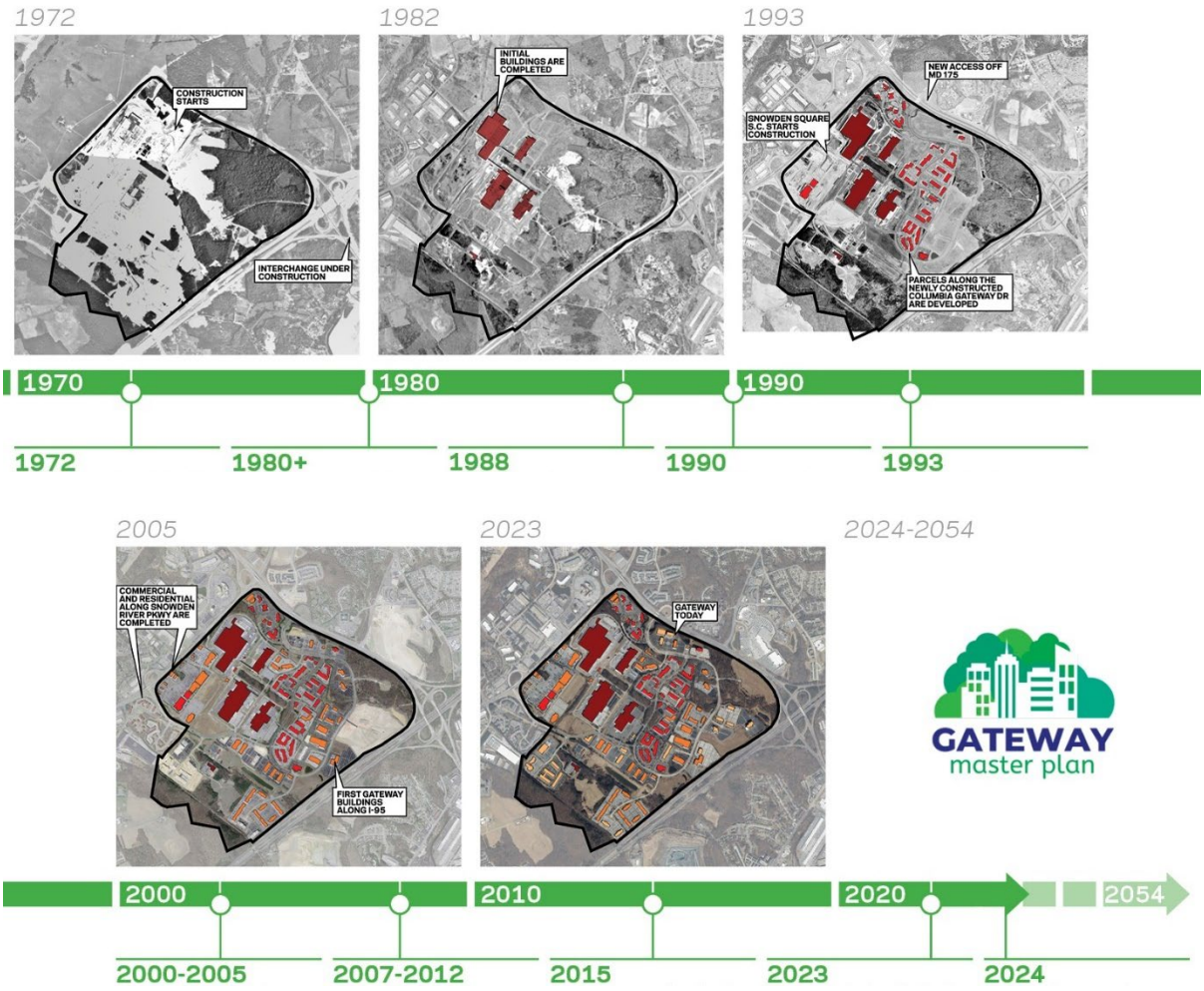
Adopted in 2016, Bike Howard, the Howard County Bicycle Master Plan, serves as a roadmap for enhancing transportation and recreational bicycling facilities throughout Howard County. The plan aims to create a connected, easy to use, accessible on- and off- road network for people of all ages and abilities. The transportation and mobility recommendations outlined by the master plan align with the Bike Howard vision.

5 - Walk Howard

Walk Howard, Howard County's Pedestrian Master Plan, was adopted in 2020 and focuses on creating a stronger, safer, and more convenient pedestrian network in Howard County, which allows residents and visitors of all abilities to access transit, schools, trails, parks, and recreational opportunities. The Gateway Master Plan's transportation and mobility recommendations align with Walk Howard's vision.



1.4 A Brief History of Gateway



1972

A few years after Columbia was founded, the Rouse Company sold a large tract of land to General Electric (GE) in the area now known as Gateway. Between 1969 and 1972, GE constructed the Appliance Park East manufacturing facility, a large plant primarily dedicated to manufacturing household appliances, which operated for nearly two decades.

1980+

The development of the large manufacturing facility included the construction of the transportation infrastructure that provides access to Gateway today, including the access on Route 175, and the intersection of Snowden River Parkway and Robert Fulton Drive.

1988

By 1988, additional road infrastructure was already under construction, including the Columbia Gateway Drive loop road, which unlocked new land for development east of the former GE manufacturing plant.

1990

Around 20 years after its construction, Appliance Park East closed operations, and the Rouse Company, through its subsidiary Howard Research and Development Corporation (HRD), re-purchased most of the land and began redeveloping the area into a suburban office park called “Columbia Gateway”.

1993

An area of the former GE industrial facility was converted into a shopping center, Snowden Square Shopping Center, with a variety of retail options including stores, restaurants and a multi-screen movie theater.

2000-2005

New clusters of single-story and two-story buildings with office or flex industrial uses are constructed along Samuel Morse Drive and Lee Deforest Drive.

2007-2012

New retail anchors emerge around Gateway, including Gateway Overlook in 2007 and Wegmans on McGaw Road in 2012.

2015

Preliminary studies for the transformation of Gateway into an innovation district are conducted by the Howard County Economic Development Authority (HCEDA) and partner entities.

2023

The General Plan, HoCo By Design, was adopted. It includes preliminary ideas to establish Gateway as a Regional Activity Center and catalyze on the site's opportunities. HoCo By Design recommends a master plan be developed for Gateway.

2024

Howard County and a team of consultants initiate the development of a master plan to establish a comprehensive roadmap for the transformation of Gateway into a thriving innovation district along a 30-year planning horizon.

1.5 Planning Process, Stakeholder and Community Engagement

The planning process was guided by the input from two main processes, a technical planning and market opportunity process, and an extensive stakeholder and community engagement process with property owners, business owners, and the broader Howard County community.

Technical Planning and Market Opportunity

The technical planning process focused on site conditions, urban design, placemaking, environment and sustainability, multi-modal transportation, infrastructure phasing, land use and public facilities, while concurrently evaluating market opportunities to guide Gateway's transformation into a major hub for employment and innovation. This process followed three main phases:

Discovery Phase
This phase included a comprehensive analysis of existing conditions and review of previous relevant planning studies and reports, policy and regulatory documents, and GIS data that provided background on physical site characteristics, environmental constraints, and surrounding context.

A second task focused on the evaluation of market conditions for a 30-year period, identifying the potential demand for multi-family and missing middle housing (to achieve both sales and rental opportunities), and providing recommendations for retail opportunities within Gateway. Additionally, this task evaluated best practices and trends on existing innovation districts and identified strengths, gaps, and business and innovation opportunities within the region.

Design/Plan Development Phase
During this phase, the consultant team worked with the Department of Planning and Zoning (DPZ) on the development of three conceptual master plan alternatives. Each option presented a different approach to placemaking, land use, open space, conceptual infrastructure phasing, and multi-modal transportation.

After building consensus around conceptual master plan alternatives, the master plan team recommended a preferred plan that integrated elements of all three options. With the insights and ideas gathered from meetings with the public, stakeholders, the Advisory Committee and the County's Technical Team, the preferred plan envisioned a bold transformation of Gateway into a vibrant "innovation district" – a hub for new research and ideas within an area that is dynamic, mixed-use, connected, and creative.

Documentation Phase

This phase focused on the development of this master plan document, which will serve to guide Gateway's future transformation.

Figure 7: Main Project Timeline

Stakeholder and Community Engagement

The Gateway Master Plan included an extensive stakeholder and public engagement process to shape the vision for Gateway's long-term transformation into an innovation district. As part of this effort, three public events were held, with each event attracting over 100 attendees.

A community "Open House" was held in January 2024, at the Maryland Innovation Center (MIC), to kick-off the planning process. At this event, community members were introduced to the master plan team and viewed a presentation that outlined project goals, relationship of the master plan to *HoCo By Design*, an overview about innovation districts, and additional background information. Attendees were able to share their feedback at several topic-specific stations using sticky notes/dots. Additionally, over 60 comment cards were completed during the event.

At a second public meeting held in September 2024, community members viewed a presentation with three master plan conceptual alternatives including distinct approaches to placemaking, land use, open space, and transportation and mobility. At this event, the broader community was asked to provide feedback on the alternatives. Over 100 sticky notes/dots were placed on the presentation boards and around 50 comment cards with thoughts on the options were received.

Feedback from previous meetings helped to shape the preferred plan and presentation. The updated plan was presented during the third public event, held in two sessions in January 2025. At this event, community members learned about innovation districts and the market opportunities, along with the framework, vision and the redevelopment approach. Topics included subareas and land use mix, building height and urban form, affordable housing goals, open space, and alternative zoning tools. Additionally, presenters outlined strategies and recommendations about sustainable design, transportation and mobility, and public infrastructure.

Figure 8: Community Open House at the Maryland Innovation Center (MIC) — January 2024

Throughout the process, in addition to meetings with stakeholders and the broader community, the master plan team met on a regular basis with the following advisory groups:

Advisory Committee - Appointed by executive order, the Advisory Committee integrated key community stakeholders and subject matter experts, including Gateway property and business owners, representatives of Columbia Association, and other community members with expertise in economic development, innovation, housing, sustainability, transportation, and critical planning areas.

Technical Team - The Technical Team consisted of Howard County department staff who are considered subject matter and institutional experts. The Gateway Master Plan project team consulted with members of the Technical Team on a regular basis to verify and validate key findings, concepts, data, and reports.

Property Owners - As part of an integrated and iterative process, the master plan team engaged in ongoing conversations and received input from multiple property owners. This included meetings with the Columbia Gateway Association, and separate meetings with major property owners in Gateway.

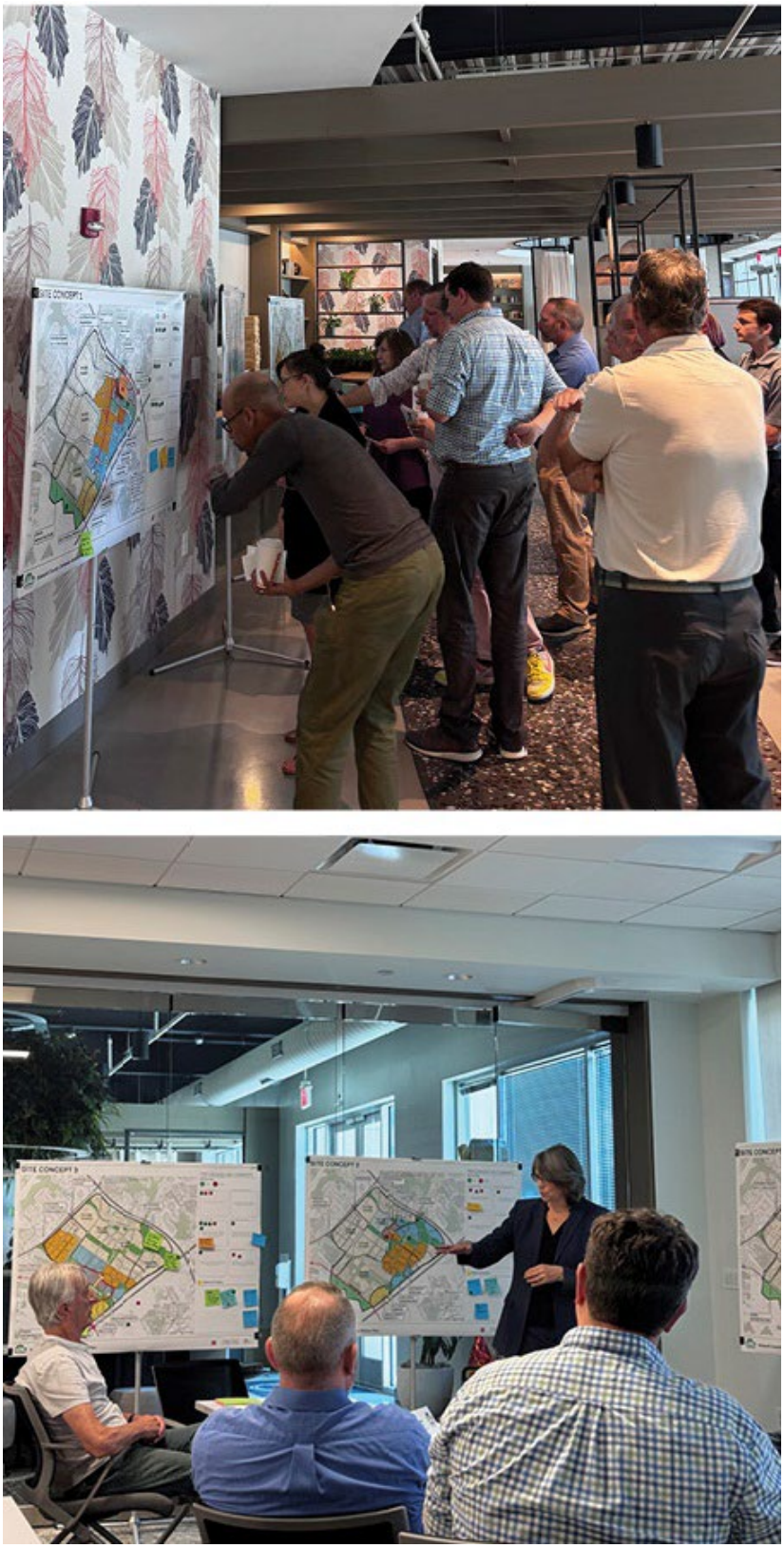


Figure 9: Design Work Session with the Advisory Committee, June 2024

1.6 Vision and Planning Principles

Vision Statement

The Gateway Innovation District will be a major hub for cybersecurity, defense, technology, artificial intelligence (AI), quantum, and other emerging industries while also offering residents a well-connected, vibrant, and thriving community in which to live, work, and play.

The redevelopment of Gateway will encourage and incentivize a diverse mix of uses to support a dynamic innovation ecosystem, and a sustainable, multigenerational and mixed-income community while introducing new housing and job opportunities, open spaces, and multi-modal transportation alternatives.

1

Figure 10: Aerial photo looking south from Columbia Gateway Drive

Planning Principles

The Gateway Master Plan established eight principles to provide the overarching foundation for the long-term transformation of Gateway:

(1) INNOVATION AND GROWTH

Establish the Gateway Innovation District as an epicenter for employment, research, and innovation

The innovation district will build on the existing strengths and assets within Gateway's current boundaries and offer new pathways for collaboration and commercialization while creating a vibrant innovation ecosystem.

The Gateway Innovation District can help attract and retain talent, expand assets that support businesses, academic/industry collaboration opportunities, entrepreneurship supports, applied research, experiential learning/internships, co-working spaces, training and workshop programs, and drive new opportunities for economic development through dynamic partnerships with anchor academic institutions and others. Gateway will welcome everybody throughout the Baltimore-Washington (BW) region and beyond to live, work, learn and share a culture of innovation.

(2) MIX THE USES

Create a mixed-use, walkable physical environment that supports innovation and creates a socially vibrant, pedestrian-focused community

The mix of land uses proposed for Gateway will facilitate the transition from a traditional business park into a vibrant, well-connected, and compact urban environment with a unified design that maximizes synergies between buildings and within the public realm. Density and proximity make businesses more productive. Working, living, learning, and playing will be possible throughout the Gateway Innovation District. The goal is to create a place where people want to be — to work, live, and stay.

By organizing the 1,100-acre site into nine subareas and establishing conditions such as alternative zoning tools and incentives, Gateway will create opportunities to integrate a wide range of uses that support the development of an innovation ecosystem while providing flexibility for developments to respond to market demands. The greatest intensity of uses will be located along public focal points such as the Woonerf and urban plazas at nodes (further described below), and in areas with future access to multi-modal transportation choices. Industrial uses will continue to thrive, in appropriate locations, and support the innovation ecosystem.

(3) A UNIQUE SENSE OF PLACE

Create "A there, there" for Gateway – a recognizable shared open space for the community

The Gateway Innovation District will integrate an open space network with distinctive spaces, including a Woonerf, urban plazas at nodes, pathways, and more. The plan envisions the creation of a Woonerf – a "living street" where pedestrians, bike and slow-moving cars coexist – as the tool that will create a main shared open space for the community. The Woonerf will form the foundation of the pedestrian network, and its linear nature will provide a wide number of residents and workers with convenient access to a high quality, pedestrian-first public space that will be safe and welcoming to users of all ages and abilities.

Along the Woonerf and throughout the site, there will be multiple nodes anchored by new and existing assets (such as the Maryland Innovation Center or the Innovation Hub) which will concentrate density, retail and other uses, and create unique urban spots. Ground-floor activating uses and dynamic programming that can spill out into the street will be promoted and incentivized to promote social and cultural interactions and activate the public realm at the heart of Gateway.

(4) A PLACE FOR PEOPLE

A multi-generational, accessible and mixed-income community where all people can thrive

Aligned with policies defined in the General Plan, Gateway will emphasize diverse housing types, a mix of incomes, and both rental and homeownership opportunities. In Gateway, future zoning should include affordable and multigenerational requirements and/or incentives to provide much needed housing for a diverse workforce at all income levels.

(5) WALKABLE ENVIRONMENT

Establish a human-scale urban form that prioritizes walkability

Walkable environments offer numerous benefits to communities, from creating healthier and more sustainable communities, to boosting the local economy and strengthening the identity of a place. Compact, dense areas where people can walk are where employees and clients want to be, as walkability correlates to higher levels of productivity and creative thinking.[1],[2]

Gateway will integrate an interconnected network of streets that generally aligns with property lines and existing roads, to break down the original business park's super blocks into smaller, walkable blocks. Parking will be strategically located to allow people arriving by car to park once and easily walk to multiple destinations in Gateway. This configuration will foster an innovation ecosystem, allow ease of movement, and transform Gateway into a vibrant, healthy and well-connected community.

[1] Stanford Report: Stanford study finds walking improves creativity. Available from: https://news.stanford.edu/stories/2014/04/walking-vs-sitting-042414

[2] Public Square, A CNU Journal: Ten economic benefits of walkable places. Available from: https://www.cnu.org/publicsquare/2021/08/18/ten-economic-benefits-walkable-places

(6) SUSTAINABILITY AND RESILIENCY

Take green design to the next level

The Master Plan will promote and incentivize design strategies to create developments that are resilient to climate change, supportive of the global environment and local ecosystems, and contribute to the health and wellbeing of the community while advancing standards for sustainable design.

Sites and buildings will showcase innovative approaches to integrating emerging technologies while maintaining flexibility for future advancements. As Gateway redevelops, emphasis will be placed on promoting the use of renewable energy, reducing carbon emissions, and integrating nature-based solutions to advance community-wide sustainability goals.

(7) TRANSPORTATION AND MOBILITY

Develop a multi-modal transportation network that welcomes people traveling via all modes

An interconnected network of “Complete Streets” will provide multi-modal connectivity by connecting people walking, bicycling and driving to and within Gateway. Walking and biking trails, and multi-modal connections are key elements of successful innovation districts, and for Gateway, the CSX multi-modal corridor will serve as a major link to County-wide anchors and surrounding communities. At the same time, a new vehicular access point from Route 175 will offer a welcoming entrance for drivers. Transit and emerging technologies such as on-demand micro-transit, e-scooters, and e-bikes will also help to reduce car dependency.

(8) FLEXIBILITY OVER TIME

Establish a market-based and flexible Implementation framework

Gateway Innovation District will allow flexibility and adaptability to market demand and conditions. Nodes will offer the potential for higher development intensity and a greater mix of uses and could be the earliest locations for new development. The plan's major focal point, the Woonerf, should allow for variation and flexibility as it—and redevelopments along it—are constructed and enhanced. Further, Gateway's infrastructure design should be flexible to support adaptive reuse and future technology shifts. Over 30 years, phased infrastructure investments can lead to a vibrant, walkable, and connected community with a diversity of amenities that allow Howard County to achieve important community and economic goals.

Figure 11: Conceptual rendering of the Woonerf

CHAPTER 2 – INNOVATION DISTRICTS AND MARKET OPPORTUNITIES

2.1 Gateway Innovation District: Harnessing Opportunities for Growth

Gateway Innovation District represents a landmark opportunity to leverage Howard County's strengths and resources to create a vibrant live-work-play community. This approach will allow Gateway to expand its reach and impact, integrating with the surrounding community and bringing people and resources together to advance discovery, learning, and economic growth.

Innovation districts are communities where academic institutions, government entities, private organizations, and entrepreneurs co-locate to create a cluster of innovation and entrepreneurial activity (as illustrated on Fig. 12: Key Features of an Innovation District). Innovation districts may include institutions owned and operated by various entities (e.g., government, industry, academia).

The increasing popularity of innovation districts reflects a growing awareness of the importance of relationships and urban planning in innovation and economic growth. These districts are more likely to be located in urban settings and more integrated with and connected to their surrounding community. Key features of innovation districts include mixed-use spaces (e.g., housing, retail, and offices), transportation systems, shared research facilities, co-working spaces, and other infrastructure that encourages collaboration.

The high concentration of innovation activity facilitated by innovation districts enables intensive collaboration between diverse stakeholders. As such, innovation districts foster larger communities of innovators, corporations, start-ups, and academia, ultimately creating environments conducive to the cross-pollination of ideas across sectors.

Figure 12: Key Features of an Innovation District

Leveraging Baltimore's Tech Hub Designation

Thirty-one Regional Technology and Innovation Hubs (Tech Hubs) have been designated by the U.S. government to support the development of regional innovation ecosystems across the country and develop global-leading technology programs. Each Tech Hub represents a consortium of partners and resources from public, private, and academic sectors. These regional consortia are eligible to apply for Tech Hubs funding to support start-up and scale-up of businesses, advance the development of critical technologies, and build the workforce of the future. These Tech Hubs aim to contribute to regional growth and overall U.S. economic and national security.

In 2023, the greater Baltimore MSA (the Baltimore-Towson-Columbia Metropolitan Statistical Area), was designated a national Tech Hub by the U.S. Economic Development Administration (EDA), with Howard County Economic Development Authority (HCEDA) and six other surrounding counties included as partners. This designation puts the Baltimore region in line to compete for vital innovation funding. Gateway Innovation District has the opportunity to work with the lead agency, the Greater Baltimore Committee, along with the HCEDA, to secure financing related to the Tech Hub designation.

2.2 From Park to District and Beyond: A Cascade of Innovation

Gateway's evolution into an innovation district exemplifies the progression that many communities of innovation follow. At the simplest level, these communities take the form of incubators and accelerators, which often focus on a single business or sector. As their activities, networks, and physical assets grow in complexity, these communities can evolve into parks, districts, corridors, and networks. With this cascade of development in mind, Gateway Innovation District can envision its development as part of a longer-term evolution. It is evolving from its early successes as a business park through its forthcoming expansion into an innovation district and looking ahead to future possibilities to participate in broader communities of innovation in the region and state.

Figure 13: Visualization of a Traditional Business Park (Source: Stiletto)

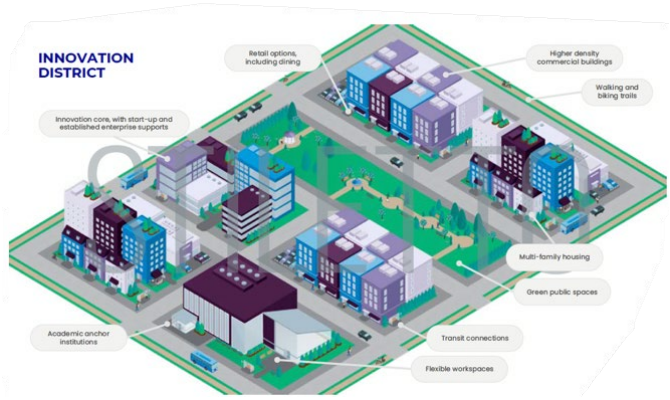


Figure 14: Visualization of an Innovation District (Source: Stiletto)

Six Key Characteristics of Successful Innovation Districts

Successful innovation districts share six common characteristics that fuel innovation, economic growth, and create the environment and opportunity for industry, government, non-profits, and academia to collide and thrive. These characteristics can be activated to guide Gateway Innovation District development as follows:

1) Multi-level government and university/institutional support: Stable support and buy-in from local and regional governments and institutions can help Gateway access funding, resources, and partnerships that can sustain development over the long term.

2) A champion: Influential representative(s) can raise awareness of Gateway and help attract new support and participation. They can also advocate for development, raise awareness, and build buy-in for the district.

3) Defined market demand: Gateway has articulated needs for space, facilities, and collaboration—needs that the innovation district will meet. Gateway can continue to track these needs and use them as a reference point when developing in-demand offerings, such as programming within the district.

4) Unique value proposition: Gateway's standout features, such as its regional strengths, strong key industries, and its strategic location, set it apart, and are essential to establishing the innovation district's identity and brand. The clearer this value proposition, the easier it is to attract and retain industry and other essential ecosystem partners through consistent and compelling communication and promotion.

5) Strategic sector focus: The priority industries that an innovation district supports ensure that it maximizes resources and positions itself as a leader and convener. Gateway's priority industries include both areas of strength and growing and emerging areas.

6) Management dedication to supporting tenant growth: Innovation districts thrive with leaders who are skilled at and committed to attracting and retaining the right tenant mix over the long-term. With the right governance structure and a vibrant group of tenants, Gateway Innovation District can support activity and growth.

Using this framework to guide and measure its development, Gateway Innovation District can maximize its potential to achieve its vision for significant economic impact and long-term sustainability.

2.3 Priority Industries

Gateway will maximize its impact by focusing its efforts and resources on its greatest strengths and opportunities. As an important regional hub for growth, Gateway can advance several important industries and establish its identity as a leader in these fields. Priority industries for the innovation district were identified by drawing on economic and stakeholder data. These industries are grouped into two categories: areas of strength (with excellent alignment and anticipated growth) and growing and emerging areas (with opportunities to improve alignment and build strength).

Areas of Strength

Cybersecurity: Cybersecurity is a quickly growing industry that supports the protection of all other industries, organizations, and networks from digital attacks.

Military, Defense, and Government Contracting: This industry provides equipment, technology, and services to support the military and government operations.

Scientific Research and Development Services: Companies and workers in this industry conduct research or use research findings to develop new products or processes.

Software Development: Software development includes computer systems design and related services.

Technology: This sector includes companies and workers that create and support digital tools, systems, and infrastructure used across industries.

Growing and Emerging Areas

Medical Laboratories and Imaging: Organizations in this industry provide diagnostic or analytic services (e.g., bacteriological laboratories, biological laboratories).

Precision Instrument Manufacturing: This industry develops highly accurate instruments that can measure, test, analyze, and control (e.g., optical instruments, lens surveying, and drafting instruments).

Distribution, Transportation, and Logistics: Organizations and workers in this industry design and implement transportation systems, operate or repair equipment, and plan the movement and storage of materials/products.

Quantum: Organizations and workers in this sector develop cutting-edge technologies through quantum mechanics, with applications in computing, sensing, and secure communications.

Artificial Intelligence (AI): This sector focuses on the development and application of systems designed to replicate human intelligence to enhance learning, problem-solving, and automation.

Figure 15: Priority Industries in Howard County

2.4 Responding to Market Demand

An analysis of market indicators conducted in 2024 demonstrated strong regional demand. The Gateway Innovation District has an opportunity to capture some of that share, and the approximate 1,100-acre site is large enough to accommodate the demand.

Market demand analysis represents a snapshot in time and is limited to forecasting based on the current context. Factors like zoning, property owner willingness, and the lending community will all impact what can ultimately be realized on the ground at Gateway. Demand will also be affected by other developments that take shape in the region.

WHAT DRIVES GROWTH IN A COMMUNITY?

- ✓ Willing Property Owners
- ✓ Market Demand
- ✓ Government Ordinances (such as zoning and subdivision regulations)
- ✓ Developers Readiness
- ✓ Lending Community

Housing Opportunities

As input to the larger effort to develop Gateway into an innovation district, the master plan team conducted a market assessment with a focus on identifying the potential for residential and retail development – two key elements in diversifying Gateway's offerings. The study evaluated several key market demand indicators for Howard County. Of note, up to 6,600 housing units (in multi-family dwellings) are expected to be needed over the next 30 years, which reflects about 25[3]-30% of the market demand in the Baltimore Washington (BW) corridor[4]. Development is likely to start at a slower pace over the first 10 years, while new investments are focused on public space and infrastructure improvements, and Downtown Columbia continues to develop multi-family housing. Demand could then accelerate as the mixed-use walkable environment is established.

The market demand for dense missing middle housing in Gateway is also anticipated to reach up to 1,800 units over the same period, creating clear opportunities for homeownership in the County. Based on a potential capture of 8-12% of countywide demand, Gateway has the potential to support annual sales of 40-60 stacked townhouses (or 1,200-1,800 units over 30 years), with a density of 40 dwelling units per acre. However, reaching this level of development will depend on finding appropriate sites or creating them through redevelopment.

Figure 16: BW Corridor Market Area (Source: Esri)

[3] Roughly equivalent to Columbia's share of corridor development from 2010-2023.

[4] The Baltimore Washington Corridor is defined for the purposes of the master plan to include Columbia and extended to Baltimore/Washington International Thurgood Marshall Airport (BWI) and Fort Meade

Retail Opportunities

Gateway retail offerings include Snowden Square Shopping Center – a power center on Snowden River Parkway oriented to a large regional market, a small strip center with restaurants and other establishments in the center of the site, and additional retail options are distributed across the area generally defined as west of Interstate 95, including a Wegmans, Trader Joe's, and Costco. Over 100 other retail and restaurant establishments are located within a five-minute drive from Gateway, creating a very competitive retail environment in the area. To expand its current retail base, the Gateway District will need to attract new residents to provide evening and weekend patronage, improve external accessibility and visibility, develop public gathering spaces to bring in customers, and make the area more walkable for employees.

If Gateway is successful in these efforts, new stores and restaurants will be needed to support the overall innovation district and the movement of people throughout the district. Retail shops and restaurants could flourish alongside housing and job growth. There are different scenarios through which retail could expand.

In one scenario, residents could demand new space in line with per capita estimates from the International Council of Shopping Centers (ICSC), which has found the United States contains approximately 24 square feet of retail space per capita.[5]

Should Gateway realize the full demand over 30 years for 6,600 multi-family dwellings and 1,800 missing middle units (which could be stacked townhomes), these units could together house approximately 18,000 residents.[6] At 24 square feet per capita, these residents could support approximately 430,000 square feet of retail space over 30 years. However, only 55% of the space supported by their expenditures are in the types of retailers suited to a Gateway location – groceries and food stores, drugstores, and eating and drinking places – roughly 240,000 square feet.[7]

[5] "Shopping Centers: America's First and Foremost Marketplace," International Council of Shopping Centers (ICSC), 2014.

[6] Assumes 5% vacancy for multi-family units and 2.09 residents per multi-family unit. Assumes 0% vacancy for stacked townhomes and 2.68 residents per stacked townhome. Household size estimates based on those reported in the "Howard County Residential Construction & Population Report," April 2025, Howard County Department of Planning and Zoning, Division of Research.

[7] General merchandise, apparel, furniture, and other miscellaneous stores tend to cluster in shopping centers where customers have the ability to comparison shop. These store types appear infrequently in the first-floor spaces in mixed-use developments envisioned for Gateway.

Of course, Gateway's growth will be phased. Initial market estimates suggest development may start slowly over the first 10 years as new investments are made in public space and infrastructure and Downtown Columbia continues to develop dense multi-family housing. Demand could then accelerate as the mixed-use walkable environment is established, and compelling locations are created.

In the first ten years, initial market estimates indicate up to 1,500 new multifamily units and 600 new missing middle units could be added in Gateway. Together, these 2,100 units could house 4,500 new residents, supporting approximately 55,000 square feet of retail space suited to Gateway locations.[8]

While residents may support evening and weekend sales, job growth in Gateway can support daytime sales. Currently, approximately 11,000 people work in Gateway's commercial office and flex office spaces. Over 30 years, the expansion of Gateway's employment spaces could bring 8,000 more employees, for a total of 19,000.

When at work, office workers spend an estimated $13 per day for breakfast and coffee and $16 for lunch according to a national survey by Owl Labs in 2023. Compared to a more detailed, focused survey of office worker spending by the International Council of Shopping Centers in 2012, this estimate would seem to overstate personal spending by as much as 50% by excluding those who bring their lunch and don't buy food at the office. Using a more conservative $14.50 per day for food and drink while at work, the future workforce of 19,000 could spend an estimated $72 million annually on food and drink. If Gateway captured 40% of these expenditures (or $28 million), at $400 in sales per square foot, such capture would support approximately 72,000 in new retail square footage.

Again, Gateway's growth will be phased. In the first ten years, growth of Gateway's employment spaces could result in approximately 16,000 employees. Assuming $14.50 in food and drink expenditures while at work, this workforce could spend approximately $63 million annually. Assuming a 40% capture rate, and $400 in sales per square foot, Gateway could therefore add approximately 63,000 new retail square feet.

Gateway's ability to capture all the expenditures of its residents and employees will be constrained by the competition from nearby stores, which could increase their sales in response to the new demand without necessarily expanding their size.

[8] Based on same assumptions listed in prior footnote with regards to vacancy and residents per unit.

Employment and Job Growth

Job growth is expected to fuel the county's demand for additional non-residential space. The Gateway Innovation District could support this growth by housing more of the county's workforce. Gateway's current share in Howard County jobs (7.4%)[9,10] is anticipated to grow to between 8.4-10.3%, resulting in up to approximately 8,000 new jobs at Gateway over the next 30 years.[11, 12]

To support this job growth, it will be important for Gateway to provide transportation access, support services (such as an Innovation Hub), and spaces businesses value. Responding to identified needs and harnessing new approaches to placemaking and resource-sharing, the Gateway Innovation District can be a launch pad and destination for researchers, entrepreneurs, and investors in priority industries. Gateway can also be consequential for the county and region, providing housing and jobs, and building a connected live-work-play community.

[9] CoStar Gateway tenant data, available through private subscription, provided by Howard County Economic Development

[10] Stiletto Analysis, 2024

[11] CoStar Gateway tenant data, available through private subscription, provided by Howard County Economic Development

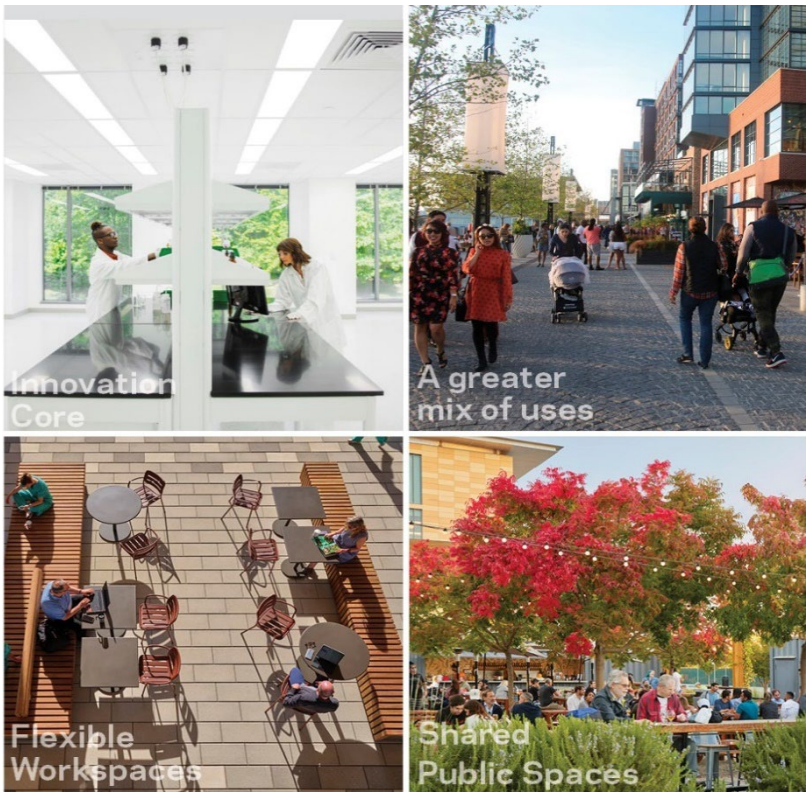
[12] Stiletto Analysis, 2024

CHAPTER 3 – POLICIES AND RECOMMENDATIONS

3.1 Major Plan Strategies

The Gateway area today reflects the physical configuration of a traditional business park with free-standing buildings surrounded by parking lots and a limited diversity of land uses (predominantly industrial, manufacturing, and office uses). While the area is located along major roadways (such as Interstate 98 and Route 175), it lacks convenient connections to these major roadways and to surrounding communities by all modes of transportation.

The Gateway of Tomorrow is envisioned to be an integral part of the County, a Regional Activity Center as outlined in the general plan, supporting business growth and economic development. This plan builds on the existing strengths of Gateway as an employment hub and anticipates that Gateway can evolve into a complete, sustainable community that creates housing and employment opportunities, and allows a mix of uses that contribute to establishing a thriving innovation ecosystem. The 30-year vision for Gateway includes strategies outlined on the following pages (as depicted on Map 3: Conceptual Framework Map).



Examples of key innovation district features envisioned for the Gateway of Tomorrow, pictured on the right

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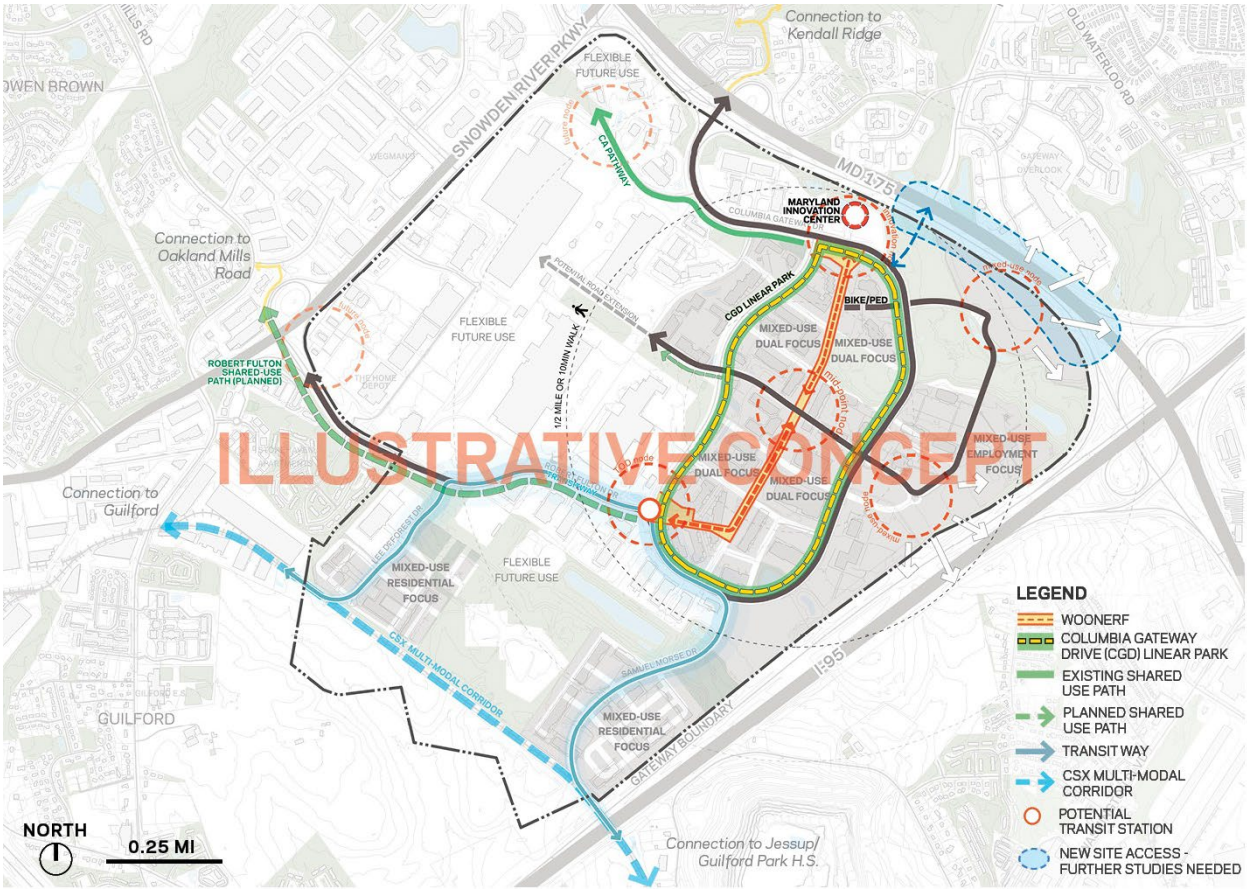


Map 3: Conceptual Framework Map

Business Growth, Economic Development, and Flexibility

- ✓ Gateway will build on industry strengths and promote the integration of growing and emerging industries, new and existing assets, and a unified design to cultivate an innovation ecosystem.
- ✓ The plan recommends concentrating near-term infrastructure improvements and public amenities near the Maryland Innovation Center (MIC) and the primary focal point.
- ✓ The transformation of Gateway is anticipated to occur in multiple phases, remaining flexible and responsive to the market, and allowing development to occur anywhere within the site.

Innovation and Creation Spaces

- ✓ An innovation space **"The Innovation Hub"** will ideally be in close proximity to the Maryland Innovation Center (MIC), providing the MIC with opportunities to expand their programming and create a thriving innovation core at the heart of Gateway.
- ✓ The Innovation Hub may include accelerator spaces for companies, a maker space, coworking spaces, café, recreational amenities, and flexible meeting spaces to host lectures and conferences. The intent is to bring people and resources together.
- ✓ The Innovation Hub should ideally be located near the Woonerf and potentially adjacent to an urban plaza, allowing activities to spill out into the public space.

WHAT IS THE INNOVATION HUB?

A physical space dedicated to cultivating partnerships and networks among researchers, businesses, entrepreneurs and creators. These spaces encourage various uses, such as, research labs, coworking spaces, and may even have recreational amenities. They are often anchored by an educational institution, located in a vibrant area, and attract new talent to communities of innovation.

In Gateway, an Innovation Hub can support the work of the Maryland Innovation Center (MIC) and help expand its network and partnerships. Therefore, the master plan recommends that the Innovation Hub be in close proximity to the MIC and near the Woonerf, the plan's key public focal point.

Figure 17: Conceptual rendering of the Innovation Node

Transformative Placemaking

- ✓ The plan integrates a Woonerf (inspired by the Dutch term for a “living street”) as the main public open space—this is intended to be the "there, there" or hub of significant activity in Gateway.
- ✓ The plan emphasizes nodes as flexible areas featuring higher development intensity, a wide mix of uses, and urban plazas or other placemaking elements (such as a Woonerf segment, linear park segment, or similar).
- ✓ The Gateway of Tomorrow will include open spaces designed for flexibility, capable of hosting diverse activities throughout the day, season, and year, creating a vibrant public realm and a strong sense of community.
- ✓ The existing Columbia Association (CA) trail that runs along Columbia Gateway Drive will be retrofitted into a linear park with a wider bike/walk trail, native plantings, and other recreational amenities.
- ✓ The distribution of neighborhood parks and pocket parks will offer the community convenient access to multi-generational, accessible, and sustainable shared open spaces.

Nodes

- ✓ Some nodes could be the earliest locations for development activity to occur in Gateway.
- ✓ Nodes will provide development flexibility and allow for higher development intensity and a greater mix of uses at strategic locations.
- ✓ Taller buildings will be allowed at nodes, including retail, community, and other foot-traffic generating uses on the ground level.
- ✓ New and/or existing assets will serve as anchors at nodes.
- ✓ Nodes should connect to an interconnected network of streets.

Walkable Community

- ✓ An interconnected network of streets following property boundaries and road alignments will create a pedestrian-friendly environment that will foster productivity, social, and cultural interactions.
- ✓ Mid-block pedestrian connections, in appropriate locations, can reduce the scale of large development blocks, enhancing accessibility and improving ease of movement for all users.
- ✓ The elongated, linear design of the woonerf will provide the community with convenient access to a high-quality open space within a short walking distance from their work location or residence.
- ✓ Parking will be strategically located to allow people arriving by car to park once and walk to multiple destinations in Gateway.

Mix of Uses

- ✓ The plan will encourage and incentivize a mix of land uses across the entire 1,100-acre site.
- ✓ Uses that generate foot traffic on ground floors will be encouraged particularly in the nodes and along the Woonerf.
- ✓ Gateway will recognize the economic potential of industrial uses in appropriate locations while seeking ways for industry to thrive alongside other uses in the future.

Maximum visibility from outside Gateway

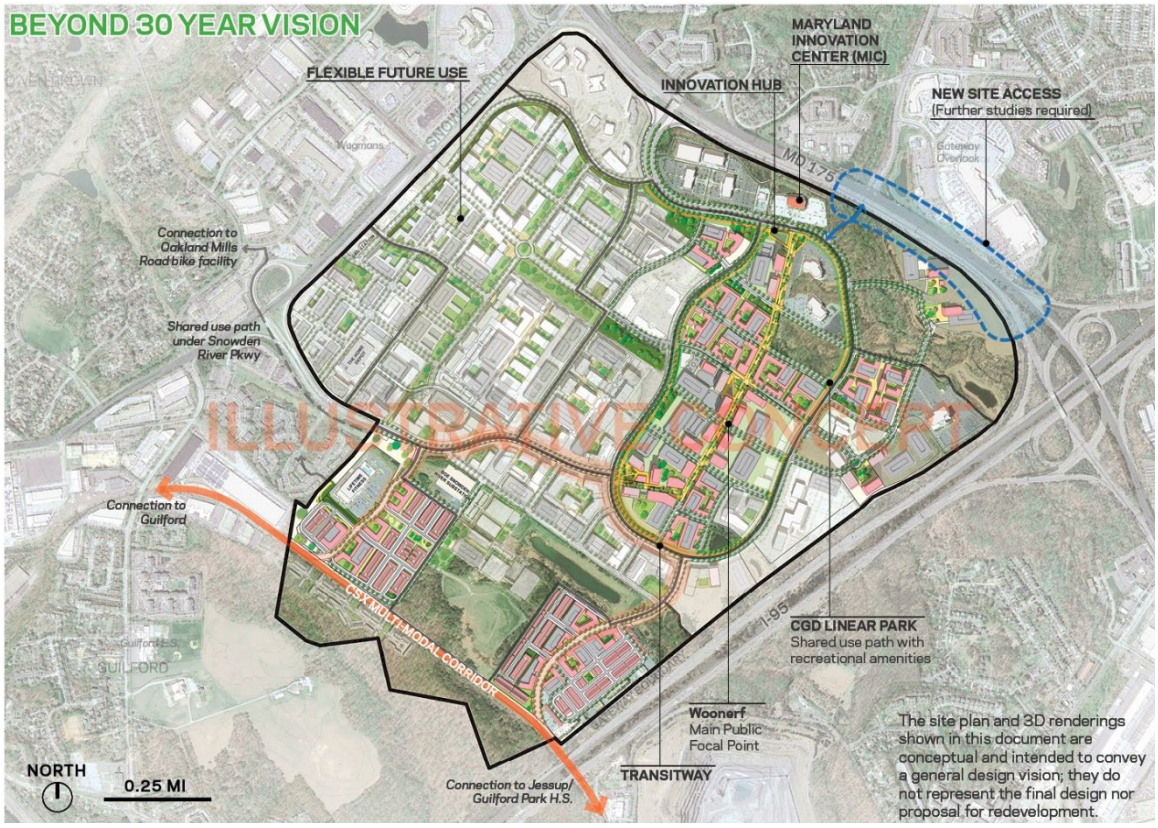
- ✓ Taller buildings will be allowed along major roadways such as Interstate 95 and Route 175, to increase Gateway's visibility from outside.
- ✓ The plan will encourage near-term infrastructure improvements near parcels readily available for development, including undeveloped parcels along Interstate 95.

Multi-modal connections within and outside Gateway

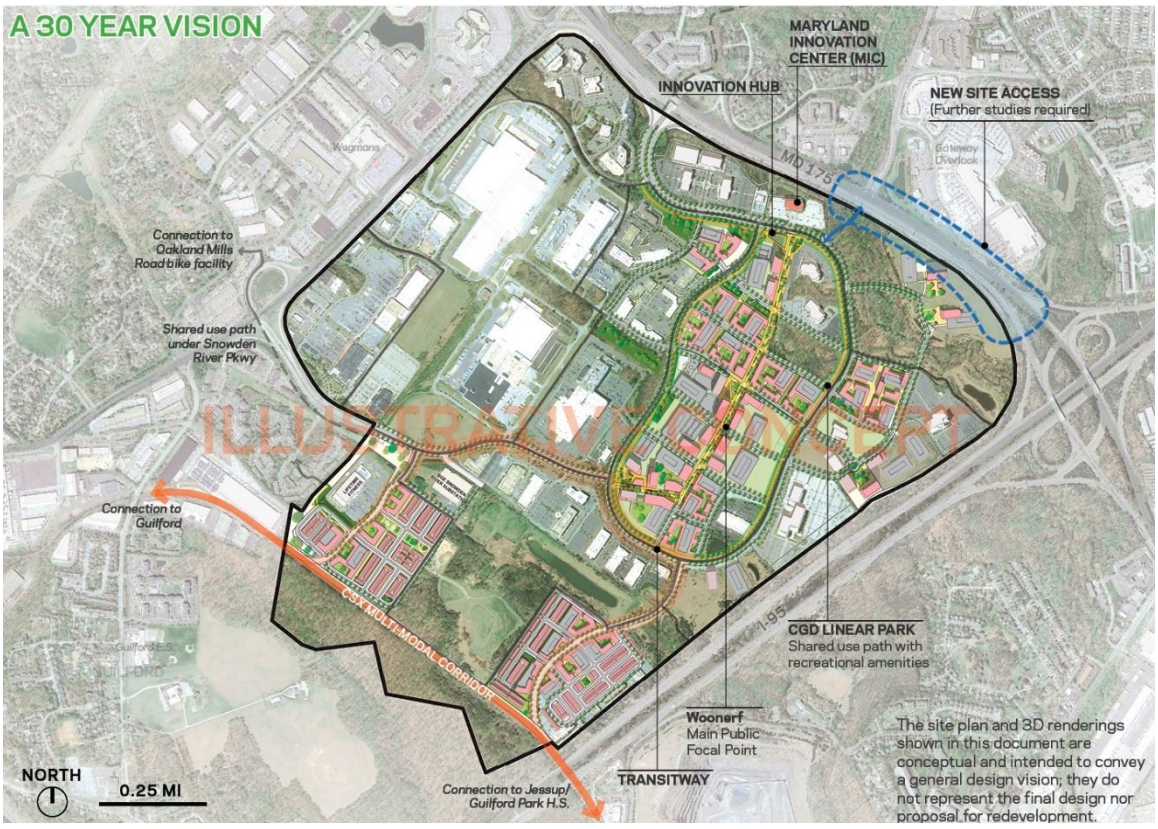
- ✓ All new and reconfigured streets will be designed in accordance with the County's Complete Streets policies, providing the infrastructure for pedestrians, bicyclists, transit vehicles, micromobility services, and vehicles to circulate safely.
- ✓ The CSX railway right of way will be transformed into an active transportation and transit corridor connecting Gateway to other parts of the County.
- ✓ The CSX corridor is anticipated to integrate a form of rubber wheel transit (such as micromobility oriented vehicles), which will be connected to the site by a transitway along Robert Fulton Drive.
- ✓ The plan acknowledges the evolving technologies associated with transportation and recommends remaining open and flexible to emerging modes that are functional, productive, and conducive to an innovation environment.
- ✓ A potential transit station is anticipated to be located at the intersection of Robert Fulton Drive and Columbia Gateway Drive.
- ✓ The plan recommends adding bike and pedestrian infrastructure to the two existing entry points at Robert Fulton Drive and Columbia Gateway Drive, to provide Gateway with active transportation connections to surrounding communities and the broader County active transportation network.
- ✓ The plan supports improving existing access and adding a new, welcoming entrance to Gateway from Route 175 bounding the northern edge of the site.
- ✓ New complete streets will be created as extensions of existing roads, where possible.

Figure 18: Conceptual rendering—High density, mix of uses, and multi-modal environment along the Woonerf

The site plan and 3D renderings shown in this document are conceptual and intended to convey a general design vision; they do not represent the final design or proposal for redevelopment.



1 *Map 5: Illustrative Site Plan (30-Year Vision)*



2 *Map 4: Illustrative Site Plan (Beyond 30-Year Vision)*

3.2 Land Use and Zoning

Existing Land Uses

The Gateway area today comprises approximately 140 different properties, with parcel sizes ranging from under 5 acres to over 50 acres. Around 25% of the land is currently designated as industrial use (260 Acres), including 84 acres that remain undeveloped. There are 574 acres of land covered with commercial uses, which include office and retail uses. The retail uses are concentrated at the Snowden Square Shopping Center, with around 500,000 square feet of retail space including department stores, restaurants, and a movie theater.

As a traditional business park, Gateway is predominantly composed of free-standing, low density buildings and many acres of surface parking (about 296 acres – 26.7% of the Gateway area). While residential communities such as the Stonehaven Apartments are adjacent to the site, there are currently no residential uses within Gateway itself.

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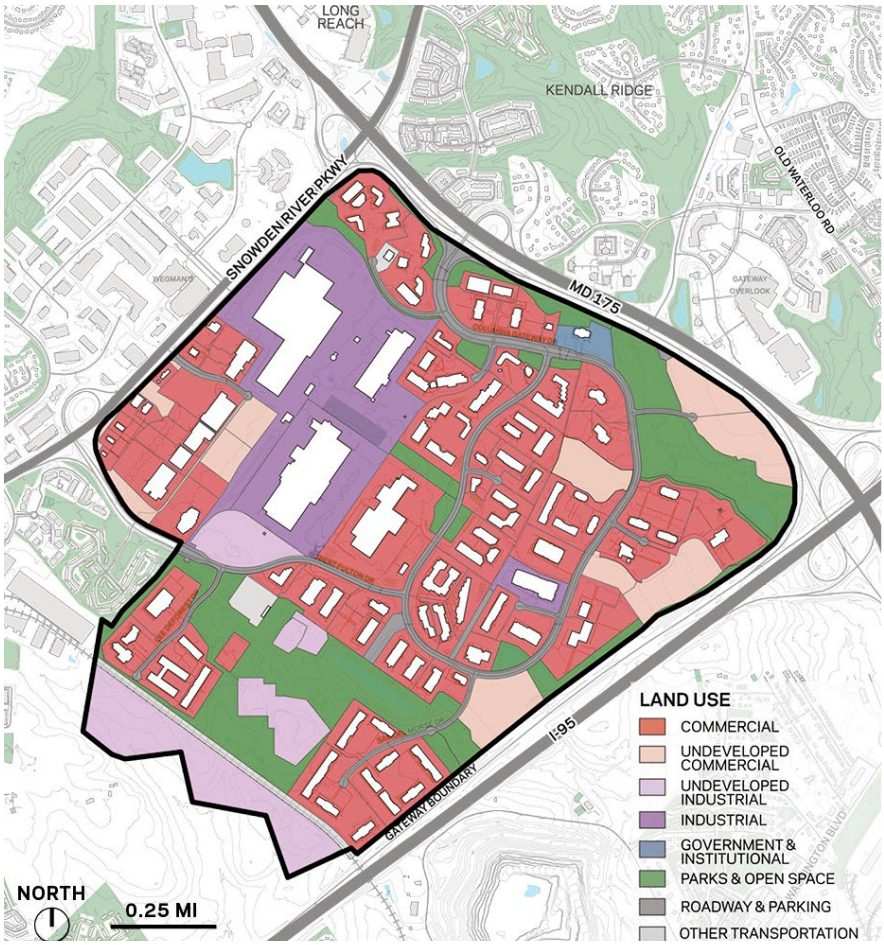


Map 6: Existing Land Use Map

260 AC.

designated as industrial use

including 84 acres that remain undeveloped

52%

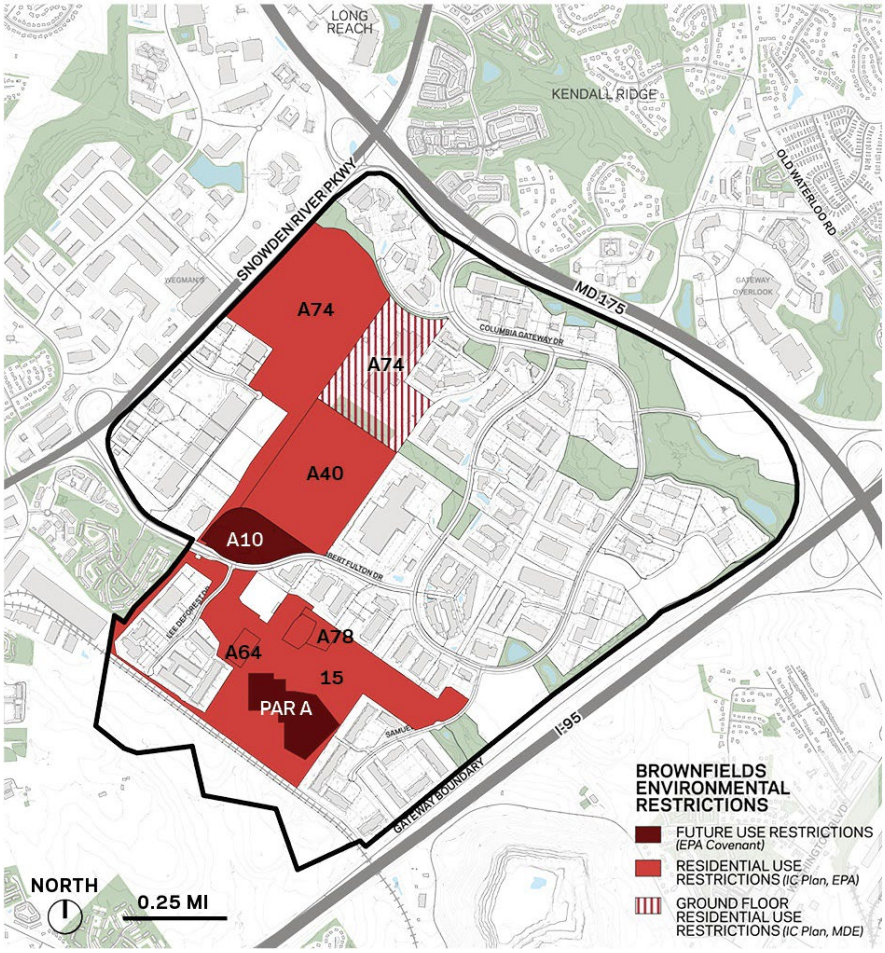
of the Gateway's land area is covered with commercial uses

including office and retail uses

2

Brownfields and Environmental Restrictions

Approximately 26% of Gateway's land area contains brownfields – sites with environmental contamination which are subject to residential use restrictions. These restrictions vary, with some sites only restricting ground-floor residential use. Sites subject to restrictions are shown on Map 7: Brownfields Environmental Restrictions Map; given the constraints on residential, an employment focus and continuation of industrial uses in these areas is recommended.



Map 7: Brownfields Environmental Restrictions Map

26%

of the land contains brownfields

Approximately 286 acres of the Gateway area contain brownfields with different levels of restrictions on certain uses

30 AC.

EPA covenant restrictions

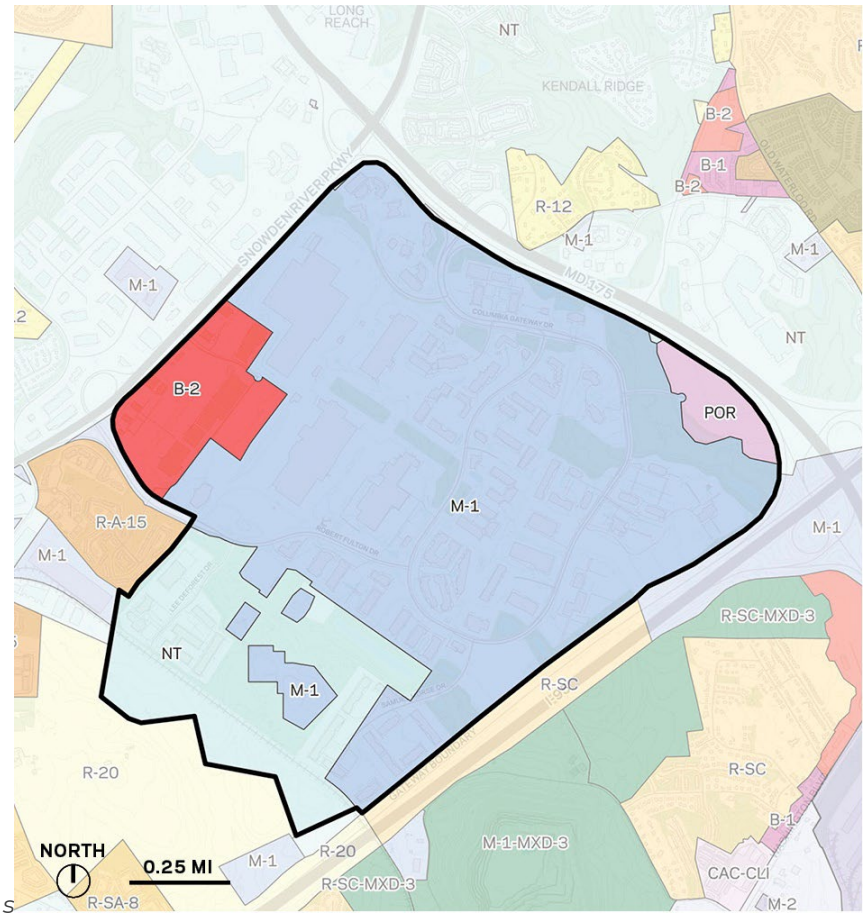
Around 30% of Gateway's brownfields are subject to future use restrictions (EPA Covenant), including the former GE land fill (Par A) and lot A10 - for which the owner is looking into restrictions scope and locations

Current Zoning

The following table (Table 1: Current Zoning Districts) summarizes the general intent and acreage of each zoning district within Gateway, and the plan (see Map 8: Current Zoning Map) illustrates how these districts are distributed across the site. In addition to current zoning, private covenants may also impact the use and design of developments in Gateway.

Zone	Description	Acreage (+/-)
M-1	**Manufacturing: Light (M-1)**—established to permit a mix of manufacturing, warehousing, and business uses with provisions for limited retail sales.	810 AC
B-2	**Business: General (B-2)**—established to provide for commercial sales and services that directly serve the general public.	75 AC
NT	**New Town District**	193 AC
POR	**Planned Office Research (POR)**—established to permit and encourage diverse institutional, commercial, office research and cultural facilities.	28 AC

Table 1: Current Zoning District



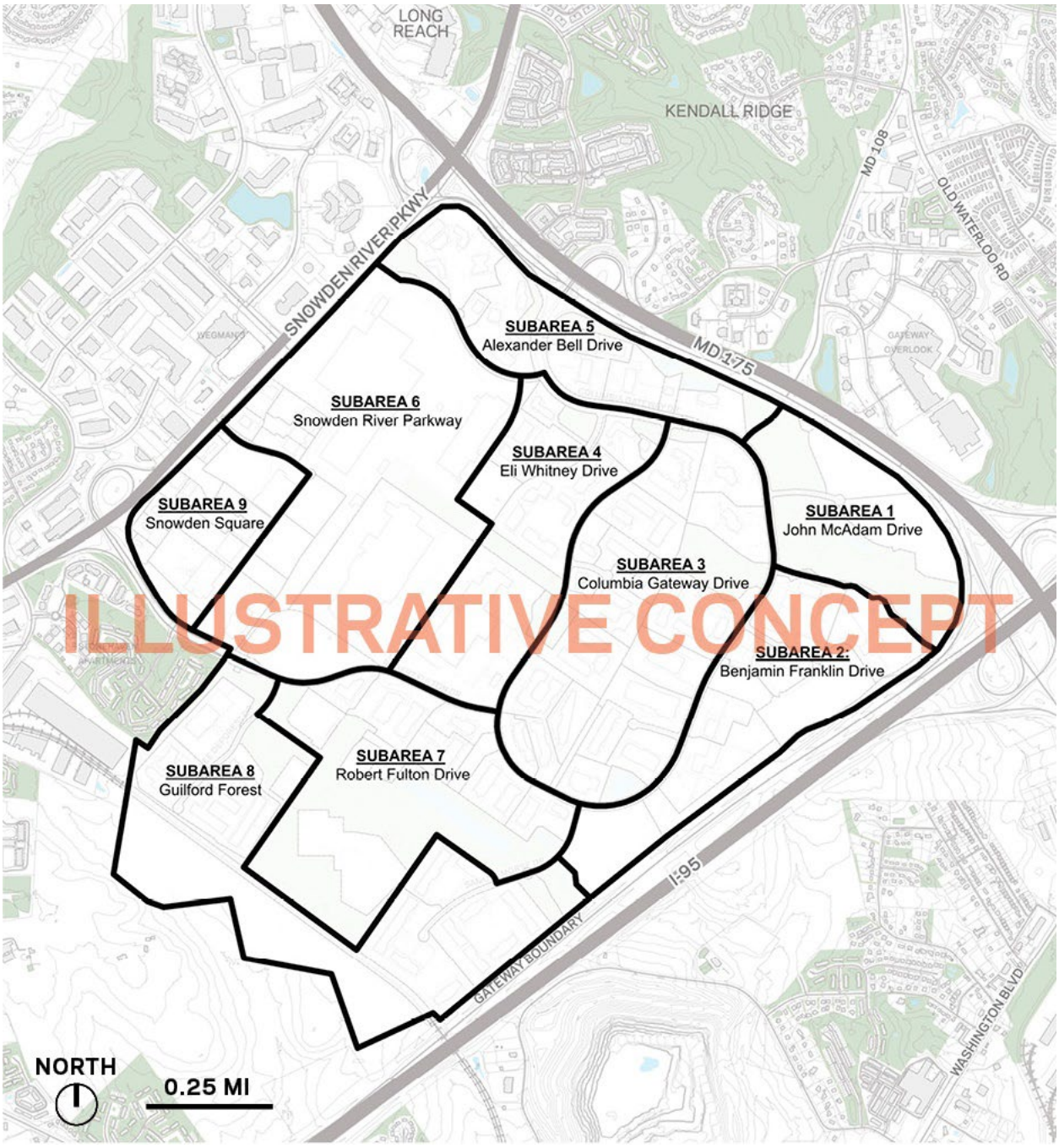
Map 8: Current Zoning Map

Subareas

The master plan organizes the 1,100-acre site into nine distinct subareas, allowing for flexible and efficient development while providing a more manageable framework for zoning, land use, public infrastructure priorities, open space, public amenities, and urban form, all aligned with a unified and cohesive design.

Subarea boundaries are defined by property lines and existing road alignments. For each subarea, the master plan outlines a vision informed by its location relative to new and existing assets, neighboring uses, transportation opportunities, and the desired development type(s) at that location. The subareas are as follows:

1. John McAdam Drive
2. Benjamin Franklin Drive
3. Columbia Gateway Drive
4. Eli Whitney Drive
5. Alexander Bell Drive
6. Snowden River Parkway
7. Robert Fulton Drive
8. Guilford Forest
9. Snowden Square



Map 9: Subareas Map

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Land Use Mix

The master plan highlights the importance of mixing the uses to create vibrant, complete communities that promote and provide opportunities for innovation. Conveniently located uses bring people and resources together, fostering synergies between buildings and the public realm, and creating a strong sense of place.

For Gateway, the overall goal is to allow a diverse mix of uses across all subareas, providing flexibility for development over time. This will support the vision of transforming Gateway into a magnet for employment and innovation, with new housing, entertainment, and job opportunities. These mixes would not be required on a site –by-site basis but encouraged within the subarea. To achieve this goal, the master plan establishes the following mixed-use focus area categories (depicted on Map 10: Subareas and Land Use Mix):

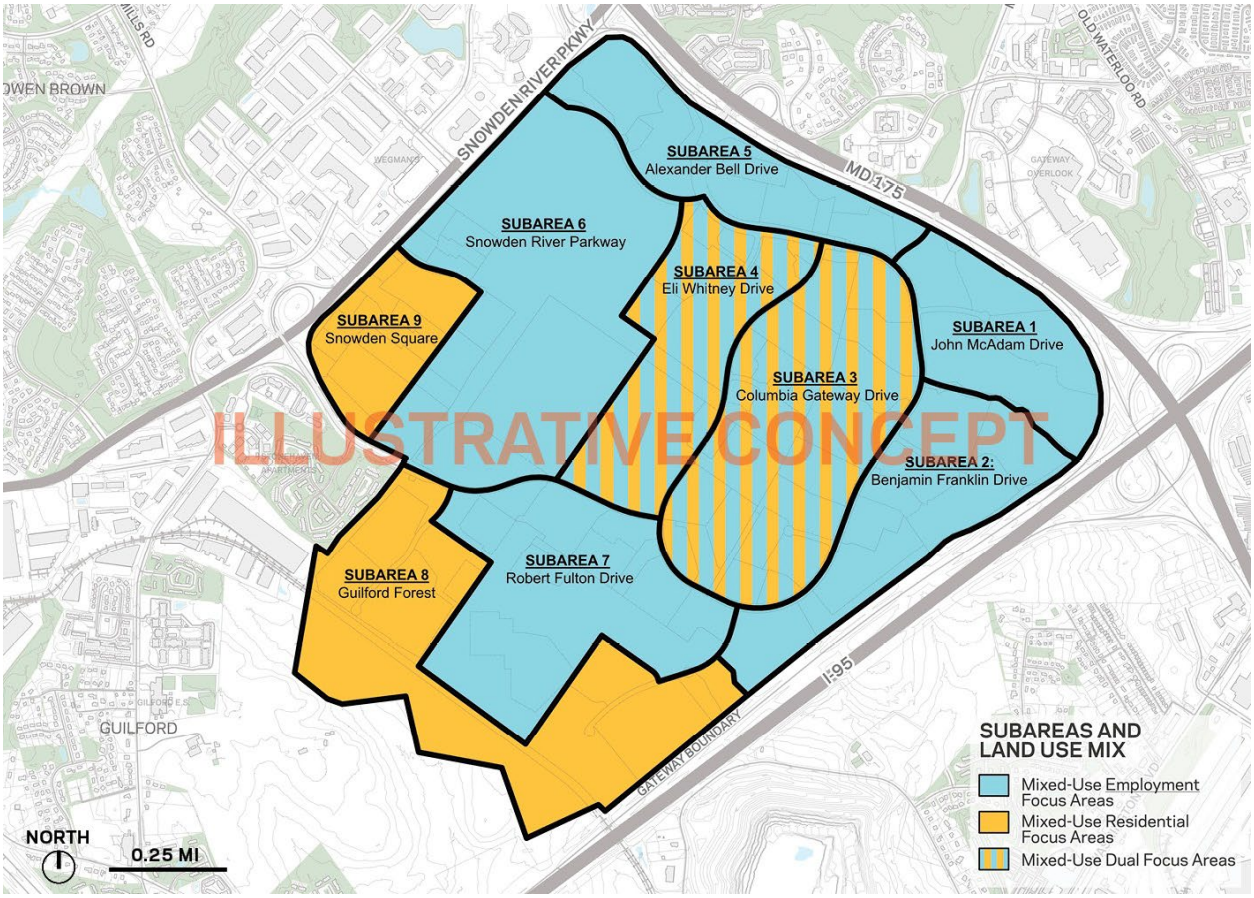
Mixed-Use Employment Focus Areas
Allow for medium to high-density mixed-use development with a focus on employment. In general, these employment focused areas are intended to be located along main public roads and in or near areas with visibility from external roads (such as Interstate 95 and Route 175).

Mixed-Use Residential Focus Areas
Allow for medium to high density mixed-use development with a focus on residential use. Residential focused areas are intended to be located adjacent to neighboring residential communities, and with easy access to amenities such as green spaces and trails.

Mixed-Use Dual Focus Areas
Allow for medium to high density mixed-use development with a dual focus on employment and residential uses. This mixed-use focus area is designed for areas envisioned to have a greater mix of uses, particularly around key public spaces like the Woonerf. It will integrate job-related, residential, and community-oriented uses, creating a fully mixed-use environment for living, working, learning, playing, and collaborating.

Potential Uses

Potential uses across all mixed-use focus areas could include – but are not limited to – office, research and development (R&D), commercial, retail, supporting industrial[13], hotel, dense missing middle housing (such as stacked townhomes and multiplexes), multi-family residential, community facilities/institutions, and educational uses. Following the adoption of the master plan, a detailed zoning program/code effort will be undertaken (further described under the Zoning Recommendations section later in this chapter) to establish the specific list of permitted uses for each mixed-use focus area.



Map 10: Subareas and Land Use Mix Map

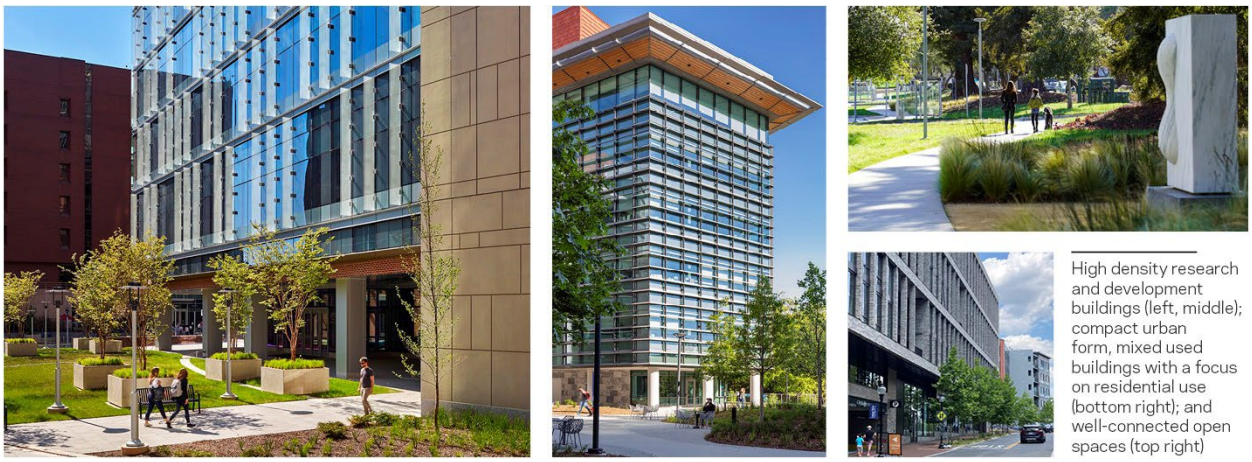
[13] Supporting industrial refers to certain industrial uses, such as flex spaces and data centers, that support targeted employment sectors in innovation districts.

Redevelopment Vision for Subareas

This section outlines the redevelopment vision for each subarea, providing an overview of the existing zoning, and offering recommendations and strategies about land use mix and targeted percentages, transportation infrastructure goals, open space and public amenities and the desired urban form and building heights. The zoning program should consider how to incentivize and encourage these recommendations in the subareas. For example, density bonuses could be offered on a project basis to realize the land use goals. Alternatively, a performance metric could be put into place to advance land use goals and amenities. Also, the targeted percentages and how to incentivize them should be further explored during the creation of a new zoning program for Gateway.

Various existing uses already support the vision of the innovation district and are critical to cultivating a niche innovation market. The plan supports the retention of these uses and anticipates that redevelopment will be incremental. As new development is built, buffers, screening, setbacks, or other design elements and transitions may need to be considered so new and existing uses can coexist through the redevelopment process. At the same time, visibility is important to existing and future businesses in Gateway; therefore, it will be important to ensure business visibility in the design of any buffers or other screening elements. The plan anticipates new industrial uses will emerge to support the innovation district, potentially to include data centers. The future zoning evaluation should include assessment of how new industrial uses, including data centers, can coexist with residential communities — taking into account screening and noise considerations.

Given the unique mix of uses that are envisioned for Gateway and its incremental redevelopment strategy, new amenities described in the subareas are anticipated to be tied to new development. While new or reconfigured roads will be designed per the County's Complete Streets policy, the policy allows for flexibility and recognizes that every street will not necessarily accommodate every mode of transportation. Also, the implementation of the Woonerf is anticipated to create more multi-modal design flexibility in Gateway's future street network.



High density research and development buildings (left, middle); compact urban form, mixed use buildings with a focus on residential use (bottom right); and well-connected open spaces (top right)

SUBAREA 1: JOHN MCADAM DRIVE

This subarea comprises about 80 acres and is bounded by Interstate 95 on the east, Route 175 on the north, Columbia Gateway Drive on the west, and Dorsey Run on the south. There is no existing development in this subarea.

Keymap

Current Zoning

The land within this subarea is currently zoned to allow and encourage diverse institutional, commercial, office research and cultural facilities (Planned Office Research District – POR). The two main parcels in this subarea remain undeveloped. The bulk regulations for the underlying zone allow for a maximum height of 50 feet for structures with a minimum setback and 80 feet for structures with an additional 1 foot in height for every 2 feet of setback above the minimum. (See Howard County Zoning Regulations Section 115.0: POR (Planned Office Research) District for permitted uses in the existing zone).

Redevelopment Vision

The vision for this subarea is to become an activity node for Gateway and redevelop into an urban neighborhood with a mix of uses with a focus on employment. Redevelopment should capitalize on the visibility from Interstate 95 and Route 175, and could integrate uses such as – but not limited to – high-density office, research and development (R&D), institutional, healthcare facilities, retail, and hotel accommodations.

Land Use Mix and Targeted Percentages:

This subarea is envisioned to achieve a mix of land uses with a focus on employment with the following areawide land use targets:

- Non-Residential Uses: 70% – 100%
- Residential Uses: 0 – 30%

Transportation Infrastructure Goals:

The master plan recommends investment in new road infrastructure to improve connectivity and maximize development potential in this subarea, including:

- A new road connecting John McAdams Drive to Benjamin Franklin Drive
- A site access point along Route 175, which could straddle subarea 5, requiring further evaluation and coordination with the State Highway Administration. Refer to the Multi-Modal Facilities Map for additional information about the proposed street network.

Open Space and Public Amenities:

An Urban Plaza should be located within this subarea to serve as focal point for retail uses while providing active and passive recreation, and leisure opportunities for residents and workers. See Map 16: Conceptual Open Space Framework Map for additional information.

Urban Form and Building Height:

Taller buildings will be allowed and encouraged along major roadways. A variety of building heights should be provided across this subarea. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.

SUBAREA 2: BENJAMIN FRANKLIN DRIVE

This 110-Acre area comprises parcels located along Interstate 95, and is bounded by Dorsey Run on the north, Ridgely Run on the south, Columbia Gateway Drive and Samuel Morse Drive on the west, and Interstate 95 along the east. Existing development in this subarea primarily consists of multi-story office buildings.

Keymap

Current Zoning

This subarea is currently zoned for manufacturing, warehousing and light industrial use (M-1). Refer to the Howard County Zoning Regulations Section 122.0: M-1 (Manufacturing: Light) District for permitted uses, density and height regulations in the existing zoning district.

Redevelopment Vision

Similar to Subarea 1, the Benjamin Franklin subarea should become a node of activity and redevelop into a compact neighborhood with a mix of uses with a focus on employment. Land uses that benefit from the visibility from Interstate 95 are recommended, including – but not limited to—high-density office, R&D, retail, institutional uses, and supporting industrial uses. Supporting industry includes certain industrial uses, such as flex spaces and data centers, that support targeted employment sectors in innovation districts. Supporting industrial uses should be properly screened or set back from neighboring uses.

Land Use Mix and Targeted Percentages:

This subarea is envisioned to include a mix of land uses with a focus on employment, with the following areawide use targets:

- Non-Residential Uses: 70—100%
- Residential Uses: 0—30%

Transportation Infrastructure Goals:

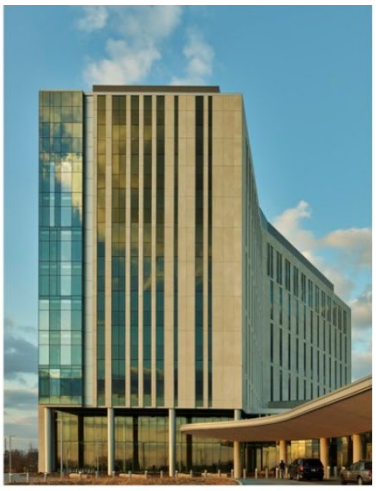
The master plan recommends investment on new road infrastructure to improve connectivity and maximize development potential in this subarea. This includes a new road connecting to the John McAdam Drive Subarea and multiple access points along Columbia Gateway Drive. Refer to Map 20: Multi-Modal Facilities Map for additional information about the proposed street network.

Open Space and Public Amenities:

Urban Design and open space amenities, such as streetscapes, plazas, open space connections, and courtyards, should align with the areawide public realm and open space recommendations. As an activity node, this subarea could feature an urban plaza which could serve as a focal point for concentrating retail uses. Additionally, a pocket park is recommended for this subarea. See Map 16: Conceptual Open Space Framework Map for additional information.

Urban Form and Building Height:

Taller buildings will be allowed and encouraged along major roadways. A variety of building heights should be provided across this subarea, particularly at nodes. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.



This plan recommends high density and a focus on employment uses along major roadways (top right), and buildings designed to frame urban plazas and open spaces at nodes (top left)

Supporting industrial buildings should be properly integrated into the built environment, with their functions visible expressed to the extend possible, to showcase their industrial nature (bottom)

1

This plan recommends high density and a focus on employment uses along major roadways (top right), and buildings designed to frame urban plazas and open spaces at nodes (top left).

Supporting industrial buildings should be properly integrated into the built environment, with their functions visibly expressed to the extent possible, to showcase their industrial nature (bottom)

2

SUBAREA 3: COLUMBIA GATEWAY DRIVE

This 170-acre subarea, bounded by Columbia Gateway Drive in all directions, is currently developed with mostly clusters of 1-2 story office and light industrial buildings, surrounded by surface parking.

Keymap

Current Zoning

The Columbia Gateway Drive Subarea is currently zoned for manufacturing, warehousing, and light industrial uses (M-1). Refer to the Howard County Zoning Regulations Section 122.0: M-1 (Manufacturing: Light) District for permitted uses, density and height regulations in the existing zoning district.

Redevelopment Vision

The Columbia Gateway Drive Subarea is anticipated to become the most densely developed area, featuring the highest concentration and diversity of uses in Gateway. This area is intended to foster walkability and social vibrancy, with the “Woonerf” serving as the main public focal point. There could be multiple nodes within this subarea, which could be anchored by different public amenities. The northern node could be anchored by the Innovation Hub (across from the Maryland Innovation Center – MIC), while the southern node could be anchored by a potential transit station.

Land Use Mix and Targeted Percentages:

A mix of land uses with a focus that is nearly evenly split **between employment or residential** uses is envisioned for this subarea, to ensure day/night activity and a socially vibrant urban environment. Permitted uses along the Woonerf are intended to be flexible, and design standards can provide for flexibility in uses while achieving a more urban form. However, light industrial, warehouse, data centers, and other manufacturing uses currently permitted by the underlying zoning district are not envisioned for redevelopment in this subarea. The plan anticipates redevelopment will be incremental; therefore, existing uses may coexist with redevelopment. For Subarea 3, targeted percentages of land uses are as follows:

- Non-Residential Uses: 40—60%
- Residential Uses: 40—60%

Transportation Infrastructure Goals:

- A transit stop is anticipated to be located near the intersection of Robert Fulton Drive and Columbia Gateway Drive, offering convenient access to transit options for development within the southern node.
- New cross streets connecting the woonerf to Columbia Gateway Drive, which may be constructed in multiple phases as redevelopment occurs.

Open Space and Public Amenities:

- An Innovation Hub, envisioned to be ideally located within walking distance from the Maryland Innovation Center (MIC), will serve as a shared space for innovators and entrepreneurs to collaborate, socialize, exchange ideas, and host events, becoming a new landmark in Gateway.

- Several open spaces and plazas are envisioned to be located within Subarea 3, including the Woonerf, which will become the heart of all activity for Gateway. The Woonerf will be a pedestrian-oriented space designed for people, bicycles, and slow-moving cars, with a key emphasis on fostering community interaction and bringing people together.

- Urban plazas should be located at nodes and should be designed as flexible, adaptable open spaces capable of hosting a variety of activities throughout the day and year-round.

- A linear park, with passive and active recreational amenities, and multi-use path is envisioned along the Columbia Gateway Drive loop to reinforce the pedestrian and bike connections in Gateway. It will also serve as a non-vehicular connection into and out of Gateway.

Urban Form and Building Height:

A variety of building heights should be provided in this subarea, with taller buildings at nodes to help establish focal points. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.

Along the Woonerf, variation and flexibility in the form of buildings, streetscapes, and setbacks are envisioned. However, an appropriate street width to building height should be identified to prevent the creation of dark spaces or wind corridors along the Woonerf. In general, the form of most spaces along the Woonerf should accommodate street-activating uses like retail and restaurants, especially within nodes; however, not all buildings are expected to have a “front door” that opens onto the Woonerf.

Potential urban form framing open spaces (top left); variation in building height (top right); shared amenities at the ground level of buildings (middle right); and urban plazas as flexible open spaces at nodes (bottom)

SUBAREA 4: ELI WHITNEY DRIVE

This subarea comprises approximately 100 Acres, located on the north side of the loop road created by Columbia Gateway Drive and bounded by this road on the north and east sides, Robert Fulton Drive on the south, and Lot A74 on the west. Existing development in this subarea primarily consists of industrial and flex office buildings.

Keymap

Current Zoning

This subarea is currently zoned for manufacturing and light industrial uses (M-1). Refer to the Howard County Zoning Regulations Section 122.0: M-1 (Manufacturing: Light) District for permitted uses, density and height regulations in the existing zoning district.

Redevelopment Vision

Redevelopment of Subarea 4 is planned to include a mix of uses and could integrate uses including but not limited to high-density office, R&D, civic/community uses, as well as medium to high-density residential uses.

Land Use Mix and Targeted Percentages:

A mix of land uses with a focus that is nearly evenly split **between employment or residential** uses is envisioned for this subarea, to ensure day/night activity and a socially vibrant urban environment. For Subarea 4, targeted percentages of land uses are as follows:

- Non-Residential Uses: 40—60%
- Residential Uses: 40—60%

Transportation Infrastructure Goals:

- A new street as an extension of Eli Whitney Drive to connect to Columbia Gateway Drive loop.
- New bike/ped connections should link the Columbia Gateway Drive linear park to the existing Columbia Association shared-use path located on Alexander Bell Drive.

Open Space and Public Amenities:

A neighborhood park, tied to new residential development, is envisioned for this subarea, combining passive and active recreation spaces and aligned with an integrated design to create a welcoming environment for users of all age groups and abilities. Refer to Map 16: Conceptual Open Space Framework Map for additional information.

Urban Form and Building Height:

The character and urban form envisioned for this subarea is a dense, compact development with mid-rise buildings and certain variation in building heights and massing articulation. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.

SUBAREA 5: ALEXANDER BELL DRIVE

This subarea comprises 70-80 Acres, bounded by Route 175 on the north, Columbia Gateway Drive on the south, Snowden River Parkway on the west to northwest side, and Dorsey Run on the east. Existing development in this subarea primarily consists of multi-story office buildings.

Keymap

Current Zoning

This subarea is currently zoned for manufacturing and light industrial use (M-1). Refer to the Howard County Zoning Regulations Section 122.0: M-1 (Manufacturing: Light) District for permitted uses, density and height regulations in the existing zoning district.

Redevelopment Vision

This subarea is planned to be redeveloped as an urban neighborhood with a mix of uses with focus on employment. Uses including but not limited to high-density office, R&D, and institutional uses could benefit from the proximity to the existing site access on Route 175 and visibility from outside Gateway.

Land Use Mix and Targeted Percentages:

This subarea is envisioned to achieve a mix of land uses with a focus on employment, with the following areawide use targets:

- Non-Residential Uses: 70—100%
- Residential Uses: 0—30%

Transportation Infrastructure Goals:
Improvements to existing site access on Route 175 should allow the integration of bike/ped facilities, creating new multi-modal connections to surrounding communities such as Kendall Ridge.

Open Space and Public Amenities:
Depending on the redevelopment and use mix, an urban plaza and/or pocket park are envisioned as the main shared open spaces for this subarea. Additionally, the existing Columbia Association (CA) shared use paths along Alexander Bell Drive will serve as connectors, supporting the goal of creating an interconnected network of green spaces in Gateway. See Section 3.4 Public Realm and Open Space for additional information.

Urban Form and Building Height:
A variety of building heights should be provided, with the taller buildings closer to the intersection of Snowden River Parkway and Route 175. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.

SUBAREA 6: SNOWDEN RIVER PARKWAY

This 210-acre subarea, located along the northern boundary of Gateway, covers much of the Snowden River Parkway frontage. The existing development primarily consists of large industrial warehouse buildings, surrounded by extensive surface parking areas. Brownfields are present in this subarea.

Keymap

Current Zoning

This area is zoned for manufacturing and light industrial uses (M-1) and business general (B2). Refer to the Howard County Zoning Regulations Section 122.0: M-1 (Manufacturing: Light) District, and Section 119.0: - B-2 (Business: General) District for permitted uses, density and height regulations in the existing zoning districts.

Redevelopment Vision

With its frontage along Robert Fulton Drive and Snowden River Parkway, redevelopment of this subarea should consider a mix of uses with a focus on employment. Uses including but not limited to high-density office, R&D, supporting industrial, commercial uses, and residential uses could benefit from access to Snowden River Parkway and Robert Fulton Drive. Supporting industrial includes certain industrial uses, such as flex spaces and data centers that support targeted employment sectors in innovation districts. Supporting industrial uses should be properly screened or set back from neighboring uses. Further, given the presence of environmental contamination, future uses may be limited on some sites and supporting industrial or low-density industrial uses may be appropriate.

This subarea includes properties with existing low-density industrial uses, where redevelopment within the 30-year horizon of this plan is unlikely. The master plan recommends that future development continue to have an employment focus where industrial coexists with other uses. This approach allows these areas to redevelop with a broader mix of uses or continue to thrive as industrial sites.

Land Use Mix and Targeted Percentages:

This subarea is envisioned to achieve a mix of land uses with a focus on employment, with the following areawide use targets:

- Non-Residential Uses: 70—100%
- Residential Uses: 0—30%

Transportation Infrastructure Goals:

As redevelopment in this subarea is likely to occur over the very long term, the master plan does not anticipate immediate infrastructure improvements. However, beyond the 30-year timeframe of the master plan, redevelopment may occur, incorporating an interconnected network of streets and a potential connection to McGaw Road.

Open Space and Public Amenities:

A neighborhood park and a pocket park are envisioned as the main shared open spaces for this subarea. These open spaces can serve as a buffer between supporting industrial uses and neighboring uses. Refer to Map 16: Conceptual Open Space Framework Map for additional information.

Urban Form and Building Height:

The character and urban form envisioned for this subarea is a dense, compact development with mid-rise buildings and certain variation in building heights and massing articulation. Buildings along public roadways, and especially along Snowden River Parkway should be designed to help establish a defined urban frontage. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.

SUBAREA 7: ROBERT FULTON DRIVE

This 140-acre subarea, bordered to the north by Robert Fulton Drive and to the south by the CSX right-of-way, consists of a mix of commercial, industrial, and light industrial uses. The existing development includes areas with environmental restrictions, the Baltimore Gas and Electric Company (BGE) Snowden Substation, a stormwater management pond, and low-rise, low-density development along Robert Fulton Drive.

Keymap

Current Zoning

Existing zoning districts in this subarea are M-1 District (Manufacturing: Light) and NT District (New Town). Refer to the Howard County Zoning Regulations Section 122.0: M-1 (Manufacturing: Light) District for permitted uses, density and height regulations in the M-1 zoning district. Final Development Plan (FDP) 236-A-1 within the NT District permits M-1 District uses.

Redevelopment Vision

The Robert Fulton Drive Subarea is envisioned as an urban neighborhood with a mix of uses including but not limited to office, research and development, commercial, Institutional and residential uses, and certain industrial uses, such as flex spaces and data centers, that support targeted employment sector in innovation districts. Supporting industrial uses should be properly screened or set back from neighboring uses. The former landfill site (PAR A) has potential to be transformed into a park with a blend of active and passive recreation amenities, a location for on-site renewable energy production, or other productive uses that may support the innovation district. Given the presence of environmental contamination, future uses may be limited on some sites and supporting industrial or low-density industrial uses may be appropriate.

Redevelopment should capitalize on the proximity to the CSX Multi-modal Corridor and a potential future transit station to create dense and walkable communities. Future uses may be limited on sites with environmental contamination and supporting industrial or low-density industrial uses may be appropriate.

<u>Land Use Mix and Targeted Percentages:</u>

The master plan recommends a mix of land uses with a focus on employment and the following areawide use targets:

- Non-Residential Uses: 70—100%
- Residential Uses: 0—30%

<u>Transportation Infrastructure Goals:</u>

- Robert Fulton Drive is envisioned to be reconfigured as a complete street with a designated transit lane.
- Separated bike lanes and sidewalks are envisioned along Robert Fulton Drive, between the Woonerf and Lee Deforest Drive, and a shared use path west of Lee Deforest Drive, connecting the Woonerf to Snowden River Parkway and communities beyond.

Open Space and Public Amenities:
A neighborhood park and a pocket park are envisioned as the main shared open spaces for this subarea. Refer to Map 16: Conceptual Open Space Framework Map for additional information.

Urban Form and Building Height:
The character and urban form envisioned for this subarea is a dense, compact development with mid-rise buildings. Buildings should exhibit variation in heights and massing articulation. Buildings along public roadways, and especially along Robert Fulton Drive should be designed to help establish a defined urban frontage. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.

SUBAREA 8: GUILFORD FOREST

The Guilford Forest Subarea comprises about 170 Acres, located along the southern boundary of Gateway. Existing development is predominantly located along Samuel Morse Drive and Lee Deforest Drive, including a mix of low-density office, flex industrial and commercial uses. This subarea is adjacent to the residential community of Stonehaven Apartments.

Keymap

Current Zoning

This subarea is currently zoned for light industrial and manufacturing uses (M-1), as well as a New Town under the provisions of ZR Section 125.0. Final Development Plan (FDP) 236-A-1 within the NT District permits M-1 District uses. Refer to the Howard County Zoning Regulations Section 122.0: M-1 (Manufacturing: Light) District for permitted uses, density, and height regulations in the M-1 zoning districts.

Redevelopment Vision

This area is envisioned as a mixed-use urban development with a focus on residential use including but not limited to a mix of medium to high-density residential, commercial, and civic/community uses.

Land Use Mix and Targeted Percentages:

Redevelopment is envisioned to achieve a mix of land uses with a focus on residential and the following areawide use targets:

- Non-Residential Uses: 10–35%
- Residential Uses: 65–90%

Transportation Infrastructure Goals:

A repurposed CSX right of way (ROW) will integrate an active transportation and transit corridor, with bike and pedestrian infrastructure, and the potential for rubber wheel transit, connecting Gateway to other parts of the County.

Open Space and Public Amenities:

A neighborhood park and a pocket park are envisioned as the main shared open spaces for this subarea. Refer to Map 16: Conceptual Open Space Framework Map for additional information.

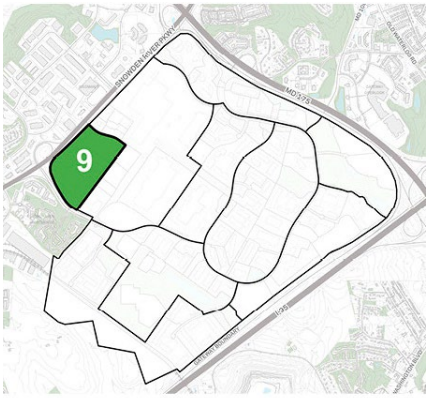
Urban Form and Building Height:

The character and urban form envisioned for this subarea is a dense, compact development with mid-rise buildings and certain variation in building heights and massing articulation. Taller buildings should be located to take advantage of views and amenities – such as green spaces and the CSX corridor. Refer to Map 13: Conceptual Height Zones Map for more details about the potential building height zones.

Additionally, residential focus areas should incorporate multi-family residential buildings and dense “missing middle” housing types, such as stacked townhomes.

SUBAREA 9: SNOWDEN SQUARE DRIVE

This subarea comprises about 50 acres of land at the corner of Snowden River Parkway and Robert Fulton Drive. The existing development mainly consists of single-story retail stores with surface parking.



Keymap

Current Zoning

This subarea is zoned B-2 (Business General), allowing for commercial sales and services that directly serve the general public. Refer to the Howard County Zoning Regulations Section 119.0: B-2 (Business: General) District for permitted uses, density and height regulations in the existing zoning districts.

Redevelopment Option

This subarea includes properties with existing low-density retail and other commercial uses, where redevelopment is unlikely within the master plan timeframe. To provide flexibility for future development, the master plan does not discourage the continuation of these uses but recommends exploring future reuse opportunities for these sites. When redevelopment occurs, the Snowden Square Drive subarea is envisioned to transform into an all-day vibrant, high-density mixed-use neighborhood with a primary focus on residential uses, with retail and foot-traffic generating uses at the ground level and residential uses above.

Land Use Mix and Targeted Percentages:

This subarea is envisioned to achieve a mix of land uses with a focus on residential uses, and the following areawide use targets:

- Non-Residential Uses: 10–35%
- Residential Uses: 65–90%

Transportation Infrastructure Goals:

Improvements to the existing site access at the intersection of Robert Fulton Drive and Snowden River Parkway will allow the integration of bike/pedestrian facilities, creating new multi-modal connections to surrounding communities and the Oakland Mills Road bike facility.

Redevelopment in this subarea is likely to occur over the very long term, beyond the 30-year timeframe of the master plan. When it does happen, it should include a new street grid with block sizes that encourage walking and biking as alternatives to driving.

Open Space and Public Amenities:

A neighborhood park and an urban plaza at a future node are envisioned as the main public spaces within this subarea. The neighborhood could integrate passive and active recreation facilities and adopt a linear form to buffer the redevelopment from surrounding industrial uses.

Urban Form and Building Height:

- A variety of building heights should be provided, with taller buildings at nodes such as the one planned near the intersection of Lee Deforest Drive and Robert Fulton Drive. Refer to Map 13: Conceptual Height Zones Map for recommended maximum building heights.
- Buildings along Snowden River Parkway and Robert Fulton Drive should be designed and oriented to help establish a defined urban frontage along these roadways.

The following table summarizes the recommendations that support the vision for each subarea:

Subarea	Land Use Mix and Targeted Percentages	Transportation Infrastructure Goals	Open Space and Public Amenities	Urban Form and Character
1 – John McAdam Drive	Mixed-Use Employment Focus – Non-Res: 70-100%; Res: 0-30%	New road connecting John McAdams Dr to Benjamin Franklin Dr.; Site access via Route 175*	Urban design and open space amenities such as streetscape, plazas, and courtyards – including an urban plaza at the node	An activity node with taller buildings at nodes and a variety of building heights to maximize visibility from the external roadways
2 – Benjamin Franklin Drive	Mixed-Use Employment Focus – Non-Res: 70-100%; Res: 0-30%	New road connecting John McAdams Dr. to Benjamin Franklin Dr.; new roads connecting to Columbia Gateway Dr.	Urban design and open space amenities such as streetscape, plazas, and courtyards – including an urban plaza and a pocket park	An activity node with taller buildings at nodes and a variety of building heights to maximize visibility from the external roadways
3 – Columbia Gateway Drive	Mixed-Use Dual Focus – Non-Res: 40-60%; Res: 40-60%	New cross streets connecting the Woonerf to Columbia Gateway Dr.; transit stop at southern node	Woonerf (pedestrian-friendly spine); urban plazas at nodes; linear park along Columbia Gateway Drive; Innovation Hub	Variety of building heights, with taller buildings at nodes to help establish focal points; an appropriate street width to building height is encouraged
4 – Eli Whitney Drive	Mixed-Use Dual Focus – Non-Res: 40-60%; Res: 40-60%	New street extending Eli Whitney Drive; new bike/ped facilities to connect to the CA trails	A neighborhood park, tied to new residential development, with a multi-generational design	Variety of building heights; buildings along Columbia Gateway Dr. should help establish a defined urban frontage
5 – Alexander Bell Drive	Mixed-Use Employment Focus – Non-Res: 70-100%; Res: 0-30%	Improvements to existing site access on Route 175 should allow the integration of bike/ped facilities	Depending on the redevelopment and use mix, an urban plaza and/or pocket park are envisioned; improvements to the existing CA shared-use trails	Variety of building heights, taller buildings encouraged close to the intersection of Snowden River Pkwy. and Route 175
6 – Snowden River Parkway	Mixed-Use Employment Focus – Non-Res: 70-100%; Res: 0-30%	No immediate infrastructure improvements; an interconnected network of streets and a potential connection to McGaw Road (beyond the 30-Year timeframe)	A neighborhood park and a pocket park are envisioned as the main shared open spaces for this subarea	Variety of building heights; buildings along public roadways including Snowden River Pkwy. should help establish a defined urban frontage
7 – Robert Fulton Drive	Mixed-Use Employment Focus – Non-Res: 70-100%; Res: 0-30%	Reconfiguration of Robert Fulton Dr. as a complete street with dedicated transit lane; new bike/ped facilities including a shared use trail connecting to Snowden River Pkwy. and communities beyond	A neighborhood park and a pocket park are envisioned as the main public spaces within this subarea	A dense, compact urban form; buildings along Robert Fulton Dr. should help establish a defined urban frontage
8 – Guilford Forest	Mixed-Use Residential Focus – Non-Res: 10-35%; Res: 65-90%	Repurposed CSX ROW to integrate an active transportation and transit corridor, with bike and pedestrian infrastructure	Neighborhood parks and pocket parks are envisioned as the main public spaces within this subarea	A dense, compact development with mid-rise buildings and certain variation in building heights
9 – Snowden Square	Mixed-Use Residential Focus – Non-Res: 10-35%; Res: 65-90%	Bike/Ped Connections to Oakland Mills Rd.; a new street grid when redevelopment occurs (Beyond 30-year timeframe)	A neighborhood park and an urban plaza at a future node are envisioned as the main public spaces within this subarea	Variety of building heights; buildings along Snowden River Pkwy. and Robert Fulton Dr. should help establish a defined urban frontage

Table 2: Summary of Recommendations per Subareas

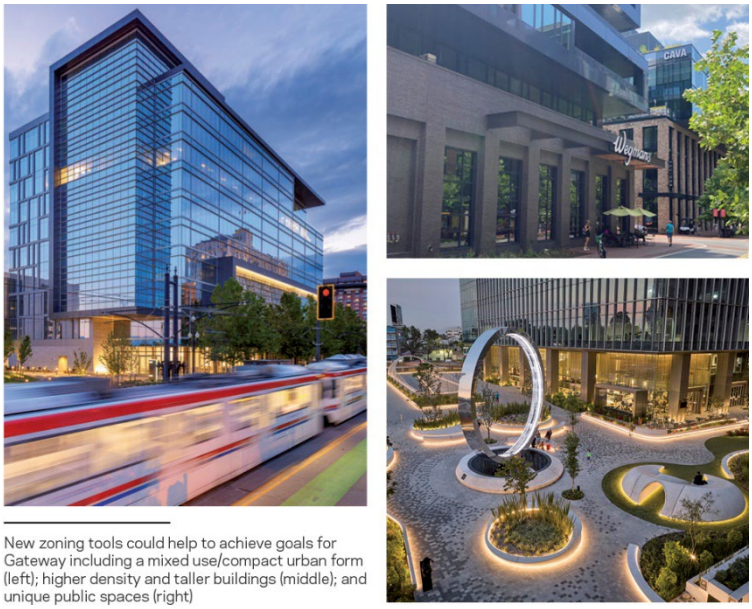
** Requires further evaluation and coordination with the State Highway Administration*

Zoning Approach

The long-term transformation of Gateway from a traditional business park – with a strong focus on industrial, manufacturing, and office uses – into an innovation district will require flexibility in terms of zoning regulations. The vision for Gateway is to continue to support economic development and business growth in Howard County, while integrating new employment and housing opportunities along with public amenities, multi-modal connections, transit options, and open spaces to foster the development of a thriving community of innovation.

The existing underlying zoning districts in Gateway contain height limitations that are restrictive, setbacks that do not allow for closely spaced taller buildings and prohibit residential uses. As Howard County does not currently have any zoning districts in its code that could realize the master plan's vision, and given the number of public amenities, open spaces, affordable housing goals and mix of uses the master plan would like to achieve, a new zoning district will need to be created. While the master plan provides recommendations on potential land uses, the master plan by itself does not change zoning or the permitted uses within Gateway. Following the adoption of the Master Plan, a detailed zoning program/code effort will be undertaken to establish the specific zoning regulations including a list of permitted uses for each mixed-use focus area.

For Gateway, the preliminary recommendation is to consider alternative zoning approaches such as performance-based zoning, incentive-based zoning, overlay districts, or form-based codes. These zoning tools could be applied individually or in combination to provide effective guidance on creating a great place. For example, a combined approach could result in an overlay district that contains performance standards, incentives, and/or form-based elements. And, as an alternative to a form-based code, design guidelines could be developed as part of the alternative zoning approach. While the master plan does not recommend a preferred zoning approach, stakeholders indicated a preference for an overlay district that would allow underlying zoning to remain in place. Stakeholders emphasized that an overlay district would ensure that existing uses would be able to remain in Gateway.



New zoning tools could help to achieve goals for Gateway including a mixed use/compact urban form (left); higher density and taller buildings (middle); and unique public spaces (right)

New zoning tools could help to achieve goals for Gateway including a mixed use/compact urban form (left); higher density and taller buildings (middle); and unique public spaces (right).

Performance-Based Zoning

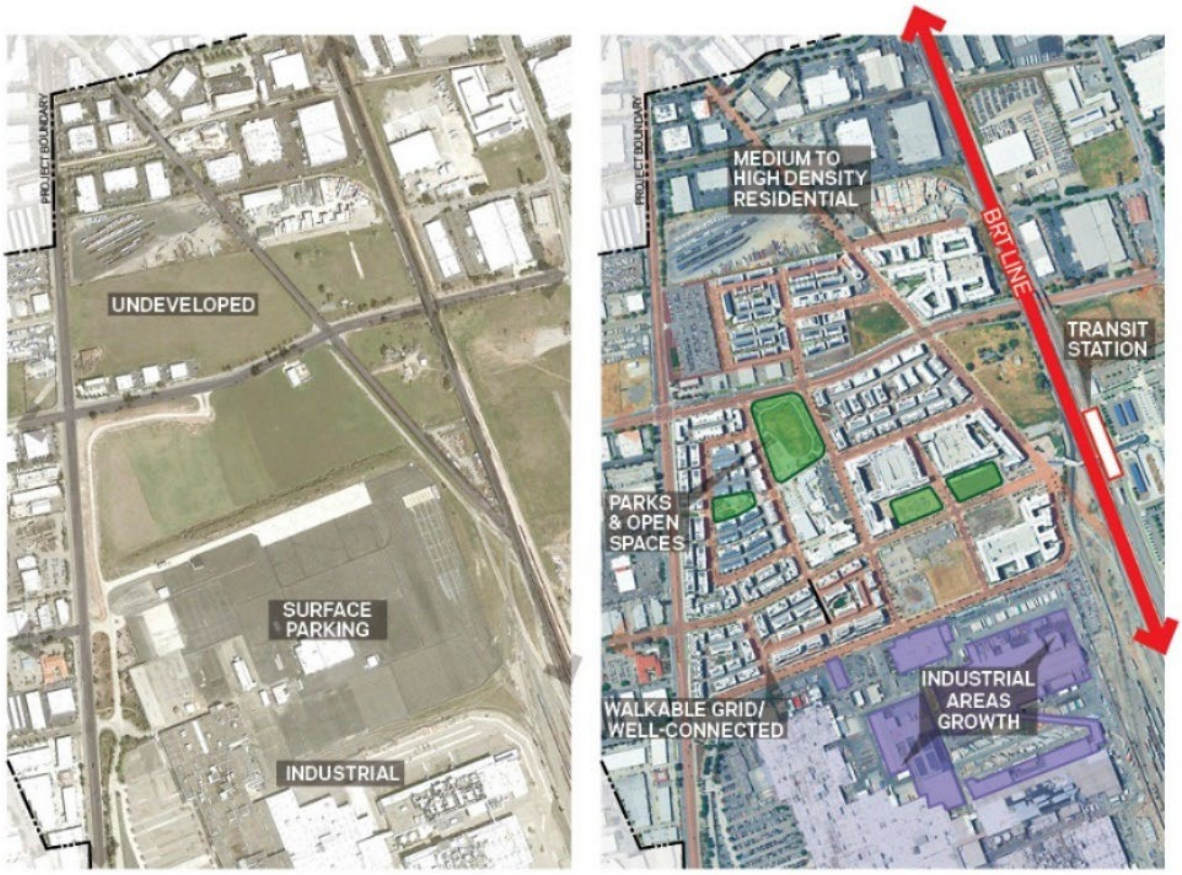
This type of zoning focuses on the outcomes or results of development rather than strict land use categories or specific locations. When this approach is used, it allows for more flexibility in how the land is utilized, promoting specific performance standards that developments must meet, such as environmental sustainability, traffic impacts, and community compatibility. Performance-based zoning encourages innovative design and planning solutions while still protecting community interests.

Case Study: Warm Springs Innovation District (Fremont, CA)

The City of Fremont adopted a performance-based approach to guide the redevelopment of a nearly 900-acre site into an innovation district. The goal of the Warm Springs/South Fremont Community Plan was to create an employment center with a focus on innovation and advanced manufacturing, while integrating housing opportunities, urban greens and plazas, and supporting uses such as schools, conference centers, art venues and other entertainment uses. The master plan targeted over 19,000 jobs and 4,000 housing units to be phased over time. Key elements include:

- Created a new zoning district—Warm Springs Innovation (WSI) district—to implement the Warm Springs/South Fremont Community Plan[14]
- Subdivision of the 900-acre site into 10 "planning areas", with each planning area allowing a distinct mix of land uses and establishing targets for future development
- A list of permitted, conditionally permitted, and prohibited uses in each planning area.
- A set of standards – such as minimum site area, minimum floor area ratios (FAR) and dwelling units per acre (DU/Acre), maximum parking ratios, and a job factor – to achieve overall goals in terms of jobs, housing units, affordable housing and sustainability.
- Procedures for master plans and subdivisions—sites with five or more acres were required to prepare a master plan prior to development approval.
- Parking credits for developments that provide car share and electric vehicles (EVs) spaces and EVs charging stations.

[14] https://www.codepublishing.com/CA/Fremont/html/Fremont18/Fremont1849.html



Warm Springs 2012 – Before Rezoning *(left): Predominantly industrial use, megablocks and large areas covered with surface parking lots (Source: Google Earth)*

Warm Springs 2025 – After Rezoning *(right): Expansion of industrial uses while integrating a new mix of uses, transit options, walkable blocks and new community amenities (Source: Google Earth)*

Incentive-based Zoning

This zoning tool offers incentives for developers to provide public benefits in exchange for more flexible zoning regulations. Developers can choose from a list of public benefits to provide, each benefit is assigned with a score, and a minimum score to qualify for incentives or bonuses must be achieved. Examples of incentives include reduced parking requirements, expedited permit review, greater building height, increased density, and reduced or waived application fees.

Case Study: Public Benefits Point System (Montgomery County, MD)[15]

The Public Benefits Point System is an incentive-based zoning tool adopted by Montgomery County to attract development in areas with transit while ensuring the delivery of high-quality public amenities – such as schools, affordable housing, walkable streets and a greener environment. Key elements include:

- Applies to commercial and residential zones with access to transit
- The County provides a list of specific public benefits for developers to choose from
- Projects must achieve a minimum score depending on their size, intensity, and location– for instance streetscape improvements could earn 20 points, while a library could earn up to 70 points
- The policy uses a data-driven approach, which periodically evaluates the point system, to ensure it aligns with its goals and continues to provide the right public benefits.

[15] https://montgomeryplanning.org/development/zoning/incentive-zoning-update/

Graphic showing the proposed distribution of public benefits across the four categories that align with Countywide priorities and supporting examples by category

Overlay District

A zoning overlay district applies an additional layer of standards on top of the existing base zoning to areas within defined boundaries. Overlay districts are commonly used in zoning codes to encourage uses that generate foot traffic (in downtown areas), protect environmental resources, preserve historic buildings and districts, or maintain the unique character of an area. These regulations can also be used to promote specific types of development, and provide flexibility in use, height, density, and design requirements.

Case Study: Beltline Overlay District (Atlanta, GA)[16]

The City of Atlanta adopted a zoning overlay district to ensure that any redevelopment that occurs along the Beltline Corridor achieves a compatible mix of uses including residential, commercial, and recreational uses. The Beltline is a 22-mile network of trails and parks located along a former rail corridor. The overlay district establishes a set of design standards to:

- ✚ Encourage a grid of smaller blocks and connected streets
- ✚ Create new mixed-use and commercial nodes at Beltline station areas that are transit-oriented and pedestrian friendly
- ✚ Promote development of a wide range of housing types appropriate to meet various housing needs and income levels

Other features of the Beltline Overlay Zoning include:

- Specific requirements to improve the relationship of buildings to the streets (such as building entrances, loading areas, and driveway curb cuts)
- Open space requirements are regulated per the underlying zoning, while open space incentives are provided by the overlay district standards and may be counted towards open space requirements, including:

[16] City of Atlanta Code of Ordinances, CHAPTER 36. - BELTLINE OVERLAY DISTRICT REGULATIONS

- New streets incentive – for new streets connecting public or private streets not currently connected
- Connectivity incentive – for developments which provide connectivity across public rights-of-way which do not provide pedestrian access (such as railroads and freeways) through new streets, pedestrian walkways, or shared use paths
- On-street parking incentive – for new on-street parking that meets certain criteria (such as when it is provided on streets with no existing on-street parking or when all new parking spaces are accessible to the general public).

- Underlying zoning requirements remain applicable, unless specifically prohibited by the overlay district regulations
- Data centers with a proposed location within 500 feet of the Beltline shall meet specific requirements (such as lot coverage, floor area, proximity to other data centers, and design standards)

Public spaces around the Ponce City Market on the east side of the Atlanta Beltline

Form-Based Code

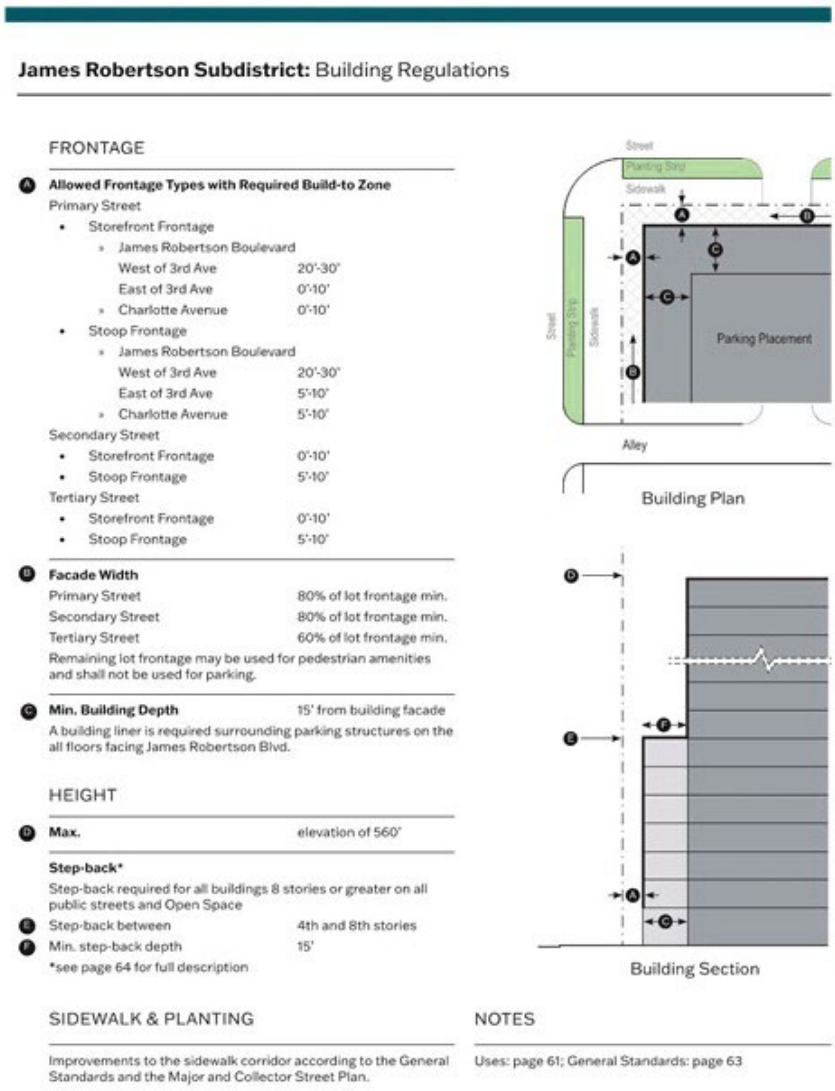
Form-Based Codes (FBCs) regulate land development to achieve a specific urban form, ensuring predictable build results and a high-quality public realm. FBCs prioritize controlling physical form to shape the public realm and regulate buildings and the streets together, not separately. Regulations and standards often include clear diagrams to address the relationship between building facades and the public realm, the building massing and articulation, and the scale and types of streets and blocks.

Case Study: Nashville's Downtown Code (Nashville, TN)[17]

The Downtown Code is a form-based zoning code that applies to much of the Downtown Community Plan area in Nashville, Tennessee. The Downtown Code regulates the physical form of buildings to ensure each makes a positive contribution to a complete urban environment. Some of the standards set forth by the DTC include:

- Defines a vision for each neighborhood in Downtown, allowing taller buildings in certain areas while other areas remain zoned for a neighborhood-scale development
- Creates areas of increased height and density
- Provides clear direction on minimum development and maximum development
- Emphasizes high-quality frontage design through a set of standards – including glazing, vehicular access, landscaping and active uses on the ground level
- Encourages buildings with multiple stories and multiple uses
- Provides standards for creating active, attractive streets and streetscapes

[17] Nashville Downtown Code (DTC), https://www.nashville.gov/departments/planning/long-range-planning/community-plans/downtown/downtown-code-dtc



James Robertson Subdistrict: Building Regulations

FRONTAGE

A Allowed Frontage Types with Required Build-to Zone

Primary Street
- Storefront Frontage
  - » James Robertson Boulevard
    - West of 3rd Ave 20'-30'
    - East of 3rd Ave 0'-10'
  - » Charlotte Avenue 0'-10'
- Stoop Frontage
  - » James Robertson Boulevard
    - West of 3rd Ave 20'-30'
    - East of 3rd Ave 5'-10'
  - » Charlotte Avenue 5'-10'

Secondary Street
- Storefront Frontage 0'-10'
- Stoop Frontage 5'-10'

Tertiary Street
- Storefront Frontage 0'-10'
- Stoop Frontage 5'-10'

B Facade Width

Primary Street	80% of lot frontage min.
Secondary Street	80% of lot frontage min.
Tertiary Street	60% of lot frontage min.

Remaining lot frontage may be used for pedestrian amenities and shall not be used for parking.

C Min. Building Depth 15' from building facade

A building liner is required surrounding parking structures on the all floors facing James Robertson Blvd.

HEIGHT

D Max. elevation of 560'

Step-back*

Step-back required for all buildings 8 stories or greater on all public streets and Open Space

E Step-back between 4th and 8th stories

F Min. step-back depth 15'

*see page 64 for full description

Building Plan

Building Section

SIDEWALK & PLANTING

Improvements to the sidewalk corridor according to the General Standards and the Major and Collector Street Plan.

NOTES

Uses: page 61; General Standards: page 63

Example of building regulations and standards outlined in Nashville's Downtown Code for a particular subdistrict

Key Recommendations:

- The Master Plan recommends a detailed zoning program/code effort be undertaken to establish the specific zoning regulations for Gateway's proposed mix of uses
- The applicability of alternative zoning approaches should be further evaluated, including performance-based zoning, incentive-based zoning, overlay districts, and form-based code elements (or design guidelines)
- The alternative zoning evaluation should determine how various approaches can incentivize the envisioned built form and associated infrastructure and amenities

3.3 Urban Form and Development

The long-term transformation of Gateway into an innovation district may take 30 years or more and will occur on a site-by-site basis. The master plan offers recommendations to guide the future creation of urban form and public realm development standards. Gateway is envisioned to evolve into a compact, walkable physical environment that fosters multigenerational, social interactions and better relationships between buildings and public spaces. Future zoning regulations should encourage and incentivize development standards that meet the envisioned form.

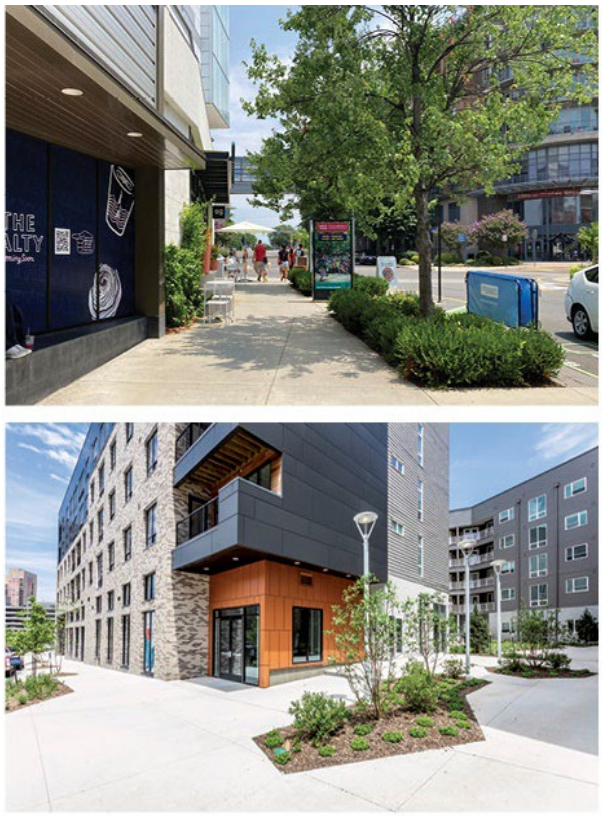
The plan also seeks to concentrate the highest density and tallest buildings around high-quality open spaces at nodes, shaping them into identifiable urban spaces that foster a strong sense of community. This approach offers flexibility for multiple nodes of activity to emerge in different subareas over time; some nodes could be the earliest locations for development activity to occur in Gateway.

The Columbia Gateway Drive subarea is envisioned to become the urban core and heart of all activity in Gateway. This core area is envisioned to include the primary focal point – the Woonerf – along with new perpendicular streets and a focus on uses that generate pedestrian activity, creating a unique environment for walking and biking. Buildings within and around the Columbia Gateway Drive loop should be designed to frame the streets and public spaces

Examples of the envisioned urban form for medium to high density residential focus areas (upper and middle left); high density office buildings (upper right), and active ground floor uses/walkable areas (bottom)

Site Design

The site design recommendations provide guidance on the establishment of a walkable block structure, hierarchy and character of streets, and building placement – including setbacks and build-to lines. These recommendations will support the goal of creating a pedestrian-focused physical environment and a vibrant and engaging public realm that brings people together.



Examples of walkable urban areas (top, bottom); anc
mid-block pedestrian connections (middle)

Examples of walkable urban areas (top, bottom); and mid-block pedestrian connections (middle)

Block Structure

In Gateway, the existing physical environment is very car-oriented, prioritizing the convenient access for existing uses but failing to create appropriate conditions for walking or biking. Buildings are spaced farther apart, placed away from street edge, and roads lack connectivity. In general, block sizes should align with the use and functional requirements of the sites. This approach will provide flexibility for integrating new uses while allowing existing uses—such as supporting industrial uses—to continue thriving in certain areas.

The reconfiguration of the existing block structure will be essential for transforming Gateway into a great walkable urban place. A new grid of streets that generally follows property lines will increase connectivity within subareas. This grid will also break down the superblocks—like the one formed by the Columbia Gateway Drive loop—into smaller, more compact blocks that encourage people to walk or bike instead of driving (as depicted on diagrams in Fig 19: Approach to Creating a Walkable Community). Block sizes will vary based on property lines, generally ranging from 400–450 feet. These dimensions are comparable to the urban fabric found in walkable areas of Downtown Washington, DC, and Baltimore. Additionally, the master plan recommends integrating mid-block pedestrian connections for larger blocks, allowing for increased walkability and maximizing porosity of the new blocks.

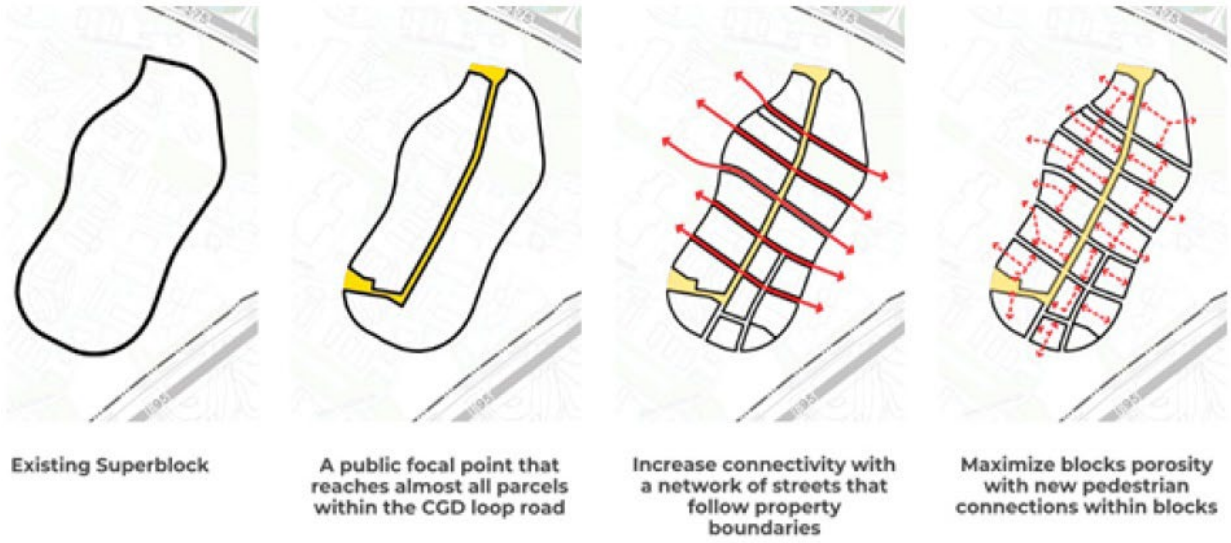


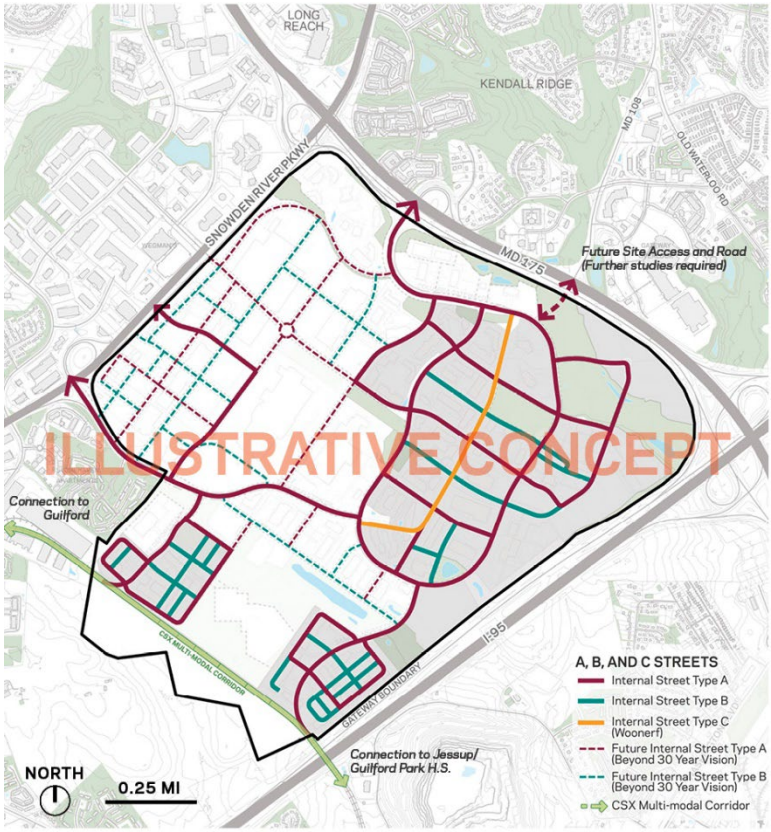
Figure 19: Approach to Creating a Walkable Community:

Street Pattern

The master plan proposes a street network where new and reconfigured streets will accommodate multiple modes of transportation, with a strong emphasis on pedestrian safety, comfort and accessibility. New street designs will be aligned with the typical street types as detailed in the Howard County Complete Streets and Bridges Design Manual Vol. III.

The street network aims to prevent conflicts between loading and service functions and pedestrian movements. To avoid circulation of heavy vehicles and safety issues within the core area, sites with frequent operation of large trucks should provide truck access directly from Snowden River Parkway or Robert Fulton Drive. To further support this goal, the master plan provides guidance on the location of the envisioned main function for each road types as depicted on Map 11: Street Pattern Map. Building entries and lobbies are envisioned to face Type A roads, while parking entrances, loading, and service areas should be limited to Type B roads. Lobbies and drop-off zones are discouraged on Type C roads (The Woonerf); however, ground-floor units may have direct access from the street.

For further details about the street types and configurations envisioned, refer to section 3.7 Transportation and Mobility.



Map 11: Street Pattern Map

Build-to Lines and Setbacks

The underlying zoning regulations currently regulate building setbacks. Zoning districts such as M-1 (Manufacturing: Light) require a 50-footsetback from any internal or external public street right-of way. The master plan recommends minimizing building setbacks and establishing build-to lines for certain areas, including the area within and around the Columbia Gateway Drive loop road. This will help to create a dense urban environment with better relationship between buildings and the public realm (see Map 12: Conceptual Build-to Lines Map). Future zoning regulations should encourage and incentivize development standards that achieve this urban form.

For areas with ground-floor retail or employment uses, the public realm should be designed to enhance the pedestrian experience by integrating features such as private open spaces, outdoor seating and dining areas, or allowing ground floor activities to spill out into the public realm. Where ground floor residential units are provided (or employment uses where privacy is important), the public realm should prioritize increasing privacy with landscaping, private front yards, or grade separation. When uses requiring privacy front public gathering areas—like the Woonerf—the public realm should incorporate features that contribute to the pedestrian experience (such as plazas, seating, or other amenities), though these may be used in combination with landscaping, private front yards, or grade separation to maintain privacy. Future design standards should also be sensitive to the mix of neighboring uses, especially for industrial, as buffers may be needed depending on the neighboring uses.

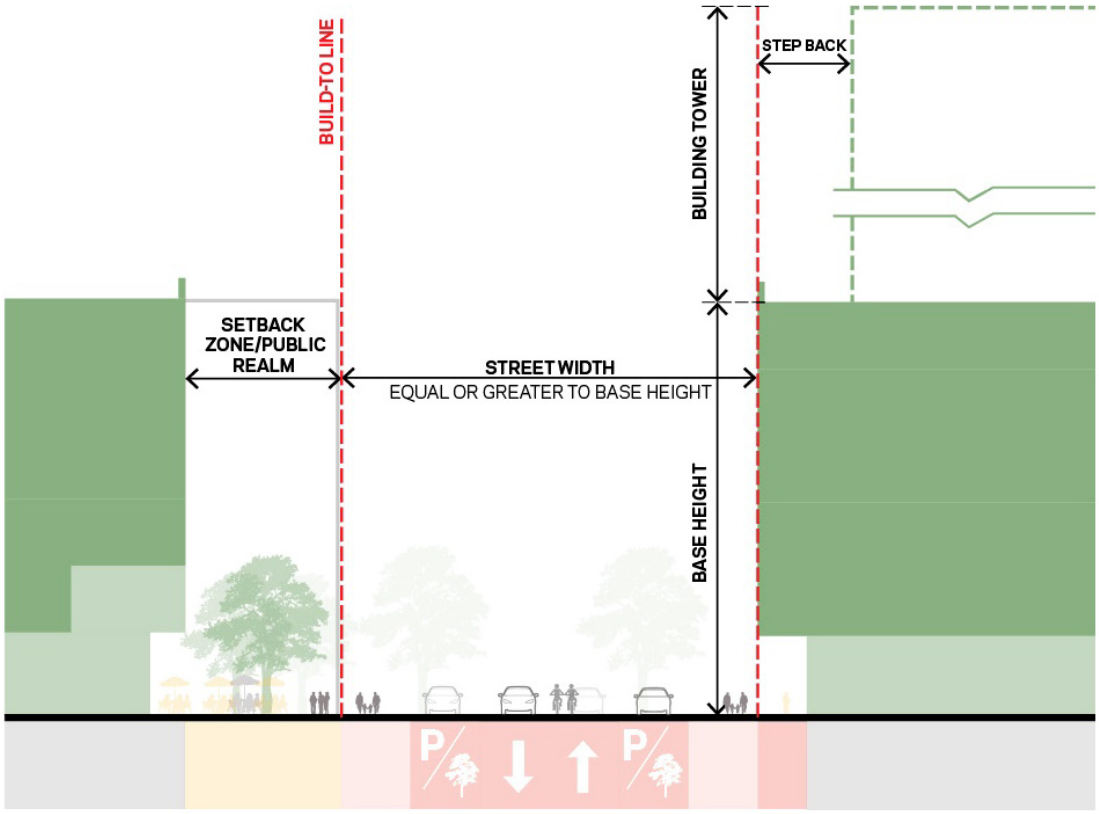
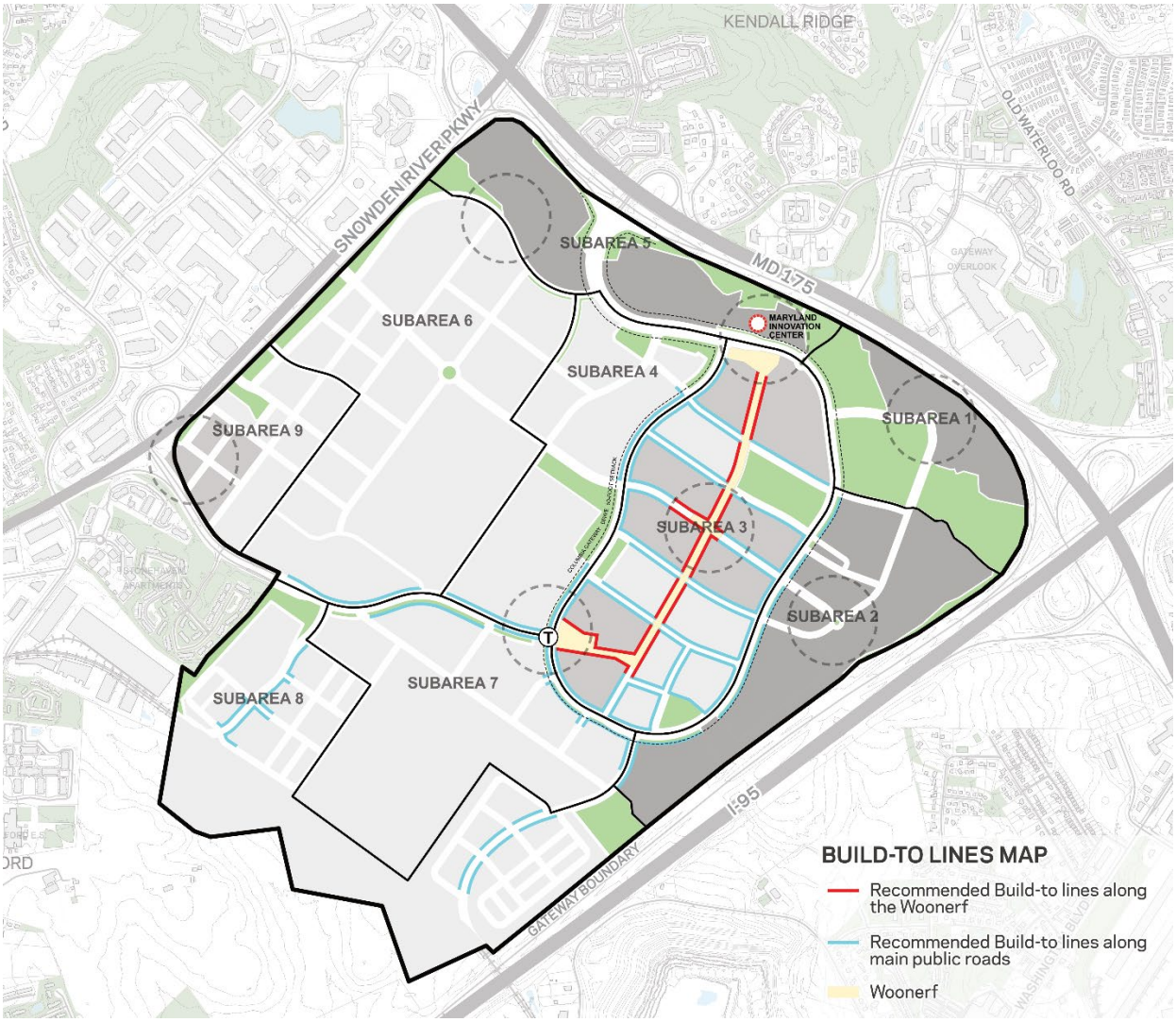


Figure 20: Conceptual section illustrating an appropriate ratio of street width to building base height along the Woonerf



Map 12: Conceptual Build-to Lines Map

Building Design

Scale, Massing and Orientation

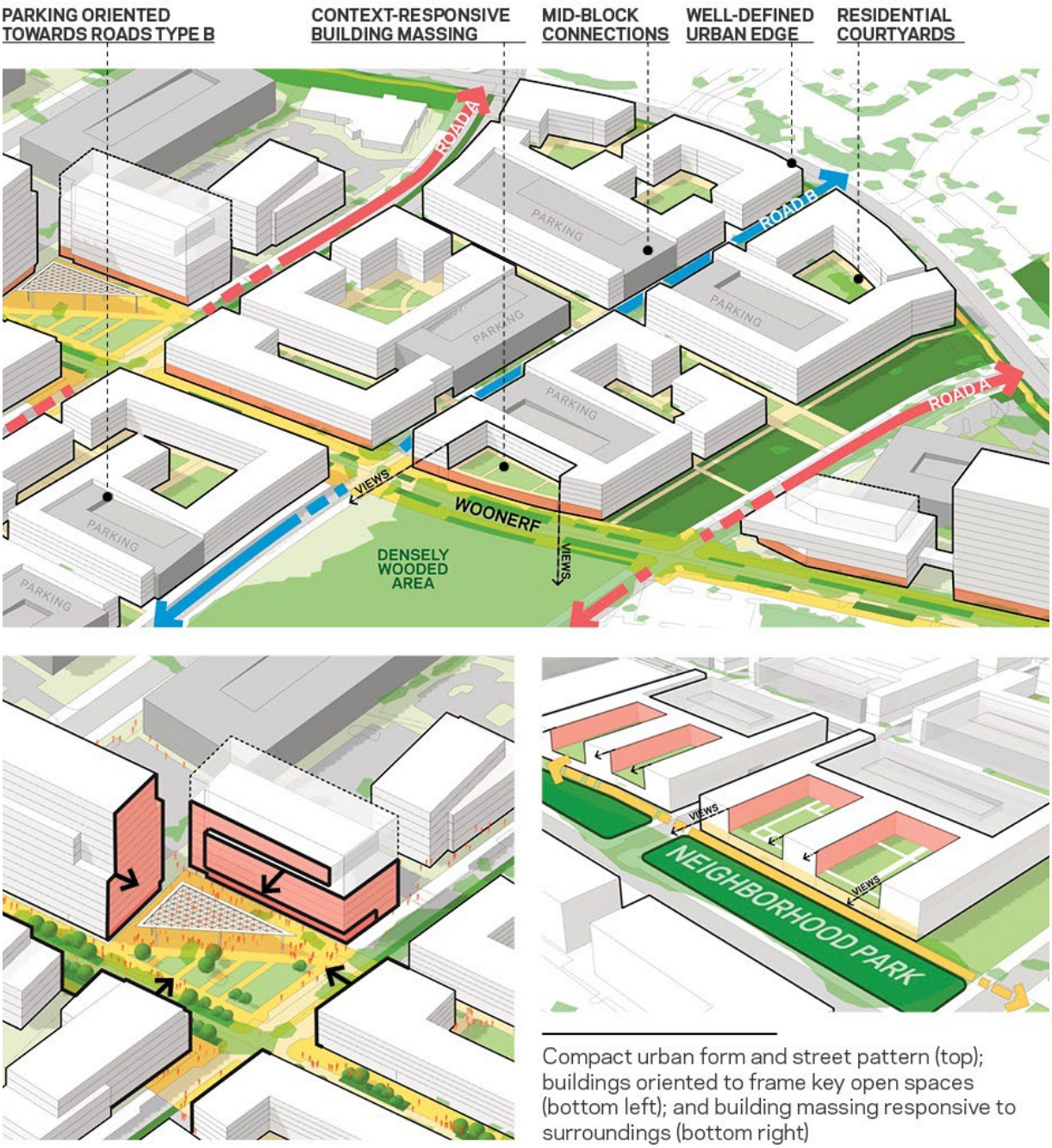
Redevelopment in Gateway is intended to achieve a compact, urban form with multi-story buildings that contribute to the formation of a human-scaled physical environment. The bulk and massing of buildings should be designed with sensitivity to their impact on light, shadow and wind patterns in surrounding areas and the public realm. Buildings should use a context-responsive design, with massing articulations to relate to surroundings, including parks and natural areas. Additional guidance regarding building massing, which should be further explored and refined through the creation of development standards, includes:

- Buildings located within and around the Columbia Gateway Drive (CGD) loop should be designed to frame the streets.

- An appropriate ratio of street width to building height should be identified along the Woonerf to ensure minimal impact on light, shadow, and wind patterns (see Fig. 20).

- Mixed-use residential buildings may introduce façade step backs to break up massing.

- Stacked townhomes should be integrated alongside multi-family residential buildings to emphasize site integration and establish a unified neighborhood pattern.



Compact urban form and street pattern (top); buildings oriented to frame key open spaces (bottom left); and building massing responsive to surroundings (bottom right)

Compact urban form and street pattern (top); buildings oriented to frame key open spaces (bottom left); and building massing responsive to surroundings (bottom right)

Locations of all buildings and open spaces shown on graphics are conceptual

Ground Floors and the Public Realm Edge

The design of buildings at the street level will be essential for establishing a walkable urban environment, fostering human interaction, and creating a unique sense of community in Gateway. Elements such as building entries, appropriate level of transparency and activity-generating uses like commercial and retail spaces will help activate the interface between buildings and the public realm.

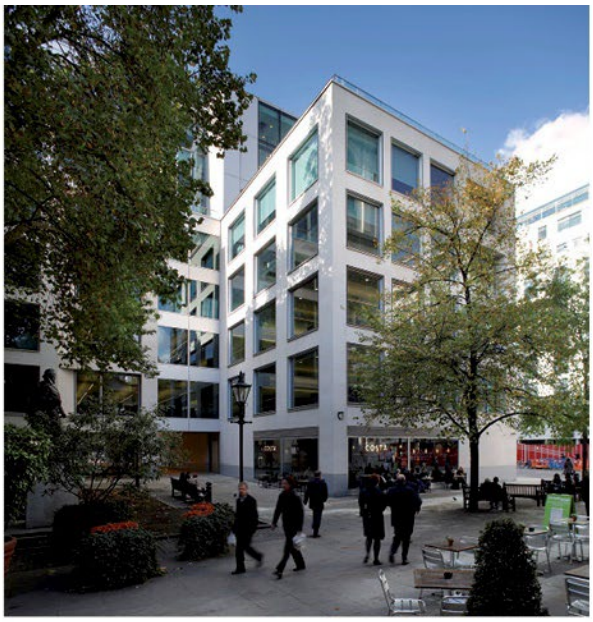
Ground Floor Activation

The following recommendations offer guidance for activating ground floors along public roads and publicly accessible open spaces.

- Concentrate retail, civic, and community uses around shared open spaces such as urban plazas at the nodes.
- Design buildings with ground-level floor heights suitable for a variety of uses, such as retail and other flexible functions.
- For retail areas, it is recommended to have retail on both sides of the street or clustered together to ensure economic viability and vibrancy.
- Allow and encourage buildings along the Woonerf to physically and visually orient shared amenities—such as meeting spaces, fitness rooms, or outdoor amenities—towards the public space.
- Provide human-scaled architectural elements along the ground floor facing all streets and open spaces.
- Design for accessibility, with all primary entrances for active uses flush with the sidewalk level.

Ground Floor Height

Building ground floors should be designed to meet a minimum floor-to-floor height and floorplate depth to allow for a full range of uses including commercial, retail, civic/community, and any other ground floor activating use.



Locally serving retail spaces concentrated around urban plazas (top right); sidewalk cafes and dining (top left); active use frontages (middle left); double-sided retail streets (bottom right); ground level retail and commercial uses above (bottom left)

Locally serving retail spaces concentrated around urban plazas (top right); sidewalk cafes and dining (top left); active use frontages (middle left); double-sided retail streets (bottom right); ground level retail and commercial uses above (bottom left)

Ground Floor Facades

Storefront facades should have a minimum transparent glazing. To the degree possible, office, R&D, and other non-residential uses located at the ground level of buildings along the Woonerf, or shared open spaces, are encouraged to maximize glazing to reveal their inner workings to the public realm. This visual connection will enhance the pedestrian experience by allowing visibility from the sidewalk into a building.

Ground-level residential uses should prioritize privacy by utilizing lower transparency levels. Residential lobbies and shared amenities can feature a higher transparency level to provide a visual connection to the public.

Long expanses of solid walls without fenestration, entries or windows should be minimized as they are detrimental to the pedestrian experience. These inactive facades should be minimized when facing a public road or a shared open space, especially along the Woonerf. However, some sensitive uses may require maximum privacy, and when located at the ground level, associated inactive facades should feature a special design treatment or be screened with landscaping and open spaces for employees. Standards for special design treatments should be developed for these inactive facades.

Building integrating commercial and community uses at street level (top); ground-floor residential with landscape screen for privacy (bottom right); and examples of uses that allow physical and visual activation of the ground level (bottom left)

Building integrating commercial and community uses at street level (top); ground-floor residential with landscape screen for privacy (bottom right); and examples of uses that allow physical and visual activation of the ground level (bottom left)

Parking Facility Design

The master plan encourages projects to explore alternatives to surface parking to promote a more efficient use of the land and create new opportunities for urban infill, where appropriate. Some examples include stand-alone parking garages and integrated parking structures – such as below grade or partially below grade parking, and above grade parking facilities.

The master plan recommends lining parking garages with uses, or utilize screening, when parking garages face primary streets and open spaces. Incentives could be put into place to encourage parking facilities to be adaptable for alternative uses. Parking facilities shared by multiple buildings are allowed and encouraged. Incentives may be considered for parking facilities that integrate EV charging stations, solar PV panels, and dedicated spaces for car-pooling and low-emission vehicles. For more information about parking strategies, refer to section 3.7 Transportation and Mobility.

Parking garage lined with commercial uses at the ground level

Figure 21: Parking Locations Recommendations

Building Heights

For Gateway, the vision calls for a physical environment that embraces a variety of building forms and heights, concentrating taller and greater density at nodes, along major roadways, and in or near areas with visibility from external roads such as Interstate 95 and Route 175. Allowing flexible building heights in certain areas will help create focal points and define a skyline that provides Gateway with a unique identity.

The maximum building height in Gateway is envisioned to be 250 feet along the northern and eastern edges of the site, specifically in subareas 1, 2 and 5. At nodes, the recommended maximum building height is 170 feet, and elsewhere structures should not exceed 100 feet in height (as illustrated on Map 13: Conceptual Height Zones Map). These maximum height zones are conceptual and do not indicate a specific form, location, orientation or number of buildings.

Signature buildings and variation in height are allowed and encouraged at nodes, to either create gateways, frame the urban plazas, or accentuate key intersections. Variation in building heights and forms is both allowed and encouraged along the Woonerf (see Fig. 22: Conceptual Height Variation Diagram). Buildings should also be designed to minimize their impact on light, shadow, and wind in surrounding areas and the public realm.

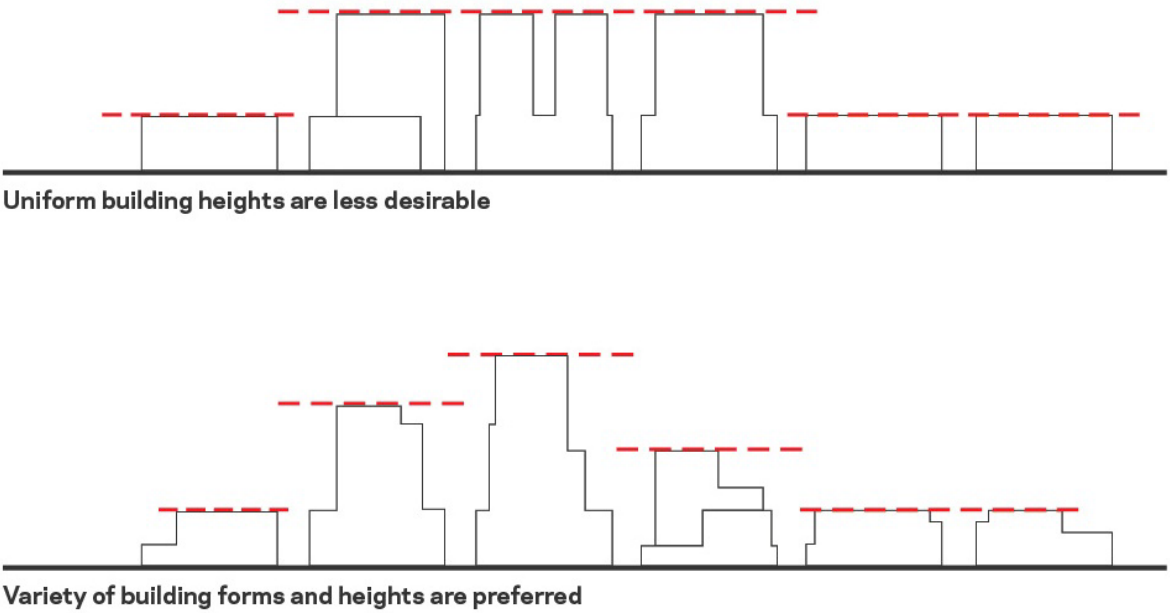
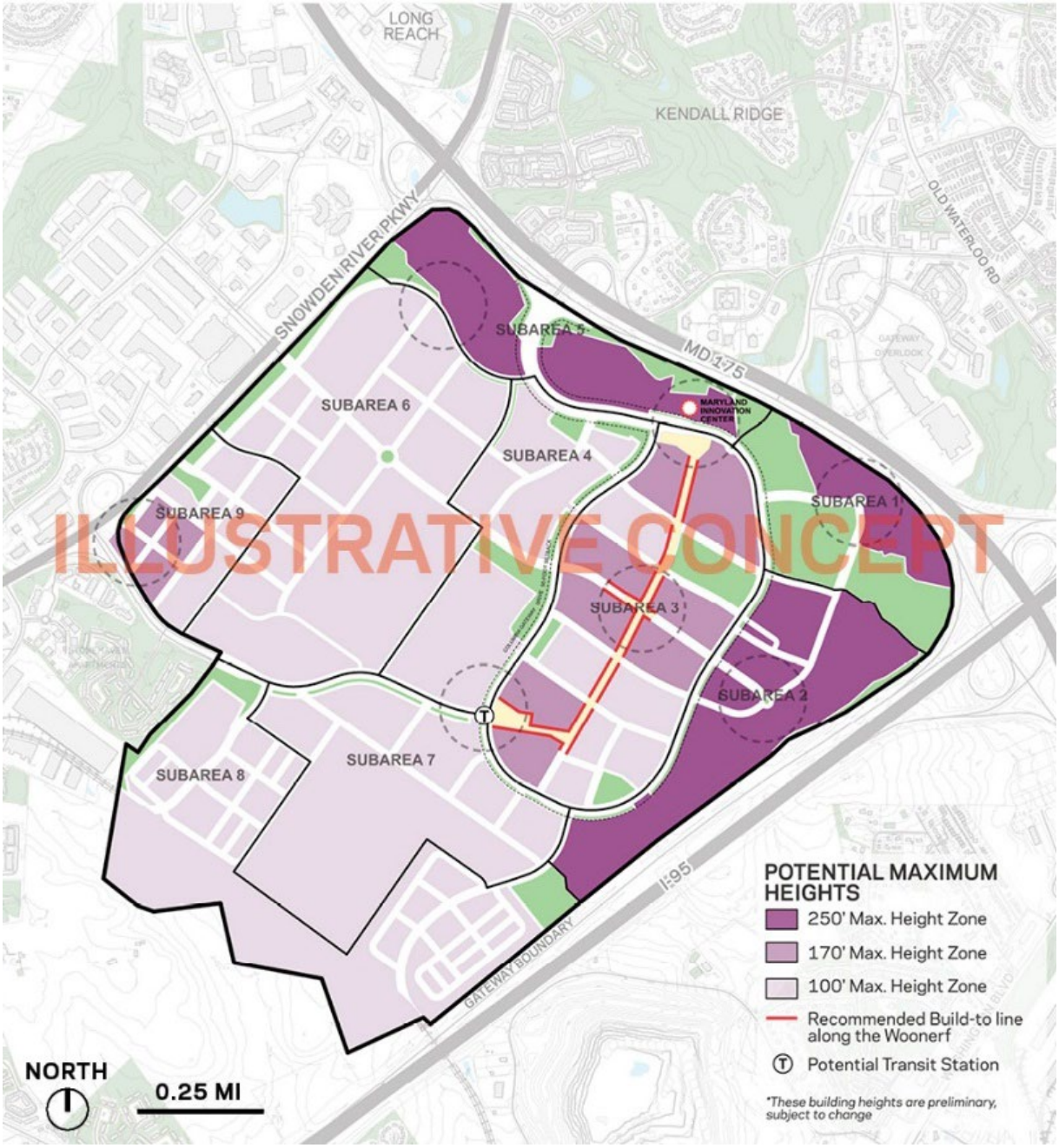


Figure 22: Conceptual Height Variation Diagram



Map 13: Conceptual Height Zones Map

Taller buildings and greater densities may be considered in exchange for investment in infrastructure/amenities that provide benefits to the public. Examples include going above and beyond existing requirements for LEED certification and the preservation of ecologically sensitive areas, publicly accessible open spaces and amenities, land or buildings for public facilities, and income-restricted housing. Density bonuses or other development incentives should be considered for developments that allocate land for publicly accessible open spaces.

Additional guidance regarding building heights, which should be further explored and refined through the creation of development standards, includes:

- Taller buildings should be allowed along major roadways (such as Interstate 95 and Route 175) to take advantage of the visibility from outside Gateway.
- Taller structures (>201 feet) should further coordinate approval, as needed, with the Maryland Aviation Administration (MAA).
- Innovative building designs that reduce airplane noise should be used in areas highly impacted by Baltimore/Washington International Thurgood Marshall Airport operations.
- Variation in building heights and forms is encouraged at nodes to create focal points.
- Mid-rise neighborhoods are encouraged to use a variety of building heights.

1

Examples of building height variation in medium to high density urban environments

2

1

Baltimore/Washington International Thurgood Marshall Airport Flight Paths

As identified in HoCo By Design, Gateway is located within certain flight paths for the Baltimore/Washington International Thurgood Marshall Airport (BWI Airport). The impact of flight paths in terms of noise and building heights was recommended for consideration by the master plan.

The Gateway area is outside the boundaries of the Airport Noise Zone (ANZ) for BWI Airport, which was created "to control the incompatible land development around BWI Airport and develop a Noise Abatement Plan (NAP) to minimize the impact of aircraft noise on people living near the Airport." While the entire Gateway area is outside the Airport Noise Zone, structures with a height greater than 200 ft. may require further coordination with the Maryland Aviation Administration (MAA). However, based on initial review, above ground development heights of up to 400 feet should be possible at Columbia Gateway.

Though Gateway is outside the ANZ, future development that falls directly under NextGen flight paths should utilize best practices in building standards for attenuating noise, as called for in the general plan. As further stated in HoCo By Design, this is particularly important given recent studies on the impact of airport noise conducted at the request of the Maryland General Assembly, and FAA's consideration of changes to noise measurement policies.

2

Design Vision for Nodes

The framework for the long-term transformation of Gateway integrates "nodes" in key areas to establish focal points and concentrate higher development intensities and taller buildings. Some nodes could be the earliest locations for development activity to occur in Gateway. Key areas can be defined by assets (like an Innovation Hub or transit center) or geographic locations (like a key intersection in the future grid of streets). These nodes are intended to become identifiable and vibrant urban spaces in Gateway, places where people will get together. Each node should feature an urban plaza – essentially a scaled-down version of a town square – serving as a signature open space. The nodes should be hubs for retail, civic/community and other ground-activating uses. Buildings in nodes are encouraged to vary in height and form, and their placement should help shape the public realm.

As redevelopment may occur anywhere in Gateway, these areas offer more flexibility for new activity centers to emerge in multiple subareas. Nodes can potentially focus on a specific employment-industry like Cybersecurity, or contain a broader variety of uses. They may be anchored by existing assets (such as the Maryland Innovation Center – MIC), new assets, or a combination of both. The envisioned nodes include, but are not necessarily limited to:

- **MIC/Innovation Hub Node** – envisioned to be located on the north end of the woonerf, anchored by the MIC and the Innovation Hub
- **Mid-point Node** – a mixed-use node envisioned to be located near the mid-point along the woonerf
- **Transit-oriented Development (TOD) Node** – this node accentuates the terminus of Robert Fulton Drive and is envisioned to be anchored by a potential transit station
- **John McAdams Node** – envisioned near the intersection of John McAdams Drive and the future extension of Benjamin Franklin Drive
- **Benjamin Franklin Node** – envisioned at the intersection of the extended street, a focal point in Subarea 2
- **Other future nodes** – envisioned at the Lee Deforest Drive and Robert Fulton Drive intersection, and in Subarea 5 close to Alexander Bell Drive

The vision for the nodes includes a greater development intensity, taller buildings and an urban plaza that concentrates retail and other ground-floor activating uses

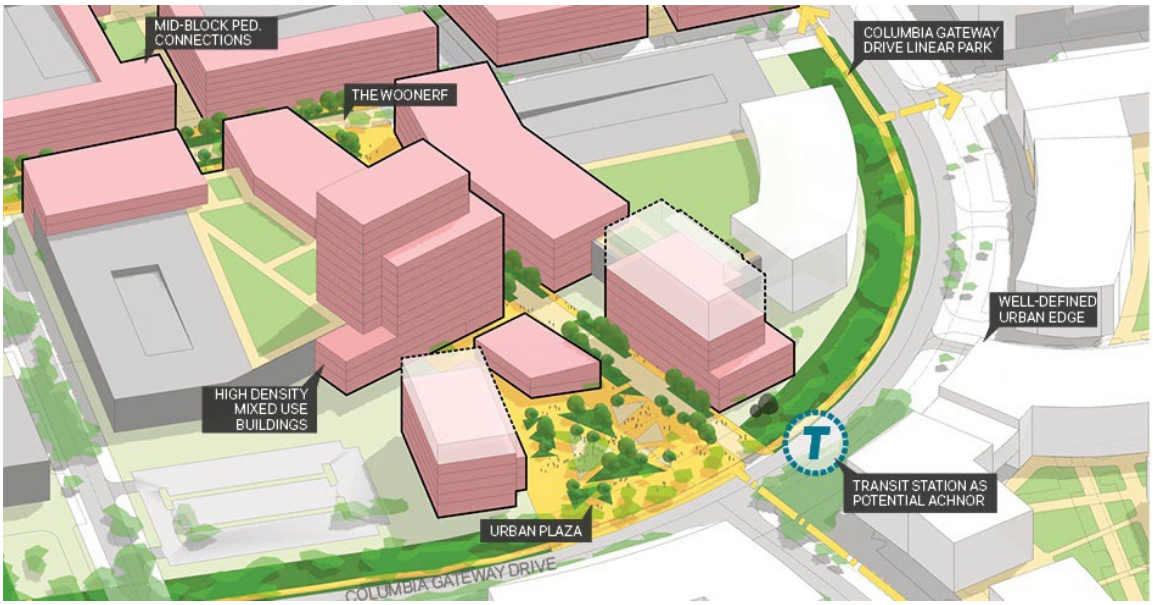


Figure 23: Illustrative Diagram – TOD Node (Artist Rendering)

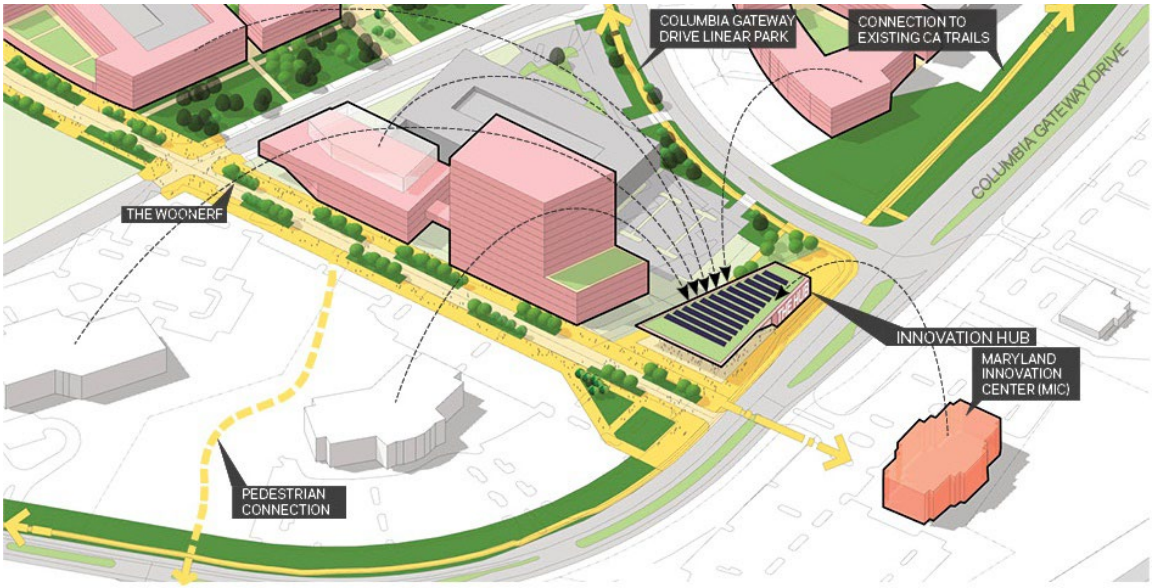


Figure 24: Illustrative Diagram – Innovation Node (Artist Rendering)

1

Key Recommendations:

- Encourage and incentivize development standards that meet the envisioned form
- Create a new grid of streets with walkable blocks
- Separate loading and service functions from pedestrian movements
- Minimize building setbacks to help create an urban form, while providing design options for uses requiring privacy or buffers, depending on neighboring uses
- Design buildings with sensitivity to light, shadow, and wind patterns in the public realm
- Allow and encourage ground-floor activating elements, particularly in the nodes and along the Woonerf, while offering design options for inactive facades
- Line parking garages with uses, or use screening, when parking garages face primary streets and open spaces
- Allow taller buildings along highways (for visibility) and in nodes (to serve as focal points for retail)
- Consider taller buildings and greater densities in exchange for investment in infrastructure and amenities that provide benefits to the public

3.4 Public Realm and Open Space

The Gateway Master Plan envisions establishing an interconnected network of open spaces, providing workers, residents, and visitors convenient access to shared amenities such as parks, plazas, courtyards, walking and biking trails, and other recreational features. Integrating these amenities into the physical environment is essential for transforming Gateway from a traditional business park to a vibrant, well-connected community that fosters creativity and innovation. This approach is key in establishing an attractive destination where people can work, live, and play while cultivating a unique sense of community.

The following goals are intended to guide the creation of standards for design and development of open spaces, as redevelopment opportunities emerge:

Convenient: Shared open spaces should be easily accessible and strategically located to ensure every user in Gateway can access a green space within a short walking distance from their place of work or residence.

Connected: The vision for Gateway is to establish a green network, a comprehensive system of parks and open spaces that connect all subareas.

Multigenerational, Universally Accessible: Welcoming open spaces for users of all age groups and all abilities.

Social and Flexible: Places designed for people to gather, socialize, and relax, while remaining flexible to accommodate a variety of activities, ensuring they stay vibrant and engaging throughout the day and year.

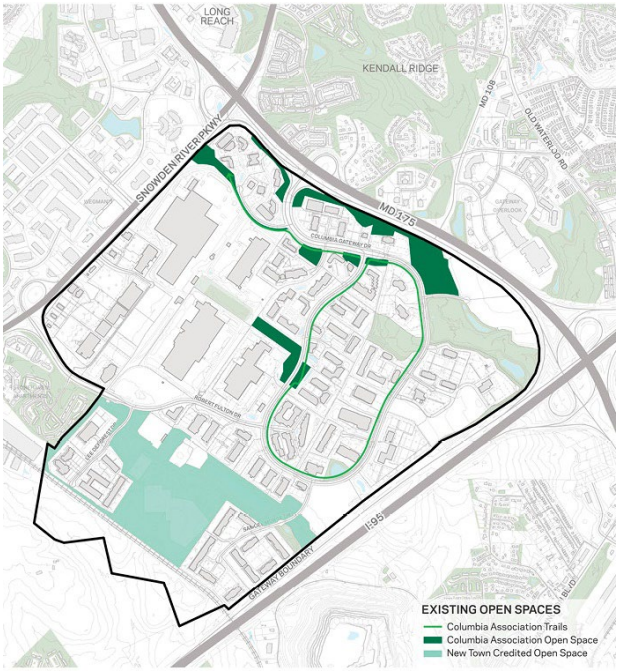
Healthy: Maximizing the benefits of access to nature—for physical, mental and social health—and promoting a healthy lifestyle in Gateway.

Sustainable and Resilient Open Spaces: Increased tree canopy cover, use of native species and/or species adapted to the region, and integration of nature-based solutions into the landscape design.

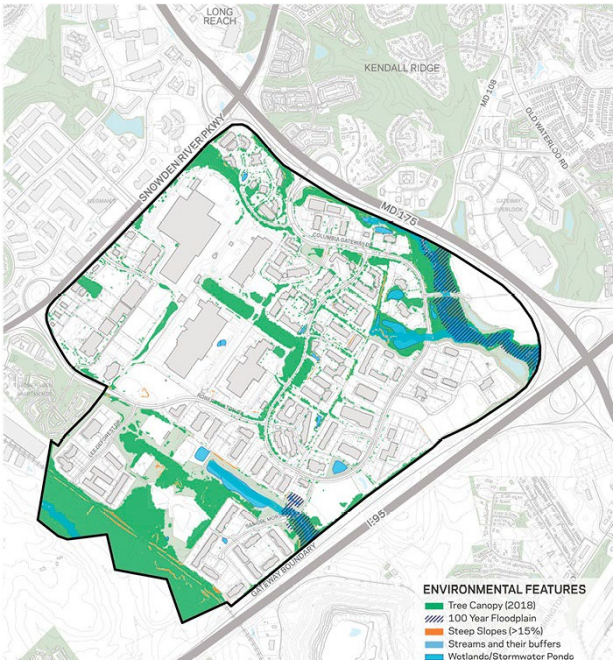

CONVENIENT
CONNECTED
ACCESSIBLE
SOCIAL
HEALTHY
SUSTAINABLE

Open Space Context

The Gateway area is predominantly privately owned, except for the county-owned parcel where the Maryland Innovation Center (MIC) is located. Currently, there are no designated public open spaces, however, Columbia Association land and trails comprise a publicly accessible open space network (as depicted on Map 14: Existing Open Spaces Map). These spaces have the potential to link to new open spaces as Gateway redevelops. These private green areas include the land and recreational amenities owned by Columbia Association–such as shared-use trails, recreational courts, and over 30 acres of green space distributed across multiple properties—along with privately-owned stormwater management ponds and the wetlands and densely vegetated areas tied to natural ecosystems such as Dorsey Run, Ridgely Run, and the Pickett's Branch, which runs through a parcel on the south side of the CSX rail tracks. This master plan envisions the integration of these natural resources as essential for the creation of an interconnected network of green spaces.



Map 14: Existing Open Spaces Map



Map 15: Existing Environmental Features Map

Open Space Framework

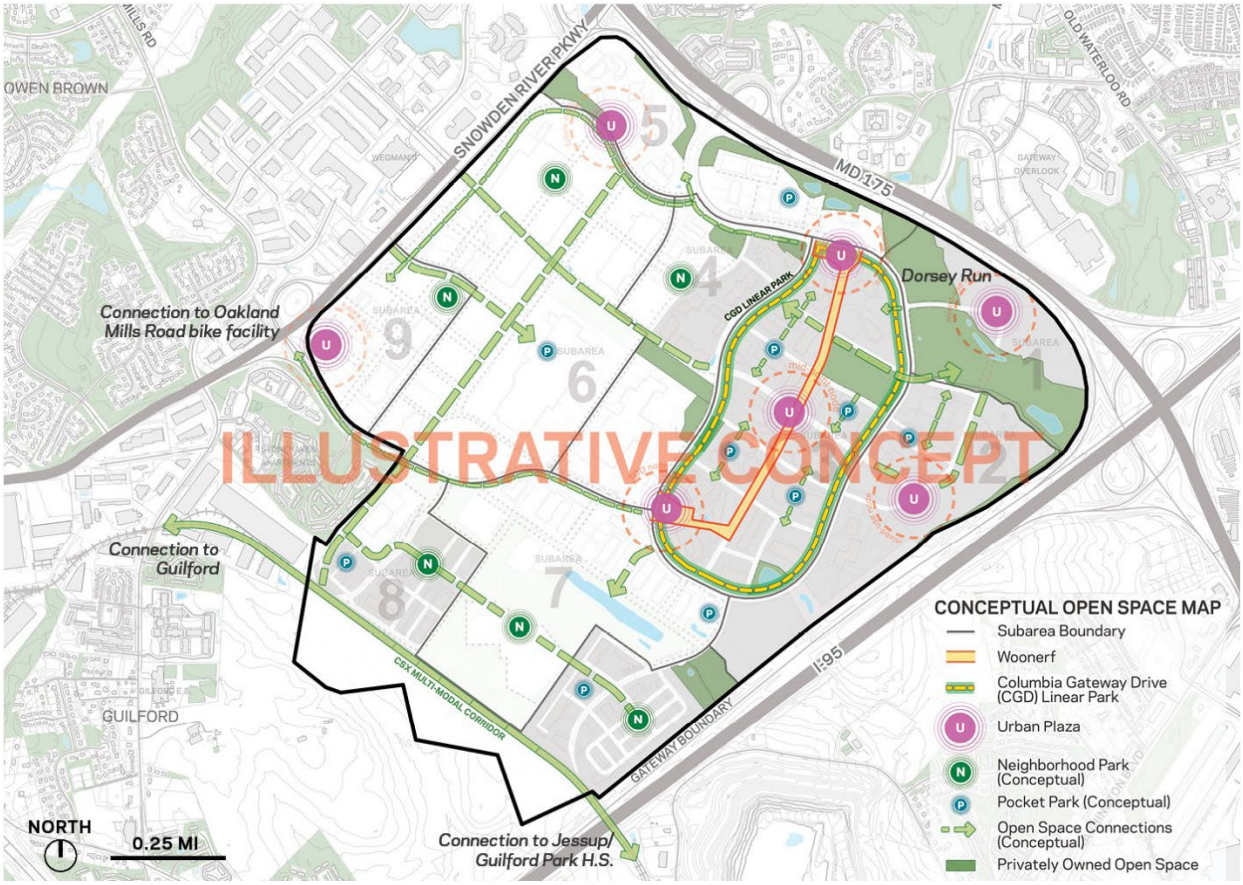
The Master Plan establishes a conceptual open space framework to indicate a general location, scale, function and type of outdoor spaces that will build the foundation for an interconnected network of open spaces in Gateway (See Map 16: Conceptual Open Space Framework Map). This conceptual framework does not specify the final location, size or program of each typology, providing flexibility for these parameters to be defined as redevelopment progresses in each subarea. The placement of open space is often refined during site planning, when geographical, geological, and topographical details are fleshed out.

Gateway's open spaces may be publicly owned and managed, or privately owned and publicly accessible spaces. The master plan encourages exploring public-private partnership models and funding mechanisms for the dedication of land, design, construction, maintenance, and management of future green areas. Density bonuses or other development incentives should be considered for developments that allocate land for publicly accessible open spaces. Alternatively, acquisitions may be pursued, requirements established in future zoning regulations—or a combination of incentives, acquisitions, and requirements—may be used for the creation of publicly accessible open space.

Recreational outdoor areas for residents and employees (top left); Outdoor collaboration spaces (middle left, top right); Front yards along dense missing middle buildings (bottom left); and pedestrian connections (bottom right)

Recreational outdoor areas for residents and employees (top left); Outdoor collaboration spaces (middle left, top right); Front yards along dense missing middle buildings (bottom left); and pedestrian connections (bottom right)

The conceptual framework includes open space typologies such as the Woonerf, Columbia Gateway Drive (CGD) linear park, urban plazas, neighborhood parks, pocket parks, and the CSX multi-modal corridor, which are detailed further in this section.



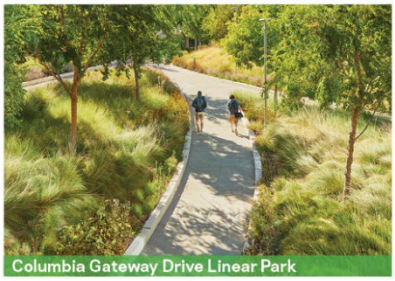
Map 16: Conceptual Open Space Framework Map

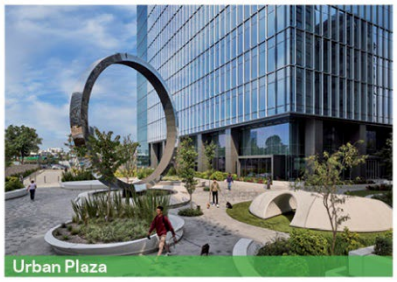
***All locations are conceptual*

Open Space Typologies

A series of parks and open space typologies are outlined by the master plan. Each typology offers variation in function and setting, while aligning with the goal of creating diverse and multigenerational open spaces. The plan provides recommendations to guide the design and programming of typologies as follows:


Woonerf


Columbia Gateway Drive Linear Park


Urban Plaza


Neighborhood Park


Pocket Park


Multi-Modal Corridor

Park and Open Space Service Areas

1 Community/District Level
Including typologies such as the Woonerf, CSX Multi-modal Corridor, and the CGD Linear Park

2 Nodes Level
Including urban plazas envisioned for each node

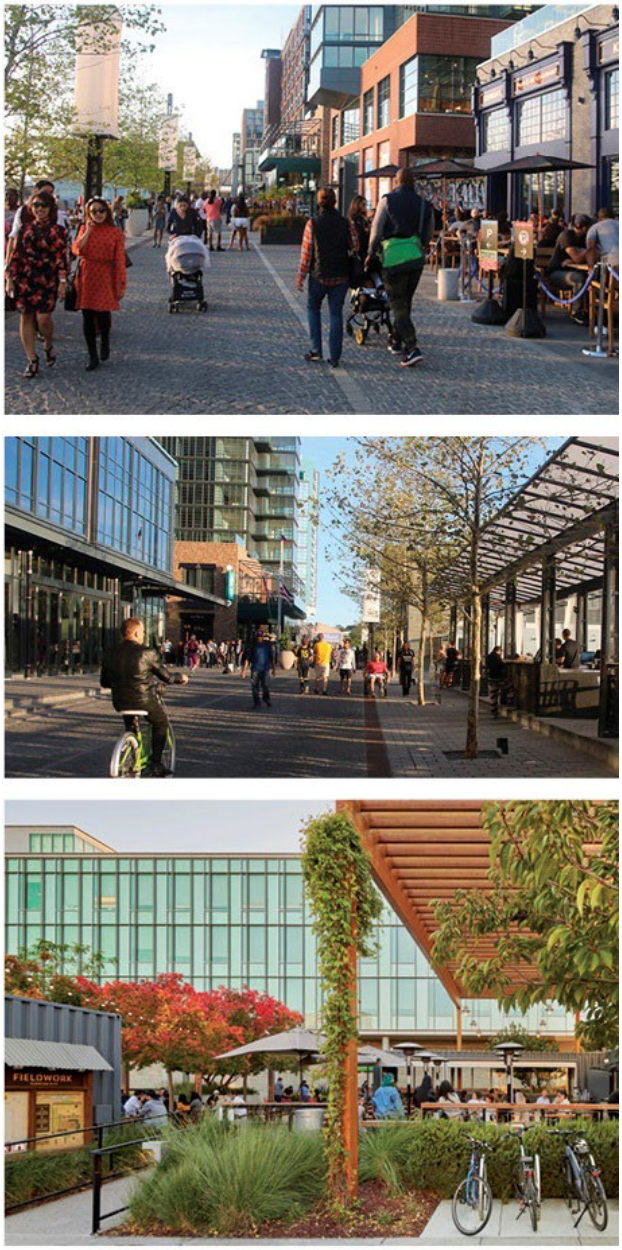
3 Neighborhood Level
Including neighborhood parks, and pocket parks serving as focal points within subareas

4 Block Level
Including private recreational spaces and publicly accessible private open spaces

Woonerf

This signature shared open space is envisioned to become the primary focal point and the heart of all activity, fostering social and cultural interactions in Gateway: a living, shared street that prioritizes pedestrians and bicycles, and integrates high-quality social spaces to bring people together. The Woonerf should also accommodate slow-moving cars and short-term on-street parking to help activate ground-floor spaces. On-street parking and green infrastructure (such as bioretention, bioswales, street trees, rain gardens, and permeable pavements) should alternatively be present next to the travel lanes for the length of the street. This type of shared street usually features a curb-less configuration, blending the space dedicated for cars, bicycles and pedestrians. Due to its linear nature, a wide range of residents and workers should have easy access to this pedestrian-first, walkable environment.

The Woonerf 's design should allow for variation and flexibility as it is constructed and enhanced. There should also be flexibility for the form of buildings, streetscapes, and setbacks along the Woonerf, particularly to recognize the privacy needs of some uses (like ground-floor residential uses and some ground-floor employment uses that require security measures to support operations). For example, minimum and maximum setbacks could be identified. A menu of design options that illustrates how redevelopments containing such uses can still contribute to a vibrant pedestrian environment should be developed. Options may include features like plazas, seating, or other amenities that are used in combination with landscaping, private front yards, or grade separation to maintain privacy. To provide design continuity, the menu can be developed along with a design palette for landscaping and streetscape elements such as trees, pavers, streetlights, and street furniture. All of this should be incorporated in any design guidelines developed as part of the alternative zoning program.



Shared street with curb-less configuration along active ground floor uses (top); bike/ped welcoming environment (middle); social/gathering spaces (bottom)

The master plan recommends exploring public-private partnerships, incentives, acquisitions, and zoning requirements to support the Woonerf 's implementation and adopting a multi-phased and incremental approach, as redevelopment opportunities in Subarea 3 emerge.

RECOMMENDED DESIGN AND LANDSCAPE FEATURES

Service Area:	Community/District
Design Features:	• Seating areas • Outdoor patios • Increased tree canopy • Curb-less configuration • Bio-retention areas • Pollinator gardens • Public art • 2-way vehicular travel lanes • On-street parking in certain areas (interspersed with planted areas, rain gardens)
Landscape Features:	• Minimize impervious areas and maximize groundcover and tree canopy cover • Street trees along the Woonerf should be arranged in clusters to create native habitat nodes • Use bollards, planters and other barriers for car-free days • Use pavement design to define areas where slow-moving cars are allowed

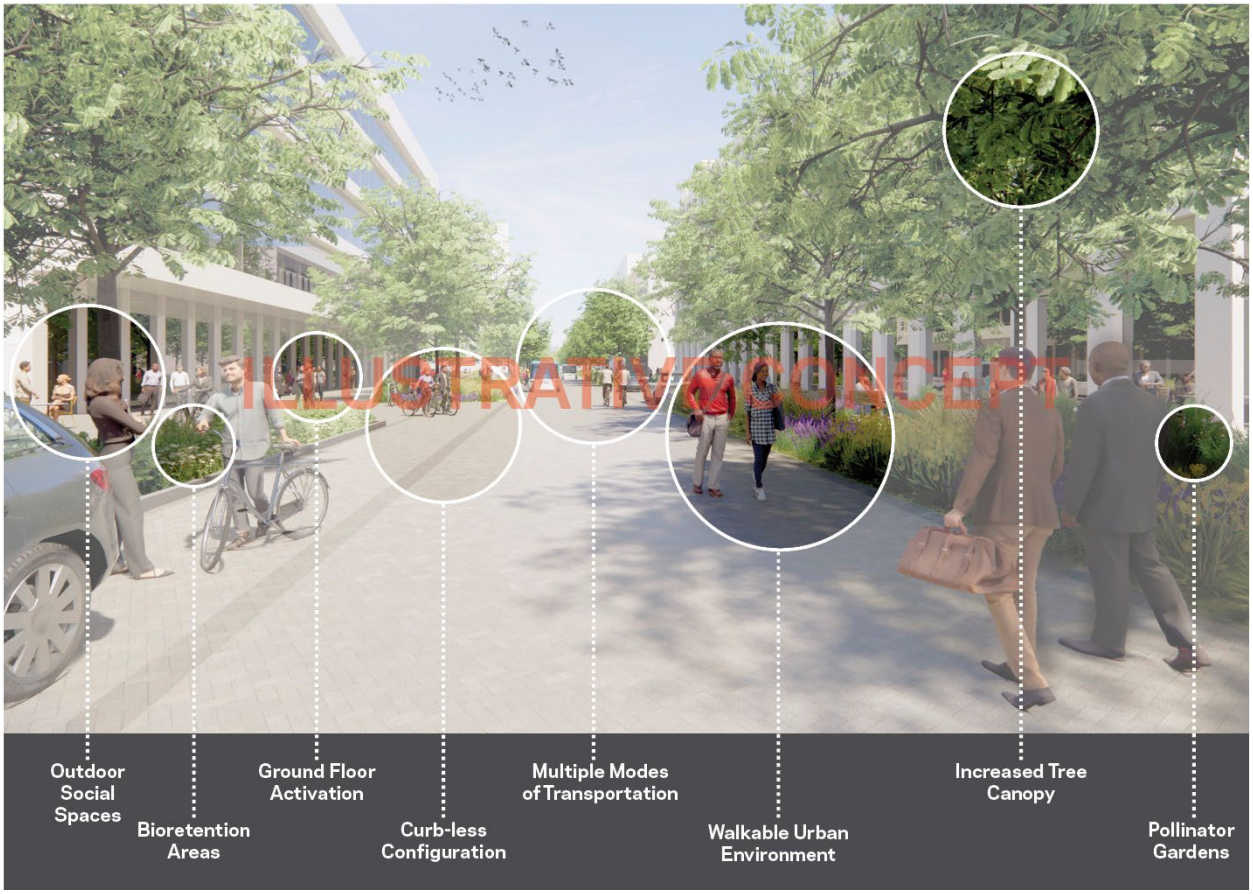


Figure 25: Conceptual rendering of the Woonerf

Columbia Gateway Linear Park

The master plan envisions transforming the existing shared-use trail, that runs along the inner side of the Columbia Gateway Drive loop, into a linear park with a wider bike/jog path, and added greenery, seating areas, lighting, and recreational features. This shared-use path should be set back from the curb and landscaped on both sides, offering users a park-like experience. As an already frequently used amenity, the goal is to enhance the recreational opportunities for the current workforce, as well as future workers, residents, and visitors to Gateway.

RECOMMENDED DESIGN AND LANDSCAPE FEATURES

Service Area:	Community/District
Potential Program/ Design Features:	• A two-way shared use path • Seating • Fitness equipment • Rain gardens • Lighting • Drinking fountains • Bike repair stations
Landscape Features:	• Minimize impervious areas and maximize groundcover and tree cover • Native and/or adapted species to the region are strongly encouraged

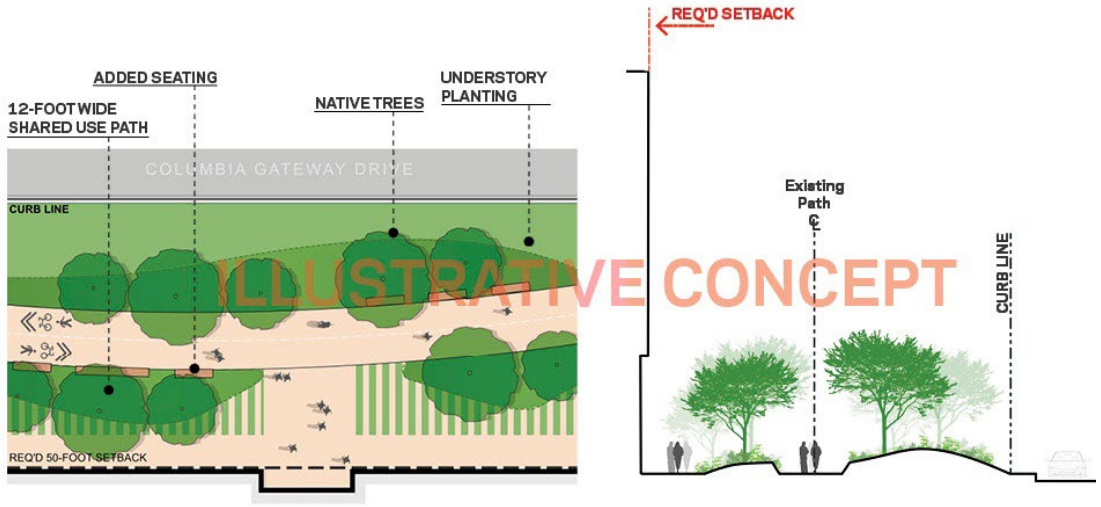


Figure 26: Illustrative Diagram – Columbia Gateway Drive Linear Park

Urban Plazas

Urban plazas should be located at each node, serving as a focal point for retail, community, and other active uses. This typology is intended to function as a scaled-down version of a town square, a place for people to gather and socialize. Urban plazas are generally paved, with trees and landscaping defining the perimeter or infused throughout to provide shade. Flexibility will be essential in designing an urban plaza to ensure the space can host a variety of programmed activities throughout the day and year.

These plazas should be integrated into the streetscape and framed by the buildings while maximizing sunlight and public access. Activity from the ground floors may spill out to the public, blending the indoor-outdoor line. Other possible uses include outdoor dining and restaurant areas, food trucks, seasonal events, such as art installations, innovation fairs or music events.

RECOMMENDED DESIGN AND LANDSCAPE FEATURES

Service Area:	**Nodes**
Potential Program/ Design Features:	• Hardscape/flexible area • Outdoor dining • Seating • Shade structure • Tree canopy coverage • Playground (when adjacent to residential areas) • Water feature • Public art • Movable stage • Civic and cultural event spaces
Landscape Features:	• Design spaces to welcome users of all ages and abilities • Minimize impervious areas by balancing paved and planted areas • Integrate appropriate lighting into the plaza design • Native and/or adapted species to the region are strongly encouraged • Include movable and fixed seating options

Active ground-floor uses encouraged to be located facing urban plazas at nodes

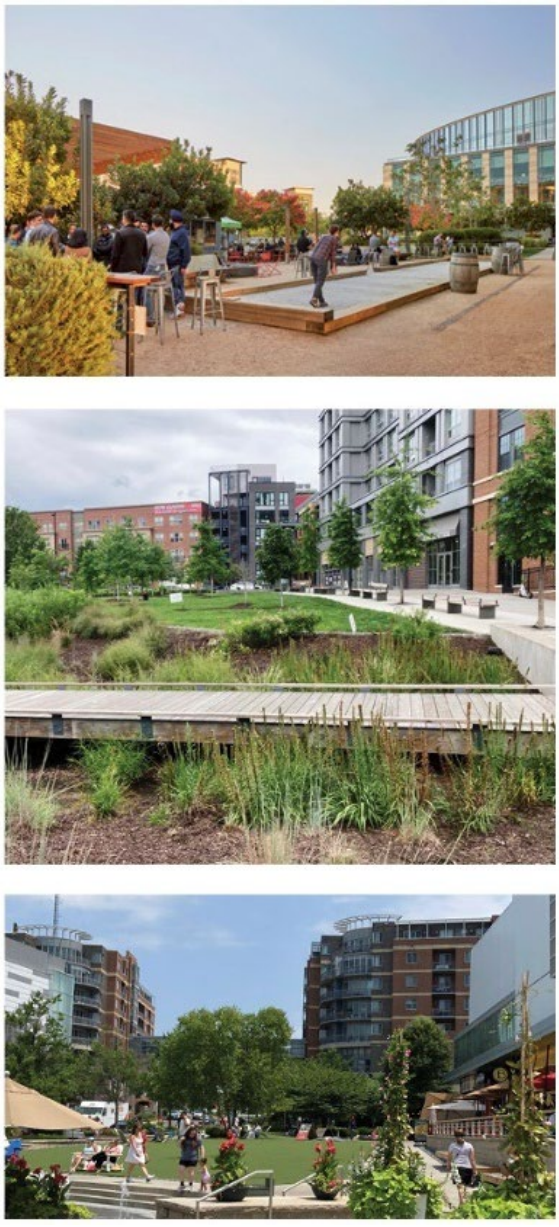
Figure 27: Conceptual rendering of the Urban Plaza

Neighborhood Parks

Neighborhood parks are primarily envisioned for mixed-use areas with a residential focus, as well as certain employment-focused areas. Their shape and size may be determined as redevelopment progresses but are envisioned to accommodate multigenerational program areas. These parks should be placed at a centralized location, ensuring that all residents and workers have access to high-quality open spaces within a 5–10-minute walk. Also, there is an opportunity for neighborhood parks to be co-located, such as with schools and daycares, to share functions and enhance community access. These parks can also serve as a buffer between industrial uses and residential uses.

RECOMMENDED DESIGN AND LANDSCAPE FEATURES

Service Area:	Neighborhood (¼to ½ mile from residential buildings)
Potential Program/ Design Features:	• Sport courts (pickleball, tennis, basketball or similar) • Bioretention areas, rain gardens • Pollinator gardens • Fitness equipment • Shaded seating areas • Shade structure/pavilion • Tree canopy coverage • Playground (when adjacent to residential areas) • Water feature • Public art • Dog run • Stage/event space • Restrooms • Community garden
Landscape Features:	• Design spaces to welcome users of all ages and abilities • Minimize impervious areas by balancing paved and planted areas • Native and/or adapted species to the region are strongly encouraged • Nature-based solutions should be prioritized for stormwater management



Neighborhood Park in an Employment Focus Area (top); Bio-retention areas and landscape features (middle); and flexible open space (bottom)

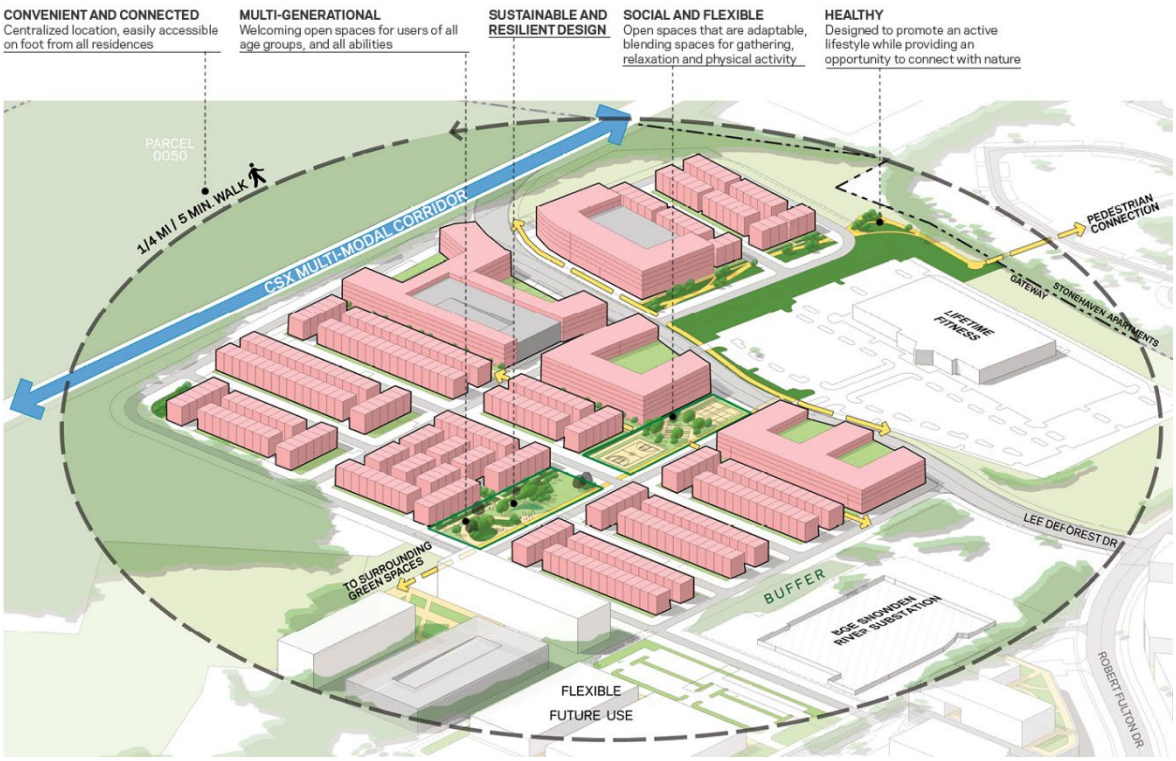


Figure 28: Illustrative Diagram of a Neighborhood Park (Artist Rendering)

Pocket Parks

Pocket parks are compact versions of urban parks or plazas, typically located in and near areas with high volumes of pedestrian traffic. These parks can be integrated into both residential and employment focus areas. Pocket parks should be framed by surrounding buildings and feature a balanced mix of paved and planted areas, unified through thoughtful design. Pocket parks should be well-integrated with adjacent streetscapes—with a seamless transition in hardscape and planting materials.

RECOMMENDED DESIGN AND LANDSCAPE FEATURES

Service Area:	Block/Neighborhood
Potential Program/ Design Features:	• Bioretention areas, rain gardens • Pollinator gardens • Fitness equipment • Shaded seating areas • Tree canopy coverage • Playground (when adjacent to residential areas) • Water feature • Dog run
Landscape Features:	• Design spaces to welcome users of all ages and abilities • Optimize sun and shade conditions • Minimize impervious areas by balancing paved and planted areas • Native and/or adapted species to the region are strongly encouraged

Figure 29: Conceptual rendering of a Pocket Park

CSX Multi-modal Corridor

The CSX multi-modal corridor will be an essential component of the open space network, supporting the goal of connecting Gateway to immediate surrounding communities and other parts of the County while expanding recreational opportunities. The primary goal is to repurpose the former CSX rail tracks, with a short-term focus on creating a corridor that allows pedestrians, bicycles, and micro-mobility devices such as scooters to circulate safely. In the mid-term, there is a potential to integrate a rubber wheel transit system or trolley into the multi-modal corridor. As of spring 2025, Howard County's Economic Development Authority has been and continues to investigate the feasibility of the CSX multi-modal corridor to meet the needs of the Master Plan's vision and the County's transportation goals.

RECOMMENDED DESIGN AND LANDSCAPE FEATURES

Service Area:	**District/Community**
Potential Program/ Design Features:	• Bike and pedestrian facilities • Transit/trolley • Showcase existing rail car/industrial heritage • Bioretention areas, rain gardens • Pollinator gardens • Mural/public art opportunities • Accessible routes/footbridges over the tracks • Tree canopy coverage • Reimagined underutilized underpasses • Play areas
Landscape Features:	• Design spaces to welcome users of all ages and abilities • Native and/or adapted species to the region are strongly encouraged

Bio-retention demonstration areas (top); Park amenities (middle); and shared use trails (bottom)

Atlanta Beltline

Multi-use trails with shade trees (top left); micro-mobility docking station (top right); passive recreation areas (bottom right); and gathering/social spaces (bottom left)

Key Recommendations:

- Establish an interconnected network of open spaces that is convenient to employees and residents, accessible to all ages and abilities, flexible to accommodate a variety of activities, and sustainable with increased tree canopy and native species
- Create focal points for Gateway through its open spaces, including the Woonerf as the primary focal point
- Explore public-private partnership models and funding mechanisms for the dedication of land, design, construction, maintenance, and management of future green areas
- Consider a combination of incentives, acquisitions, and requirements for the creation of publicly accessible open space

3.5 Affordable Housing

New mixed-use residential developments in Gateway are envisioned to provide a variety of housing options accessible to all income levels and household types. Gateway will build on the guidance provided by the recently adopted general plan, HoCo By Design, for how activity centers should offer diverse, accessible, and affordable housing options when they redevelop.

HoCo By Design also describes targets for affordability and accessibility identified in the Housing Opportunities Master Plan (HOMP):

- Affordability Target: The greater of at least 20% of all net new housing units should be available to households making less than 60% of AMI each year
- Accessibility Target: At least 10% of new housing units affordable to households making less than 60% of AMI should be physically accessible for persons with disabilities. This target should be supplemented with concerted efforts to facilitate accessibility improvements to the existing ownership and rental stock to better enable integrated aging in place.

These targets may be achieved through a variety of programs, grants, incentives, and partnerships. The general plan contemplates the creation of a new zoning district that would encourage diverse housing types that are affordable to a mix of incomes and offer homeownership opportunities. Further, the general plan includes recommendations for evaluating public-private partnerships or other incentives to achieve more affordable for-sale and rental opportunities. The plan also emphasizes the importance of creating multigenerational neighborhoods and recommends considering incentives for low-income and disability-income housing units and evaluating incentives to achieve Universal Design Guideline utilization in at least 10% of all affordable units built throughout the County.

Furthermore, HoCo By Design recommends establishing a targeted incentive program to increase the supply of affordable housing units above and beyond what is required under the County's Moderate Income Housing Unit (MIHU) program to assist the County with reaching the affordability and accessibility targets recommended in the HOMP. The County's MIHU program is an inclusionary zoning program that requires developers of new housing in specific zoning districts to sell or allocate a portion of new dwelling units to households earning 40-80% of the Howard County Median Income.

Housing Goals for Gateway

For Gateway, the vision is to include affordable and multigenerational housing, consistent with the general plan's direction. The market demand for multi-family residential is anticipated to reach up to 6,600 units over the next 30 years, and up to 1,800 dense missing middle units are expected to be in demand within the same timeframe. The Master Plan anticipates that a combination of housing programs and future zoning regulations should include requirements and incentives to achieve affordable and multigenerational housing options. Example strategies include, but are not limited to:

- Implementing the County's Moderate Income Housing Unit (MIHU) Program within Gateway, requiring developers to sell or rent up to 15% of the new dwelling units to households with a moderate income
- Establishing incentives for developers to provide Low Income Housing Units (LIHU), with reduced rents available for low-income households, including incentives for mixed-use developments combining public, commercial, retail, and/or transportation facilities with mixed-income affordable rental housing
- Promoting incentives for developers to reserve a portion of the new housing units for households receiving a disability income (Disability Income Housing Units – DIHU) and age-restricted households
- Allowing for denser missing middle housing types (such as stacked townhomes)
- Providing incentives to create homeownership opportunities
- Exploring a "live near your work" program, as described in the Transportation Demand Management section (3.7 Transportation and Mobility)

Key Recommendations:

- ✚ Pursue requirements and incentives, through a combination of housing programs and future zoning regulations, to achieve affordable and multigenerational housing options that are available for rental and/or homeownership opportunities.

1

Examples of medium to high density residential buildings

2

3.6 Sustainable Design

A comprehensive sustainable design strategy has been developed in alignment with County goals for climate change mitigation and resiliency. The strategies and recommendations support four primary focus areas: decarbonization, resiliency, health and wellbeing, and urban ecology. Many of the strategies provide an array of benefits supporting multiple focus areas to provide a holistic approach to sustainable design. However, these strategies and recommendations are not meant to be all-inclusive; there may be other sustainable design practices that may emerge over the 30-year timeframe of the plan.

Graphic showing the four focus areas for holistic approach to sustainable design for Gateway

Decarbonization

Decarbonization focuses on reducing or eliminating greenhouse gas (GHG) emissions which contribute to climate change. At the scale of the Gateway Innovation District, major GHG emissions result from building construction and operation. The decarbonization strategies presented promote a multi-modal transportation network, efficient high-performance buildings, on-site renewable energy production, and construction with responsibly sourced low-GHG producing materials. Additionally, nature-based climate solutions, such as focusing on deep-rooted native plants, will improve soil health and increase carbon sequestration.

Multi-Modal Transportation Network

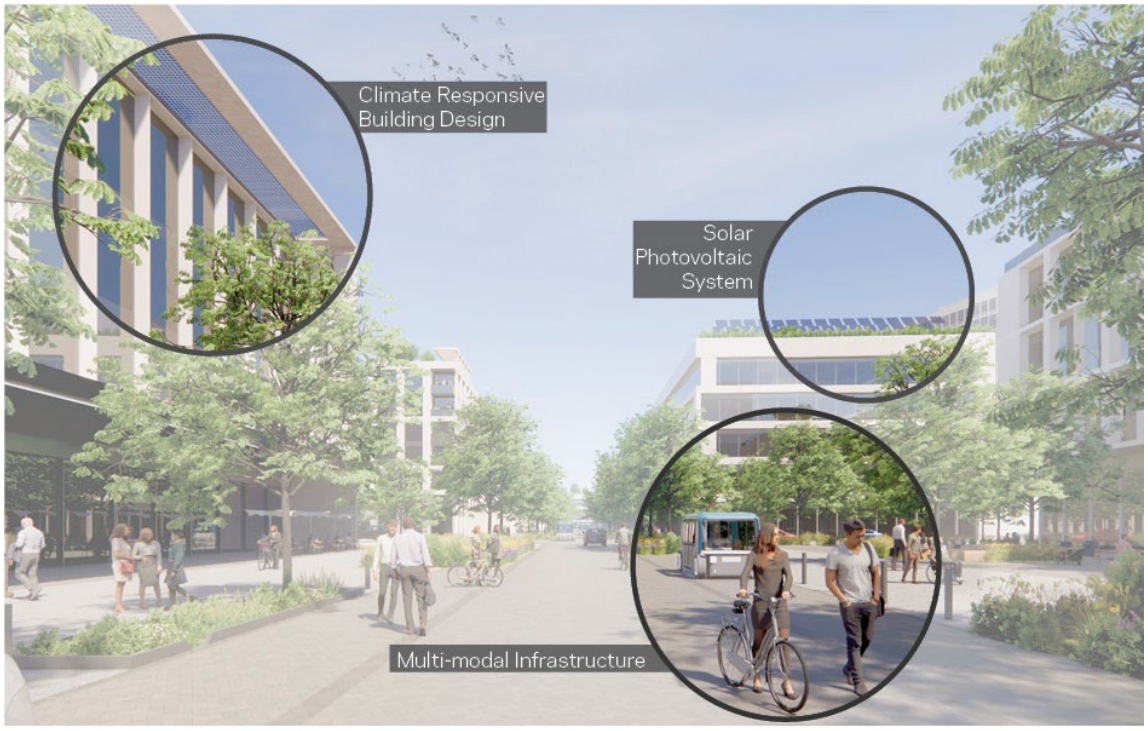
The proposed multi-modal transportation network provides a variety of viable and desirable modes of transportation. Similar to the recommendations presented in section 3.7, the following strategies aim to encourage walking, biking, and transit use to reduce dependence on GHG-emitting vehicles.

Pedestrian and Bicycle Infrastructure Network: A safe and desirable infrastructure network for pedestrians and cyclists can minimize reliance on GHG-emitting vehicles. Safety can be improved by connected networks of pedestrian and bicycle paths separated from vehicular traffic, traffic-calming measures to reduce vehicle speed, and intersection daylighting measures to increase visibility. The desirability of the environment can be enhanced with pedestrian-scale design including trees and plantings, seating, public art, and street-level storefronts.

Public Transit Network: A robust public transit network can minimize reliance on personal GHG-emitting vehicles. A robust network should include frequent, reliable service and shelters with shade, seating, and service information.

Electric Vehicle Charging Infrastructure: Providing public and residential electric vehicle charging stations can support adoption of electric vehicles (EVs). As more renewable energy is added to the electrical grid, EVs will contribute less to carbon emissions over time.

Public Transit System (left); Electric vehicle charging stations (top right); and pedestrian and bike facilities



Conceptual rendering highlighting key decarbonization strategies recommended for Gateway

High-Performance Buildings

The operation of new and existing buildings contributes significantly to GHG emissions. The following strategies aim to reduce the energy demand for new and renovated buildings. Note, building design and sustainability elements are ultimately governed by the County's adopted green building code.

Climate-Responsive Design: Designing buildings in response to environmental conditions such as solar, wind, and temperature patterns can reduce energy needs. Passive strategies of form, orientation, materials, and facade design can be utilized to reduce HVAC and lighting demands while creating a comfortable environment for occupants.

High-Efficiency MEP Systems: Efficient HVAC systems (e.g., heat-pumps: air, water, geothermal/ground-source; heat recovery; other future technologies; etc.), efficient lighting such as LED and future technologies, , efficient plumbing fixtures, automated building controls, and building monitoring systems further reduce energy use. As technologies are constantly advancing, efficient systems should not be limited to these recommendations but remain open to new advancements.

Low-GWP Refrigerants: Refrigerants with low global warming potential reduce leakage of greenhouse gases into the environment throughout a building system's lifespan.[18]

Electrification: Electrified buildings without any gas equipment or appliances (except as required for emergency back-up equipment) reduce GHG emissions. The Howard County *Building Code Considerations for Comprehensive Building Decarbonization* provides guidelines for building electrification. The document also describes exemptions and partial exemptions, such as those for the cooking areas of restaurants and commercial kitchens.

[18] Howard County Climate Action Plan, Mitigation Strategies, Energy

Grid-Interactive Buildings: Designing intelligently connected buildings which respond to utility grid demand and shift loads accordingly to help reduce energy needs in times of peak demand. When demand for the grid is higher, older and more inefficient power plants may need to be switched on to accommodate the increased demand. Load shifting in buildings often utilizes energy storage (batteries, thermal storage, and other future technologies), which is discussed under Resiliency.

Renewable Energy

Onsite renewable energy systems can further reduce the GHG emissions of building operation in Gateway. The following strategies aim to promote renewable energy integration into new and existing buildings.

Solar Photovoltaic Systems: Solar photovoltaic (PV) systems can offset grid electricity usage. PV arrays can be placed on building roofs and parking garages, as canopies above surface parking, incorporated into building enclosures, shade canopies in public spaces, and open fields.

Solar Hot Water Systems: Solar hot water systems can be beneficial for buildings with high-volume hot water usage, such as residences.

Future Technologies: For reasons of cost, scale, and solar availability, solar PV systems are currently the most commercially viable renewable energy technology for most building sites. However, technological advancements in the coming decades may provide new options for onsite renewable energy production and storage. Some technologies that may be explored include:

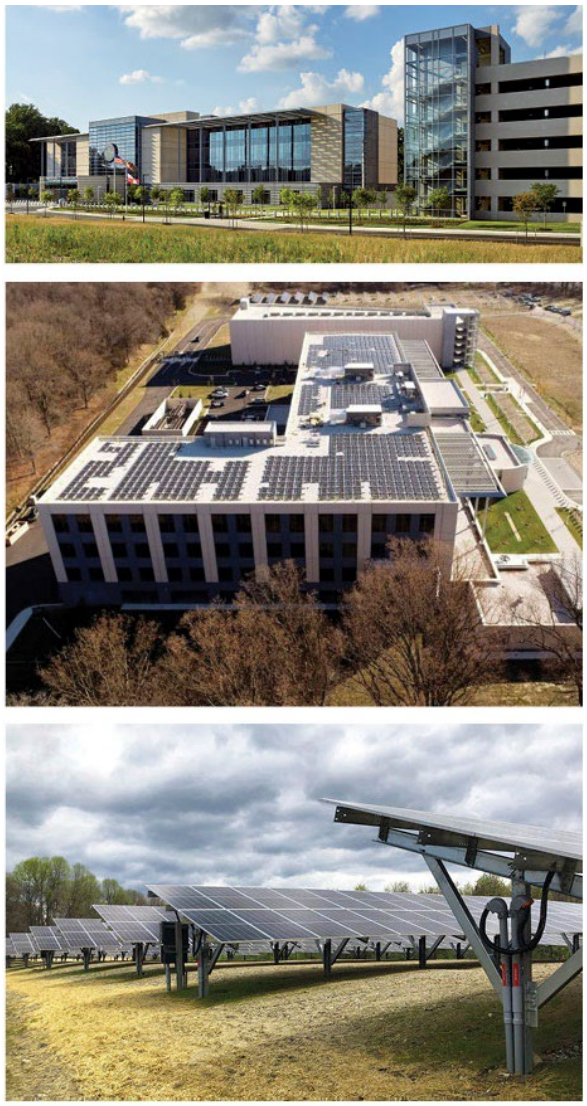
- Geothermal: Renewable geothermal energy is a utility-scale power solution which derives energy from the Earth's core. It should not be confused with "geothermal" (ground-source) heat pumps which can be constructed at the building-scale to reduce heating and cooling energy by exchanging heat with the ground. Ground-source heat pumps are discussed in the High-Performance Building section because they reduce energy demand but do not generate power.

- Small Scale Wind: Small scale wind turbines are designed for installation on residential or commercial buildings. Currently the cost of energy produced is high compared to solar PV. In addition, small scale wind patterns are harder to predict in developed areas causing turbines to underperform.

- Small Modular Reactors (SMRs): Nuclear is not technically a renewable energy source as it consumes fuel, but it does not emit CO2 as a biproduct of energy generation. Because of this, SMRs are generating a lot of interest in powering the rapidly increasing energy demand for data centers. There are currently no commercially operational SMRs in the U.S. at time of writing, however first commercial deployment is expected in the early 2030s.

Embodied Carbon Reduction

In addition to operational emissions, embodied carbon emissions from raw material extraction and manufacturing comprise a significant proportion of a building's total lifecycle GHG contribution. Unlike operational emissions, embodied carbon emissions are all released upfront during construction with no way to reduce the impact over time. Choosing materials and construction methods with reduced global warming potential can support overall GHG reduction goals.



***Howard County Circuit Courthouse**: A LEED Gold-certified building with roof solar PVs (middle) and a solar field (bottom) designed to supply the facility with over 50 percent of its energy needs.*

Resiliency

Climate resiliency focuses on measures to adapt to changing climate conditions and respond to hazardous climate events. As described in Howard County Climate Forward, the county's main vulnerabilities to climate change are increasing heat and precipitation. Precipitation is expected to occur in more frequent extreme storms, increasing severe flooding risks. The resiliency strategies presented support mitigation measures to reduce the adverse effects of heat and flooding and recovery measures to respond to emergencies when they occur.

Stormwater Management

Effective stormwater management can help remove pollutants from runoff, reduce water temperature, moderate the flow of runoff into nearby water bodies, and reduce flooding. The following strategies aim to protect against flooding and reduce runoff using natural hydrologic processes to retain and infiltrate water. New developments may employ these strategies to meet the County's stormwater management requirements.

Low-Impact Development Strategies: Designing sites and landscapes using low-impact development (LID) strategies can mitigate flooding by absorbing rainfall, reducing water ponding, and street flooding. LID strategies aim to mimic the natural hydrology of a site to reduce runoff into municipal storm systems and recharge groundwater through infiltration. Some examples of LID strategies include bioretention, bioswales, rain gardens, and permeable pavements. LID strategies may also be planned as part of the design for and incorporated into green open space and amenity areas.

Green Roofs: Green roofs can provide additional rainwater holding capacity at the roof level which may also reduce the area required for stormwater management at ground level. Green roofs can be paired with rooftop PV for maximum utilization of the roof area.

Water Treatment and Reuse

Onsite water treatment and reuse systems can provide resiliency in two major ways: reducing demand on municipal water supply during drought and maintaining a non-potable water supply in case of municipal water disruption. The following strategies aim to capture available water and reuse for non-potable water needs.

Rainwater Harvesting: Rainwater harvesting systems can capture rain from building roofs and store in tanks which can be placed on the site or constructed below-grade—water collection tanks are commonly constructed integrally with below-grade parking structures. Harvested rainwater can support site irrigation systems (if needed) and eliminate the need for potable water use in outdoor applications. Rainwater can also be used for non-potable water uses within the building such as flushing and cooling tower make-up.

Onsite Water Reuse: Building systems can be designed to treat, store, and reuse water. Water can be treated onsite by various methods, stored in tanks, and then distributed for non-potable water uses like flushing, irrigation, and cooling tower make-up throughout a building or development. Capturing and reusing water onsite can also reduce stormwater runoff and wastewater discharge from the development.

In addition to rainwater, all potable and non-potable water used onsite may be recycled back into an onsite treatment and storage system (though such reuse would require changes to the building code). Some systems reuse only lightly contaminated greywater (from sinks, showers, and washing machines), but more robust systems may also include heavily contaminated blackwater (from toilets, urinals, and other heavy chemical uses).

A water balance study was conducted for the 30-year plan which estimated that 100% of flush water could be supplied by recycled water with additional available for some portion of irrigation or cooling tower make-up.

Onsite Potable Water Storage: Onsite storage of potable water can provide resilience in case of municipal water supply disruptions, though capacity and water age are some key factors to be considered.

Reclaimed Water Use: Utilizing reclaimed water from the Little Patuxent Water Reclamation Plant is another potential option to consider. This approach would allow for the expanded use of reclaimed water for non-potable purposes – such as irrigation, landscaping, and cooling towers – thereby supporting long-term water sustainability goals and reducing reliance on potable water supplies. However, the feasibility of extending the 'purple pipe' infrastructure – particularly in terms of infrastructure requirements, and distance – would need to be carefully evaluated as part of this option.

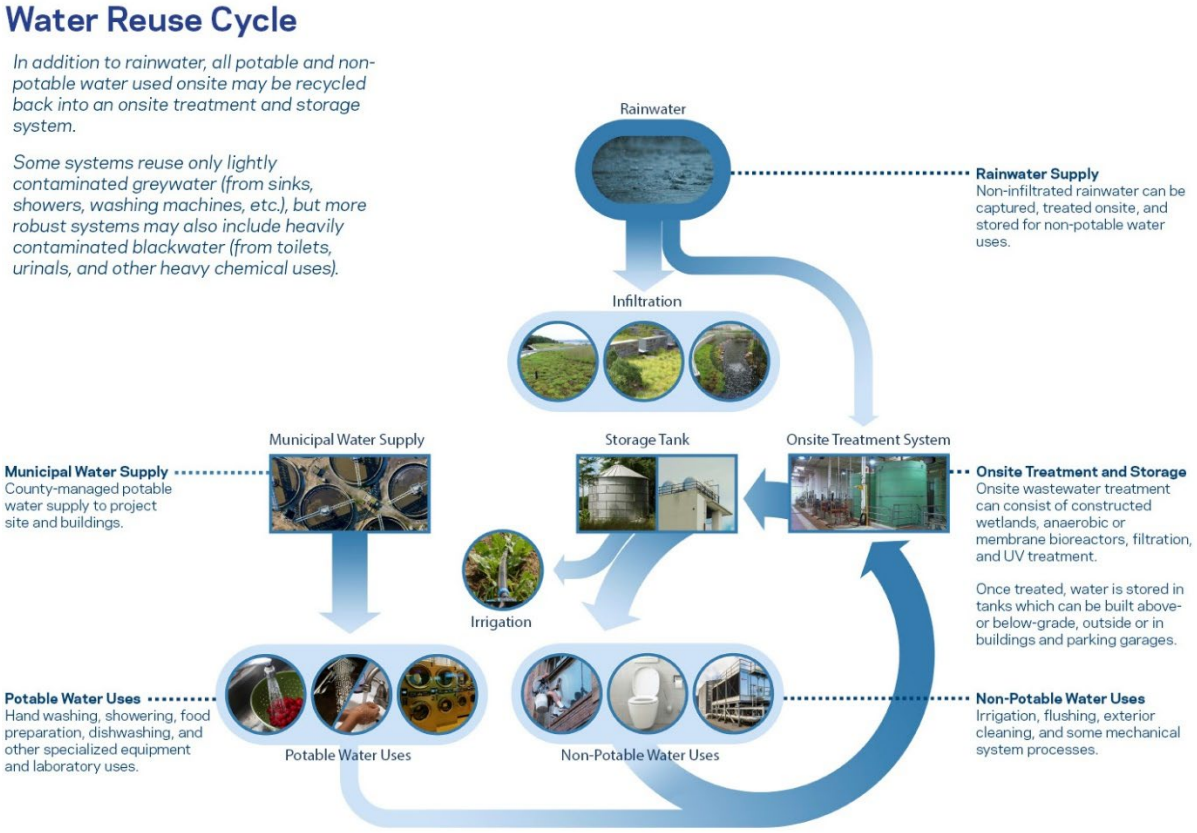
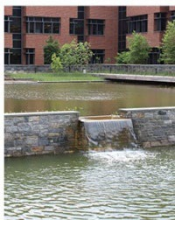


Figure 30: Water Reuse Cycle Illustration (Source: HOK)

Heat Island Mitigation



The heat island effect is when developed areas experience higher temperatures due to heat absorption and radiation of hardscape and building materials. The additional heat can exacerbate the danger to human health on already hot days. The following strategies aim to reduce the heat island effect in redevelopment.

Tree Canopy Coverage: Tree canopies can help reduce the heat island effect and provide shade to pedestrians. By reducing surface temperatures, trees can provide energy savings for electricity and air conditioning in summer. In addition, tree canopies contribute to biodiversity and provide habitat for local wildlife.

Light Colored Paving and Building Materials: Choosing paving and building materials with a high solar reflectance (SR) can reduce the heat island effect. Dark paving and building materials absorb heat and increase nearby temperatures.

Vegetation: Planted vegetation, including green roofs, also contribute to cooler surface temperatures. Native vegetation will require less water supply and be more adaptable to surviving in this climate.

Energy Back-up and Recovery

Energy systems can provide resiliency by reducing demand on the electric grid and maintaining power in case of utility outages. The following strategies aim to promote onsite energy generation back-up.

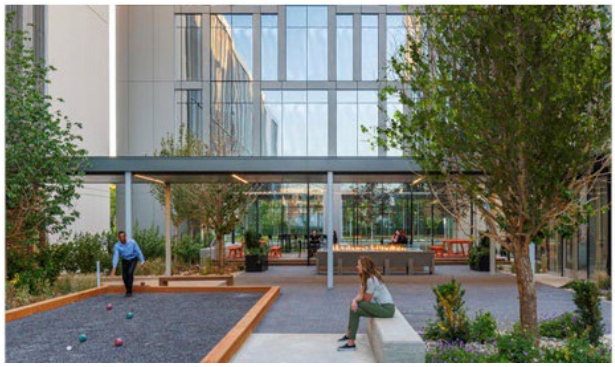
Solar Photovoltaic Systems: Solar photovoltaic (PV) systems can be capable of operating critical building systems during power outages, which can provide resilience in instances of grid power disruptions especially when paired with energy storage.

Energy Storage: Incorporating energy storage systems in buildings can support recovery after damaging weather events when grid power may be disrupted. Energy storage also allows for targeted reduction of utility energy use during peak demand periods contributing to the broader resilience of the grid. Common energy storage methods currently are battery and thermal storage, but the increasing demand for storage is likely to drive new technologies in coming decades.

Microgrid: Buildings and developments can be designed to operate independent of the utility grid to provide resilience in case of grid disruptions.

Health & Wellbeing

Health and wellbeing strategies focus on the physical, mental, and social health of the community both on an individual level and as a collective. The strategies presented promote physical activity, interaction with nature, and community connection.



Walkable Bikeable Community

The following strategies aim to support walking and biking as viable and desirable modes of transportation within the development.

Pedestrian and Bicycle Infrastructure Network: Walking or biking to accomplish daily activities promotes an active lifestyle, interaction with nature, and social connection. These transportation modes can be supported by providing connected pedestrian paths, separated and protected bicycle paths, and traffic-calming measures to create safe and desirable environments for walking and biking.

Bicycle Parking and Repair: In addition to bicycle paths, secure short- and long-term bicycle parking and repair stations to support bicycle use for daily activities.

Mixed-Use Development: Complete live, work, and play communities can be designed with convenient access to daily necessities like groceries, pharmacy, and childcare, and desirable amenities, such as restaurants, entertainment, and natural spaces within walking distance of offices and residences.

Human-Nature Interaction

The following strategies aim to encourage people to spend more time outdoors by creating lively and pleasant public spaces.

Public Use Outdoor Spaces: Provide outdoor spaces that are programmed for community events and recreation to encourage people to spend time outdoors. The programming should include recreational space for all ages and abilities, including parks, playgrounds, gardens, nature trails, and public plazas.

Street Trees: Street trees create habitats for local wildlife, providing opportunities for people to interact with nature in the public realm on a daily basis and experience seasonal changes. Shade from trees also provides a more comfortable environment on hot days, extending the time that people of all ages can comfortably enjoy the outdoors and accomplish daily errands on foot.

Nature Education: Signage can be incorporated into public spaces to educate the community on local ecosystems, conservation, and sustainable development strategies.


Tree Canopy Coverage
Pedestrian- and Bike-Friendly Spaces
Tree Canopy Shade Coverage
Public Use Outdoor Spaces

Outdoor Thermal Comfort

The following strategies aim to encourage people to spend more time outdoors by reducing thermal stress.

Tree Canopy Coverage: The shade from trees along walkways and gathering spaces can reduce heat island effect and create a cooler microclimate for human comfort. People will be able to spend more time outside when heat stress is reduced. Deciduous trees which lose their leaves in winter are advantageous because they provide shade on hot summer days but also allow sunlight to stream through the branches on cold winter days.

Architectural Shading Interventions: Architectural shading can be used to provide shade and cooler temperatures in public spaces and can be deployed or retracted seasonally as needed. Shading strategies might include awnings and overhangs at building exteriors; canopies, sails, and umbrellas at seating areas and walkways; and PV canopies above parking.

Water Features: Water features such as fountains, ponds, misters, and splash pads can provide cooling effects and sensory interest to public spaces.

Equitable Development

The following strategies aim to provide equitable access to public spaces and amenities to support a multigenerational community.

Public Use Outdoor Spaces: Outdoor areas with recreational space can encourage the community to spend time outdoors where they can experience the natural environment. The programming should include recreational spaces for all ages and abilities.

Access to Daily Amenities: Communities with convenient access to daily necessities, such as groceries, pharmacy, and childcare, can support a multi-generational community.

Urban Ecology

Urban ecology focuses on supporting the local ecosystem for the benefit of all. HoCo By Design, the County's general plan, recommends incorporating natural resources into site planning to create connections between natural resources both on- and off-site (existing regulations already require new development to protect steep slopes, floodplains, streams, and wetlands, and meet forest conservation requirements). The strategies presented aim to incorporate natural systems into development, mitigate harm to wildlife, and provide holistic benefits to the community.

Biodiversity: Incorporating native plants and pollinator species into building sites can support local wildlife and the overall ecosystem health. Because native plants are adapted to local climate conditions, they also require less (or no) irrigation, conserving water. Removal of invasive species should be encouraged to promote biodiversity.

Habitat Support: A healthy ecosystem can also be supported by incorporating native habitats into building sites. Connections between habitat areas from one site to another, traffic calming measures, and signage can provide safe passage for wildlife.

Bird-Friendly Design: Design building facades using bird-friendly strategies to avoid bird collisions and deaths. Large areas of reflective glazing are particularly deadly for birds and solutions such as reducing glazed area, reducing reflectivity, and adding patterning can mitigate collisions. The American Bird Conservancy provides additional guidance for bird-friendly design.

Light Pollution: Design exterior lighting to minimize uplighting, glare, and light trespass and include controls to allow for after-hours shutoff of lights not needed for safety.

Native habitats integrated into building sites (top left); native plants and pollinator species (right); and use of frit patterns on glass facades for bird protection (bottom left)

Key Recommendations:

- ✚ The master plan recommends incentives for projects that incorporate sustainable design practices and also exceed the County's regulatory requirements.

3.7 Transportation and Mobility

The overall goal for transportation and mobility in Gateway is to create an interconnected transportation network of Complete Streets that serves all modes and connects people walking, bicycling, and driving to and around the Columbia Gateway area. The components of this network will include external access improvements and new internal streets to serve all transportation modes, along with dedicated and expanded transit facilities and service. Further, policies and strategies will be developed to manage transportation demand and parking.

Complete Streets Policy & Design Manual Updates

The planning, design, construction, and maintenance of the streets, roads, and related transportation infrastructure in Howard County is guided and directed by the Howard County Complete Streets Policy. The policy outlines two clear goals, which are to: require "a seamless, connected street network, regardless of mode, including safe and convenient pedestrian crossing and access to transit" and to "develop plans, facilities, and accommodations that further the County's Complete Streets policy. These policies, along with the Howard County Design Manual, are guiding how and where the transportation network will change and respond to the revitalization in Gateway. The policy also notes that every street does not necessarily need to provide separate accommodation for every mode, but a network should be in place so that trips can be made by walking, biking, taking public transit, and driving.

Transportation System Needs

In addition to following Complete Streets guidance to reimagine the Gateway transportation network, it is necessary to determine how vehicle traffic volumes and travel patterns may change in the future as a result of development that may occur. Assessing the future transportation system needs to involve three steps:

1. Developing an understanding of existing traffic patterns in and around Gateway
2. Inventorying existing programmed capital projects and projected background development that impact Gateway
3. Determining the amount and location of future residential and nonresidential growth within Gateway

These steps will enable Howard County to be prepared for the increased travel demand potentially generated by future development.

At the start of the master planning process, an inventory of previous transportation studies that impact access to Gateway was conducted. The review identified three impactful capital project ideas:

- Improve existing access and add a new access point to Gateway along Route 175 bounding the northern edge of the site
- Provide regional transit service to Gateway via the CSX right-of-way bounding the southern edge of the site
- Provide a shared use path along Robert Fulton Drive between Snowden River Parkway at Oakland Mills Road to Robert Fulton Drive at Columbia Gateway Drive

Further study was necessary to evaluate transportation system needs relating to improved access to the Gateway site and mobility improvements within Gateway. Planned projects were included in that evaluation.

Methodology

As part of the master planning process, a custom travel demand model was developed to estimate the future transportation needs within and surrounding Gateway. The evaluation included major roads like Columbia Gateway Drive, Snowden River Parkway, Robert Fulton Drive, and Route 175, as well as local streets within the site. The goal of the travel demand model was to determine roadway improvements which will be necessary to accommodate the amount and type of development expected within Gateway.

Results

One early goal of the master plan team was to improve access and visibility to the Gateway site from Interstate 95, given challenges with limited existing access. Further, HoCo By Design calls for the consideration of additional connections between Gateway and the regional transportation system. The travel demand model was used to analyze the feasibility of providing a new access point to Gateway along Route 175 between Route 108 and Interstate 95. The results indicate that feasible strategies for this additional site access can be provided. Specifics of the access point must include a detailed transportation study with input from the Mayland State Highway Administration, property owners, regulatory agencies, and public input to develop and evaluate a full range of alternatives and identify the preferred configuration to address multi-modal transportation needs, while addressing stakeholder and environmental concerns (such as Maryland Department of Environment review for impacts to wetlands/streams).

The scenarios evaluated to determine feasibility indicated that the preferred alternative would need to provide a street configuration that distributes traffic entering the site between the existing and new access points along Route 175, and avoid concentrating substantial new traffic movements at existing near-capacity intersections. This will be important to provide acceptable traffic operations both in the internal Gateway roadway network, and along Route 175. See the Route 175/Gateway Access Improvements section below for additional information.

Access Improvements to Gateway

HoCo By Design, the County's recently adopted general plan, calls for future transportation connections, including bicycle, pedestrian, and transit, among and between activity centers and other commercial centers. The general plan also describes a new northern access point for Gateway – a partially grade-separated interchange at Route 175 and Route 108. The plan for Gateway proposes new ways for vehicles, bicycles, and pedestrians to externally access the site; these improvements are depicted on Map 17: Site Access Map.

Route 175/Gateway Access Improvements

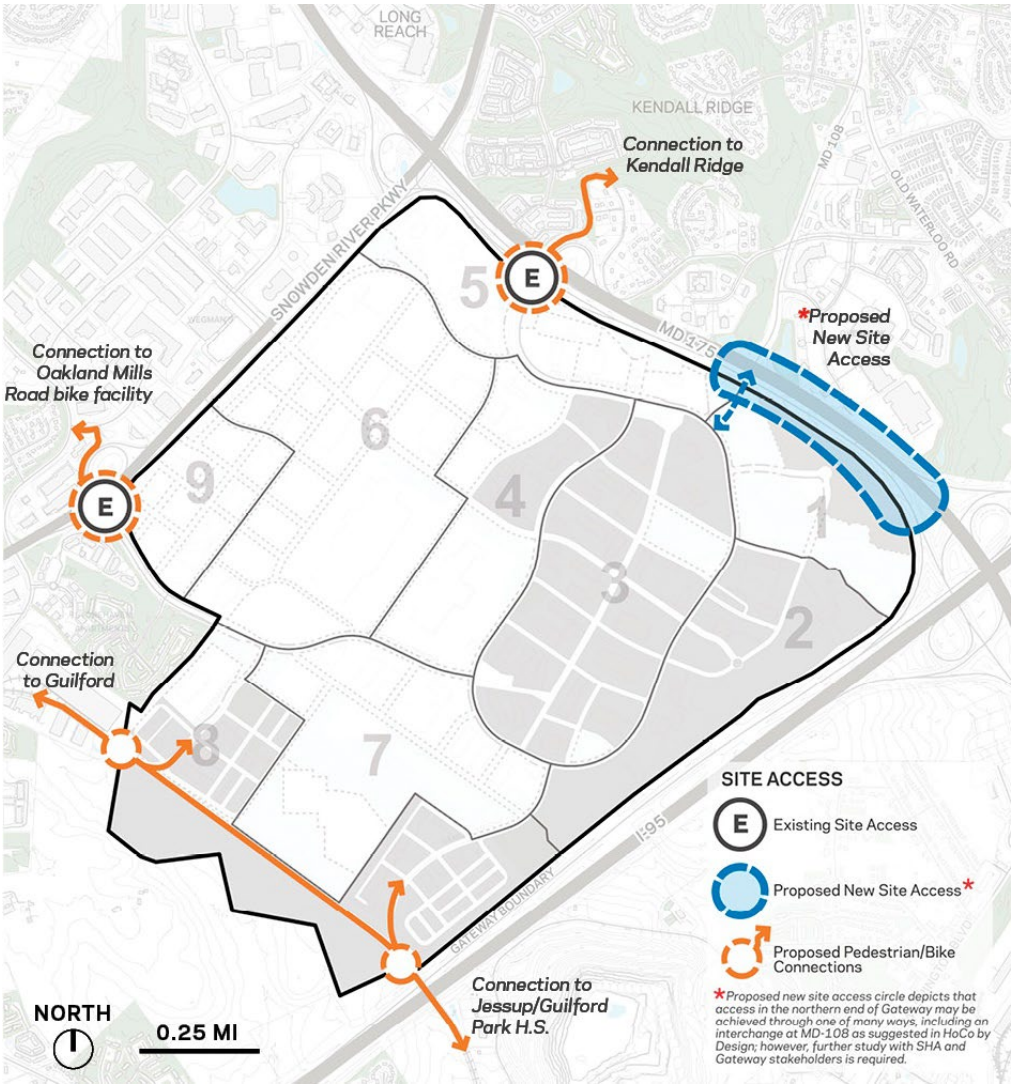
The State Highway Administration (SHA) performed a preliminary analysis of motor vehicle operations and potential alternatives at Route 175 and Route 108. Resilience 2050, the 2023 Baltimore Metropolitan Council's Long Range Transportation Plan documents $70 billion worth of transportation investments that may receive federal funding between 2028and 2050. The plan identifies the intersection of Route 175/ Route 108 as a roadway expansion project, noting "this T-intersection experiences significant congestion and an even worse collision experience. Existing intersection exhibits a collision rate higher than almost all intersections in Howard County. A partial grade-separation with direct access into Columbia Gateway will improve intersection capacity and alleviate the high collision rate."

Every year, Howard County updates the County's list of transportation priorities for the Maryland Department of Transportation's Consolidated Transportation Program. This list is known as the Transportation Priorities Letter. In Howard County's 2024 Priority Letter to the Maryland Department of Transportation (MDOT), connectivity between Route 175 and Gateway was identified as a Design and Engineering Project. Multiple access enhancements were identified including:

- Enhance connectivity for all transportation modes at existing access points
- Add a new access point for all modes at Route 108/Route 175
- Provide direct access to Columbia Gateway Drive from Interstate 95

This master plan supports the addition of a new access point from Route175. There are a variety of ways this access could be achieved, such as a new intersection with or interchange at Route108, a flyover from Interstate 95, or an access point between Route 108 and Interstate 95. Strategies for providing the new connection may involve grade separation at Route 175. Connections along Route 175 must meet SHA requirements for operations and safety and conform to SHA criteria. In addition to SHA review and approval, any selected alternative that modifies or adds an interchange ramp to Interstate 95 must be reviewed and approved by the Federal Highway Administration (FHWA) through the Interstate Access Permit Application (IAPA) process.

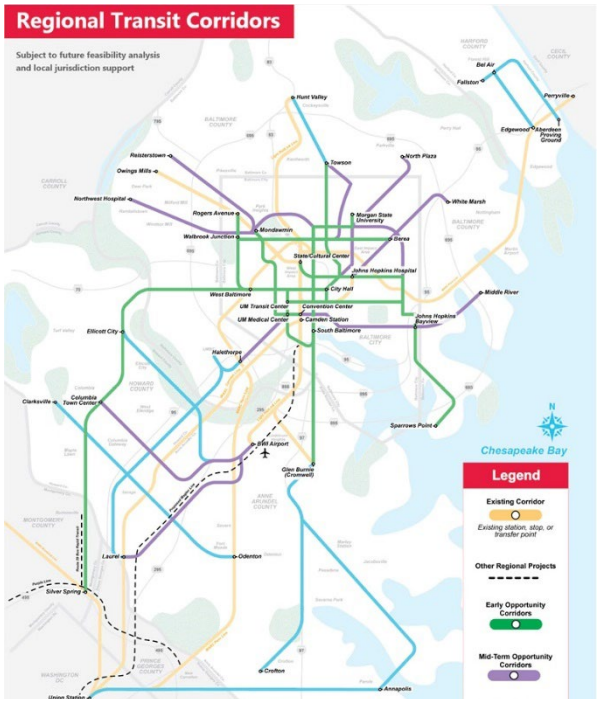
Further evaluation and coordination with State Highway Administration will be needed to identify the preferred access point. Regardless of its specific location, master plan goals for the access point include distributing traffic entering the site among all future access points to mitigate congestion, creating a welcoming new entrance to Gateway, and connecting to surrounding communities.



Map 17: Site Access Map

Bike and Pedestrian Connectivity

The proposed transportation network prioritizes walking and cycling, seamlessly connecting to existing paths and trails beyond Gateway, which will provide employees and residents with new ways to travel. This includes utilizing the CSX rail line – a 3.1-mile abandoned railroad spur – as a unique connection for people walking and biking to and from the innovation district. A full list of the plan's external connections for people walking and bicycling to and from the site includes:



Map 18: Maryland Regional Transit Corridors Map (Source: https://rtpcorridors.com/)

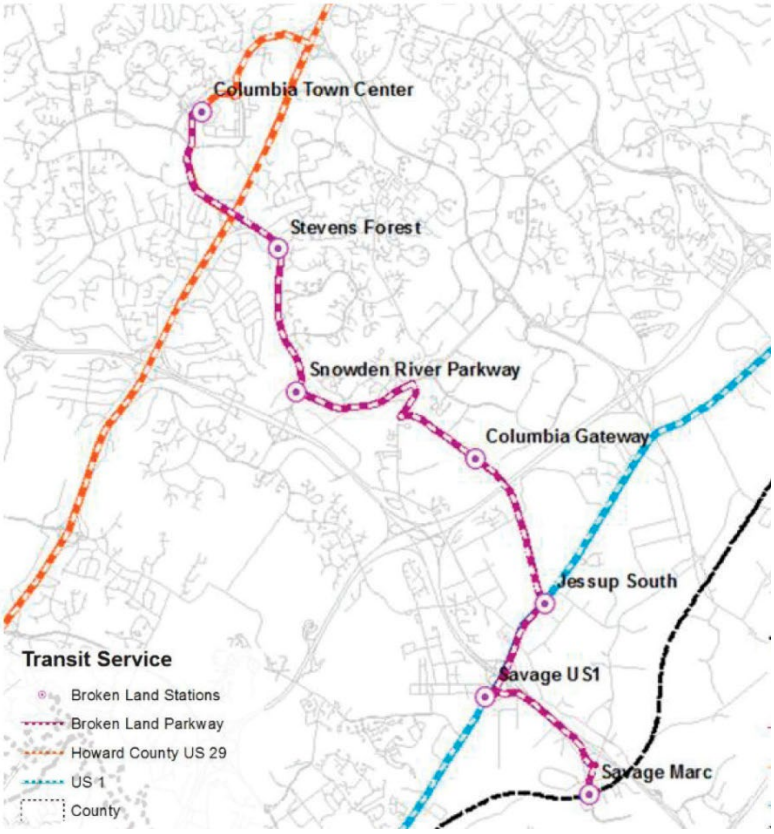
- A shared use path under Snowden River Parkway along the Robert Fulton Drive right of way to connect to an Oakland Mills Road shared use path, providing connectivity to the Oakland Mills Road cycle track; the proposed Dobbin Road shared use path; and the Elkhorn Branch Trail.
- A shared use path under Route 175 along Columbia Gateway Drive right of way that connects to the Kendall Ridge path network and to Snowden River Parkway and Dobbin Road shared use paths
- A grade separated shared-use path connection across Route 175 to connect to Route 108, the Gateway Overlook Shopping Center, and Old Waterloo Road. The exact location for this path is subject to further evaluation as part of future planning for a Route 175 vehicular access point.
- A multi-modal corridor that includes a shared use path and transitway along the CSX rail line connecting Guilford to the west and Jessup and Guilford Park High School to the east

Transit Connectivity

Regional Transit

In a 2012 Bus Rapid Transit (BRT) Concept Plan, the CSX line was envisioned as part of a dedicated bus rapid transit system that would connect Downtown Columbia and the Odenton MARC station. As shown on Map 19: Transit Service Map, stations were assumed at various locations including the Columbia park and ride, Snowden River Parkway, Columbia Gateway Drive, and Fort Meade.

This route would take advantage of the CSX right-of-way for approximately 4.9 miles between Oakland Mills Road and the Savage MARC Station. The study assumed local shuttles and circulators would convey passengers from a station located along the CSX line into the Gateway Site. This BRT concept was included in the 2020 Central Maryland Regional Transit Plan, which outlines how to improve public transportation in the region over the next 25 years.



Map 19: Transit Service. Proposed future transit service shown in Columbia Gateway Vicinity. (Source: Howard County Bus Rapid Transit Phase II Study Technical Report

Dedicated Transitway and Station

Rather than locate a transit station along the CSX line, this master plan recommends that the Gateway transit stop be more centrally located near the southern limit of the Woonerf. The transitway would travel along Robert Fulton Drive, Lee Deforest Drive, Columbia Gateway Drive and Samuel Morse Drive, and the CSX multi-modal corridor. The proposed configuration is shown in Map 20: Multimodal Facilities Map.

Local Transit

The Transit Development Plan (TDP) serves as a guide for public transportation improvements within Howard County and surrounding communities over a five-year planning horizon. The TDP was most recently updated in 2023. It focuses on improving the efficiency and effectiveness of transit services and is intended to be responsive to changing land uses, demographics, and travel patterns. As of 2025, Gateway is served by RTA Route 406, which has the highest operating cost per trip among all routes and limited activity along much of its alignment. As Gateway evolves, the TDP will adapt to meet changing transit demands through the update process.

Additional Transportation Policies and Programs

Transportation Demand Management (TDM)

As described in HoCo By Design, Howard County's general plan, transportation demand management (TDM) is a group of strategies used to manage demand for travel on the transportation network. The focus is on moving people, not vehicles, creating a more efficient use of our roadways. The transportation needs and opportunities within Gateway will evolve as the master plan is implemented and developers begin to build out the site. As Gateway becomes more dense, additional TDM Strategies may make sense.

TDM products and services include encouragement to use alternatives to single-occupant vehicles (SOV) such as taking transit, ridesharing, riding bikes, and walking, thereby reducing the number of vehicles using the road network. Alternatives to commuting such as compressed work weeks, flextime, and telecommuting, as well as parking management tactics such as preferential parking for carpools and parking pricing are also effective strategies. Some communities have used "live near your work" incentives to reduce commute times and encourage mode shift, or electing to take transit, bike, or walk instead of drive. Per the Howard County *Transportation Demand Management* page, "*t*he result of a successful TDM strategy is less traffic congestion, better air quality, and even happier, healthier communities."[19]

The general plan describes how TDM strategies can involve providing information on the range of transportation options in a community, promoting travel options to community members and businesses, and developing incentives to support using non-automotive travel options, along with disincentives. Strategies also include parking management and reducing zoning requirements for provision of automobile parking to influence which transportation options people choose when they travel and reduce search times for parking. Even for people who elect to arrive at Gateway using a motorized vehicle, the complete street network and internal multimodal links provide an opportunity to park once to visit multiple destinations, thereby eliminating short motor vehicle trips within the site. Parking policies must be structured to allow visits to multiple destinations regardless of property ownership of the parking lot chosen.

This master plan recommends that Howard County develop a Transportation Demand Management Plan for Gateway to support non-automotive travel options and reduce demand on the motor vehicle transportation network.

[19] *Transportation Demand Management. Howard County Office of Transportation. (accessed 2025, March 2). https://www.howardcountymd.gov/transportation/transportation-demand-management.*

Case Studies

Howard County required both Downtown Columbia and Maple Lawn in Fulton to adopt TDM strategies by completing a Transportation Demand Management Plan (TDMP).

Downtown Columbia (DTC) Transportation Demand Management Plan (TDMP)

The Downtown Columbia Master Plan called for the development of a Transportation Demand Management Plan (TDMP) for DTC to ensure it will be multi-modal as it grows. To do so, the role of travel options other than driving alone, such as taking the bus, biking, walking, telework and modified work schedules, needs to be increased.

The TDMP is a critical tool in enhancing the role of travel options. The initial 2018 plan was updated to be more aligned with the current development and transportation realities in DTC, as well as address COVID's impact on transportation choices. It includes steps to be taken by the Downtown Columbia Partnership and the Howard County Office of Transportation in both the short- and long-term to successfully implement TDM measures in Downtown Columbia.[xi] This document was used to generate the recommendations for Gateway listed below.

Maple Lawn Transportation Demand Management Plan (TDMP)

On December 29, 2000, the Zoning Board's Decision and Order in Case No. 995M incorporated Exhibit 55, a Transportation Demand Management Plan, as part of the proposal to develop Maple Lawn in Fulton, thus becoming a requirement for development of the property. The TDMP states that the developer intended to spearhead the effort to create a coordinated TDM programming and included a funding mechanism of $0.10 per square foot of leasable space in commercial buildings and $30 per year for homeowners. Currently, implementation of the Maple Lawn TDMP is the responsibility of two parties: the residential homeowners' association and the developers, Greenebaum, and St. John's Properties.

Recommendations

Develop a TDMP for Gateway

Develop a TDMP for Gateway to support non-automotive travel options and reduce demand on the motor vehicle transportation network. The following recommendations were developed based on national best practices and strategies for Downtown Columbia. They are suggested for consideration and could be expanded upon during the development of the Gateway TDMP.

Work with Employers to Develop TDM Strategies for New Employees

The Howard County Office of Transportation (OOT) should work with incoming and existing employers to develop TDM Statements. OOT is currently working with partners in Downtown Columbia to develop a TDM creation guide and provide developers with model TDM statements.

Plan for Scalable Micromobility and Microtransit Options

Work with partners to expand transportation choice for travel within Gateway. Consider micromobility strategies like bikeshare or electric scooter-share programs. Explore expanding the Route 1 Corridor microtransit pilot project. Ensure the design of the streetscape throughout Gateway can accommodate micromobility and microtransit operations in the future.

Advocate for Increased Transit

To support the development of a transitway and dedicated transit station described in the Transit Connectivity section of the document, Howard County will need to continue to advocate for expanded transit options in the Gateway area by engaging with area elected officials and transit agencies.

Adopt Curb Management Strategies

Motor vehicles making deliveries or pickups to area businesses and residences can cause congestion and create a potential safety hazard when temporarily parked in the travel lane. Ensure curb management strategies are discussed during the site plan development process to ensure appropriate accommodations are made to minimize impacts. Some potential strategies include establishing time or use limits and flexible-use curb zones.

Implement Comprehensive Parking Management

Available, affordable, and convenient parking will incentivize driving to Gateway. Parking supply, price, and accessibility should be carefully considered as it relates to the proposed development during the site buildout process. Conversely, not providing sufficient parking can result in increased congestion while drivers search for a parking spot.

While some surface parking lots may remain or be needed for smaller development sites, they should be avoided where high-intensity development is proposed. Surface parking lots take up a lot of space, increases the distance between destinations, and detract from the sense of place the master plan envisions. Structured parking provides more parking in a smaller footprint and can be “hidden” above, below, or wrapped within commercial or mixed-uses.

In partnership with landowners, developers, and stakeholders, Howard County should work to minimize demand for on-site parking by exploring and developing policies and programs, such as parking cashout programs, unbundling parking benefits for new residential development, and creating a parking improvement district to deliver parking capacity district wide. The outcomes of these policies and programs will be to allow parking ‘once’ for a trip to Gateway, avoiding broad segments of reserved parking dedicated to individual properties that is prevalent in suburban parking areas. While some permitted or reserved parking may be desirable, ample general parking dedicated to Gateway visitors must be provided to avoid short, motorized vehicle trips within Gateway.

Explore the Development of a Live Near Your Work Program: Live Near Your Work (LNYW) programs provide homebuying incentives for individuals who work within a certain geographic area. Usually, LNYW programs are a partnership between the local government entity and participating employers. A set dollar amount is provided to prospective residents to incentivize the purchase or rental of a home or apartment near their place of employment. The funds are usually allocated to down payment, closing costs, or rental subsidies and are calculated based on local market conditions. Often, a commitment to remain in the home for a set amount of time is required. Howard County should explore the development of a LNYW program for Gateway that reflects the housing goals included in Section 3.5.

Key Recommendations:

- Create an interconnected network that serves all modes and connects people walking, bicycling, and driving to Gateway
- Pursue a new access point from Route 175 through further evaluation and coordination with State Highway Administration and key stakeholders
- Provide employees and residents new walking, bicycling, and transit options to Gateway
- Develop a transportation demand management plan for Gateway to support non-automotive travel options and reduce demand on the motor vehicle transportation network

3.8 Public Infrastructure

Gateway's redevelopment vision includes many public infrastructure investments to be made over the plan's long-term, 30-year implementation schedule. Given the breadth and complexity of infrastructure needed, a plan for public infrastructure and financing should be developed to guide future investment.

Potential Infrastructure Needs

The plan organizes potential infrastructure needs into categories, which include:

- Public facilities – such as public schools, police protection, fire/emergency medical services (EMS), public libraries, community centers, public restrooms, and parking garages
- External access improvements – vehicular access from Route 175 and multiple bike and pedestrian improvements (including the CSX multi-modal corridor)
- Internal road network and site circulation improvements – new streets, reconfigurations of existing streets (as complete streets)
- Water/sewer improvements – water supply and sewer system improvements
- Open spaces – including multiple types of open spaces shown on the open space framework, including the Woonerf, linear park, urban plazas, and neighborhood parks
- Innovation facilities – an innovation hub

Several of these infrastructure categories – transportation and mobility improvements, open spaces, and innovation facilities – are described in more detail in earlier sections of the plan. Public schools are described in later pages of this section.

With regards to fire/EMS, an evaluation should be conducted to determine the need for a fire station to be located inside the Gateway area. Further, as Gateway redevelops, it will be important to ensure that access requirements are met (including, but not limited to secondary access, road width, turning radius, weight capacity, etc.). The Office of the Fire Marshal can provide specific guidance as redevelopment takes place and as the internal road network and external site access points are further studied.

In addition, Howard County Police Department's Strategic Planning Section should be involved in the evaluation of the road network and external site access and other facility needs.

A comprehensive evaluation of police protection infrastructure, specifically the potential for a full-service police station, is necessary. The type, amount, locations, and phases of development in the Gateway redevelopment area will significantly impact the police department's capacity to respond to calls and meet community needs without further investments.

Previous studies have highlighted the advantages of adding a third police station within the County – a recommendation included in the County's General Plan, HoCo By Design. This station would serve not only the growing Gateway area but also the surrounding regions and the County.

The evaluation should consider factors such as the number and location of existing police stations, the number of authorized sworn officers, emergency call volume, population density and growth trends, co-locating public safety facilities, and the potential for incorporating integration technologies (like "Smart Cities") that enhance service delivery to the community.

The Howard County Library System (HCLS) should evaluate the need for additional library capacity to serve planned growth in Gateway. If there is a need for a new library in Gateway, HCLS should consider integrating the library with other complimentary public or private facilities as recommended in the County's general plan, HoCo By Design.

Similarly, the County should evaluate the need for a new community center, serving all ages, or separate ones, as a resource for individuals, families, and the senior population.

As with the North Laurel Community Center, a facility could be designed to allow for future growth, based on the actual population it will be catering to (its site shall be sized accordingly).

Space for this facility should be centrally located, and easily reachable, either on foot or by different means of transportation, in addition to private cars.

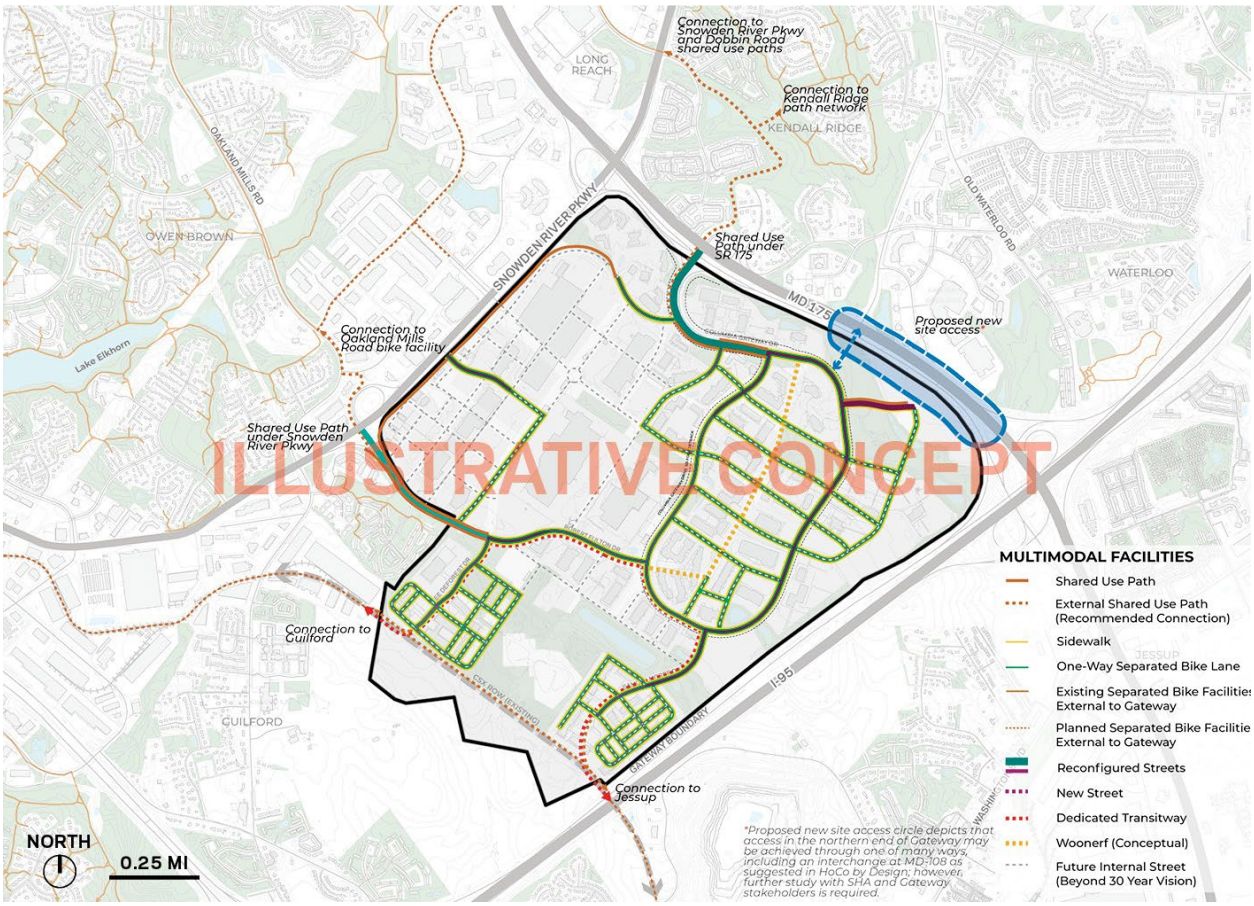
Preliminary evaluation of water and sewer needs indicates that the water supply, with already planned improvements and some necessary operating changes, can meet anticipated demand (as based on the market estimates presented earlier in the document). The sewer system will need not only investment in already planned improvements, but also other considerable improvements (which could include new or expanded pumping stations and sewer pipes). However, such improvements are not anticipated to be needed in the near term, allowing time to plan and fund these improvements. The extent and timing of improvements will depend on the amount, type, and timing of new development.

Further, sustainable strategies, like greywater reuse and onsite blackwater treatment, could offset the need for sewer capital improvement to serve future demand. As an innovation district, Gateway may include data centers, which are heavy-impact water users, primarily for cooling. Therefore, onsite reuse has the potential to drastically reduce freshwater demand and wastewater discharge. More importantly, onsite water reuse will make Gateway less vulnerable to water shortages, droughts, and public infrastructure failures. This in turn enhances resiliency and operational continuity at Gateway. With regards to onsite blackwater treatment, there are a few factors that need to be considered and evaluated. For example, factors such as high upfront cost of investment, skilled personnel for ongoing operations and maintenance, strict regulatory compliance, and concerns regarding safety and odor would need to be thoroughly evaluated.

Mobility Improvements within Gateway

In addition to improving external access, the plan proposes a new internal road network and site circulation improvements, illustrated in Map 20: Multimodal Facilities. The alignment of new streets is based on three main principles:

- Create an interconnected network of streets that builds off the existing street network with new streets that follow existing property lines
- Design all proposed and reconfigured streets as Complete Streets using the typical street types in Howard County Design Manual Volume III, Complete Streets and Bridges
- Design new streets as extensions of existing streets where possible (e.g. Eli Whitney Drive and Benjamin Franklin Drive)

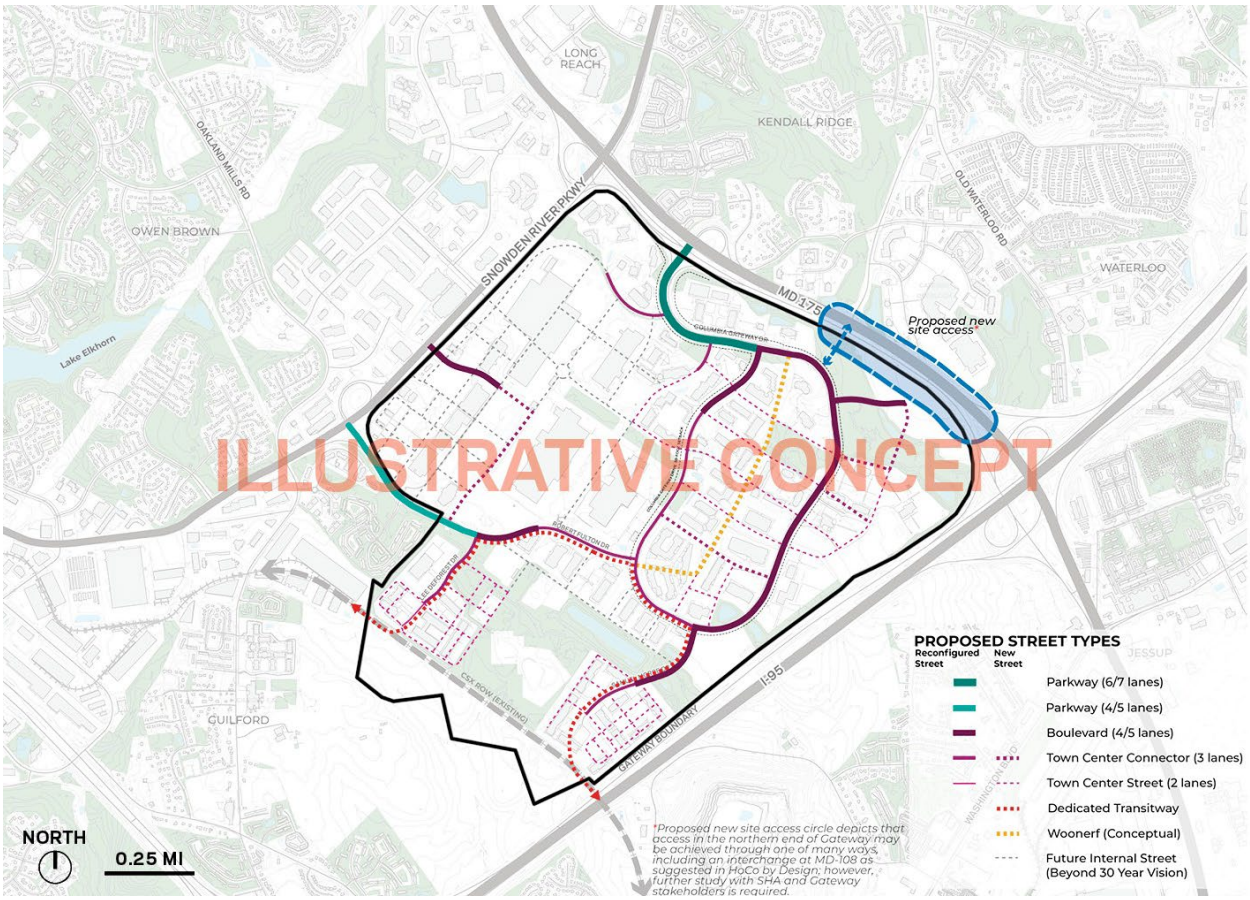


Map 20: Multimodal Facilities Map

Map depicting multimodal facilities proposed within Gateway and existing and proposed shared use facilities surrounding gateway.

Proposed Complete Street Network

The transformation of Gateway's existing roads to an interconnected network of Complete Streets will allow users to travel safely regardless of mode. This vision aligns with the County's policy for Complete Streets, which calls for roads to accommodate residents of all ages and abilities who travel by foot, bicycle, public transportation or automobile. Map 21: Proposed Street Types illustrates how street types from the County's Complete Streets Design Manual can be applied to Gateway.



Map 21: Proposed Street Types Map

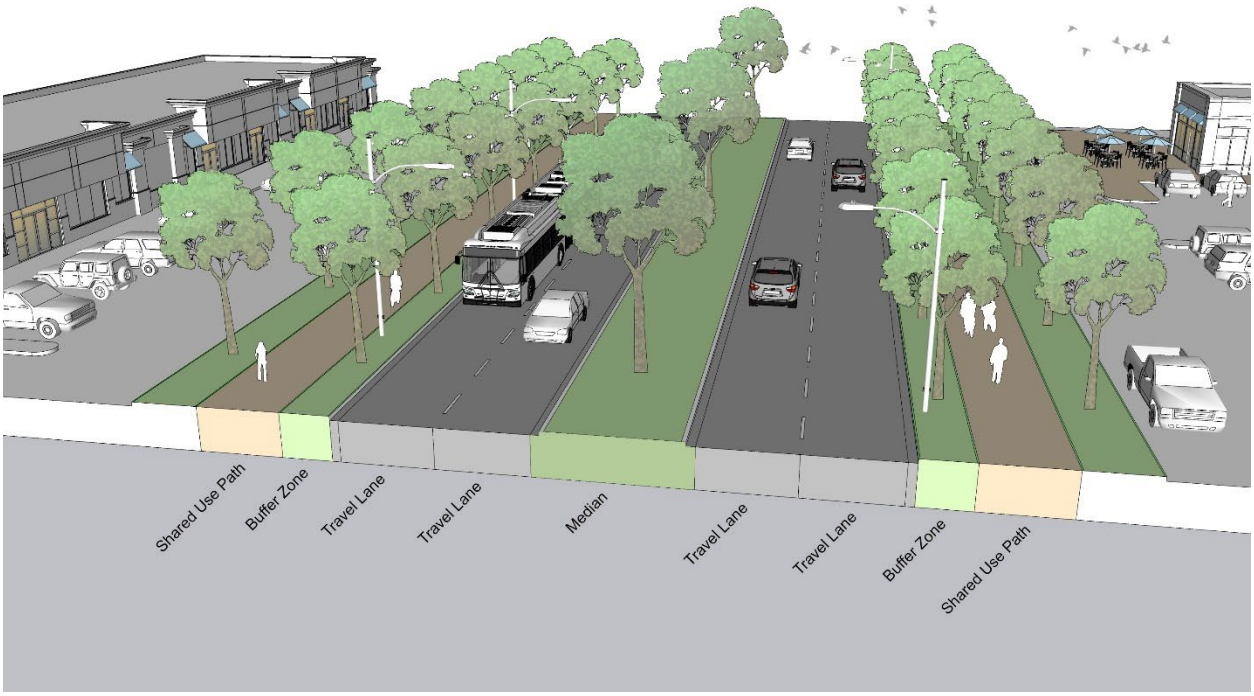
Map depicting the Street Types for existing and new streets within Gateway

Street Types

The Street Types included in the Design Manual were developed by linking land use contexts common to Howard County with accommodation for all modes of travel. Boulevards, Town Center Connectors, and Town Center Streets were developed to provide safe multimodal facilities in higher density mixed-use areas, similar to what is proposed in Gateway. The Parkway and Neighborhood streets were intended for lower density suburban environments, which could accommodate Gateway's industrial uses.

The proposed street types depicted in Map 21 include Parkways, Boulevards, Town Center Connectors, and Town Center Streets. The street types shown were evaluated based on the travel demand model and the resultant projected traffic volume for each street according to the intensity of residential and commercial development envisioned, as well as continuing industrial. These street types are likely to be refined in the future as internal and external access configurations are determined, and as future development types and uses are proposed. Further, the street grid is illustrative, and during implementation, changes to the grid may be needed. An overview of each type, along with information from the County's Complete Streets Design Manual, follows.

Parkways are 4/5 or 6/7 lane divided streets with grass or landscaped medians. They are intended to serve as streets which can accommodate a large motor vehicle demand. Treed buffer zones separate travel lanes from shared use paths for people walking and bicycling.



Street Type	Right of Way Width	Center Turn Lane/Median	Inside Travel Lane*	Outside Travel Lane	Shoulder/Offset from Curb	Parallel Parking	On-Street Bike Lane	Buffer Zone***	Separate Bike Lane	Sidewalk	Shared Use Path	Target Speed	Carrying Capacity
Parkway (6-lane)	122'	11' **/ 16' min	12' **	11'	1'	N/A	N/A	6'	N/A	N/A	10' (2 sides)	varies	50-60k
Parkway (4-lane)	112'	11' **/ 28'	12' **	11'	1'	N/A	N/A	6'	N/A	N/A	10' (2 sides)	varies	50-60k

*Against center line/median; ** Includes 1' gutter pan; ***Dimension measured from back of curb to sidewalk/separated bike lane/shared use path

Figure 31: Street Type - Parkway Section and Dimensions

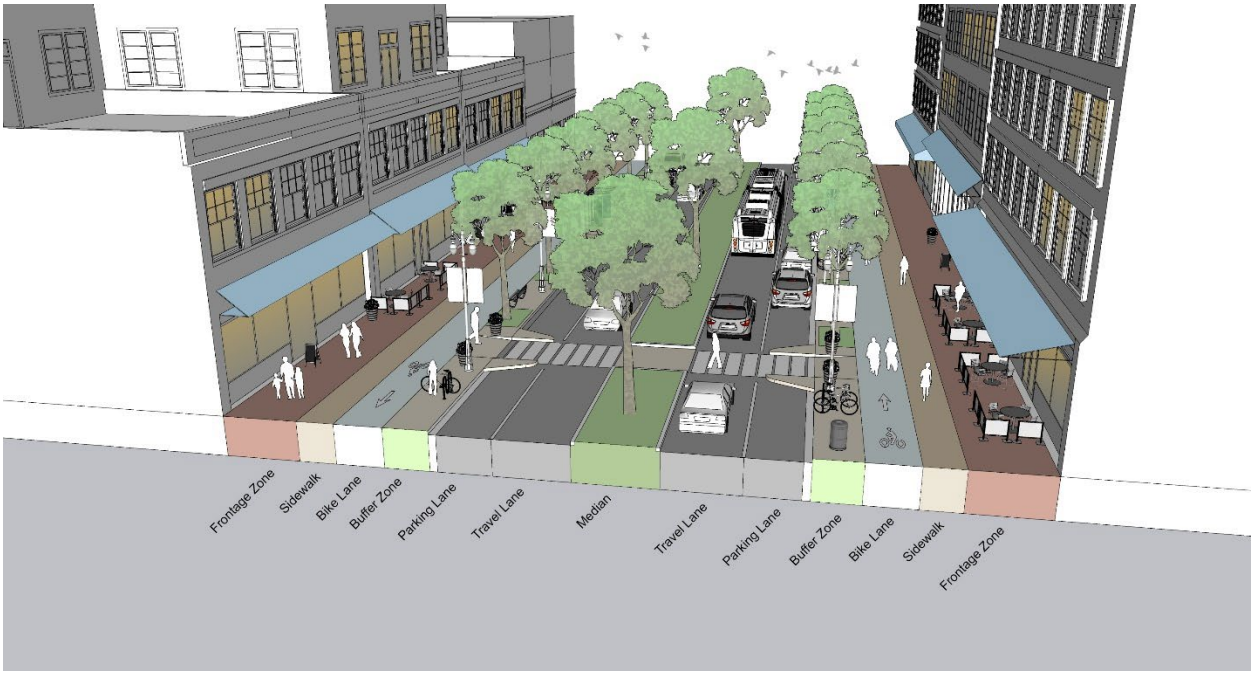
Boulevards are 4/5 lane divided streets with grass or landscaped medians that also provide a median crossing island. They are intended as principle motorized vehicular routes in higher density mixed-use areas. Separated walking and bicycling facilities – like sidewalks and bike lanes – are provided, rather than shared use paths, given anticipated high volumes of pedestrians and bicyclists. The graphic in **Figure 33** depicts on-street parking, however, on-street parking is not envisioned on all Boulevards in Gateway in order to minimize right of way needs.

Street Type	Right of Way Width	Center Turn Lane/Median	Inside Travel Lane*	Outside Travel Lane	Shoulder/Offset from Curb	Parallel Parking	On-Street Bike Lane	Buffer Zone***	Separate Bike Lane	Sidewalk	Shared Use Path	Target Speed	Carrying Capacity
Boulevard	116'	11' **/ 16'	11' **	11'	N/A	8' **	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	35-40k
Boulevard No Parking	100'	11' **/ 16'	11' **	11' **	N/A	N/A	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	35-40k

*Against center line/median; ** Includes 1' gutter pan; ***Dimension measured from back of curb to sidewalk/separated bike lane/shared use path

Figure 32: Street Type - Boulevard Section and Dimensions

Town Center Connectors are 3 lane streets with center turn lanes. They are intended for streets with a moderate motorized vehicle demand. Like Boulevards, volumes of pedestrians and bicyclists are anticipated to be high; therefore, separated walking and bicycling facilities are provided rather than shared use paths. Curb extensions and median refuges should be provided in mid-block crossing locations. On-street parking is not envisioned on all Town Center Connectors in Gateway in order to minimize right of way needs.

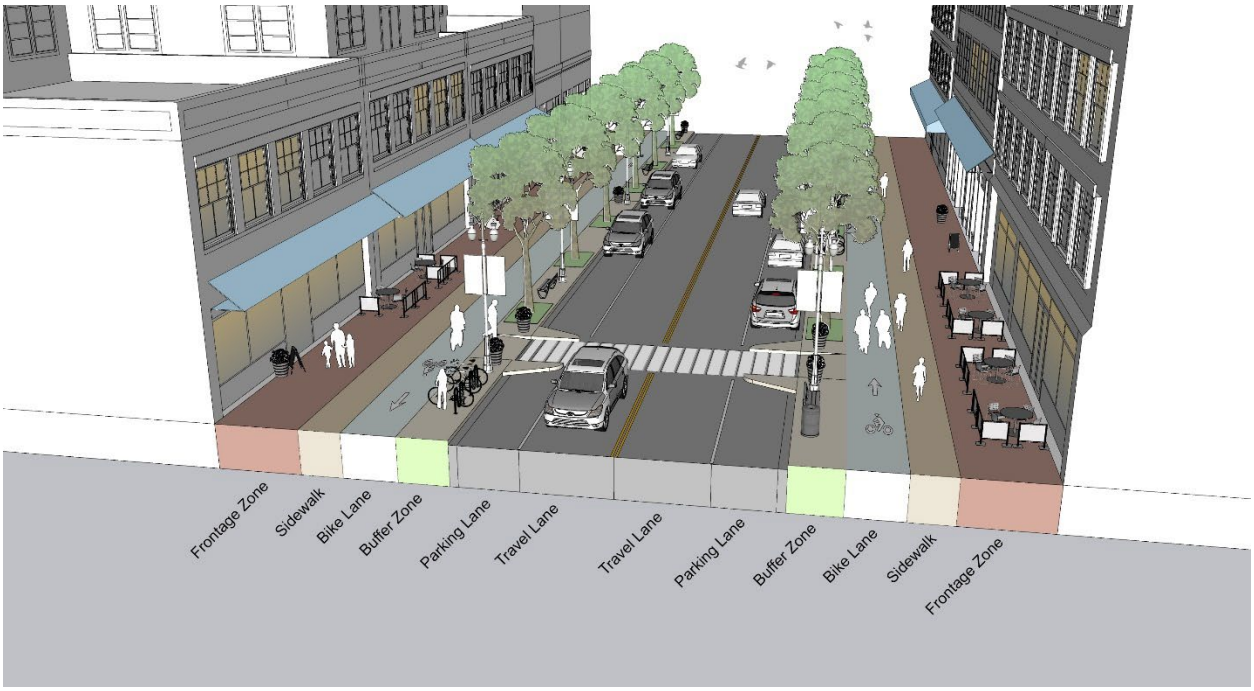


Street Type	Right of Way Width	Center Turn Lane/Median	Inside Travel Lane*	Outside Travel Lane	Shoulder/Offset from Curb	Parallel Parking	On-Street Bike Lane	Buffer Zone***	Separate Bike Lane	Sidewalk	Shared Use Path	Target Speed	Carrying Capacity
Town Center Connector	88'	11'	N/A	11'	N/A	8' **	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	<20k
Town Center Connector No Parking	72'	11'	N/A	11' **	N/A	N/A	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	<20k

*Against center line/median; ** Includes 1' gutter pan; ***Dimension measured from back of curb to sidewalk/separated bike lane/shared use path

Figure 33: Street Type - Town Center Connector Section and Dimensions

Town Center Streets are 2 lane streets which are anticipated to have limited motorized vehicle demand. Like Town Center Connectors, separate walking and bicycling facilities are provided rather than shared use paths in anticipation of high volumes of pedestrians and bicyclists.



Street Type	Right of Way Width	Center Turn Lane/Median	Inside Travel Lane*	Outside Travel Lane	Shoulder/Offset from Curb	Parallel Parking	On-Street Bike Lane	Buffer Zone***	Separate Bike Lane	Sidewalk	Shared Use Path	Target Speed	Carrying Capacity
Town Center Street	76'	N/A	N/A	10.5'	N/A	8' **	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	<12k
Town Center Street No Parking	64'	N/A	N/A	12' **	N/A	N/A	N/A	6'	6.5'	5' min (2 sides)	N/A	25 mph	<12k

*Against center line/median; ** Includes 1' gutter pan; ***Dimension measured from back of curb to sidewalk/separated bike lane/shared use path

Figure 34: Street Type - Town Center Street Section and Dimensions

Microtransit

As the entire master planning area is nearly 1,100 acres, and higher-intensity development is envisioned in strategic nodes and along the Woonerf, future workers and residents may need to travel via methods other than foot or bike within and in and out of Gateway. Efficient transit is especially important to connect workers and residents to other destinations, including Downtown Columbia and MARC stations. As an alternative to Bus Rapid Transit (BRT), microtransit may be a feasible option in the future.

Per the Federal Highway Administration, microtransit is defined as "small-scale, on demand public transit services that that can offer fixed routes and schedules, as well as flexible routes and on-demand scheduling."[20]

Rather than identifying a preferred transit type within Gateway, the plan acknowledges the evolving technologies associated with transportation and, consistent with the context of an innovation district, recommends remaining open and flexible to future transit technology. For instance, there are autonomous shuttles in operation in different parts of the country, and the plan is open to this type of smaller-scale transit that could connect Gateway to surrounding areas.

Recently, Howard County implemented a Microtransit pilot project on parts of the US 1 Corridor, including Columbia Gateway. HoCo RapidRide, is an app-based ride hailing service with a ½ hour pickup window.

[20] *Microtransit. American Public Transportation Association. (2025). https://www.apta.com/research-technical-resources/mobility-innovation-hub/microtransit/*

Phasing Infrastructure Investment

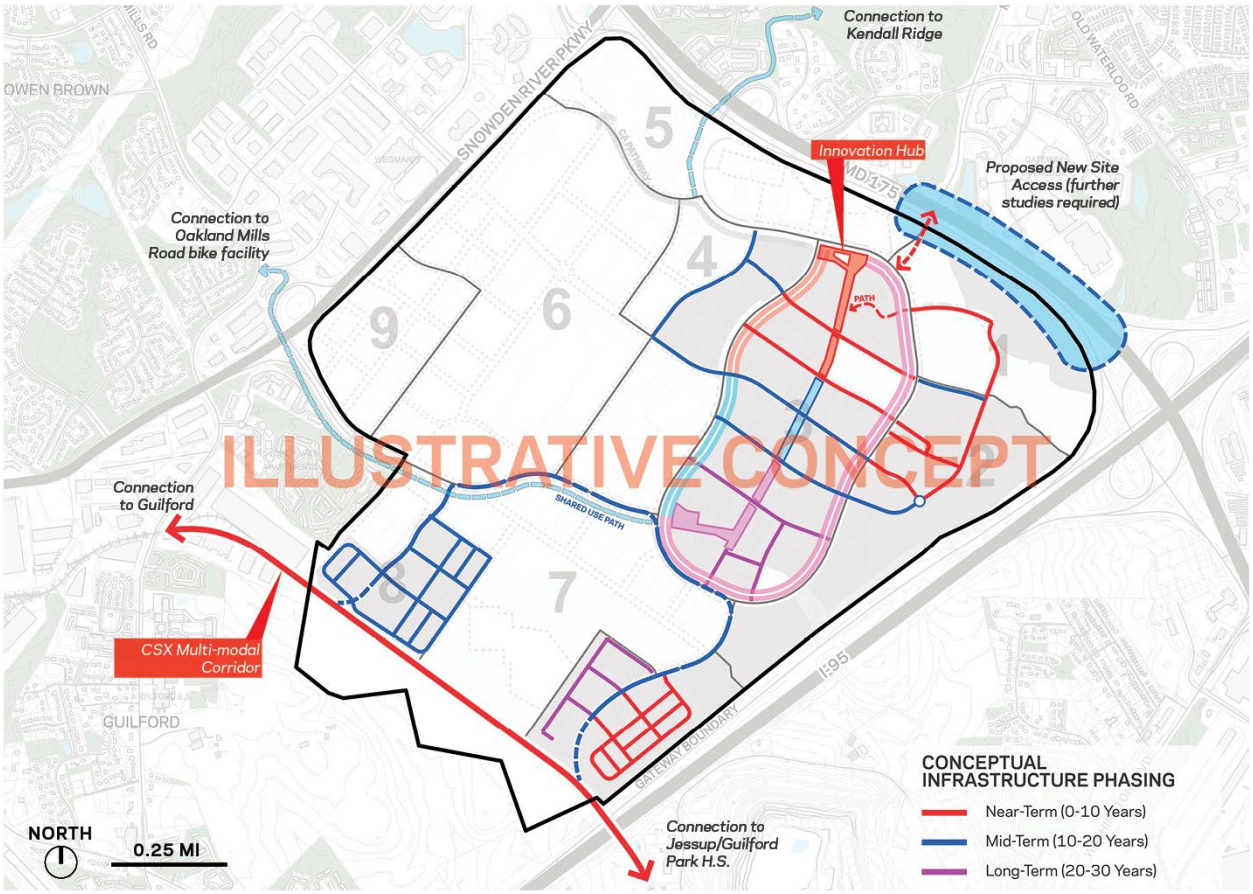
Gateway's redevelopment will not occur all at once, and neither will investment in its infrastructure. As previously mentioned, a plan for public infrastructure and financing should be developed. This plan should further evaluate and establish a recommended sequence of investments and consider how some nodes may be the earliest locations for new development; however, the master plan provides an illustrative concept of how some key infrastructure pieces could be phased (illustrated in Map 22: Conceptual Infrastructure Phasing). Infrastructure investments—along with expanded programming to support employment growth and new zoning—can catalyze redevelopment. Some infrastructure investments may require an incremental approach. For example, the Woonerf and new streets may develop gradually, as redevelopment occurs.

The design of the Woonerf will depend on the scope of the design of the associated redevelopment. For example, a phase one scenario could involve the development of the Innovation Hub and an associated plaza that is designed to become a part of the Woonerf. Meanwhile, a redevelopment in another block could build a segment of the Woonerf and a side road; to avoid a 'hidden' front door, the redevelopment's front door could be located at the corner of the new side road and Woonerf. To connect the Innovation Hub Plaza to this Woonerf segment, a temporary multi-use path could be built. That temporary path would then be transformed into the Woonerf as additional redevelopments occur.

In the near-term (0 to 10 years) – infrastructure investment could begin in the northern part of the site with investment in an innovation hub (envisioned to be a catalyst use) and evaluation of a new access point along Route 175. Private development opportunities in nodes may be pursued, and investment in a first segment of the Woonerf and internal roads could be built. At the same time, investment in the CSX multi-modal corridor can occur in the southern part of the site to connect Gateway to neighboring communities. And, the County can seek opportunities to acquire sites for public infrastructure needs, such as schools, libraries, fire stations, etc.

In the mid-term (11 to 20 years) – the second, additional investment in the Woonerf could be built along with additional internal roads. The mid-term may also include investment in Route 175 access in the north, and construction of the dedicated transitway in the south.

In the long-term (21 to 30 years) – completion of the Woonerf could occur, along with additional internal roads.



Map 22: Conceptual Infrastructure Phasing Map

Transportation Phasing Considerations

In Gateway, the proposed transportation improvements include both the retrofit of existing streets, and the creation of new streets along new rights-of-way as depicted in Map 21: Proposed Street Types Map. Requiring developers to provide transportation improvements in accordance with the APFO process will result in a piecemeal implementation of the proposed street network. It may be necessary to establish an alternative implementation model to ensure that public and private investment in the transportation network supports residential and job growth within Gateway.

Howard County Adequate Public Facility Process for Transportation Improvements

The Howard County Adequate Public Facilities Ordinance (APFO) provides a growth management process that enables the County to provide adequate public roads, schools, and other facilities in a timely manner and achieve general plan growth objectives. This process is designed to direct growth to areas where adequate infrastructure exists or will exist.

The Department of Planning and Zoning, Development Engineering Division (DED) is tasked with evaluating whether developments impact existing road intersections by increasing traffic flow to unacceptable levels as prescribed in the current Howard County Code and Howard County Design Manual, Volume III. DED and the Department of Public Works (DPW) evaluate whether mitigation is required through the construction of road improvements, intersection modifications, or whether a fee-in-lieu is to be paid into a Capital Project to correct the deficient intersection.

The APFO process often results in the construction of frontage improvements along the edge of a development that fronts on an existing road, new roads internal to the proposed development, and off-site intersection improvements.

This process works well when applied to individual residential or commercial developments, or when to the development of a larger greenfield, or undeveloped area. It is less well suited to the redevelopment of a larger area with multiple property owners for two primary reasons:

- Retrofitting an existing street to a new street type cannot occur one frontage improvement at a time. For safety and accessibility reasons, it is necessary to ensure consistency of motor vehicle lane configuration, bicycle facilities, and pedestrian facilities along a corridor, and the continuity and connectivity of routes as they are implemented across the site.
- Intersections should not be continually modified and expanded as each additional parcel is redeveloped. Instead, intersections should be designed to accommodate all future forecast growth within the master planned area. Evaluating the same intersection with each new development would result in the same intersection being studied and potentially modified with each new development.

CASE STUDIES

An overview of three infrastructure implementation case studies is included below for consideration during the development of the plan for public infrastructure and financing reviewed in this section.

Case Study 1: Downtown Columbia, Howard County, MD

The Downtown Columbia Master Plan was adopted in 2010 as an amendment to Howard County's General Plan. The master plan outlines a 30-year revitalization and redevelopment effort focused on fostering a mixed-use walkable urban center with higher density residential, office, retail, and entertainment amenities. HoCo By Design, the County's new General Plan, carries forward the Downtown Columbia Plan.

Regarding infrastructure, the Downtown Columbia Master Plan:

> *"...recommends that private developers, not current residents be responsible for the cost to design, permit, and construct, in addition to their own buildings and facilities, all necessary County roads, intersections, and sidewalks, including upgrades to existing roads in accordance with the Adequate Public Facilities Act and new non-program sized sewer and water lines within Downtown Columbia. Water and sewer system improvements should continue to be funded by user revenues paid to the Water and Sewer Enterprise Fund."*

Since transportation improvements were completed following the Adequate Public Facilities process, implementation of infrastructure in Downtown Columbia has been piecemeal. Traffic studies are submitted by the developer for each phase, and the resulting transportation network reflects what is needed for each phase of project development rather than the site as a whole.

Implementing transportation improvements based on existing APFO requirements, on a piecemeal basis, does not retrofit the existing suburban infrastructure quickly which can reduce progression to a more urbanized community. Urban environments strive for roadways that accommodate multiple modes of transportation, including connectivity for bicyclists and pedestrians.

In addition to the challenges of incrementally creating transportation improvements, this same challenge is a barrier to creating efficient parking options. An authority, public/private partnership, or cooperative structure that allows multiple stakeholders to collaborate to deliver projects may allow for greater flexibility in ensuring that transportation and parking is provided in locations supporting multimodal connectivity.

Case Study 2: White Flint, Montgomery County, MD

White Flint, situated in Montgomery County just outside the Capital Beltway, lies between Rockville and Bethesda. It benefits from excellent transit access, as it is positioned along the Route 355/Interstate 270 Corridor—a historic route connecting Montgomery County to Frederick County.

In 2010 Montgomery County Council approved the White Flint Sector Plan [xiii]. The Plan espouses goals like Howard County's Goals for Gateway. Per Montgomery County's website, the Plan aims to:

- Create a thriving, diverse mixed-use center with highest intensity closest to Metro and along Rockville Pike
- Create new parks and open spaces
- Transform Rockville Pike into a boulevard with street trees and improved crosswalks
- Develop a transportation network that includes a grid of new public streets
- Improve the pedestrian and bicycling environment
- Promote sustainable development

The White Flint Special Taxing district was established by Montgomery County Council Bill Number 50-10 to fund projects to improve area amenities including public spaces, streetscape improvements, and bikeways. The legislation stipulates that the funds collected shall not exceed an amount sufficient to cover the costs of transportation infrastructure approved by the Council. Tax rates are determined based on the estimated cost, including contingency, for each listed transportation infrastructure improvement.

The Montgomery County Planning Board approved Implementation Guidelines for the monitoring, coordinating, and staging for the implementation of recommendations in the Sector Plan. An Implementation Advisory Committee meets regularly to identify new projects for the amenity fund and monitor the County Capital Improvement Program and Growth Policy.

Case Study 3: Delaware Transportation Improvement Districts

The State of Delaware utilizes Transportation Improvement Districts (TIDs) to "provide the transportation improvements needed to support land development in locations identified as appropriate for development in local Comprehensive Plans. Coordinating land use and transportation can lower infrastructure costs and foster planning for market ready development / redevelopment opportunities." DelDOT administers 7 TIDs that are in operation and 7 TIDs in development across the state. Private developments or redevelopments within the geographic limits of a TID are assessed as a transportation-based impact fee, which allows for the cost of transportation improvements to be equitably distributed among the private sector partners that will benefit from the new facilities. Transportation improvements are triggered by development related growth.

According to *Transportation Improvement Districts: A Guide for Delaware Local Governments*, TIDs have the following benefits:

- Foster market-ready (re) development
- Support complete communities
- Focus transportation investments to high-priority growth areas
- Complement master plans
- Provide for "fair-share" contributions to transportation improvements
- Improve cost-effectiveness and efficiency of transportation improvements
- Promote intergovernmental coordination

1

Key Recommendations:

- Consider an alternative implementation model to ensure that public and private investment in the transportation network supports residential and job growth within Gateway
- Explore alternative models for creating efficient parking options in locations that support multi-modal connectivity

School Capacity Considerations

As Gateway adds new multi-family housing and denser missing middle housing types, there will be school children living in the community. Since Gateway's housing types will be more urban than most of Howard County's suburban-style homes, pupil yields in Gateway are anticipated to be lower than countywide average pupil yields.

As directed by HoCo By Design, the County's Department of Planning and Zoning conducted a pupil yield analysis to better understand student generation rates by housing types and neighborhoods. The analysis evaluated historical pupil enrollment data from the Howard County Public School System (HCPSS) from 2013 through 2023. It determined that pupil yields vary by housing types and neighborhood, with smaller housing types yielding fewer students per unit.

Newer multi-family developments, such as those in Downtown Columbia, have significantly lower student yields compared to single-family housing types and also lower yields compared to garden-style apartment units. If new multi-family housing in Gateway follows market trends in the region, it may redevelop with many studios, one-bedroom units, and two-bedroom units, and a lesser number of three-bedroom units, which are more typical of garden-style apartments. The pupil yield study shows that apartment buildings with a lower average number of bedrooms per unit generate lower pupil yield rates than the countywide average.

- It is possible that Gateway's multi-family units could yield similar numbers of students to Downtown Columbia's newer multi-family buildings. Pupil yield rates could be approximately 0.04 students per unit if rates are similar to those generated in 2023 by the Metropolitan, TEN.M & m.flats, and Juniper. This yield level is significantly lower than the countywide average apartment student yield rate of 0.31 pupils per unit, about 8 times less.

- In another scenario, Gateway's multi-family units could yield students at rates like newer multi-family buildings countywide (i.e., those built since 2010, which in 2023, generated 0.19 students per unit), still much less than the 0.31 countywide average student yield rate.

- Meanwhile, denser missing middle housing types could yield similar numbers of students as townhomes (0.51 pupils per unit as noted above).

- Regardless of whichever development scenario plays out, further evaluation and coordination with HCPSS will be needed to estimate future pupil yields and plan for needed public school capacities.
- Further, the County should work with HCPSS to reassess pupil yields as redevelopment progresses over the 30-year period.

According to the HCPSS 2024 School Feasibility Study, Gateway is currently assigned to Cradlerock Elementary School, Lake Elkhorn Middle School, and Oakland Mills High School. The Adequate Public Facilities Ordinance (APFO) 2027-2028 School Capacity chart indicates that the Cradlerock Elementary School district is closed, meaning that if any residential development were proposed for the site today, it would be placed in a waiting bin for up to five years.

The APFO school capacity chart is updated annually and informed by HCPSS enrollment projections and capacity utilization calculations prepared by HCPSS.

Like the APFO School Capacity chart, the HCPSS Feasibility Study is updated annually. Moving forward, the information in the annual Feasibility Study will be presented in the Educational Facilities Master Plan (EFMP). Enrollment projections are based on various factors (such as birth rates, housing resales, and apartment turnover). Near-term housing growth projections factor into the enrollment projections as well and are based on plans recently approved by the County's Department of Planning and Zoning and future redevelopment potential based on zoning capacity.

Since Gateway's existing zoning does not allow for residential development, Gateway has not yet been included in the HCPSS annual enrollment projections. Once Gateway's zoning is changed to allow residential development, its potential housing growth can be factored into the HCPSS projections. Additionally, pupil yields and school capacity needs should be reassessed as Gateway adds residential units.

While further evaluation and coordination will be needed to more fully plan for public schools, the master plan outlines some preliminary recommendations for the County and HCPSS to consider.

Near-term preliminary recommendations:

- Incentivize private property owners to proffer land or dedicate suitable site(s) for future school use. As part of the development of an alternative zoning program, incentives to support land dedication for public schools should be considered.
- Seek opportunities to acquire sites suitable for public infrastructure needs in Gateway (for schools, fire and police stations, and libraries). While the County may not have immediate needs for these facilities, available sites could be acquired in the near-term with leaseback options for tenants to hold land for future school or other community facility needs. Such a leaseback strategy is described in HoCo By Design.
- Consider pursuing a public-private partnership model, as contemplated in HoCo By Design, to address near-term school site acquisition. In addition to offering incentives, the County, HCPSS and property owners may want to seek opportunities to pursue a cooperative agreement or public-private partnership in the near-term to reserve a site for potential school use.
- Assess school capacity needs at the time of rezoning and monitor pupil yields generated from new housing in Gateway.

Near/mid-term preliminary recommendations:

- Seek opportunities to reassign Gateway to school districts with the capacity to help catalyze redevelopment in the near-term. While school capacity needs are being evaluated, the County, with HCPSS, determines if a site inside Gateway is needed for a school. As Gateway currently does not have any residential units, reassigning would have no impact on existing students or families in Gateway. Gateway could be reassigned to one or more schools with capacity to facilitate redevelopment.

Alternative School Site Models

The County's General Plan, HoCo By Design, includes some guidance for future school sites, especially for activity centers (places where housing and businesses are mixed together in a walkable environment), of which Gateway is the largest. The general plan calls for exploration of opportunities to co-locate schools with other public amenities – like libraries, parks, affordable housing, and athletic fields, to make use of limited greenfield space and leverage additional funding opportunities.

HoCo By Design also suggests that alternative school design models be examined to maximize available land resources. Such alternative designs may include higher capacity buildings, smaller footprints, shared site amenities, vertical construction, and adaptive reuse of underutilized properties. There are examples of alternative designs from different parts of the country. These designs typically share some common features:

- Smaller footprints compared to schools typically found in suburban settings
- Shared recreational facilities or rooftop play areas
- Shared parking
- Bus drop off zone on a secondary street
- Compact or vertical form which can allow for innovative design and greater energy efficiency

1

H-B Woodlawn Secondary Program (HBW), Arlington, VA (+/- 2.5 Acre Site)

Small footprint, with access to transit and bike infrastructure, kids play areas on roof terraces, newly constructed field on top of a single-level parking, and curb-side bus drop-off zone on secondary street (bottom right)

2

H-B Woodlawn Secondary Program (HBW), Arlington, VA (+/- 2.5 Acre Site)*: Small footprint, with access to transit and bike infrastructure, kids play areas on roof terraces, newly constructed field on top of a single-level parking, and curb-side bus drop-off zone on secondary street (bottom right)*

3

Urban School of San Francisco, California (+/- 0.7 Acre, divided into two sites)

A K-12 school with athletics and academic facilities in separate buildings (within less than 5 minutes walking), easy access to transit, walk or bike are the main way of commute (top)

The Nueva School, San Mateo, California (+/- 2.8 Acre Site)

Capacity for over 450 students, high-density mixed use area, close to a transit station,and parking below grade

Tenderloin Community E.S., San Francisco, California (+/- 1.5 Acre Site)

Small building footprint in a dense urban area, capacity for over 300 students (Pre K to K-5), walking distance to Metro and Bus Rapid Transit (BRT), kids play areas at grade and on rooftops (bottom)

***Urban School of San Francisco, California (+/- 0.7 Acre, divided into two sites)**: A K-12 school with athletics and academic facilities in separate buildings (within less than 5 minutes walking), easy access to transit, walk or bike are the main way of commute (top)*

***The Nueva School, San Mateo, California (+/- 2.8 Acre Site)**: Capacity for over 450 students, high-density mixed use area, close to a transit station, and parking below grade*

***Tenderloin Community E.S., San Francisco, California (+/- 1.5 Acre Site):** Small building footprint in a dense urban area, capacity for over 300 students (Pre K to K-5), walking distance to Metro and Bus Rapid Transit (BRT), kids play areas at grade and on rooftops (bottom)*

These design features are aligned with the vision for a more compact, urban form in Gateway. The site is anticipated to redevelop with a greater variety of building heights than in other parts of Howard County. Complete streets are planned throughout the site, along with numerous bicycle and pedestrian connections to and from the site – resulting in potential for walking and biking to school.

Gateway is also being planned with various types of open spaces, including neighborhood parks, linear pathways, and pocket parks. These could potentially be utilized as shared recreational facilities with a school. Shared parking strategies can be considered to help reduce the footprint required for a new school site. Further, there may be opportunities to connect future students in Gateway with the innovation district's burgeoning industries.

Preliminary recommendations for the County and HCPSS to consider in the near-term include:

- Examine alternative school design models that establish a variety of ways to maximize available land resources
- Explore the opportunity to establish a 21st century urban school model that embodies innovation in Gateway
- Consider the suitability of existing buildings for adaptive reuse as an alternative school design that utilizes a smaller footprint

Further evaluation and coordination will be needed with HCPSS to more fully evaluate the potential for an alternative school design in Gateway.

Key Recommendations:

- Develop a plan for public infrastructure and financing to guide future investment in public facilities, transportation and mobility improvements, water/sewer improvements, open spaces, and innovation facilities
- Further evaluate and coordinate with HCPSS to more fully plan for public schools, considering the master plan's preliminary recommendations

CHAPTER 4 – IMPLEMENTATION

4.1 Pacing Growth

HoCo By Design describes how Gateway – in addition to Downtown Columbia – represents one of the last large potential growth centers in the County. The general plan goes on to describe how Gateway is poised to be the County's next big mixed-use center and will help accommodate future jobs and housing demand.

Figure 35: Summary of Market Demand

Non-residential market potential

Market evaluation conducted for the master plan suggests that over 30 years, Gateway could add approximately 4,700-8,100 new jobs, equating to a net additional demand for roughly 1-1.8 million new square feet of nonresidential space. The tables below show potential growth of the workforce, based on market analysis, and associated demand for non-residential space. This space does not account for retail demand described in Section 2.4, which would only serve to increase the demand for non-residential space.

Property Type	Current Gateway Employment	Forecasted Workforce Demand			
	Year 0 2023	Year 10 2033	Year 20 2043	Year 30 2053	New 2023-53
Low-Growth Scenario					
Commercial office	10,187	12,410	13,295	14,142	3,955
Innovation /flex office	652	1,219	1,317	1,408	756
High-Growth Scenario					
Commercial office	10,187	14,666	15,712	16,713	6,526
Innovation /flex office	652	1,950	2,107	2,253	1,600

Table 3: Gateway Forecasted Workforce Demand Chart, as estimated in 2024 (Source: Stiletto Analysis)

Property Type	Current Gateway Inventory	Forecasted New Office Demand (Square Feet)			
	Year 0 2023	Year 10 2033	Year 20 2043	Year 30 2053	New 2023-53
Low-Growth Scenario					
Commercial office	3,953,865	444,605	621,573	790,951	790,951
Innovation /flex office	1,653,305	169,957	199,469	226,724	226,724
High-Growth Scenario					
Commercial office	3,953,865	895,881	1,105,025	1,305,199	1,305,199
Innovation /flex office	1,653,305	389,318	436,538	480,146	480,146
Total Combined Commercial and Innovation/Flex Space Demand					
Low-growth	5,607,170	614,562	821,043	1,017,676	1,017,676
High-growth	5,607,170	1,285,200	1,541,564	1,785,346	1,785,346

Table 4: Gateway Forecasted Space Demand Chart, as estimated in 2024 (Source: Stiletto Analysis)

Residential market potential

On the housing side, there is market potential to support the addition of 4,500-6,600 multi-family units and 1,200-1,800 denser missing middle units over 30 years.

Examples of missing middle (top) and multi-family residential buildings (bottom)

Development of these units is anticipated to start slowly over the first 10 years as new investments are made in public spaces and infrastructure and Downtown Columbia continues to develop dense multi-family housing. Demand could then accelerate as the mixed-use walkable environment is established, and compelling locations are created.

The residential demand chart illustrates how new residential units could be built in the near-term (years 1-10), mid-term (years 11-20), and long-term (years 21 to 30), depending on the strength of market demand.

As Gateway is a large area with numerous property owners and individual parcels, redevelopment is not expected to happen quickly. Many factors influence and drive growth. Local government is one aspect that drives growth, primarily through zoning and land development regulations, and through various types of incentives. However, other factors need to align for redevelopment to occur. Property owners and developers must choose to invest in redevelopment. There needs to be market demand for new space. The lending community must support the investment. As a result, large-scale redevelopment is often a long-term endeavor.

Gateway Residential Demand Chart - Low and High Market Demand (Cumulative)

	Near-Term		Mid-Term Cumulative		Long-Term Cumulative	
	Low Market	High Market	Low Market	High Market	Low Market	High Market
Multi-family	1,000	1,500	2,700	4,000	4,500	6,600
Denser Missing Middle	400	600	800	1,200	1,200	1,800
Subtotal	1,400	2,100	3,500	5,200	5,700	8,400

Table 5: Gateway Residential Demand Chart, as estimated in 2024

Housing Allocations

As described in HoCo By Design, the County's Adequate Public Facilities Ordinance (APFO) sets the pace of new residential development through an annual housing allocation chart, which caps the number of new units that can be built each year by geographic regions. Once the annual cap is reached, subdivision plans are placed "on hold" until the next year when more allocations are made available.

HoCo By Design further describes how once a master plan for Gateway is completed, and the number and pacing of residential units for Gateway are determined, the allocation chart can be amended to include annual allocations for Gateway, or a separate chart for Gateway can be adopted. The general plan further notes that Gateway's units are not likely to be built in the near-term, as zoning changes will follow the master plan, and units will take several years after zoning to be constructed. Once zoning is changed, the allocation chart should be amended. Such allocations may consider the market demand estimates in this master plan or other factors relevant at the time.[21]

Key Recommendations:

- Amend the housing allocation chart to include annual allocations for Gateway once Gateway's zoning is changed
- Re-evaluate market demand, potential, and master plan goals throughout the master plan timeframe

[21] *Market demand will change throughout the master plan timeframe and should be revisited as Gateway redevelops. Other factors should be evaluated, like the pacing of new housing added in Downtown Columbia and other areas of Howard County, and countywide market demand estimates (such as demand identified in HoCo By Design). These factors could support a faster pace of housing growth than that indicated by the Gateway Residential Demand Chart.*

4.2 Potential Infrastructure Financing Tools

Designing, funding, and constructing Gateway's many types of infrastructure projects will be a complex, phased undertaking. The master plan recognizes that a combination of financing tools will be necessary, and multiple tools should be considered. These tools can be tailored to meet the specific needs of a project and ensure its successful implementation. Key tools in the public financing toolbox include:

- Tax Increment Financing (TIF): a method that uses future real property tax revenues generated by the project to finance certain improvements
- Special Taxing Districts: can be used alone to create additional revenues and/or as a back-up credit enhancement together with TIF to fund certain improvements
- Other Revenues: includes local county (income, admissions, hotel/motel) and state (real property, sales) sources of revenue
- Public Private Partnerships (PPP): collaborative agreements between government entities and private sector companies to share resources, risks, and rewards with true "three-P's" consisting of availability/lease payments, operations and maintenance payments, and other agreed upon fees/payments
- Grants and Subsidies: direct financial assistance provided by government agencies to support specific project components
- Tax Credits and Incentives: provided to reduce tax liabilities and encourage investment

An infrastructure phasing and financing plan will be an important early step in the plan's implementation. This plan should identify when and how various public financing tools should be deployed and the priorities of infrastructure projects.

Key Recommendations:

- ✚ Determine how various public financing tools should be used as part of the development of an infrastructure phasing and financing plan

4.3 Implementation Approach

The Gateway Innovation District will take a phased approach to its redevelopment, allowing flexibility and adaptability to market demand and conditions over a 30+ time horizon. With strategic and phased infrastructure improvements, Gateway's character can transform into a vibrant, walkable, and connected community with an array of amenities.

However, as infrastructure investments and redevelopment take time, there are various strategic actions that can be taken in the near-term to support the innovation district's employment growth, which along with this master plan's vision, will catalyze redevelopment. These strategic actions are in alignment with the six common characteristics (found in Section 2.2 and listed below) that help fuel innovation and create the environment for industry, government, non-profits and academia to collide and thrive.

1) Multi-level government and university/institutional support

2) A champion

3) Defined market demand

4) Unique value proposition

5) Strategic sector focus

6) Management dedication to supporting tenant growth

Recommended Strategic Actions

The County, property owners, and other stakeholders may pursue various strategic actions in the near-term to help lay the foundation for the innovation district. The actions listed below focus on business attraction, funding mechanisms, zoning, and other planning activities.

- Focus **business attraction and retention** efforts on identified priority industries
- Establish anchor institution(s)
- Create opportunities to **establish early pathways to education** and careers in innovation
- Support Howard County Economic Development Authority (EDA) in its efforts to **scale up the Maryland Innovation Center (MIC)**
- Pursue the development of an **Innovation Hub** as an opportunity to expand the programming at the MIC and create a thriving innovation core at the heart of Gateway
- Establish a Gateway Innovation District **Board of Directors**
- **Catalyze/facilitate redevelopment** by planning appropriately for public infrastructure (such as roads, community amenities, school facilities, etc.).
- **Strategically acquire sites for public amenities and infrastructure** based on infrastructure planning.
- **Establish/codify financing mechanisms** for infrastructure improvements as needed.
- **Develop/amend zoning** that encourages building development/improvement in line with the master plan and provides incentives to catalyze mixed-use redevelopment that offers an array of publicly accessible open spaces, amenities and facilities; achieves sustainable design goals; and creates opportunities for affordable, multi-generational housing.
- Establish a **communications plan** to guide the strategic communication efforts and promotions of Gateway Innovation District, including to bring awareness, funding opportunities, and support for Gateway from different levels of government, and to create ambassadors and champions within government.

Partnerships/Champion

Section 2.2 explains that "a Champion" is an influential representative(s) who can build awareness and help attract new support/participation, and can help advocate for the development, raising awareness and building buy-in for the district.

Gateway is fortunate to have a strong industry cluster, committed property owners, and various entities already playing a supportive or catalytic role in Gateway. These entities will also play a critical role in realizing the master plan vision. Together, these entities may be able to identify or establish an organization that could play the "champion" role to help realize the master plan's vision, fill-in programming gaps and coordinate partnerships.

Some of those key entities are:

- **Columbia Gateway Association** – A non-profit organization consisting of approximately 25 property owners in the Gateway area primarily established to organize events that promote the Gateway Business District.
- **Howard County Economic Development Authority (HCEDA)** - The HCEDA is a quasi-governmental organization whose mission is to be a catalyst for economic growth and stability in Howard County. It performs an essential public function in promoting and enhancing the economic welfare of the County through its programs to encourage job creation, retain existing businesses, and attract new businesses. HCEDA is also the home to the Maryland Innovation Center and is located within the Gateway Innovation District.
- **Columbia Association** – A non-profit community services corporation that manages and provides a multitude of services, amenities, and public spaces to the nearly 100,000 residents living in Columbia, MD.
- **Howard County Government**
- **Gateway property owners/business owners/developers**

In the near-term future, Gateway can benefit from the development of diverse champions that extend beyond these current groups. These connections can form the basis of new relationships and opportunities (such as higher education partners and new tenants).

CONCLUSION

Gateway is uniquely positioned to be the region's nerve center for cutting-edge research, pioneering ideas, and entrepreneurial ventures for a global market.

The Master Plan provides a roadmap to transform Gateway into a forward-thinking innovation district – an innovative ecosystem designed to fuel sustainable job creation, foster long-term economic growth, and attract the brightest minds in research, entrepreneurship, and technology. The Gateway of tomorrow prioritizes a phased mixed-use redevelopment strategy, with a focus on increasing density, enhancing connectivity, and creating spaces that inspire collaboration.

At the heart of Gateway is a bold ambition to build an environment where visionary entrepreneurs, researchers, and companies can thrive. By leveraging its unique location, diverse industries, and cutting-edge design, Gateway is poised to become the new center of innovation in the region – the place that people come together, share ideas, and drive the future forward.

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