Rockville's Pike
ENVISION A GREAT PLACE

An Update to the 1989 Rockville Pike Corridor Neighborhood Plan

PREPARED BY
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WITH ASSISTANCE FROM
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Draft for Planning Commission Public Hearing

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The Mayor and Council has provided overall strategic direction and continuing participation in the Rockville Pike Plan process. Board and Commission members carefully deliberated on ideas and issues that surfaced throughout the meetings, interviews and presentations. The support of these individuals enhanced and encouraged the development of this process. Commission members and chairs shown as of December 1, 2010.

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Executive Summary

INTRODUCTION

In the spring of 2007, the City of Rockville retained the services of ACP Visioning+ Planning (ACP), AECOM (formerly Glatting Jackson Kercher Anglin and Economics Research Associates), and Kim Littleton, AICP, to conduct an extensive public involvement program and develop *Rockville's Pike: Envision a Great Place*.

Rockville's Pike is an update to the Rockville Pike Corridor Neighborhood Plan that was adopted by the City as part of the Master Plan in 1989. The primary goal of the plan update is to establish a vision for the future of Rockville Pike and to recommend policies and implementation steps to turn that vision into reality. The vision in *Rockville's Pike* represents a major shift in the perception of transportation and land use in the study area, proposing a balanced use of travel modes, which will result in a more efficient transportation network and attractive community space.

1. The Study Area

The study area contains approximately 410 acres surrounding a 2.2 mile-long portion of Rockville Pike (Route 355). The study area is bounded on the north by Richard Montgomery Drive and on the south by Bou Avenue. To the north, the western boundary of the study area falls at the rear of the properties facing Rockville Pike; in the middle, it intersects the Woodmont Country Club property; and, to the south, it follows the eastern edge of Jefferson Street. The eastern boundary of the study area is located on the western edge of the Metrorail right-of-way.

2. The Process

From November 2007 to July 2008, the consultant team carefully orchestrated a public involvement process that incorporated several components: public workshops to receive community input; presentations to the community to report findings of the technical analysis; and a five-day charrette to integrate the input from citizens, stakeholders, and community leaders with the technical findings. The team also conducted interviews with stakeholders, special interest groups, the Mayor and Council, property owners, and the public. The plan created through this process will undergo further public review and is scheduled for adoption in 2011.

3. Why a Plan and Why Now?

The updated plan for the Pike is very timely, and not simply because the previous plan is 20 years old. Planning for the Pike is important for a variety of reasons:

- Traffic congestion is likely to get worse as the current roadway system is close to saturation at certain times of the day.
- City traffic standards for development review are likely to inhibit the continued redevelopment of the Pike.
- Rockville Pike remains an important retail destination located in a strong regional economic market with significant long-term growth potential.
- The undistinguished appearance of the Pike will make it less economically competitive with large-scale growth and development that is expected nearby, such as the White Flint area. Places along the Pike are aging, are designed primarily to accommodate cars, and are unfriendly to the pedestrian.

The combination of these four factors—the need to address traffic congestion, policy constraints on large redevelopment, the strength of the Pike's potential, and the opportunity to turn the Pike into a signature address for Rockville and the region—make *Rockville's Pike: Envision a Great Place* such a timely and vital undertaking. The Pike will redevelop gradually over time. This plan is intended to give community direction to property owners who want to redevelop.

More information on findings can be found in Appendix B: Research Summary. Please note that the data contained in this chapter was gathered in the fall of 2007 and in the spring and summer of 2008. Market conditions have changed since the beginning of the study. While these changes affect short-term considerations, they do not affect the long-term economic outlook for the Rockville Pike study area, which remains strong.

A. SUMMARY OF FINDINGS

The *Rockville's Pike* planning process incorporated detailed technical analysis about the transportation, land use, and economic conditions on the Pike. This section highlights several of the key findings that arose from the analysis:

1. Transportation

- Rockville Pike serves a dual transportation role in terms of mobility and access. It is both a regional corridor through Montgomery County, as well as an access road for local traffic trying to reach commercial land uses.

- Neighborhoods in the study area have few connections to the Pike itself. On the eastern side of the road, access is limited due to the Metrorail tracks. Woodmont Country Club obstructs the western side.
- Traffic congestion on the Pike is the worst when the demand for travel to retail establishments is highest.
- Rockville Pike is approaching its vehicle-moving capacity. It carries about 54,000 cars per day and, in peak travel directions, approximately 3,000 cars per hour.
- Local bus transit service provides coverage to most of the Pike study area, but it is largely compromised by a lack of a connected street network.
- Rockville Pike is paralleled by Metrorail's Red Line service, which includes one station, Twinbrook, in the Pike planning area and another, Rockville, immediately north of the planning area but within city limits. The Red Line services provide high-capacity transit connections to other parts of the metropolitan Washington region and, coupled with existing local bus services, offer outstanding potential as a means of mobility for people traveling to and from the Pike corridor.
- Safety is a concern for pedestrians, cyclists, and motorists alike. The overall crash rate on the Pike is significantly higher than the statewide average. Pedestrians and cyclists face barriers to movement due to heavy traffic volumes, high design speeds, limited pedestrian crossings, and insufficient signal timings.

2. Land Use

- The predominant land use pattern in the Rockville Pike corridor is in the form of individual parcels containing a single use (primarily retail), and surrounded by extensive surface parking. This development pattern uses a tremendous amount of land and forces multiple vehicle trips for anyone attempting to complete even the simplest errands. The commercial nature of the Rockville Pike corridor and an emphasis on movement by car has resulted in a place that lacks any type of open public spaces for gathering, such as parks, plazas, or squares.
- Impervious surfaces cover approximately 60 percent of the study area, with pavement covering more than 70 percent of the impervious surface area.
- The Pike has extremely long blocks that create a barrier between the east and west sides of the Pike and limit development opportunities.
- The Pike lacks a sense of place; it has the undistinguished look of generic suburban strip developments characterized by one to two story buildings. The undistinguished appearance of the study area is likely to affect the corridor's economic competitiveness in the region.
- The widely separated buildings along the Pike fail to create an attractive or walkable place and make walking (and the use of public transportation) challenging, unsafe, and unpleasant.

- Low density development along the Pike fails to take advantage of the proximity to the Twinbrook Metro Station. Low densities combined with poor walking conditions hinder the ability of Metro to become a viable alternative to the private automobile.

3. Economic Analysis

- Rockville Pike is a destination retail center for the surrounding region. It is located in a strong regional economic market with high average household incomes and good long-term growth potential. An analysis of market demand indicates that retail will continue to serve as the economic base for the corridor.
- Residential use is emerging along the Pike. The Twinbrook Station development is providing an important market test for development potential along Rockville Pike and will further adapt the market to a higher density product type.
- Office demand is limited along the Pike, and office uses will likely serve as a secondary component to development in areas that are not immediately adjacent to the Metro station. The I-270 corridor will continue to be the primary Class A office draw in the region.

4. Critical Lane Volume Analysis

The Critical Lane Volume Analysis conducted in the fall of 2010 revealed that the combination of the City's traffic standards and the existing and projected traffic (based on approved development projects) will not readily allow development consistent with the recommendations of this plan. Five of the key intersections in the corridor are already "failing", using the City's current approach, thereby effectively preventing development along the corridor.

5. School Capacity

Similarly, the City's Adequate Public Facilities Ordinance (APFO) establishes that no child-generating development can take place if the new residences will be within the boundaries of a school that has enrollment of 110% or more of the school's program capacity. At this time, Montgomery County Public Schools (MCPS) data show that all four elementary schools and the middle school in the Richard Montgomery cluster, which serves the majority of the Pike, either exceed 110% or are projected to exceed 110% within the next five years.

B. DEVELOPMENT PRINCIPLES

The *Rockville's Pike* public process led to the identification of ten principles that have consistently guided the formulation of this plan. They are:

1. Quality architecture and urban design will create a visually appealing environment along the Pike.

2. Roadway and intersection improvements on the Pike will allow for smooth, safe vehicular flow.
3. The Pike will feature a safe and pleasant environment for walking and biking.
4. Additional open space, landscaping, and environmentally friendly development will contribute to a "greener" Pike.
5. The Pike will feature vibrant, walkable mixed-use developments.
6. New public spaces on the Pike will provide a pleasant environment for community gathering and outdoor activity.
7. The economic success of Rockville Pike will be maintained by supporting both local and national retail and encouraging property redevelopment.
8. Rockville's Pike will be well connected with surrounding areas, providing choices for cars and pedestrians to access and move between properties along the Pike.
9. The Pike will feature efficient and reliable public transportation options.
10. Appropriate signage, lighting, and wayfinding tools will make the Pike an inviting and easily navigable environment.

References to the ten development principles are presented throughout this chapter as sidebars which link them to various components of Rockville Pike corridor plan.

C. A PLAN FOR THE ROCKVILLE PIKE CORRIDOR

Rockville's Pike represents a fundamental shift in thinking about transportation and land use in the study area. It is aimed at balancing travel modes (automobile, transit, bicycling, and walking) along Rockville Pike and at creating an attractive place that is able to support this balance. Key recommendations and considerations included in the plan are listed below.

1. The Core Recommendation: Redesign and Reconstruct Rockville Pike as a Multi-Way Boulevard

The proposed redesign and reconstruction of Rockville Pike as a multi-way boulevard meets the transportation, quality-of-place, and economic goals of the Plan. The multi-way boulevard will expand the palette of transportation options for visitors and residents traversing the corridor (i.e., the modal split). It will create a vibrant, attractive, and pedestrian-friendly place: a signature place for the community. Additionally, it will position the corridor to continue as a premier retail center in the region. The mechanics of the functionality of the boulevard are described below.

2. Principal Transportation Elements of the Multi-Way Boulevard

The multi-way boulevard is a time-tested way to address the transportation and land use conditions found in the corridor today. From a transportation standpoint, the multi-way boulevard will:

Development Principle #2: Roadway and intersection improvements on the Pike will allow for smooth, safe vehicular flow.

- Maintain the same 84' curb-to-curb section that accommodates the current six travel lanes as the primary roadway to move through traffic.
- Expand the current roadway to include a two-lane access road in each direction, parallel to and separated from the primary roadway, with one lane devoted to buses and bicycles and the other used as a general vehicle lane to accommodate local traffic movements.
- Enable traffic to move smoothly at intersections and between access lanes and the primary roadway.
- Protect bicycle and pedestrian movements.
- Relocate bus stops within 200' of intersections to facilitate access to pedestrian crossings.
- Realign both the Rockville Pike and Twinbrook Parkway intersection and the Edmonston Drive and Rockville Pike intersection to facilitate traffic flow and ease congestion.

3. The Benefits of the Boulevard Approach

The boulevard design benefits the study area in several ways. It will:

- Separate local and regional trips.
- Make the Pike safer for pedestrians and cyclists.
- Reinforce the role of the corridor as a significant retail center in the region.
- Integrate the Twinbrook Metro Station into the corridor and make public transit a more attractive option.
- Bring transit, walking, and bicycle user closer to the land uses of the Pike.
- Facilitate the transformation of the corridor into an attractive place.
- Create a healthier community in terms of a reduced carbon footprint, better air quality, and the promotion of more active lifestyles.
- Create the conditions for a shift in the transportation modal split along the Pike, from a high degree of reliance on the private automobile to more diverse transportation choices.

Development Principle #8: Rockville's Pike will be well connected with surrounding areas, providing choices for cars and pedestrians to access and move between properties along the Pike.

Development Principle #10: Appropriate signage, lighting, and wayfinding tools will make the Pike an inviting and easily navigable environment.

4. Study Area Transportation Elements

Beyond the creation of the multi-way boulevard, the Plan addresses additional transportation needs in the study area as a whole. It proposes to:

- Expand the street network to create a regular pattern of developable urban blocks.
- Space intersections to enable a greater number of safe pedestrian crossings.
- Establish a street functional hierarchy to support development standards and to determine how buildings relate to the street network. (The street hierarchy is the foundation of the form code proposed for the corridor.)

- Reduce parking requirements to enable residents and shoppers to park once and walk to their desired destinations.
- Facilitate movement through a coordinated and hierarchical signage system to guide vehicles approaching at different speeds, as well as bicycles and pedestrians.

5. Principal Land Use Elements

The Rockville Pike corridor plan integrates the transportation elements with a set of rigorous land use elements to guide the transformation of the corridor from an undistinguished suburban strip to a place that meets the excellence in design desired by the City. The proposed land use elements will:

Development Principle #3: The Pike will feature a safe and pleasant environment for walking and biking.

- Make the Pike walkable and provide safety and shelter to pedestrians in a vibrant and aesthetically pleasing environment. This will be accomplished by:
    - Moving buildings forward and providing a continuous yet varied enclosure at the sidewalk level;
    - Establishing height standards for different parts of the study area to respond to the characteristics of the street frontage in which buildings are located;
    - Creating a continuous sidewalk on both sides of the Pike, extending to all side streets;
    - Reducing the size of existing blocks as part of the redevelopment process; and
    - Changing the treatment of building frontages at special intersections.

Development Principle #6: New public spaces on the Pike will provide a pleasant environment for community gathering and outdoors activity.

- Mix uses, vertically whenever possible, in a single building and within individual blocks with ground floors reserved for retail uses and upper floors dedicated to living or working spaces.

Development Principle #5: The Pike will feature vibrant, walkable mixed-use developments.

- Make the Pike green through tree planting and landscaping that will turn the multi-way boulevard into the primary public green space in the study area.
- Expand green areas beyond the Pike through the creation of plazas, parks, and squares accessible to residents living in and near the study area.
- Make the Pike environmentally friendly through location-efficient land uses and development incentives tied to LEED certification, or equivalent.

Development Principle #4: Additional open space, landscaping, and environmentally friendly development will contribute to a "greener" Pike.

6. Redevelopment and Congestion Management Elements

The *Rockville's Pike* plan presents a transformative set of design elements intended to offset the demand for vehicle trips by favoring land development patterns that make the area more walkable and better able to capitalize on the potential for transit use. Redevelopment of the corridor is crucial to making this happen. At present, the City's system of growth management and the development review process may hinder the transformation envisioned by the plan. The Rockville Pike corridor plan

addresses these fundamental issues by introducing: a. mechanisms to affect development capacity and b. mechanisms to address congestion management.

a. Mechanisms to Affect Development Capacity

These include:

- Implementing engineering-based changes that increase traffic capacity as a result of the physical redesign of roadways and intersections.
- Increasing the Critical Lane Volume standard together with adopting a more flexible system of capacity allocation to reduce the number of intersections along the Pike that exceed the Comprehensive Transportation Review threshold, thereby permitting more development.
- Developing a broader set of transportation review measures that are focused more on the corridor and the study area as a whole than on specific intersections.

b. Mechanisms to Address Congestion Management

These include:

- Managing demand through the creation of a Transportation Management Association, an organization of businesses and employers created to foster travel options beyond single occupancy vehicles.
- Adopting and enhancing the existing City Transportation Demand Management program to reduce the use of single occupancy vehicles and encourage new alternative modes of transportation.
- Improving transit service in the corridor through such means as better placement of transit stops and measures to improve service and enhance riders' safety.

Development Principle #9: The Pike will feature efficient and reliable public transportation options.

7. Funding Mechanisms

Recommended funding mechanisms to pay for the public improvements include:

- Ensuring that the multi-way boulevard is a funding priority for Montgomery County and the State of Maryland.
- Creating Tax Increment Financing districts to provide the City with substantial bonding capacity to provide needed public enhancements and improvements in the redevelopment, such as streetscape, public amenities, and other development components.
- Expanding the City's use of in-lieu contributions to allow the construction of improvements at once and not merely rely on property development to generate small portions of this infrastructure.

8. Economic Strategies

Recommended mechanisms to maintain the viability of the Pike through the redevelopment process include creating Public-Private Partnerships and addressing retail and small business, office, and housing strategies.

D. THE ROCKVILLE PIKE DISTRICT FORM CODE

The Rockville Pike District Form Code presents the development regulations that govern building form and land use within the study area. The District Form Code is intended to be adopted into the Zoning Code of the City of Rockville (adopted December 15, 2008). Several of the recommendations related to the land use elements of the plan—including the height of buildings, their position on the site, their relationship to the sidewalks, and the design characteristics of the public realm—will be regulated and implemented through the District Form Code.

Development Principle #1: Quality architecture and urban design will create a visually appealing environment along the Pike.

E. IMPLEMENTATION

Rockville's Pike includes an extensive set of recommendations to facilitate the complex undertaking of plan implementation. Implementing this plan will require strong collaboration and cooperation among the City, Montgomery County, the State of Maryland, the private sector, and other organizations. It will also require a careful evaluation of appropriate funding mechanisms and options.

Overarching recommendations needed to implement the plan are organized as follows:

- General policy recommendations that set the stage for the implementation of the plan itself, including: adopting *Rockville's Pike: Envision a Great Place*; adopting the Rockville Pike District Form Code; and establishing strong regional partnerships to coordinate planning for areas outside of the boundaries of the Rockville Pike corridor.
- Recommendations on how to implement the transportation elements of the multi-way boulevard, including: partnering with Montgomery County to present the concept to the Maryland Department of Transportation and the Metropolitan Washington Council of Governments; developing a fully engineered street plan for the reconstruction of Rockville Pike; acquiring rights-of-way; and phasing construction.
- Recommendations on implementing the study area transportation elements, including: developing a fully engineered plan of street expansion and realignment and developing a wayfinding plan.
- Recommendations that facilitate the implementation of the land use elements of the plan, including: streamlining the development approval process, establishing the position of Town Architect, developing a streetscape plan, reviewing relevant regulations and policies for conformity with the plan, assessing other study area needs.
- Recommendations to enable redevelopment and address congestion management, including: acting upon the recommendations of the critical lane volume analysis report, forming and administering a transportation management association, adopting and enhancing city Transportation Demand Management (TDM) activities, and optimizing transit service through the corridor.

Development Principle #7: The economic success of Rockville's Pike will be maintained by supporting both local and national retail and encouraging property redevelopment.

- Recommendations to adopt funding strategies to implement the plan, including: securing State and Federal funds to create the multi-way boulevard, creating a tax increment financing district, and expanding the use of in-lieu contributions.
- Recommendations to sustain economic diversity, including: establishing public private partnerships, enhancing retail & small business opportunities, assisting small businesses to relocate in the study area, and continuing the inclusion of moderately priced units along the corridor.

F. CONCLUSION

The bold vision for the Rockville Pike corridor articulated by community residents and presented in this plan is a complex undertaking. It is likely to have a transformative impact on the physical ambiance of the corridor, on the flow of local and regional traffic, and on the economic vitality of the area.

Through physical and land use improvements and a new approach to regulation, the Rockville Pike corridor has the potential to become a signature place for the City and a great place for residents and visitors to enjoy. Through a great number of roadway design and congestion management improvements and the addition of some new streets, the Pike and streets throughout the study area have the potential for improved traffic flow, increased safety, and a better balance of transportation choices for private vehicles, transit and bicycle users, and pedestrians.

This close integration and mutually beneficial relationship of land use and transportation improvements gives strength and boldness to the community vision. It is the key to transforming the Rockville Pike into the thriving and vital place the community wants and the prosperous economic engine the community needs.

Chapter 1 – Introduction

OVERVIEW

Rockville's Pike: Envision a Great Place is the product of an intensive community planning initiative that incorporated input from citizens, stakeholders, private and public sector leaders, government agencies, and consultants. The plan was developed through a sequence of public meetings that began in December 2007 and culminated in a community design charrette that was held from May 31 to June 4, 2008. The input gathered through the *Rockville's Pike* public involvement process has resulted in a plan that is based on a set of agreed-upon development principles and effectively captures the community's vision for the Pike.

This document serves as an update to the *Rockville Pike Corridor Neighborhood Plan* that was adopted in 1989. In addition to incorporating the extensive public input captured through the *Rockville's Pike* process, it is based on sound technical analysis. A consultant team comprised of three firms—ACP Visioning+Planning (ACP), AECOM, and Kim Littleton, AICP—conducted careful research and analysis regarding existing transportation, land use, economic, and regulatory conditions. These findings were shared with the public and integrated into their decision-making processes, ensuring that the resulting vision found in this plan is well grounded in the realities of the Pike.

This document summarizes the result of the *Rockville's Pike* planning effort and includes policy, planning, transportation, regulatory, and economic recommendations designed to turn the ideas and vision brought forth by the public into a built reality.

The plan offers bold but incremental strategies for growth and redevelopment along the Pike. It addresses issues of mobility and safety, and it provides the vision and regulatory tools to create a memorable place in the Rockville Pike corridor in line with the aspirations of the City of Rockville and its residents. The Plan is now in the hands of the community as it faces the important task of implementing its vision.

A. THE STUDY AREA

1. Overview

The study area includes the portion of Rockville Pike (Route 355) that is bounded on the north by Richard Montgomery Drive and on the south by Bou Avenue; approximately 2.2 miles long. Most of the study area is within the City of Rockville's corporate limits except for a small portion of Montgomery County to the south.

Figure 1.1: The Study Area Boundary *– Rockville Pike is surrounded by neighborhoods, but access between the Pike and the neighborhoods is limited by two major physical barriers: the Metrorail right-of-way and the easily recognizable Woodmont Country Club. Source: ACP*

To the north, the western boundary of the study area falls at the rear of the properties facing Rockville Pike; in the middle, it intersects the Woodmont Country Club property; to the south, it follows the eastern edge of Jefferson Street. The eastern boundary of the study area is along the western edge of the Metrorail right-of-way. The study area contains approximately 410 acres (including rights-of-way), and is made up of 262 separate parcels.

The study area is surrounded by established neighborhoods to the east and the west. These neighborhoods have limited access to the Pike. For instance, the entire Twinbrook neighborhood lies on the eastern side of the Metrorail right-of-way and is connected to the corridor by only two roads: First Street and Edmonston Drive. To the northwest lie downtown Rockville and the mixed-use Rockville Town Center. To the southeast is the rapidly developing White Flint area.

2. The Three Pikes

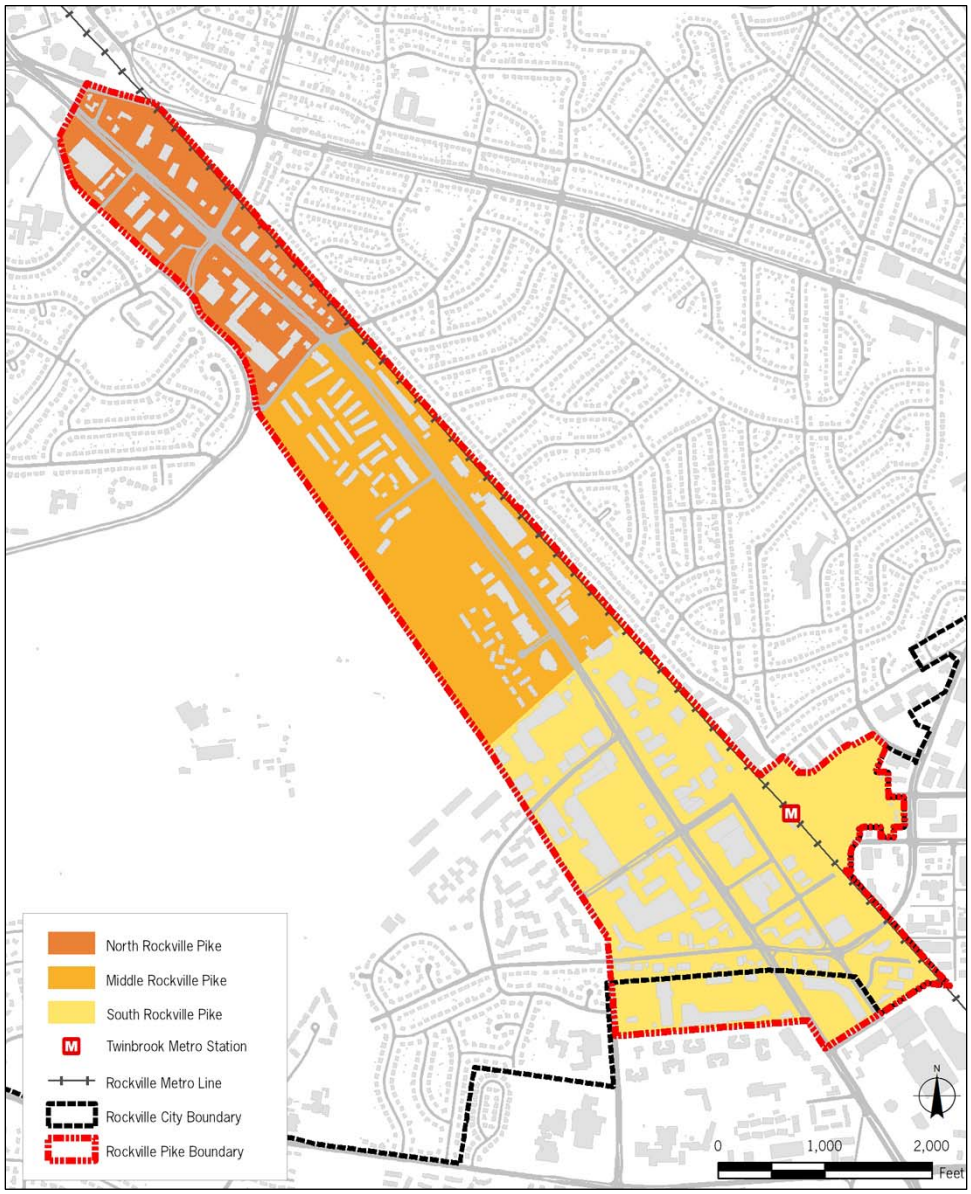
When examining conditions along Rockville Pike, it became apparent that the corridor could be divided into three distinct sections: North Pike, Middle Pike, and South Pike. Each of these sections has a unique set of transportation, economic, and land use conditions and challenges.

The three sections are consistent with the organization of the 1989 Plan and are described below.

North Pike. This section extends from the Dodge Street/Richard Montgomery intersection to Edmonston Drive. Here, the Pike is a six-lane divided highway with left turn lanes at intersections. The North Pike is characterized by small shopping centers and office buildings. It exhibits lower rents than the South Pike, and includes a mix of national and local retail tenants. It has a concentration of auto dealers, local ethnic restaurants, and specialty shops. Though new development continues to occur, it is on a relatively small scale due in part to the size of parcels. Lots on the east side of the Pike adjacent to the Metrorail right-of-way are particularly shallow, while the west side features larger block sizes. The northern most area of the North Pike is within walking distance from the Rockville Metro Station. Pedestrian access, however, is made difficult by the complex geometry of the Veirs Mill Road/Rockville Pike intersection that creates a de-facto barrier to walking.

Middle Pike. This section of the Pike is adjacent to the Woodmont Country Club, extending from Edmonston Drive to the lot just south of Templeton Place. It is the narrowest portion of the Pike, with the smallest concentration of space and the fewest roadway connections. The east side of the Pike adjacent to the Metrorail right-of-way is characterized by a single long block with very shallow commercial lots, while the west side of the Pike features a combination of multi-family and commercial uses that back onto the Woodmont Country Club. Like the North Pike, the Middle Pike exhibits lower rents and smaller tenants than the South Pike, and features a large number of locally-owned retail establishments.

Figure 1.2: The Three Pikes *– The three sections of the Rockville Pike study area.* Source: ACP



South Pike. This section of the Pike is south of Woodmont Country Club and north of Bou Avenue. It is bordered by East Jefferson Street to the west and the Metrorail right-of-way to the east. The South Pike has a relatively well developed street network, though its connections to thoroughfare streets such as Twinbrook Parkway are limited. The very large blocks found on the west side of the corridor present a potential opportunity for further expansion of the street network. The South Pike is the only portion of the study area with ready pedestrian access to a Metrorail station, as well as to the bus services that connect to this station. It is also the dominant retail section of the corridor, featuring larger, national retail tenants that tend to serve as anchors in making Rockville Pike a retail destination. Retail rents in this section are the highest in the study area. The South Pike features some multi-

family residential developments such as those at Congressional Village. The approved Twinbrook Station redevelopment project is transforming 26 acres surrounding the Twinbrook Metro—including a portion of the Rockville Pike study area—into a high-density, mixed-use, transit-oriented development.

The different characteristics of the three sections of the Pike have an impact on how the plan addresses transportation and land use solutions and how future growth may be accommodated. These three sections will be referenced throughout the plan but particularly in Chapter 6: The Rockville Pike District Form Code, where regulations are specifically tied to the characteristics of the three sections of the Pike.

B. WHY A PLAN, AND WHY NOW?

Rockville's Pike: Envision a Great Place is a timely effort and not simply because the previous plan is more than 20 years old. Four factors make a new plan for Rockville Pike compelling.

1. **Traffic congestion is likely to get worse** as the current roadway system is close to saturation at peak periods. Congestion will only increase as growth continues along Route 355 and as major nearby developments, including over 3 million square feet in the White Flint area to the south, come to fruition. The Metropolitan Washington Council of Governments' regional travel demand model indicates that projected growth by 2030, with or without any additional development within Rockville, will exhaust the capacity of the corridor beyond levels of service that are acceptable today. A new road design and expanded road network that facilitates other travel modes and is more pedestrian-friendly is needed.

2. City traffic standards for development review are likely to inhibit the continued redevelopment of the Pike. Further analysis conducted on current traffic levels with the addition of development that the City has already approved suggests that larger developments would not be able to be approved under current development review regulations**.** The City cannot afford to let traffic congestion erode the viability of the Pike and stop it from reaching its potential as a vibrant center of activity.

3. **Rockville Pike remains an important retail destination** located in a strong regional economic market with significant long-term growth potential. Despite recent nationwide economic fluctuations, the high household incomes in the vicinity of the Pike point to continued long-term economic vitality from a retail standpoint. The Rockville community appreciates the economic significance of the Pike and wants to ensure that it continues to fulfill its potential. Properties along the Pike will continue to redevelop as they have for decades. Recent examples, such as the Twinbrook Station project, indicate that future redevelopment will likely occur in a more intensive fashion. However, a new plan is needed to ensure that development is designed cohesively and according to the community's vision.

4. **The appearance of the Pike is undistinguished** particularly when compared to emerging regional shopping magnets. Places along the Pike are aging and are designed primarily to accommodate cars: blocks are long, and uses are segregated. Places are unfriendly to the pedestrian and uses are too distant to be walkable. When a resident or shopper is outside of the confines of the car, there are few sidewalks, amenities, public places, or green spaces to define the public realm and enrich the pedestrian experience. Public input has indicated a strong desire to seize the opportunity of this new plan to transform the corridor into an attractive place that adds to character of the community.

The combination of these four factors—the need to address traffic congestion, policy constraints on large redevelopment, the strength of the Pike's potential, and the opportunity to turn the Pike into a signature address for Rockville and the region—make *Rockville's Pike: Envision a Great Place* such a timely and vital undertaking.

Finally, from the standpoint of the City, developing a new plan for the Pike is an essential component of the process to manage change. As shopping centers along the Pike age over time, they will inevitably redevelop. *Rockville's Pike* offers direction on how the Pike can transform itself in a manner that reflects the community's vision of a great place.

C. ORGANIZATION OF THE PLAN

The *Rockville's Pike* plan provides a comprehensive guide for understanding the public process, the findings, the public's vision for the future of the Pike, and the policies and recommendations to implement that vision. Following this Introduction, the plan is organized according to the following chapters:

Chapter 2 – The Public Process outlines the major activities of the *Rockville's Pike* public involvement process.

Chapter 3 – Key Findings provides an overview of the technical analysis that contributed to the development of the plan.

Chapter 4 – Development Principles describes the 10 development principles that were established through the public involvement process and used to guide the creation of the plan.

Chapter 5 – A Plan for the Rockville Pike Corridor describes the key elements of the plan.

Chapter 6 – Rockville Pike District Form Code provides regulations that will guide future development and redevelopment along the Pike in a manner consistent with the plan's vision.

Chapter 7 – Implementation outlines a series of specific implementation steps that will help turn the vision into reality.

In addition to the seven chapters, the report contains five appendices.

Appendix A – Model Sites illustrates three conceptual examples of what redevelopment might look like under the *Rockville's Pike* plan.

Appendix B – Research Summary expands on the key findings discussed in Chapter 3, providing more details about the technical analysis that contributed to the plan.

Appendix C – Case Studies and Funding Mechanisms provides transportation and redevelopment case studies as well as a menu of funding mechanisms for the City to consider.

Appendix D – History and Historic Preservation follows the Pike development from its beginning to the present.

Appendix E – Critical Lane Volume Analysis provides an analysis of available infrastructure capacity based on the parameters of the City's Comprehensive Transportation Review (CTR) program.

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Chapter 2 – The Public Process

INTRODUCTION

Strong public involvement has been central to the development of *Rockville's Pike*. As a consequence, the plan is built on the ideas, aspirations, and insights offered by the public and supported by technical information gathered by the consultant team.

In order to gather input and test ideas with the public, numerous meetings were held over a period of seven months. These meetings were open to everyone who lives, works, or shops in Rockville and were consistently well-attended, indicating a strong community interest in the future of the Pike. Throughout the process, all ideas from the public were carefully documented, posted on the project web-site, and used to inform the development of the plan.

The *Rockville's Pike* public process presented an opportunity to unify technical input with intuitive local knowledge. The consultant team shared the technical findings—outlined in Chapter 3: Key Findings and Appendix B: Research Summary—at various public meetings, giving participants a chance to learn more about how their community functions in terms of land use, transportation, and market conditions. Small group discussions and facilitated activities gave community members a chance to use this information to generate more informed recommendations about the future of the Pike. Through a process of joint discovery, the public, consultant team, and staff identified a set of development principles that served as the foundation for design work and effectively captured the community's vision for the Pike.

This chapter summarizes the variety of public meetings and activities that engaged staff, consultants, stakeholders, and citizens in the creation of the plan.

A. EARLY STEPS

As with any planning effort, one of the first steps was to familiarize the consultant team with the study area. An initial orientation meeting with City staff and consultants was held in September 2007. This day-long meeting included a bus and walking tour of the Pike. Staff members shared plans and studies relevant to the Pike and its surrounding neighborhoods, as well as information on proposed new developments such as Twinbrook Station.

During the fall of 2007, the consultant team worked closely with Rockville staff to develop a project identity (see the logo developed by the City on the left) and to build community awareness about the upcoming planning process.

The City engaged in extensive outreach and publicity efforts in order to draw attention to the *Rockville's Pike* process and encourage participation at public meetings. Techniques included announcements at neighborhood meetings, mailings, flyer distribution, articles in *Rockville Reports*, programs on the local Rockville television network, and regular updates to the project website (www.rockvillemd.gov/rockvillespike). These efforts returned very positive results, as participation at each public meeting ranged from about 65 to 150 people.

Exit questionnaires distributed at each meeting tracked demographic representation and helped the City tailor its outreach strategies accordingly. In some cases, the City intensified its efforts to reach out to underrepresented groups. For example, field surveys were conducted to gain input from bus riders, who were seen as less likely to participate in evening meetings due to limited public transportation service.

B. THE PUBLIC PROCESS

1. Stakeholder Interviews

The consultants conducted a series of stakeholder interviews in November and December 2007 to gain a better understanding of critical issues and community perceptions and attitudes related to Rockville Pike. The interviews were also used to encourage the participation of key interest groups.

Stakeholders interviewed included representatives from: City departments (such as Transportation and Public Works), the development community, regional agencies (such as Maryland-National Capital Park and Planning Commission and State Highway Administration), property and business owners, neighborhood and civic associations, Rockville citizen commissions (including the planning, historic district, and human services commissions), and a group of Richard Montgomery High School students. The Mayor, all members of City Council, and the City Manager were also interviewed individually.

The interviews produced three key outcomes. First, they helped the consultant provided an initial understanding of the opportunities and challenges that the plan should address. Second, they illustrated the variety of ideas, perceptions, and

attitudes that exist concerning the Pike. Finally, they identified a set of critical issues and questions that were later tested during the *Rockville's Pike* kick-off meeting.

2. Kick-Off Meeting

The kick-off meeting took place on December 4, 2007. The purpose of the meeting was to initiate a dialogue between the public and the consultant team, share ideas, and highlight critical issues to be addressed in order to lay the groundwork for the project.

The meeting consisted of three main parts: a general presentation by consultants on transportation, economics, urban design, and development regulations; small group table dialogues that allowed participants to brainstorm on critical issues that were identified through the stakeholder interviews and offer ideas on how to address them; and a question and answer session with the consultant team.

Figure 2.1: The Kick-Off - *Meeting participants listen to the kick-off presentation.*

3. Stakeholder Workshop

The stakeholder workshop took place on February 26, 2008. The purpose of the meeting was to identify physical strengths and weaknesses along the Pike and test issues that emerged from public input at the kick-off meeting.

Activities at the stakeholder workshop included: an overview of the major themes that emerged from the kick-off meeting; a small group exercise known as *Good Places, Bad Places* which engaged participants in mapping physical strengths and weaknesses along the Pike; a facilitated discussion about critical questions; and a reporting period that allowed each small group to present results of their activities.

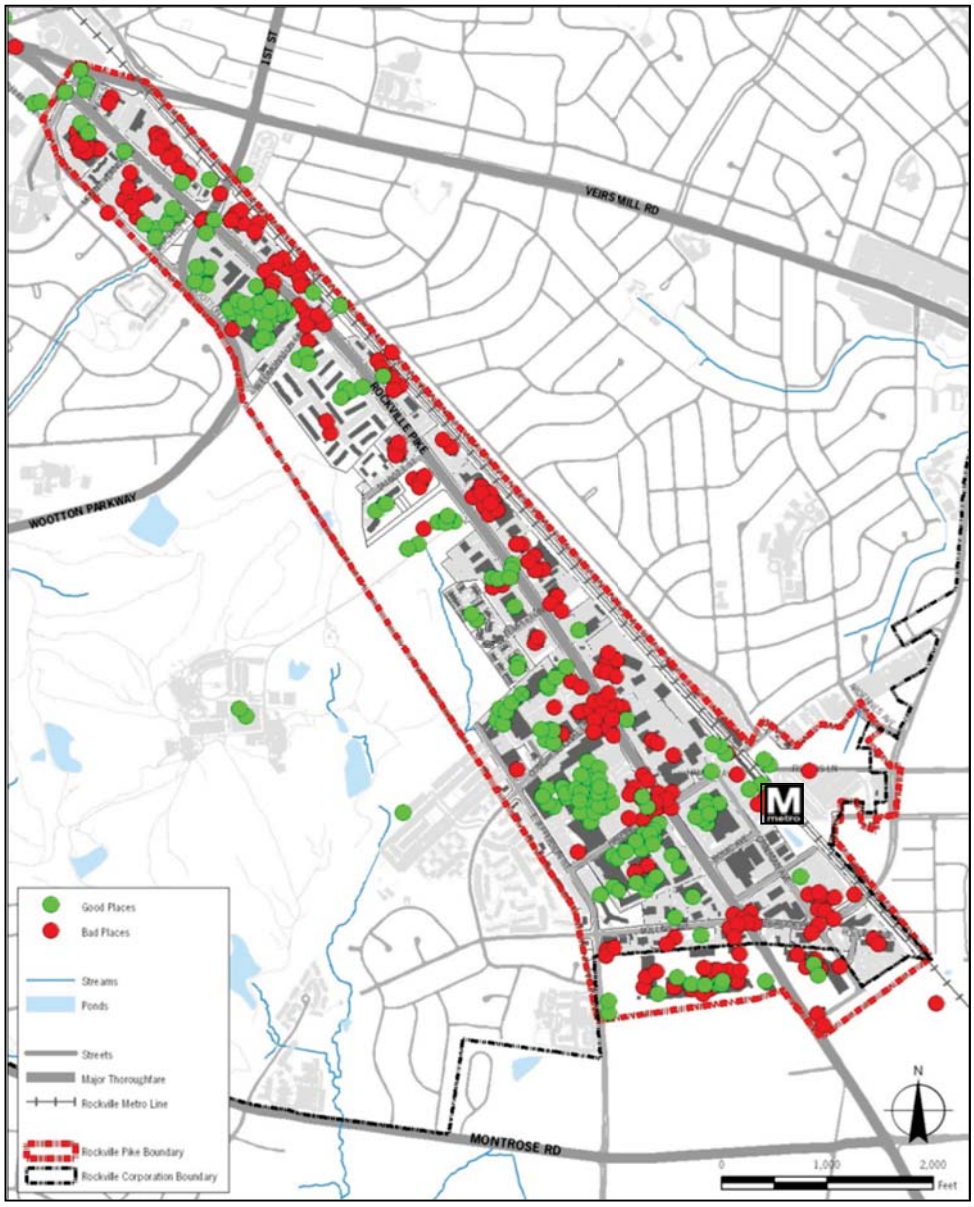


Figure 2.2: Good Places, Bad Places Map *– This image shows the composite allocation of dots from the Good Places, Bad Places exercise. Participants placed green dots on the maps to indicate "good places" and red dots on the map to indicate "bad places." Then, trained facilitators at each table led a discussion to identify the physical characteristics that make good places "good" or bad places "bad." The detailed input on physical characteristics helped to inform the creation of development principles for the Pike.*
Source: ACP

The stakeholder workshop provided two critical outcomes. The *Good Places, Bad Places* exercise gave a clear understanding of public perceptions of the physical condition of the Pike, while the critical questions exercise clarified earlier public input and helped inform the drafting of ten development principles.

4. Reports to the Community

The kick-off meeting and the stakeholder workshop both emphasized small group activities, designed to elicit extensive input from the public about their ideas and their vision for the future of the Pike. The two subsequent public meetings, Reports to the Community, placed more emphasis on providing detailed presentations about the consultant team's work. Reports to the Community gave the consultants

opportunities to share the preliminary results of their technical research and analysis and receive additional feedback from the public.

a. First Report to the Community: Transportation and Land Use

The first Report to the Community took place on March 18, 2008. The purpose of the meeting was to present an analysis of existing transportation and land use conditions along the Pike. The presentation included a history of development along the Pike, and an analysis of existing conditions, including issues such as connectivity, traffic congestion, safety, walkability, transit, and land use patterns.

The meeting also presented an opportunity to review the results of the *Good Places, Bad Places* exercise, present the ten draft development principles based on input from the first two public meetings, and allow participants to rate the importance of each of the draft principles on a scale from 1 to 5. The principles are described in detail in Chapter 4: Development Principles.

b. Second Report to the Community: Economics

The second Report to the Community took place on May 6, 2008. The focus of this meeting was the economic and market conditions of the Pike. The consultant team highlighted key findings about economic conditions, discussed potential market demand for residential, retail, and office uses, and introduced the idea of identifying "model sites", i.e., sites that have the potential to simulate the plan's recommendation. "Model sites" were investigated during the course of the charrette, as described in Section 5, below.

5. The Community Design Charrette

A charrette is a planning technique that has been widely applied throughout the world. It brings together and engages the multi-disciplinary talents and energies of community members, consultants, city staff, and all interested parties in a creative, intensive planning effort over a compressed period of time. This use of the term is said to originate from L'École des Beaux-Arts in Paris during the 19th century, where proctors circulated a cart, or charrette, to collect drawings from students as they worked hard to meet their exam deadlines.

The *Rockville's Pike* community design charrette was tailored to provide the widest range of opportunities for public input over a short period of time. It built upon the months of earlier public engagement described above, which provided a solid foundation of technical analysis, as well as publicly endorsed development principles that would inform the plan for the Pike. This section describes each of the major charrette activities.

Figure 2.3: The Design Workshop – *Trained facilitators at the design workshop helped participants express their ideas on a large map.*

a. First Public Meeting: Public Design Workshop

The first event of the charrette was a public design workshop held on May 31, 2008. The workshop began with a presentation that provided an overview of the *Rockville's Pike* process. Next, participants completed a visual survey to provide input on physical design issues.

The central activity of the public design workshop was a facilitated mapping exercise. Each table was randomly assigned to investigate one portion of the Pike, either the North, Middle, or South section.

Participants received prompt sheets that encouraged them to consider road network and connectivity, type and intensity of land use, and green infrastructure and public spaces. A trained facilitator at each table helped to transfer participants' ideas onto the map. Participants were also encouraged to draw and describe their ideas directly on the map, and the exercise resulted in a collaborative design plan from each table.

The meeting ended with a reporting period in which each table presented their map and the results of their design exercise. There was a great deal of consistency across the eight tables, and the ideas gathered through this exercise provided a foundation for the consultant team's work at the design studio for the remainder of the charrette.

Figure 2.4: The Design Workshop – *At the design workshop, participants collaborated in small groups to design one of the three sections of the study area.*

b. Design Studio

The design studio is the creative center of any charrette—a place where consultants collaborate with staff, stakeholders, and members of the public to formulate design

solutions over a condensed period of time. The Rockville's Pike design studio was located at 718 Rockville Pike, the site of the former Koons Ford dealership. The team conducted the design studio from the afternoon of Saturday, May 31 through Tuesday, June 3.

At the studio, City staff members were engaged to share data and provide clarity on conditions and policies that affect the Pike and surrounding neighborhoods. Meetings were held with the development community and owners of potential model sites to help envision the types of redevelopment that would be appropriate for various portions of the Pike. The team also met with representatives from regional agencies, including the Maryland Department of Transportation, Montgomery County Park and Planning, and Ride-On. Members of the public stopped by the studio regularly to check on the progress of the effort and offer comments and ideas.

On Sunday, June 1, visitors to the studio were invited to join the consultant team and City staff on a walking audit where they explored first-hand some of the conditions, challenges, and possible solutions regarding transportation and land use in the South Pike. Ultimately, the design studio was a place of continuous, collaborative activity where everyone worked together to develop design solutions for the Pike.

A most remarkable product of the design studio was a drawing that illustrated at-a-glance the depth and breadth of the changes proposed in transforming the Rockville Pike into a multi-way boulevard. Drawn at the 50-scale, it measured over 13 feet and it became the centerpiece of discussion among studio visitors. The drawing, divided in two parts because of its size, is shown on the next page in its original version.

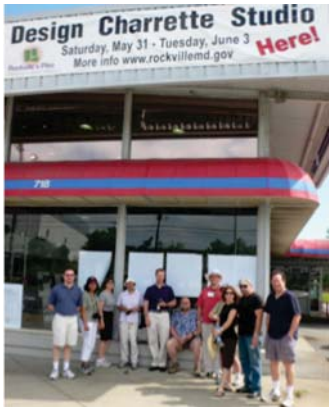


Figure 2.6: The Walking Audit *– Charrette team and community members meet at the design studio before the walking audit.*

c. Open House

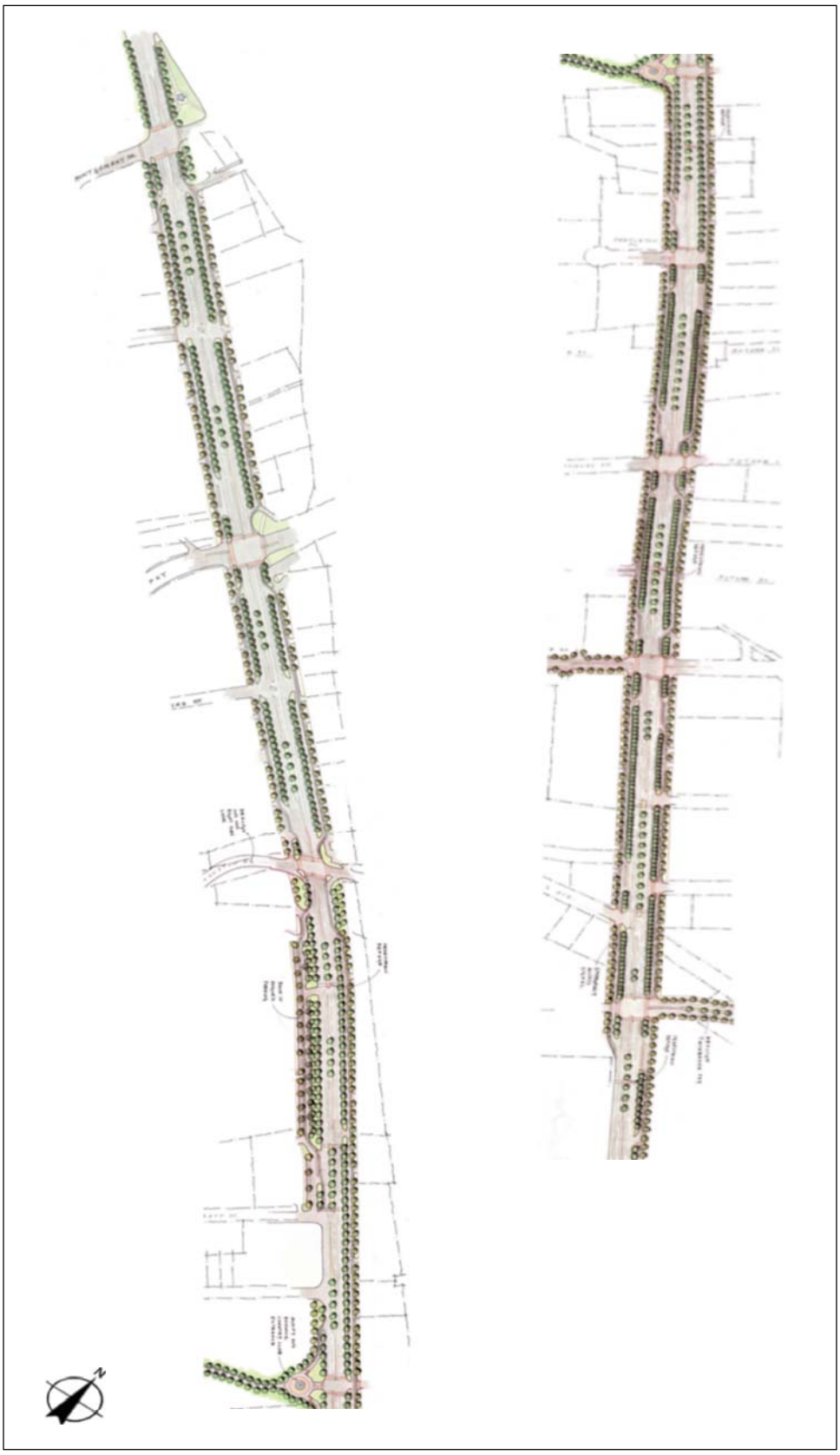
An Open House was hosted at the design studio on Monday, June 2 and provided an opportunity for the public to check in on the emerging design for the Pike, and offer input that would guide refinements during the last day of the charrette.

d. Final Public Meeting: Charrette Results – A Report to the Community

The final public event of the charrette was a presentation of the results. This meeting served as the third Report to the Community. The consultant team highlighted key aspects of the charrette design work, including a plan to transform the Pike itself into a green, multi-way boulevard.

Overall, participants were very supportive of the new vision for the Pike. A comment card was distributed in which participants were asked one simple question: "Are we on the right track?" In tallying the results, it was encouraging to see that 88 percent of respondents said "yes", 12 percent were "unsure", and zero percent of respondents felt that the design was "off-track". This level of confidence in the design concepts and preliminary plan was a direct result of a process that: 1) allowed for ongoing feedback to balance technical findings and local knowledge, and 2) adhered to sound, publicly accepted development principles.

Figure 2.7: Plan View of the of the Rockville Pike's Multi-Way Boulevard *– The image shows the 14-foot drawing created during the charrette. It shows on the left the northern portion of the proposed boulevard from Richard Montgomery Drive (top of the drawing) to the entrance to the Woodmont Country Club (bottom of the drawing). It shows on the right the southern portion of the proposed boulevard from the entrance to the Woodmont Country Club (top of the drawing) to Bou Avenue (bottom of the drawing).*
Source: AECOM



Chapter 3 – Key Findings

OVERVIEW

This chapter summarizes key findings from the research conducted by the consultant team concurrently with the public involvement process. These findings were presented to the community and subsequently integrated with public input to develop *Rockville's Pike: Envision a Great Place*. The information is divided into six sections:

A. History and Historic Preservation
B. Transportation
C. Land Use
D. Economic Analysis
E. Critical Lane Volume Analysis
F. School Capacity

Expanded summaries of the research conducted in each of the five categories can be found in Appendix B: Research Summary.

Please note that the data contained in this chapter was gathered in the fall of 2007 and in the spring and summer of 2008. Market conditions have changed since the beginning of the study. While these changes affect short-term considerations, they do not affect the long-term economic outlook for the Rockville Pike study area that remains strong.

A. HISTORY AND HISTORIC PRESERVATION

A review of Rockville Pike's history reveals its long and regional importance, as well as the close relationship between transportation initiatives and land use development patterns over time.

1. Rockville Pike has served as a major transportation artery for the Washington, DC region for centuries and it is one of Montgomery County's most traveled roads.

More information on history and historic preservation can be found in Appendix D: History and Historic Preservation.

2. The Pike served as an important link for runaway slaves on the Underground Railroad. Other Pike travelers have included Native Americans, colonial farmers, American presidents, fugitive slaves, confederate and union troops, wealthy Washingtonians retreating to their summer homes, and modern day commuters and shoppers.
3. The Pike was a toll road throughout most of the 19th century and it became one of the first paved state roads in the county.
4. Passenger train service between the District of Columbia and Rockville was introduced in 1873, followed by the electric trolley along Rockville Pike in 1900. The establishment of railroad and trolley service had a significant effect on the siting of summer resorts and residences in Rockville and along the Pike.

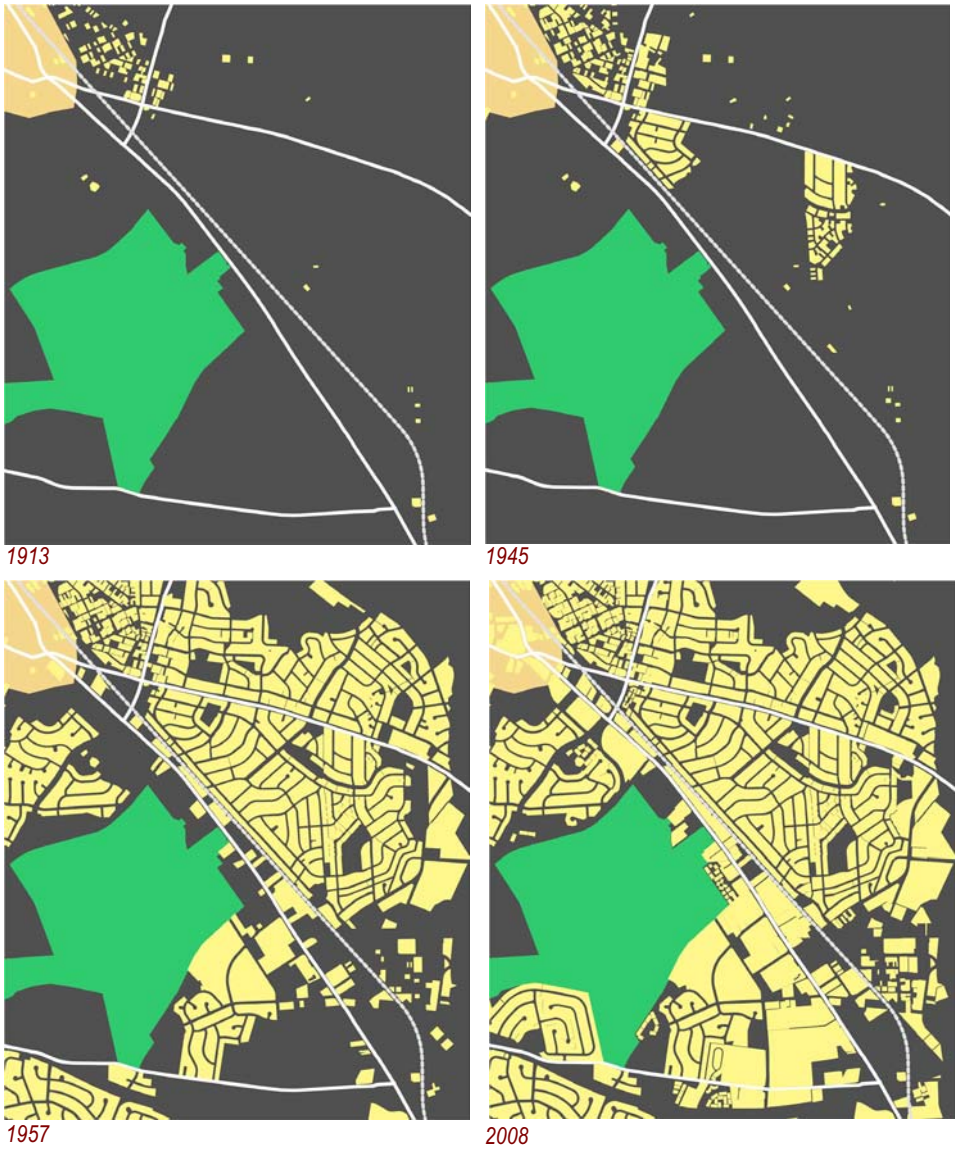


Figure 3.1: Historic Patterns of Development *– The four diagrams offer a snapshot of development in 1913, 1945, 1957, and 2008. They graphically illustrate how development along the Pike exploded after WWII. The road itself widened first to four lanes in 1953, then to six in 1975 with auto-friendly development occurring on land adjacent to the Pike.*
Source: AECOM

5. Rockville's population tripled twice between 1945 and 1975 and the City saw the construction of several residential neighborhoods on both sides of the Pike. The increasing prevalence of automobiles after World War II also encouraged auto-oriented commercial development along the Pike.
6. The Pike was widened from two to four lanes in 1953 and to six lanes in 1975 to accommodate rapidly increasing automobile volumes.
7. Metrorail stations opened along the Pike at White Flint, Twinbrook, Rockville, and Shady Grove in 1984. Montgomery County's Ride-On bus service started in 1979 to augment regional Metrobus service.
8. Any building that meets one or more of the City's criteria for architectural, cultural, historical, or archaeological significance is potentially eligible for historic designation in Rockville. At present, the Rockville Pike study area does not contain any locally designated historic sites; however, the Pike has been the location of significant historic resources, many of which have been demolished to make room for new development. Any existing resources may be designated in the future to protect them from demolition.

B. TRANSPORTATION

Transportation findings focus on the functionality of the street network, traffic, transit service, safety, and bicyclist and pedestrian conditions.

More information on transportation findings can be found in Appendix B: Research Summary.

1. Rockville Pike serves two major transportation functions: a regional corridor through Montgomery County and an access road to commercial land uses. Parallel interstate 270 is not a substitute for regional movement because it only offers limited access in Montgomery County. Motorists will continue to use Rockville Pike for reaching retail and employment destinations.
2. Neighborhoods in the study area have few connections to the Pike. On the east side of the road, access is limited due to the Metrorail right-of-way. Woodmont Country Club obstructs the west side.
3. Traffic congestion is the worst when the demand for travel to the retail establishments is highest.
4. Rockville Pike is near its vehicle-moving capacity at peak times. It carries approximately 54,000 cars per day and, in peak travel directions, approximately 3,000 cars per peak hour. In spite of this, many intersections experience relatively light overall delay because traffic signals are timed to favor Rockville Pike and to keep its traffic flowing.
5. Local bus transit service provides coverage to most of the Pike study area, but it is largely compromised by a lack of a connected street network. This is due to the fact that the only transit-demanding area is the commercial concentration along Rockville Pike. As Rockville Pike is not served by a rich network of streets, transit vehicles need to use it and cannot rely on parallel streets for routing and circulation.

6. Safety is a significant concern. The difference in vehicle speeds resulting from serving as both an access and mobility function has made the Pike prone to accidents. (See Table 3.2.) Neither bicyclists nor pedestrians feel safe, and cyclists in particular do not regard the Pike as a desirable connection.

Table 3.2 - Crashes and Severity at Selected Corridor Intersections from 2004 to 2006

Intersection	Total Number of Crashes	Number Involving Personal Injury	Number Involving Pedestrians	Number Involving Rear-End Collisions
Wootton Parkway	43	20	1	13
Edmonston Drive	42	17	3	21
Templeton Drive	23	8	1	16
Halpine Road	26	16	8	14
Bou Avenue	43	29	2	22

Source: Maryland State Highway Administration Accident Data

7. The Metrorail Red Line provides high-capacity rapid transit service to the Rockville Pike corridor at the Rockville and Twinbrook stations and connects it to other parts of the Washington region. This is a vitally important asset for regional access between places of residence and employment throughout the region.

C. LAND USE

More information on land use findings can be found in Appendix B: Research Summary.

Land use findings focus on land use and ownership patterns, amenities, spatial qualities, and prevailing densities.

1. The predominant land use pattern along the corridor is in the form of individual parcels each containing a single use. In this condition, each land use is surrounded by an individual parking lot forcing multiple trips for anyone attempting to make even simple trips. There are no public open spaces in the study area. The commercial nature of Rockville Pike and its emphasis on movement by car has resulted in a place that lacks any type of public space such as parks, plazas, or squares.
2. Impervious surfaces cover 60 percent of the study area. Pavement covers nearly 71 percent of the impervious surface area or approximately 43 percent of the total study area.
3. The Pike has extremely long blocks. (Most notably, nearly 7,000 feet separate Edmonston Drive and the next intersection to the south at Halpine Road.) Long blocks create a barrier between the east and west sides of the Pike and limit development opportunities.

4. The Rockville Pike corridor has the undistinguished look of a generic and aging suburban strip development. For the most part, one or two story buildings surrounded by surface parking characterize the area. This condition translates into a lack of building frontage continuity and a lack of physical containment—two hallmarks of great places.
5. Walking is not an appealing option. The widely separated buildings along the Pike fail to create an attractive or walkable public realm and make walking (and the use of public transportation) challenging, unsafe, and unpleasant. Pedestrians share crossing times with vehicles resulting in short signal times at intersections and potential conflicts with vehicles turning across the pedestrian's path. Accommodations for transit users are minimal.
6. Low density developments on the Pike do not take advantage of the proximity to the Twinbrook Metro Station. Currently, parcels in the study area are developed at an average Floor to Area Ratio (FAR) of 0.35. This means that the total area of all floors in a building is typically only one-third of the area of the parcel on which it is situated. With such low density, only a limited number of buildings fall within walking distance of the Twinbrook Metro Station, hindering the ability of Metro to become a viable alternative to the private automobile.

D. ECONOMIC ANALYSIS

1. Demographic and Economic Profile

This section examines general demographic and economic conditions in the study area.

More information on economic analysis findings can be found in Appendix B: Research Summary.

1. Long-term population and employment growth projections are positive, though traffic and current development patterns present challenges to employment in particular sectors, notably commercial office.
2. High household incomes in the region contribute to the economic vitality of retail.
3. The Rockville Pike corridor is located in a strong regional economic market with long-term growth potential.
4. Strong residential growth in recent years and a vibrant economic environment suggests positive long-term development potential, in spite of current economic trends.
5. Employment and commercial activity are concentrated in the retail sectors, and Rockville Pike is one of the primary retail corridors in the region.

2. Real Estate Trends

This section reviews retail, office, and residential trends in the study area. Analysis included review of existing patterns of real estate development, including rents,

occupancy, and absorption trends of various land uses. The key findings of these analyses include:

1. The retail market is the primary driver in the corridor, and the corridor serves as a regional destination retail center and one of the best performing agglomerations of retail in the region.
2. Commercial office is a smaller component of the overall Rockville Pike development pattern with a few free-standing office buildings in the corridor.
3. Residential is emerging as a use along the Pike with the market developing at a quicker pace to the south of Rockville Pike near the White Flint Metro Station.

3. Market Demand

This section examines the market demand for residential, office, and retail in the study area. To determine future land use patterns, the economic consultants examined growth trends and assessed future demand potential.

1. Residential demand is emerging, though competition will exist with White Flint and Rockville Town Center for future growth.
2. The Twinbrook Station development is providing an important market test for development potential along Rockville Pike and will further adapt the market to a higher density product type.
3. Office demand is limited and will serve as a secondary component to developments, except in situations closely connected to the Metro, such as Twinbrook Station. The I-270 corridor will continue to be the primary Class A office draw, with more limited office potential along the Pike.
4. The retail market is well served and will continue to provide the economic base; however, additional demand will come in small increments and is anticipated to remain relatively constant in terms of total square feet. As incomes rise, store productivity and rental rates will likely increase.

E. CRITICAL LANE VOLUME ANALYSIS

The entire study can be found in Appendix E: Critical Lane Volume Analysis.

The Critical Lane Volume Analysis conducted in the fall of 2010 revealed that the combination of the City's traffic standards and the existing and projected traffic (based on approved development projects) will not readily allow development consistent with the recommendations of this plan. Five of the key intersections in the corridor are already "failing", using the City's current approach, thereby effectively preventing development that will add traffic to the corridor.

F. SCHOOL CAPACITY

The City's Adequate Public Facilities Ordinance (APFO) establishes that no child-generating development can take place if the new residences will be within the

boundaries of a school that has enrollment of 110% or more of the school's program capacity. Montgomery County Public Schools (MCPS) data show that all four elementary schools and the middle school either exceed 110% or are projected to exceed 110% within the next five years.

More information on school capacity can be found in Appendix B: Research Summary.

Table 3.3 – School Existing and Projected Enrollment/Capacity

School	2010-2011 Enrollment/Capacity	2016-2017 Projected Enrollment/Capacity
Beall ES	136%	155%
College Gardens ES	118%	123%
Ritchie Park ES	133%	150%
Twinbrook ES	104%	117%
Julius West MS	104%	136%
Richard Montgomery HS	93%	95%

Source: Montgomery County Public Schools, 2010

If Rockville Pike's redevelopment is to accommodate residences for families, school capacity must be addressed. Montgomery County Public Schools recognizes this challenge and has launched studies of how to increase capacity.

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Chapter 4 – Development Principles

INTRODUCTION

Principles are statements of intent that describe in words how the physical environment, both natural and manmade, should be treated in the future. The draft principles for the *Rockville's Pike* plan came directly out of the extensive public input that was generated at the kick-off meeting in December 2007 and the stakeholder workshop in February 2008. The public process (detailed in Chapter 2) was designed to encourage collaborative understanding and information-sharing among local citizens, stakeholders, staff, and consultants. Therefore, the principles resulting from the public process reflect both the local knowledge and aspirations of citizens who are familiar with the Pike, as well as the consultant team's technical analysis of the corridor (described in Chapter 3: Key Findings and Appendix B: Research Summary). The principles guided the work of the consultant team during the community design charrette (May 31 to June 4, 2008) and played a central role in the development of *Rockville's Pike*.

Participants of the first Report to the Community in March 2008 confirmed the significance of these draft principles. Participants were asked to rate the importance of each principle on a scale of 1 to 5, where 1 indicated a principle was not important to the future of the Pike and 5 indicated it was very important. They also had the option to provide comments on each principle. Overall, the draft principles were well received, with the average rating of all ten being between 3.11 and 4.42, or "important" to "very important."

This chapter provides a brief description of each of the *Rockville's Pike* development principles. Throughout the chapter, illustrative quotes from some of the many participants who contributed to the plan can be found in the sidebar.

A. DEVELOPMENT PRINCIPLES

1. Quality architecture and urban design will create a visually appealing environment along the Pike.

"Enhance diversity of appearance - styles, heights, materials, buildings reflecting different eras, landscaping, uses."

Participants consistently emphasized the importance of high quality architecture and coherent design in planning for the future of the Pike. Their recommendations addressed such issues as: structural renovations, façade improvements, bringing buildings closer to the street, enforcing building maintenance codes, reducing the prominence of surface parking, and emphasizing quality landscaping, among other issues. The District Form Code found in Chapter 6 strongly supports this principle. By placing a greater emphasis on building form rather than use, and by clearly defining the character of the public realm, the District Form Code sets up design standards that will create more consistent development patterns and greatly improve the appearance of the Pike, while allowing for architectural diversity and visual interest.

2. Roadway and intersection improvements on the Pike will allow for smooth, safe vehicular flow.

"Make the road more like a boulevard and less like a commuter route."

Traffic congestion and the need for improved traffic safety are significant concerns for people who travel along the Pike. Participants provided numerous suggestions for addressing traffic concerns including: street pavement repairs, improved signal timing, redesign of intersections, and improving access to and from shopping centers. The boulevard concept, street network enhancements, and intersection improvements recommended in this plan conform to this principle of smoother, safer traffic flow.

3. The Pike will feature a safe and pleasant environment for walking and biking.

"Making Rockville's Pike more pedestrian and biker friendly will bring about more community unity and interaction."

Throughout the public process participants expressed strong concerns about pedestrian safety, and emphasized the importance of creating an environment on the Pike that is safe for pedestrians and cyclists. Participant recommendations included: sidewalk enhancements, bicycle lanes, walking/biking trails, signal timings that allow pedestrians to cross the Pike comfortably, improved access to shops and surrounding neighborhoods, and the reconfiguration of buildings and parking lots to enhance the pedestrian environment, among others. The transportation and land use components in this plan adhere firmly to this principle. Whereas the Pike today prioritizes the private automobile over all other modes of transportation, the Pike envisioned in this plan safely supports multiple modes of transportation, including walking, biking, and public transit.

4. Additional open space, landscaping, and environmentally friendly development will contribute to a "greener" Pike.

The *Rockville's Pike* process revealed a strong community desire for a greener Pike in terms of landscaping, visual aesthetics, and environmental quality. Participant recommendations suggested planting more trees, improving landscaping, reducing impervious surfaces, and supporting green building, among other initiatives. The conceptual plan and many of the policy recommendations found in this document support the public's vision of a greener Pike.

"Why can't Rockville Pike be a model for sustainable development, meaning development that greatly improves the built and natural environment?"

5. The Pike will feature vibrant, walkable mixed-use developments.

Participants would like to encourage more mixed-use development along the Pike. They see a mix of uses as contributing to the vibrancy of the Pike, encouraging more street life and providing opportunities for nightlife, public gathering, and a greater sense of community. Participants identified the areas in close proximity to the Metro stations as being most appropriate for intensive mixed-use development, a recommendation that is confirmed in this plan.

"I agree that vertical mixed-use needs emphasis. Great design is a must! Sense of place creation is important."

6. New public spaces on the Pike will provide a pleasant environment for community gathering and outdoor activity.

As it exists today, with its extensive surface parking lots and high speed traffic, the Pike may not seem conducive for public gathering spaces and outdoor cafes. However, participants envision such community amenities as important components of the Pike in the future. Their suggestions support the creation of a pleasant public realm that will invite outdoor activity and community interaction, including mixed-use developments that incorporate green space and encourage walking, public spaces that integrate flowers, fountains, and public art, and civic areas that support community activities such as farmers markets. This plan reflects the same careful attention to the public realm.

"Additional landscaping, architectural detail and wide sidewalks (like streetscape) make a big difference."

7. The economic success of Rockville's Pike will be maintained by supporting both local and national retail and encouraging property redevelopment.

Retail is central to the economic success of the Pike, from the large national chains that draw shoppers from throughout the region to the smaller "mom and pop" stores that contribute to the unique commercial character of the Pike. Participants identified the commercial and retail success of Rockville Pike as an element that should continue to be supported. As shopping centers age and redevelopment opportunities arise, they would like to see the shops that they patronize remain. As this plan shows, redevelopment can continue to support a strong retail environment while simultaneously enhancing the public realm, reducing surface parking, promoting walkability, and providing for a more intensive mix of uses.

"Development should attract pedestrian interest with large street-front windows and connecting walkways in front of all storefronts."

8. Rockville's Pike will be well connected with surrounding areas, providing choices for cars and pedestrians to access and move between properties along the Pike.

"Ensure maximum accessibility (multiple entrances, alternative access) to high traffic shopping centers."

Many participants cited the need to better connect Rockville Pike in terms of adjacent shopping centers and surrounding neighborhoods and streets. The current configuration of the street network features incomplete service roads and multiple driveway entrances which tend to force much of the local traffic onto Rockville Pike, even for very short trips between nearby shopping centers. The proposed plan for the Pike seeks to expand the street network to enhance connectivity along the Pike for both cars and pedestrians. It also recommends improving pedestrian connections between the Pike and its surrounding neighborhoods, which will reduce the need to use a car for local errands.

9. The Pike will feature efficient and reliable public transportation options.

"A dedicated bus lane on 355 encourages more ridership and faster travel."

Concerns about the reliability of public transportation arose throughout the public process. While the number 46 bus route is scheduled to run along the Pike frequently, public input indicates that the timing of the current service is not predictable or reliable enough to encourage more widespread use. Safety concerns were also cited related to the mid-block location of bus stops, which tends to encourage pedestrians to cross the Pike mid-block. Many individuals who do not currently ride the bus expressed an interest in using a more efficient public transportation option that would enable them to refrain from driving along the Pike. The boulevard street network recommended in this plan will move buses off of the high-speed through portions of the Pike, and onto pedestrian-friendly local roads that are fronted by shops and mixed-use development. The plan gives buses and bikes their own lane, which will go a long way towards helping the public transportation system run on time and facilitate more frequent use of buses by Rockville residents and visitors.

10. Appropriate signage, lighting, and wayfinding tools will make the Pike an inviting and easily navigable environment.

"Make driving and walking more visually pleasant with green space, interesting and varied architecture, signage, and plantings."

Participants indicated they would like to see way-finding improvements that will maintain and enhance the economic success of the Pike. They want to see better signage and lighting that will make the Pike more welcoming and navigable for residents and visitors alike. The plan incorporates these recommendations and also provides for an expanded road network that will break up some of the largest blocks and create a more coherent system for maneuvering along the Pike. An attractive pedestrian environment will also enable shoppers to "park once" and comfortably reach nearby shops on foot.

Chapter 5 – A Plan for the Rockville Pike Corridor

INTRODUCTION

This chapter of *Rockville's Pike: Envision a Great Place* describes the transformation of the Rockville Pike corridor into an attractive, prosperous, and walkable area. This vision is for an area that features distinguished buildings, ample sidewalks landscaped with trees, slow and safe access roads, bike lanes that are separated from high-speed traffic lanes, safe pedestrian crossings, an expanded street network that connects the Pike with the rest of the community, and walkable blocks that support thriving retail, offices, and residences.

The transformation is very much the result of what City residents envisioned through the extensive public involvement process described in Chapter 2: The Public Process. Early on in that process, residents identified three overarching themes to guide the corridor plan: create a special place, improve general mobility, and keep the area economically viable. Those themes were refined into the ten development principles outlined in Chapter 4: Development Principles and the principles became the guiding framework of the corridor plan.

The transformation also reflects the findings of the transportation, land use, and economic analysis summarized in Chapter 3: Key Findings and described at length in Appendix B: Research Summary. The integration of the public's vision with technical findings shaped the plan for the corridor described in this chapter and Chapter 6: Rockville Pike District Form Code.

The Rockville Pike corridor encompasses the entire study area as described on page 1.2 of the Introduction. The study area includes the portion of Rockville Pike (Route 355) bordered to the north by Richard Montgomery Drive, to the east by the western edge of the Metrorail right-of-way, to the south by Bou Avenue, and to the west by a line that in the north falls at the rear of the properties facing Rockville Pike; in the middle, it intersects the Woodmont Country Club; and in the south, it follows the eastern edge of Jefferson Street.

Finally, specific recommendations on how to implement the plan as a whole are found in Chapter 7: Implementation. Chapter 5 is divided in the following ten sections.

Recommendations on how to implement Rockville's Pike: Envision a Great Place as a whole can be found in Chapter 7: Implementation.

A. The Core Recommendation – Introduces the recommendation to turn Rockville Pike into a multi-way boulevard.
B. The Benefits of the Multi-Way Boulevard Approach – Lists the key corridor wide benefits of developing the multi-way boulevard.
C. Principal Transportation Elements of the Multi-Way Boulevard – Describes in detail the transportation elements of the multi-way boulevard.
D. Study Area Transportation Elements – Describes transportation elements related to the study area as a whole.
E. Summary of Recommended Transportation Improvements – Summarize in chart form the transportation recommendations and their benefits.
F. Principal Land Use Elements – Describes the land use elements that complement the transportation changes.
G. Transportation Elements to Enable Redevelopment – Describes design and policy recommendations to off-set the demand for vehicles.
H. Congestion Management Elements – Describes how to increase the use of transit, walking, and biking options in the study area.
I. Funding Mechanisms – Describes how to pay for the improvements.
J. Economic Strategies – Describes how to sustain the study area's economic viability.

A. THE CORE RECOMMENDATION

This section provides an overview of the core recommendation of *Rockville's Pike: Envision a Great Place*.

1. Redesign and Reconstruct Rockville Pike as a Multi-Way Boulevard

The core recommendation of the Rockville Pike corridor plan is to redesign and redevelop the Rockville Pike as a traditional multi-way boulevard.

Multi-way boulevards are extensively described in The Boulevard Book, authored by Allan B. Jacobs, Elizabeth MacDonald, and Yodan Rofé. The authors explain that a multi-way boulevard is "unique because its parallel roadways serve distinctly different traffic functions. It directly addresses the functional problems posed by the coexistence of through movement and access to abutting land uses on major urban streets." That is a most accurate description of one of the problems Rockville Pike faces today.

a. What Is a Multi-Way Boulevard?

A multi-way boulevard is a time-tested way to address the fundamental transportation and land use conditions similar to those found on the Pike today. The boulevard effectively addresses the dual nature of the Pike as a regional corridor and as an access road to commercial land uses. It provides the framework for the creation of distinctive public places. The medians that separate through traffic from local traffic can be planted with trees. The local lanes that accommodate buses, bicycles, and very slow moving vehicles further buffer sidewalks from traffic. The sidewalks, visually and physically separated from through traffic, can be landscaped and become pleasant places to walk and socialize.

Multi-way boulevards have been a design of choice for important and signature streets throughout the world and in the United States, and there are many extraordinary examples that demonstrate their successful application, including the iconic boulevards of Paris and Barcelona, the Esplanade in Chico, California, and Ocean and Eastern Parkways in Brooklyn, New York. Today, they are making a comeback as communities make efforts to lend character and sense of place to otherwise undistinguished arterial roads as they intersect urbanized areas – precisely the condition of Rockville Pike.

Figure 5.1: Paseo de Gracia, Barcelona - *Long recognized as the major high-end shopping street in Barcelona, the elegant Paseo de Gracia is a classic multi-way boulevard that has the same cross section dimensions as Rockville Pike.*

Figure 5.2: K Street, Washington, DC - *The section of K Street in the District of Columbia on the left (looking east from 16th Street) functions as a multi-way boulevard.*
Source: Wikimedia Commons
Credit: AgnosticPreachersKid.

b. Characteristics of the Rockville Pike's Boulevard

The multi-way boulevard proposed for Rockville Pike will:

- Accommodate the current six travel lanes and center turn lanes, maintaining the current 84-feet right-of-way.
- Add two sets of two access lanes separated from the travel lanes by planted medians.
- Include two moving lanes (one for cars and the other for buses and bikes) and one lane for on-street parking in each access road.
- Provide ample sidewalks well protected from the main traffic lanes.
- Feature sophisticated intersection design and operation with improved pedestrian crossings.
- Provide bike access along the length of the Pike within the outer access lane where traffic will be slower.

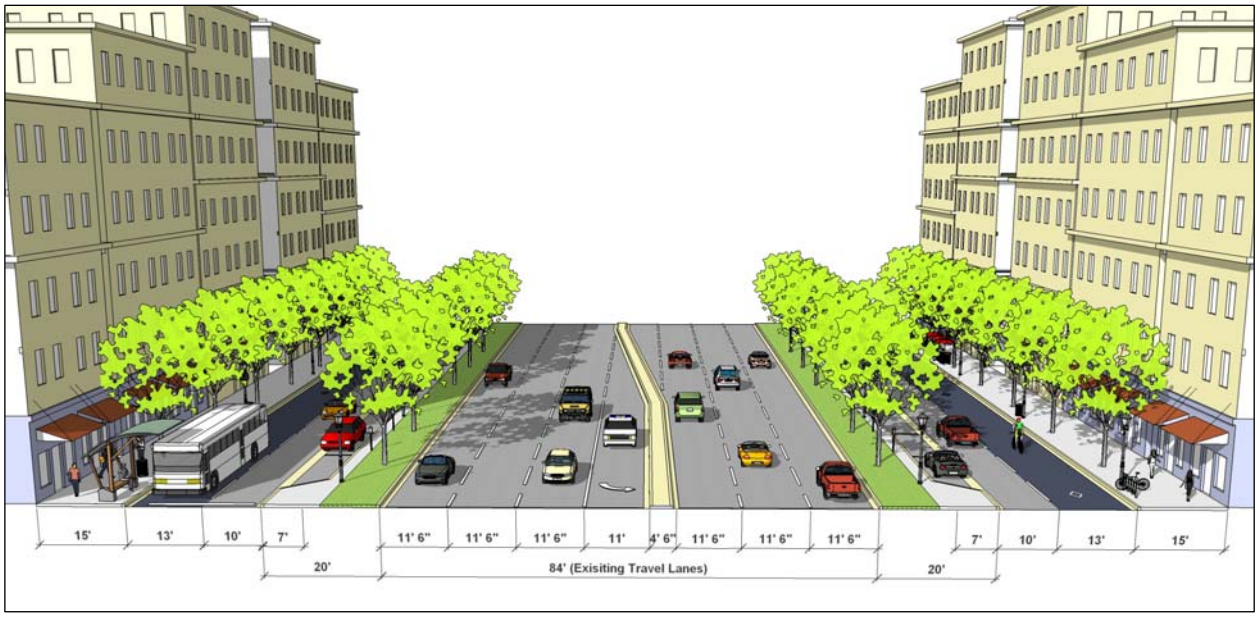

Figure 5.3: Section of the Rockville Pike's Multi-Way Boulevard *– This recommended typical section of the Pike illustrates the functional composition of the boulevard. Source: AECOM*

B. THE BENEFITS OF THE MULTI-WAY BOULEVARD APPROACH

The proposed multi-way boulevard approach for the Rockville Pike will generate benefits that extend throughout the length of the Pike and through the corridor as a whole. The boulevard approach will:

- **Allow for the separation of local and regional trips.** The separation offers added capacity to the outer lane of the Rockville Pike mainline as vehicles no longer need to make right turns into driveways and are accommodated instead by the boulevard access lanes. By allowing through traffic to move smoothly, this feature improves general mobility.

- **Make the Pike safer** by separating pedestrians and cyclists from faster-moving vehicles. The large number of curb cuts, long blocks, limited pedestrian connections, and unprotected bike lanes, make the Pike today unsafe for motorists, bicyclists, and pedestrians alike, and make the corridor prone to accidents.
- **Reinforce the role of the corridor as a significant retail center in the region**. Paralleling national trends, Washington D.C. consumer markets have shown an increasing acceptance and participation in pedestrian-oriented shopping/mixed-use environments in which significant numbers of residents and local workers walk or bike to retail clusters.
- **Integrate the Twinbrook Metro Station into the corridor and make transit a more attractive option** by increasing convenience for Metrorail and bus riders through improved sidewalks and protected crossings at intersections, an expanded street network, and the creation and improvement of pedestrian-friendly streets linking the station to the Pike. This is an important benefit because the station is one of the City's two major transit locations (the other being the Rockville Station, located just north of the study area) and provides the most direct access from the regional rail transit network to the South Pike area that has the greatest potential for redevelopment.
- **Bring transit, walking, and bicycle users closer to the land uses of the Pike**, improve the experience of the road for non-motorized users, and expand bicycle access and safety through the multi-way boulevard's shared transit and bicycle lanes.
- **Facilitate the transformation of the corridor into an attractive place**. This is accomplished by the substitution of today's undistinguished appearance with tree-lined streets and sidewalks. It is also accomplished through form-based regulations that, over time, will shape redeveloped properties in ways that are consistent with the vision and wants of the community.
- **Create a healthier community** in terms of a reduced carbon footprint, better air quality, and the promotion of more active lifestyles and by providing incentives for buildings that achieve the Silver level of LEED certification (50 points) or equivalent.
- **Create the conditions for a shift in the transportation modal split along the Pike**, from an almost exclusive reliance on the private automobile to more diverse transportation choices. Regional traffic growth as forecast in the Metropolitan Washington Council of Governments' travel demand model suggests that by 2030, with or without any additional development within the study area, the corridor's capacity will be exhausted beyond levels of service that are acceptable today. A more detailed analysis that takes development recently approved by the City of Rockville into account suggests that many of the Pike corridor's intersections are already beyond the capacity permitted under current

Local examples of successful regional retail centers include downtown Bethesda and Friendship Heights, Reston Town Center, NoMa, Penn Quarter, and Clarendon. This is the type of retail center the Pike has the potential to become.

Glossary: LEED Certification –*The US Green Building Council defines the LEED Certification as a program that "encourages and accelerates global adoption of sustainable green building and development practices through a suite of rating systems that recognize projects that implement strategies for better environmental and health performance.*
"LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high-performance green buildings."

regulations and that some new development on the Pike today already faces challenges with approval. (See Appendix E – Critical Lane Volume Analysis.) The implication of these findings is that Rockville must broaden its palette of options and achieve a more balanced modal split. The multi-way boulevard will create the conditions for doing so.

C. PRINCIPAL TRANSPORTATION ELEMENTS OF THE MULTI-WAY BOULEVARD

This section describes the primary transportation elements related to the transformation of Rockville Pike into a multi-way boulevard. Even though the plan strongly recommends the integration of the transportation and land use elements of the plan, they have been separated here for the sake of presentation clarity.

1. Primary Roadway

The proposed design of the Rockville multi-way boulevard maintains the same 84-foot curb-to-curb section that accommodates the current six travel lanes. It expands beyond that to include two-lane access roads on both sides of the boulevard.

This expansion is possible because of the setback created in the 1970s and re-enforced by the 1989 plan that sets the build-to-line at 135 feet from the centerline of the Pike. The full vision set by the 1989 plan that saw a continuous building line being created on both sides of the Pike failed to materialize in large part due to a lack of regulations capable to regulate form. The setback area was realized, however, and today is used for parking and/or as a rudimentary access lane. The multi-way boulevard would transform this undefined swath of land from a negative into a tremendous asset to Pike's users, including pedestrians, bicyclists, bus riders, and motorists. It would also enable the creation of the quality place envisioned by the Rockville community.

2. Access Lanes

The boulevard's design includes access lanes that are parallel to and separated from the primary roadway. These facilitate parking and one-way local circulation, with the direction of travel corresponding to the adjacent travel lanes of the Rockville Pike mainline. As designed, they are intended to accommodate transit service, bicycles, and local traffic. The access lanes feature two primary moving lanes: one for buses and bicycles (against the outer curb, or the curb located adjacent to buildings) and one for other moving vehicles. Parallel on-street parking is located to the left of the general purpose moving lane, between it and the landscaped parkway. The access lanes provide direct access to private property and are intended to eliminate the present need for frequent driveways along the portion of the Pike designed for through traffic. Their design is for slower speeds, reducing the vehicle conflicts between faster-moving vehicles and slower-moving vehicles and pedestrians that currently occur on the Pike.

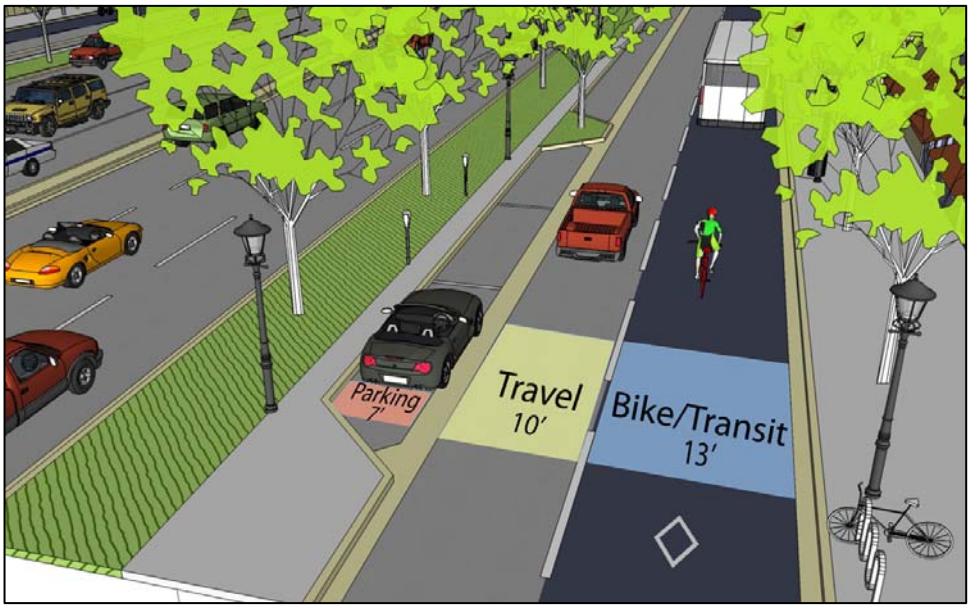

Figure 5.4: Access Lanes *– The creation of the multi-way boulevard expands the areas to which the public has open access beyond the sidewalks to include the entire area from the edges of the travel lanes to the façade of buildings. The Boulevard's access lanes separate local traffic from mainline traffic. They provide for on-street parking, local circulation, transit and bicycle movement, and pedestrian sidewalks. The area is a microcosm of a traditional pedestrian environment that shelters pedestrians and privileges walking.* *Source: AECOM*

The access lanes as designed can be added to today's Rockville Pike section without altering the current Pike mainline. They will require grading and separate drainage construction, but they are designed as separate curbed facilities and do not require relocation of existing Rockville Pike curbs or any other reconstruction of its existing roadway.

3. Intersection Design and Operations

Development Principle #2: Roadway and intersection improvements on the Pike will allow for smooth, safe vehicular flow.

The boulevard design for Rockville Pike is based on local access lanes that serve private properties and are intended to facilitate local movements, as opposed to regional movements. Each of the diagrams in the following pages presents two alternatives: one that features an option for exiting the Pike before an intersection to make right turns and one that brings all local lane movements back to the Pike mainline in advance of intersections. Both alternatives address the specific movement or operational element being considered. The final determination for a preferred alternative should be informed by discussions between the City and the Maryland Department of Transportation.

Each of the diagrams used in this section details particular operational concerns for major users of the Pike and illustrates the particular elements of each design alternative. These operational concerns include: a typical intersection, accessing local lanes from the mainline, pedestrian crossings, the "weave" (movement from access

All elements of the boulevard design, including intersection turning radii and access lane clear widths and entry points, have been designed with the needs of emergency vehicles in mind and are consistent with regulations governing these design parameters. The access lanes in particular preserve a 22-foot section between bus and bike lanes, allowing emergency vehicles to reach private properties mid-block without obstruction from parked vehicles (which are located in a separate space adjacent to these moving lanes).

lanes to mainline), right turns, bicycle movements, signal phasing, and bus movements.

a. Typical Intersection

As the local access lanes are the key features of circulation to and between land uses along the Pike, the intersections where they interface with cross streets (such as Halpine, Congressional Lane and Twinbrook Parkway) are the most complex locations of the boulevard's design. Figure 5.5, below, explains the operation of a typical Pike intersection.

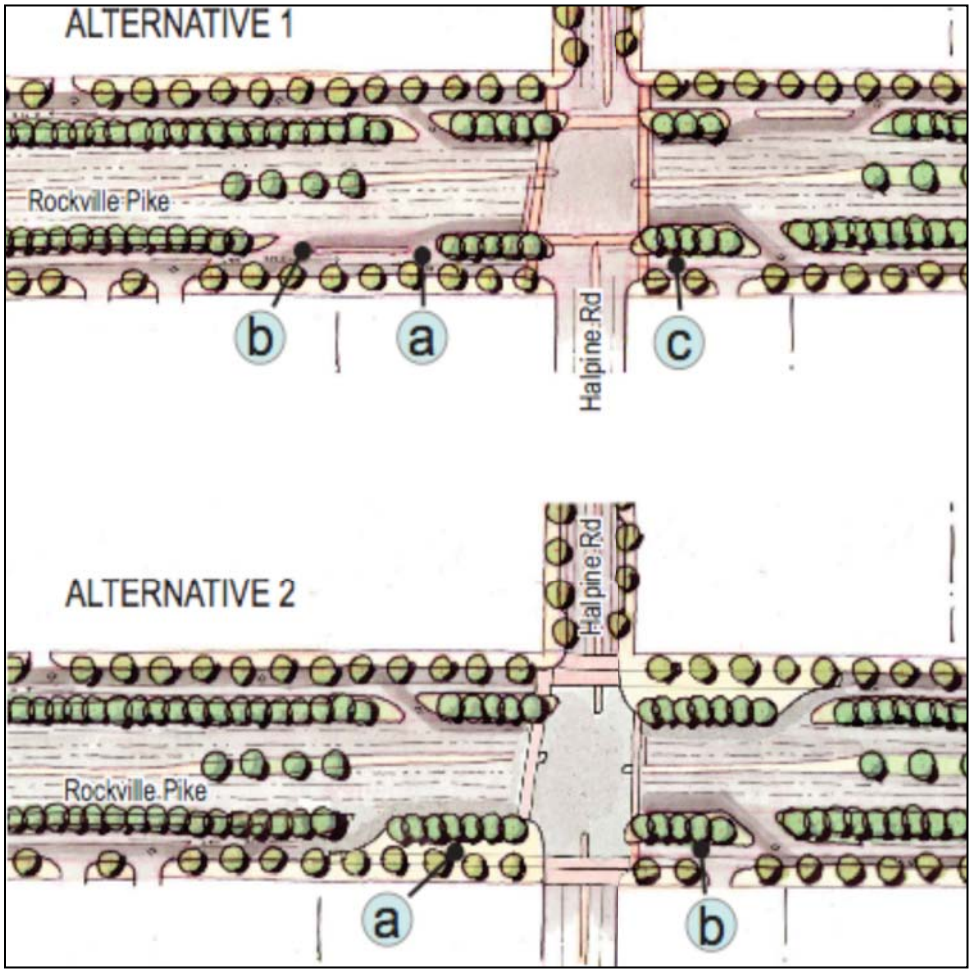

Figure 5.5: Intersection Design *– This diagram presents two design alternatives for a typical intersection along the Pike (in this and in the following examples, Halpine Road).*

Alternative 1*. This alternative offers options at the intersection approach to transfer right turns away from the Pike mainline (a). Vehicles wishing to continue along the Pike need to leave the access lanes (b). At the cross street itself, vehicles do not have the option of continuing across the cross street and on the access lanes on the far side of the intersection (c). This is due to intersection spacing and alignment: keeping a smaller intersection footprint can reduce the amount of clearance time needed at the signal overall.*

Alternative 2*. This alternative eliminates access to the cross street from the access lane (a). All turn and through movements happen from the Pike mainline. However, access to the Pike local access lanes is given from the cross street on leaving the intersection (b) to facilitate cross-street right turns that wish to access these lanes.*
Source: AECOM

b. Local Lanes Access from the Mainline

Local lanes are accessible after the intersections only. Vehicles are given an entry point 50 to 100 feet after the intersection to maximize local lane coverage of the block face (thus maximizing parking space and lower-speed access to land uses). Vehicles are not permitted to enter the access lanes from the mainline at other points. (Please refer to Figure 5.6, next page.) Both alternatives allow movements from the mainline to access lanes only at specified entry points ('a' in both drawings). The design of the landscaped parkways separating the access lane from the mainline

further prohibits mainline vehicles from maneuvering into the access lane directly from the intersection (a). From cross streets, right-hand turns to the Pike are allowed to access the local lanes directly (b). These portions of the local lanes are a single traffic lane only. Buses use the Pike mainline to move through intersections.

Figure 5.6: Accessing Local Lanes – *Local lanes are accessible after the intersections only at designated entry points ('a' in both alternatives)*
Source: AECOM

c. Improved Pedestrian Crossings

The separation of access lanes from the mainline improves pedestrian crossing conditions and addresses this fundamental safety issue along the Pike. Vehicles that formerly used driveways to access local land uses came into direct conflict with pedestrians when turning. Their high speeds meant they did not slow down sufficiently to make these turns and that they were not alert to pedestrians walking across the driveways. In this plan, the cars traveling near pedestrians are moving in more predictable patterns at much slower speeds. The boulevard design also proposes alignment of crossings that keep pedestrians in line with sidewalks and do not move them across curbs and streets at the corners of intersections.

No pedestrian bridge is recommended to cross the Pike as the boulevard design and the recommended treatment of sidewalks and intersections amply address issues of pedestrian safety.

d. The Weave (Movement from Access Lanes to Mainline)

One of the key design features of the boulevard is its use of dedicated access lanes for local land use access. This is an important feature for traffic operations in that it helps to preserve the functional classification of Rockville Pike as an arterial road, separating local trips onto a street section (the access lanes) designed more appropriately to their general needs. The boulevard design limits access to and from these lanes to a single point in each block; traffic moves into the access lanes after intersections and back to the mainline before intersections. Likewise, the access lanes merge back into the mainline once per block in advance of the intersection. The intent of this operational concern is to allow buses to use the Pike for its entire length and not have to turn on cross streets, disrupting their service to Pike businesses and customers. This is also how vehicles would continue along the Pike, merging back into the mainline in advance of intersections to continue through the Pike. Figure 5.7 illustrates how these two movements (from the access lane to the mainline and from the mainline to the access lane) are accommodated through a "weave" condition.

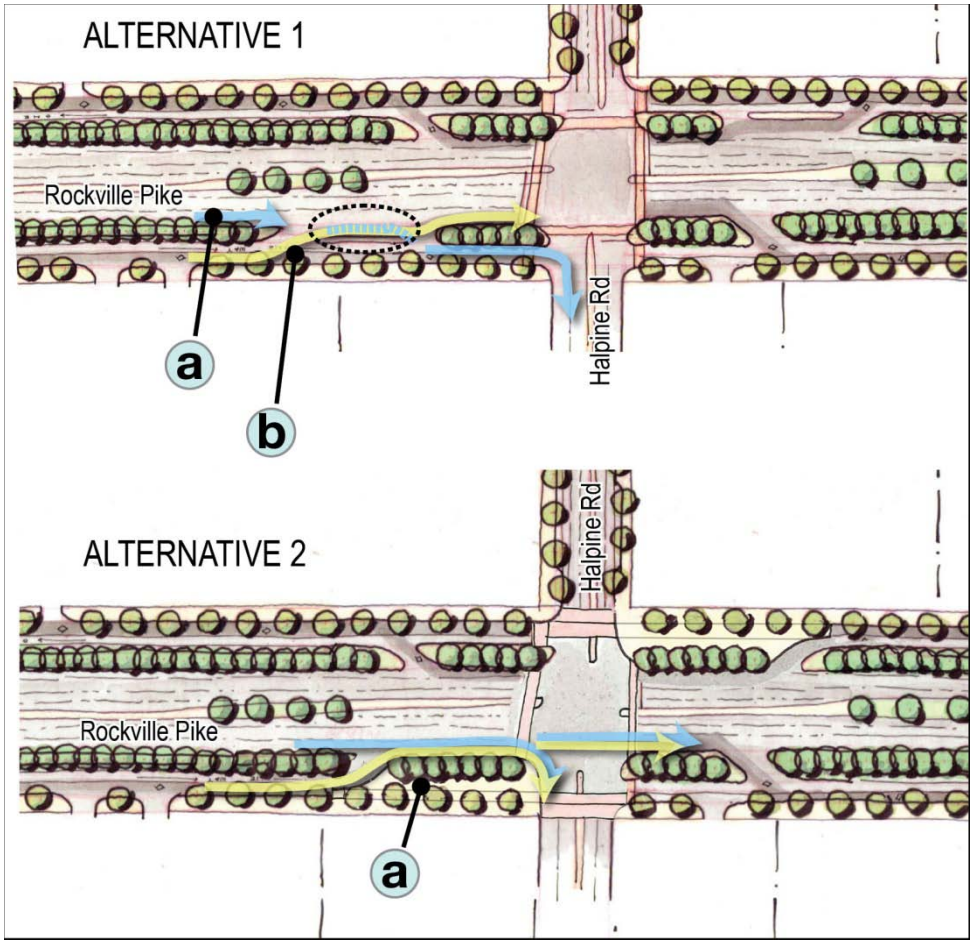

Figure 5.7: The Weave Movement *– The principal operational concerns about the crossing movements in Alternative 1 are the space in which these movements merge and the users who will be making these movements. This space is shown on the diagram here as a dotted ellipse, and is approximately 100 feet, though this could be extended as needed and as block lengths allow. It is effectively space that cannot accommodate active land uses, and is not intended for high-speed movements but rather as yielding space for vehicles waiting to move back into the Pike mainline.*

Alternative 1*.The main features of this alternative are options at the intersection approach to transfer right turns away from the outermost Pike mainline lane (a). Vehicles wishing to continue along the Pike would need to leave the access lanes (b).*

Alternative 2*. In this alternative, the principal change is the elimination of access to the cross street on the approach (a). All turn and through movements happen from the Pike mainline.*
Source: AECOM

e. Right Turns

In Alternative 1, see Figure 5.8, below, right turns are allowed onto cross streets from the local access lanes, which are controlled with stop signs when they intersect with cross streets. Right turns from the mainline onto cross streets are permitted by use of the access lanes. Right turns from the mainline may be prohibited to promote safety yet are maneuverable by emergency vehicles, if needed. The weaving lane, as described in the previous section, is designed to allow this movement to happen safely. As a matter of boulevard design, left turns from the Pike mainline are allowed only at signalized intersections, and the design of the boulevard does not propose that any intersections be signalized beyond those already signalized today. Any new unsignalized network streets will be allowed right-in, right-out access to the Pike access lanes only, using these to connect to the Pike in advance of the next full intersection.

This presents a new series of traffic rules to govern Pike operations, although it also offers particular capacity benefits, especially in that it reduces driveway entrances and allows right-turning vehicles from the Pike mainline a chance to avoid queues and use the access lanes to make their turns.

Figure 5.8: Right Turns *– Right turns from the Pike mainline are allowed in either alternative, but the crossing access to and from the access lanes on the intersection approach means that they may be controlled differently from one design alternative to another.*

Alternative 1 *(refer also to the weave diagram, Figure 5.7). Right turns wishing to leave the Pike mainline and use the access lane can do this (a). This right turn is controlled by a stop sign, which eliminates the need for complex signal timing at the main intersection. Right turns from the mainline to a cross street are still permitted (b), but will not be permitted on red lights as to mitigate conflict with right turns coming from the access lanes.*

Alternative 2*. Because the access lane ends in advance of the intersections, both movements here share the outer lane of the Pike mainline to make right turns and through movements. The implications of this are that drivers do not have an option of avoiding traffic queues in the outer lane, but it does eliminate potential conflicts that the weave presents. One advantage to this design is that it does allow right turns on red lights, thus potentially reducing intersection delay.*

Source: AECOM

f. Bicycle Movements

In general, the access lanes of the boulevard are intended as a direct bicycle path along the length of the Rockville Pike corridor. Bicycles may either share the dedicated bus portion or the general vehicle portion of the access lane. Bicycle lanes have not been designated adjacent to curbs due to the expectation of transit vehicles using the bus lane: when buses stop for passengers, a curbside bicycle lane places cyclists directly in the path of boarding and alighting passengers. Cyclists will move around stopped buses much as they would move around parked cars. Figure 5.9, below, illustrates bicycle movements at intersections.

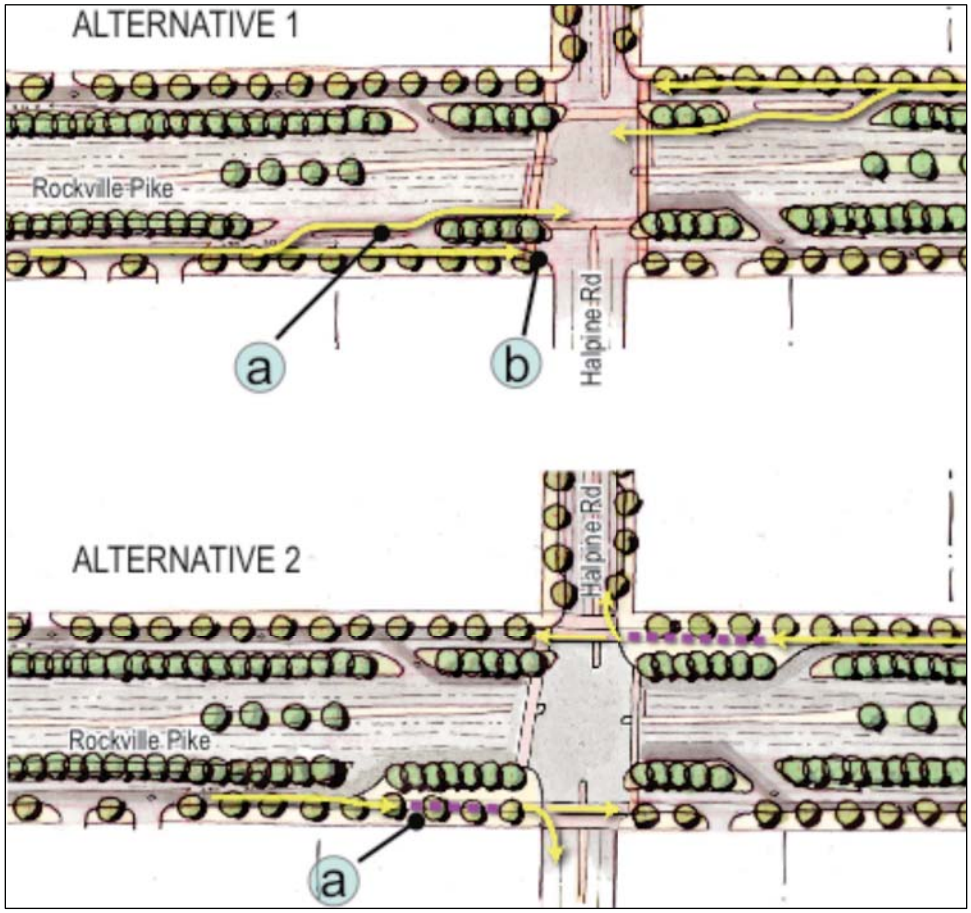

Figure 5.9: Bicycle Movements - *The boulevard provides an opportunity to connect bicycles along the length of the Pike. The two design alternatives present different options for how cyclists may proceed through intersections.*

Alternative 1*. Cyclists have an option depending on their comfort level. They may either continue through intersections by merging into the Pike mainline (a), which is likely not to be a desirable option, or they may continue on the access lane. If cyclists continue in the access lane, they will be behind the vehicle stop bar of the cross street, implying that they must walk bicycles across the intersection as pedestrians (b) or turn right. If they proceed through the intersection on the Pike mainline, they yield to exiting traffic in the merge lane just as a bus would.*

Alternative 2*. Because cyclists share the outer lane of the access way with buses, a special bike path is added in the space between the intersection corner and the end of the vehicle access lanes (dashed purple line, also item a). Cyclists may continue on this and cross the intersection with pedestrians. This points to an advantage of Alternative 2 for cyclists and pedestrians: they are afforded a direct crossing of the intersection, but this requires the stopping of vehicles on the cross streets farther back, potentially increasing the time needed for signal clearance.*
Source: AECOM

g. Signal Phasing

Signal phasing can occur much as it does today, with an added restriction of not allowing right turns on red from Rockville Pike's mainline or the intersecting streets to improve pedestrian and bicycle safety. Left turns from Rockville Pike are permitted, though vehicles re-entering the mainline from access lanes in advance of an intersection will not be allowed to make left turns at that intersection.

Boulevard access lanes are controlled with stop signs where they intersect with cross streets and as such do not need a separate signal phase. The vehicle stop bar for

cross streets is located behind the alignment of the boulevard access lanes. However, vehicles moving along the access lanes cannot use these continuously to avoid the Rockville Pike mainline; at the stop-controlled intersections, vehicles may make right turns only at stop-controlled intersections. This is intended to avoid conflicts between right-turning vehicles on the mainline and vehicles on the access lane attempting to cross an intersecting street.

h. Bus Movements

Buses leave the access lane and continue through the Pike mainline in both alternatives. However, in Alternative 1 they pass through the weave section and as such are controlled to allow right-turn exiting movements out from the Pike.

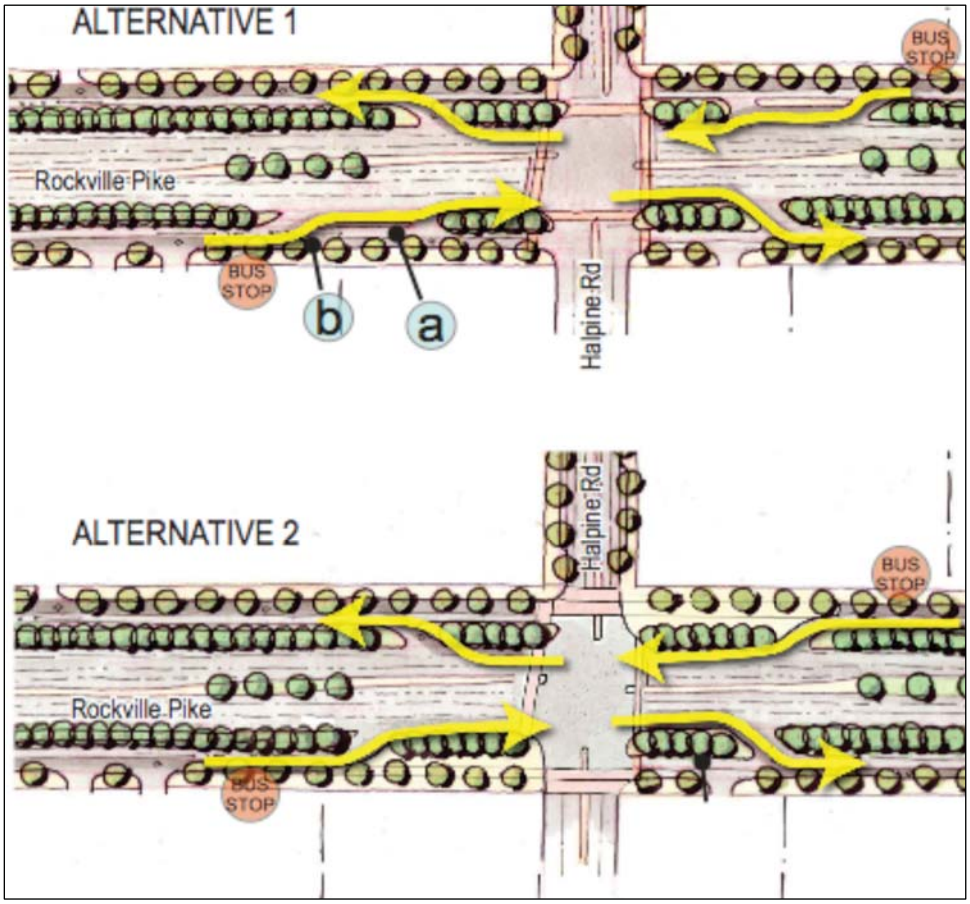

Figure 5.10: Bus Movements - *The diagram shows alternative ways to accommodate bus movement along the proposed boulevard. It also indicates the location of bus stops. Bus stops are located on the near side of intersections. However, the needed length of the merge back into Pike traffic (in either design alternative) means that stop locations are at least 150-200 feet from the actual intersection corner.*

Alternative 1. *Buses use the weave lane to enter back into the Pike (a). However, as discussed previously, the weave lane permits both this movement and an 'exit' movement that allows right turns from the Pike to use the access lanes to make right turns. These exiting movements will have the right-of-way, meaning buses and other vehicles entering in the weave lane must yield to exiting traffic before the weave lane begins (b).*

Alternative 2. *The elimination of the weave means that buses simply yield to oncoming traffic. Buses turning left from the Pike onto a cross street cannot cross all of the Pike's lanes if they are merging back into the road from an access lane. This has implications on routing and suggests that buses cannot use the access lane to make stops for the length of a block in advance of the intersection where they are turning.*
Source: AECOM

4. Intersection Realignments

The plan moves the Rockville Pike/Twinbrook Parkway intersection slightly to the south, simplifying the geometry at this intersection by introducing a perpendicular angle between Twinbrook and the Pike. (See Figure 5.11, next page.) This provides an opportunity for a new street connection extending across and to the west of Rockville Pike.

The intersection of Edmonston Drive and Rockville Pike will also have an added eastbound right turn lane. (See Figure 5.12, below.) This helps facilitate traffic flow to Rockville Pike and alleviates congestion at the intersection of Wootton Parkway and Rockville Pike. The addition of this turn lane requires a slight realignment of the Edmonston centerline as it intersects with the Pike as to avoid a property impact to the southwest corner of the intersection. The City should work with any business dislocated as a result of the street realignment.

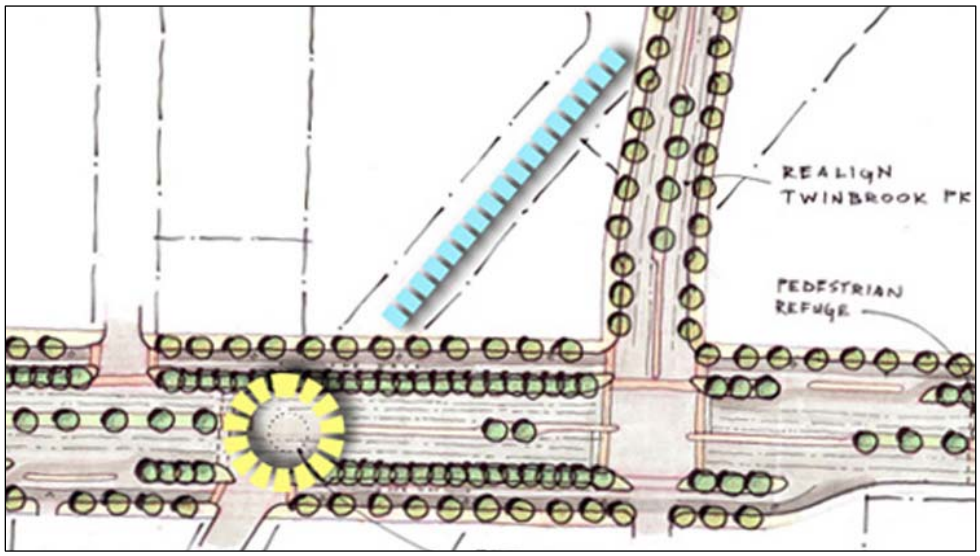

Figure 5.11: Twinbrook Parkway Realignment *– Twinbrook is recommended to be realigned, simplifying the geometry of its intersection with Rockville Pike to a perpendicular angle. Realignment will improve general circulation and pedestrian safety. The existing Twinbrook alignment is shown on this diagram in the light blue line. Rollins Avenue would remain in place, with an emergency signal introduced to allow egress from the fire station when needed but only permitting right-in, right-out access to vehicles under regular operations.*
Source: AECOM

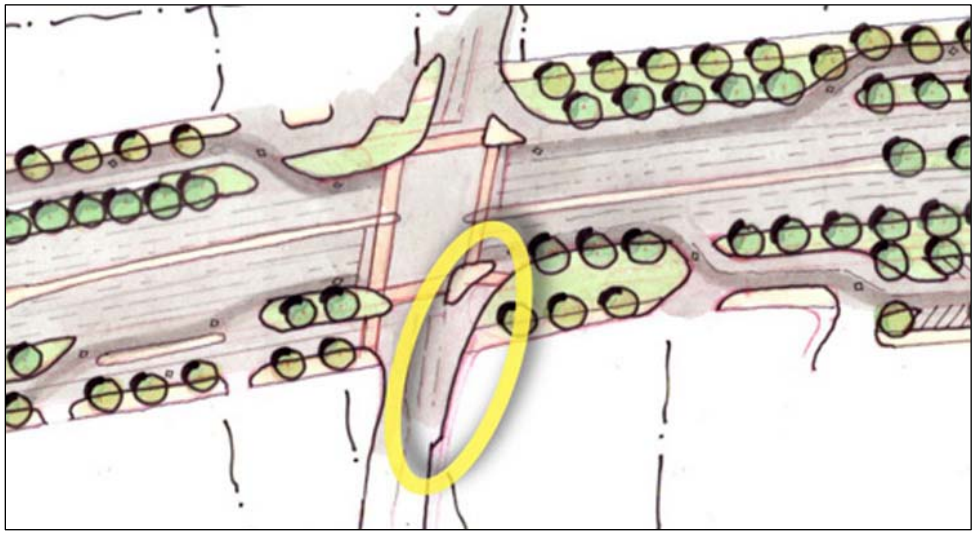

Figure 5.12: Edmonston Realignment *– At the intersection of Edmonston and Rockville Pike, an eastbound right turn lane is introduced to enhance intersection capacity and alleviate traffic congestion at the Wootton Parkway and Rockville Pike intersection.*
Source: AECOM

D. STUDY AREA TRANSPORTATION ELEMENTS

The recommendations included in this section focus on the entire study area and not just on the Rockville Pike. The classification of each street is identified in the Rockville Pike Street Master Plan to the left. The Pike maintains its arterial classification. Halpine Road and Twinbrook Parkway serve as collectors.

The "A" and "B" streets are local streets. "A" streets serve more of a shopping street function than "B" streets. "A" streets include Chapman Avenue, Congressional Lane, and Jefferson Street. "B" streets include Rollins Avenue and Bou Avenue.

No new pedestrian connection is recommended across the Metrorail right-of-way. Rather, as an alternative, the plan recommends improving the quality of the walking experience along Lewis Avenue on the east side of the Metrorail right-of-way. Sidewalks and tree planting would then facilitate walking from the Twinbrook neighborhood to the Rockville Pike. The notion of pedestrian bridges across the Metrorail right-of-way could be revisited in the future as redevelopment along the Pike might make such a costly and complex undertaking desirable.

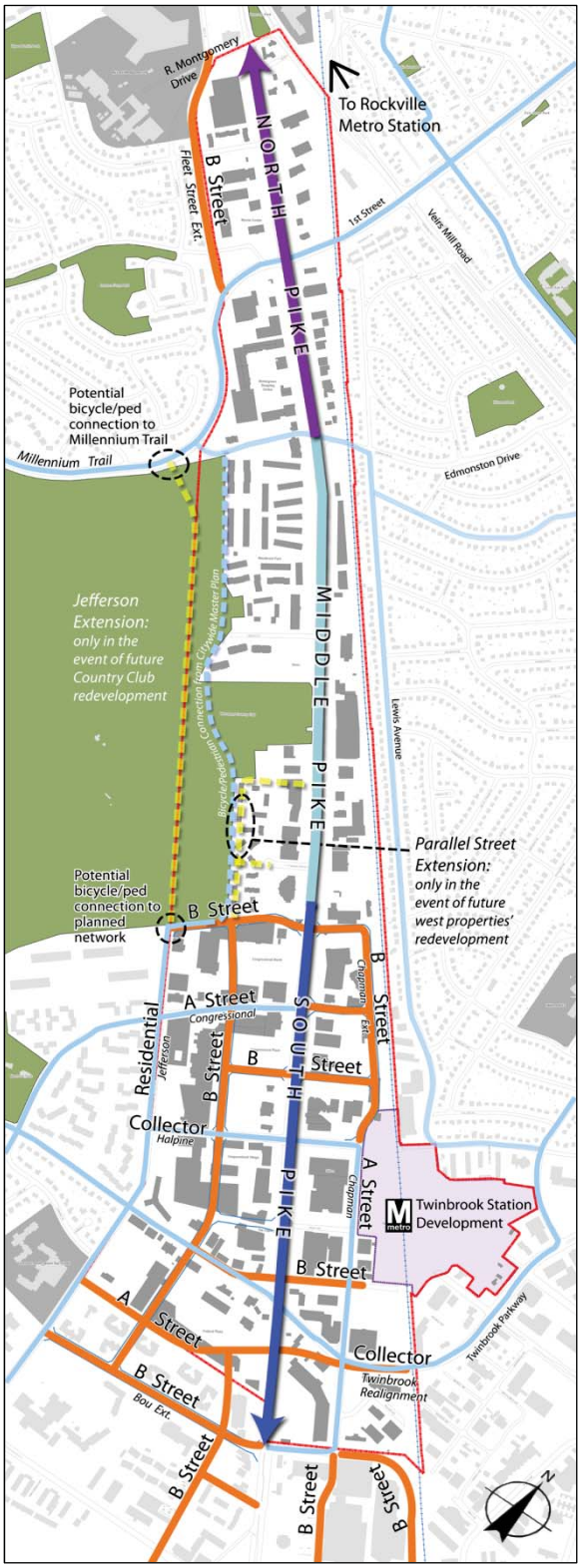

Figure 5.13: The Rockville Pike Street Master Plan-
The proposed new streets are shown in orange. Existing major streets are shown in light blue. The study area boundaries are shown in red. More specific features of the map are explained in the following pages.
Source: AECOM

1. Expand the Street Network

Development Principle #8: Rockville's Pike will be well connected with surrounding areas, providing choices for cars and pedestrians to access and move between properties along the Pike.

The expanded street network suggested in this plan is designed to increase connectivity and movement choice within the study area, create a regular pattern of developable urban blocks, and space intersections for frequent and convenient pedestrian crossing opportunities. The proposed street alignments have been selected to guide the placement of new streets as development occurs along Rockville Pike. Specific street alignment recommendations for the North, Middle, and South Pike areas are described below.

a. The North Pike

The primary street addition in the North Pike district is the extension of Fleet Street to connect Wootton and Edmonston and to provide a circulation alternative to Rockville Pike.

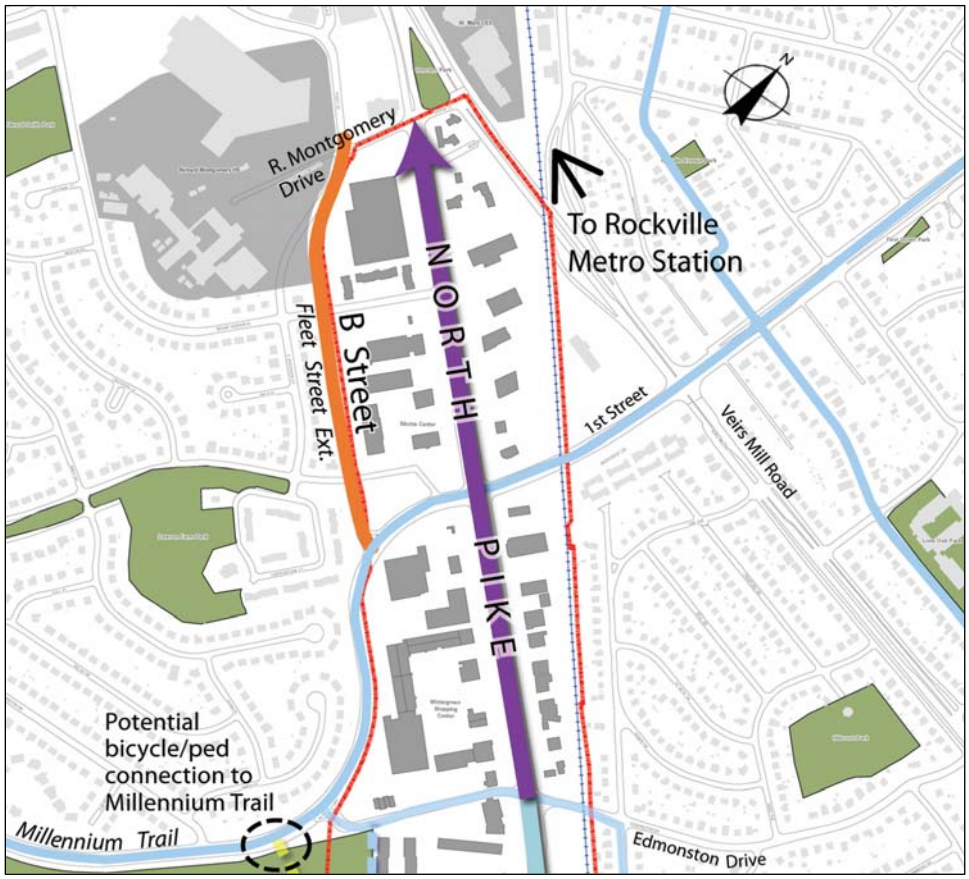

Figure 5.14: The North Pike- The proposed new streets are shown in orange. Existing major streets are shown in light blue. The study area boundaries are shown in red. Source: AECOM

b. The Middle Pike

This section is the narrowest portion of the Pike, with the smallest concentration of space and the fewest roadway connections. Recommendations on how to address the unique conditions of the Middle Pike are listed below.

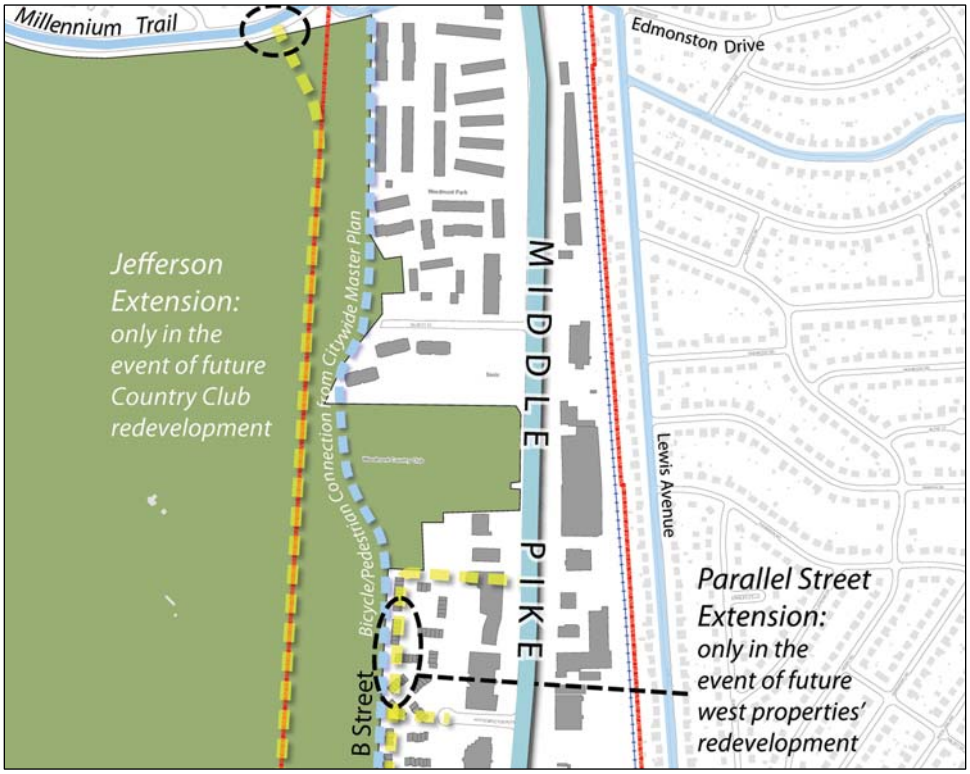

Figure 5.15: The Middle Pike- *The proposed new streets are shown in orange. Existing major streets are shown in light blue. The study area boundaries are shown in red. The dotted blue line shows the alignment of the bicycle pedestrian connection recommended in the Citywide Master Plan. The yellow dotted line indicates the potential alignment of the Jefferson Street extension in the event of future redevelopment of the Woodmont Country Club. For a more extensive description of these recommendations, refer to the text.*
Source: AECOM

The Boulevard Access Lane West of the Pike – One of the most notable land uses along the Middle Pike is the Woodmont Country Club. The proposed boulevard access lane encroaches on Country Club property. A roundabout is proposed to preserve the through movement of the access lane and to emphasize and facilitate entry to the club. (See Figure 5.16, right.) While the current land use remains in place, this section of the Pike will maintain its distinctive character. If the property were redeveloped, it would have the same zoning designation as the areas immediately to the north and the south of it, confirming the built-to line prevalent along the boulevard.

Parallel Street Extension – Streets parallel to Rockville Pike are an important part of the plan's concept: they help circulation in the Pike corridor area and provide additional access to properties. If redevelopment of the properties along the west side of the Middle Pike south of the Country Club entrance occurs, a "B" Street parallel to and immediately west of the Pike should be extended along the rear lot line of these properties. If additional development occurs in the Woodmont Country Club property or in the properties north of the Club entrance, a "B" street should be extended to the back of those properties as

Figure 5.16: The Entrance to the Woodmont Country Club – *The proposed roundabout at the entrance of the Country Club. This recommendation has an operational traffic benefit but also provides an opportunity for aesthetic enhancement. It is not an absolute requirement of the plan and should be evaluated in the context of any future proposal aimed at redeveloping the area.*
Source: AECOM

well following the current alignment or following an alignment that takes into account the proposed development program and the area geography.

The Jefferson Extension – An extension of Jefferson Street should be considered as a component of any future land use changes to the Country Club that affect that portion of the Club's property in the Pike planning area. Figure 5.15 depicts a conceptual alignment for this addition. The addition of a parallel street offers immense potential to assist Rockville Pike's traffic distribution needs. The potential extension would connect each current end of Jefferson Street and would allow local travel to reach the west side of future Rockville Pike redevelopment without using the Pike. The Jefferson extension should incorporate bicycle lanes to strengthen the connections between existing bicycle and pedestrian infrastructure at the north and south ends of the Pike corridor. The Millennium Trail along Wootton Parkway and the Bethesda Trolley Trail are two of the key bicycle and pedestrian connections throughout central Montgomery County. While implementing the multi-way boulevard design for Rockville Pike can take an immediate step in linking the Pike to these two facilities, a future extension of Jefferson Street should further accommodate cyclists and pedestrians in making the link. A design recommended to address this issue is on-street bicycle lanes along an extended Jefferson Street, using a street cross section similar to the "A" Street section in Figure 5.19, page 5.21.

c. South Pike

The South Pike offers the best opportunities to expand the corridor's street network. It also allows for the most functional diversification. Street additions in the South Pike district are specified by their assignment in terms of a generalized functional classification. Please refer to Figure 5.17, next page.

Rockville Pike maintains its current arterial classification and purpose to move traffic. Halpine Road and Twinbrook Parkway serve a collector function and connect local land uses to the Pike. The purpose of local streets is to serve an access function. This function helps to guide the development of the street network. The "A" and "B" streets are essentially local streets. Their different names imply a different accommodation of land uses: "A" streets serve more of a main street function than "B" streets, which are secondary local streets intended to provide access to parking and to enhance internal circulation. The street classification is described and illustrated in great detail in Section 2. Establish a Street Hierarchy, starting on the next page.

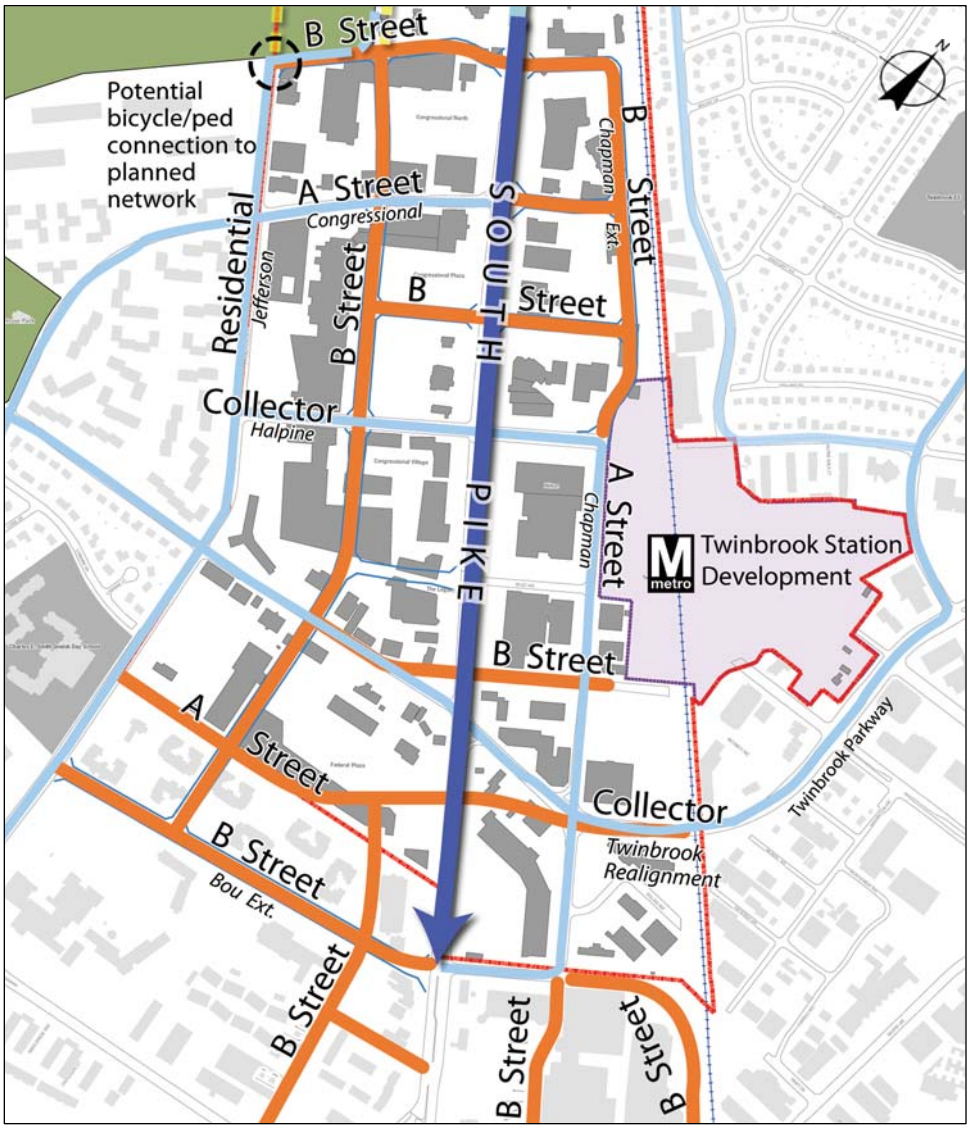

Figure 5.17: The South Pike- *The proposed new streets are shown in orange. Existing major streets are shown in light blue. The study area boundaries are shown in red.* Source: AECOM

2. Establish a Street Hierarchy

Development Principle #3: The Pike will feature a safe and pleasant environment for walking and biking.

In addition to Rockville Pike, a hierarchy of streets helps to establish a framework for development standards and how the transportation network will serve buildings. Rockville Pike is the dominant street of this classification system and its characteristics have already been described.

The street types include a collector street intended to serve denser land uses and to connect Rockville Pike to local streets. Currently, Halpine Road is designated as

the primary collector street, due in part to its existing multi-lane cross section and also to its connection across Rockville Pike to the Twinbrook Metro station.

a. Collector Streets

Collector streets function as a smaller version of Rockville Pike's arterial role, connecting different parts of the Pike corridor. Based on current design for collector streets, multiple travel lanes may be provided. On-street parking is also provided directly adjacent to travel lanes to add to existing parking supply and to support shops and offices that may be located along this street. The street features a 15 foot sidewalk section, as the direct connections between different parts of the study area suggest that it will be heavily used as a pedestrian corridor.

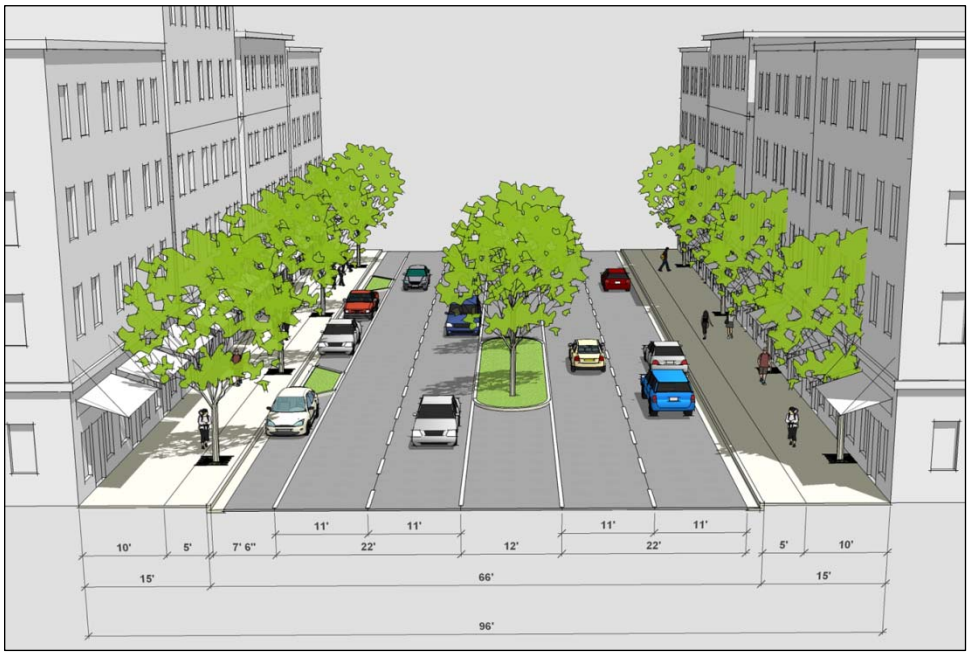

Figure 5.18: Collector Streets – *Collector streets serve denser land uses and connect Rockville Pike to local streets.*
Source: AECOM

b. "A" Streets

"A" streets are intended to be shopping and office streets with sidewalks and streetside landscaping that foster a high level of pedestrian activity. Their function is more to provide access to uses rather than just provide mobility, whereas collector streets are intended to share this focus evenly. In promoting access in this way, the emphasis of the design is a balance of vehicle movement and bicycle and pedestrian access, and thus is intended to support both on-street parking and bicycle lanes. As these are retail/commercial streets that buildings and land uses will front directly, they also contain sidewalks and streetscapes with a combined minimum width of 16 feet.

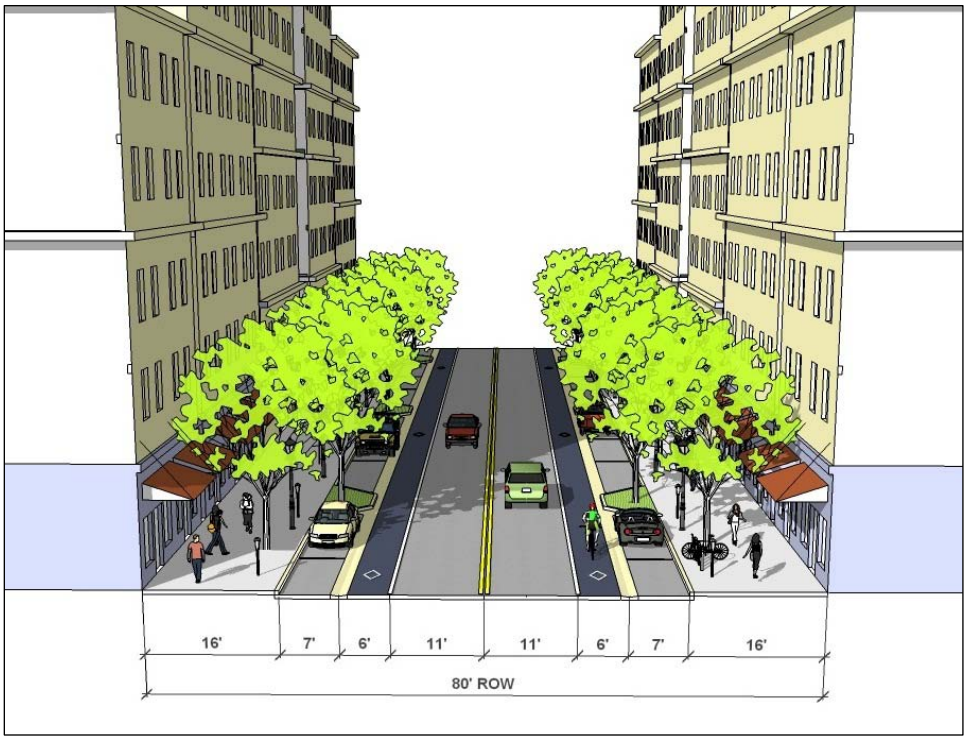

Figure 5.19: "A" Streets - *While collector streets are intended to equally serve access and mobility functions, the A street is intended to be more of a retail-based main street and as such serves bicycles, pedestrians and vehicles (in both movement and parking). The signs on the buildings remain visible from cars and pedestrians. "A" streets include Chapman Avenue, Congressional Lane, and Jefferson Street.*
Source: AECOM

c."B" Streets

These are intended to serve a more local access function. "B" streets are not typically located where buildings are oriented for primary entrances and facades, although this is not a rule. They will likely include side entrances and, depending on subdivision of parcels, may be the primary access street. In general, the intent for their land use is

Figure 5.20: "B" Streets – "*B" streets are intended to provide local access and are generally smaller in footprint. "B" streets include Rollins Avenue and Bou Avenue.*
Source: AECOM

not based on retail uses, but rather for offices and residential entrances. As a result, they are not expected to carry as much pedestrian traffic. In terms of circulation and traffic, they are intended to provide connections to parking structures, service alleys, and any surface parking located behind buildings.

d. Alleys

As detailed further in Chapter 6: Rockville Pike District Form Code, rear alleys are an important and helpful means of access to properties, especially for deliveries and other service trips. In urban environments, alleys often provide access to parking, especially when development requirements have placed parking behind buildings.

A typical alley width, as found in a mixed-use environment such as Rockville Pike, is between 16 feet and 20 feet. In many jurisdictions, concerns regarding passable widths for fire response vehicles have led to a requirement for a minimum of 20 feet of 'clear space' (i.e., space between vertical elements such as buildings, signs, or even curbs) to be accommodated in any public street.

Construction of alleys should be coordinated with land development, but will likely require active participation from the City in construction. Typically, alleys would be shared between two adjacent lots, constructed over the rear lot line with half the required right-of-way or easement space yielded from each of these two lots. In many cases, though, this will not be practical, especially when private properties share a lot line with the Metrorail right-of-way and associated easements. In these cases, development of the parcels should plan to incorporate the entire alley into the back of the current parcel.

3. Reduce Parking Requirements

Land Use Key Finding #8:
Extensive surface parking detracts from the quality of the public realm.

Under the zoning ordinance that currently regulates the study area, retail parking standards require a maximum of 5 parking spaces for each 1,000 square feet of building. The standards assume that each land use is stand-alone. The implication is that a customer needs a parking space to buy groceries and then decides to have lunch nearby, he/she will need another parking space next to the coffee shop. Given the segregated pattern of land use that exists along the Pike, this set- up makes perfect sense. It also creates a phenomenon where surface parking becomes the largest and most conspicuously visible land use along the Pike.

This plan addresses the issue of parking differently. It recognizes that the creation of walkable conditions and the proposed integration of uses diminish the need to require separate parking for each land use. In this more urban and traditional land use pattern, the so-called "park once" goal can become reality. A customer can park once and walk to several locations that are within walking distance from the place he or she left the car. A reduction in parking means that the quality of the walking experience is improved. Additionally, the rising costs of gasoline make

transit a more attractive option and will further reduce the need for parking spaces along the Pike.

The Parking section of each Frontage Type table of the Rockville Pike District Form Code in Chapter 6: Rockville Pike District Form Code recommends reducing parking requirements in a number of ways. It suggests waiving requirements for buildings smaller than 3,000 square feet and reducing the number of spaces required (per square foot or unit) as development intensity increases and one moves closer to the Twinbrook Metro Station (Table 1.2.3 F, Additional Standards for all Street Frontages). It also allows off-street parking to be counted against requirements and provides the opportunity to locate parking off-site within a 1,300 foot radius or as shared parking.

From the standpoint of a retail strategy, a certain amount of adjacent/on-street parking is needed as 'teaser' parking for short consumer trips but fewer spots are required with transit access and/or structured parking. Part of the transition of the Pike from auto-oriented to pedestrian-oriented will require merchants and developers to consider the average length of shopping trips and the synergy between neighboring businesses. Parking capacity on surface lots should eventually shift to a mixture of on-street/surface and structured, as dictated by relative land values.

4. Facilitate Movement

Development Principle #10: Appropriate signage, lighting, and wayfinding tools will make the Pike an inviting and easily navigable environment.

The City needs to develop a coordinated and hierarchical signage system for the study area that takes into consideration the need to direct vehicles approaching at different speeds, as well as bicycles and pedestrians. The multi-way boulevard design and expanded street network recommended for the Pike will facilitate wayfinding and movement in several ways:

- From a vehicular standpoint, the new roadway design slows local traffic and simplifies potential movements. Rather than offering a series of curb cuts and parking lot entrances off a high speed road, automobiles will enter the boulevard's local access roads at a limited number of well-defined points, and more easily navigate toward their desired destinations.
- The smaller blocks, safer roads, and enhanced pedestrian environment will encourage pedestrian use of the Pike and facilitate window-shopping. Informational kiosks and maps can be strategically located—at major intersections, in parking garages, near bus stops, etc. —to help pedestrians find their way around.
- The separation of through traffic and local traffic will enable the City to tailor lighting on the Pike towards different needs. While the six through lanes can be

served by highway style illumination, the local access roads can be enhanced by smaller-scale streetlights.

E. SUMMARY OF RECOMMENDED TRANSPORTATION IMPROVEMENTS

This section summarizes in a comparative chart short- and long-term transportation improvements and benefits.

Short-Term Improvements	Description/Benefit
Extension of Fleet Street from Ritchie Parkway to Mount Vernon Place	This short extension provides a network alternative to the Wootton Parkway/Rockville Pike intersection, especially for traffic wishing to access development on the west side of Rockville Pike and north of Wootton.
Upgrade pedestrian signal infrastructure	Many intersections currently rely on push-button pedestrian signal activation. Signals should allow a walk phase concurrent with all green lights (even if the walk phase begins a warning signal, or 'flashing DON'T WALK' beacon, while the corresponding street's vehicle traffic still has a green light).
Pedestrian crosswalk improvements at Edmonston/Rockville Pike intersection	Some crosswalk approaches (e.g., Edmonston on the east leg of the intersection) do not feature proper ADA-compliant curb ramp design. In some places, pedestrians who need to use ramps must move close to or into active travel lanes. Improvement of this crossing would enhance pedestrian safety and confidence. This intersection is especially important because of Edmonston's connection across Metrorail, providing a key link from the Pike corridor to adjacent neighborhoods in the short term.
Pedestrian crosswalk improvements at Templeton/Rockville Pike intersection	Crosswalks should be placed across Rockville Pike on both sides of Templeton. (Presently, there is only a crossing on the north side of the intersection). This provides a more immediate and convenient crossing opportunity. In addition, traffic signals should be modified accordingly to accommodate pedestrian crossings.
Pedestrian crosswalk improvements at Congressional/Rockville Pike intersection	Crosswalks should be placed across Rockville Pike on both sides of Congressional. (Presently, there is only a crossing on the north side of the intersection.) This provides a more immediate and convenient crossing opportunity. Additionally, traffic signals should be modified accordingly to accommodate pedestrian crossings.

Long-Term Improvements	Benefit
Pedestrian crosswalk marking at unsignalized intersections (across stop-controlled approaches only)	Intersections without signal control can feature crosswalks behind which vehicle stop bars are located. Specific locations of improvement include: • Talbott Street • Bouic Avenue • Thompson Avenue
Rockville Pike Multi-way Boulevard	Design recommendations and benefits of the boulevard are discussed throughout the Plan.
Realignment of Twinbrook Parkway/Rockville Pike Intersection	The realignment allows more consistent block length and cross-street spacing per the Street Master Plan. It also eliminates the current skew in intersection angle, making turning movements more visible from all points of the intersection and contributing to pedestrian safety.
Extend Congressional to the east, from Rockville Pike to Chapman	The extension provides a proper public street alternative for circulation, helps to offset heavy turning movement need at Congressional intersection, and gives motorists a travel alternative.
New Street at Rockville Pike between Congressional and Halpine	This new street increases network potential for local trip distribution and property access and establishes a more regular spacing of the block (providing a more amenable pedestrian environment). It is not recommended as a full-access intersection and does not allow vehicles to cross Rockville Pike. (Only right-in, right-out access is permitted.)
Jefferson Street Extension from current terminus at the south boundary of Woodmont Country Club to Wootton Parkway near Edmonston Drive	The extension connects the Mid-Pike and South Pike sections of the corridor and provides an alternative to the Pike for local trips, potentially alleviating significant Pike vehicle travel demand. The Street Master Plan shows the alignment of this extension as representing the western boundary of the Rockville Pike study area. The actual alignment may vary, but the benefits of the added connection are key, particularly if there is significant redevelopment on the Woodmont site.
Extend Chapman Avenue as a street	The extension of Chapman provides an important circulation opportunity and an alternative to using the Pike for local trips and provides connections from the South Pike area to Twinbrook Parkway and Montrose Road. The extension does not carry the street north through the entire Pike corridor due to dimensional constraints on properties on the east side of the Pike.

F. PRINCIPAL LAND USE ELEMENTS

This section describes the land use vision for the Rockville Pike study area. The proposed land use elements were tested in three model sites along Rockville Pike during the five-day charrette held in July, 2008. The concept for each site, none of which has been formally proposed by the owner or approved by the City, followed a development program that took into consideration market potential (at that time) and the physical characteristics of the site. The design recommendations and economic analysis for each site can be found in Appendix A: Model Sites.

The results of the model site analysis were used to develop the specific code recommendations found in Chapter 6: Rockville Pike District Form Code. For the most part, the recommendations on how to implement the elements described in this section of *Rockville's Pike: Envision a Great Place* can be found in Chapter 6: Rockville Pike District Form Code. Additional recommendations can be found in Chapter 7: Implementation, Section D.

1. Make the Pike Walkable

Development Principle # 3: The Pike will feature a safe and pleasant environment for walking and biking.

Land Use Key Finding #5: *The widely separated buildings along the Pike fail to create an attractive or walkable public realm and make walking (and the use of public transportation) challenging, unsafe, and unpleasant. Pedestrians share crossing times with vehicles resulting in short signal times at intersections and potential conflicts with vehicles turning across the pedestrian's path. Accommodations for transit users are minimal.*

There are several conditions that will help create a pleasant environment for walking and biking along the Rockville Pike. Safety is one of those conditions. The transportation elements described in the previous section (access lanes, intersection design, operation recommendations and a hierarchical street classification) help protect cyclists and pedestrians and create a safe place. The transportation improvements need to be supported by an urban form that will make walking and biking the pleasant experience envisioned by the community. The key elements to create great walkable places along the Pike include: spatial containment, building height, sidewalks, smaller blocks, a richly landscaped and detailed environment, and place diversity. These elements are described below.

a. Establish Spatial Containment

Today, individual buildings along the Pike are surrounded by surface parking lots that create vast expanses of impervious surfaces. The majority of these lots are minimally landscaped. These vast expanses of pavement, while convenient to the motorist, degrade the experience of cyclists and pedestrians.

Glossary: Build-to Line (BTL) – *A line appearing graphically on the regulating plan or stated as a setback dimension, along which a building façade must be placed.*

To achieve spatial containment, the plan recommends moving buildings forward and providing a continuous yet varied enclosure at the sidewalk level. To ensure that such enclosure is achieved while the process of redevelopment along the Pike is occurring, the Rockville Pike District Form Code's development regulations require that new buildings be built to the *build-to line*. (See Chapter 6 for details.)

Figure 5.21 illustrates how spatial containment can be created along the Pike, once the boulevard framework is in place.

Figure 5.21: Spatial Containment *– This rendering offers a bird's eye perspective of the Rockville Pike boulevard looking southwest. The image shows the spatial containment and the sense of place created by moving buildings toward the sidewalk. For reference, the intersection at the bottom right of the image is where Congressional Lane crosses the Pike.*
Source: ACP

b. Regulate Building Height

The height of buildings is also critical to establishing a sense of spatial containment. The plan recommends that buildings fronting Rockville Pike have a variable height of six to eight stories to frame the public realm. Different height standards are recommended for different parts of the study area to respond to the characteristics of the street frontage in which they are located.

For example, the tallest buildings should be located in the proximity of the Twinbrook Metro Station where potential exists for creating the type and intensity of uses that serve and promote transit. The height of buildings decreases toward the west side of the study area, in the proximity of existing residential areas.

The appropriate height of buildings was determined in three ways:

- Comments by the public indicated the desire to transition from approved higher densities around the Twinbrook Metro Station development to lower heights moving north and west in the study area;
- The three model sites described in Appendix A provided an opportunity to calibrate building height to the development program for each site; and
- The study of the physical massing of the model sites produced information to calibrate the proposed height of buildings to the width of existing and proposed streets.

Glossary: Public Realm *– Public realm refers to all areas to which the public has open access. The Rockville Pike Form Code will create a predictable public realm by controlling physical form and by providing the regulatory tools to achieve the public's vision. The absence of a form code, a tool not available at the time, prevented the vision of the 1989 plan from becoming a reality.*

Information related to the height of buildings measured by number of stories and related to street frontages can be found in Chapter 6: The Rockville Pike District Form Code.

Figures 5.22 and 5.23 compare existing and future conditions at the corner of Rockville Pike and Congressional Lane.

Figure 5.24 shows the view looking north on Chapman Avenue from the Twinbrook Metro Station. The corner of Chapman Avenue and Halpine Road has the

Figure 5.22: The Corner of Rockville Pike and Congressional Lane Today.
Source: ACP

***Figure 5.23: The Corner of Rockville Pike and Congressional Lane in the Future** – This rendering shows the pedestrian environment created by the multi-way boulevard. It also shows how the chamfering of buildings at key intersections creates special places. The image also shows how the regulations in the District Form Code, Chapter 6, fulfill Development Principle #1 that states: "Quality architecture and urban design will create a visually appealing environment along the Pike".*
Source: ACP

tallest building in the study area (12 stories high). Appendix A: Model Sites explains in detail how building height relates to the redevelopment framework set up by the street classification.

c. Require Continuous and Attractive Sidewalks

Rockville Pike's pedestrian environment is limited. Pedestrians encounter narrow sidewalks, sometimes only four feet in width, and complicated intersections with limited light time for crossing. Bus stops are often in the middle of long blocks, forcing transit users to search for the closest crossing or cross the Pike unprotected.

The plan recommends the creation of a continuous sidewalk on both sides of the Pike, extending to all side streets. The width of the sidewalks and the intensity of activities encouraged vary in different parts of the study area. The highest level of activities is encouraged along the Pike itself and lowest level of activities is reserved for streets that function as service access roads and therefore have less emphasis on pedestrian activities.

Figure 5.24: Chapman Avenue – *Chapman Avenue looking north toward the corner of Halpine Road.* *Source: ACP*

Chapter 6: The Rockville Pike District Form Code provides detailed streetscape standards for the study area. The standards are intended to ensure a coherent streetscape and set the parameters for the placement of street trees and other amenities such as benches, signs, street lights, etc. on or near each building site.

d. Reduce Block Size

The Pike features very long blocks, which restrict opportunities for pedestrian (and vehicular) connectivity. On the east side of Rockville Pike, the alignment of the Metro line parallel to the Pike has limited the number of roadway access points, resulting in an extended block length of almost 7,000 feet between Edmonston Drive and the next intersection to the south at Halpine Road. The second longest block

Land Use Key Finding #7: *The Pike is a barrier – Extremely long blocks restrict opportunities for linking the east and west sides of the corridor and limit development opportunities.*

(approximately 1,500 feet) is between the intersections of Edmonston Drive and First Street with the Pike.

Long blocks make walking unpleasant. Studies have shown that smaller blocks (somewhere between 200 to 400 feet in length) create optimal walking conditions and dramatically improve pedestrian connectivity. Smaller blocks give pedestrians choice of movement as well as variety of pedestrian conditions to choose from.

The plan recommends reducing the size of existing blocks in the study area as part of the redevelopment process. (See Figure 5.25, below.)

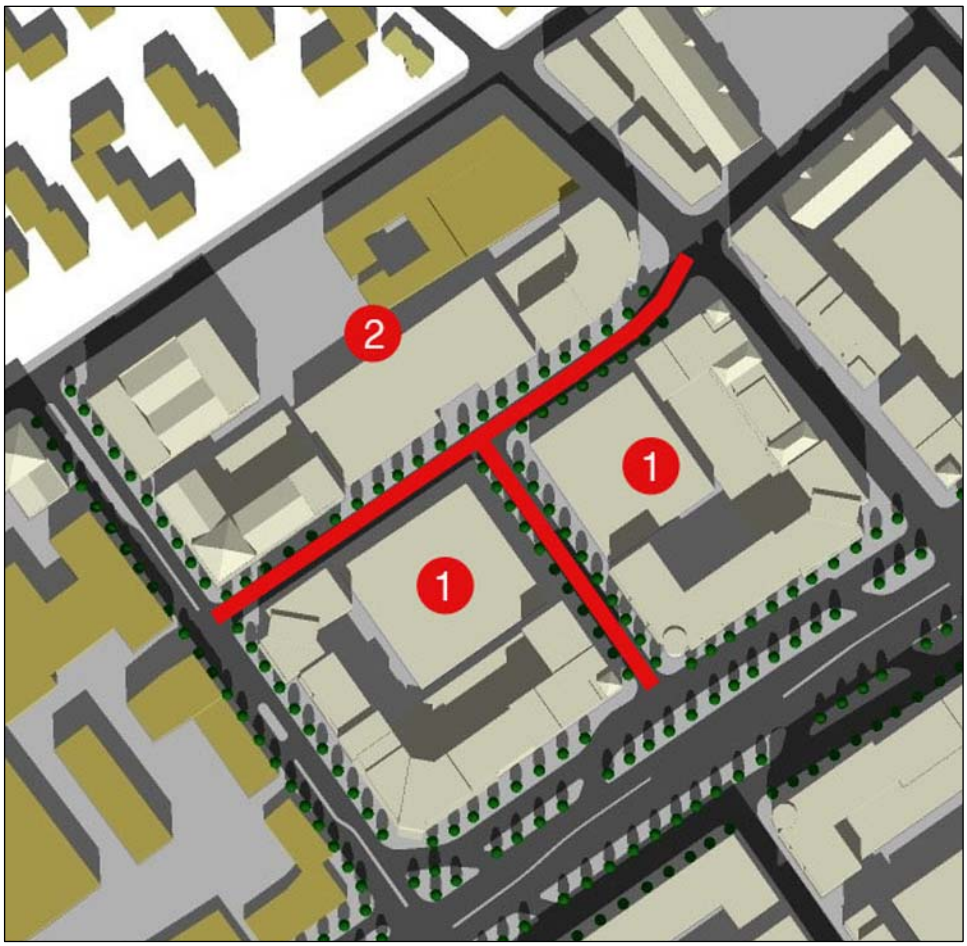

Figure 5.25: Creating Smaller Blocks *– The introduction of internal streets breaks up Congressional Plaza into three smaller, walkable blocks. The two blocks fronting the Rockville Pike will be approximately 450 feet by 450 feet (Coded as 1). The third block fronting Jefferson Street could be 450 feet by 1000 feet. (Coded as 2). The longer side facing Jefferson Street, however, is divided in two by a park.*
Source: ACP

e. Celebrate Important Intersections

The plan recommends changing the treatment of building frontages at special intersections. Special intersections are Twinbrook Parkway, Halpine Road, Edmonston Drive, Wooton Parkway, and First Street. At these intersections, the Rockville Pike District Form Code requires corner buildings to be chamfered (i.e., cut symmetrically at a 45 degree angle. See Figure 5.23.) The chamfering of buildings increases the face exposure of corner buildings and creates larger

pedestrian environment at corners. Such areas can be used for additional landscaping, for open-air cafes and restaurants, and to mark entryways to shops.

2. Mix Uses

Development Principle #5: The Pike will feature vibrant, walkable and mixed-use developments.

Uses can be mixed horizontally or vertically. The plan recommends the vertical integration of uses whenever possible, in a single building or on a single site, in a way that creates synergy among the uses, mutually benefits each use, and creates a vibrant atmosphere along the Pike. The plan recommends reserving the ground floors of buildings for retail uses and dedicating the upper floors to living or working spaces. The Rockville Pike District Form Code allows developers to respond to market demand and determine the appropriate mix of uses for each area, while maintaining compatibility with surrounding uses and forms. The Code also provides more flexibility in the number and type of land uses allowed in the more mixed-use street frontage areas (e.g., Urban Corridor, Urban Center, and Urban Core) by listing them in a more general form called a use type (e.g., "General Retail" rather than "Bookstore"). This avoids having to make an exhaustive list of uses within each street frontage area. Listed within these land use types are occasional subtypes (e.g., Retail: Liquor Sales) that could potentially be more of a nuisance. These uses are usually subject to more discretionary (Conditional Use) review than permitted uses.

The mixing of uses and diverse building types, along with street frontages that are uninterrupted by parking lots and curb cuts, will dramatically enhance the pedestrian experience and make walking and window-shopping more pleasant experiences.

Glossary: Mixed-Uses – *Horizontal mixed-uses are the combination of different uses next to each other. Vertical mixed-uses are the combination of uses within single structures.*

Land Use Key Finding #1: *The predominant land use pattern along the corridor is in the form of individual parcels each containing a single use.*

Land Use Key Finding #6: *Extensive surface parking detracts from the public realm. Impervious surfaces cover 60 percent of the study area. Pavement covers nearly 71 percent of that impervious surface area.*

3. Provide Open Space in the Study Area

Development Principle #4: Additional open space, landscaping, and environmentally friendly development will contribute to a greener Pike.

The provision of open space in the Rockville Pike corridor must be approached in the context of a transformation in the overall character of the Pike from a suburban corridor to a more urban place. In this context, open space is a more inclusive and encompassing proposition than in conventional suburban land use where parcels are conveniently separated and quantified. Open space in an urbanized context also performs more functions than passive and active uses. It becomes the focus of individual or social activities and those activities follow ever-changing patterns of use as opposed to structured functions. For example, a sidewalk along the boulevard may provide a stage for outdoor seating while a "B" street may become an informal

Land Use Key Finding #4: *Today, the Rockville Pike has the undistinguished look of a generic and aging suburban strip development. For the most part, one or two story buildings separated by a six-lane roadway and surrounded by surface parking characterize the area. This condition translates into a lack of building frontage continuity and a lack of physical containment—two hallmarks of great places.*

meeting place or a place for children play. A good example of how open space functions differently in an urban context is the Rockville Town Center where the half-acre Plaza is surrounded on four sides by ground-floor retail and institutional uses and varying building heights in a mixed-use setting. The following two sections describe the provision of open space in the Rockville Pike corridor: the greening of the Pike, and the provision of open spaces beyond the Pike. The diverse types of open space that can be created in the study area will meet the City goal of providing between 10-15 percent of new development as public use open space while reinforcing the urban character of the corridor.

a. Green the Pike

Development Principle #6: New public spaces on the Pike will provide a pleasant environment for community gathering and outdoors activity.

The plan recommends turning the multi-way boulevard into the primary public open space in the study area. The greening of the Pike is a relatively inexpensive strategy with tremendous implication on the quality of life and the quality of the shopping experience along the Pike. Similarly, the proposed treatment of sidewalks along "A" and "B" streets will extend the type of urban open space envisioned for the Pike well into the study area.

Trees along the Pike will provide shade during the summer, color during the fall, and flowers in early spring. When planted along the entire length of the Pike, trees will transform what is now primarily a concrete environment into an attractive, coherent, and welcoming place. The greening of the Pike would create a distinctive gateway to the community, accentuating a unique character and form and creating a striking contrast to the relentless suburban character of Route 355 to the north and south of the study area.

Greening strategies similar to the one proposed for the Rockville Pike have been implemented in many communities. Recently, the City of New York established the goal of planting one million trees in the next 22 years, with a focus on the greening of streets and boulevards.

b. Provide Open Spaces Beyond the Pike

"If we can develop and design streets so that they are wonderful, fulfilling places to be — community-building places, attractive for all people — then we will have successfully designed about one-third of the city directly and will have had an immense impact on the rest." Allan B. Jacobs

The Rockville Pike District Form Code sets several standards related to the type of public open spaces in the study area and their form. Green areas can be developed as one of four types: plazas (open space partially defined by directly abutting buildings and streets), greens (open spaces consisting of lawn and informally arranged trees and shrubs), parks (naturally landscaped areas, a mixture of wooded and open green areas), and squares (open spaces consisting of lawns formally arranged and defined by abutting streets and building frontages). (These spaces are illustrated and described in Chapter 6, Section 1.5, page 48). Urban squares (formal open spaces

directly abutting street and consisting of pavement with or without landscaping) complement the types of open spaces envisioned in the study area.

Five percent of the buildable area of each lot is required to be in contiguous open space, with another ten percent of the area dedicated to the City as fee-in-lieu (which is used to acquire public open space within the corridor). This formula is based on a comparison of the Pike corridor with similar mixed-use developments in the country (for example, the Arena District in Columbus, Ohio) and in the region (including the Rockville Town Center).

Figure 5.26: Small Green Areas – *Properties that do not front the Pike can meet the open space requirement by creating public squares or parks. No open space is recommended along Rockville Pike to maintain building frontage continuity other than the continuous landscaping described in a. Green the Pike, on page 5.32.* Source: ACP

For properties fronting Rockville Pike, the ten percent may be applied to landscaping and streetscape improvements within the Pike's easement area, especially the sidewalks, the areas created by chamfering buildings at key intersections, and the tree lawn in the medians separating the mainline from access lanes. Properties that do not face the Pike could develop pocket parks, squares, playgrounds, and small active recreation facilities such as basketball courts, foosball, and outdoor chess. In some cases, green roofs could be dedicated as open space, particularly in buildings that have a large ground-floor footprint and a small upper-floor footprint. In those cases easy, well identified, and safe access must be provided. Open spaces should be distributed within 1/8 of a mile walking distance from multi-family homes. Green roofs should also be encouraged as private recreation opportunities for newly built residential buildings.

Finally, the boulevard will provide for continuous sidewalks and bike lanes that can connect to the City's extensive trail system, facilitating pedestrian and bicycle access to nearby neighborhood parks such as Montrose Park and Dawson Farm Park.

4. An Environmentally Friendly Pike

The green, urban, multi-way boulevard with its accompanying mixed-use development sets the stage for building a more environmentally friendly Pike - a place where people can easily walk, bike, and take public transit to conveniently located shops and services. This location efficiency reduces reliance on automobiles

and provides the building blocks for a healthier community in terms of a reduced carbon footprint, better air quality, and the promotion of more active lifestyles. It is step one in linking redevelopment and sustainability.

In addition to the environmental benefits gained by the mixed-use boulevard approach, the plan recommends additional measures in support of more environmentally friendly development. The Rockville Pike District Form Code (as seen in Chapter 6, Table 1.2.3.F Additional Standards for All Street Frontages) allows for additional building height for buildings that achieve the Silver level of LEED certification (50 points) or equivalent. For reference, the Green Building Code adopted by the City on May 10, 2010 requires that all new non-residential and multi-family development obtain at least 25 LEED points or equivalent. Projects that achieve the Silver level of certification will also receive priority for processing and review. Finally, as referenced in the District Form Code, all projects within the district will be subject to the standards set by Article 20, of the Adequate Public Facilities; Environmental Guidelines for the Protection and Enhancement of the City's Natural Resources, July 1999; Chapter 19 of the City Code, Sediment Control and Stormwater Management, June 2010; the Landscaping, Screening, and Lighting Manual, December 2008; and the Forest and Tree Protection Code, as amended, 2008, and all other adopted guidelines and policy documents.

The City will need to proactively engage in a dialogue with property owners to discuss opportunities, alternatives, and ideas to make the Pike environmentally friendly and sustainable.

G. TRANSPORTATION ELEMENTS TO ENABLE REDEVELOPMENT

The information presented in this section is detailed in Appendix E: Critical Lane Volume Analysis.

Rockville's Pike presents a transformative set of design and policy recommendations intended to offset the demand for vehicle trips by combining land uses, to improve the pedestrian environment through a more walking-oriented physical form of land development, and to capitalize on the potential for transit use to connect to places both inside and outside of the Pike corridor.

Redevelopment of the corridor is crucial to making this happen, not only in shaping the corridor's built environment into a more walkable form but also in making basic contributions to multimodal infrastructure. At present, the City's system of concurrency management and development regulations and Comprehensive Transportation Review (CTR) requirements preclude this from happening easily. The City requires development applicants to assess impacts their development will have on traffic, specifically traffic at individual intersections.

When considering current traffic and the traffic expected to be generated from currently approved development, many of Rockville Pike's intersections are already over capacity. Therefore, development projects on a scale that would make meaningful contributions to implementing the plan cannot readily be accommodated within the review parameters. Added traffic would only compound the problems

those intersections already face. More importantly, the CTR program may require the development generating the traffic to undertake costly vehicle-oriented congestion mitigation measures, such as additions of lanes at intersections, which may counter the intent of the plan to promote walking, cycling and transit access.

Although the CTR program does allow small-scale developments such as convenience stores and small offices to circumvent this analysis and recognizes that their impacts are relatively minor (i.e., generating fewer than 30 vehicle trips in the peak travel hour) these types of development are not likely to contribute to the plan's vision. Indeed, small-scale, incremental development projects are more likely to exhaust what infrastructural capacity does remain in the corridor.

The City should consider the following alternative approaches if it wishes to accommodate new growth and development.

School Capacity *– School capacity plays an important role in the Pike's redevelopment potential. The City's Adequate Public Facilities Ordinance (APFO) establishes that no child-generating development can take place if the new residences will be within the boundaries of a school cluster that has enrollment of 110% or more of the school's program capacity, as defined by Montgomery County Public Schools (MCPS).*

The Plan for the Rockville Pike corridors includes mid- to high-rise residential development that might require the expansion of school capacity to permit redevelopment. Multi-family mid- to high-rise units generate the lowest number of students per unit. Based on information contained in a memorandum dated August 27, 2009 from the Office of the Superintendent of Schools, MCPS, Rockville, Maryland, 100 multi-family units would generate 4.2 elementary students, 3.9 middle school students and 3.3 high school students. By comparison, 100 single-family detached housing units generate 32 elementary school students, 14 middle school students, and 13 high school students. A per dwelling unit fee is assessed for residential development. A more detailed analysis of school capacity can be found in Appendix B.

1. Implement Engineering-Based Changes to Increase Intersection Capacity

In many cases on Rockville Pike, intersection congestion occurs not only because of the volume of traffic using the intersection but also the ways in which that traffic is operating.

These changes may include physical changes to the roadway and intersection design, such as the addition of turn lanes. They may also include changes to traffic control, such as the replacement of signal infrastructure to allow different turning movement patterns and the re-phasing and retiming of signals to improve efficiency. Throughout the *Rockville's Pike* planning process, the planning team noted constraints to right-of-way, although these are not universally located along the corridor and some intersections may have opportunities to use this approach.

Increases in capacity from engineering-based solutions will allow additional traffic to pass through the intersection while maintaining acceptable levels of service. For this reason, any such approaches should be considered in tandem with an increase in Critical Lane Volume (CLV), primarily so that any commitment of resources to implement engineering changes is not foregone by a standard of measurement that does not recognize them.

2. Increase the Critical Lane Volume (CLV) Standard

As demonstrated in Appendix E: Critical Lane Volume Analysis, increasing the allowable standard would reduce the number of intersections along the Pike that exceed the CTR-determined CLV threshold, thereby permitting more development. This would not require physical changes to street and roadway infrastructure but would rather adjust the City's adequate public facility policy to permit additional traffic in dominant movements.

Increasing the CLV standard should be implemented in tandem with a more flexible system of capacity allocation. Currently, the capacity allocation for development is based on approved development: capacity is *reserved* when

development is approved and used, or *allocated*, when development is completed and occupied. Once infrastructure capacity is reserved and allocated, it cannot be regained even though Transportation Demand Management (TDM) measures may be in place to reduce vehicular trips. Under such system, the only way to add capacity is through conventional improvement projects such as road widening.

The City should adopt a more flexible system of capacity allocation that:

1. Does not weigh reserved capacity against demand for development, if new development introduces robust TDM measures that offset its traffic-generating impact, and
2. Enables the City to monitor the ongoing need for infrastructure capacity and restore capacity when it is no longer being used.

3. Develop a Broader Set of Concurrency Review Measures

Measures should be focused more on the corridor and the Plan area than on specific intersections. A focus on intersections as a basis for concurrency and adequate public facility management may pose problems when certain intersections reach their capacity limits. This is especially true in corridor-based districts, where the principal thoroughfare inevitably carries a large share of local traffic generated within the corridor: in these cases, traffic impact from new development is often reviewed over a greater length of the corridor than simply at the single intersection where development is located.

H. CONGESTION MANAGEMENT ELEMENTS

The City needs to supplement transportation infrastructure capacity and work closely with corridor businesses and organizations to manage trip generation and travel demand to successfully manage congestion. This focuses on: creating a transportation management association; addressing level of service standards; modifying the current system of capacity allocation; and optimizing transit service through the corridor. The recommendations on how to implement the elements described in this section of *Rockville's Pike: Envision a Great Place* can be found in Chapter 7: Implementation, Section E.

1. Create a Transportation Management Association (TMA)

Transportation Management Associations (TMAs) are organizations of businesses, employers, and other facilities generating travel demand. Their primary function is to develop and coordinate travel options beyond single-occupant commuting. In most cases, TMA administration is handled through an extra-jurisdictional entity funded largely through member businesses and associations. However, there is nothing that precludes a government from leading the development of one and providing seed funding for its initial operations. Key elements of this TMA are as follows:

- Businesses operating under any development that has claimed TMA credits are required to join the TMA and work with the City to ensure that target demand management goals are being met. If the City administers TMA-like functions, it may collect membership or administration fees from these member businesses, but the nature of the partnership is for the member businesses to be able to claim benefits in the form of reduced parking need and reduced trip generation.
- Developments not wishing to claim Transportation Demand Management (TDM) credit must mitigate for all trips at the time of development approval. This mitigation can be in the form of an in-lieu contribution to a City fund, which can be used broadly for implementing elements of this plan, including local street networks and sidewalks. The City, in coordination with Maryland Department of Transportation, may choose to use impact fees and other mitigation funds to develop and construct capacity-based improvements in the corridor, though it is highly important that the City use the land use recommendations of this plan as well as the Form Code in considering physical roadway improvements to Rockville Pike or side streets. A proposal to revise the CTR incorporates this idea.

Transportation Management Associations *are generally non-profit, member-controlled organizations typically formed by business improvement districts or as conditions of approval of major developments. They usually exist as non-governmental associations led by a board because they are funded by member businesses and organizations; this encourages an approach to reducing single-occupant vehicle trips in order to realize incentives that local governments may promote or requirements that local governments may enact.*

The TMA provides an ongoing review of vehicular capacity, transit service and capacity, and trips generated by existing land uses. TMA members are required to report to the city the number of trips that their business or organization generates on at least a quarterly basis so that the TMA may maintain an updated inventory of available capacity and look for opportunities to implement further TDM programs.

2. Adopting and Enhancing City Transportation Demand Management Activities

The City of Rockville manages a TDM program, whose purpose is to reduce the single-occupancy vehicle transportation mode and encourage new alternative mode users. By adopting and creating best practices, the City is already working to establish its own TDM brand. The City should seek opportunities to expand and enhance programs as they are applied to the Pike.

Currently, TDM activities are funded through developer contributions. As specified in TDM agreements with applicants, the City collects TDM fees from new commercial development, new retail development, and from new multi-family dwelling units, excluding moderately priced dwelling units and multi-family developments less than 15 units.

High-priority activities of the program, citywide, are:

- Implementing multimodal improvements, including recommendations from the City's Sidewalk Prioritization Policy, the Complete Streets Policy, and the Pedestrian Safety Intersection Inventory
- Establishing employer trip-reduction programs
- Implementing a web-based Trip Reduction Tool, which takes new development applicants through a series of questions about the development site's transit

availability, land use mix, density, and pedestrian accessibility, in order to determine a trip reduction range and a list of trip reduction strategies.

- Formalizing a TDM fee for new developments generating 30 or more trips.
- Amending the CTR to be consistent with the TDM Plan. The purpose of the revision is to simplify the process followed by the developer to comply with the transportation requirements and to combine TDM fees with other transportation improvement fees.

Second and third priority action steps, which provide over twenty additional recommendations, also reflect an integration of physical multimodal improvements and programmatic elements. One important element of this plan is to use a portion of the TDM funds to install physical improvements related to non-auto modes of transportation.

3. Improve Transit Service Through the Rockville Pike Corridor

Transportation Key Finding #4: *Transit service provides coverage to most of the Pike's study area, but it is compromised primarily by a lack of a connected street network. This is due to the fact that the only transit-demanding area is the commercial concentration along Rockville Pike. As Rockville Pike is not served by a rich network of streets, transit vehicles need to use it and cannot rely on parallel streets.*

Transportation Key Finding #6: *Neither bicyclists nor pedestrians feel safe on the Pike, and cyclists in particular do not look at it as a desirable connection.*

Development Principle #9: The Pike will feature efficient and reliable public transportation options

As noted in Chapter 3: Key Findings and Appendix B: Research Summary, the Rockville Pike corridor is currently served by a combination of transit routes and modes. Ride On bus service currently provides a more locally-oriented service, where Metro bus and rail link to the larger metropolitan area. The former is useful for short trips within the Pike area. This service needs to be improved to increase the share of trips being taken on transit.

The design for the multi-way boulevard calls for the placement of transit stops, though these are accessed by the bus lanes and not from the Rockville Pike mainline. This locates the stop approximately 100-150 feet in advance of the intersections. This improves safety for cyclists and vehicles who share the access lanes: vehicles can see a stopped bus from a more advanced distance, and cyclists also have a greater distance to see and circumnavigate buses with which they are sharing the bus/bicycle lane.

I. FUNDING MECHANISMS

Creating the multi-way boulevard and implementing other recommended infrastructure improvements in the study area will require significant financial resources from multiple sources. This section recommends mechanisms that are available to fund these improvements.

1. Secure State and Federal Funds to Create the Multi-Way Boulevard

Rockville Pike is a state highway (MD 355) and is part of a critical economic corridor for Rockville, Montgomery County, the capital region, and the State of Maryland. The City should work with the County and the State to ensure that creating the multi-way boulevard is included in the State's funding priorities; then, they should work with State and Federal officials to secure funding. An approved *Rockville's Pike* will communicate to public funding sources that the City is doing its part to ensure the long-term viability of this key economic engine. The City can then make a strong argument that investing in the Pike should be viewed as investment in the economic health of a region far broader than Rockville, in addition to the safety, multi-modal, environmental, and aesthetic benefits that the improvements will bring.

2. Create a Tax Increment Financing District for the Study Area

Tax Increment Financing (TIF) is a financing tool used by local governments to finance development using future tax gains in taxes that are realized from the increase in value in real estate due to the improvements. TIF is a mechanism employed by cities and counties to fund public investments in areas slated for redevelopment by capturing, for a pre-determined period of time, all or a portion of the increased property tax revenues that may result if the redevelopment stimulates private investment. It is assumed that these public improvements serve as a catalyst for redevelopment in the TIF district by making it more attractive to developers and businesses. The sources of TIF funding are dependent upon the state legislation as well as the terms of the TIF structure, which are negotiated between the participating regulatory entities (i.e., state, county, and local government).

When a public project is completed, such as a new road, parking garage, or other infrastructure investment, real estate values from the properties that benefit from the improvement are likely to increase. This often stimulates new development, creating an increase in tax revenue. The projected increase in tax revenue is used to finance debt to pay for the improvement. Cities and counties may designate a TIF district that is comprised of those properties that would likely benefit from the public improvement. These districts are in place for an adequate time period for increased tax revenues to pay back the bonds issued to fund the improvement.

Rockville Pike presents an interesting opportunity to develop increased property values in the corridor due to likely increases in density and development intensity and higher values. TIF funds could be used to help defray the costs of roadway and streetscape improvements along the Pike boulevard, to provide for pedestrian and bicycle amenities that balance the auto-dominated character of the Pike today, or to implement beautification/branding/wayfinding systems along the Pike to better reinforce its identity as a destination and aid in circulation efficiency.

3. Expand In-Lieu Contributions

Presently, the Comprehensive Transportation Review (CTR) system allows the City to require construction of multimodal facilities (which may include sidewalks, bicycle parking and other simple infrastructure) as a condition of approval for new development. Proposed revisions to the City's CTR require developers to provide in-lieu contributions for off-site non-auto improvements. In-lieu contributions, through which an applicant for development approval pays the City an amount equivalent to the costs of adding the required infrastructure, do not seem to be broadly enabled in the CTR system. This suggests that a single development may need to provide its own sidewalks, parking and other infrastructure contributions, yet it may be years before other developments build their shares and complete the pedestrian environment.

The City should expand its use of in-lieu contributions to allow the construction of complete sidewalks and transportation facilities at once and not simply rely on property development to generate small portions of this infrastructure.

The City should also reserve funds to complement the in-lieu contributions it receives from active development projects. For example, if a project constructs a sidewalk on its property or pays an equivalent amount to an in-lieu contribution fund, the City will need to complete the sidewalk to connect to a Metrorail station or to an adjacent neighborhood. As other properties adjacent to the first project redevelop, their in-lieu contributions replenish the City's fund and reimburse the City for its initial capital investment in the sidewalk. This implies that the City may need to be prepared to make initial capital investment to realize significant components of the plan's transportation system, but the payment of in-lieu contributions can retire any financing obligations that the City incurs in providing this infrastructure in advance of development that it serves.

This use of City funding is most importantly applied to enhancing already-existing streets to better fit within the overall character-based vision for the Rockville Pike corridor. Local street networks, especially in the South Pike district, can be constructed largely by private development. The City will need to contribute to these projects, especially in the case of small properties for whom required contributions to network would constitute a hardship. Small properties may hinder development due to the relatively high cost of such a requirement. The City's ability to contribute funding to help complete transportation network projects in a timely manner will greatly improve the development potential of the corridor.

J. ECONOMIC STRATEGIES

This section describes strategies to maintain the viability of the Pike through the redevelopment process. These include creating Public-Private Partnerships and addressing retail and small business, office, and housing strategies. The recommendations on how to implement the elements described in this section of

Rockville's Pike: Envision a Great Place can be found in Chapter 7: Implementation, Section G.

1. Partner for Change

The City should consider encouraging Public-Private Partnerships (PPPs) to promote redevelopment on the Pike. Public-Private Partnerships can take many different forms and are increasingly used as a tool to encourage and facilitate development through shared risk in development projects. Government entities, typically with a stake in the development through ownership of land or facilities, can support development by issuing bonds, often for non-commercial but required project components such as structured parking, or development of key infrastructure assets such as sewer and water costs. The public sector can also reduce the cost of capital for private developers through the use of public financing tools (sometimes used to cover the financial 'gap' in affordable/workforce housing) or to cover costs for public space enhancements linked to future property taxes (such as Tax Increment Financing). These tools can be utilized through local and state government entities to reduce either direct costs or indirect costs associated with the project risk, thereby making the project a more easily financed development opportunity.

Another approach to reduce risk and/or provide incremental revenues is to offer a bonus density that can be applied to market-rate uses to offset the cost of less profitable uses, such as moderately priced housing. Public entities can also play a role in assembling and ground-leasing parcels to master developers or through the development of anchor facilities that will be leased for public purposes in the development, providing a revenue stream to the developer for a period of time.

PPPs are often used to incorporate public facilities within a development or as a tool to reduce capital costs to allow for the inclusion of open space within the development.

Real Estate Trend Finding #1:
The retail market is the primary driver in the corridor, and the corridor serves as a regional destination retail center and one of the best performing agglomerations of retail in the region.

Demographic and Economic Profile Finding #5:
Strong household incomes in the region contribute to the economic vitality of retail.

Demographic and Economic Profile Finding #1:
Rockville Pike is located in a strong regional economic market with long-term growth potential, despite the impact of the recent recession.

2. Retail and Small Business Enhancement Strategy

Development Principle #7: The economic success of Rockville's Pike will be maintained by supporting both local and national retail and encouraging property redevelopment.

Retail and small business enhancement strategies go hand-in-hand along Rockville Pike. The corridor is primarily driven by small retail establishments along the Middle and North Pike, where there are higher concentrations of small, locally-owned businesses due to land configuration. The public consistently cited small and locally-owned retail services and stores as critical components to the Pike's success, which must be retained.

Typically, assistance for small and locally-owned businesses comes from three sources: (1) funding (often for façade and design assistance/ improvements, access

to capital for under-capitalized businesses, or special employment funds for job training and retention); (2) provision of technical assistance in retail and financial management, business plan development, store operations or other areas (often linked to college-level academic institutions and business schools or volunteer retired executive programs); and (3) administrative efficiencies and relief from extended review and approval processes that add costs to operating businesses or that may delay approval of new businesses. The third source can be the result of more efficient public processes, and does not require substantial capital commitments by the public sector, but can be highly beneficial to retail businesses trying to open or relocate in a commercial district.

As a "prototype assistance area" blending public and private sector efforts, the Middle Pike may be particularly appropriate for assistance programs targeting recruitment and retention of small and locally owned retail businesses. Limited in site depth on the east and containing a concentration of more affordable housing on the west, site characteristics are likely to keep rents lower and provide an opportunity for a "both/and" solution, rather than relying on national chain tenants throughout the Pike. Small and locally-owned businesses provide the distinct character that will complement clusters of national chain tenants in the South Pike and provide opportunities for small businesses that might not otherwise be able to locate to the Pike.

The North Pike's retail offerings will likely be affected by longer-term growth of public and private sector office/mixed-use development along both sides of the Pike. Recruitment and inclusion of small and locally-owned businesses in mixed-use buildings (with reasonable parking requirements) can also provide support for these businesses, who may have more difficulties meeting the higher rent rates for retail space in the South Pike.

The South Pike is driven primarily by large, national tenant chains. While redevelopment in this area may provide opportunities for small businesses to open smaller spaces in redeveloped centers, this part of the Pike will likely continue as a national tenant center, and more targeted small business growth opportunities should be focused in the Middle and North Pike. The higher rents (and higher sales productivities) that national chain-affiliated tenants can generate will likely continue to be a challenge for smaller businesses, both in occupancy costs and the ability to sustain higher sales to equal that produced by chains. To the extent that multiple land owners, longer-term phasing, and investment/development timing can be coordinated through a Business Improvement District, this area too presents an opportunity to attract and sustain smaller retail businesses along the Pike.

Market Demand Finding #4:
The retail market is well served and will continue to provide the economic base; however, additional demand will come in small increments and is anticipated to remain relatively constant in terms of total square feet. As incomes rise, store productivity and rental rates will likely increase.

3. Office Recruitment Strategy

While a challenging market is presented for large office user recruitment, there are opportunities to design Class A office recruitment programs for properties along the

Rockville Pike. Particularly attractive are properties near public transit nodes to provide a diversity of access opportunities for employees. The area near the Rockville Metro station is emerging as a government services related office area and may provide the most attractive large-scale office destination in the short to medium term. Near the Twinbrook Metro Station, current development plans will provide a strong benchmark for office recruitment along the Pike and may provide a foundation for further office development at that node. In other sections of the Pike, site size and access characteristics will make it difficult to create office spaces large enough to recruit major office users; these types of tenants may be more appropriately targeted for other areas of Rockville and Montgomery County (consistent with long-range planning for the I-270 corridor, for example). However, smaller office spaces, second and third floor spaces, and other constrained locations could provide space for dentists, doctors, and other professional services that would serve Rockville residents and shoppers.

Market Demand Finding #3:
Office demand is limited and will serve as a secondary component to developments, except in situations closely connected to the Metro, such as Twinbrook Station. The I-270 corridor will continue to be the primary Class A office draw, with more limited office potential along the Pike.

4. Housing Strategy

Housing development along the Pike will largely be driven by market demand and economics. The development at the Twinbrook Metro Station area will further help educate the market on transit-oriented development in the Rockville area and should help spur further demand for higher density housing in the corridor. Providing access to Metro will prove critical to housing market absorption for higher density development.

Market Demand Finding #1:
Residential demand is emerging, though competition will exist with White Flint and Rockville Town Center for future growth.

Market Demand Finding #2:
Twinbrook Station is providing an important market test for development potential along Rockville Pike and will further adapt the market to a higher density product type.

Multi-family residential, including a mix of for sale and for rent, will be the most competitive product type due to land economics, site capacity and dimensions presented by the smaller, narrow parcels in portions of the Pike. Townhome products could be developed in conjunction with some development plans but is unlikely to be a major component of development.

The Moderately Priced Dwelling Unit (MPDU) Program administered by the City requires developers to provide a portion of their residential units, rental or for purchase, at costs that are affordable to individuals earning less than 60 percent Annual Median Income (AMI), as established annually by the U.S. Department of Housing and Urban Development. Maximum eligible incomes vary depending on household size. In the Rockville Pike Study Area, residential developments that total or exceed 50 units must dedicate 15 percent as moderately priced housing units in mixed-use zones. The number of MPDUs required may be increased if density bonus units are allowed. The builder/developer must maintain rental units at MPDU program-established rates for a period of 30 years. MPDU units offered for sale may be sold during the 30-year control period, but the resale price is controlled through the MPDU Program. Rockville's MPDU Program should be continued.

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Chapter 6 – Rockville Pike District Form Code

INTRODUCTION

A form-based code, or "form code," is a method of regulating development to achieve a specific urban form. Form codes create a predictable public realm primarily by controlling physical form, with a lesser focus on land use, through various types of development regulations (*Form-Based Codes Institute, http://www.formbasedcodes.org)*.

Form codes address the relationship between building façades and the public realm or street, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form codes (presented in both diagrams and words) are keyed to a regulating plan that designates the appropriate form and scale (and therefore character) of development rather than only distinctions in land-use types. Form codes are not to be confused with design guidelines or general statements of policy; form codes are regulatory, not advisory.

Form codes typically follow one (or a combination) of four organizing principles: transect-based, building type-based, street-based, and frontage-based. The transect-based code organizes neighborhoods in a continuum of intensity, ranging from rural to urban. The building type-based code takes particular building types (e.g., townhouse/attached single-family, commercial block, and apartment buildings) and applies them to their respective lot types on a Regulating Plan. Street-based codes focus their regulations primarily on the specific design and location of streets.

A frontage-based code focuses its regulations on the way that buildings address the public realm. This is the organizing principle behind the Rockville Pike District Form Code. This approach emphasizes the public realm's character and allows what is developed behind the frontage to be more flexible.

This chapter provides the development regulations governing building form and land use within the Rockville Pike study area. The regulations reflect the community's vision and implement the intent of the Rockville Pike Corridor Plan described in Chapter 5. The Form Code is intended for incorporation, by adoption, into the Zoning Code of the City of Rockville adopted December 15, 2008.

The chapter is organized following the format recommended by the Form-Based Codes Institute and includes: the regulating plan, the building form standards, additional standards, administrative rules, and a glossary.

The Regulating Plan (on page 9) designates the application of form-based standards using different streets colors and linking the form and performance of a property's façade to its street frontage. The Regulating Plan is based on the Street Master Plan. (See Figure 5.13, page 5.15, previous chapter.)

The Form Code standards were based on samples of block, thoroughfare, open space, building and frontage types from five different urban areas, both within and outside the City of Rockville: Rockville Town Center, Kings Farm, The Arena District (Columbus, Ohio), The Gateway District (Columbus Ohio), and Connecticut Avenue (Washington DC). They were also based on the analysis of the modeling of three sites in the study area. The three models are described in Appendix A: Model Sites.

The Building Form Standards (starting at page 10) describe the form and performance of property's façades. They are organized into three sub areas: the North Pike, the Middle Pike, and the South Pike. Additional Standards (starting at page 45) regulate block, thoroughfares, and open space standards, building and frontage types, architectural standards, and streetscape standards. These standards prescribe how buildings and other elements further shape and make use of the street. Administration (starting at page 73) provides guidance in how to administer the Form Code. The Glossary (starting at page 81) explains frequently used terms.

The Form Code does not increase the overall density of the district. There are no standards that directly specify development density or intensity within each of the Corridor's frontage types. Similar to the current mixed-use zoning assigned to the study area, the resulting density or intensity of development is based on key building envelope standards relating to height and the buildings disposition on the site. Unlike the existing zoning districts, the resulting density and intensity of development is more fine grain and varies according to frontage type and location along the corridor.

While an integral component of *Rockville's Pike: Envision a Great Place*, the Rockville Pike District Form Code is also legal document that can be adopted, in whole or in part, into the City's zoning ordinance. Like most zoning language, its tone is less descriptive and more prescriptive. Unlike most zoning ordinances, it explains how the physical plan's form and character can be implemented through the zoning process one development or parcel at a time. As a standalone legal document this chapter has a different format from the remainder of this report.

ROCKVILLE PIKE DISTRICT FORM CODE

The format of this section is different from the rest of the report because it is intended to be a standalone document.

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1.1 GENERAL PROVISIONS

1.1.1 Guiding Principles

Principles are statements of intent that describe in words how the physical environment – both natural and manmade – should be treated in the future. The following principles, derived from *Rockville's Pike: Envision a Great Place*, a planning process that involved extensive public input, serve as the basis for the Rockville Pike District Form Code.

A. Quality architecture and urban design will create a visually appealing environment along the Pike.

B. Roadway and intersection improvements on the Pike will allow for smooth, safe vehicular flow.

C. The Pike will feature a safe and pleasant environment for walking and biking.

D. Additional open space, landscaping, and environmentally friendly development will contribute to a "greener" Pike.

E. The Pike will feature vibrant, walkable, mixed-use developments.

F. New public spaces on the Pike will provide a pleasant environment for community gathering and outdoor activity.

G. The economic success of Rockville's Pike will be maintained by supporting both local and national retail and encouraging property redevelopment.

H. Rockville's Pike will be well connected with surrounding areas, providing choices for cars and pedestrians to access and move between properties along the Pike.

I. The Pike will feature efficient and reliable public transportation options.

J. Appropriate signage, lighting, and wayfinding tools will make the Pike an inviting and easily navigable environment.

1.1.2 Form Code Purpose

A. The Rockville Pike District Form Code is designed to foster a series of vibrant mixed-use areas within three separate segments of the Rockville Pike Corridor: North Pike, Middle Pike, and South Pike. These areas are intended to promote traditional urban form and a lively mix of uses. They are intended to allow for shopfronts, sidewalk cafes, and other commercial uses at the street level, with wide sidewalks and canopy shade trees, overlooked by upper story residences and offices.

B. Redevelopment within the Form Code shall be regulated as set forth below in order to achieve the vision set forth in *Rockville's Pike: Envision a Great Place*. These regulations provide the specific means to guide implementation of the citizen-endorsed vision for the development and redevelopment of all properties in the Form Code district.

1.1.3 Conflicting Provisions

Wherever there appears to be a conflict between these regulations and other requirements of the Zoning Code (Chapter 25 of the City of Rockville City Code), the requirements specifically set forth in these regulations shall prevail. For development standards not covered by these regulations, additional standards may also apply.

1.1.4 Form Codes-Definition

A form-based code, or form code, is a method of regulating development to achieve a specific urban form. Form codes create a predictable public realm primarily by controlling the physical form of the built environment, with a lesser focus on land use, through various types of development regulations.

Form codes address the relationship between building façades and the public realm or street, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form codes (presented in both diagrams and words) are keyed to a regulating plan that designates the appropriate form and scale (and therefore character) of development rather than only making distinctions in land use types. Form codes are not to be confused with design guidelines or general statements of policy; form codes are regulatory, not advisory.

Form codes can be based on one of four organizing principles: transect-based, building type-based, street-based, and frontage-based. The transect-based code organizes neighborhoods in a continuum of intensity, ranging from rural to urban. The building type-based code takes particular building types (e.g., townhouse, commercial block, and apartment buildings) and applies them to their respective lot types on a Regulating Plan. Street-based codes focus their regulations primarily on the specific design and location of streets.

A frontage-based code, which is the organizing principle behind the Rockville Pike District Form Code, focuses its regulations on the way that buildings address the public realm. The Regulating Plan distinguishes the application of form-based standards by different colors on the street instead of the lots. It links the form and performance of a property's façade to its frontage. This approach emphasizes the importance of establishing the character of the public realm and allows what is developed behind the frontage to be more flexible.

1.1.5 Regulatory Incentives

This Form Code includes several incentives to encourage use of the regulations, improve housing affordability, and implement green building technologies. They include:

A. Administrative rather than legislative (discretionary) review process because the regulations are tied to a specific, publicly approved vision, thus assuring that the quality and character of development are more predictable.

B. Additional building height permitted when meeting green building standards.

C. Reduced parking ratios closer to the Twinbrook Metro transit station.

D. Reduced parking for residential uses near transit stops (typically within ½ mile) helps make housing units more affordable by eliminating the need to rely solely on auto travel. This affordability is accomplished in two ways: 1) reduction in per unit costs to the developer associated with the elimination of valuable space for parking, and 2) freeing up potential owner or tenant discretionary income to be applied toward mortgage financing or rent.

E. Zero build-to-line along most street frontages improves site utilization.

F. On-street parking credit allows lower parking ratios.

G. Potentially less time for reviewing project applications.

1.1.6 Components of the Rockville Pike District Form Code

These regulations include the following:

A. Regulating Plan

1. A regulating plan provides standards for the disposition of each property or lot and illustrates how each relates to the adjacent properties and street-space. The regulating plan is the coding key for the form code that provides specific information on permitted development for each property (see page 9).

2. The regulating plan identifies the building form regulations for all building sites along each Form Code frontage. The regulating plan also shows how each lot relates to public spaces (street-space, civic greens, pedestrian pathways, etc.) and the surrounding neighborhood. There may be additional regulations for lots in special locations as identified on the regulating plan.

3. The regulating plan for the Rockville Pike corridor is divided into three distinct subareas identified in *Rockville's Pike: Envision a Great Place.* They include:

   a. **North Pike:** the area between Richard Montgomery Drive and West Edmonston Drive, which contains a combination of shallow lots and long blocks adjacent to the Metro line and larger blocks on the west side of the Pike (see page 10);

   b. **Middle Pike:** the area between West Edmonston Drive and one lot south of Templeton Place that is characterized by shallow commercial lots adjacent to the Metro line and a combination of multi-family and commercial uses on the west side (see page 20); and

   c. **South Pike:** the area between the south boundary of the Middle Pike and Bou Avenue. This area is the closest in proximity to the Twinbrook Metro Station and has the potential of being the most intensely developed area along the corridor (see page 27).

4. Each subarea of the regulating plan includes at least two (North Pike) or all (South Pike) of the following five street frontage types:

   a. Urban Corridor Street Frontage

   b. Urban Core Street Frontage

   c. Urban Center Street Frontage

   d. Urban General Street Frontage

   e. Urban Neighborhood Street Frontage

B. Building Form Standards

The Building Form Standards have the primary role of defining the physical form of the built environment. They establish specific physical and use parameters for each street frontage and general standards for all areas. The street frontage is the way a building engages the public realm and ensures that, after a building is located properly, its interface with the public realm and the transition between the two are detailed appropriately. The building form standards represent the more graphic part of the Form Code regulations, incorporating a series of illustrated tables per street frontage type.

The street frontage types are described as follows:

1. **Urban Corridor Street Frontage:** This frontage type corresponds to the properties fronting Rockville Pike and supports a very active pedestrian environment made possible by a grand boulevard accommodating multiple transportation modes (e.g., pedestrian, vehicular, bus, bicycle, etc). The building form standards applicable to this area are intended to enhance the character of Rockville Pike and its role as a major arterial.
2. **Urban Core Street Frontage:** This frontage type is the only type located in the South Pike segment of the corridor adjacent to the Twinbrook Metro Station. As the street frontage type with the most anticipated development intensity within the Form Code, it serves as a transition area between the Twinbrook Station development and the development along the Corridor.
3. **Urban Center Street Frontage:** This type of street frontage, like the Core Street Frontage, is along new and existing streets that support an active pedestrian environment and incorporate a mix-of-uses with retail on the ground floor. The Urban Center area includes a similar but less intense development character than the frontage along Rockville Pike (Urban Corridor) or the Urban Core Street Frontage.
4. **Urban General Street Frontage:** This type of street frontage does not include retail uses on the ground floor and is not intended to function as an active pedestrian environment but to access and serve residential development sites. This frontage type is along both existing and new roadways.
5. **Urban Neighborhood Street Frontage:** This type of street frontage is intended to serve primarily residential uses at varying scales and densities with a minor inclusion of business services (e.g., live work units).
6. **Additional Standards for all Street Frontages:** This is a separate table that covers standards related to all street frontage types and includes parking and other base standards.

Each street frontage type table includes the following subsections:

1. Building Placement Regulations
2. Height and Use Regulations
3. Parking Regulations
4. Encroachment Regulations
5. Permitted Land Use Types

C. Block Standards

These regulations specify maximum block length and perimeter dimensions and apply to sites that are two acres in size or larger. The Block Standards incorporate an approach for the applicant to use in creating appropriately sized blocks and, as the ultimate goal, a more interconnected street network.

D. Thoroughfare Standards

Since thoroughfares (in this case Rockville Pike and the other four street frontage types) make up a large percentage of the public space within the community, their design is one of the most critical considerations in the Code. The street-type specifications illustrate typical configurations for streets within the Form Code. Specifications address vehicular traffic lane widths, sidewalk and tree planting area dimensions, pedestrian crossing times, and on-street parking configurations.

E. Open Space Standards

The open space standards (e.g., open space per lot, civic space, plazas, greens, squares, etc.) not only deal with the size and location of the private and public space, but their physical qualities as well. This section of the Code specifies the amount of public open space that is to be provided on site and the amount that is to be provided elsewhere as a fee-in-lieu of land dedication paid by the property owner or developer. Because the Pike is designed to serve as a place for public gathering as well as travel, those properties fronting Rockville Pike (unlike properties not fronting it) shall apply their fee-in-lieu toward streetscape improvements along the Pike's frontage.

F. Building Type Standards

Like the Building Form Standards, this section of the Form Code allows certain building types depending on the type of street a particular lot is fronting on.

G. Frontage Type Standards

The frontage is the way a building engages the public realm (e.g., street, park, etc.). The reason for regulating frontages is to be sure, after a building is properly located, that its relationship to the street creates a viable public realm.

H. Architectural Standards

The goal of the architectural standards is to promote a coherent and pleasing architectural character that is complementary to the best regional traditions. The standards govern a building's architectural elements regardless of its building envelope and set the parameters for allowable materials, configurations, and construction techniques. Equivalent or better products than those specified are always encouraged and may be submitted for approval to the City.

I. Streetscape Standards

The streetscape standards are intended to ensure a coherent street-space and to assist builders and owners with understanding the relationship between the public space of the Form Code and their own buildings. These standards set the parameters for the placement of street trees and other amenities or appurtenances (e.g., benches, signs, street lights, etc.) on or near each building site and are coordinated with the street specifications.

J. Administration

The major difference in administering a Form Code and other sections of the Zoning Code is that administrative review (vs. discretionary review) is technically possible for all projects that comply with applicable form-based requirements. Allowing more administrative review is possible for two reasons: (1) the Form Code is tied to a specific, publically approved vision and plan for the Rockville Pike Corridor; and (2) there is a higher level of predictability in the quality and character of development when it is being regulated by a Form Code. Discretionary review (e.g., Planning Commission) is retained for special exception, variance, or other approval.

K. Glossary

The glossary contains definitions of terms as they are used in this Form Code and may or may not be similar to those in the Zoning Code. It also contains definitions of each use type within each land use type

table. A land use type is a generic or categorical list of uses where similar uses are grouped to allow more flexibility in the number and type of land uses allowed along a particular street frontage.

1.1.7 How to Use Form Code Regulations

In order to understand what these regulations allow on property within each frontage type in question, there are four basic steps. This information explains where the building will sit on the site, the parameters for its three dimensional form, and the range of allowable uses. By going through this sequence, you will be able to:

A. Look at the regulating plan. Find the property in question. Note the required building line and the parking setback line.

B. Note the color of the fronting street-space – this determines the building form standards for buildings fronting that street.

C. Look at the appropriate building form pages. These pages will tell you the regulations for building on this site in terms of Placement, Height, Parking, Encroachments and Use.

D. Review additional information regarding the other form elements, including Building Type, Frontage Type, Thoroughfare Type and Civic Space Type. These prescribe how buildings and other elements further shape and make use of the street.

1.1.8 General Rules for Development

These standards apply to all development throughout the Form Code.

A. Blocks/Alleys

1. All lots shall share a frontage or build-to line with a street.

2. All lots and/or all contiguous lots shall be considered to be part of a block for this purpose. No block face shall have a length greater than 500 feet without an alley, common drive, access easement, or pedestrian pathway providing through-access to another street, alley, common access easement, or street-space. Individual lots with less than 99 feet of frontage are exempt from the requirement to interrupt the block face; those with 250 feet of frontage or less but greater than 99 feet shall meet the requirement within their lot, unless already satisfied within that block face. No blocks exceeding 1,600 feet in total perimeter are permitted.

3. Curb cuts shall be limited to no more than one per 200 feet of street frontage, except where otherwise designated on the regulating plan.

4. There is no required setback from alleys. On lots having no alley access, there shall be a minimum setback of 25 feet from the rear lot line.

5. Where an Urban Center Street Frontage intersects with an Urban Corridor Street Frontage, the build-to line is the hypotenuse of a right triangle that is formed by the leg of each street's respective build-to line measured 30' from their intersection. The building façade shall extend along a minimum of 80% of the angled build-to line.

6. Where the build-to line is 0' and the edge of pavement for an existing thoroughfare is at or near the build-to/right-of-way line, then a build-to zone of 0'-15'is allowed in order to accommodate a sidewalk or pedestrian path.

B. Buildings

1. The maximum building floor-plate (footprint) is 50,000 square feet; beyond that limit Special Exception approval is necessary.
2. Retail uses on the first floor of a mixed-use building shall be a minimum of 40' in depth.
3. For each block face, buildings along the required building line shall present a complete and discrete vertical façade composition (i.e. a different façade design) or a different design that occurs at an average street frontage length of no greater than 50 feet for frontage or primary streets sites and 75 feet for side streets. Each façade composition shall include a functioning, primary street-space entry. This requirement may be satisfied through the use of liner shops for large floor-plate buildings. For individual infill projects on lots with frontage of less than 100 feet, only a single façade composition is required.
4. Where the allowable building height is greater than 7 stories along the Corridor Street Frontage, a 20' step-back from the build-to line shall be provided at the eighth story. Where the allowable building height is greater than 11 stories along the Core Street Frontage, a 20' step-back from the build-to line shall be provided at the twelfth story.
5. When the building form standard designation changes along a street frontage, the property owner has the option of applying either building envelope standards for a maximum additional distance of 75 feet in either direction along that frontage.
6. Where a parking structure is within 40 feet of any principal building that portion of the structure shall not exceed the building's eave or parapet height.

The Building Form Standards that follow have the primary role in defining the physical form of the built environment. They establish specific physical and use parameters (such as build-to lines and heights) in addition to parameters that apply to all areas, such as frontage types and parking dimensions. The use parameters are arranged in use types or categories of uses, instead of listing all uses separately. The use types, and their associated uses, are further defined in the glossary.

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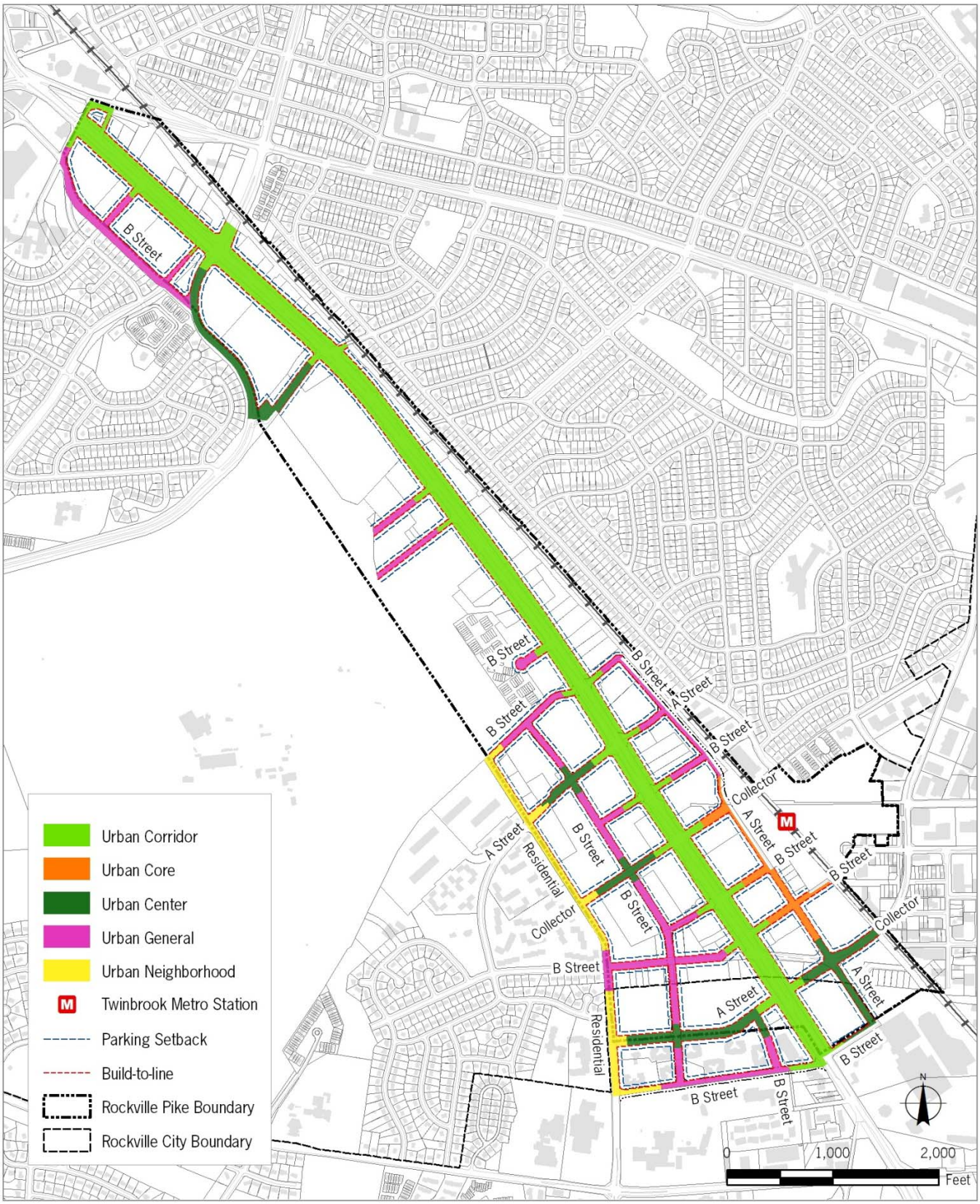
1.2 BUILDING FORM STANDARDS

1.2.0 The Regulating Plan

Map 1: The Regulating Plan



1.2.1 Building Form Standards - North Pike

Map 2: The Regulating Plan – North Pike

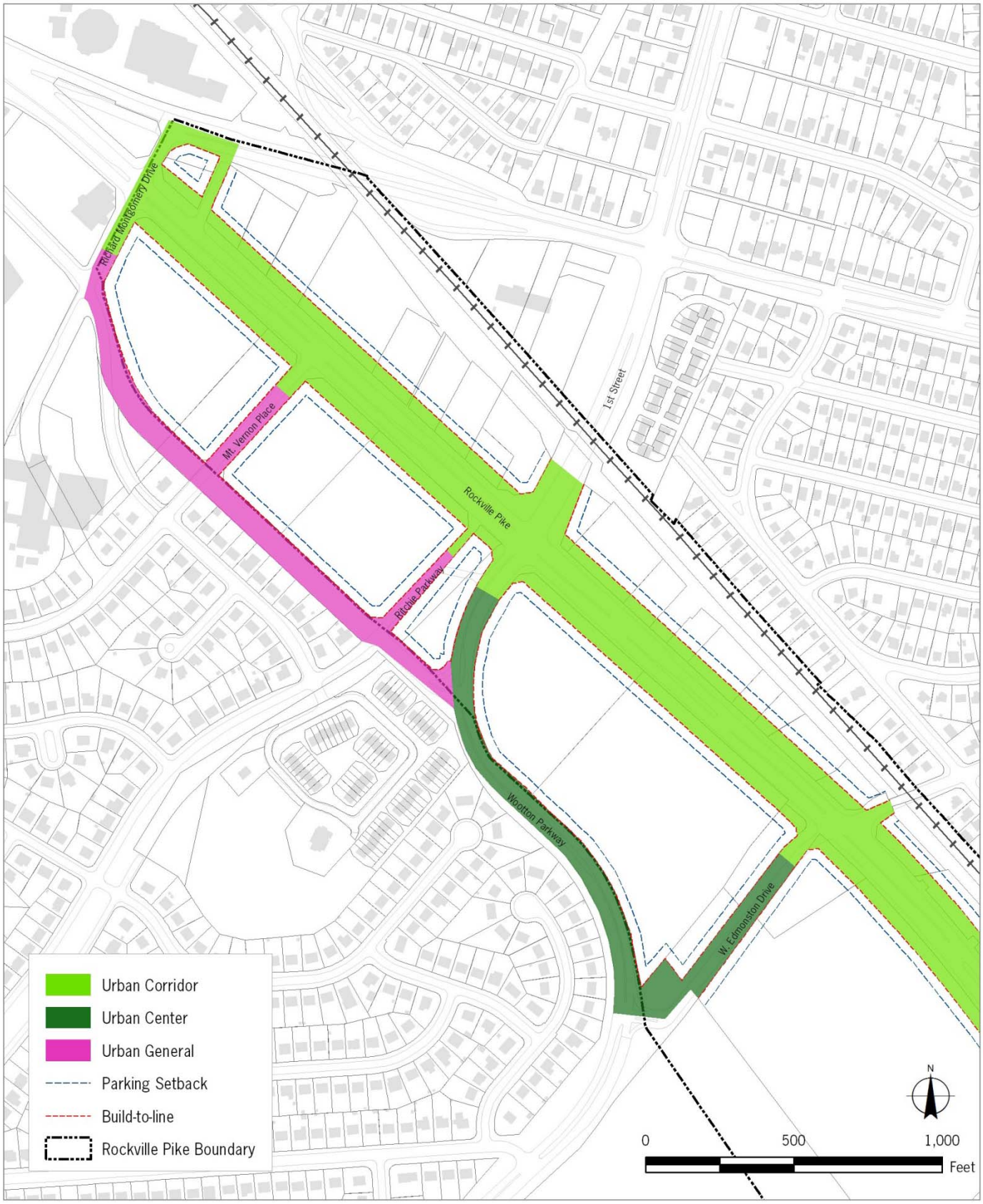
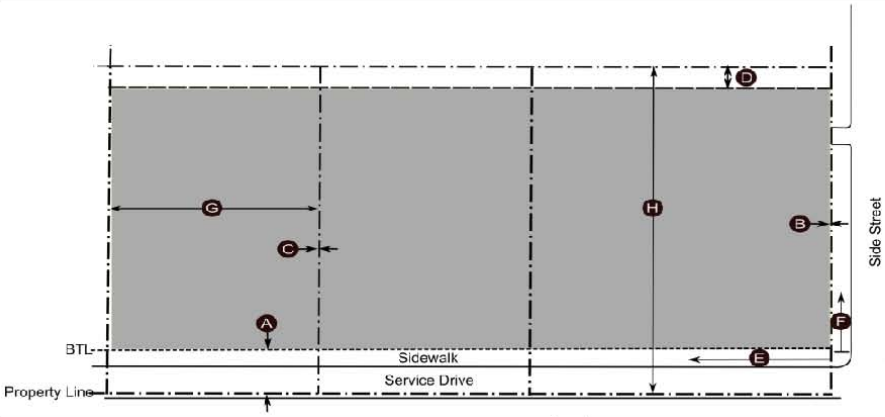


Table 1.2.1.A: North Pike Urban Corridor Street Frontage

BUILDING PLACEMENT



Key

- Building Area
- Property Line
- Build-to Line
- Setback Line

Build-to Line (BTL)		
Front	40'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	***25'	D

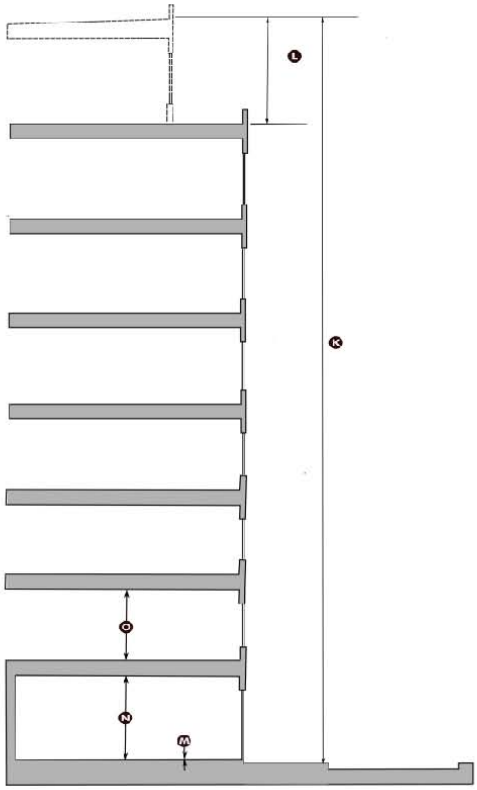
Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	200' max.	G
**Lot Depth	250' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No lot depth requirement for properties fronting Corridor on east side.

*** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service, Retail, or Recreation, Education & Public Assembly***	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	7 stories	K
Additional Story**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type table for specific uses. Minimum retail depth on first floor is 40'.

** Additional building story permitted per Section 1.2.3.F; Step-back permitted per Section 1.1.8.4.B.

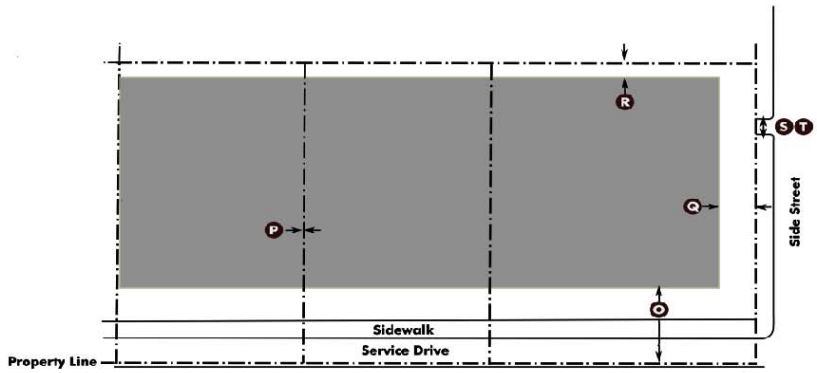
*** Restaurant permitted on upper floors if accessed from street frontage or interior lobby space.

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.1.A: North Pike Urban Corridor Street Frontage

PARKING



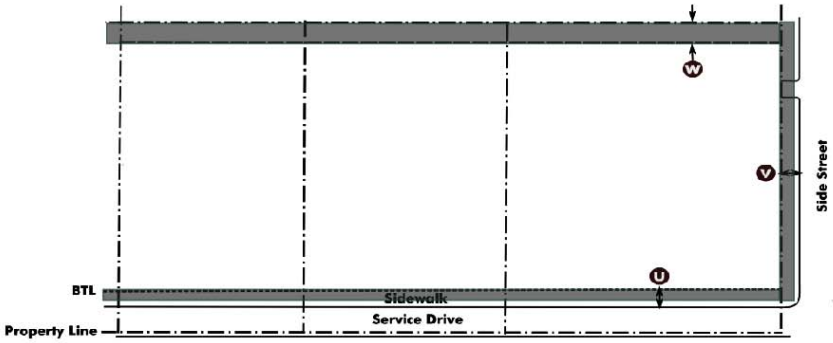
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	65'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space /600 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 800 sf

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary street.		T
Parking may be provided off-site within 1,300' or as shared parking.		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		
Parking drives are highly discouraged along Rockville Pike and are permitted if there is no other option for access to parking areas.		

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Notes

Frontage Types	See Table 1.7
Arcade	
Gallery	
Shopfront & Awning	

Table 1.2.1.A: North Pike Urban Corridor Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	P
>1500 sf	C
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

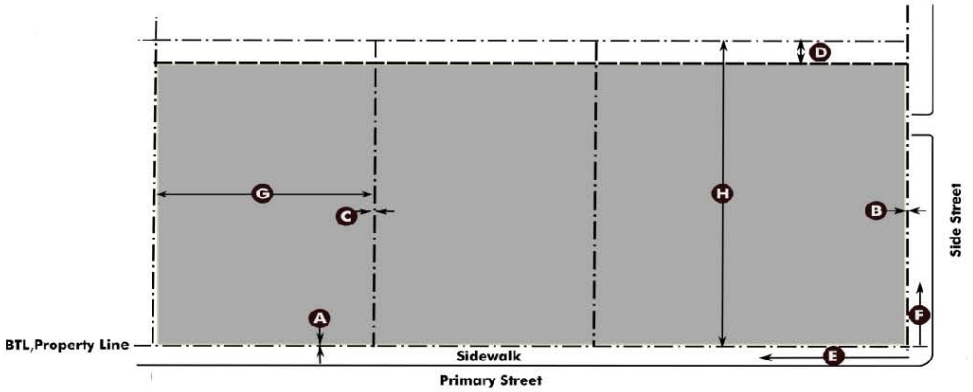
Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	C
General retail, except:	P
Alcoholic beverage sales	C
Restaurant, café, coffee shop	P
Drive-Through	C
Services: Business, Financial, Professional	
ATM	P
Bank, financial services	P
Business support services	P
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Commercial Block	
Liner	
Stacked Units	

Table 1.2.1.B: North Pike Urban Center Street Frontage

BUILDING PLACEMENT



Key

- Building Area
- Property Line
- Build-to Line
- Setback Line

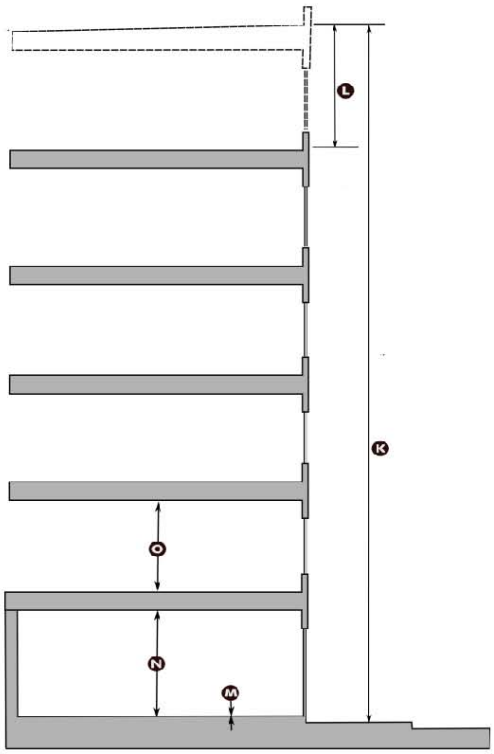
Build-to Line (BTL)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	30% min.	F
Lot Width	200' max.	G
Lot Depth	250' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service, Retail, or Recreation, Education & Public Assembly***	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	5 stories	K
Additional Story**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10 'minimum	O

* See Land Use Type table for specific uses. Minimum retail depth on first floor is 40'.

** Additional building story permitted per Section 1.2.3.F

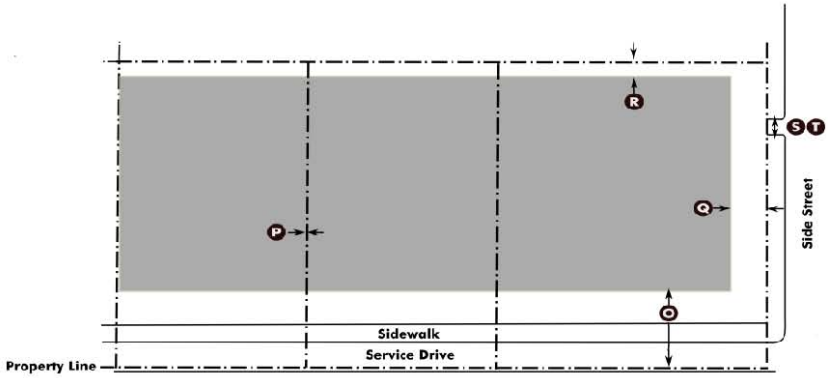
*** Restaurant permitted on upper floors if accessed from street frontage or interior lobby space.

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.1.B: North Pike Urban Center Street Frontage

PARKING



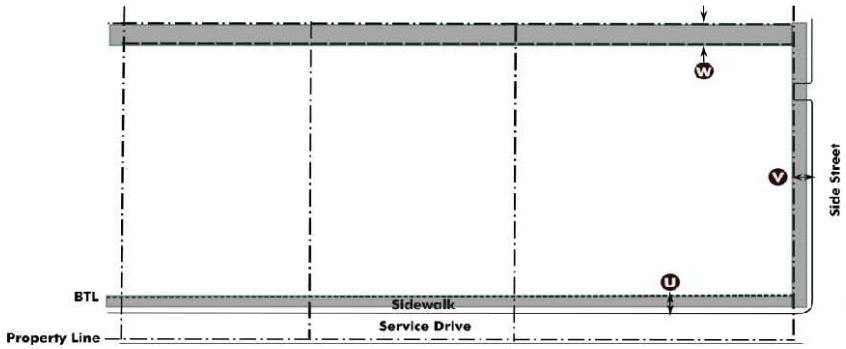
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	25'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary street.		T
Parking may be provided off-site within 1,300' or as shared parking.		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space /500 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 800 sf

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Frontage Types	See Table 1.7
Arcade	
Gallery	
Shopfront & Awning	

Notes

Table 1.2.1.B: North Pike Urban Center Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	P
>1500 sf	C
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

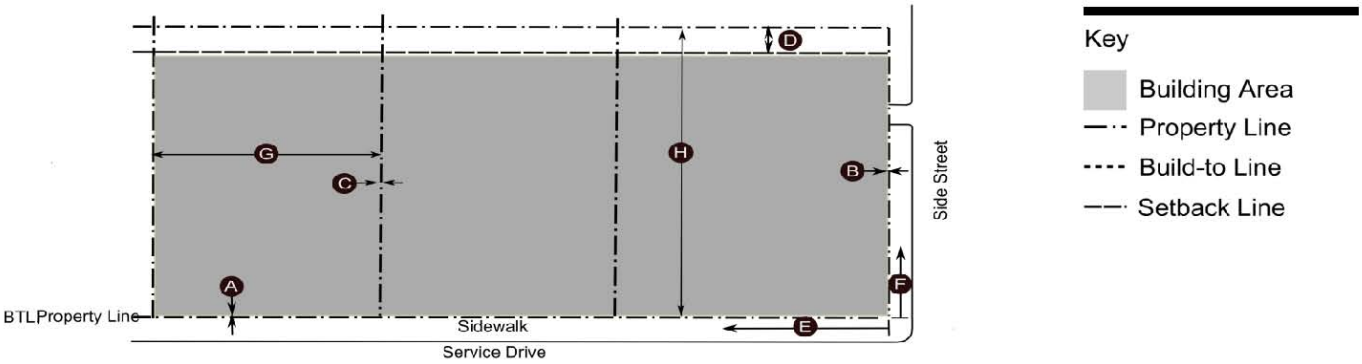
Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Dwelling: Multi-Family Duplex	NP
Dwelling: Multi-Family Triplex	NP
Dwelling: Multi-Family Fourplex	NP
Accessory Building	P
Retail	
Bar, tavern, night club	C
General retail, except:	P
Alcoholic beverage sales	C
Restaurant, café, coffee shop	P
Drive-Through	C
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	P
Business support services	P
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Commercial Block	
Liner Building	
Stacked Flats	
Townhouse/Stacked Flats	

Table 1.2.1.C: North Pike Urban General Street Frontage

BUILDING PLACEMENT



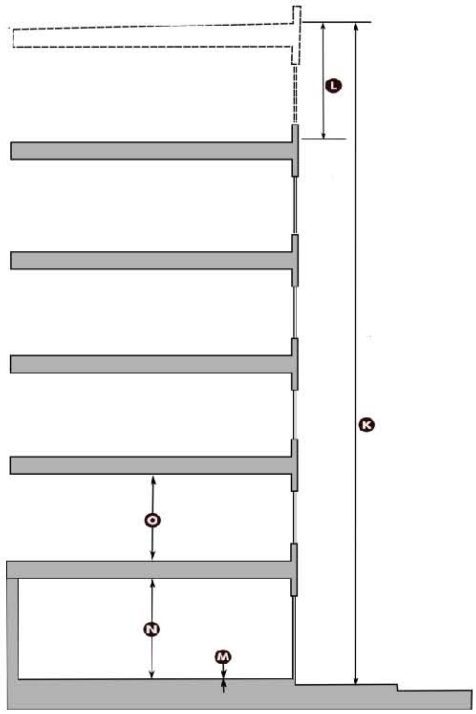
Build-to Line (BTL)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	150' max.	G
Lot Depth	200' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service or Recreation, Education & Public Assembly	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	5 stories	K
Additional Height**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15 minimum'	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type table for specific uses.

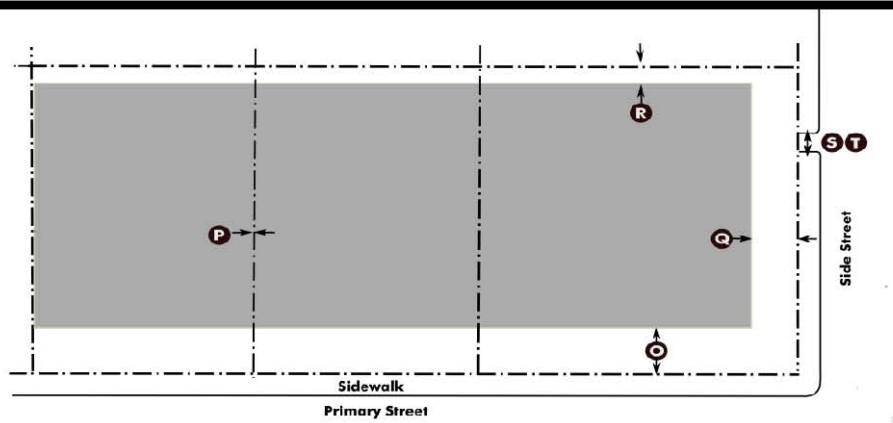
** Additional building story permitted per Table 1.2.3.F

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.1.C: North Pike Urban General Street Frontage

PARKING



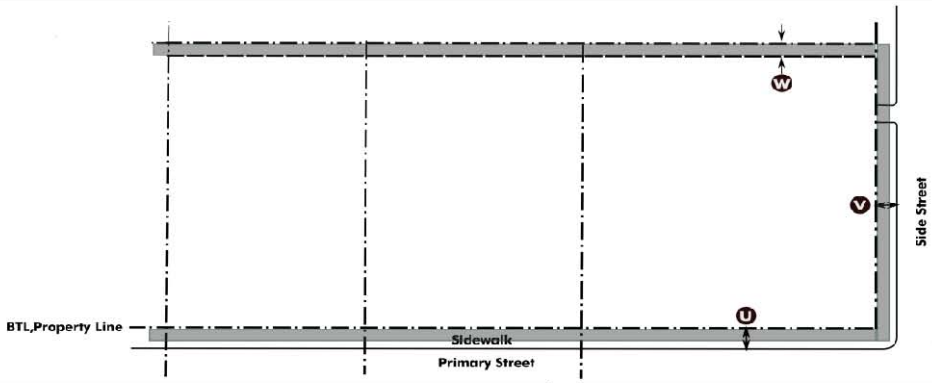
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	25'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary st.		T
Parking may be provided off-site within 1,300' or as shared parking.		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space/400 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 800 sf

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Frontage Types	See Table 1.7
Stoop	
Forecourt	

Notes

Table 1.2.1.C: North Pike Urban General Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	NP
>1500 sf	NP
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

Key*	
P	Permitted Use
C	Conditional Use (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

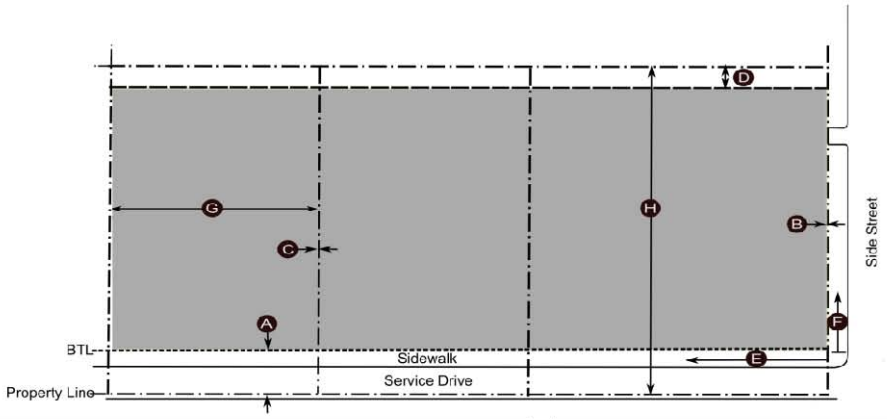
LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	NP
General retail, except:	NP
Alcoholic beverage sales	NP
Restaurant, café, coffee shop	NP
Drive-Through	NP
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	NP
Business support services	NP
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Stacked Flats	
Townhouse/Stacked Flats	
Commercial Block	
Live/Work	
Liner Building	

1.2.2 Building Form Standards - Middle Pike

Map 3: The Regulating Plan – Middle Pike

Table 1.2.2.A: Middle Pike Urban Corridor Street Frontage

BUILDING PLACEMENT



Key

- Building Area
- Property Line
- Build-to Line
- Setback Line

Build-to Line (BTL)		
Front	40'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	***25'	D

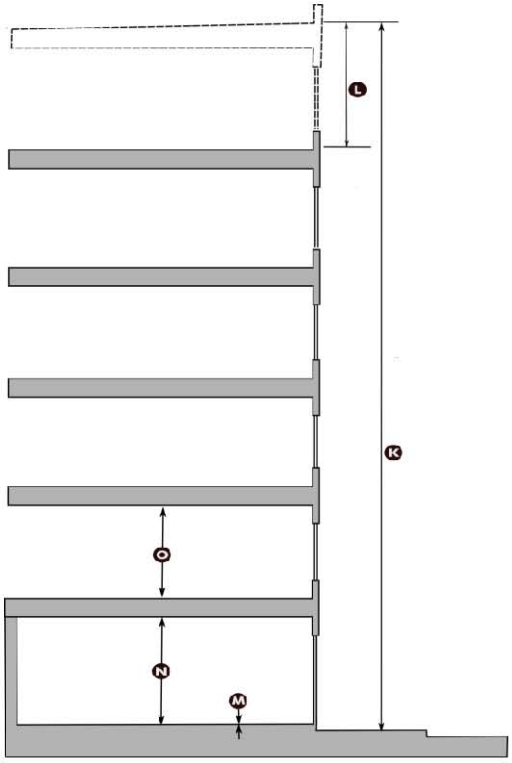
Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	150' max.	G
**Lot Depth	200' max	H

* Street facades must be built to BTL along first 30' from every corner.

** No lot depth requirement for properties fronting Corridor on east side.

*** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service, Retail, or Recreation, Education & Public Assembly***	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	5 stories	K
Additional Story**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

*See Land Use Type table for specific uses. Minimum retail depth on first floor is 40'.

**Additional building story permitted per Table 1.2.3.F

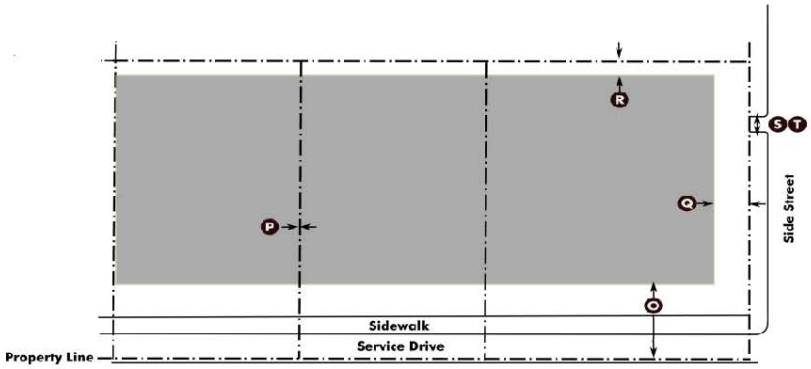
*** Restaurant permitted on upper floors if accessed from street frontage or interior lobby space.

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.2.A: Middle Pike Urban Corridor Street Frontage

PARKING



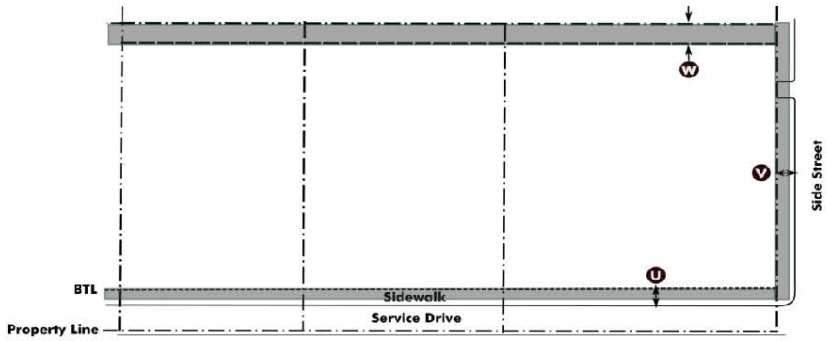
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	65'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space per 600 sf
Upper Floors	
Residential Uses	1 space per unit;. 5 per studio
Other Uses	1 space per 800 sf.

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary street.		T
Parking may be provided off-site within 1,300' or as shared parking.		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		
Parking drives are highly discouraged along Rockville Pike and are permitted if there is no other option for access to parking areas.		

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Notes

Frontage Types	See Table 1.7
Gallery	
Arcade	
Shopfront & Awning	

Table 1.2.2.A: Middle Pike Urban Corridor Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	P
>1500 sf	C
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

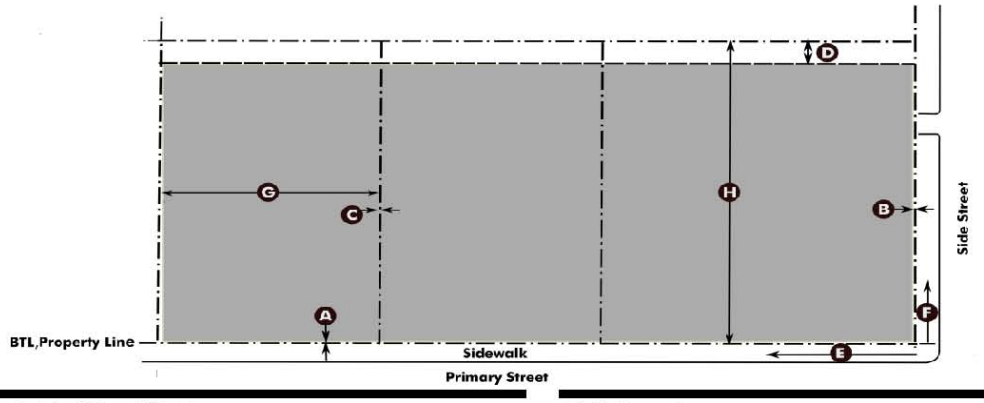
Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhse. and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	C
General retail, except:	P
Alcoholic beverage sales	C
Restaurant, café, coffee shop	P
Drive-Through	C
Neighborhood Commercial	P
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	P
Business support services	P
Medical services: Clinic, urgent care	P
Medical services: Doctors office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table1.6
Commercial Block	
Liner	
Stacked Units	

Table 1.2.2.B: Middle Pike Urban General Street Frontage

BUILDING PLACEMENT



Key

- Building Area
- Property Line
- Build-to Line
- Setback Line

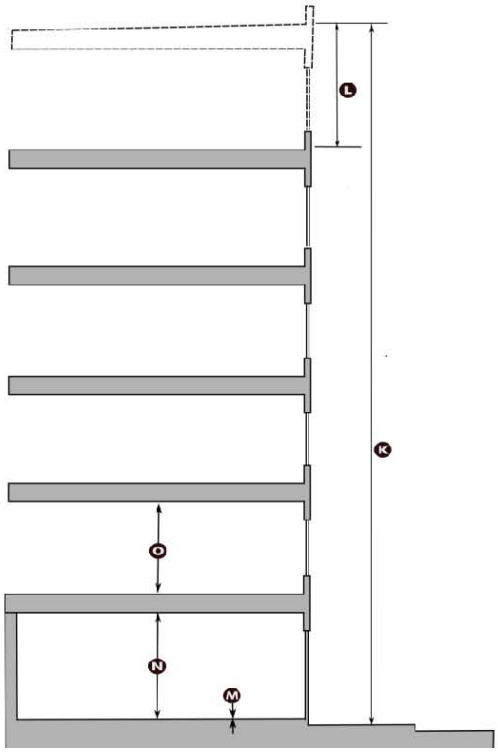
Build-to Line (BTL)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	150' max.	G
Lot Depth	200' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service or Recreation, Education & Public Assembly	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	5 stories	K
Additional Height**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type for specific uses.

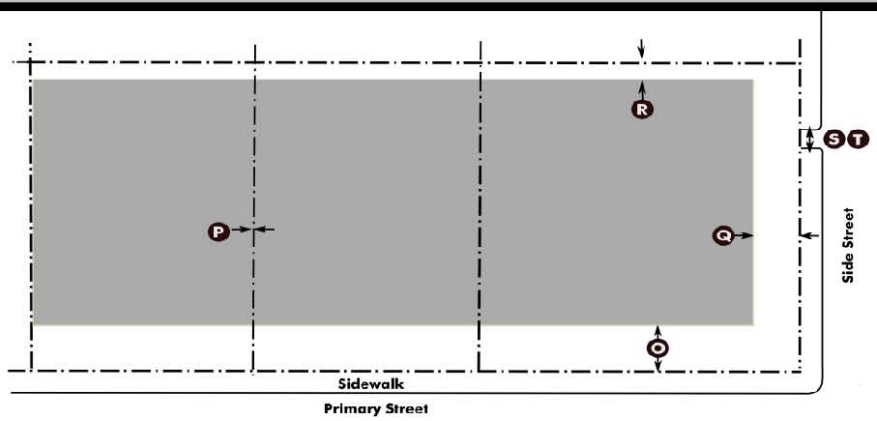
** Additional building story permitted per Table 1.2.3.F

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.2.B: Middle Pike Urban General Street Frontage

PARKING



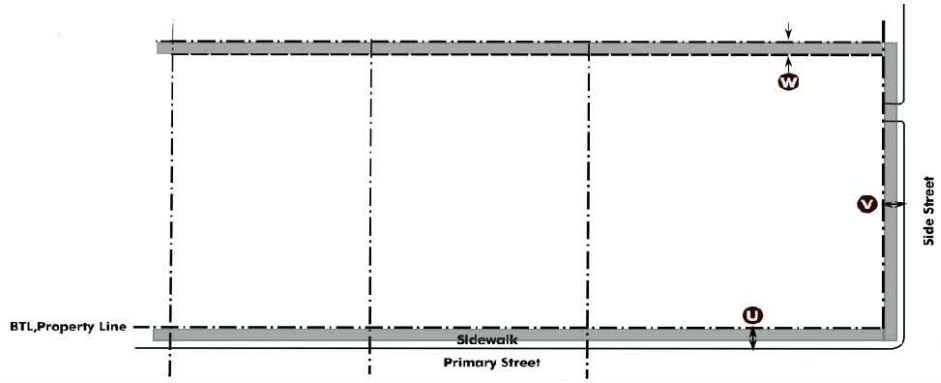
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	25'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off -street parking required
Uses > 3,000 sf	1 space/400 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 800 sf

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary st.		T
Parking may be provided off-site within 1,300' or as shared parking		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Notes

Frontage Types	See Table 1.7
Stoop	
Forecourt	

Table 1.2.2.B: Middle Pike Urban General Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	NP
>1500 sf	NP
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P

Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	NP
General retail, except:	NP
Alcoholic beverage sales	NP
Restaurant, café, coffee shop	NP
Drive-Through	NP
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	NP
Business support services	NP
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Commercial Block	
Liner	
Stacked Units	

1.2.3 Building Form Standards - South Pike

Map 4: The Regulating Plan – South Pike

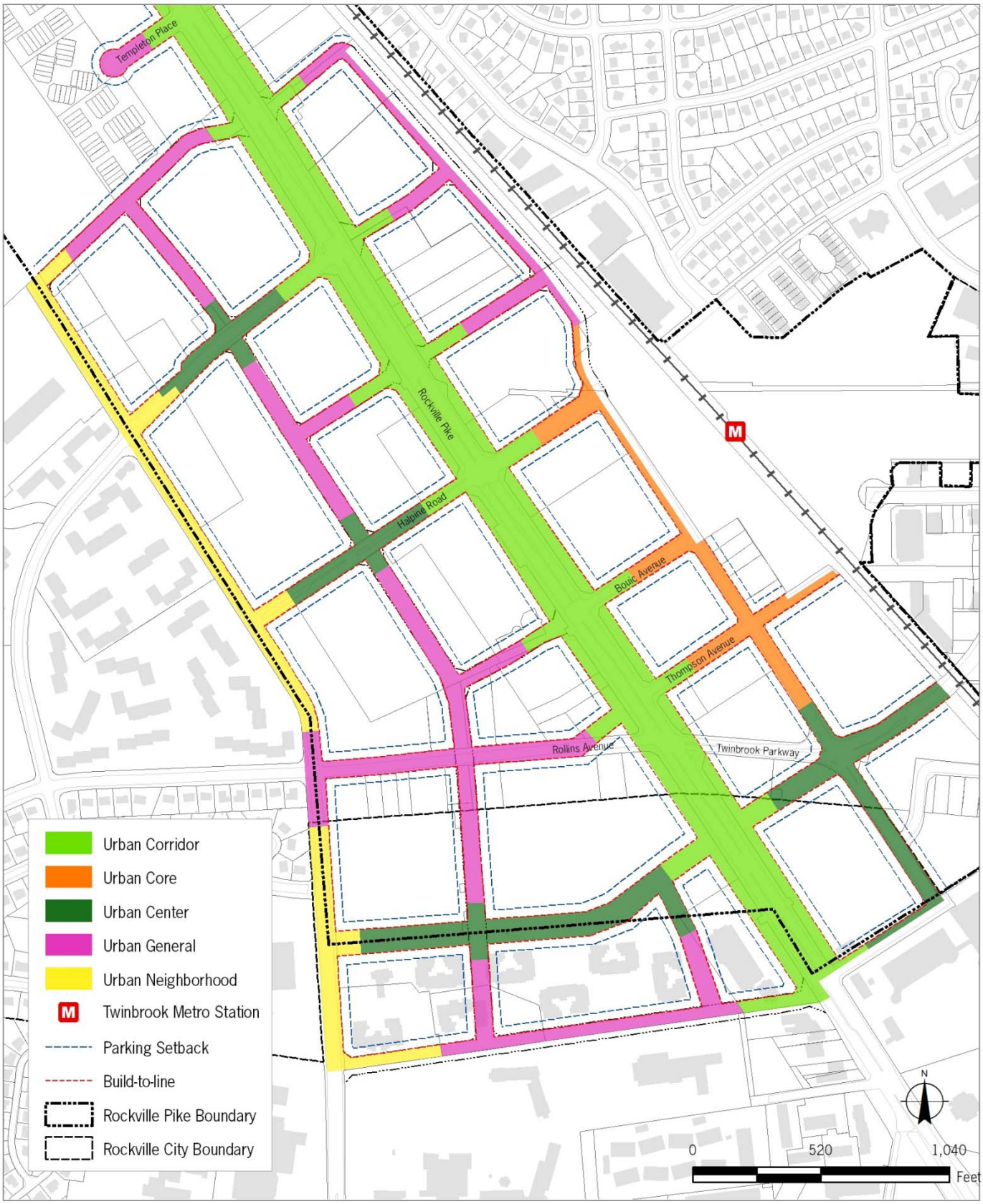
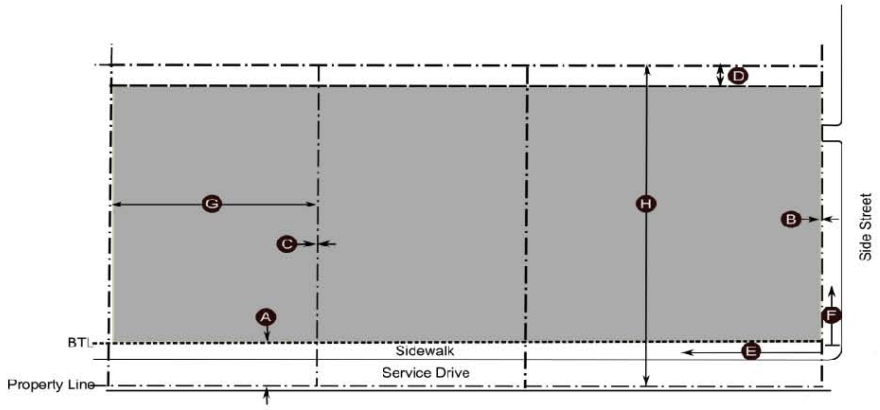


Table 1.2.3.A: South Pike Urban Corridor Street Frontage

BUILDING PLACEMENT



Key

- Building Area
- Property Line
- Build-to Line
- Setback Line

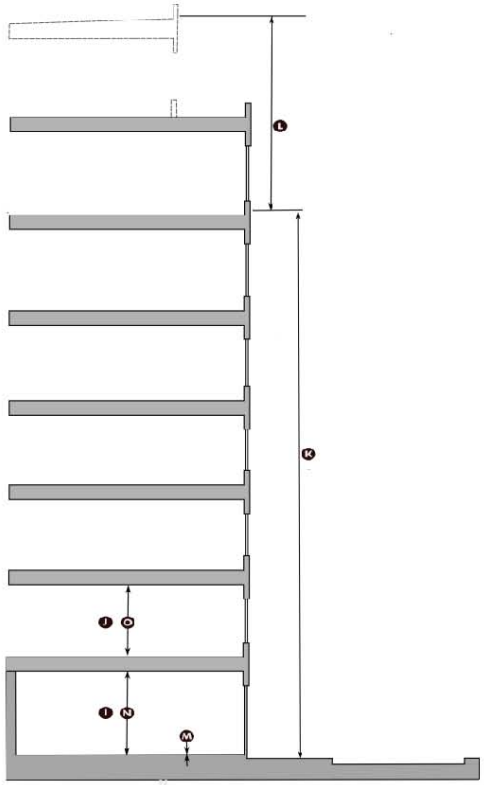
Build-to Line (BTL)		
Front	40'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	200' max.	G
Lot Depth	250' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service, Retail, or Recreation, Education & Public Assembly***	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	7 stories	K
Additional Story**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type Table for specific uses. Minimum retail depth on first floor is 40'.

** Additional building story permitted per Section 1.2.3.F; Step-back permitted per Section 1.1.8.4.B.

*** Restaurant permitted on upper floors if accessed from street frontage or interior lobby space.

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.3.A: South Pike Urban Corridor Street Frontage

PARKING

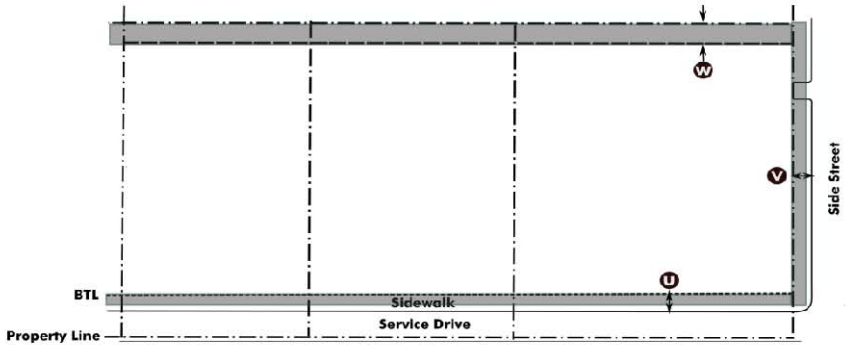
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	65'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space /600 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 800 sf

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary street.		T
Parking may be provided off-site within 1,300' or as shared parking		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		
Parking drives are highly discouraged along Rockville Pike and are permitted if there is no other option for access to parking areas.		

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Notes

Frontage Types	See Table 1.7
Arcade	
Gallery	
Shopfront & Awning	

Table 1.2.3.A: South Pike Urban Corridor Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	P
>1500 sf	C
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

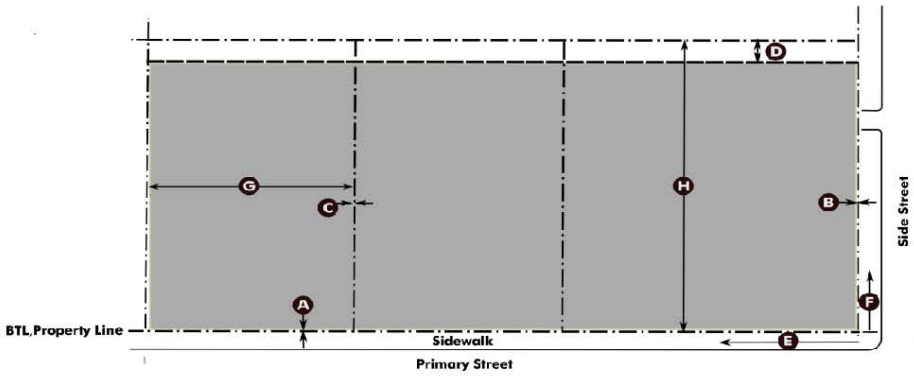
Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	C
General retail, except:	P
Alcoholic beverage sales	C
Restaurant, café, coffee shop	P
Drive-Through	C
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	P
Business support services	P
Medical services: Clinic, urgent care	P
Medical services: Doctors office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Commercial Block	
Liner Building	
Stacked Flats	
Townhouse/Stacked Flats	

Table 1.2.3.B: South Pike Urban Core Street Frontage

BUILDING PLACEMENT



Key

- Building Area
- Property Line
- Build-to Line
- Setback Line

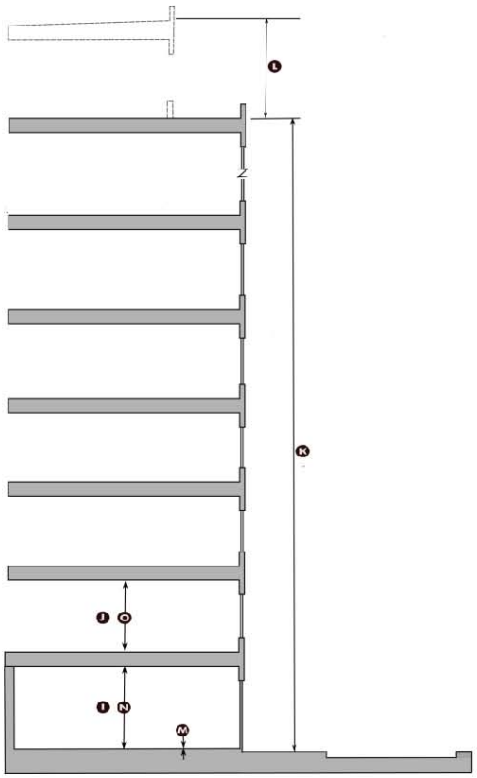
Build-to Line (BTL)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	200' max.	G
Lot Depth	250' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service, Retail, or Recreation, Education & Public Assembly***	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	11 stories	K
Additional Story**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type table for specific uses. Minimum retail depth on first floor is 40'.

** Additional building story permitted per Section 1.2.3.F; Step-back permitted per Section 1.1.8.4.B.

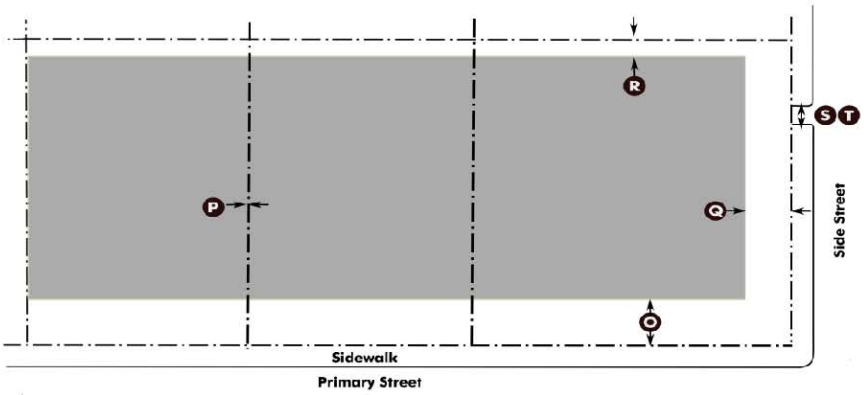
*** Restaurant permitted on upper floors if accessed from street frontage or interior lobby space.

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.3.B: South Pike Urban Core Street Frontage

PARKING



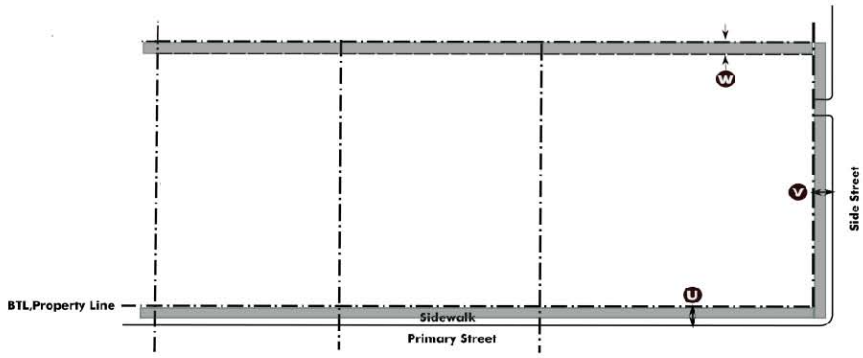
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	25'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space/800 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 800 sf

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary street.		T
Parking may be provided off-site within 1,300' or as shared parking		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Notes

Frontage Types	See Table 1.7
Arcade	
Gallery	
Shopfront & Awning	

Table 1.2.3.B: South Pike Urban Core Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	P
>1500 sf	C
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

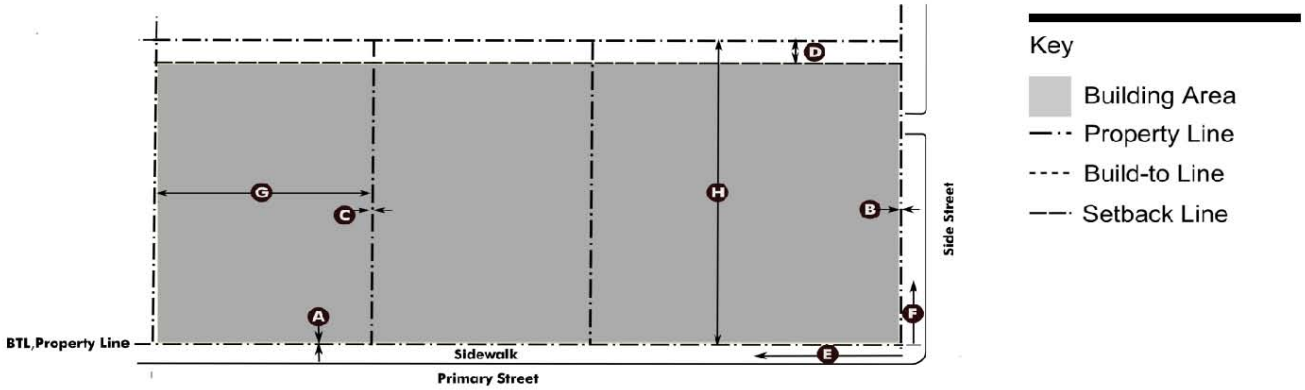
Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	C
General retail, except:	P
Alcoholic beverage sales	C
Restaurant, café, coffee shop	P
Drive-Through	C
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	P
Business support services	P
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Commercial Block	
Liner Building	
Stacked Flats	
Townhouse/Stacked Flats	

Table 1.2.3.C: South Pike Urban Center Street Frontage

BUILDING PLACEMENT



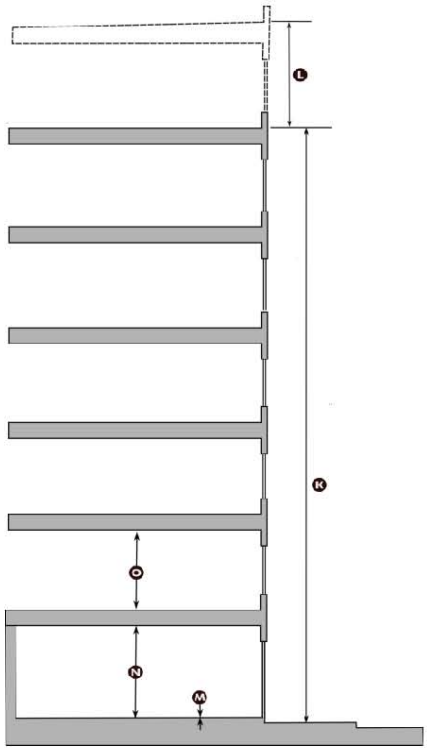
Build-to Line (BTL)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	200' max.	G
Lot Depth	250' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service, Retail, or Recreation, Education & Public Assembly***	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	6 stories	K
Additional Height**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type table for specific uses. Minimum retail depth on first floor is 40'.

** Additional building story permitted per Table 1.2.3.F

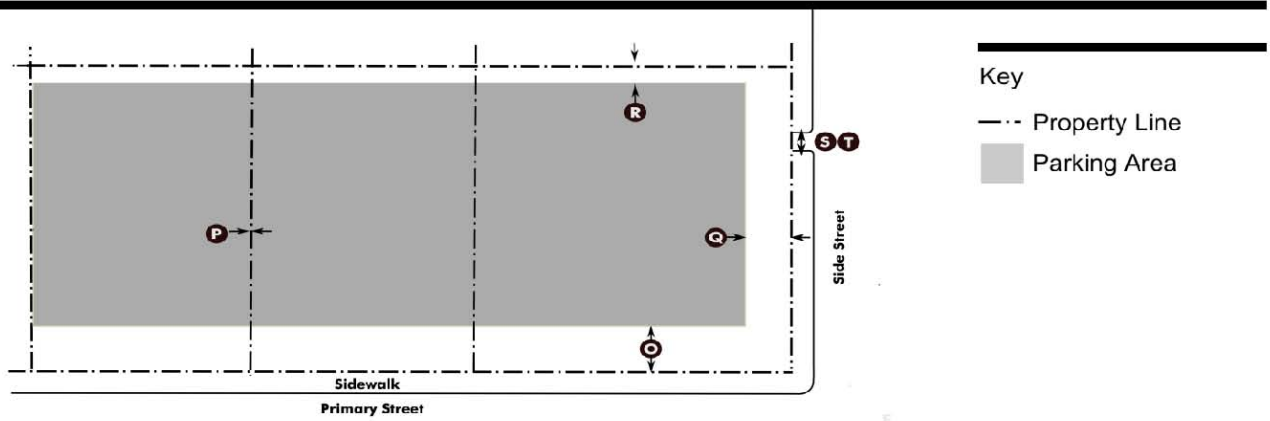
*** Restaurant permitted on upper floors if accessed from street frontage or interior lobby space.

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.3.C: South Pike Urban Center Street Frontage

PARKING

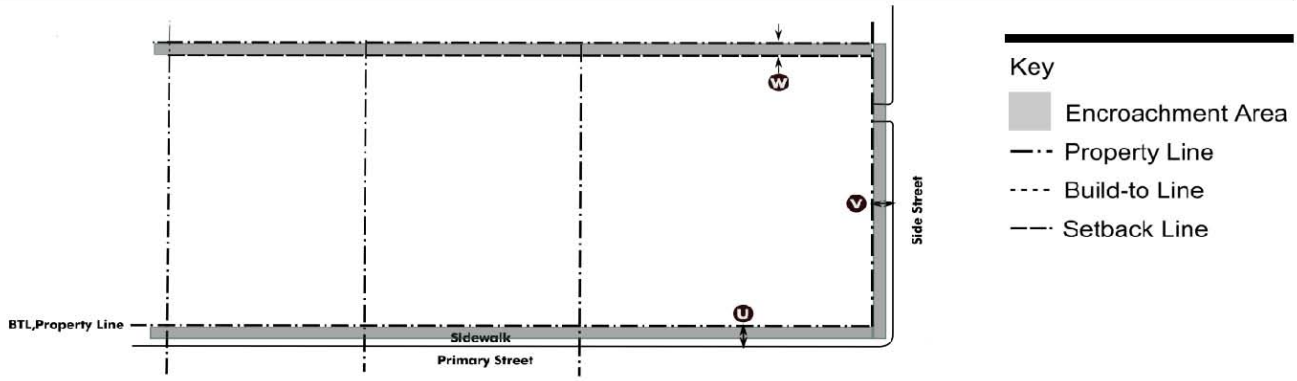


Location (Distance from Property Line)		
Front Setback	25'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space/500 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 800 sf

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary st.		T
Parking may be provided off-site within 1,300' or as shared parking.		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		

ENCROACHMENTS



Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Notes

Frontage Types	See Table 1.7
Arcade	
Gallery	
Shopfront & Awning	

Table 1.2.3.C: South Pike Urban Center Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	P
>1500 sf	C
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

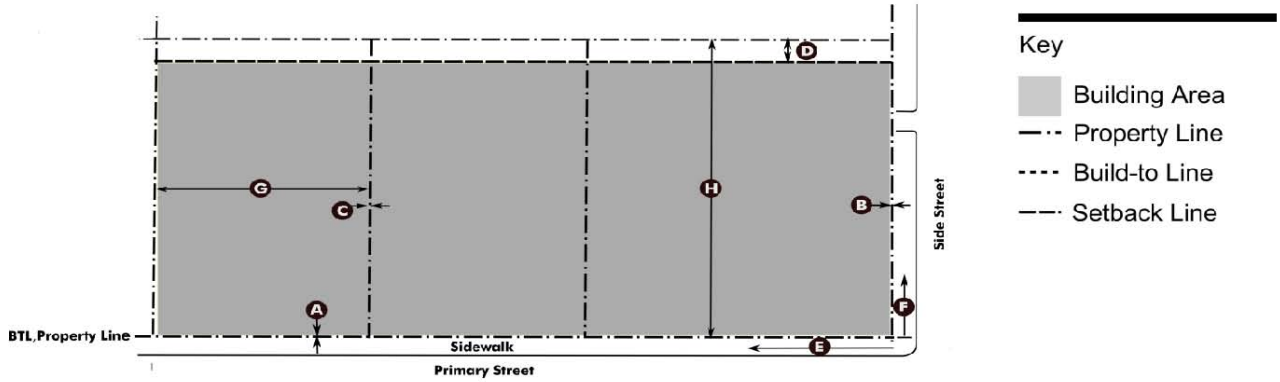
Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	C
General retail, except:	P
Alcoholic beverage sales	C
Restaurant, café, coffee shop	P
Drive-Through	C
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	P
Business support services	P
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Commercial Block	
Liner Building	
Stacked Flats	
Townhouse/Stacked Flats	

Table 1.2.3.D: South Pike Urban General Street Frontage

BUILDING PLACEMENT



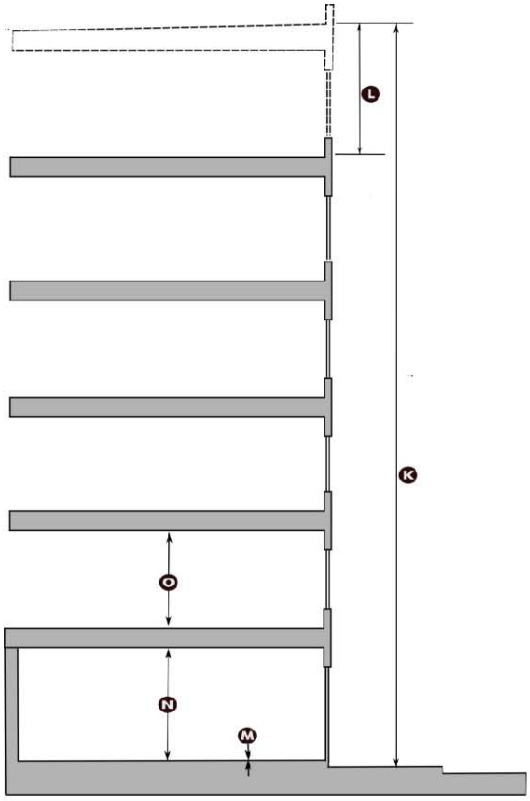
Build-to Line (BTL)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	50% min.	F
Lot Width	150' max.	G
Lot Depth	200' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Service or Recreation, Education & Public Assembly	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	5 stories	K
Additional Height**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	15' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type table for specific uses.

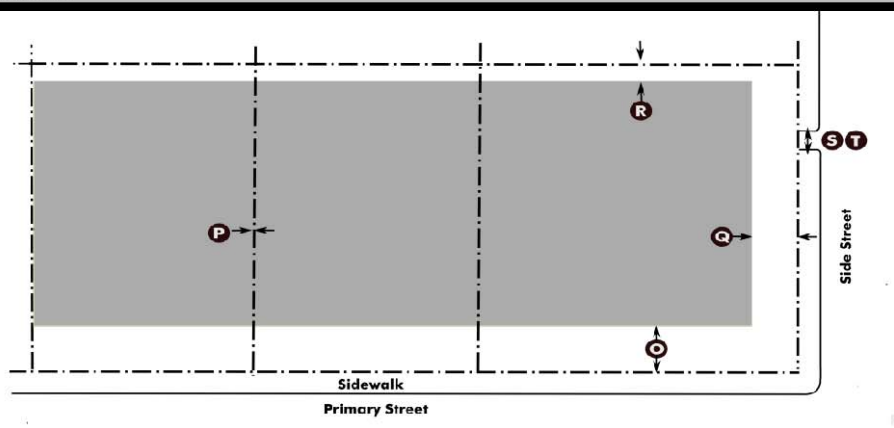
**Additional building story permitted per Table 1.2.3.F

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.3.D: South Pike Urban General Street Frontage

PARKING



Key
- Property Line
- Parking Area

Location (BTL)		
Front Setback	25'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Uses < 3,000 sf	No off-street parking required
Uses > 3,000 sf	1 space/400 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 450 sf

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary street.		T
Parking may be provided off-site within 1,300' or as shared parking		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		

ENCROACHMENTS

Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Frontage Types	See Table 1.7
Stoop	
Forecourt	

Notes

Table 1.2.3.D: South Pike Urban General Street Frontage

LAND USE TYPE	Approval Required
Recreation, Education, and Public Assembly	
Commercial Recreation Facility: Indoor	
<1500 sf	P
>1500 sf	C
Health/ Fitness Facility	
<1500 sf	P
>1500 sf	C
Library, Museum	P
Meeting Facility, public or private	P
Park, Playground	P
School, public or private	P
School: art, dance, martial arts, music, etc.	
<1500 sf	P
Theater, cinema, or performing arts	
<1500 sf	NP
>1500 sf	NP
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

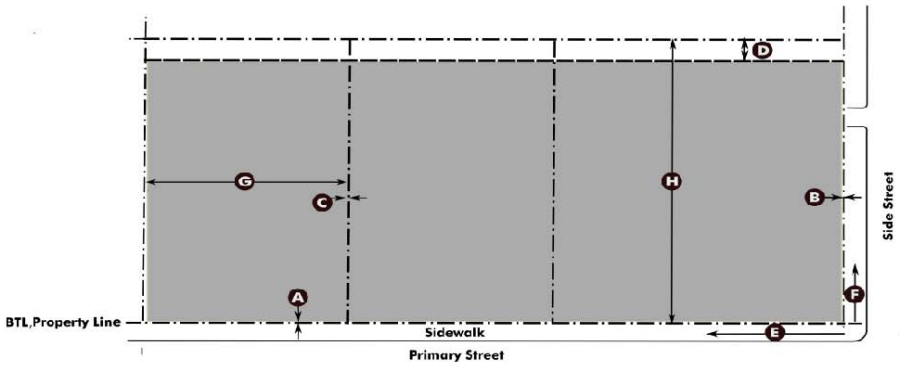
Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Accessory Building	P
Retail	
Bar, tavern, night club	NP
General retail, except:	NP
Alcoholic beverage sales	NP
Restaurant, café, coffee shop	NP
Drive-Through	NP
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	NP
Business support services	NP
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Building Types	See Table 1.6
Commercial Block	
Liner	
Stacked Units	

Table 1.2.3.E: South Pike Urban Neighborhood St. Frontage

BUILDING PLACEMENT



Key

- Building Area
- Property Line
- Build-to Line
- Setback Line

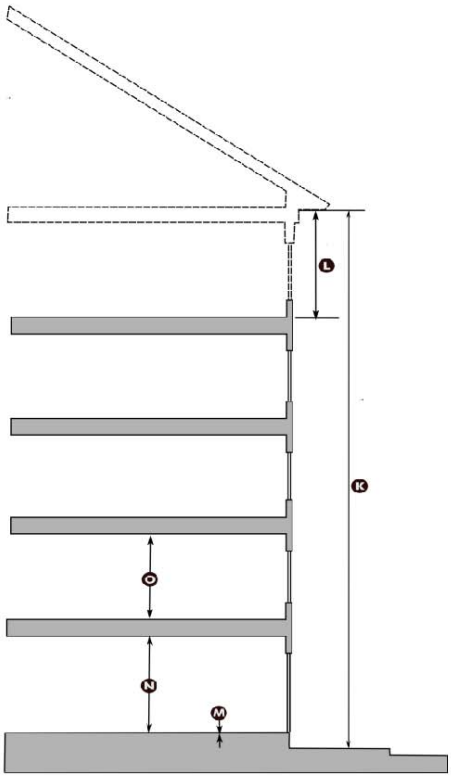
Build-to Line (BTL)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear	**25'	D

Building Form		
*Primary Street Façade built to BTL	80% min.	E
Side Street Façade built to BTL	30% min.	F
Lot Width	150' max.	G
Lot Depth	200' max.	H

* Street facades must be built to BTL along first 30' from every corner.

** No required setback from alleys.

HEIGHT & USE



Use		
Ground Floor*	Residential or Service	I
Upper Floor(s)	Residential or Service	J

Height		
Building Minimum	2 stories	K
Building Maximum	4 stories	K
Additional Story**		L
Accessory Building Maximum	2 stories	
Finish Ground Floor Level	6" maximum above sidewalk	M
First Floor Ceiling Height	10' minimum	N
Upper Floor(s) Ceiling Height	10' minimum	O

* See Land Use Type table for specific uses.

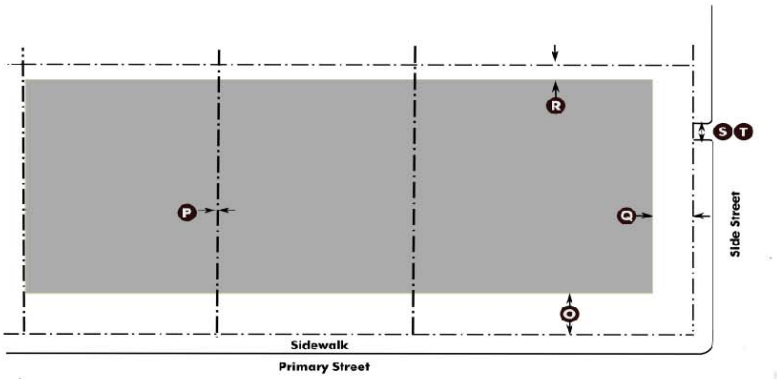
**Additional building story permitted per Section 1.2.3.F

Notes

Any lot section along the BTL not defined by a building must be defined by a 2'6" to 4'6" stucco or masonry wall.

Table 1.2.3.E: South Pike Urban Neighborhood St. Frontage

PARKING



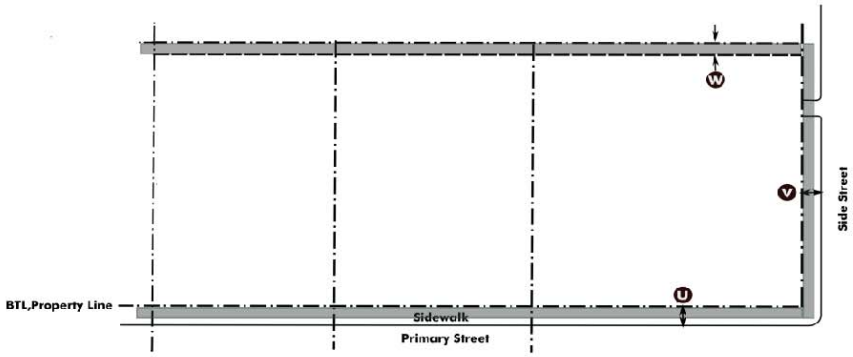
Key
- Property Line
- Parking Area

Location (Distance from Property Line)		
Front Setback	25'	O
Side Setback	0'	P
Side Street Setback	25'	Q
Rear Setback	5'	R

Required Spaces	
Ground Floor	
Residential Uses	1 space per unit; .5 per studio
Non-Residential	1 space per 500 sf
Upper Floors	
Residential Uses	1 space per unit; .5 per studio
Other Uses	1 space per 450 sf

Notes		
Parking Drive Width	18' max.	S
On corner lots, parking drive shall not be located on primary street.		T
Parking may be provided off-site within 1,300' or as shared parking		
Bicycle parking must be provided and in a secure environment per Section 25.16.09.		

ENCROACHMENTS



Key
- Encroachment Area
- Property Line
- Build-to Line
- Setback Line

Location		
Front	12' max.	U
Side Street	8' max.	V
Rear	4' max.	W

Notes

Frontage Types	See Table 1.7
Stoop	
Forecourt	

Table 1.2.3.E: South Pike Urban Neighborhood St. Frontage

LAND USE TYPE	Approval Required
Services: General	
Bed & Breakfast	
4 guest rooms or less	P
Greater than 4 guest rooms	P
Day care center: Child or adult	P
Lodging	P
Personal services	P
Transport., Communication, Infrastructure	
Parking facility, public or commercial	P
Wireless telecommunication facility	C

LAND USE TYPE	Approval Required
Residential	
Home Occupations	
< 3000 sf and 2 or fewer employees	P
> 3000 sf and 3 or fewer employees	P
> 3000 sf and 3 or more employees	C
Mixed-use project, res. component	P
Dwelling: Multi-Family (Townhouse and Flats)	P
Dwelling: Multi-Family Duplex	NP
Dwelling: Multi-Family Triplex	NP
Dwelling: Multi-Family Fourplex	NP
Accessory Building	P
Retail	
Bar, tavern, night club	NP
General retail, except:	NP
Alcoholic beverage sales	NP
Restaurant, café, coffee shop	NP
Drive-Through	NP
Services: Business, Financial, Professional	
ATM	P
Bank, Financial services	NP
Business support services	NP
Medical services: Clinic, urgent care	P
Medical services: Doctor office	P
Office: Business service	P
Office: Professional, administrative	P

Key*	
P	Permitted Use Type
C	Conditional Use Type (See Section 1.10.5)
NP	Not Permitted

* Use types not listed are not permitted.

Building Types	See Table 1.6
Stacked Flats	
Townhouse/Stacked Flats	
Live-work	

Table 1.2.3.F : Additional Standards for all Street Frontages

PARKING

Required Space Size

Off-Street Space	9'x18' min.

Notes

Wider parking drives may be required to accommodate emergency vehicles.

Off-street spaces do not have to be covered.

Tandem parking is allowed for off-street parking as long as both spaces are behind the front façade plane.

Shared drives are encouraged between adjacent lots to minimize curb cuts along the street.

All parking areas shall be screened by a 3'6" min. height hedge, wall, or fence.

Drives not allowed off of streets on lots with access to alleys.

OTHER REQUIREMENTS

Green Building Incentives

Projects shall receive priority for processing and review that include green building techniques in compliance with Article XIV, Green Building Regulations or receive a Silver LEED certification level.

Projects that include green building techniques in compliance with Article XIV, Green Building Regulations or receive a Silver LEED certification level, or equivalent, may increase building height by 1 story.

.

Standard Vehicle Space Requirements

Angle	Space Width	Space Depth*	Space Length	One-way Aisle Width	Two-way Aisle Width
Parallel	9'	9'	21'	14'	18'
30 degree*	9'	18'	18'	14'	N/A
45 degree*	9'	20'6"	18'	14'	N/A
60 degree*	9'	22'	18'	18'	N/A
Perpendicular	9'	18'	18'	24' **	24'

*Measured perpendicular to aisle. ** 20' for structured parking facilities.

Table 1.2.3.F: Additional Standards for all Street Frontages (Cont.)

Summary of Parking Space Requirements

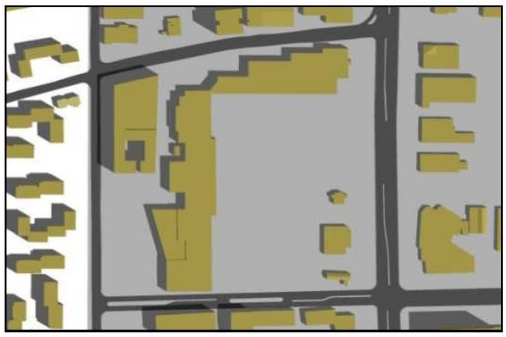
	Ground Floor		Upper Floors	
Frontage Type	Uses < 3,000 sf	Uses > 3,000 sf	Residential Uses	Other Uses
North Pike Urban Corridor	No Requirement	1 space /600 sf	1 space per unit; .5/studio	1 space per 800 sf
North Pike Urban Center	No Requirement	1 space /500 sf	1 space per unit; .5/studio	1 space per 800 sf
North Pike Urban General	No Requirement	1 space /400 sf	1 space per unit; .5/studio	1 space per 800 sf
Middle Pike Urban Corridor	No Requirement	1 space /600 sf	1 space per unit; .5/studio	1 space per 800 sf
Middle Pike Urban General	No Requirement	1 space /400 sf	1 space per unit; .5/studio	1 space per 800 sf
South Pike Urban Corridor	No Requirement	1 space /600 sf	1 space per unit; .5/studio	1 space per 800 sf
South Pike Urban Core	No Requirement	1 space /800 sf	1 space per unit; .5/studio	1 space per 800 sf
South Pike Urban Center	No Requirement	1 space /500 sf	1 space per unit; .5/studio	1 space per 800 sf
South Pike Urban General	No Requirement	1 space /400 sf	1 space per unit; .5/studio	1 space per 800 sf
South Pike Urban Neighborhood	*	*	1 space per unit; .5/studio	1 space per 800 sf

* Residential: 1 space per unit; .5/studio, Non-Residential: 1 space /500 sf

Table 1.3: Subdividing Larger Sites to Create Blocks

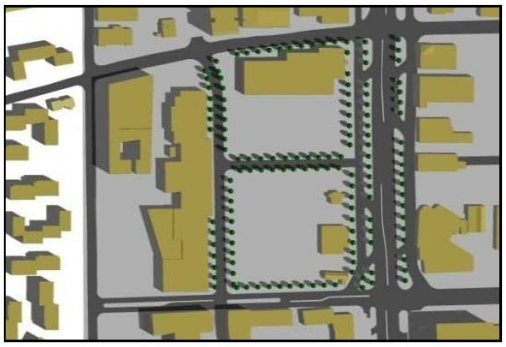
PROCEDURE FOR SUBDIVIDING LAND

An interconnected network of streets is a vital component of making communities walkable. This interconnection is afforded by a limited block size. The following approach to creating optimal block sizes applies to sites that are 2 acres or larger in size.



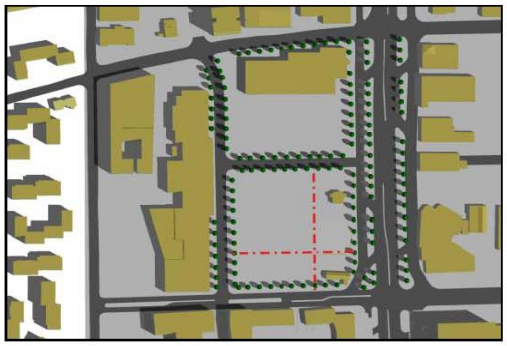
Size Site

Sites larger than 2 acres shall be subdivided further to create additional blocks.



Introduce Streets

Sites being subdivided into additional blocks shall introduce streets from the list of allowable street types (See Table 1.4). Access to blocks and their individual parcels is allowed only by alleys/lanes, side streets, etc. The intent is to maintain the continuity and integrity of the streetscape without interruptions.



Introduce Lots

Based on the types of blocks created and the thoroughfares they front, lots are introduced on each block to correspond with the Building and Parking Placement standards and Use Types.

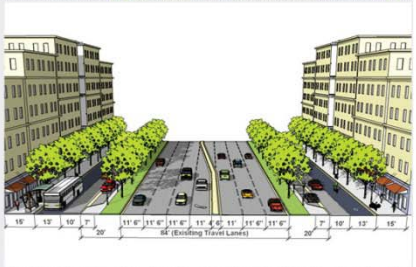
Introduce Projects

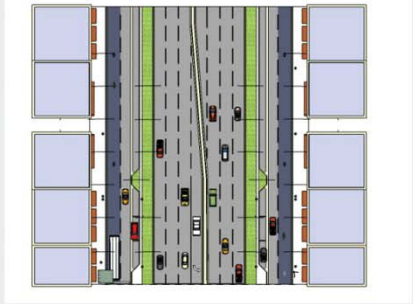
Each lot is designed to receive a building per the allowable Building and Frontage Types identified from Tables 1.6 and 1.7 and can be arranged to suit the particular organization of buildings desired. The allowable Building Types are then combined with the Frontage Types per the specific Street Frontage to generate a particular urban form and character.

1.4: Thoroughfare Standards

Boulevard *

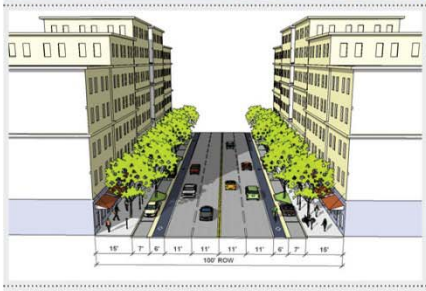
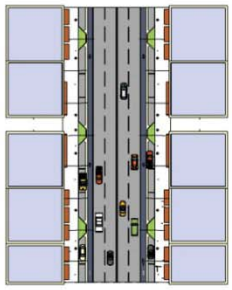
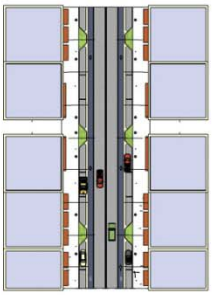
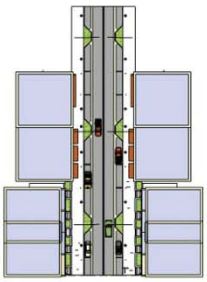
Good streets form the backbone of vibrant and healthy neighborhoods. Many perform the dual role as vehicular and pedestrian corridors, as well as the community's primary public places, and are often destinations in and of themselves. Some also function as access to parking and service areas. This table outlines the standards for creating a range of possible thoroughfare types.





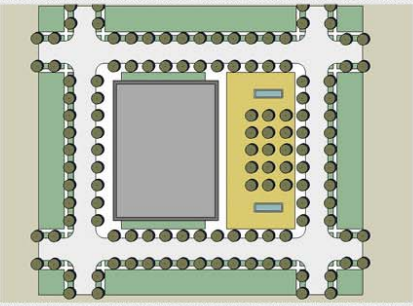
Application	
Movement Type	Free
Speed Limit	35 mph.
Pedestrian Crossing Time	24 seconds
Urban Frontage Level	Urban Corridor
Overall Widths	
Right-of-Way	120'
Curb Face to Curb Face Width	23' - Slip, 84' Through
Lanes	
Max. Traffic Lane Width	11'6"
Min. Width – Shared transit / bicycle lane	13'
Parking Lane Type	Parallel
Min. Parking Lane Width	7'
Median Required	Yes
Edges	
Curb Type	Bench
Planter Type	Continuous Planter & Tree Well
Min. Planter Width	10'
Landscape Type	
Spacing Type	Evenly Spaced
Spacing	30'
Min. Sidewalk Width	15'
Lighting	
Type	Pedestrian & Street
Spacing (Pedestrian, Street)	75', 150'

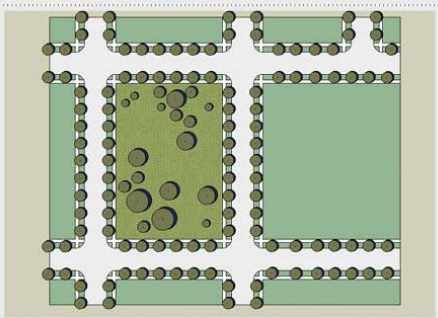
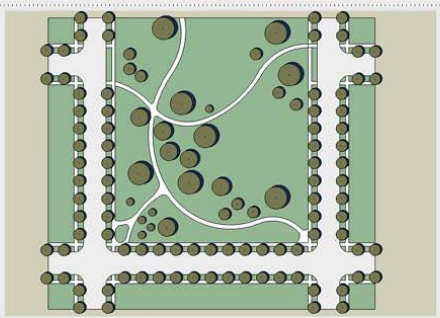
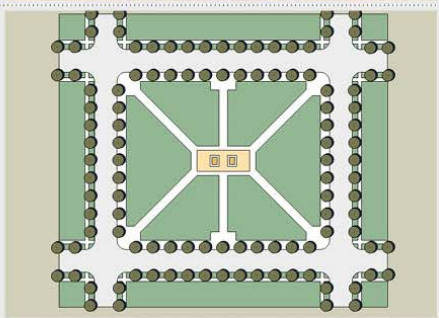
*The State of Maryland has authority over the Rockville Pike thoroughfare.

Commercial Collector **	A Street **	B Street **
		
		
Free	Slow	Slow
35 mph.	25 mph.	25 mph.
13 seconds	12 seconds	12 seconds
Urban Center	Urban Core & Urban Center	Urban Core, Center, & General
100'	80'	60'
70'	48'	36'
11'	11'	11'
6' (bicycle lane only)	6' (bicycle lane only)	NA
Parallel	Parallel	Parallel
7'	7'	7'
No	No	No
Bench	Bench	Bench
Intermittent Planter & Tree Well	Intermittent Planter & Tree Well	Intermittent Planter
7'	7'	7'
Evenly Spaced	Evenly Spaced	Evenly Spaced
30'	30'	30'
15'	16'	12'
Pedestrian & Street	Pedestrian	Pedestrian
75', 150'	75', 150'	75', 150'

** Rockville's road code regulates the standards for city roads.

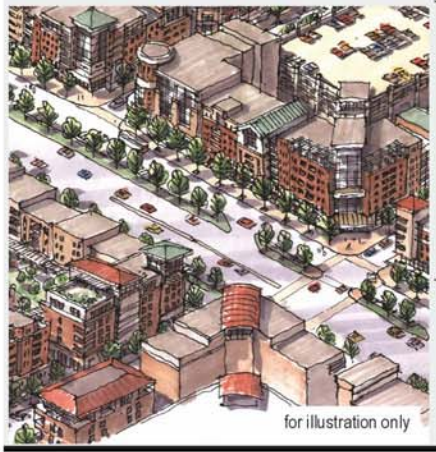
1.5: Open Space Standards

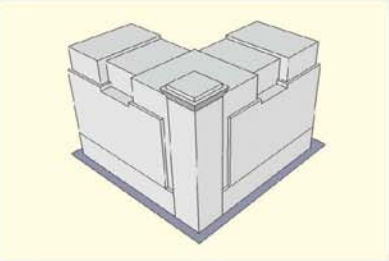
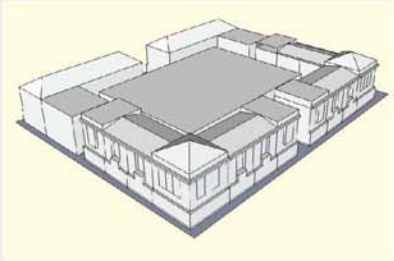
	Plaza
Public open space or civic space is to be located in the central part of a neighborhood with convenient access, visible, and proximate to the public. These standards regulate the size, location, and character of open space along the Corridor.	
for illustration only	 A plaza is a formal open space available for civic and commercial uses and spatially defined by building frontages. Landscaping in a plaza consists primarily of pavement, trees and shrubs.
Public Frontage	
Percent of Park Perimeter Fronting Street	50
Space Size	
Space Size (Acres)	0.5-1.0
Open Space Requirement*	5% of total buildable area plus 10% fee-in-lieu of.
* For properties along the Corridor Street Frontage, the 10% public open space requirement may be met by contribution of, and improvements to, the sidewalk within the defined easement area adjacent to the Rockville Pike right-of-way, and in accordance with Section 1.9 Streetscape Standards. The 5% open space requirement shall be contiguous open space and shall be located anywhere behind the parking setback, either at grade or at the second story.	
Street Frontage Type	
Type	Urban Core, Urban Corridor, & Urban Center
Proximity	
Minimum Distance from Residential Use	1/8 mile

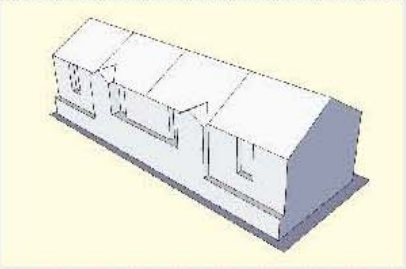
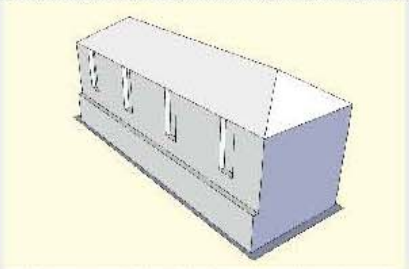
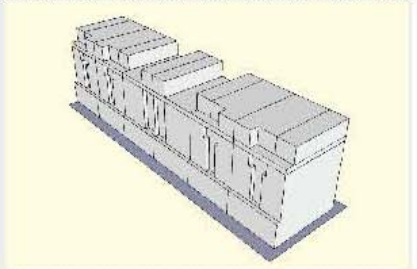
Green	Park	Square
		
A green is an open space consisting of lawn and informally arranged trees and shrubs, typically furnished with paths, benches, and open shelters. Greens are spatially defined by abutting streets.	A park is a natural landscape consisting of open and wooded areas, typically furnished with paths, benches, and open shelters. Neighborhood parks are often irregularly shaped but may be linear to parallel natural or man-made corridors.	A square is a formal open space available for recreational and civic uses and spatially defined by abutting streets and building frontages. Landscaping in a square consists of a lawn, trees, and shrubs planted in formal patterns and is typically furnished with paths, benches and open shelters.
100	100	100
0.25-1.0 5% of total buildable area plus 10% fee-in-lieu of.	1.0-2.0 + 5% of total buildable area plus 10% fee-in-lieu of.	0.5-2.0 5% of total buildable area plus 10% fee-in-lieu of.
Urban Center	Urban Neighborhood	Urban Core, Urban Corridor, & Urban Center
1/8 mile	1/8 mile	1/8 mile

1.6: Building Types

Building types are the building blocks of good urbanism because of their ability to help ensure diversity in building form. The building type standards are based more on the physical form of a building and secondarily by its use. The following standards are given by particular building type and are used to complement the building form standards.

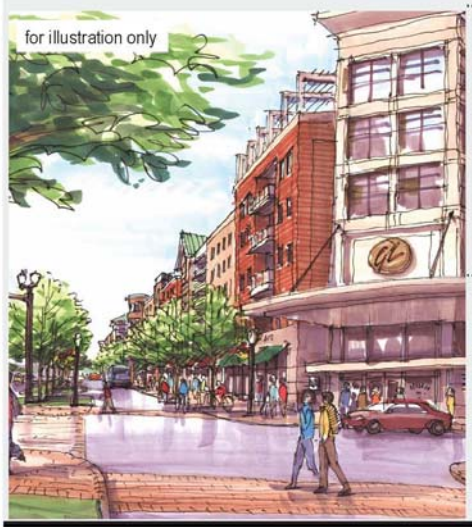

for illustration only

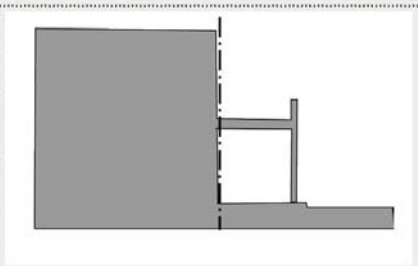
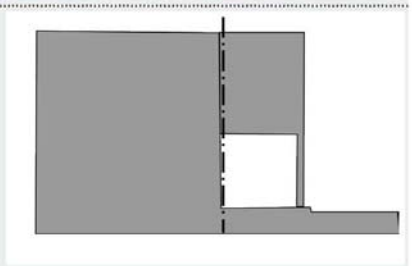
	Commercial Block	Liner
		
	A lot and building located and designed to accommodate offices or multiple dwellings on upper stories and various commercial uses on the ground story.	A building or portion of a building constructed in front of a parking garage, cinema, super market, etc to conceal large expanses of blank wall area and to face the street space with a façade that has ample doors and windows opening onto the sidewalk.
Lot Size		
Max. Lot Width	200'	200'
Max. Lot Depth	250'	250'
Pedestrian Access		
Main entrance location	Primary Street	Primary Street
Upper floor units access	Primary Street	Primary Street
Min. distance between entries to upper floors	100'	100'
Min. distance between doors at street	75'	75'
Elevator Access	Internal Lobby, Main Entrance	Internal Lobby, Main Entrance
Vehicular Access and Parking		
Allowed Parking Types	Off-Street; Above or Underground Garage; On-Street	Off-Street; Above Ground Garage; On-Street
Access to Parking	Alley or Side Street	Alley or Side Street
Access to Dwelling from Parking	Indirect Through Public Space	Indirect Through Public Space
Building Size and Massing		
Number or frequency of breaks in planes on front elevation	50'	50'
Number or frequency of breaks in planes on side elevation	75'	75'
Street Frontage Level	Urban Core, Urban Corridor, & Urban Center	Urban Core, Urban Corridor, & Urban Center
Frontages		
Allowed Type	Storefront & Awning	Storefront & Awning
Ground floor elevation max. above sidewalk	NA	NA
Service		
Location	Alley or Building Rear	Alley or Building Rear

Live/Work	Stacked Units	Townhouse/Stacked
		
A lot and building located and designed to accommodate an attached building with residential uses, commercial uses, or a combination of the two within individually occupied live-work units, all of which may occupy any story of building.	Multi-family units within a single complex that are arranged in a vertical order with various arrangements that include single and multi-floor units "stacked" upon one another.	A multi-family building with townhomes on the first level and "stacked" units on the upper levels. Access to upper units is at the frontage street level. When combined with access to the townhome units, this permits as many "doors" on the street as possible to enliven street activity.
150'	200'	200'
200'	250'	250'
Primary Street	Primary Street	Primary Street
Primary Street	Primary Street	Primary Street
Each Unit	100'	Each Unit
75'	75'	75'
Internal Lobby, Main Entrance	Internal Lobby, Main Entrance	Internal Lobby, Main Entrance
Off-Street; Single Unit Garage or Tucked Under; On-Street	Off-Street; Above or Underground Garage; On-Street	Off-Street; Above or Underground Garage; On-Street
Alley or Side Street	Alley or Side Street	Alley or Side Street
Direct	Indirect Through Public Space	Indirect Through Public Space
50'	50'	50'
75'	75'	75'
Urban General, Urban Center, & Urban Neighborhood	Urban General & Urban Neighborhood	Urban General & Urban Neighborhood
Forecourt & Stoop	Forecourt	Forecourt & Stoop
NA	NA	3'
Alley or Building Rear	Alley or Building Rear	Alley or Building Rear

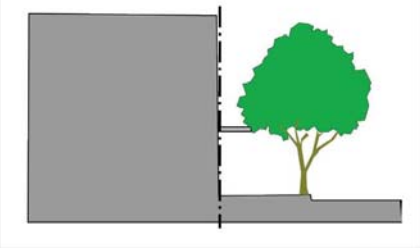
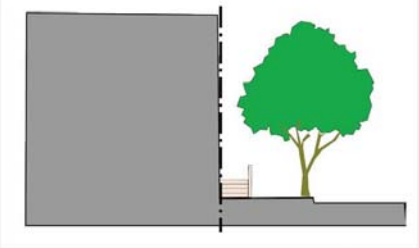
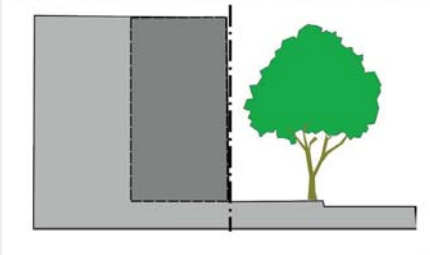
1.7: Frontage Types

Frontages are the way buildings engage the public realm. Once a building is located properly, the properly selected frontage type will serve as the interface between the public and private realm. The following frontage type standards cover the most common type of frontages found in the area.



	Gallery	Arcade
		
	A frontage wherein the façade is aligned close to the Frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the sidewalk. This type is conventional for retail use.	A colonnade supporting habitable space that overlaps the sidewalk while the façade at the sidewalk level remains at or behind the frontage line. This type is conventional for retail use.
Frontage Type		
Minimum Glazing Ground Floor %	75	80
Minimum Glazing Upper Floors %	30	30
Depth		
Minimum Overall Depth	8'*	8'*
Height		
Minimum Overall Height	10'	10'
Width		
Overall Width (% building front)	75-100	75-100
Miscellaneous		
Urban Frontage	Urban Core, Center & Corridor	Urban Core, Center & Corridor

*Minimum distance between curb line and arcade or gallery column is 2'.

Shopfront & Awning	Stoop	Forecourt
		
A frontage wherein the façade is aligned close to the frontage line with the building entrance at the sidewalk grade. This type is congenial for retail use. It has a substantial glazing on the sidewalk level and an awning that should overlap the sidewalk to within 2 feet of the curb if possible.	A frontage wherein the façade is aligned close to the frontage line with the first story elevated from the sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground floor residential use.	A frontage wherein a portion of the façade is close to the frontage line and the central portion is set back. The forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other frontage types. Large trees within the forecourts may overhang the sidewalks.
70	NA	Na
30	20	20
5'	6'	5'
10'	NA	NA
25-100	NA	50
Urban Core, Center & Corridor	Urban General & Neighborhood	Urban General & Neighborhood

1.8 ARCHITECTURAL STANDARDS

1.8.1 General Principles and Intent

These Architectural Standards serve to establish a coherent character for the Form Code and encourage a high quality, lasting quality of development. Proposed development plans must be reviewed by the Development Review Committee and the Town Architect to verify that they meet these Architectural Standards, as well as the building envelope and other standards established by these development regulations.

A. Refer to Section 1.10 for Development Review Committee information.

B. The following Principles and Standards shall be applied to all development projects within the Form Code. A statement of principle precedes each set of Standards, defining the general intent and goals to be achieved.

C. The Standards that follow each principle define more specific requirements for compliance. The standards are intended to provide some flexibility to the applicant, providing the project meets the general intent of the principle.

D. Definitions (apply to 1.8 Architectural Standards only):

1. Statements that have language such as “shall” or “shall not” are mandatory.
2. Statements that have language such as “preferred” mean that the applicant must comply unless he/she can prove that it is impractical for his/her project, before the Development Review Committee, based on the following criteria:
   a. The physical conditions of the property (e.g., drainage or small/irregular lot shape); or
   b. The applicant presents an alternative means of compliance that, in the judgment of the Development Review Committee, meets the applicable principles and complies with the stated goals and standards of the Form Code.

E. Guidelines statements that have language such as “encouraged” or “discouraged” mean that compliance is not mandatory, but recommended.

F. These Architectural Standards apply only in conditions where clearly visible from the street-space. Note that the definition of street-space includes parks, civic squares, and civic greens. These standards therefore concentrate on the public space/views from the public space and minimize interference in the private realm. For example, an architectural element that is visible only through an opening in a street wall is not clearly visible from the street-space.

G. Tradition

1. These standards favor an aesthetic that is traditional in a broad sense. They specify an architectural aesthetic of load-bearing walls and regionally appropriate materials. The standards also specify certain details, such as window proportions, roof or cornice configurations, shopfronts, and overhangs.
2. The intent behind these standards is to foster a coherent and regionally appropriate aesthetic for the Form Code.
3. All building materials to be used shall express their specific properties. For example, stronger and heavier materials (masonry) may support lighter materials (wood), not the reverse.

H. Equivalent or Better

1. While only materials, techniques, and product types prescribed here are allowed, equivalent or better practices and products are encouraged. They shall be submitted to the Development Review Committee for review.

I. Standards for Specific Architectural Elements

1. Balcony

   Balconies, where required in the building envelope standards, must be roofed and enclosed by balustrades (railings) and posts that extend up to the roof (or a balcony on the story immediately above) and shall not be otherwise enclosed above a height of 42 inches, except with insect screening. Balconies aligned vertically on adjacent floors may post up to one another and share a single roof element.

2. Bay or Bay Window

   Minimum interior clear width at main wall of four feet; projection not greater than 36 inches beyond the façade; walls and windows shall be between 90 degrees (perpendicular) and zero degrees (parallel) relative to the primary wall from which they project.

3. Dormers

   Dormers are permitted and a habitable attic story behind them shall not constitute a story so long as they do not break the primary eave line, are individually less than 15 feet wide, and are collectively not more than 60% of the façade length.

4. Front Porch

   Front porches, where required in the building envelope standards, must be roofed and enclosed by balustrades (railings) and posts that extend up to the roof and shall not be otherwise enclosed, above a height of 42 inches, except with insect screening.

1.8.2 Building Walls, Exterior

A. Principle

Building walls should reflect and complement the traditional materials and techniques of the region. They should express the construction techniques and structural constraints of traditional, long-lasting building materials. Simple configurations and solid craftsmanship are favored over complexity and ostentation in building form and the articulation of details. All building materials to be used shall express their specific properties. For example, heavier more permanent materials (masonry) support lighter materials (wood). The illustrations and statements on this page are advisory only. Refer to the standards on the following page for the specific requirements.

B. Materials

The following materials are permitted:

1. Primary Materials (75% of façade or greater):
   a. Brick and tile masonry
   b. Native stone (or synthetic equivalent)
   c. Hardie-Plank™ equivalent or better siding
   d. Stucco (cementitious finish)
2. Accent Materials (no greater than 5% of façade)
   a. Pre-cast masonry
   b. Gypsum Reinforced Fibrous Concrete (GFRC – for trim elements only)
   c. Metal (for beams, trim elements or ornamentation only)
   d. Split faced block (only for piers foundation walls and chimneys)

C. Configuration and Techniques

The following configurations and techniques are permitted:

1. Walls
    a. The horizontal dimension of the wall opening shall not exceed the vertical dimension except where otherwise prescribed in this Form Code.
    b. Wall openings shall not span vertically more than one story.
    c. Wall openings shall correspond to interior space and shall not span across building structure such as the floor structural and mechanical thickness.
    d. Material changes shall be made within a constructional logic—as where an addition (of a different material) is built onto the original building.
2. Wood Siding and Wood Simulation Materials
    a. Lap siding (horizontal) configuration.
    b. Smooth or rough-sawn finish (no faux wood grain).
3. Brick, Block, and Stone
    a. Must be detailed and in appropriate load bearing configuration.
4. Stucco (cementitious finish)
    a. Smooth or sand only, no rough or textures surfaces.

1.8.3 Roofs & Parapets

A. Principle

Roofs and parapets should demonstrate common-sense recognition of the climate by utilizing appropriate pitch, drainage, and materials in order to provide visual coherence to the Form Code. The illustrations and statements on this page are advisory only. Refer to the standards on the following page for the specific requirements.

B. Materials

1. Clay or concrete (faux clay)
2. Tile (barrel or flat roman)
3. Slate (equivalent synthetic or better)
4. Metal (standing seam, equivalent or better)
5. Dimensional Asphalt Shingles
6. Cedar Shingles
7. Cornices and soffits may be a combination of wood, vinyl, and/or metal

C. Configurations and Techniques

The following configurations and techniques are permitted:

1. Parapet Roofs

   Allowed only for Corridor, Core, Center, and Urban General frontage sites where the roof material is not visible from any adjacent street.

2. Cornices and Other Features

   a. Buildings without visible roof surfaces and overhanging eaves may satisfy the overhang requirement with a cornice projecting horizontally between six and 30 inches beyond the building walls on the primary structure for the initial four stories. For each additional story, six inches shall be added to the minimum and 12 inches shall be added to the maximum up to a maximum projection of six feet.

   b. Skylights and roof vents are permitted only on the roof plane opposite the primary street (or required building line) or when shielded from the street space by the buildings parapet wall.

3. Pitched Roofs

   a. Simple hip and gable roofs shall be symmetrically pitched between 4:12 and 10:12.

   b. Shed roofs, attached to the main structure, shall be pitched between 3:12 and 8:12.

   c. Mansard roofs are not permitted.

4. Overhang

   a. Eaves must overhang 18 to 30 inches on the primary structure for the initial four stories. For each additional story, six inches shall be added to the minimum, and twelve inches shall be added to the maximum, up to a maximum projection of seven feet.

   b. Eaves and rakes on accessory buildings, dormers, and other smaller structures must overhang at least 8 inches.

   c. Timber eaves and balcony brackets must be a minimum of 4x4 inches in dimension.

1.8.4 Street Walls

A. Principle

Street and garden walls establish a clear edge to the street-space where the buildings do not. The Form Code requirements include masonry walls that define outdoor spaces and separate the street-space from the private realm (parking lots, trash cans, gardens, and equipment). All street and garden wall façades shall be as carefully designed as the building façade, with the finished side out, i.e. the "better" side facing the street-space. The illustrations and statements on this page are advisory only. Refer to the standards on the following page for the specific requirements.

B. General

A street wall is a masonry wall set back not more than eight inches from the required building line or adjacent building façade and built to the height specified in the building envelope standards. A vehicle entry gate (opaque, maximum 18 feet wide) and a pedestrian entry gate (maximum six feet wide) are both allowed as limited substitutions within any required street wall length.

C. Materials

The following materials are permitted:

1. Native/regional stone and equivalent imitation stone
2. Metal [wrought iron, welded steel and/or aluminum (electro-statically plated black)]
3. Brick
4. Stucco on concrete block (or poured) only with brick or stone coping
5. A combination of materials (e.g. stone piers with brick infill panels)

D. Configuration and Techniques

The following configuration and techniques are permitted:

1. Street walls along any unbuilt required building line shall be built to the height and length specified in the building envelope standard.
2. Metal work may additionally be treated to imitate a copper patina.
3. Copings shall project between ½ - inch and four inches from the face of the wall.

1.8.5 Windows and Doors

A. Principle

The placement, type, and size of windows and doors help to establish the scale and vitality of the streets pace. For commercial buildings, they allow interplay between the shop interiors and the street-space. For residential streets, they foster the "eyes on the street" surveillance, which provides for the security and safety for the area. Windows should be divided by multiple panes of glass. This helps the window "hold" the surface of the façade, rather than appearing like a "hole" in the wall (an effect produced by a large single sheet of glass). The illustrations and statements on this page are advisory only. Refer to the standards on the following page for the specific requirements.

B. Materials

The following materials are permitted:

1. Windows shall be of anodized aluminum, wood, clad wood, vinyl, or steel.
2. Window glass shall be clear, with light transmission at the ground story at least 90% and for the upper stories 75% (modification as necessary to meet any applicable building and energy code requirements). Specialty windows (one per façade maximum) may utilize stained, opalescent, or glass block.
3. Window screens shall be black or gray.
4. Screen frames shall match window frame material or be dark anodized.
5. Doors shall be of wood, clad wood, or steel and may include glass panes.

C. Configuration and Techniques

The following configurations and techniques are permitted:

1. All Windows
   a. The horizontal dimension of the opening shall not exceed the vertical dimension except where otherwise prescribed in this Code.
   b. Windows may be ganged horizontally (maximum five per group) if each grouping is separated by mullion, column, pier or wall section that is at least seven inches wide.
   c. Windows shall be no closer than 30 inches to building corners (excluding bay windows) unless otherwise prescribed on the regulating plan.
   d. Windows shall be recessed behind the wall surface a minimum of two inches, except for bay windows.
   e. Exterior shutters, if applied, shall be sized and mounted appropriately for the window (one-half the width), even if inoperable.
2. Upper Story Windows
   a. Windows shall be double-hung, single-hung, awning, or casement windows.
   b. Fixed windows are permitted only as a component of a system including operable windows in a single wall opening.
   c. Residential buildings/floors: panes of glass no larger than 36 inches vertical by 30 inches horizontal.
   d. The maximum pane size for office uses is 48 inches vertical by 40 inches horizontal.
   e. Egress windows may be installed according to the appropriate building code.
3. Shopfront (Ground Floor) Windows and Doors
   a. Single panes of glass not larger than eight feet in height by five feet wide.
   b. A minimum of 60% of the window pane surface area shall allow views into the ground floor of the building for a depth of at least 15 feet.

c. Windows shall not be made opaque by window treatments (excepting operable sunscreen devices within the conditioned space).

d. Shopfronts may extend up to 24 inches beyond the façade/required building line into the streets pace.

4. Doors

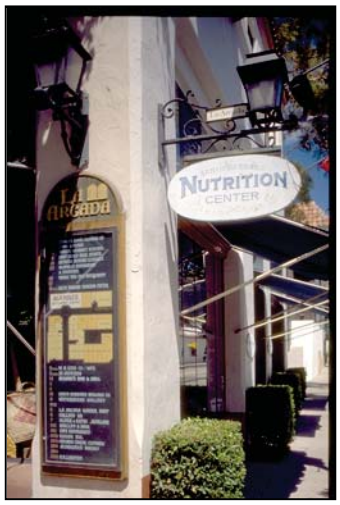
a. Double-height entryways (those that span more than one story) are not allowed.

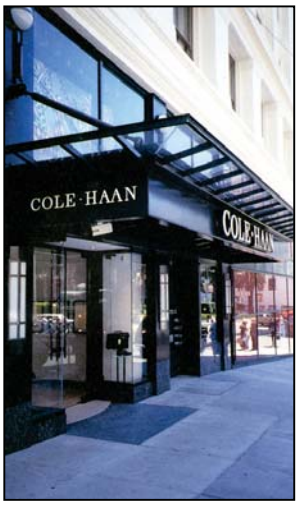
b. Doors shall not be recessed more than three feet behind the shop-front windows and, in any case, shall have a clear view and path to a 45-degree angle past the perpendicular from each side of the door.

1.8.6 Signage

A. Principle

Signs along commercial frontages should be clear, informative to the public and should weather well. Signage is desirable for advertising District shops and offices, and as decoration. Signs should be scaled to the nature of the area: mixed-use, pedestrian-oriented, with slow-moving automobile traffic. Signage that is glaring or too large creates distraction, intrudes into and lessens the District experience, and creates visual clutter. The illustrations and statements on this page are advisory only. Refer to the standards on the following page for the specific requirements.





B. All Street Frontages

1. General

a. Wall signs are permitted within the area between the second story floor line and the first floor ceiling, within a horizontal band not to exceed two feet in height. In no case shall this band be higher than 18 feet or lower than 12 feet above the adjacent sidewalk.

b. Letters shall not exceed 18 inches in height or width and three inches in relief. Signs shall not come closer than two feet to an adjacent common lot line.

c. Additionally, company logos or names may be placed within this horizontal band or placed or painted within ground floor or second story office windows. Company logos or names shall not be larger than a rectangle of eight square inches.

d. A masonry or bronze plaque bearing an owner's or building's name may be placed in the building's cornice/parapet wall or under the eaves, and above the upper story windows. Any such plaque shall be no larger than a rectangle of 18 square inches.

e. Temporary sidewalk easel signs are permitted within the dooryard area. They may also be considered a permitted obstruction to the sidewalk or right-of-way, with prior approval from the City.

2. Awnings/Overhangs

When an awning or overhang is incorporated into a building, the following requirements must be met:

a. Minimum 10 feet clear height above sidewalk, minimum 6 feet depth out from the building façade. Maximum projection to within one foot of back of curb where there are no street trees, or one foot into the tree-planting strip.

b. Canvas cloth or equivalent (no shiny or reflective materials).

c. Metal and glass are permitted, when configured as a marquee.

d. No internal illumination through the awning/overhang.

e. Lettering on awnings limited to six inches tall on vertically hanging fabric at curb side of awning.

f. No one-quarter cylinder configurations.

g. Awnings and overhangs shall complement the fenestration pattern of the building façade.

3. Prohibited Signs

Billboards, roof signs, free-standing pole signs, "can" signs, any kind of animation, and painted window signs. No flashing, scrolling, traveling, animated, or intermittent lighting shall be on the exterior of any building whether such lighting is of temporary or long-term duration. Portable or wheeled signs and advertising devices located outside any building are not allowed.

C. Urban Corridor Street Frontage (Rockville Pike)

The character of this area will fundamentally change over time. The corridor will be physically reconfigured to recognize the needs of the pedestrian while continuing to functions

as one of the primary automobile gateways to the City. The signage will be reduced in scale, no longer solely targeted to drivers (some auto-oriented signage, as described below, will be permitted in the interim). In addition to paragraph B above, the following specific standards apply in the Urban Corridor Street Frontage:

1. Blade signs (perpendicular to the required building line) not more than two feet by three feet and minimum nine feet clear height above the sidewalk may be hung below the second story level, from the façade, or from an overhang or awning.
2. Monument signs are permitted, if constructed to the following standards, until the date in which the property is redeveloped:
   a. They shall be located at the required building line.
   b. They shall sit on a defined pedestal.
   c. The text panel shall not exceed three feet in height, eight feet in length, or 24 square feet in area.
   d. For internally illuminated signs, text and graphics shall be cut-outs from an opaque panel. Opaque text and graphics on a translucent panel are not allowed.
3. If signs are externally illuminated, the light source shall be shielded so as to prevent glare and overspill.
4. Additional prohibited signs: signs painted on the exterior walls of buildings.

1.8.7 Lighting and Mechanical Equipment

A. Lighting

1. Principle

Materials and equipment chosen for lighting fixtures should be durable and weather well. Appropriate lighting is desirable for nighttime visibility, crime deterrence, and decoration. However, lighting that is too bright or intense creates glare, hinders night vision, and creates light pollution.

2. Standards

a. Street Lights. Street light as the City may specify shall be used in the Form Code.

b. Refer to Table 1.4 for street light spacing and locations.

c. At the front of the building, exterior lights shall be mounted on the building between seven (7) feet and fourteen (14) feet above the adjacent grade.

d. All lots with alleys shall have lighting fixtures within five (5) feet of the alley right-of-way. This fixture shall illuminate the alley, shall be between nine (9) and sixteen (16) feet in height, and shall not cause glare in adjacent lots.

e. Lighting elements shall be specified to exclude those that cast a clearly/perceptively unnatural spectrum of light (such as low pressure sodium). Metal halide or halogen light sources are preferred. No fluorescent lights (excepting compact fluorescent bulbs that screw into standard sockets) may be used on the exterior of buildings. These standards shall be adjusted by the city as technologies advance and produce additional acceptable elements.

f. Site lighting may be used to illuminate alleys, parking garages and working (maintenance) areas and shall be full cut-off and not exceed ½ foot-candles of illumination at any property line. Any light fixtures which are required for alley illumination shall not exceed ½ foot-candles at the alley right-of-way line opposite the subject property. Lighting shall maintain an average-to-minimum uniformity ratio of 5:1. Floodlighting shall not be used to illuminate building walls from sidewalk level (i.e., no horizontally projected up lighting as opposed to vertical “wall washing”).

g. Site lighting shall be of a design and height, and shall be located so as to illuminate only the lot.

h. No flashing, traveling, animated, or intermittent lighting shall be visible from the exterior of any building whether such lighting is of temporary or long-term duration.

i. Lighting for parking garages shall satisfy Crime Prevention Through Environmental Design (CPTED) standards.

B. Mechanical Equipment

1. Standards

The following shall be placed behind and away from any required building line, not be stored or located within any street-space, and shall be screened from view from the street-space:

a. Air compressors, mechanical, pumps, exterior water heaters, water softeners, utility and telephone company transformers, meters or boxes, garbage cans/dumpsters, storage tanks, and similar equipment shall not be stored or located within any area considered street-space in this code.

b. Roof mounted equipment shall be placed behind and away from any required building line and be screened from view from the street-space.

1.9 STREETSCAPE STANDARDS

1.9.1 Principle

The streetscape standards ensure the coherence of the street-space. They also serve to assist building owners and operators with understanding the relationship between the street-space and their own lots. This code requires that sites will be developed with buildings placed at the required building line along the outer edge of the lots they occupy. These standards also establish an environment that encourages and facilitates pedestrian activity. Native trees and plants contribute to privacy, reduction of noise and air pollution, maintenance of the natural habitat, and conservation of water. The illustrations and statements on this page are advisory only. Refer to the standards on the following page for the specific requirements.

1.9.2 General Principles

A. Streetscape

1. Building façades are part of the public realm and therefore are subject to more regulation than the rest of the property.
2. Street trees are part of an overall streetscape plan designed to provide both form (canopy) and comfort (shade) to the street-space. Street trees give special character and coherence to each street-space. The desired aesthetic shall be achieved through the use of native or proven hardy adapted species.

B. Fronts and Rears

1. Building façades are the public "face" of every building.
2. The private, interior portions of the lots (toward the alley or rear lot line) allow commercial operators to utilize these spaces as efficient working environments unseen by the public and allow residents to have private and semi-private (for townhouse flats and stacked flats buildings) gardens and courtyards.

1.9.3 Standards

A. General Provisions

1. All plant material (including trees) shall conform to the standards of the American Association of Nurserymen and the City's Landscaping and Screening Manual.
2. Mechanical and electrical equipment including, but not limited to, air compressors, pumps, exterior water heaters, water softeners, private garbage cans (not including public sidewalk waste bins), and storage tanks may not be stored or located within any street-space.
3. All streetscape shall be maintained by the adjacent property owner, Property Owners Association, or Business Owners Association. A hose bib shall be required within 50 feet of the fronting streets pace.
4. Street lighting and bicycle racks shall be placed along the street tree alignment line.

B. Street Trees

1. At the time of development, the applicant is responsible for installing street lighting in the space fronting their property between the required building line and the travel lane, as prescribed in the appropriate street type specification.
2. Street tree planter areas (tree pits and tree lawns) shall be located at grade or with their soil surface elevated not more than 12 inches above the adjacent sidewalk or top of curb. The open soil surface area shall be not less than 80 square feet per isolated planting area or 50 square feet per tree for connected soil (tree soil strip) configurations. Any planter area's minimum soil surface dimension shall be not less than six feet. Raised planter boxes shall not be used.
3. At planting, street trees shall be at least three inches in diameter (four feet above grade) and at least ten feet in overall height. Species shall be selected from the Landscaping and Screening Manual.
4. Any unpaved ground area shall be planted with groundcover, flowering vegetation, or climbing vines.
5. Street trees shall be "limbed up" as they gain appropriate maturity so as to not interfere with pedestrian or truck travel (minimum seven feet clear over the sidewalk and 14 feet over the travel lanes of the street).

C. Sidewalks

1. At the time of development, the developer is required to install sidewalks.
2. Sidewalks not otherwise designated in the regulating plan or street type specifications are a minimum of six feet wide and shall be constructed to meet all City specifications.
3. Turf and Groundcover (where clearly visible from the street-space and along the alley):
   a. All turf grass must be solidly sodded at installation - not seeded, sprigged, or plugged.
   b. Vegetative groundcovers may be used in place of turf grass.
   c. In addition to the lot, the owner must maintain the following areas:
      i. The portion of the street-space between their lot line(s) and the back of the curb.
      ii. The portion of the alley between the lot line(s) and the edge of pavement.

D. On-Street Parking

1. The parking space/tree planting pattern may be interrupted by existing or new driveways, streets, alleys, and transit stops/stations.
2. Parking spaces shall be constructed in a manner that allows proper drainage.

E. Rules for Parking Lot Plantings

1. Surface parking lots must have at least one canopy shade tree (from the Landscaping and Screening Manual) for every six spaces planted in an “orchard” configuration.
2. Subdivide surface parking lots into smaller areas through the use of landscaping and other visual elements. Landscaping shall be hardy and able to withstand soot and gas fumes.
3. Incorporate convenient bicycle parking. The “U” Rack is recommended as the standard rack. A bicycle rack may be allowed along the street tree alignment line within the street-space with prior approval from the City.

F. Pedestrian Pathway

The easement width for these pathways shall not be less than 20 feet with a paved walkway not less than 10 feet wide, except where otherwise specified on the regulating plan, and shall provide an unobstructed view straight through their entire length.

1.10 ADMINISTRATION

A. Applicability

This section, Administration, sets forth the provisions for reviewing and approving development applications within the Rockville Pike District Form Code where a landowner or developer chooses to develop pursuant to this Code. This is to ensure that all development occurring under the Code is consistent with the provisions of this Code. All elements of the Code – Regulating Plan, Building Form Standards, Block Standards, Thoroughfare Standards, Open Space Standards, Building Types, Thoroughfare Types, Architectural, and Streetscape Standards - will be applied during review. There are two review processes for the Code: Type I Development and Type II Development. The Type II Development process is dependent upon site size and/or the need for deviations from the Code. Projects approved through the Type II Development process shall nonetheless meet the intent of the Code.

B. Code Administrators

The administration of the Rockville Pike District Form Code derives it authority from the provisions of Section 25.04.08 of the Zoning Code where land development may be subject to additional approvals required by other chapters of the Zoning Code or by resolution of the Mayor and Council, or by an adopted Plan. All projects within the Rockville Pike District Form Code shall be subject to review and approval by the Chief of Planning (CP) upon recommendation from the Town Architect (TA) and the Development Review Committee (DRC). Appeals to the decision of the CP, TA and DRC shall be made to the Planning Commission. Variances shall also be heard by the Board of Appeals per Section 25.06.03. Administrative Adjustments to the Form Code regulations and standards will be made by the CP per Section 25.06.06. Appeals and variances to the Form Code regulations shall include recommendations from the Planning Commission per Section 25.04.02.b. 1. (e).

C. Town Architect Action

Upon submission of a completed application, the Town Architect will review the development plan for consistency with the requirements of this Code. The appropriate review process of a development plan is determined by the size of the proposed development.

1. Type I Development Option: Projects of building area less than or equal to 40,000 gross square feet shall be able to build as a matter of right when they meet all of the standards of the Code in accordance with Article 7 Procedures for Site Plans and Project Plans, Special Exceptions, and Other Permits: Level One Site Plan Review and the requirements in this subsection. Permits will not be issued for building activity until review is completed and a determination made that the proposal is consistent with the Code.

    a. The Town Architect will forward the application to the DRC for review and recommendation.

    b. Upon completion of the staff and agency review, the applicant may choose to meet with the Town Architect to discuss any required changes or conditions to the development plan.

    c. Within 30 days after the application has been determined complete, the Town Architect must approve, approve with conditions, or disapprove the Type I development plan, and state the reasons for such action.

2. Type II Development Option: The Uptown D2 Type II Development process will be required for buildings over 40,000 gross square feet. Such projects will be required to meet the intent of the Code and will be evaluated in terms of how well they conform to the Code and Article 7, Procedures for Site Plans and Project Plans, Special Exceptions, and Other Permits: Level Two Site Plan Review, and the requirements in this subsection. The Type II Development process will give the opportunity for appropriate deviations from the Code that are consistent with the City's goals and plans including the Rockville Comprehensive Plan and Rockville's Pike: Envision a Great Place. The justifications for these deviations may include problems related to topography or street grade, the location of alleys and streets, breaks and passages between buildings, signs, streetscape details, design issues related to the inclusion of existing buildings or mature trees as part of a development proposal. The Type II Development process also provides the opportunity for community input as well as fine-tuning of a development proposal to address issues that may not have been contemplated by the Code. The public hearing is to address the project's compliance with the Code and the extent of any minor deviations from the Code requirements – not to revisit or redesign aspects of the project that are within the parameters of the Code.

D. Approval Criteria

The Code Administrator shall review the application in accordance with the following:

a. Compliance with this code

b. Compliance with the District Form Code Regulating Plan.

1.10.1 Submission Requirements

Applicants must submit the following items to the Town Architect for review:

A. Certified survey of the parcel, including dimensions of the parcel and the existing lot area by zoning classification with north arrow orientation, and full sections of adjacent streets, certified by a registered engineer or surveyor at a scale of 1'to 50" or greater showing:

1. All existing easements.

2. Existing topography for the parcel and adjacent streets at two (2)-foot contour intervals with elevations given at Montgomery County Datum.

3. Locations and descriptions of all existing sidewalks, curb, gutter, water and sewer lines, utility poles, traffic signal poles, street lights, street trees, water meters, transformers and fire hydrants, within the parcel and the periphery of the parcel.

4. Locations, dimensions, and approximate heights of all existing buildings and structures on the parcel.

5. Locations and descriptions of existing major trees, six inches or greater in caliper measured four feet above grade.

B. Proposed subdivision plat including lot lines, lot dimensions, and the square footage of all subdivided lots, certified by a registered engineer or land surveyor, showing:

1. All required dedications of public right-of-way, and parcel area computed after public dedication.

2. Proposed grading for the parcel and adjacent streets at two -foot contour intervals with elevations given at Montgomery County Datum.

3. Location, dimensions and general design of interior streets and sidewalks.
4. Location of all proposed water lines, sewer lines, easements, approximate location and estimated size of proposed storm water management facilities, sidewalks, curb, gutter, utility poles, traffic signal poles, street lights, street trees, water meters, transformers and fire hydrants within the parcel and the periphery of the parcel.
5. Locations, dimensions and the maximum height in feet of all proposed buildings and structures, including dimensions of proposed front, side and rear yards.
6. Locations and dimensions of proposed driveways, driveway entrances, garage entrances and surface parking.
7. Locations, size and identification of all proposed trees, and all existing trees to be saved.
8. Coverage expressed as the square footage of the site occupied by any proposed buildings or structures, parking, and driveways, and as a percentage of the total lot area.

C. Elevations of all structures on the site with details of windows, storefront treatment, balconies, etc. as called for in the Rockville Pike District Form Code.

D. Physical relationship of proposed buildings and structures to adjacent lots and buildings on the same street block, showing the dimensions between buildings and across adjacent streets.

E. Any plans or data that may be necessary in order to judge compliance with the requirements of the Rockville Pike District Form Code including: lighting plan, roof plan, architectural plans with elevations, given at Montgomery County Datum.

F. A Leadership in Energy & Environmental Design (LEED) Scorecard shall be completed and accompany the application.

G. A statement of how the applicant will provide the required parking if parking is not provided on-site.

H. All proposed signage.

1.10.2 Other Applicable Regulations

E. Applicable Sections

All projects within the Rockville Pike District Form Code shall be subject to the following standards:

1. Article 20, Adequate Public Facilities.
2. Environmental Guidelines for the Protection and Enhancement of the City's Natural Resources, July 1999.
3. Water Quality Protection Code, July 2007.
4. Landscaping, Screening, and Lighting Manual, December 2008.
5. Forest and Tree Protection Code, as amended, 2008.
6. Green Building Code, adopted May 10, 2010

1.10.3 Findings

The DRC staff and TA may approve the design and/or use of a development proposal based upon the following findings:

A. The approval of the design review plan is in conformance with all provisions of the City of Rockville Zoning Ordinance, Chapter 25, the Rockville Pike District Form Code, and other applicable land use regulations, including, but not limited to, the Rockville Comprehensive Plan and *Rockville Pike's: Envision a Great Place*, adopted 2011.

B. The approval of the plan is in the best interest of the public health, safety, and general welfare.

C. General site considerations, including site layout, open space and topography, orientation and location of buildings, vehicular access, circulation and parking, setbacks, heights, walls, fences, public safety, and similar elements have been designed to provide a desirable environment for the development.

D. General architectural considerations, including the character, scale, and quality of design, the architectural relationship with the site and other buildings, building materials, colors, screening of exterior appurtenances, exterior lighting and signing, and similar elements have been incorporated in order to ensure the compatibility of this development with its design concept and the character of adjacent buildings.

E. General landscape considerations, including the location, type, size, color, texture, and coverage of plant materials at the time of planting and after a five-year growth period, provision for irrigation, maintenance, and protection of landscaped areas and similar elements have been considered to ensure visual relief, to complement buildings and structures, and to provide an attractive environment for the enjoyment of the public.

1.10.4 Amendments

Amendments to approved developments shall follow the requirements of Section 25.05.07.

1.10.5 Conditional Uses

A. Uses listed as Conditional within Section 1.2, Building Form Standards, shall be subject to Section 25.07.06, Level Three Site Plan Review. The Planning Commission shall review the particular facts and circumstances of each proposed use in terms of the following criteria and shall find adequate evidence that:

1. The proposed use is consistent with the City of Rockville's Comprehensive Master Plan and Rockville's Pike: Envision a Great Place.

2. The proposed location of the use conforms with the purpose of the Form Code, and the purposes of the district in which the site is located, and will comply with the application provisions of the Form Code.

3. The location, size, design, and operating characteristics of the proposed use will be compatible in design, scale, coverage, and density with the existing and anticipated adjacent uses.

4. There is adequate access, traffic, and public service capacity for the proposed use and surrounding existing and anticipated uses.

5. There are no potentially significant adverse environmental impacts that could not be feasibly mitigated and monitored.

B. In addition to the criteria listed in Section 1.10.5.A, Planning Commission shall consider development standards for the following specific conditional uses:

1. Drive-Through

    a. Minimum lot area shall be 7,500 square feet, except those uses with drive-in or drive-through facilities shall be located on lots with a minimum area of 40,000 square feet.

    b. All structures, including drive-in or drive-through windows and lanes, shall be set back at least 100 feet from any residential property.

    c. A solid wood fence or masonry wall six feet high shall be constructed where a convenience food store, drive-in or drive-through store or fast food restaurant is located adjacent to a residential property.

    d. Stacking space for eight vehicles shall be provided for every drive-in and drive-through facility. Stacking spaces shall not block or otherwise interfere with site circulation patterns.

    e. Customer and employee parking shall be separated from drive-in and drive-through activities and customer parking shall be located in the area with highest accessibility to dining or sales areas.

    f. The circulation system shall provide smooth, continuous traffic flow with efficient, non-conflicting movement throughout the site. Major pedestrian movements shall not conflict with major vehicular circulation movements.

    g. Access shall be from a "B" Street, Table 1.4 Thoroughfare Standards or shall be provided in a manner that does not cause heavy traffic on residential streets.

2. Bar, Tavern, or Night Club:

    a. Such establishment shall be located at least 250 feet from a residential district, churches, and schools.

    b. All activities shall take place in a fully enclosed sound-resistant building, with closed windows and double-door entrances that provide a sound lock.

    c. The site shall be kept free of litter and debris.

    d. The use of bars, lounges or taverns shall be no later than 2:00 am unless otherwise specified in the approval.

3. Wireless Telecommunications Facility: (See Section 25.09.08, Wireless Communication Facility).

4. Home Occupations - Greater than 3,000 square feet and 3 or more employees: (See Section 25.09.07.c, Major Home-Based Business Enterprises).

5. Alcohol Beverage Sales: Tennant area limited to 5,000 square feet of floor area.

1.10.6 Variances

Variances shall be heard by the Board of Appeals per Section 25.06.03, with advice of the Planning Commission per Section 25.14.02.a.1.(e).

1.10.7 Appeals

Any person aggrieved by any final decision of the CP on a Level One site plan application, may appeal the same to the Planning Commission in accordance with Section 25.04.06. Notice of the Planning Commission meeting on the appeal is required in accordance with the provisions of Section 25.07.03. Unless otherwise provided, any person aggrieved by any final decision of the Commission may appeal the same to the Circuit Court for the County. Such appeal must be taken according to the Maryland Rules as set forth in Title 7, Chapter 200.

1.10.8 Special Exceptions

Special exceptions shall be permitted per 25.15.01 and 25.07.09, Special Exceptions.

1.10.9 Nonconformities

A. Purpose: Within the Rockville Pike District Form Code, nonconformities include lots, uses of land, structures and land in combination that exist and were lawful before this Form Code was passed or amended, but which would be prohibited, regulated or restricted under the terms or this Form Code. The legitimate interest of those who lawfully established these nonconformities are recognized by providing for their continuance, subject to regulations limiting their completion, restoration, reconstruction, extension and/or substitution. Nothing contained in this Form Code shall be construed to require any change in the layout, plans, construction, size or use of any lot, structure or structure and land in combination for which a zoning permit became effective and does not lapse prior to the effective date of this Form Code. While it is the intent of this Form Code that such nonconformities be allowed to continue until removed, they should not be encouraged to survive. No nonconformity may be moved, extended, altered, expanded, or used as grounds for any other use(s) or structure(s) prohibited elsewhere in the district without the approval of Board of Appeals except as otherwise specifically provided for in this Form Code.

B. Incompatibility of Nonconformities: Nonconformities are declared by this Form Code to be incompatible with permitted uses in the districts in which such uses are located. A nonconforming use of a structure, a nonconforming use of land or a nonconforming use of a structure and land in combination shall not be extended or enlarged after passage of this Form Code by attachment on a building or premises of additional signs intended to be seen from off the premises, or by the addition of other uses of a nature which would be generally prohibited in the Form Code district.

C. Avoidance of Undue Hardship: To avoid undue hardship, nothing in this Form Code shall be deemed to require a change in the plans, construction or designated use of any building on which actual construction was lawfully begun prior to the effective date of adoption or amendment of this Form Code and upon which actual building construction has been carried on diligently. Actual construction is defined to include the placing of construction materials in permanent position and fastened in a permanent manner. Where demolition or removal of an existing building has substantially begun preparatory to rebuilding, such demolition or removal shall be deemed to be actual construction, provided that the work shall be carried out diligently.

D. Recording of New or Subdivided Lots: Any new lots created and recorded after adoption of the Form Code must meet the Code's minimum development regulations.

E. Nonconforming Uses of Land: At the time of adoption of this Form Code, lawful uses of land exist which would not be permitted by the regulations imposed by this Form Code. These uses may be continued so long as they remain otherwise lawful, provided:

1. No such nonconforming uses shall be enlarged or increased, nor extended to occupy a greater area of land than was occupied at the effective date of adoption or amendment of this Form Code;
2. No such nonconforming uses shall be moved in whole or in part to any portion of the lot or parcel other than that occupied by such uses at the effective date of adoption or amendment of this Form Code;
3. If any such nonconforming uses of land are voluntarily discontinued or abandoned for more than three months (except when government action impedes access to the premises), any subsequent use of such land shall conform to the regulations specified by this Form Code for the district in which such land is located; and
4. No additional structure not conforming to the requirements of this Form Code shall be erected in connection with such nonconforming use of land.

F. Nonconforming Structures: Where a lawful structure exists at the effective date of adoption or amendment of this Form Code that could not be built under the terms of this Form Code by reason of restrictions on area, lot coverage, height, yards, its location on the lot, bulk or other requirements concerning the structure, such structure may be continued so long as it remains otherwise lawful, subject to the following provisions:

1. No such nonconforming structure may be enlarged or altered in a way which increases its nonconformity, but any structure or portion thereof may be altered to decrease its nonconformity;
2. Should such nonconforming structure or nonconforming portion of a structure be destroyed, by any means, to the extent of more than 50 percent of the gross floor area of such structure, it shall not be reconstructed except in conformity within the provision of this Form Code; and
3. Should such structure be moved for any reason, it shall thereafter conform to the regulations for the Form Code.

G. Nonconforming Uses of Structures or of Structures and Land in Combination: If a lawful use involving individual structures, or of a structure and land in combination, exists at the effective date of adoption or amendment of this Form Code that would not be allowed in the district under the terms of this Form Code, the lawful use may be continued so long as it remains otherwise lawful, subject to the following provisions:

1. No existing structure devoted to a use not permitted by this Form Code in the district in which it is located shall be enlarged, extended, constructed, reconstructed, moved, or structurally altered except in changing the use of the structure to a use permitted in the district in which it is located;
2. Any nonconforming use may be extended throughout any parts of a building which were manifestly arranged or designed for such use at the time of adoption or amendment of this Form Code, but no such use shall be extended to occupy any land outside such building;
3. Any structure, or structure and land in combination, in or on which a nonconforming use is superseded by a permitted use, shall thereafter conform to the Form Code regulations, and the nonconforming use may not thereafter be established;
4. When a nonconforming use of a structure, or structure and land in combination, is discontinued or abandoned for more than three months (except when government action impedes access to the premises), the structure, or structure and land in combination, shall not thereafter be used except in conformity with the regulations of the district in which it is located; and

5. When nonconforming use status is applied to a structure and land in combination, removal or destruction of the structure shall eliminate the nonconforming status of the land.

H. Termination of Use Through Discontinuance: When any nonconforming use is discontinued or abandoned for more than three months, any new use shall not thereafter be established except in conformity with the regulations of the Form Code, and the nonconforming use may not thereafter be established. The intent to continue a nonconforming use shall not be evidence of its continuance.

I. Termination of Use by Damage or Destruction: In the event that any nonconforming building or structure is destroyed by any means to the extent of more than 50 percent of the gross floor area of such structure, exclusive of foundation, it shall not be rebuilt, restored or reoccupied for any use unless it conforms to all regulations of this Form Code.

J. Repairs and Maintenance: On any nonconforming structure or portion of a structure containing a nonconforming use, work may be done on ordinary repairs, or on repair or replacement or non-bearing walls, fixtures, wiring or plumbing, provided that the cubic content existing when it became nonconforming shall not be increased. Nothing in this Form Code shall be deemed to prevent the strengthening or restoring to a safe condition of any building or part thereof declared to be unsafe by any official charged with protecting the public safety, upon order of such official. Where appropriate, a building permit for such activities shall be required.

1.11 GLOSSARY

Accessory Building: A building customarily incidental to, related and clearly subordinate to the primary building on the same parcel, which does not alter the primary use nor serve property other than the parcel where the primary building is located.

Alcoholic Beverage Sales - Off-Premise: The retail sale of beer, wine, and/or spirits in sealed containers for off-site consumption, either as part of another retail use, or as a primary business activity.

Apartment: A dwelling unit sharing a building and a lot with other dwellings and/or uses. Apartments may be for rent or for sale as condominiums.

Arcade: A colonnade supporting habitable space that overlaps the sidewalk while the façade at the sidewalk level remains at or behind the frontage line. This type is conventional for retail use.

ATM or Bank: An automated teller machine (computerized, self-service machine used by banking customers for financial transactions, including deposits, withdrawals and fund transfers, without face-to-face contact with financial institution personnel), located outdoors at a bank, or in another location. Includes banks, but does not include drive-up ATMs or check-cashing stores. See also "Financial Institutions" for other financial organizations.

Attached Single-Family: A single-family dwelling that shares a party wall with another of the same type and occupies the full Build-to or frontage line. See Townhouse. (Syn. Rowhouse)

Bar, Tavern, Night Club:

Bar, Tavern: A business where alcoholic beverages are sold for on-site consumption, which are not part of a larger restaurant. Includes bars, taverns, pubs, and similar establishments where any food service is subordinate to the sale of alcoholic beverages. The business may also include beer brewing and other beverage tasting facilities as part of a microbrewery ("brew-pub").

Night Club: A facility serving alcoholic beverages for on-site consumption, and providing entertainment, examples of which include live music and/or dancing, comedy, etc., but does not include adult oriented businesses.

Bed & Breakfast Inn: A residential structure with one or more bedrooms rented for overnight lodging, where meals may be provided subject to applicable Health Department regulations.

Building Type: A structure that is defined by a combination of its configuration, disposition and function. Build-to Line (BTL): A line appearing graphically on the regulating plan or stated as a setback dimension, along which a building façade must be placed.

Build-to Line (BTL): A line appearing graphically on the regulating plan or stated as a setback dimension, along which a building façade must be placed.

Business, Service: Establishments providing direct services to consumers. Examples of these uses include employment agencies, insurance agent offices, real estate offices, travel agencies, utility company offices, elected official satellite offices, etc. This use does not include "Bank, Financial Services," which is defined separately.

Business Support Service: An establishment within a building that provides services to other businesses. Examples of these services include computer-related services (rental, repair) (see also "Maintenance Service – Client Site Services"), copying, quick printing, and blueprinting services, film processing and photofinishing (retail), mailing and mail box services.

Chief of Planning: The individual holding the position of Chief of Planning within the City of Rockville's Department of Community Planning and Development Services or such individual's designee.

Child Day Care: See "Day Care Center."

Civic: A term defining not-for-profit organizations, dedicated to arts, culture, education, religious activities, government, transit, municipal parking facilities and clubs.

Commercial: A term defining workplace, office and retail use collectively.

Commercial Block Building Type: A lot and building located and designed to accommodate offices or multiple dwellings on upper stories and various commercial uses on the ground story.

Commercial Recreation Facility - Indoor: An establishment providing indoor amusement and entertainment services for a fee or admission charge, including: bowling alleys, coin-operated amusement arcades, electronic game arcades (video games, pinball, etc.), ice skating and roller skating, pool and billiard rooms as primary uses. This use does not include sex oriented businesses. Four or more electronic games or amusement devices (e.g., pool or billiard tables, pinball machines, etc.) in any establishment, or a premises where 50 percent or more of the floor area is occupied by electronic games or amusement devices, are considered a commercial recreation facility; three or fewer machines or devices are not considered a land use separate from the primary use of the site.

Conditional Use: A use that is permitted in a zone, but which must comply with specified conditions that may limit some aspect of that use.

Dwelling, Dwelling Unit, or Housing Unit: A room or group of internally connected rooms that have sleeping, cooking, eating, and sanitation facilities, but not more than one kitchen, which constitute an independent housekeeping unit, occupied by or intended for one household on a long-term basis.

Dwelling, Multi-Family: A residential structure containing two or more dwelling units.

- **Duplex:** A building with two separate dwellings located either side by side or one on top of the other.
- **Fourplex:** A building with four separate dwellings.

Triplex: A building with three separate dwellings.

Rowhouse: A building with two or more single-family dwellings located side by side, with common walls on the side lot lines, the façades reading in a continuous plan.

Encroachment: Any structural element that breaks the plane of a vertical or horizontal regulatory limit, extending into a setback, into the public frontage, or above a height limit.

Façade: The vertical surface of a building generally set facing a street ("front façade").

Financial Services: Includes banks and trust companies, credit agencies, holding (but not primarily operating) companies, lending and thrift institutions, other investment companies, securities/commodity contract brokers and dealers, security and commodity exchanges, vehicle finance (equity) leasing agencies. This does not include check-cashing stores.

Forecourt: A frontage wherein a portion of the façade is close to the frontage line and the central portion set back. The forecourt created is suitable for vehicular drop-off. This type should be located with other frontage types. Large trees within the forecourts may overhang the sidewalks.

Frontage Line: The property lines of a lot fronting a street or other public way, or a park, or green.

Frontage Type: See Table 1.7 (Frontage Standards).

Front Porch: A roofed structure that is not enclosed and is attached to the façade of a building.

Gallery: As a building frontage type, a roofed promenade extending along the façade of a building and supported by columns on the outer side.

General Retail: Stores and shops intended to serve the City as destination retail, rather than convenience shopping. Examples of these stores and lines of merchandise include:

art galleries, retail, art supplies, including framing services, books, magazines, and newspapers, cameras and photographic supplies, clothing, shoes, and accessories, collectibles (cards, coins, comics, stamps, etc.), drug stores and pharmacies, dry goods, fabrics and sewing supplies, furniture and appliance stores, hobby materials, home and office electronics, jewelry, luggage and leather goods, musical instruments and-carried), parts, accessories, small wares, specialty grocery store, specialty shops, sporting goods and equipment, stationery, toys and games, variety stores, videos, DVDs, records, CDs, including rental stores.

Health/Fitness Facility: A fitness center, gymnasium, health and athletic club, which may include any of the following:

exercise machines, weight facilities, group exercise rooms, sauna, spa or hot tub facilities; indoor tennis, handball, racquetball, archery and shooting ranges and other indoor sports activities, indoor or outdoor pools.

Height: A limit to the vertical extent of a building that is measured in number of stories. Height limits do not apply to masts, belfries, clock towers, chimney flues, water tanks, elevator bulkheads, and similar structures, which may be of any height approved by the Chief of Planning.

Home Occupation: Residential premises used for the transaction of business or the supply of professional services. Home occupation shall be limited to the following: agent, architect, artist, broker, consultant, draftsman, dressmaker, engineer, interior decorator, lawyer, notary public, teacher, and other similar occupations, as determined by the Chief of Planning. Such use shall not simultaneously employ more than 1 person in addition to residents of the dwelling. The total gross area of the home occupation use shall not exceed 25 percent of the gross square footage of the residential unit. The home occupation use shall not disrupt the generally residential character of the neighborhood. The Chief of Planning shall review the nature of a proposed home occupation use at the time of review of a business license for such use, and may approve, approve with conditions, continue or deny the application.

Land Use Type: A generic or categorical list of uses where similar uses are grouped to allow more flexibility in the number and type of land uses allowed along a particular street frontage.

Library, Museum: Public or quasi-public facilities, examples of which include: aquariums, arboretums, art galleries and exhibitions, botanical gardens, historic sites and exhibits, libraries, museums, planetariums, and zoos. May also include accessory retail uses such as a gift/book shop, restaurant, etc.

Liner Building: A building or portion of a building constructed in front of a parking garage, cinema, super market, etc. to conceal large expanses of blank wall area and to face the street space with a façade that has ample doors and windows opening onto the sidewalk.

Live-Work Unit: An integrated housing unit and working space occupied and utilized by a single household in a structure that has been designed or structurally modified to accommodate joint residential occupancy and work activity, and which includes:

complete kitchen space and sanitary facilities in compliance with the Building Code; and

working space reserved for and regularly used by one or more occupants of the unit.

Lodging: A facility (typically a hotel or motel) with guest rooms or suites, with or without kitchen facilities, rented to the general public for transient lodging. Hotels typically include a variety of services in addition to lodging; for example, restaurants, meeting facilities, personal services, etc. Also includes accessory guest facilities such as swimming pools, tennis courts, indoor athletic facilities, accessory retail uses, etc.

Medical Services: Clinic, Urgent Care: A facility other than a hospital where medical, mental health, surgical and other personal health services are provided on an outpatient basis. Examples of these uses include:

medical offices with five or more licensed practitioners and/or medical specialties, outpatient care facilities, urgent care facilities, and other allied health services.

These facilities may also include incidental medical laboratories. Counseling services by other than medical doctors or psychiatrists are included under "Offices - Professional/Administrative."

Medical Services: Doctor Office: A facility other than a hospital where medical, dental, mental health, surgical, and/or other personal health care services are provided on an outpatient basis, and that accommodates no more than four licensed primary practitioners (for example, chiropractors, medical doctors, psychiatrists, etc., other than nursing staff) within an individual office suite. A facility with five or more licensed practitioners is instead classified under "Medical Services - Clinic, Urgent Care." Counseling services by other than medical doctors or psychiatrists are included under "Offices - Professional/Administrative."

Medical Services: Extended Care: Residential facilities providing nursing and health-related care as a primary use with in-patient beds. Examples of these uses include: board and care homes; convalescent and rest homes; extended care facilities; and skilled nursing facilities. Long-term personal care facilities that do not emphasize medical treatment are included under "Residential Care."

Meeting Facility, Public or Private: A facility for public or private meetings, including:

> community centers, religious assembly facilities (e.g., churches, mosques, synagogues, etc.), civic and private auditoriums, Grange halls, union halls, meeting halls for clubs and other membership organizations, etc.

Also includes functionally related internal facilities such as kitchens, multi-purpose rooms, and storage. This does not include conference and meeting rooms' accessory and incidental to another primary use, and which only on-site employees and clients typically use, and occupy less floor area on the site than the offices they support. Does not include:

> cinemas, performing arts theaters, indoor commercial sports assembly or other commercial entertainment facilities.

Related on-site facilities such as day care centers and schools are separately defined, and separately regulated by this Form Code.

Mixed-use: Multiple functions within the same building or the same general area through superimposition or within the same area through adjacency.

Museum: See "Library, Museum."

Neighborhood Market: A neighborhood serving retail store of 3,500 square feet or less in gross floor area, primarily offering food products, which may also carry a range of merchandise oriented to daily convenience shopping needs, and may be combined with food service (e.g., delicatessen).

Open Space, Private: Land intended to remain undeveloped and located on privately owned property. It may be accessible to the public, but is not required to meet the same accessibility standards as public open space (e.g., fronting one or more streets, publically owned and controlled, etc.

Open Space, Public: Land intended to remain undeveloped and located on publically owned property and is directly accessible to the public. It may be space that has been classified as Civic Space.

Park, Playground: An outdoor recreation facility that may provide a variety of recreational opportunities including playground equipment, open space areas for passive recreation and picnicking, and sport and active recreation facilities.

Parking Facility, Public or Private: Parking lots or structures operated by the City, or a private entity providing parking for a fee. Does not include towing impound and storage facilities.

Personal Services: Establishments that provide non-medical services to individuals as a primary use. Examples of these uses include:

> barber and beauty shops, clothing rental, dry cleaning pick-up stores with limited equipment, home electronics and small appliance repair, laundromats (self-service laundries), locksmiths, massage (licensed, therapeutic, non-sexual), nail salons, pet grooming with no boarding, shoe repair shops, tailors, tanning salons.

These uses may also include accessory retail sales of products related to the services provided.

Professional, Administrative: Office-type facilities occupied by businesses that provide professional services, or are engaged in the production of intellectual property. Examples of these uses include:

> accounting, auditing and bookkeeping services, advertising agencies, attorneys, business associations, chambers of commerce, commercial art and design services, construction contractors (office facilities only), counseling services, court reporting services, design services including architecture, engineering, landscape architecture, urban planning, detective agencies and similar services, doctors, educational, scientific and research organizations, financial management and investment counseling, literary and talent agencies, management and public relations services, media postproduction services, news services, photographers and photography studios, political campaign headquarters, psychologists, secretarial, stenographic, word processing, and temporary clerical employee services , security and commodity brokers, writers and artists offices.

Prohibited Uses: The following are examples of uses not permitted anywhere within the Rockville Pike Corridor Form Code area:

> animal hatcheries; boarding houses; chemical manufacturing, storage, or distribution; any commercial use in where patrons remain in their automobiles while receiving goods or services, except service stations; enameling, painting, or plating of materials, except artist's studios; kennels; the manufacture, storage, or disposal of hazardous waste materials; mini-storage warehouses; outdoor advertising or billboards; packing houses; prisons or detention centers, except as accessory to a police station; drug and alcohol treatment and rehab centers; thrift stores; soup kitchens and charitable food distribution centers; sand, gravel, or other mineral extraction; scrap yards; tire vulcanizing and retreading; vending machines, except within a commercial building; uses providing goods or services of a predominantly adult-only or sexual nature, such as adult book or video stores or sex shops; and other similar uses as determined by the Chief of Planning.

Public Realm: Those parts of the urban fabric that are held in common such as plazas, squares, parks, thoroughfares, and civic buildings.

Residential: Premises used primarily for human habitation. Units shall not be less than 375 square feet in net area.

Restaurant, Cafe, Coffee Shop: A retail business selling ready-to-eat food and/or beverages for on- or off-premise consumption. These include eating establishments where customers are served from a walk-up ordering counter for either on- or off-premise consumption ("counter service"); and establishments where customers are served food at their tables for on-premise consumption ("table service"), that may also provide food for take-out, but does not include drive-through services.

School, Public or Private: Includes the following facilities:

Elementary, Middle, Secondary: A public or private academic educational institution, including elementary (kindergarten through 6th grade), middle and junior high schools (7th and 8th grades), secondary and high schools (9th through 12th grades), and facilities that provide any combination of those levels. May also include any of these schools that also provide room and board.

Specialized Education/Training: A school that provides education and/or training, including tutoring, or vocational training, in limited subjects. Examples of these schools include:

art school, ballet and other dance school, business, secretarial, and vocational school, computers and electronics school, drama school, driver education school, establishments providing courses by mail, language school, martial arts, music school, professional school (law, medicine, etc.), seminaries/religious ministry training facility.

This does not include pre-schools and child day care facilities (see "Day Care"). See also the definition of "Studio - Art, Dance, Martial Arts, Music, etc." for smaller-scale facilities offering specialized instruction.

Secondary Building: A building that accommodates the secondary use of the site.

Setback: The mandatory distance between a property line and a building or appurtenance. This area must be left free of structures that are higher than 3 feet excluding streetwalls, except as noted in the Building Form Standards.

Shared Parking: Any parking spaces assigned to more than one use, where persons utilizing the spaces are unlikely to need the spaces at the same time of day.

Shopfront: The portion of a building at the ground floor that is made available for retail or other commercial use. Shopfronts shall be directly accessible from the sidewalk.

Shopfront and Awning: The frontage wherein the façade is aligned close to the frontage line with the building entrance at the sidewalk grade. It has substantial glazing on the sidewalk level and an awning that should overlap the sidewalk to within a few of the curb, if possible

Single Family Dwelling: A residential structure containing a single dwelling unit. This includes Rowhouses for the purposes of this Form Code.

Stacked Units: Multi-family units within a single complex that are arranged in a vertical order with various arrangements that include single and multi-floor units "stacked" on one another.

Stoop: A frontage wherein the façade is aligned close to the frontage line with the first story elevated from the sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground floor residential use.

Story: A habitable floor level within a building, typically 8'to 12' high from floor to ceiling. Individual spaces, such as lobbies and foyers may exceed one story in height. In Shopfront spaces, the ceiling height of the first story may be as high as 16'.

Studio: Art, Dance, Martial Arts, Music, etc: Small scale facilities, typically accommodating no more than two groups of students at a time, in no more than two instructional spaces. Examples of these facilities include:

individual and group instruction and training in the arts; production rehearsal; photography, and the processing of photographs produced only by users of the studio facilities; martial arts training studios; gymnastics instruction, and aerobics and gymnastics studios with no other fitness facilities or equipment.

Substantial Compliance: It occurs when physical improvements to the existing development site are completed which constitute the greatest degree of compliance with current development provisions.

Theater, Cinema or Performing Arts: An indoor facility for group entertainment other than sporting events. Examples of these facilities include: civic theaters, facilities for "live" theater and concerts, and movie theaters.

Town Architect: A person retained by the City or on City staff to assist in the review of Form Code applications from initial submission and approval to the review of construction documents and site visits during construction to assure compliance.

Townhouse: A single-family dwelling that shares a party wall with another of the same type and occupies the full Build-to or frontage line. See Attached Single-Family. (Syn. Rowhouse).

Townhouse Stacked: A multi-family building with townhomes on the first level and "stacked" units on the upper levels. Access to upper units is at the frontage street level. When combined with access to the townhomes, this permits as many "doors" on the street as possible to enliven street activity.

Wireless Telecommunications Facility: Public, commercial and private electromagnetic and photoelectrical transmission, broadcast, repeater and receiving stations for radio, television, telegraph, telephone, data network, and wireless communications, including commercial earth stations for satellite-based communications. This includes antennas, commercial satellite dish antennas, and equipment buildings. Does not include telephone, telegraph and cable television transmission facilities utilizing hard-wired or direct cable connections.

Zoning Form Code or Zoning Code: The City of Rockville Zoning Ordinance, Chapter 25 of the City of Rockville City Code.

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Chapter 7 – Implementation

INTRODUCTION

This chapter identifies recommendations and steps (when appropriate) to implement *Rockville's Pike: Envision a Great Place* and turn the community's vision for the Pike into a built reality. A recommendation indicates a specific course of action to address an element of the plan. A step is an action taken to achieve a particular recommendation. Not all recommendations require action steps.

The implementation chapter starts with a set of broad policy recommendations which are not linked to any specific element of the plan but set the stage for the implementation of the plan itself. Following that, the chapter is organized according to the way elements are presented and described in Chapter 5: A Plan for the Rockville Pike Corridor. However, several of the recommendations related to the land use elements of the plan - such as controlling the height of buildings, their position on the site, their relationship to the sidewalks, and the design characteristics of the public realm - are regulated through the Rockville Pike District Form Code (Chapter 6) and therefore are not repeated. Finally, this chapter includes recommendations aimed at managing congestion and maintaining and improving the commercial vitality of the Pike. This chapter is divided in the following sections:

A. General Policy Recommendations

B. Implement the Transportation Elements of the Multi-Way Boulevard

C. Implement Study Area Transportation Elements

D. Implement the Land Use Elements of the Multi-Way Boulevard

E. Enable Redevelopment and Address Congestion Management

***Glossary**:*
*A **recommendation** indicates a specific course of action to address an element of the plan.*
*A **step** is an action taken to achieve a particular recommendation.*

F. Adopt Funding Strategies

G. Sustain Economic Diversity

H. Implementation Recommendations Matrix

This extensive set of recommendations brings to light the complexity of implementing the plan for Rockville Pike. They indicate that implementing this plan will require a high level of collaboration and cooperation between the City and the private sector and between the City and surrounding jurisdictions. It will also require a careful evaluation of appropriate funding mechanisms and options.

Furthermore, these recommendations make clear that implementation will not happen overnight but will require seizing opportunities and carefully timing implementation steps to keep the Pike moving and its businesses viable. Recommendations have been listed using a combination of letters and numbers; the letter refers to the Section (for example, A 1, A 2, etc. refer to Section A: General Policy Recommendations, below). Steps are listed underneath their corresponding recommendation. An implementation recommendations matrix is included at the end of this chapter.

A. GENERAL POLICY RECOMMENDATIONS

The following three recommendations are at the foundation of the implementation of *Rockville's Pike: Envision a Great Place*.

A 1 – Adopt *Rockville's Pike: Envision a Great Place*

The City Council should adopt *Rockville's Pike: Envision a Great Place* to give it official standing.

Adopting this plan sends an important message to residents that City Council shares and supports their vision for Rockville Pike's future. It informs property owners and businesses that the City is committed to the implementation of the plan and its principles. It also gives clear direction to staff as they interact with applicants and engage in development review.

A 2 – Adopt the Rockville Pike District Form Code

The City should take steps to amend its adopted zoning ordinance to include the Rockville Pike District Form Code presented in Chapter 6. This would include the mapping of a district boundary on the zoning map to establish the Rockville Pike District Form Code.

Zoning and the Adequate Public Facilities Standards (APFS) must be supportive of the recommendations included in this plan and must provide clarity and predictability to the development review process. The code detailed in Chapter 6: Rockville Pike District Form Code establishes clear zoning standards that support the vision for Rockville Pike. It provides a visual guide to property owners and investors,

and ensures that future development, likely to occur over a long period of time, is consistent with the public's vision and plan.

Other city regulations must also be reviewed for consistency with the plan's vision, including road standards, signage, forestry, and others.

A 3 – Establish Strong Regional Partnerships

The City must engage in planning efforts with Montgomery County to establish joint policies that will ensure compatible development throughout the length of the Route 355 corridor.

Montgomery County is in the process of planning along the Route 355 corridor. Areas to the north (including the downtown and Rockville Town Center) and areas to the south (such as White Flint) are a critical part of the primary retail, housing, and office market areas that will sustain the economic prosperity and competitiveness of the Pike.

B. IMPLEMENT THE TRANSPORTATION ELEMENTS OF THE MULTI-WAY BOULEVARD

This section deals with recommendations on how to transform Rockville Pike into a multi-way boulevard as described in Chapter 5: A Plan for the Rockville Pike Corridor. These recommendations focus on what the City needs to do to initiate the project and work with partner agencies to gain broader acceptance of the boulevard design. It is critical that these recommendations be considered and implemented, along with the land use recommendations that follow in the next section.

B 1 – Present the Boulevard Concept to the Maryland Department of Transportation

The City and County should jointly present the boulevard concept to the Maryland Department of Transportation (MDOT) to engage that agency as a partner and understand their concerns in advancing the project.

As MDOT maintains jurisdiction of Rockville Pike/Route 355, their support will be essential in pursuing altered design options. They can also work with the City and County in environmental review and preliminary engineering.

B 2 – Present the Boulevard Concept to the Metropolitan Washington Council of Governments

The City and County should jointly present the boulevard concept to the Metropolitan Washington Council of Governments and request that the multi-way boulevard project be included in the long-range regional transportation plan.

B 3 – Develop a Fully Engineered Plan for the Reconstruction of Rockville Pike

The City should partner with the State of Maryland and Montgomery County to develop a fully engineered roadway design for Rockville Pike based on the transportation elements described in Chapter 5, Section C.

The plan should address the design of the primary roadway, access lanes, sidewalks, intersections, movement between access lanes and primary roadway, right turns, bicycle lanes, and on-street parking. The engineering of the Rockville Pike area can be staggered based on phasing considerations described in B 5, below.

B 4 – Acquire Right-of-Way

The City should acquire public right-of-way or easements to ensure that the phased construction of the Rockville Pike boulevard can be accomplished.

Present right-of-way dimensions vary between 110 feet and 125 feet, and nearly all of the proposed 200-foot section for the boulevard will need to be accommodated in public right-of-way. The engineered plan described above will identify the precise alignment of the primary roadway, access lanes, and sidewalk determining on a parcel-by-parcel basis what the city needs to acquire.

B 4.1 Contact Affected Property Owners – The City needs to meet with all property owners affected by the reconstruction of Rockville Pike to present the plan and discuss acquisition of right of way.

B 5 – Phase Construction

The Maryland Department of the Environment (MDE) has adopted new requirements and regulations to emphasize Environmental Site Design (ESD) techniques. Rockville has adopted these requirements into its storm water management regulations. ESD techniques emphasize small, localized measures that provide ground water recharge and decreased impervious area.

Construction should be phased in increments no smaller than the three Pike districts as defined in this plan—North Pike, Middle Pike, and South Pike—in consideration of minimizing the disruption likely to be caused by construction and by the need to keep traffic moving.

The phasing will depend largely on redevelopment activity, maintenance of traffic, and the areas of the Pike where the City will need to focus infrastructure enhancement to manage traffic impact and congestion. It is likely this will be either the North Pike or South Pike section as these are the areas that have the greatest amount of land, the most redevelopment potential, and therefore the highest potential to generate revenues needed to finance construction. They also offer the greatest potential for demonstrating the boulevard's desirability. The Middle Pike section, by contrast, has limited redevelopment potential and any investments in this section will likely be enacted entirely by public agencies.

B 5.1 Coordinate Construction of Pike with Water and Sewer Infrastructure – The City should coordinate the phasing of construction in the study area with the need to replace (and if necessary, upgrade) aging water and sewer infrastructure in and near the Pike. Water and sewer infrastructure in the Rockville Pike study area is aging and may require rehabilitation or capacity upgrades to support additional development. The Public Works Department completed a comprehensive study of the City's water distribution system in 2008, resulting in the 2008 Water Distribution Master Plan. This Plan, which recommends an extensive replacement program to replace water pipes with insufficient flow capacity, began implementation in 2009. Although water pipes specifically in the

Rockville Pike Planning Area were not identified, much of the water infrastructure to the east and north of the study area will be replaced over the 20 year plan.

In addition to the water system upgrades, the sanitary sewer system will require upgrading to serve the development projected through the plan. Public Works initiated a comprehensive capacity analysis of the Rockville Creek Sewer Shed in early 2010 and should coordinate required upgrades with the Pike reconstruction.

B 5.2 Place Utility Lines Underground – In coordination with utility companies, the City should implement the recommendation to relocate "all aerial utility lines along the Pike […] as a safety measure and to enhance the visual appearance of the Pike" as stated on page 141 of the 1989 Neighborhood Plan. The reconstruction of the Pike into a boulevard represents a unique opportunity to implement this long-standing goal of the community.

C. IMPLEMENT STUDY AREA TRANSPORTATION ELEMENTS

This section deals with how to implement those elements of *Rockville's Pike: Envision a Great Place* that extend beyond the Pike and affect the study area as a whole.

C 1 – Develop a Fully Engineered Plan of Street Expansion and Realignment

The City should develop a fully engineered street plan for the Rockville Pike study area based on the transportation elements described in Chapter 5, Section D.

The plan should address the design of the proposed realignment of roadways, the proposed expanded street network, and the design of collector, "A" and "B" streets, alleys, and sidewalks. The engineering of the street network for the study area can be staggered based on phasing considerations described in recommendation B 5, above.

C 1.1 Work With Area Property Owners – The City should contact and work with any business dislocated as a result of the street realignment.

C 2 – Develop a Wayfinding Plan

The City should commission the design of a coordinated and hierarchical signage system for the study area.

The signage should focus on: a high speed sign system for vehicles moving along the primary roadway; a low speed sign system to guide vehicular and bicycle traffic in the local lane; and a pedestrian speed sign system to take pedestrians to their destination. The study should recommend a consistent identity based on colors, icons, typefaces, and typeface size that becomes de-facto, an element of the branding of the Rockville Pike boulevard. If deemed appropriate, the boulevard identity could allude to or replicate the signage system developed for the Rockville Town Center.

D. IMPLEMENT THE LAND USE ELEMENTS OF THE MULTI-WAY BOULEVARD

The plan recognizes that private developers bear a great deal of the responsibility of creating the attractive physical environment that complements the transportation element of the multi-way boulevard. The principal land use elements of the multi-way boulevard are described in Chapter 5, Section F. The bulk of the recommendations that address how the redevelopment process can transform the character and visual quality of Rockville Pike are contained in Chapter 6: Rockville Pike District Form Code. The Code regulates the position and the height of buildings; the design of special intersections, lot size, and building treatment; and provides streetscape standards to ensure a coherent and exciting public realm. The recommendations listed below indicate ways to facilitate the understanding and application of the Form Code, following its adoption.

D 1 – Streamline the Development Approval Process

The City should streamline its application review process following the recommendations of the Rockville Pike District Form Code.

A form code emphasizes legibility, using clear illustrations and tables to convey requirements. Developers who adhere to the code should proceed through a relatively timely administrative review, rather than a lengthy discretionary review process. Ultimately, this makes the development process more predictable for developers, and the development product better aligned with community expectations. Any project that "meets code" will move through the review process quickly, while those projects that warrant a variance, modification, or exception will continue to require board approval. Additional ways to streamline the development review process include processing applications under the Form District with priority, and waiving or reducing review fees, particularly for projects that feature desired amenities such as LEED certification or affordable housing.

D 1.1 Train Planning Staff – Following adoption of the Rockville Pike District Form Code the City should organize hands-on training sessions to familiarize staff with the Code.

D 1.2 Educate Property Owners – Planning staff should conduct periodic sessions with property owners, developers, and potential investors to familiarize them with the Form Code and its streamlined approval process.

D 2 – Establish the Position of Town Architect

The City should establish the position of Town Architect to administer the application review process for development and redevelopment along the Pike.

The Town Architect should work under the direction of the Planning Director. He/she should have a background in architecture and urban design and should be familiar with the development principles at the foundation of this plan and with the Rockville Pike District Form Code. The Town Architect should guide applications

through the streamlined review process implied by the code and should have the authority to accept or deny applications based on compliance with the Code. The Town Architect could be a staff member or work on retainer.

D 2.1 Conduct Site Surveys Along the Pike – The Town Architect needs to conduct accurate surveys and specific site analyses to confirm existing information on rights-of-ways, property lines, building locations, and any easements and covenants tied to individual properties as site-specific applications come forward or City improvements are initiated.

D 3 – Develop a Streetscape Plan

The City should commission a streetscape plan for the Rockville Pike study area detailing all aspects of the public realm.

The plan should focus on the overall street network with the goal of creating a continuous, comfortable, and safe pedestrian environment throughout the study area. The streetscape plan should address surfaces, the location and species of trees, planters, lighting, and street furniture. The streetscape should also implement the recommendations of greening the Rockville Pike, making it the primary public and green place of the study area as described in Chapter 5.

D 4 – Review Relevant Regulations and Policies for Conformity with the Plan

Regulations in addition to the zoning ordinance (forestry, roads, stormwater, etc.) influence how developers may build on their sites. The City should review these regulations to ensure that they are compatible with the plan's vision.

D 5 – Assess Other Study Area Needs

The City should assess the recreational and public facility needs of the study area in response to the proposed increase in residential land use.

The *Rockville's Pike* plan recommends the creation of small passive gathering places throughout the study area but does not address the need for larger recreational open space. The proposed study should determine if it is appropriate to locate a larger open space in the study area and where such place should be located. The proposed study should also evaluate if school or other public facilities should be planned for the corridor, and if so, where they should be located.

E. ENABLE REDEVELOPMENT AND ADDRESS CONGESTION MANAGEMENT

Rockville's Pike presents a transformative set of design elements intended to offset the demand for vehicle trips by favoring land development patterns that make the area more walkable and better able to capitalize on the potential for transit use. Redevelopment of the corridor is crucial to making this happen. At present, the City's system of concurrency management and development review precludes the transformation envisioned by the plan from happening easily. The Critical Lane

Volume Analysis conducted in the fall of 2010 revealed that the City's system of development review does not readily allow development consistent with the recommendations of this plan.

The recommendations in this section provide guidance on directions the City should take to enable redevelopment and manage congestion. A key recommendation to achieving this is to act upon the recommendations contained in the Critical Lane Volume Analysis (Appendix E). Another key recommendation is to establish a clear and ongoing oversight into efforts on the part of corridor businesses and organizations to manage trip generation and travel demand. The City's current development review program assesses this impact and allows credit for the use of demand management strategies at the time of development review only. The City should take a more proactive role in monitoring how traffic is generated and how travel demand is being met to ensure the continued success of the Rockville Pike corridor and to continue to permit development. Other recommendations include revising the level of service standards, adopting a more flexible system of capacity allocation, and optimizing transit service. These recommendations have been described at length in Chapter 5, Section E: Congestion Management Elements.

E 1 – Act Upon the Recommendations of the Critical Lane Volume Analysis Report

The City of Rockville needs to act upon the three recommendations contained in the Critical Lane Volume Analysis report. The City should specifically consider the following:

E 1.1 Implement Engineered Changes That Increase Intersection Capacity – These changes can include physical changes to the roadway and intersection design, such as the addition of turn lanes. They can also include changes to traffic control, such as the replacement of signal infrastructure to allow different turning movement patterns and the re-phasing and retiming of signals to improve efficiency. The City will need to work with MDOT for any changes within the state right-of-way.

E 1.2 Increase the Critical Lane Volume Standard to Permit Additional Traffic – The CTR-determined CLV threshold would not be in excess if the standard were to be raised. This recommendation does not require physical changes to street and roadway infrastructure but an adjustment of the City's adequate public facility policy to permit additional traffic in dominant movements. This recommendation should be implemented in conjunction with a more flexible system of capacity allocation

E 1.3 Develop a Broader Set of Review Measures – Measures should be focused more on the corridor and the Plan area than on specific intersections. A focus on intersections as a basis for concurrency and adequate public facility management may pose problems when certain intersections reach their capacity limits. This is especially true in corridor-based districts, where the principal thoroughfare

***CTR Credits/Reductions**: Developers must present a traffic study to the city showing how many trips a development is expected to generate. This number may reduced for regulatory purposes if the developer provides alternatives that will reduce the number of trips to/from the site.*

inevitably carries a large share of local traffic generated within the corridor. In these cases, traffic impact from new development is often reviewed over a greater length of the corridor than simply at the single intersection where development is located.

E 2 – Form and Administer a Transportation Management Association (TMA)

The City of Rockville will need to take an active role in forming a Transportation Management Association and coordinating with it its development review program. This allows Rockville to track the ongoing efforts of member businesses and organizations in reducing trips taken by single-occupant vehicles and thus preserving corridor-wide capacity for additional development.

E 2.1 Increase the Limit on Credits/Reductions for Trip Generation – Rockville should consider augmenting its Comprehensive Transportation Review methodology to allow credits/reductions in trip generation beyond the current 30 percent cap in Transit-Oriented Areas (TOAs) and 20 percent in non-Transit-Oriented areas in the study area. While the current nature of the Pike suggests that such a balance between walking, bicycling, transit and vehicle use would be highly ambitious, a TMA administered by the City will help to ensure use of Transportation Demand Management (TDM) programs and to identify new opportunities to further this balance and reduce traffic congestion. And as stated previously, the development of a true mixed-use, mixed-purpose built environment suits the corridor to a reduction in vehicle trips due to the proximity of complementary functions of community life.

E 2.2 Pursue Parking Management Initiatives – The City, in partnership with the proposed TMA, should change the focus of the parking requirements specified by the Rockville Pike District Form Code by adding the option of payments toward shared facilities, especially parking structures.

E 2.3 Combine Parking Reduction with Demand Management Strategies – The City, working with the proposed TMA should pursue a policy of maintaining an inventory of available parking that corresponds to vehicular roadway capacity. The less capacity that is available in the transportation system, the less parking will be permitted with new development. Developers and businesses will be required to actively participate in TDM strategies such as providing employees with transit passes and/or vanpool and ridesharing service options to qualify for parking reduction.

In conjunction with such a system, the City can implement a program where corridor businesses and organizations are taxed on their parking inventory or what portion of a shared parking facility they are using. The primary purpose of taxing parking is to generate revenue to finance improvements and enhancements to the transportation system recommended in this plan, but such a

tax can also serve as an incentive for businesses to explore additional options for trip reduction.

If employers demonstrate after the initial development that they are utilizing trip reduction options, then they will be able to release an appropriate number of parking spaces (counted at the time of development approval) into the supply of available parking. The reduction in the number of trips being generated by those establishments frees capacity that can be allocated to future developments.

E 2.4 Cluster Bicycle Accommodation – The City, in partnership with the proposed TMA, should enable the "clustering" of bicycle storage in locations that are convenient and accessible to multiple destinations. The clustering should be treated in a way similar to the in-lieu contributions discussed in recommendation E 2, above.

Suggested guidelines for clustering bicycle storage include:

- Residential: 1 space per 4 units, plus visitor spaces equal to at least 20 percent of the number of total units
- Hotel: 1 space per 15 rooms
- Retail: 1 space per 3,000 square feet of leasable floor area
- Office: 1 space per 2,500 square feet of leasable floor area

With respect to controlling the parking of bicycles, the Rockville Pike District Form Code Parking Standards reference the Bicycle Parking Section of the Zoning Ordinance of the City of Rockville (adopted December 15, 2008) that regulates, among other items, bicycle parking location, type (short and long term), configuration, stall dimensions, rack design, and security precautions.

E 3 – Adopt and Enhance City TDM Activities

The City should seek opportunities to expand and enhance its TDM program to reduce the single-occupancy vehicle transportation mode and encourage new alternative mode users particularly as they are applied to the Pike.

E 4 – Optimize Transit Service Through the Rockville Pike Corridor

The City should work closely with Montgomery County's Ride On and with WMATA to optimize transit service through Rockville Pike and maximize benefits stemming from the repositioning of bus stops on the near side of intersections along the safer access lanes.

F. ADOPT FUNDING STRATEGIES

This section focuses on the implementation of two primary funding strategies recommended to implement *Rockville's Pike: Envision a Great Place*: creating a Tax Increment Financing district and expanding use of the City's in-lieu contributions. These two strategies will enable the City to proceed with the reconstruction of Rockville Pike focusing on the coordinated implementation of the transportation and

land use elements expressed in the plan. These recommendations have been described in Chapter 5, Section E.

F 1 – Secure State and Federal Funds to Create the Multi-Way Boulevard

The City should work with the County and the State to ensure that creating the multi-way boulevard is included in the State's funding priorities and then with State and Federal officials to secure funding.

F 2 – Create a Tax Increment Financing District

The City should create a Tax Increment Financing District(s) (TIFs) along Rockville Pike to provide the City with substantial bonding capacity to provide needed public enhancements and improvements in the redevelopment, such as streetscape, public amenities, and other development components.

While further study is required to determine the exact capacity and structure of one or more TIF districts, this is a commonly used tool in redevelopment projects to support public investments.

F 2.1 Define the TIF District Structure and Boundaries – The City should conduct a study to determine the precise structure and boundaries of the TIF District(s) and their exact financing capacity. Consideration should be given to create districts that correlate to the North, Middle, and South Pike areas. The study should determine priorities for the use of funds and the amount of funding to be used for specific projects along the Pike.

F 2.2 Coordinate with MDOT – The City should coordinate the establishment of the Pike TIF District(s) through MDOT's approval process, long-term Capital Investment Program (CIP), and traffic engineering standards, as the Pike is a Maryland state highway.

F 3 – Expand the Use of In-Lieu Contributions

The City should expand its use of in-lieu contributions to allow the construction of complete sidewalks and transportation facilities at once and not simply rely on property development to generate small portions of this infrastructure.

For example, if a project constructs a sidewalk on its property or pays an equivalent amount to an in-lieu contribution fund, the City will need to complete the sidewalk to connect to a Metro rail station or to an adjacent neighborhood. This implies that the City must be prepared to make initial capital investments to realize significant components of the plan's transportation system, but over time the payment of in-lieu contributions can retire any financing obligations that the City incurs in providing this infrastructure in advance of development. The City will need to reserve funds to complement the in-lieu contributions it receives from active development projects.

G. SUSTAIN ECONOMIC DIVERSITY

These recommendations focus on strategies to facilitate the redevelopment process and to ensure that small businesses, offices, and moderately priced housing remain in the study area and thrive through the redevelopment process. They have been described in Chapter 5, Section G.

G 1 – Establish Public Private Partnerships

This City should consider encouraging Public Private Partnerships to promote redevelopment on the Pike.

Partnerships must be consistent with local political and financial objectives, and require negotiated agreements with developers to maximize the return on public investment. Should any element of the plan implementation require policy or funding to execute a Public Private Partnership, public acceptance of both the practice and the sources of funds will be required.

G 2 – Enhance Retail & Small Business Opportunities

The City could dedicate economic development resources to areas along the Pike to encourage access to small business development services and engage small businesses in the redevelopment process.

Several programs at the County-level are designed to support small business. Targeted outreach of business assistance to small business establishments in the corridor will be critical to ensure that their needs are being met and that they remain competitive in a redevelopment environment. In particular, the City's Development Coordinator should work with the County's economic development staff and with the Rockville Economic Development Inc. (REDI) to target businesses that may be displaced through redevelopment, assist them in finding new facility locations in the redeveloped areas, and ensure that they have the tools and financing to succeed. The County's economic development services division has numerous small business programs to support small and minority owned businesses through counseling, mentoring, and financing resources to help them startup or expand. These services should be integrated into a direct program to support potential small business owners in new developments.

G 3 – Assist Small Business Office to Relocate in the Study Area

The City should work with small business owners seeking office space to help them identify space in redeveloped properties and remain competitive in the new Rockville Pike environment.

Several programs exist to assist employers through employee tax credit programs that reward job creation. While not targeted to a specific geography, these programs may be useful in recruiting Class A office tenants to the corridor. These programs are described in greater detail in Chapter 10.

G 4 – Continue Inclusion of Moderately Priced Units

The City should ensure that moderately priced unit are included in the study area redevelopment process pursuant its own Moderately Priced Dwelling Unit (MPDU) Program.

H. IMPLEMENTATION RECOMMENDATIONS MATRIX

The matrix found in the following page links the recommendations and steps presented in this chapter with the elements of *Rockville's Pike* described in Chapter 5: A Plan for the Rockville Pike Corridor.

Implementation Recommendations

Plan Elements	Redesign and Reconstruct Rockville Pike as a Multi-Way Boulevard	Principal Transportation Elements of the Multi-Way Boulevard	Study Area Transportation Recommendations	Principal Land Use Elements	Congestion Management Elements	Funding Mechanisms	Economic Strategies
A. GENERAL POLICY RECOMMENDATIONS							
A 1 – Adopt Rockville's Pike: Envision a Great Place	■	■	■	■	■	■	■
A 2 – Adopt the Rockville Pike District Form Code	■	■	■	■			
A 3 – Establish Strong Regional Partnerships	■	■			■		
B. IMPLEMENT THE TRANSPORTATION ELEMENTS OF THE MULTI-WAY BOULEVARD							
B 1 – Present the Boulevard Concept to the Maryland Department of Transportation	■	■					
B 2 – Present the Boulevard Concept to the Metropolitan Washington Council of Governments	■	■					
B 3 – Develop a Fully Engineered Plan for the Reconstruction of Rockville Pike	■	■			■		
B 4 – Acquire Right-of-Way	■	■			■		
B 4.1 Contact Affected Property Owners	■	■					
B 5 – Phase Construction	■	■					
B 5.1 Coordinate Construction of Pike with Water and Sewer Infrastructure	■	■		■			
B 5.2 Place Utility Lines Underground	■	■		■			
C. IMPLEMENT STUDY AREA TRANSPORTATION ELEMENTS							
C 1 – Develop a Fully Engineered Plan of Street Expansion and Realignment			■		■		
C 1.1 Work With Area Property Owners			■	■			
C 2 – Develop a Wayfinding Plan	■	■	■	■			■
D. IMPLEMENT THE LAND USE ELEMENTS OF THE MULTI-WAY BOULEVARD							
D 1 – Streamline the Development Approval Process	■			■			■
D 1.1 Train Planning Staff	■			■			■
D 1.2 Educate Property Owners	■			■			■
D 2 – Establish the Position of Town Architect	■			■			■
D 2.1 Conduct Site Surveys Along the Pike	■			■			
D 3 – Develop a Streetscape Plan	■	■	■	■			■
D 4 – Review Relevant Regulations and Policies for Conformity with the Plan	■	■	■	■			
D 5 – Assess Other Study Area Needs	■	■	■	■			
E. ENABLE REDEVELOPMENT AND ADDRESS CONGESTION MANAGEMENT							
E 1 – Act Upon the Recommendations of the Critical Lane Volume Analysis Report	■	■	■	■	■		■
E 1.1 Implement Engineered Changes that Increase Intersection Capacity	■	■	■	■	■		■
E 1.2 Increase the Critical Lane Volume Standard to Permit Additional Traffic	■	■	■	■	■		■
E 1.3 Develop a Broader Set of Review Measures	■	■	■	■	■		■
E 2 – Form and Administer a Transportation Management Association (TMA)	■	■	■	■	■		■
E 2.1 Increase the Limit on Credits/Reductions for Trip Generation	■	■	■	■	■		■
E 2.2 Pursue Parking Management Initiatives	■				■		■
E 2.3 Combine Parking Reduction with Demand Management Strategies	■				■		■
E 2.4 Cluster Bicycle Accommodation	■			■	■		
E 3 – Adopt and Enhance City TDM Activities	■	■	■	■	■		
E 4 – Optimize Transit Service Through the Rockville Pike Corridor	■	■	■	■	■		
F. ADOPT FUNDING STRATEGIES							
F 1 – Secure State and Federal Funds to Create the Multi-Way Boulevard	■	■	■	■	■	■	
F 2 – Create a Tax Increment Financing District	■			■		■	■
F 2.1 Define the TIF District Structure and Boundaries	■			■		■	■
F 2.2 Coordinate with MDOT		■	■		■	■	■
F 3 – Expand the Use of In-Lieu Contributions	■	■	■	■		■	■
G. SUSTAIN ECONOMIC DIVERSITY							
G 1 – Establish Public Private Partnerships	■		■	■			■
G 2 – Enhance Retail & Small Business Opportunities	■		■	■			■
G 3 – Assist Small Business Office to Relocate in the Study Area	■		■	■			■
G 4 – Continue Inclusion of Moderately Priced Units	■		■	■			■

Appendix A – Model Sites

INTRODUCTION

Appendix A summarizes the findings of a detailed development analysis of three sites identified as having the potential to be models for future redevelopment of Rockville Pike. The purpose of analyzing these sites was to provide a demonstration of what redevelopment along the Pike could look like in response to the community's vision of a walkable and exciting place and within rigorous market parameters. They are not intended, however, to prescribe a specific development scenario. Furthermore, the presentation of these hypothetical projects in no way indicates that the city has approved them as development projects.

The selection of the three model sites was driven by several key criteria:

- Openness of their owners to have their sites used in the planning process;
- Potential of the sites to enable the testing of the community's values about redevelopment and quality of place;
- Potential to enable the exploration of a range of conditions replicable to other sites;
- Potential to spark change; and
- A minimum size of five acres.

The model sites were used extensively to develop the land regulations found in Chapter 6: The Rockville Pike District Form Code. They visualize how the form code would work when applied to specific sites along the Rockville Pike Corridor. The District Form Code was re-calibrated after testing its applicability to different sites in the study area.

Please note that the data contained in this chapter was gathered in the fall of 2007 and in the spring and summer of 2008. Market conditions have changed since the beginning of the study. While these changes affect short-term considerations, they do not affect the long-term economic outlook for the Rockville Pike study area that remains strong.

The three model sites are:

1. The Congressional Plaza, a 17-acre site bounded by Rockville Pike to the east, Halpine Road to the south, Jefferson Street to the west, and Congressional Lane to the north.
2. The 5.75-acre site located at the northeast corner of Halpine Road and Rockville Pike, bound to the east by the proposed extension of Chapman Avenue and to the north by a proposed new road.
3. The 5.5-acre site on the northern end of the study area bound to the west by Rockville Pike and to the east by the Metro right-of-way. It includes the former Koons Ford Dealership and adjacent parcels.

The consultants proposed a development program for each of the sites, taking into consideration market potential and the physical characteristics of the site. The program was developed during the design charrette, and the results were presented to the public at the charrette's final public meeting.

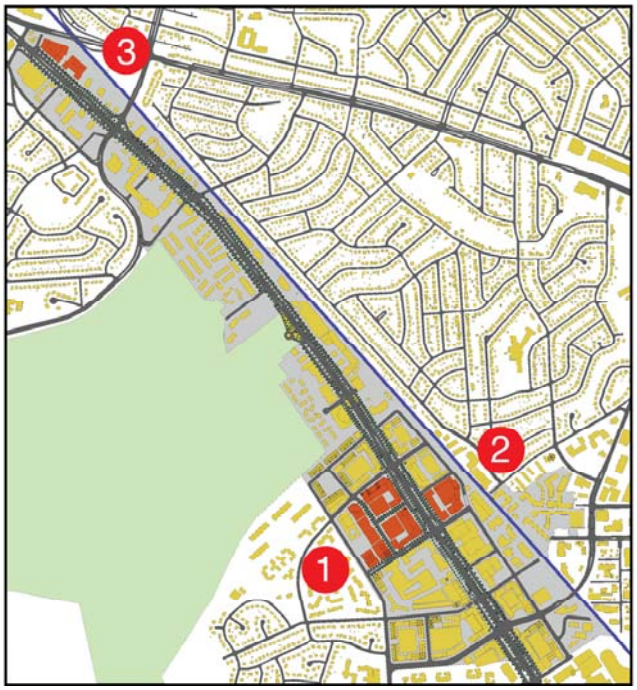


Figure 8.1: The Three Model Sites *– Sites 1 and 2 are located in the South Pike area. Site 3 is located in the North Pike area.*
Source: ACP

A description of the design and programmatic characteristics of each site and an analysis of comparative impacts on real property, retail sales, hotel room, and recordation/transfer taxes follows.

1. Methodology and Assumptions for Economic Analysis

Using the range of development potential as outlined in the design charrette, the economic consultants created a pro forma development analysis for each site to

analyze potential development costs and annual revenues. The consultants used a variety of standard industry published sources to calculate construction costs, including Marshall's Valuation Service and RS Means. A standard percentage for soft costs and developer fees was then added to this amount.

To calculate estimated value of the new program, it was necessary to estimate a net operating income for each site. Revenue data was calculated using market rate rents uncovered during the consultants' initial market analysis, from sources such as CoStar, REIS, Hanley Wood Market Intelligence, and the Montgomery County Convention and Visitors Bureau. Removing the average percentage of revenues used for expenses yielded the net operating income. Revenue assumptions for all three scenarios include:

- For-Rent Residential: Average gross rent of $1,675 per unit per month; stabilized occupancy of 95 percent; and expense factor of 41 percent.
- Retail: Average rent of $38 per square foot per year in Model Sites 1 & 2 and $30 per square foot per year in Model Site 3; stabilized occupancy of 95 percent in Model Sites 1 & 2 and 97 percent in Model Site 3; and expense factors of 15 percent across all three scenarios.
- Office: Average rent of $30 per square foot per year; stabilized occupancy of 91 percent; and an expense factor of 50 percent.

The consultants capitalized projected net operating income from the programmatic elements to estimate market value. Capitalization rates utilized in the analysis vary by use:

- Apartments – 5.8 percent
- Retail – 7.0 percent
- Office – 6.8 percent
- Hotel – 8.3 percent

The current value of the property, as indicated in the State Department of Assessments and Taxation (SDAT) database, was removed from the new value to arrive at a net new value. The economic consultants used this net new value to calculate the applicable property taxes that would be paid to the City, County, and State.

To estimate new retail sales, the economic consultants used an estimated per-square-foot productivity rate based on the projected rents and removed existing on-site sales. For the sake of this analysis, the consultants assumed 100 percent of all retail sales are taxable.

As a planning assumption, the economic consultants estimated that there would be market demand for 68 percent of all units to be rental, with the remaining 32 percent for-sale. The rental units, representing 68 percent of all units, are distributed across all three sites; the for-sale units are only on model site 1. These estimates were based on current market trends and used for planning purposes; changes in the market could alter the overall percentages to have more for-sale and less rental.

Though estimated construction costs for parking structures were included, operating incomes were not calculated, in recognition of the fact that in many cases parking would need to be provided by the landlords for tenants and thus would not be in the revenue stream.

It is important to note that these model site analyses are not economic impact or full fiscal impact studies, which would require the examination of additional costs and benefits. However, they do show the comparative relationship of various development programs on the sites and the tax benefits that could be leveraged for implementation.

A. MODEL SITE 1: CONGRESSIONAL PLAZA

The proposed program for the 17-acre Congressional Plaza site includes 750-1,000 residential units, 70-90,000 office square feet, and 275,000-400,000 square feet of retail. These uses would require 1,785 to 2,470 parking spaces.

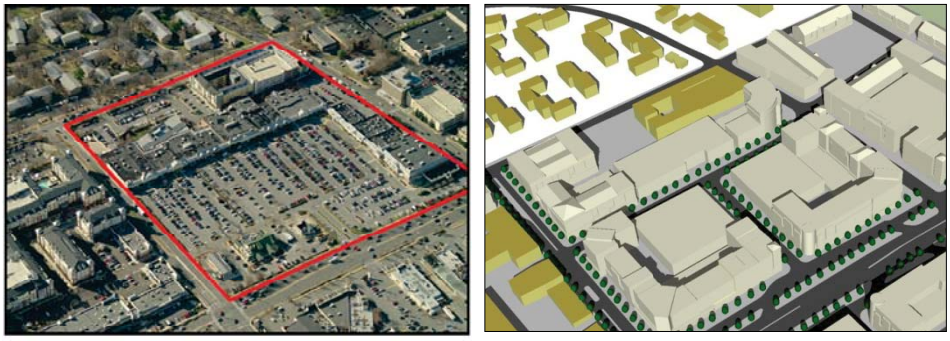


Figure 8.2: Congressional Plaza *– Existing conditions (left) and massing model of possible future redevelopment.*
Source: ACP

1. Design Solutions

Several distinctive design solutions were developed for this site. They include:

a. Smaller Blocks

The size of the block occupied by Congressional Plaza is 1000 feet by 1000 feet. In the model the site was divided into three blocks. The two blocks fronting the Rockville Pike are approximately 450 feet by 450 feet - an ideal size to create a walkable public realm (coded as 1 in Figure 8.3). The third block fronting Jefferson Street is 450 feet by 1000 feet (coded as 2 in Figure 8.3). The longer side facing Jefferson Street is divided in two parts by a 200 foot by 200 foot open space, successfully breaking up the size of the block. The longer side to the east of the block remains 1000 feet long but it is a Type "B" street that functions as a service access road, with less emphasis on pedestrian access.

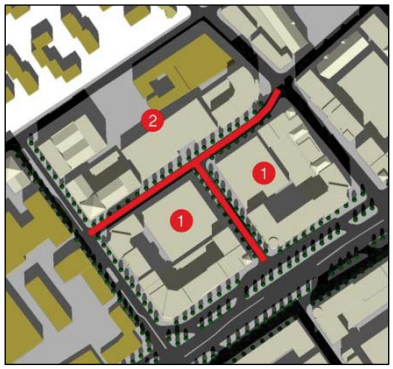


Figure 8.3: Model Site 1 Smaller Blocks *– The introduction of internal streets breaks up Congressional Plaza into three smaller, walkable blocks.*
Source: ACP

b. Type and Location of Buildings

The smaller block structure enables the introduction of a great variety of building types with heights and characteristics that respond to the street frontage in which they are located. Specifically:

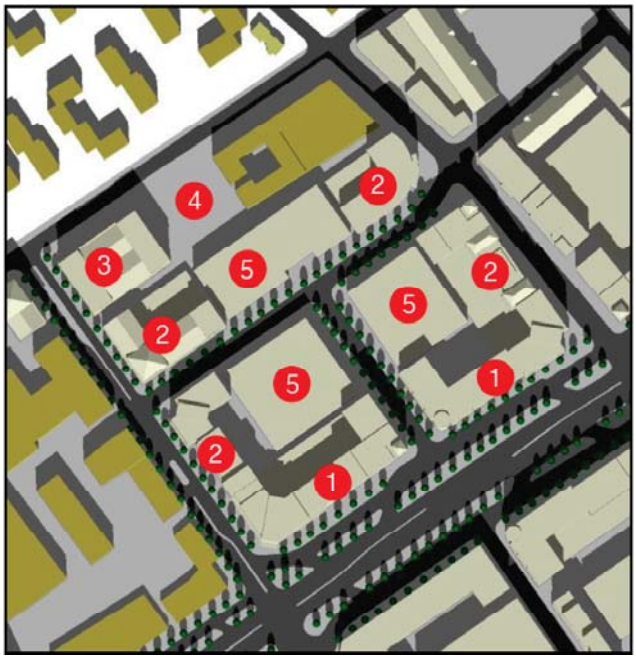


Figure 8.4: Model Site 1 Building Types *– Buildings on the site will have different characteristics depending on which streets they front.*
Source: ACP

1. *Buildings fronting Rockville Pike* have a variable height of six to eight stories. The ground floor is for retail uses and the top floors can be either apartments or offices. The vertical and horizontal mixed-uses created along the Pike frontage will generate diverse activities and pedestrian movements. The building height helps frame the public realm. (Coded 1 in Figure 8.4)
2. *Buildings fronting Halpine Drive and Congressional Lane* are lower, ranging from four to six stories, gradually decreasing in height as they move further away from the Pike. The ground floor is still used for retail uses, though as buildings move further from the Pike, retail uses give way to small professional offices and services. The pedestrian-oriented public realm found on the Pike extends to these two Type A streets. (Coded 2 in Figure 8.4)
3. *Buildings fronting East Jefferson Street* are exclusively residential in nature with a maximum height of four stories. The tapering of building height from the Rockville Pike boulevard to the residential neighborhoods on East Jefferson Street was created following comments made by the public during the charrette. (Coded 3 in Figure 8.4)
4. *Open Space* is provided in the form of a small formal park facing East Jefferson Street in addition to the landscaping and greening that occurs along the sidewalks facing the Pike. (Coded 4 in Figure 8.4)

5. *Parking* is provided in the form of structures located in the back of liner buildings, accessible through the newly created Type B streets that separate the new block structure. (Coded 5 in Figure 8.4)

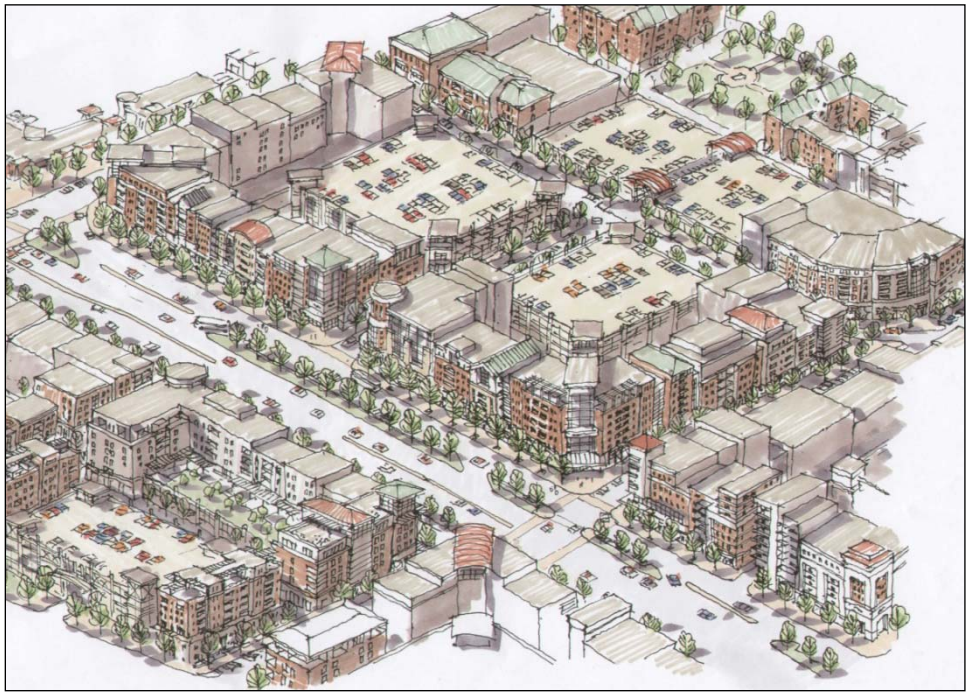


Figure 8.5: Model Site 1 Illustration *– This rendering illustrates a possible redevelopment concept consistent with the vision of this plan.*
Source: ACP

2. Economic Analysis

Please note that the economic analysis for the three model sites was conducted in the spring and summer of 2008. Market conditions have changed since. The data, however, provide the necessary real life rigor to the modeling of the three sites.

Developing the potential program would take an estimated $279.1 million to $376.9 million, plus an additional $34 to $47 million for required structured parking.

This is the only site that is projected to have condominiums in these model scenarios. Due to current market conditions and land availability, and its proximity to the Metro, this site would have the greatest market potential. However, it is possible that the share of for-sale and for-rent units could change as the for-sale market improves. The potential condominium sales (averaging $450,000 per unit, less a 10 percent cost of sale) would generate $167 to $222.7 million in value.

Using the income and expense assumptions and capitalization rates explained above, the total capitalized value of the redeveloped site would be approximately $367 to $504 million. In addition to the value of the condominium component, this is comprised of between $66 and $88 million from rental apartments, $120.5 and $175.3 million from the retail space, and $14 and $18 million from the office space. Removing the $107 million in current assessed value of the site suggests a net new value of between $260.5 and $396.9 million.

At current real property tax rates, the site would bring an additional $291,773 to $444,634 to the State, $2.1 to $3.2 million to Montgomery County, and $786,745 to $1.2 million to the City of Rockville.

The low end of the retail program provides for less retail than currently exists on the site. So, potential new on-site retail sales taxes range from a negative net new amount of $1.4 million to a positive net new $1.4 million.

The sale of the included condominiums would require the payment of transfer and recordation taxes. At 1.5 percent of the total transaction, transfer taxes for these units would yield between $2.8 million and $3.7 million for the County. At $3.45 for every $500 of value, the units would gain between $1.2 and $1.7 million in recordation taxes for the County. Unlike property and sales taxes, these are one-time payments.

B. MODEL SITE 2: NORTHEAST CORNER OF HALPINE ROAD AND ROCKVILLE PIKE

The program developed for the 5.75-acre site includes between 425-575 residential units, 50,000-200,000 square feet of office space, and 115,000-200,000 square feet of retail.

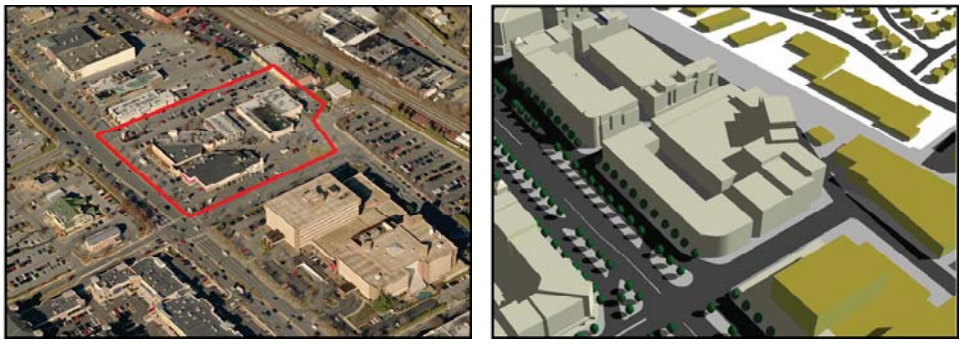


Figure 8.6: Northeast Corner of Halpine Road and Rockville Pike *– Existing conditions (left) and massing model. Please note that the massing model was developed to include beyond the model site to better evaluate the visual impact of redevelopment on the Rockville Pike.*
Source: ACP

1. Design Solutions

This site greatly benefits from its close proximity to the Twinbrook Metro Station, giving it marketability and the potential for taking full advantage of the multi-modal transportation system.

a. Street Network

Model Site 2 is the southernmost edge of the 7000 foot block located between Halpine Road and Edmonston Drive on the east side of Rockville Pike. The plan recommends that Chapman Avenue be extended northward along the Metro right-of-way and that a new Type B street be created along the north edge of the site, creating a block that is 450 feet by 500 feet. The new streets are indicated in red in Figure 8.7 on the next page.

b. Type and Location of Buildings

There are several building typologies integrated in the development of this model site. They are:

1. *Buildings along the Pike* have a variable height ranging from six to eight stories and a similar mix of uses described for model site 1. (Coded 1 in Figure 8.7)
2. *Buildings at the corner of Chapman Avenue and Halpine* are the tallest buildings within the model sites. Their height responds to the proximity of the Twinbrook Metro Station, and the potential for creating the type and intensity of uses that serve and promote transit use. They also respond to comments by the public to transition from higher densities around the Twinbrook Station development to lower densities moving north and west. Here buildings reach a height of 12 stories, with retail uses facing Chapman Avenue and Halpine Road. (Coded 2 in Figure 8.7)
3. *Buildings along the new Type B road,* the diagonal street on the upper left corner of the image, are predominantly residential buildings (coded 3 in Figure 8.7) that line a parking structure (coded 4 in Figure 8.7). Limited small commercial uses face the sidewalk.

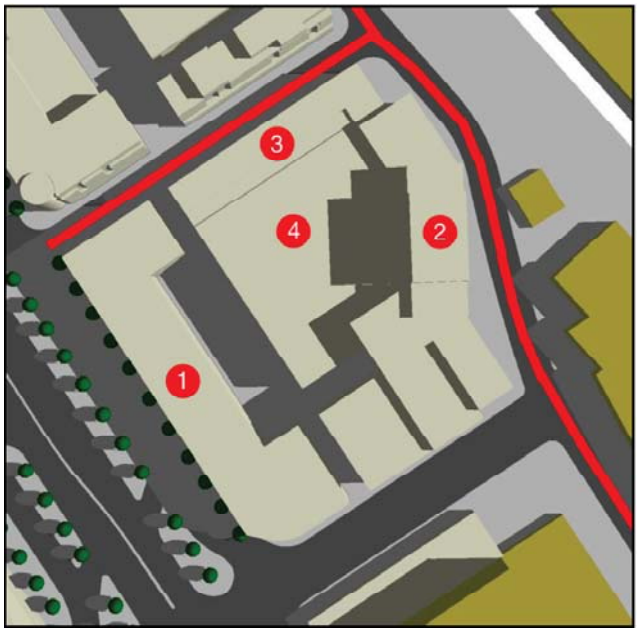


Figure 8.7: Model Site 2 Building Types *– Model Site 2 has a higher intensity of development due to its proximity to the Metro.*
Source: ACP

c. Open Space

The open space requirements for this site are met through landscaping and greening along Rockville Pike. Additional open space could be provided in the form of green areas on the roof of residential buildings, which would offer private open space opportunities while creating an environmentally friendly building environment.

Figure 8.8: Model Site 2 Illustration *– This rendering illustrates the proposed redevelopment concept for Model Site 2. It offers a bird's eye perspective looking southeast towards the Twinbrook Metro.*
Source: ACP

2. Economic Analysis

Total development for these uses would range from $154.2 to $256.1 million for the rentable building area. Structured parking would cost an additional $17.4 to $33.7 million.

Using the same income and expense assumptions and capitalization rates as in model site 1, the total capitalized value of the redeveloped site would be $143.5 to $240 million—$83 to $112 million from the rental residential units, $50 to $87.7 million from the retail space, and $10 to $40 million from the office space. Removing the $19.3 million in current assessed value of the site suggests a net new value of between $124.2 and $220.8 million. This value would translate to $139,162 to $247,328 in real property taxes for the State, $1 to $1.8 million for the County, and $375,240 to $666,903 for the City.

The recommended program would contain an additional 50,386 to 135,386 square feet of retail, which at $380 per square foot in sales suggests total net new retail sales of between $19 and $51 million. At the State's current rate of 6 percent, this means a total of $1.1 to $3 million in new retail sales taxes.

C. MODEL SITE 3: FORMER FORD DEALERSHIP AND OTHER PARCELS

The program for this site includes 115-150 residential units, 75,000-100,000 square feet of office space, 25,000-40,000 square feet of retail, and 175-240 hotel rooms, comprising 5.5 acres on the northern end of the study area.

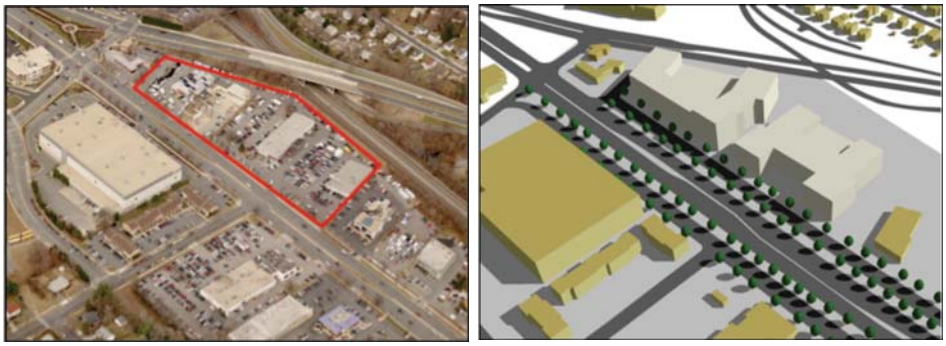


Figure 8.9: Former Ford Dealership and Other Parcels *– Existing conditions (left) and massing model.* *Source: ACP*

1. Design Solutions

This site illustrates the constraints found on east side of the Pike. The site is wedged between Rockville Pike to the west, Metro to the east, and Veirs Mill Road to the northeast.

a. Type and Location of Buildings

There are several building typologies integrated in the development of this model site. They are:

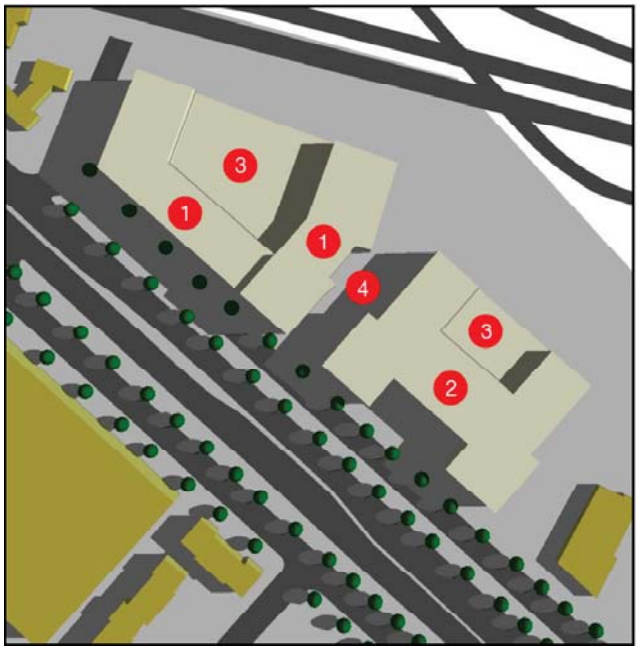


Figure 8.10: Model Site 3 Building Types *– Model site 3 incorporates a hotel along with other mixed-use buildings.* *Source: ACP*

1. *Buildings fronting Rockville Pike* have a variable height of five to seven stories. The ground floor is for limited retail uses and the top floors are for apartments or offices. The building height is lower than along the southern portion of Rockville Pike as this segment of the Pike marks a visual transition from the Middle Pike (the segment of the Pike with the lowest profile) and downtown Rockville to the north. (Coded 1 in Figure 8.10)

2. *Hotel* - A second typology was tested in this site following a potential market for a limited number of hotel rooms. Visually the hotel typology is similar to other buildings in this segment of the Pike, with the exception of a small setback to allow for the hotel drop-off driveway. (Coded 2 in Figure 8.10) Parking is in structures placed behind liner buildings. (Coded 3 in Figure 8.10)

b. Open Space

Open space requirements are met through landscaping and greening the Pike and through the creation of a gathering place between the mixed-use building and the hotel. (Coded 4 in Figure 8.10)

Figure 8.11: Model Site 3 Illustration *– This rendering illustrates the proposed redevelopment concept for Model Site 3. It offers a bird's eye perspective looking northeast towards downtown Rockville. Source: ACP*

2. Economic Analysis

The proposed uses would cost a total of approximately $75.5 to $101.5 million to develop, with an additional $7.8 to $10.8 million for structured parking. Because the north of the Pike has been traditionally less competitive for retail, and because it is further from a Metro station, retail rents, $30 per square foot, are slightly lower than in the other two sites. The economic consultants have assumed, based on historic data, the area would have low vacancy rates for retail - approximately 3 percent.

Hotel revenues were calculated by using Average Daily Rates (ADR) ($127) and Occupancy (65 percent) released for Montgomery County by the Convention and Visitors Bureau. Capitalized at 8.3 percent, this component yields between $27 and $37 million in value.

Using the income and expense assumptions and capitalization rates explained above, the total capitalized value of the redeveloped site would be approximately $73.3 to $100.4 million, including the hotel component: $22.5 and $29.3 million from rental apartments, $8.8 and $14.1 million from the retail space, and $15 and $20

million from the office space. Removing the $12 million in current assessed value of the site suggests a net new value of between $61.2 and $88.4 million.

This net new value yields between $68,644 and $99,055 in real property taxes for the State, $497,667 and $718,150 for the County, and $185,093 and $267,095 for the City.

The recommended program would provide between $4 and $8.6 million in net new retail sales from retail space, yielding $243,480 to $513,480 in new retail sales taxes for the State. The hotel would add $479,353 to $657,398 in additional sales taxes from room sales. In addition, the 7 percent County room tax and 2 percent City room tax would yield $369,102 to $506,197 for the County and $105,458 to $144,628 for the City.

D. PHASING OF SITE REDEVELOPMENT

The redevelopment of Rockville Pike will take time as national and regional economic trends will affect the pace of development and absorption of built space. Much like the historic development of the study area, redevelopment will happen in phases. Likewise, development of individual sites could be phased over time.

The following sequence of images gives an example of how the redevelopment of Model Site 1 can be phased to minimize disruption and be more responsive to market conditions. Similarly, phasing can be applied to other redevelopment sites in the study area.

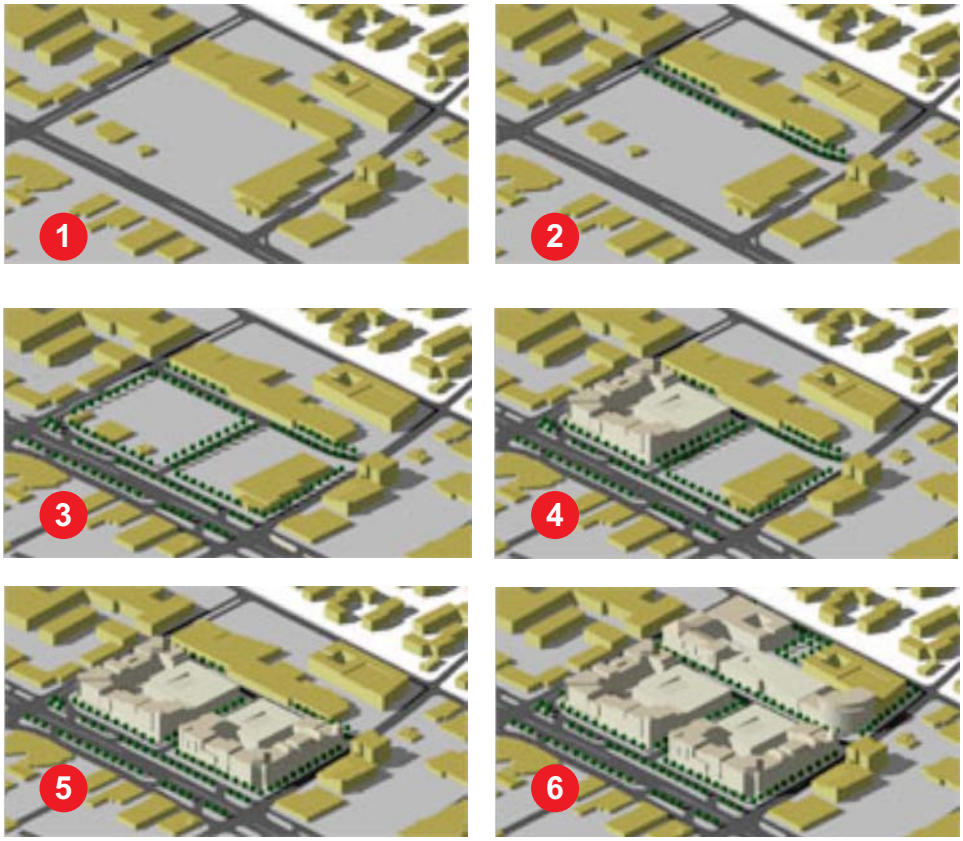


Figure 8.12: Model Site 1 Phasing *– This sequence of images conveys a recommended phasing for the redevelopment of Model Site 1.*
1. The site today.
2. An internal road is added to provide additional access to the site with minimal disruption to existing structures.
3. A second internal road is added to create two smaller blocks that front the Pike.
4. One of the two smaller blocks is redeveloped at a higher intensity, with surface parking replaced by structured parking.
5. The second smaller block is redeveloped in a similar manner.
6. The final large block is redeveloped, and incorporates a park or public square on East Jefferson.
Source: ACP

E. PROGRAM SUMMARY ANALYSIS

Table 8.13, below, summarizes the program of each of the model sites and compares information on the size of each site, the square footage or number of units for each use category, construction costs, and potential tax revenues.

Table 8.13: Model Sites Program Summary Analysis

	Model Site 1 Congressional Plaza		Model Site 2 NE Corner of Halpine		Model Site 3 Former Ford Site + Addition	
Site Size (Acres)	18		6		6	
Residential Units	750 - 1,000		425 - 575		115 - 150	
Office Space (sf)	70,000 - 90,000		50,000 - 200,000		75,000 - 100,000	
Retail Space (sf)	275,000 - 400,000		115,000 - 200,000		25,000 - 40,000	
Hotel Rooms	n/a		n/a		175 - 240	
RBA Construction Costs	$ (279,168,500)	$ (376,987,000)	$ (154,238,500)	$ (256,100,000)	$ (75,536,240)	$ (101,556,386)
Parking Construction Costs	$ (33,951,236)	$ (46,980,141)	$ (17,498,676)	$ (33,761,033)	$ (7,893,425)	$ (10,841,571)
Total Construction Costs	$ (313,119,736)	$ (423,967,141)	$ (171,737,176)	$ (289,861,033)	$ (83,429,664)	$ (112,397,957)
Net New Value	$ 260,511,577	$ 396,994,796	$ 124,251,648	$ 220,828,715	$ 61,289,095	$ 88,442,063
	Low	High	Low	High	Low	High
Net New Property Taxes						
State of Maryland	$ 291,773	$ 444,634	$ 139,162	$ 247,328	$ 68,644	$ 99,055
Montgomery County	$ 2,115,354	$ 3,223,598	$ 1,008,923	$ 1,793,129	$ 497,667	$ 718,150
Rockville	$ 786,745	$ 1,198,924	$ 375,240	$ 666,903	$ 185,093	$ 267,095
Retail Sales Taxes	$ (1,436,400)	$ 1,413,600	$ 1,148,801	$ 3,086,801	$ 958,706	$ 1,314,796
Transfer & Recordation Taxes *(For Residential Sales)*	$ 4,065,188	$ 5,420,250	$ -	$ -	$ -	$ -
Hotel Taxes						
Montgomery County	n/a	n/a	n/a	n/a	$ 369,102	$ 506,197
Rockville	n/a	n/a	n/a	n/a	$ 105,458	$ 144,628
Total New Taxes in Above Categories to:						
State of Maryland	$ (1,144,627)	$ 1,858,234	$ 1,287,963	$ 3,334,129	$ 1,027,349	$ 1,413,851
Montgomery County	$ 6,180,542	$ 8,643,848	$ 1,008,923	$ 1,793,129	$ 866,769	$ 1,224,346
Rockville	$ 786,745	$ 1,198,924	$ 375,240	$ 666,903	$ 290,551	$ 267,095

Source: SDAT, AECOM, 2008

F. LESSONS LEARNED

The urban design and economic analysis of the three model sites provided a number of insights on how to guide the redevelopment process. These are listed below.

- The model redevelopment sites should increase City revenues, which could be used to offset infrastructure investments and leverage public-private partnerships.
- Conversations with property owners have disclosed a significant level of interest in redevelopment opportunities, establishing the conditions for timely partnerships between the City and property owners in pursuing the implementation of a mutually-beneficial plan.
- The redevelopment sequence suggested for Model Site 1 shows how the process of change can happen incrementally in order to minimize physical and economic disruption.
- The design of the three sites vividly shows that the intensification of uses, driven by economic imperatives, can be harnessed through design to create a

physical environment that furthers a transportation modal shift that encourages walking, and biking.

- There are differences in the redevelopment potential of the three segments of the study area. The South Pike has the greatest potential for redevelopment in terms of parcel and block sizes and transit orientation. The North Pike has potential for redevelopment but minimal road network expansion potential and limited transit orientation. (The walking conditions around the Rockville Metro Station are severely compromised by the confluence of Rockville Pike and Veirs Mills Road). The Middle Pike has the most limited potential for redevelopment, due to dispersed ownership, small parcels, and physical constraints.
- Parking is a critical issue. On smaller parcels, the development of structures to support a regional retail destination becomes economically challenging. Each model site was developed with the assumption that parking should be on-site. The proposed designs show that surface parking will inevitably give way to structured parking. Yet even with structured parking, parking becomes a defining characteristic of each site. Shared off-site parking should be developed to service those areas where structured parking is not feasible due to economic or physical constraints.

Appendix B – Research Summary

INTRODUCTION

This chapter outlines the findings of the research conducted by the consultant team. It is organized in the following sections:

A. Transportation

B. Land Use

C. Economic Analysis

D. School Capacity

A. TRANSPORTATION

1. Overview

Rockville Pike serves a dual role—it is an arterial road designed to move traffic from one part of the region to another, and it is also a significant retail center that attracts customers from throughout the region and generates numerous local trips.

Rockville Pike has been well built and engineered to perform its role as a traffic arterial during the work week. Even in the afternoon commute time, traffic congestion (as measured by overall delay at intersections) falls within reasonable levels of service. This occurs in spite of heavy traffic volume because many of the Pike's intersections have been engineered through turn lanes and timing of traffic signals to move traffic along the road. Corridor-wide movement is slowed down considerably by increased delays at intersections, mostly a function of intersections needing to accommodate traffic into and out of retail establishments. When this begins to happen, the crossing movements compete for traffic signal time; the longer cross traffic has to move (allowing access from retail establishments), the longer

Please note that the data contained in this chapter was gathered in the fall of 2007 and in the spring and summer of 2008. Market conditions have changed since the beginning of the study. While these changes affect short-term considerations, they do not affect the long-term economic outlook for the Rockville Pike study area that remains strong.

traffic on Rockville Pike must wait. Public perception of Rockville Pike includes concern over this phenomenon.

The true dual nature of the corridor begins to appear in the afternoons and is most notable on Saturdays, when the greatest amount of retail activity complicates the aforementioned traffic engineering efforts to move traffic along the Pike and contributes to greater corridor-wide congestion. The heavy regional movement of the corridor does not stop on Saturdays, but a greater number of retail customers (even greater than afternoons in the work week) entering and exiting from shopping centers means the traffic moving along the Pike waits longer at intersections.

Following this overview, the analysis of transportation in the corridor focuses on street network, traffic, transit, safety, and conditions of travel for bicyclists and pedestrians.

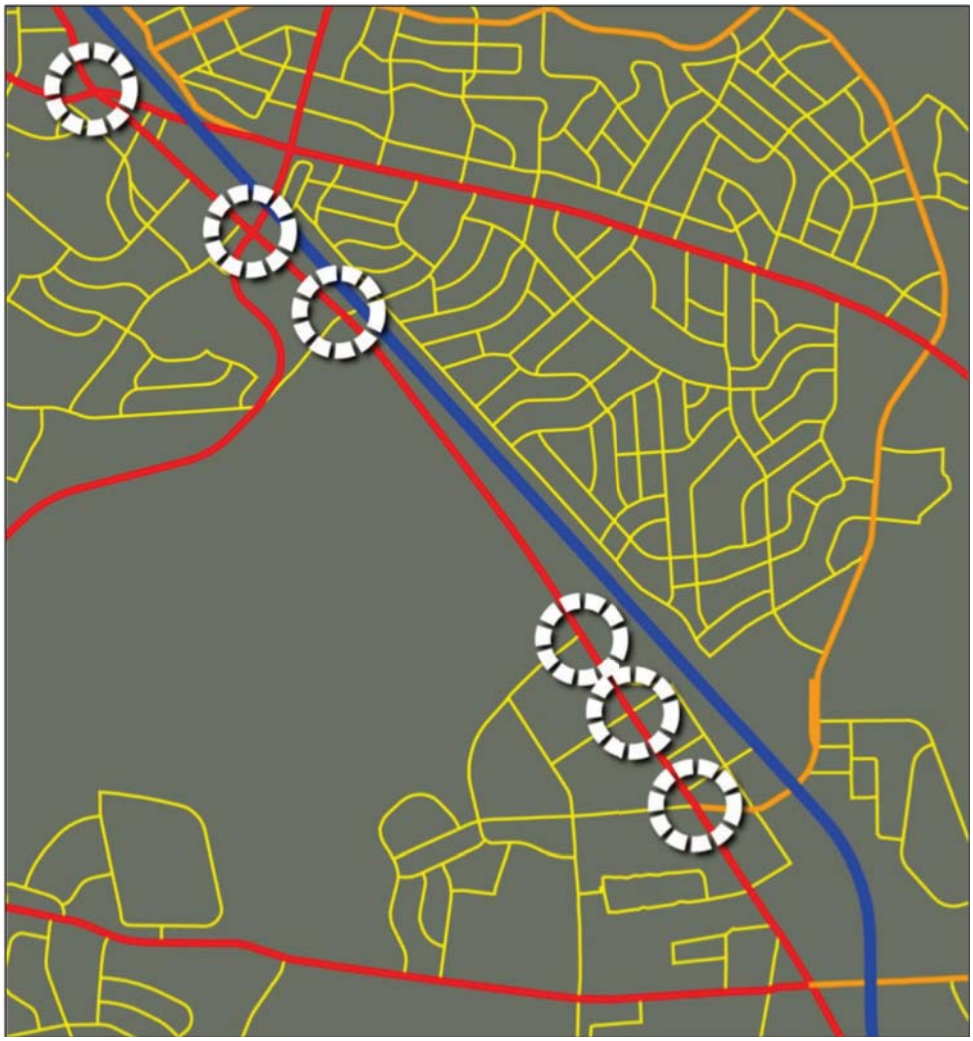


Figure 9.1: Street Connectivity Diagram *– This diagrammatic representation of the street network surrounding the Pike shows: the barrier created by the Metrorail right-of -way (in blue); the rich pattern of connected residential streets (in yellow); and the dramatic vacuum of connectivity along the Pike (limited East – West connectors are circled in white).*
Source: AECOM

2. Street Network

In the study area, the neighborhoods have few connections to the Pike itself. On one side of the road, access is limited due to the Metrorail right-of-way; on the other side, it is obstructed by Woodmont Country Club. While these features directly limit access to street network and Rockville Pike alternatives, the sections of the Pike to the north and south of the Country Club are also surrounded by neighborhoods to which they are not well-connected. East-west connections from the Pike do serve these residential areas, but it is along major thoroughfares such as Wootton and Montrose Parkways, causing a concentration of vehicular traffic on these arterial roadways. Although the north and south districts of the Rockville Pike corridor may have a greater physical envelope in which to add street network, their connections to street network are currently limited.

3. Traffic

Traffic can be viewed on two different levels: a 'micro' level, related to turning movements at intersections, and a 'macro' level, related to larger travel patterns through regional roads. In general, the primary direction of travel on weekday mornings is southbound toward Bethesda and Washington. Major Rockville Pike employment centers, such as the National Institutes of Health and the Bethesda Naval Medical Center, and the major employment center of Washington, D.C. all contribute to this movement. However, there is also notable morning peak travel moving northbound toward Rockville. Examining traffic counts at intersections over the last four years reveals that movements into Rockville have increased, due partly to employment in the City as well as in employment centers further north, such as Gaithersburg and Germantown.

Traffic movement is reversed in the afternoon peak period, with most traffic moving northbound and some moving southbound. In the afternoon, however, retail becomes an issue. While few establishments are open on the Pike during the morning peak period of 7:00-9:00 a.m., the afternoon peak period sees many more turning movements off Rockville Pike in both directions. This suggests that shopping centers, during retail hours, form a significant part of the overall regional travel pattern.

Additional information on corridor capacity can be found in Appendix E: Critical Lane Volume Analysis.

4. Corridor Performance

Overall, the corridor works primarily as an arterial roadway in the weekday mornings and plays more of a dual role in the afternoon periods and Saturdays. Its general performance (by mobility standards) is stronger in the morning, but this comes at the expense of connectivity, cross-street movements, and perhaps most notably, pedestrian and bicycle movements. What is notable here is that in the morning peak period, intersections are mostly doing well. This includes some of the larger intersections, such as Twinbrook Parkway.

The primary finding about this operational pattern is that traffic congestion, as measured by delay at intersections, is not always as present a condition as simple traffic volume. The timing of traffic signals along the corridor can be configured in a way to optimize traffic flow and efficiency of movement, even if the corridor is carrying large volumes of traffic. However, when movements other than peak period commute patterns are introduced to intersections, more time is needed in traffic signal cycles to handle these movements and high volumes on Rockville Pike experience longer delays.

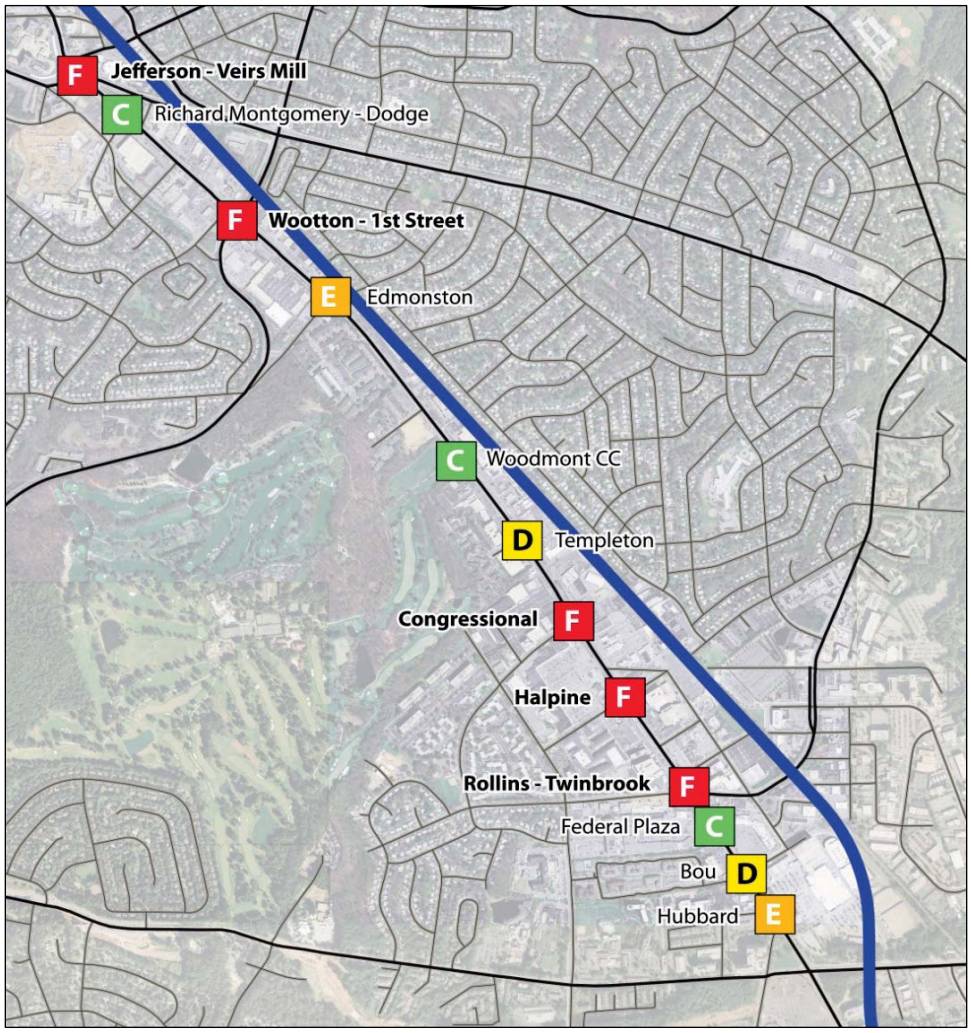


***Figure 9.2: PM Peak Hours Statistics** – Planners use level of service as a tool for measuring the performance of transportation infrastructure, tying it to numerical measures that are expressed in terms of letter grades (A through F, with A representing the highest performance in a given measurement). In thinking of traffic congestion, this is a simple tool in summarizing the complex factors that create congestion in the first place and ties performance to a very comprehensible phenomenon for the end-user: delay, or time spent waiting in traffic.*

Though it carries heavy volumes, Rockville Pike generally performs well as a corridor in the mornings due to coordination of traffic signals. Rockville Pike begins to experience intersection levels of congestion in afternoon peak periods due to the presence of retail uses on the corridor.

Source: AECOM

The issue of congestion resulting from crossing and turning traffic becomes more pronounced in the afternoon peak period and highly pronounced on Saturdays. This is due to Rockville Pike's concentration of retail uses, in which many businesses are not open during traditional morning commute hours but are open on afternoons and Saturdays. The road's ability to handle traffic moving through the corridor is challenged when there are demands to move across it and from one part of it to another. The lack of a parallel street network means that nearly all trips must traverse Rockville Pike.

However, new growth and development lead to a demand for transportation, seen most notably in vehicular traffic. To the present, a responsive program of traffic engineering has been able to manage the seemingly contradictory conditions of a road near saturation and relatively good levels of service at intersections. Yet this approach has limitations and as Rockville Pike continues to mature, it is not reasonable to expect that the current levels of service reported earlier in this chapter can be preserved. It is also not reasonable to continue to emphasize expensive and exclusively vehicle-based, capacity-based improvements at intersections as mitigation strategies. Instead, level of service-based standards for development review should consider the true nature of a corridor: that it features many local destinations along a roadway serving a larger regional area, and that a need for movement should be evaluated hand-in-hand with the need for access that a corridor inevitably brings.

5. Transit Service

Transit service in the Rockville Pike corridor is a combination of local bus routes and heavy rail rapid transit. Montgomery County's Ride On transit provides the majority of bus service along the corridor. This includes Route 46, which follows Rockville Pike directly through the study area. The Washington Metropolitan Area Transit Authority (WMATA) serves Rockville Pike with bus and rail transit, with the Metro Red Line rail serving as a major parallel corridor to the Pike and offering two stations, Rockville and Twinbrook, that anchor each end of the corridor. Rockville is also served by the Maryland Rail Commuter (MARC) Brunswick line, and Amtrak stops at the Rockville Metro station, connecting Rockville to the national passenger rail network.

Examining service frequency and coverage shows that the Rockville Pike corridor area generally has reliable access to transit throughout the day. The proximity to the Metro Red Line is a particular asset to the corridor in providing options for regional mobility, especially as it is a direct parallel to Rockville Pike in leading to Bethesda and Washington. However, the Red Line uses a pair of at-grade tracks that allow limited crossings to the north and east, creating constraints for access to and from the Pike corridor. The Metrorail Red Line is a vitally important

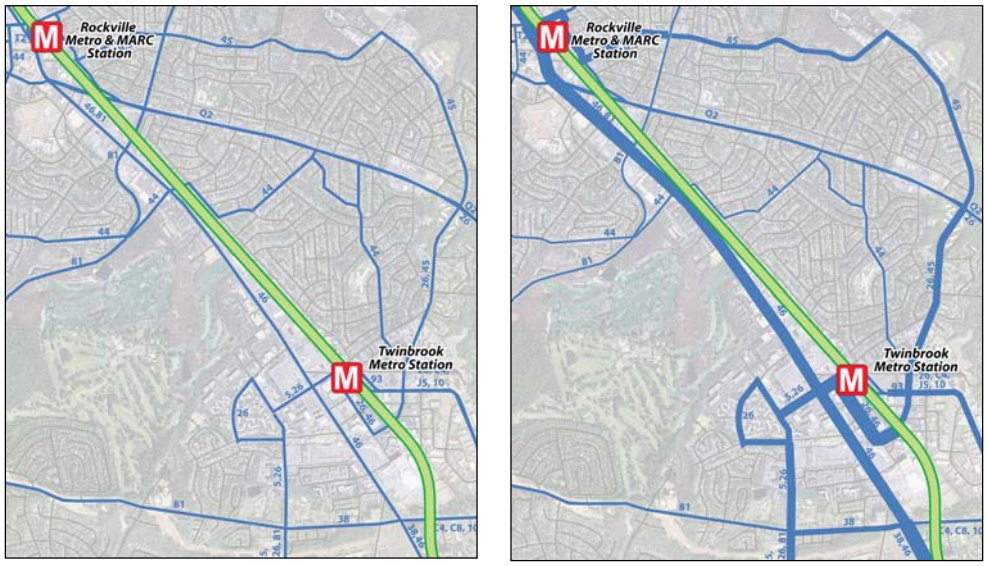


Figure 9.3: Transit Service – *Transit service in the Rockville Pike corridor is generally even and balanced, with a combination of routes serving neighborhoods and routes oriented to the main Rockville Pike corridor (left). Examining the service based on frequency (right, with wider lines representing more frequent service) shows that the disconnected network of the corridor limits frequent, direct service to Rockville Pike and Veirs Mill Road.* *Source: AECOM*

component in the plan's policy recommendations for Rockville to focus on increasing the share of mobility handled by transit.

It is also useful to look at what path each transit route must follow. In general, the high number of turns along bus routes suggests that it is difficult to operate service efficiently; in addition, the long signal waits for crossing Rockville Pike imply that transit operations may be compromised in trying to access Metrorail stations. This suggests that street design and network connections make the direct regional connection of Metrorail more difficult to access.

The multi-way boulevard recommendation for shared bicycle and transit lanes allows transit service to utilize the Pike more regularly. Instead of a single transit route serving it, the dedication of transit lanes is intended to facilitate the increase in transit service up and down the Pike, allowing more frequent service to capture the higher ridership expected from increased development density and a mix of uses. This is a critically important component in the plan's recommendation for increased use of public transit, walking, and bicycling to manage travel demand: frequent bus service within the corridor (even if a bus route's final destination is outside of the corridor) will help Pike residents and visitors to travel more easily within the Pike and connect to the two Metrorail stations that provide greater access to the region.

Transit service will need to serve a fundamentally different role in urban mobility for the Rockville Pike corridor than it does today. The Metrorail Red Line is a high-capacity transit service but serves the entire Washington metropolitan area and as such is unlikely to be used for service from one Rockville Pike destination to another. Currently, bus routes are focused on neighborhood and regional connections to the Rockville and Twinbrook Metrorail stations and only one local route (Ride-On's Route 46) provides transit service up and down Rockville Pike itself. These transit services meet transportation needs of the area and reflect

Rockville Pike's current nature as a primarily retail corridor with automobile-oriented land uses.

As Rockville Pike evolves into a multi-use activity center based on the Plan's recommendations, transit will need to serve two primary roles:

1. Connecting the Pike to other parts of the Washington region, giving people working or doing business in the Pike corridor reliable transit-based commuter access;
2. Connecting destinations internal to the Pike with one another, including connecting the high-capacity regional transit nodes at the Rockville and Twinbrook stations to other locations along the Pike.

The Plan's emphasis on seeking a greater share of person trips being accommodated by non-single occupant vehicle travel modes means that transit to and from the Rockville Pike corridor must be complemented by reliable and frequent transit service within the corridor. Although specific operational plans of the Pike's two current providers of scheduled transit are not currently established, the vision of the Rockville Pike plan sees transit as a convenient way to move throughout the corridor, especially for distances longer than a half-mile. Bus transit routes that currently terminate at one of the two Metro stations could continue through the Pike corridor to the other station, adding another run of bus service to the Pike and decreasing frequencies by bundling routes along the street. As an alternative, a more conventional shuttle service could be used that serves the length of the corridor at frequent time intervals. Rockville will need to continue coordination with its transit agencies to ensure that transit service helps to meet the needs of the Rockville Pike corridor as it matures.

6. Safety

From 2004-2006, 350 crashes occurred along the Pike. No single location stands out as considerably more dangerous than another; crashes have occurred somewhat evenly along the Pike. However, the overall crash rate is significantly higher than the statewide average per Maryland State Highway Agency statistics. Over 140 of these crashes are rear-end collisions, implying that the speed differential between the arterial function and the commercial access expectation adds to overall hazards in traveling Rockville Pike.

Crashes involving pedestrians have occurred throughout the corridor as well, with 19 injuries from 2004-2006. Though pedestrian-related crashes have occurred the entire length of the corridor, a relatively high number has occurred at or near the intersection of Halpine Road. In most cases, the crashes were caused by a right-turning vehicle failing to pay attention as a pedestrian was crossing an intersection or driveway.

Only two crashes from 2004-2006 involved fatalities, and these did not involve pedestrians. During peak hours, especially in the afternoon, slower average corridor

travel speeds suggest that crashes may not be as severe. Nonetheless, the 45 mile-per-hour design speed of the road does lead to potentially greater severity of crashes in the off-peak hours. In fact, both fatal crashes occurred at night.

Table 9.4: Crashes and Severity at Selected Corridor Intersections from 2004-2006

Intersection	Total Number of Crashes	Number Involving Personal Injury	Number Involving Pedestrians	Number Involving Rear-End Collisions
Wootton Parkway	43	20	1	13
Edmonston Drive	42	17	3	21
Templeton Drive	23	8	1	16
Halpine Road	26	16	8	14
Bou Avenue	43	29	2	22

Source: Maryland State Highway Administration Accident Data

7. Bicycle Conditions

Rockville currently has a plan for a network of bicycle facilities, either through on-street bicycle lanes, signed bicycle routes where bicycle traffic is intended to share the main street with automobile traffic, or off-street paths and trails. While the full plan has not yet been implemented, it has established a framework through which remaining routes can be added or designated. Rockville's Bicycle Committee is actively engaged in promoting bicycle transportation and has expressed that the community is a generally bicycle-friendly environment.

The primary concern in the study area is Rockville Pike itself. In addition to being a crossing barrier for pedestrians, which complicates access from west of the Pike to the Metrorail stations and commercial land uses, the Pike's design, speed, and heavy traffic volume make cycling along the road unappealing. As traffic congestion and longer vehicle waits at Pike crossings suggest that vehicle travel may not always be an ideal choice, especially for short trips, the unwelcoming characteristics of the Pike—both from speed and roadway design—imply that this main commercial street cannot help 'complete' these bicycle trips.

However, the overall corridor study area is an important regional cycling link. Chapman Avenue connects directly to Montgomery County's Bethesda Trolley Trail, a part of the County's cycling network. The Centennial Trail along Wootton Parkway is a major component of Rockville's cycling master plan, tying a large residential area of the City to commercial land uses along Rockville Pike. These regional connections are important, but the lack of a bicycle route along Rockville Pike is a missing link between them.

General development policies have historically not accommodated cyclists in the study area, either. Bicycle parking is limited throughout the corridor, sometimes

provided by private property owners or managers but not always in easily accessible locations. The Metrorail stations also have limited bicycle parking, implying that commuters wishing to use Metro for longer-distance regional commuting may be limited in their abilities to rely on cycling for the Rockville-based portion of their commute.

8. Pedestrian Conditions

Pedestrian concerns are pressing as well. Presently, few of the intersections along the corridor have signal timing plans that allow for safe pedestrian crossing. This is a particular concern in the afternoon, when more traffic crosses or turns onto Rockville Pike. Pedestrians share crossing times with vehicles, meaning not only that they are given short times at intersections where signal timing has been optimized to favor Rockville Pike's flow, but also that the risk of accidents increases as turning traffic movements cross the pedestrian's path.

One principal complication here is that these intersections are the only crossing opportunities. Rockville Pike's heavy traffic volumes have led to a configuration of traffic signals to keep this traffic moving. Frequent crossing opportunities that are protected with traffic signals are counter to this concept: they stand to increase vehicular delay. As such, safe crossing opportunities are limited to the already-signalized intersections, some of which are far apart.

Pedestrian access to transit is another concern. In addition to the barrier presented by the Pike, access to Metro is complicated by the rail line itself. Metrorail is constructed on at-grade tracks, with crossings in the area limited to six streets. Even though the general study area includes both the Twinbrook and Rockville stations, such physical barriers make the effective walk shed from both of these stations fairly short.

Pedestrians face challenges even away from the public right-of-way of the Pike. The predominantly commercial land uses of the Pike have been developed in a way that allows easy vehicular access to buildings, including parking and circulation. This is typical of suburban environments throughout North America, but it does not provide a safe environment for pedestrians to reach buildings.

Figure 9.5: Existing Bicycle and Pedestrian Conditions – *Rockville Pike's pedestrian environment is limited. Pedestrians encounter narrow sidewalks, sometimes only four feet in width, and complicated intersection crossings that present challenges to disabled persons.*

B. LAND USE

1. Overview

Rockville Pike is a well-established and economically viable shopping corridor. It is also the main commercial core for the City of Rockville and a major source of revenue for the City, in terms of property and income taxes. Well-established national and local retailers are located there, together with car showrooms, ancillary automotive businesses, offices, hotels, and a limited number of residences.

In addition to the transportation challenges previously described, a number of issues and problems related to the physical character, appearance, and patterns of development along the Pike are now coming to the forefront of the community's awareness and are casting doubts on the ability of the Pike to sustain its success in the future.

2. Existing Land Use

The predominant land use pattern in the study area is in the form of single uses on single parcels (rather than multiple uses mixed horizontally or vertically on one parcel).

Land uses that fall under the umbrella of the Rockville Pike Corridor Mixed-Use Development designation include retail, office and industrial. Retail makes up over 58 percent of the total developed land. Transportation rights-of-way such as roads and the railway make up 20 percent of the total. Residential uses (shades of orange) account for 12 percent of the total. There are several multi-family residential developments located within the study area, including Congressional Towers,

Woodmont Park, and Woodmont Overlook. Private recreational uses (comprised of the Woodmont Country Club, shown in light green) make up the rest of the land use in the study area. Table 9.7, next page, shows the current breakdown of uses.

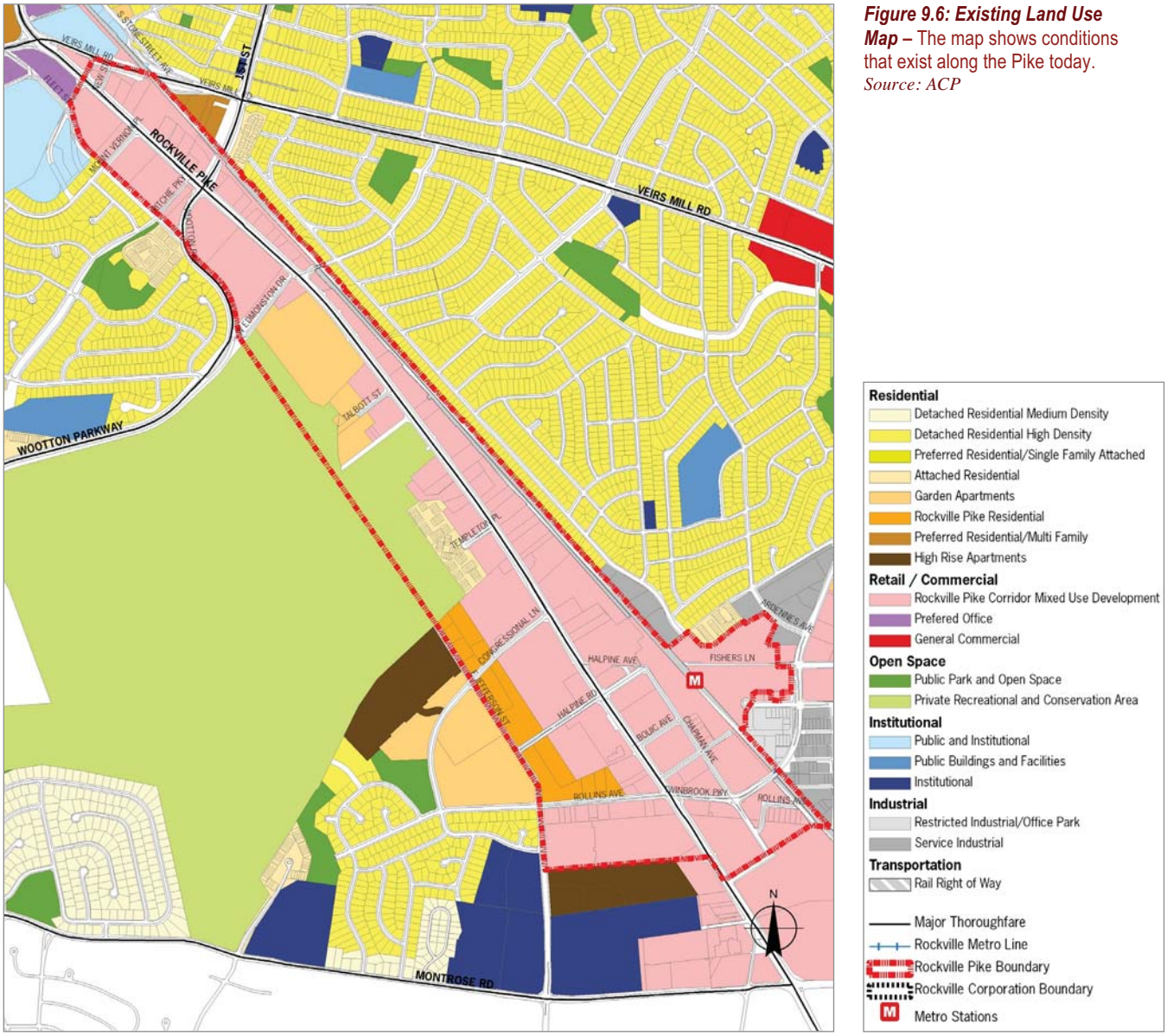


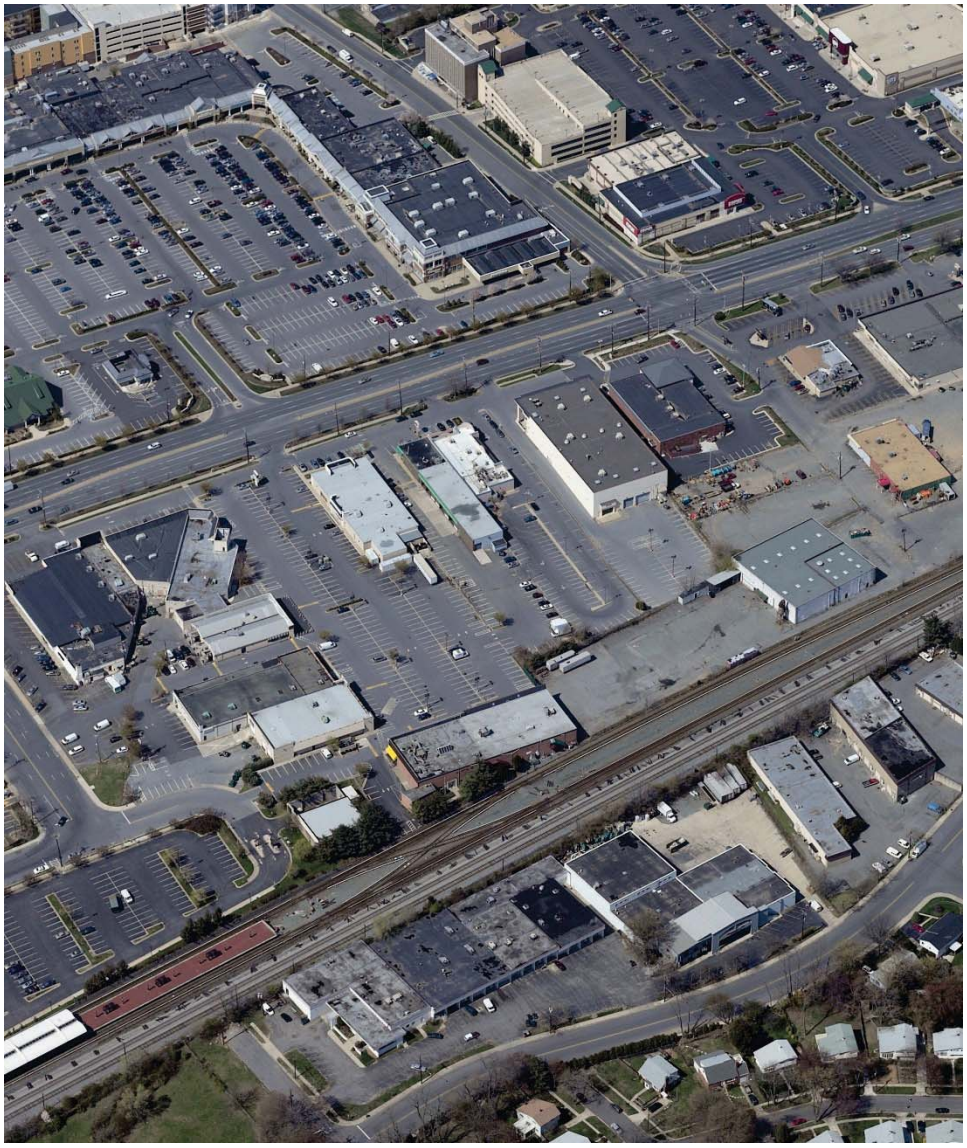
Figure 9.6: Existing Land Use Map – The map shows conditions that exist along the Pike today.
Source: ACP

Table 9.7: Land Use Breakdown in the Study Area

Land Use Category	Acres	Percent
Residential	49.46	12.1 %
Office	0.18	0.0 %
Retail	239.36	58.5 %
Private Recreational	37.69	9.2 %
Transportation	82.73	20.2 %
Total Land Use	**409.42**	**100 %**

Source: ACP

Figure 9.8: The Pike at Congressional Plaza *– Figure 9.8 provides a dramatic snapshot of the physical character that land uses along the Pike create: single use buildings surrounded by extensive surface parking.*



3. Topography

Grade changes are a minor factor along the Pike. The overall grade changes subtly, ranging from a high of 460 feet to a low of 370 feet above sea level. The highest elevation is located at the Village Green Condominiums and the lowest elevation is less than ¼ mile south within the Woodmont Country Club Property. This condition creates a dip in the roadway, and offers a scenic long view for residents at the peak elevation.

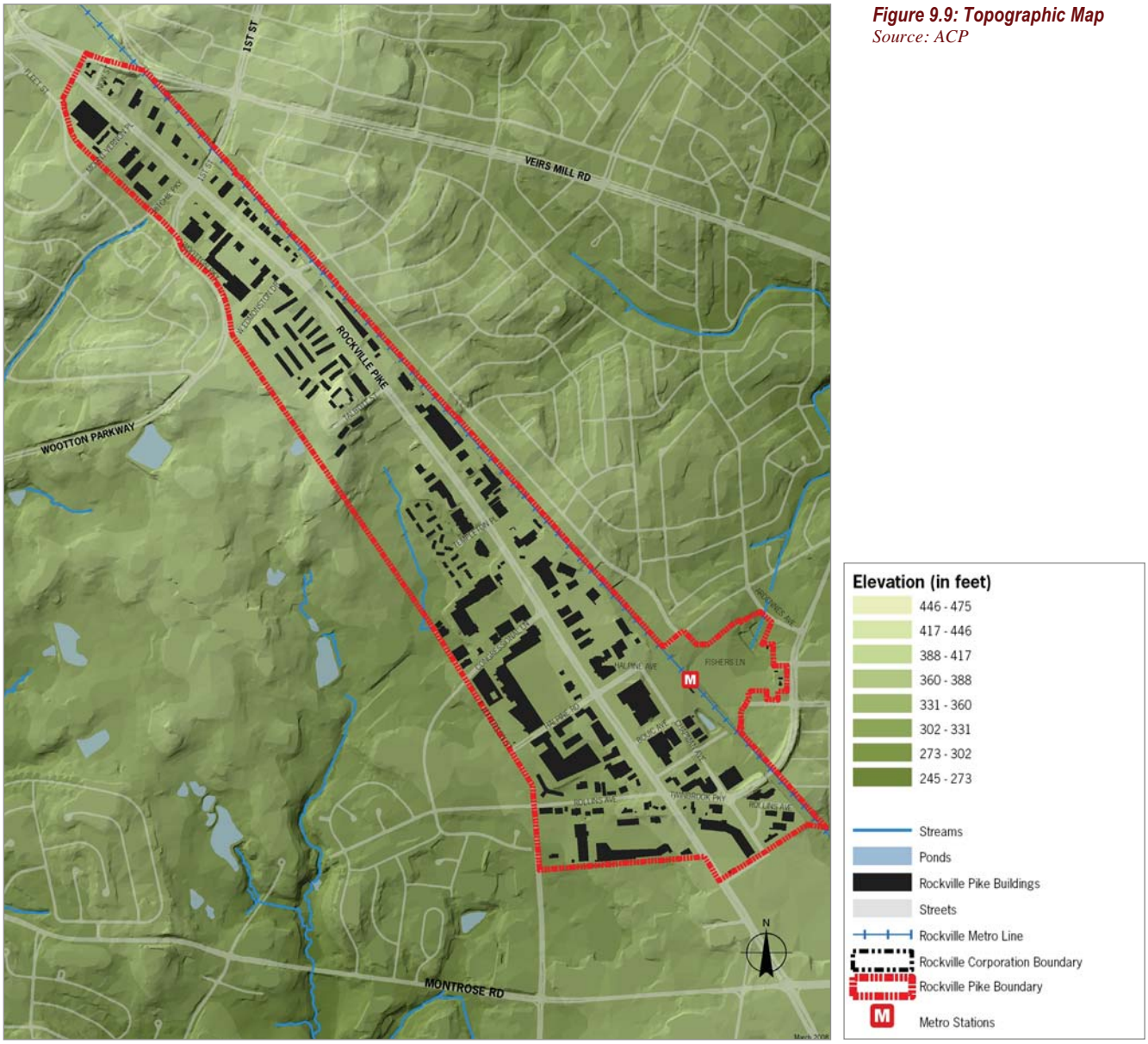
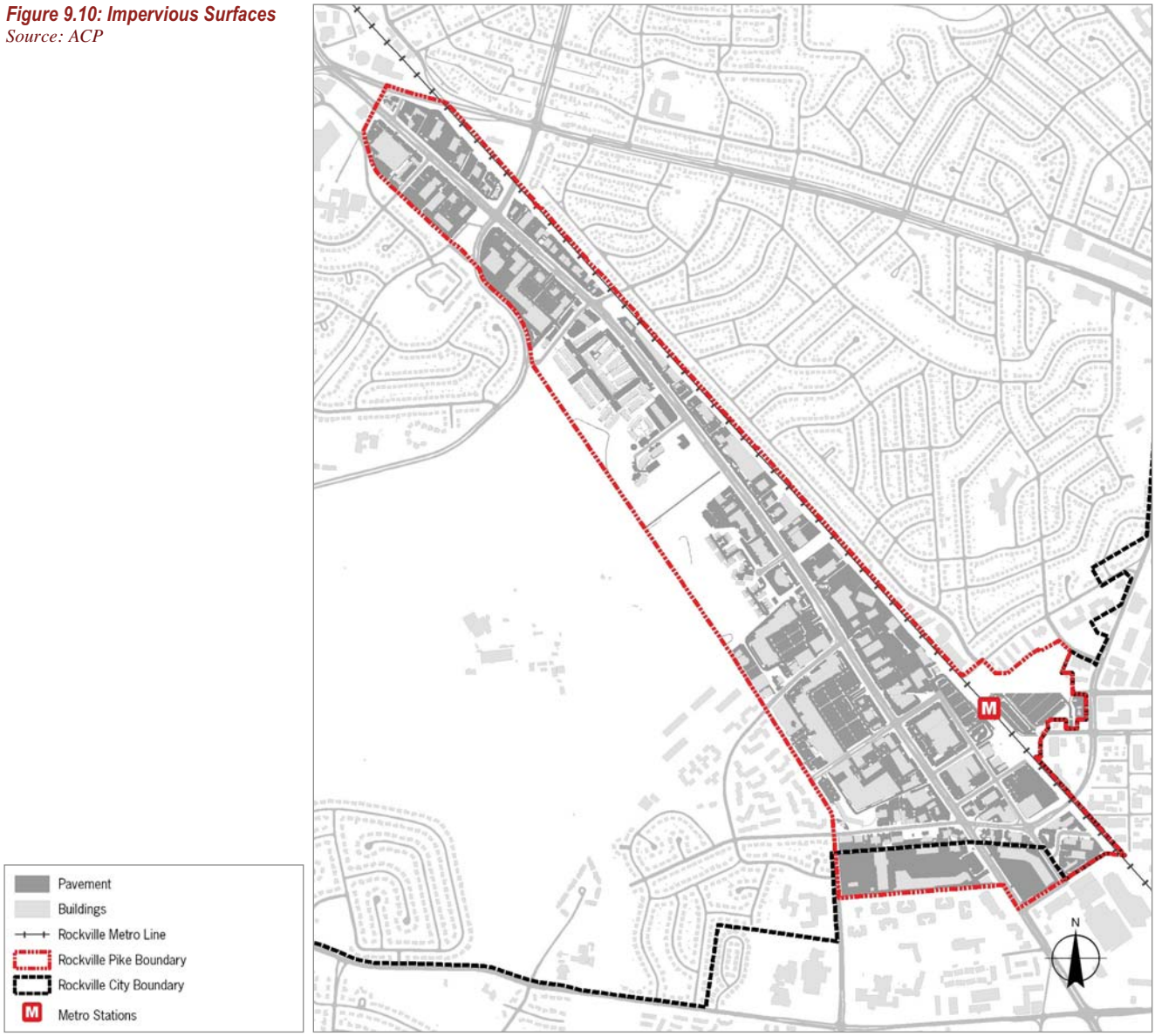


Figure 9.9: Topographic Map
Source: ACP

4. Impervious Surfaces

The amount of impervious surface contributed by buildings, parking, and roadways dramatically affects the Corridor's visual appearance. In fact, impervious surfaces cover 60 percent of the study area. Pavement covers nearly 71 percent of the impervious surface area (approximately 43 percent of the total study area) and buildings make up approximately 29 percent of impervious surfaces (or 17 percent of the total study area). The plan below shows the extent of the impervious surfaces along the pike. Buildings are represented in light gray and surface parking in dark gray.

Figure 9.10: Impervious Surfaces
Source: ACP



5. Block Size

The Pike features very long blocks, which restrict opportunities for pedestrian and vehicular connectivity and limit opportunities for linking the east side of the Corridor with the west side.

On the east side of Rockville Pike, the alignment of the Metro line parallel to the Pike has limited the number of roadway access points, resulting in an extended block length of almost 7,000 feet between Edmonston Drive and the next intersection to the south at Halpine Road. The next longest block (approximately 1,500 feet) lies between the intersections of Edmonston Drive and First Street with the Pike. Block depths range from 150 feet at the Edmonston Drive intersection to 625 feet at the intersection with Twinbrook Parkway. On the west side of Rockville Pike, more frequent intersections reduce block length and improve connectivity.

Figure 9.11: Study Area Map *– On the east side of Rockville Pike, there is a block length of almost 7,000 feet between Edmonston Drive and Halpine Road, equivalent to the length of the National Mall.*
Source: ACP

6. The Regulatory Context

The Mayor and Council of Rockville adopted a revised zoning ordinance and a comprehensive rezoning to implement the new zones on December 15, 2008. The new ordinance and zoning map are effective as of March 16, 2009.

The new Zoning Ordinance includes two Mixed-Use Districts within the Rockville Pike Corridor Study area: the Mixed-Use Transit District (MXTD) Zone and the Mixed-Use Corridor District (MXCD) Zone. The MXTD and MXCD zones also apply to other areas of Rockville, and thus are not customized to the conditions of Rockville Pike, though they do include some form-based principles. The Code recommendations offered in Chapter 6: Rockville Pike District Form Code would replace the existing zoning for the study area.

C. ECONOMIC ANALYSIS

Overview

This section examines the economy of the Rockville Pike study area. Analysis was conducted using several geographic levels. In addition to analyzing City of Rockville, Montgomery County, and metropolitan area demographic trends, the

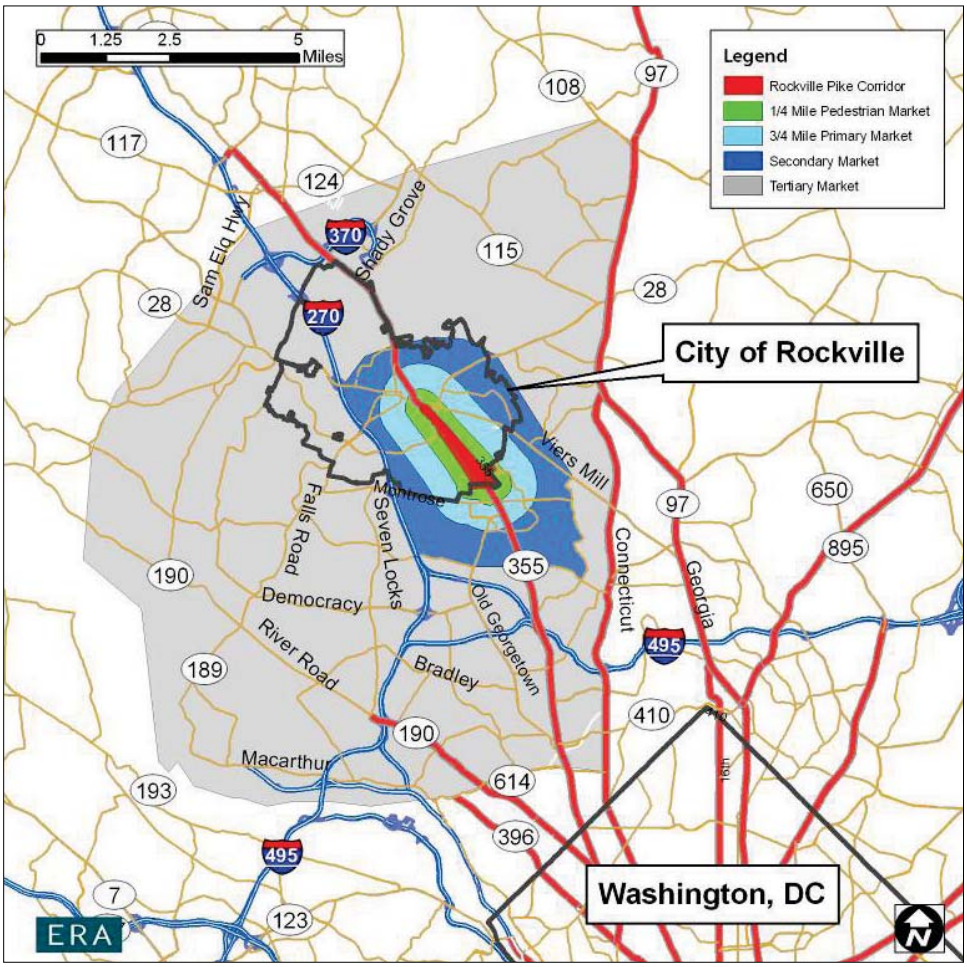


Figure 9.12: Study Area Map – Figure 9.12 shows the four trade areas that are discussed in this section: the ¼-mile Pedestrian Market immediately surrounding the Pike, the ¾-mile Primary Market, the Secondary Market, and the Tertiary Market, which represents the Pike's regional geographic draw.
Source: ESRI; AECOM

analysis concludes more focused analysis on the four "trade area" rings around the Rockville Pike corridor. (See Figure 9.12, previous page.)

Following this overview, the economic analysis is divided into three parts: 1) The Demographic and Economic Profile; 2) Real Estate Trends; and 3) Market Demand. Detailed information is provided for each part. Though current economic conditions are challenging, the overall economic outlook for the Rockville Pike study area is strong. Long-term projections are flattened to account for the unknown timing of economic growth and recession. The depth and duration of the current economic downturn can be expected to slow down the timing of near-term opportunities and actions, due to constrained capital markets and consumer caution affecting the retail sector. This does not mean that the general planning directions of the Rockville Pike Master Plan should change, but that the projected period of implementation may be adjusted in response to changing market conditions.

1. Demographic and Economic Profile

a. Population and Households

The Washington, D.C. metropolitan area has enjoyed economic growth that has attracted more residents to the area. According to projections, this prosperity will continue. As a preferred residential location in the metro area, Montgomery County has shared in this growth. Rockville, too, has grown in the past several years, and is projected to continue this growth in the next five years. This growth will fuel additional real estate development.

In the last seven years, according to data from ESRI, the metro area added an additional 655,000 residents, representing an overall increase of 13.7 percent and a compound annual growth rate of 1.8 percent (CAGR). Rockville has grown at the same pace of 1.8 percent annually since 2000, which is at a faster rate than that of the County. (See Table 9.13, below.) This pace is expected to continue through 2012 for both Rockville and the MSA. If projections are correct, Rockville's population will grow by 5,000 residents in the next five years.

Table 9.13: Population Growth Trends, 2000-2012

	Total			Change		CAGR	
	2000	2007	2012	2000-07	2007-12	2000-07	2007-12
City of Rockville	47,169	53,420	58,487	6,251	5,067	1.8%	1.8%
Montgomery County	873,341	949,347	996,106	76,006	46,759	1.2%	1.0%
Washington D.C. MSA	4,796,183	5,451,302	5,954,314	655,119	503,012	1.8%	1.8%

Source: ESRI, 2007: AECOM, 2008

The area immediately surrounding Rockville Pike experienced similar performance, as shown in Table 9.14 on the following page. Growth does not occur equally across the entire City or County. The area around the Pike - designated as a ¼-mile radius -has grown at 1.5 percent in the last seven years. The pace of growth in the next five years is expected to increase to 1.7 percent, adding an additional

almost 1,200 residents. Other trade areas are not experiencing as fast a rate of growth, reflecting that they are located in largely built-out neighborhoods. The ¾ mile radius market and secondary market have grown at only 0.4 percent annually in the last 7 years. The tertiary area market, a larger area surrounding the Pike, has grown at a rate of 1.2 percent. Though the rate of growth is expected to increase slightly in the primary transit market and the secondary market in the next five years, it will not achieve the same rate as the Pike and its immediate environs.

Table 9.14: Rockville Pike Retail Trade Areas Population Growth Trends, 2000-2012

	Total			Change		CAGR	
	2000	2007	2012	2000-07	2007-12	2000-07	2007-12
1/4 Mile Primary Pedestrian Market	12,106	13,407	14,587	1,301	1,180	1.5%	1.7%
3/4 Mile Primary Transit Market	17,914	18,430	19,326	516	896	0.4%	1.0%
Secondary Market	30,722	31,550	32,726	828	1,176	0.4%	0.7%
Tertiary Market	231,488	250,912	263,733	19,424	12,821	1.2%	1.0%
Total	292,230	314,299	330,372	22,069	16,073	1.0%	1.0%

Source: ESRI, 2007: AECOM, 2008

Household incomes in Rockville and Montgomery County are consistently above the U.S. average. In 2007, Rockville's median income was $85,911, which (although lower than Montgomery County's) is over $30,000 greater than the U.S. median of $53,154. Between 2007 and 2012, Rockville's median income is expected to increase at a rate slightly above that of inflation: 3.2 percent. (See Table 9.15, below.) By comparison, inflation between 2000 and 2007 had a compound annual growth rate of 2.6 percent.

Table 9.15: Median Household Incomes, 2007-2012

	Total			CAGR	
	2000	2007	2012	2000-07	2007-12
City of Rockville	$67,539	$85,911	$100,675	3.5%	3.2%
Montgomery County	$71,476	$90,063	$106,197	3.4%	3.4%
Washington D.C. MSA	$62,971	$80,082	$94,806	3.5%	3.4%
USA	$42,164	$53,154	$62,503	3.4%	3.3%

Source: ESRI, 2007: AECOM, 2008

Looking at the number of households in each income range in detail, the largest percentage of households in 2007 was in the $100,000-$149,999 range in Rockville, Montgomery County, and the MSA. A full 43 percent of Rockville's households earn $100,000 or above, which is higher than the MSA's 39 percent in the same income range but lower than Montgomery County's 45.1 percent. (See Table 9.16, on the following page.) These are also the categories that are expected to have the largest gains in shares of households between 2007 and 2012. Rockville is expected to have an 80.7 percent increase in households earning over $200,000 per year, thus gaining 6.2 percent in overall share.

Table 9.16: Households by Household Income, 2007

	City of Rockville	Montgomery County	Washington D.C. MSA
< $15,000	6.6%	4.7%	6.3%
$15,000 – $24,999	4.7%	3.8%	4.7%
$25,000 – $34,999	5.6%	5.1%	6.1%
$35,000 – $49,999	9.3%	9.6%	10.8%
$50,000 – $74,999	16.6%	16.9%	18.2%
$75,000 – $99,999	14.1%	14.8%	15.2%
$100,000 – $149,999	21.8%	21.4%	20.3%
$150,000 – $199,999	11.5%	10.6%	9.2%
$200,000 +	9.8%	13.1%	9.2%
Median Income	$85,911	$90,063	$80,082

Source: ESRI, 2007: AECOM, 2008

b. Employment

In 2008, the greatest percentage of people employed in Montgomery County worked in Services (48 percent). This amount is higher than the share of people employed in this field in the U.S. (36 percent). The Services industry is a growing industry expected to maintain or grow its share in coming decades. The County also has a large amount of workers in government - a total of 13 percent in Federal, State, and Local levels. (See Table 9.17.)

Not surprisingly, given its proximity to Washington, there is a greater percentage

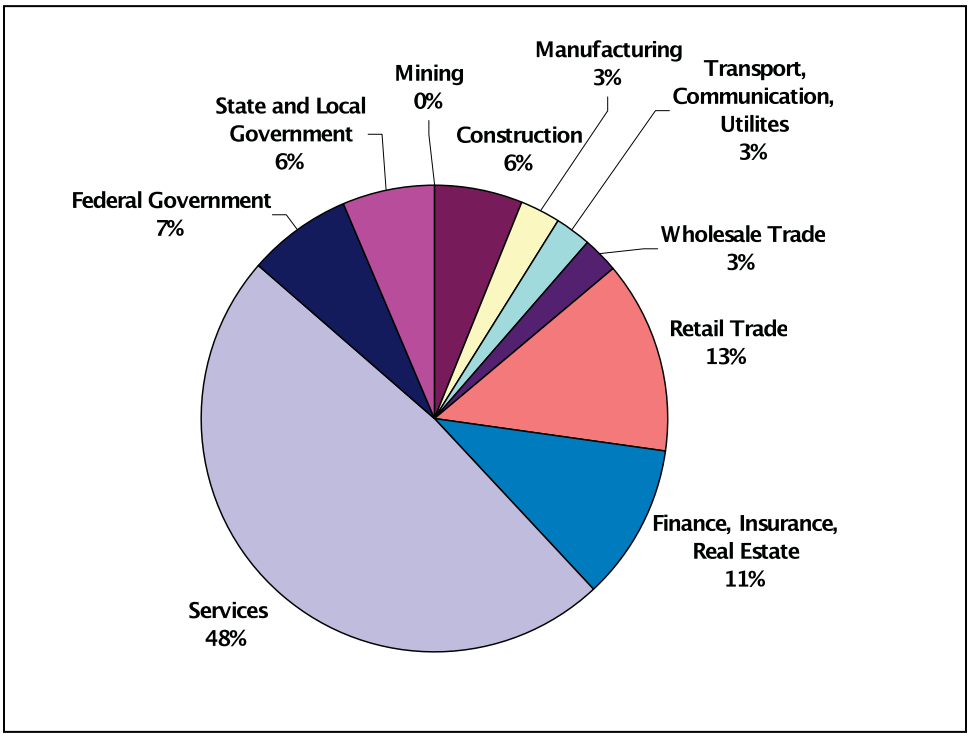


Figure 9.17: Montgomery County Estimated Share of Employment by Industry, 2008
Source: AECOM

of Federal jobs than in the U.S. as a whole. These industries typically have high percentages of office users and, along with Construction, have been the industries that have driven regional growth since 2000. The services industry added approximately 45,000 jobs in Montgomery County between 2000 and 2007, an increase of 2.1 percent annually, a rapid rise. Employment in the finance, insurance, and real estate sectors grew at a similar pace, adding 11,000 jobs. However, in the area surrounding Rockville Pike, Services, and Retail are dramatic drivers, accounting for nearly three quarters of employment and anticipated to continue growing in the years ahead. Services are a broad category that includes many types of employers typically associated with retail environments or offices in retail areas.

2. Real Estate Trends

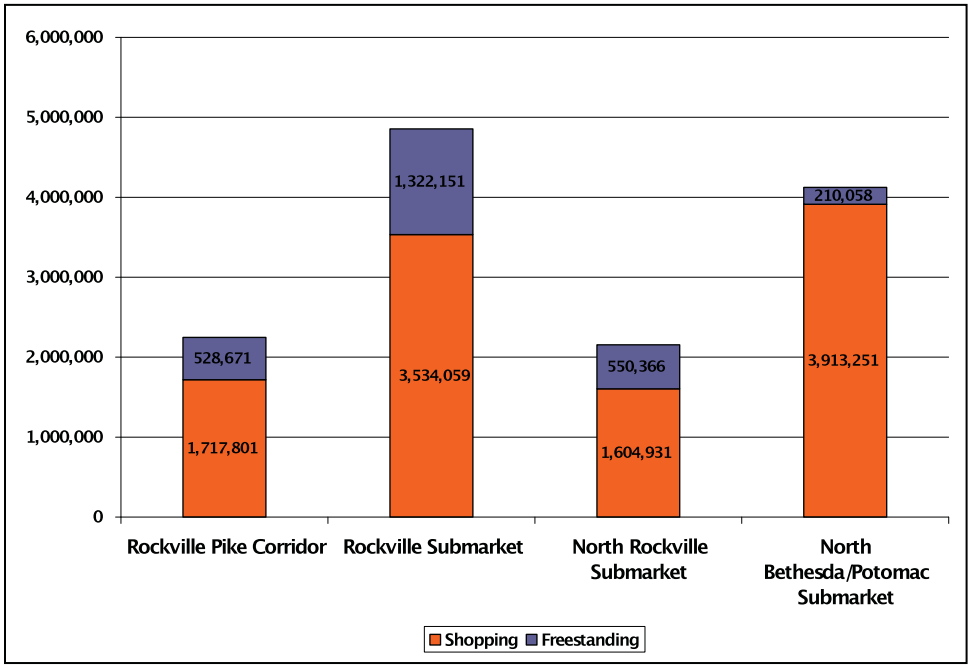
a. Retail

Rockville Pike is best known in the Washington Area as a retail destination. Therefore, it is important to assess the available data for performance of space on the Pike and how it compares to neighboring areas. (See Figure 9.18, below.)

Rockville Pike is in the Rockville Submarket. The data is divided between space that is within shopping centers and freestanding retail.

First, the performance of retail space overall was examined, followed by type of retail. Overall, the Rockville Pike area has approximately 2 million square feet, which is 18 percent of the Rockville Submarket. The average retail rental rate for the most recent quarter was $34.20 per square foot, higher than any average rate in proximate submarkets, and suggesting that sales productivities most likely average around $350 per square foot. In the last 5 years, the Pike's average annual vacancy rate was 1.7 percent, lower than the submarket as a whole. Notable within the Pike,

Figure 9.18: Retail Supply in Square Feet by Type, Rockville Pike and Proximate Submarkets
Source: AECOM



the south Pike area is comprised of predominantly national retail tenants that pay higher rents and often have larger footprints. Middle and north Pike have many more small, locally owned tenants with smaller store sizes and lower average rents.

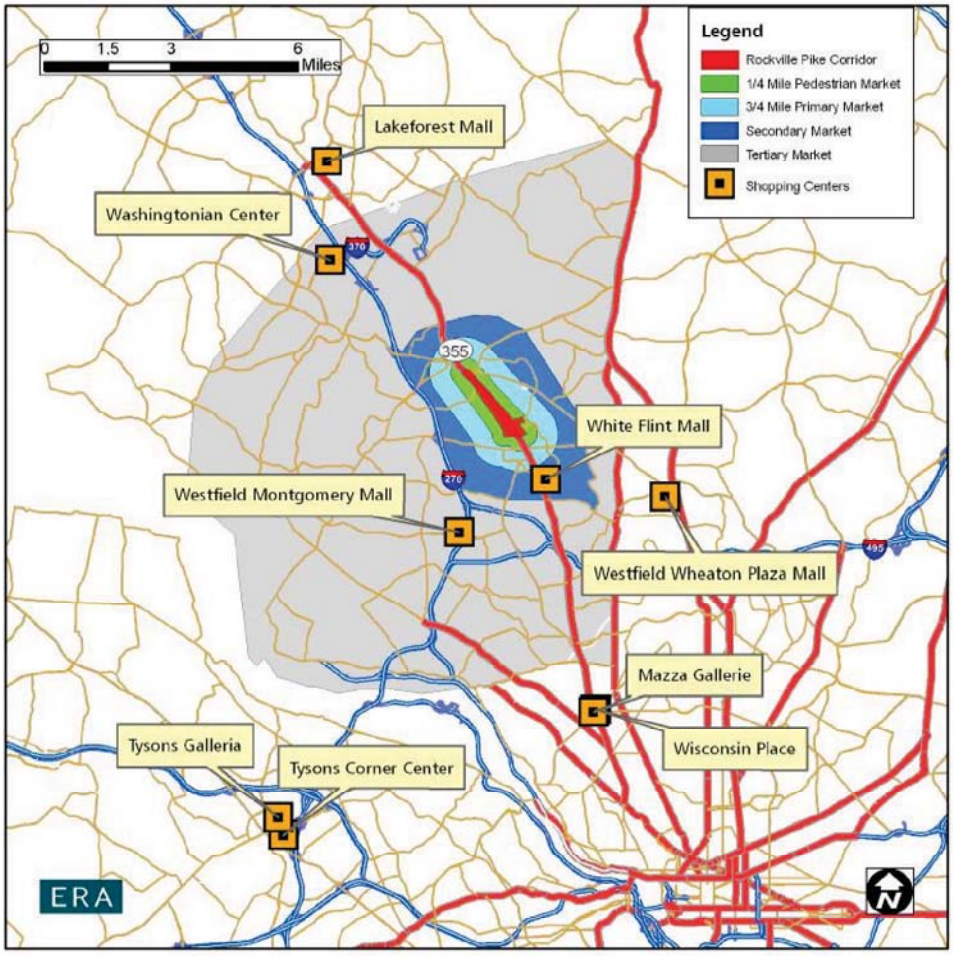


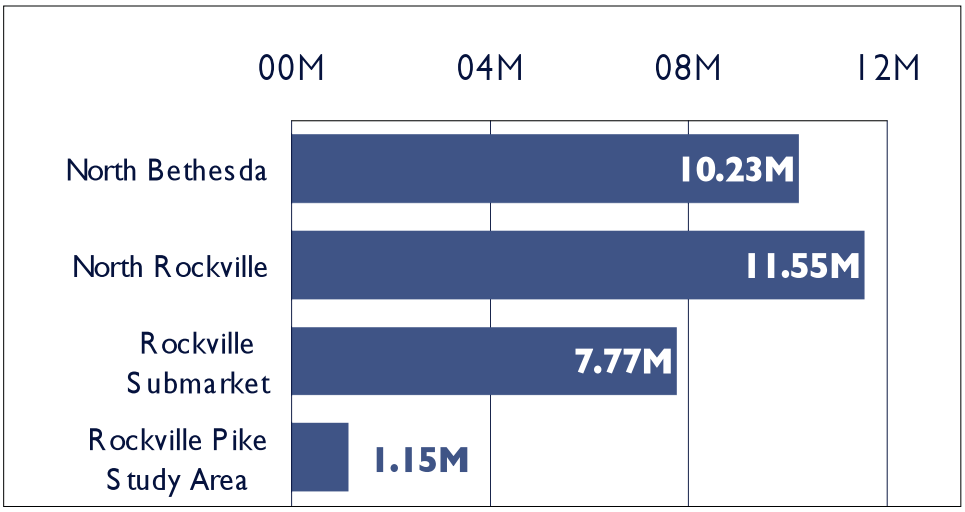
Figure 9.19: Rockville Pike Trade Areas with Major Regional Shopping Centers
Source: ESRI; CoStar; AECOM

b. Office

CoStar, a real estate database, was used to assess the office market in and around the Rockville Pike Study Area. Rockville Pike is a part of the Rockville Submarket. It is bordered to the north by the North Rockville Submarket and to the south by the North Bethesda/Potomac Submarket, and because of the two areas' comparable geographic locations and competitive aspects, they will be used as a point of comparison for the Rockville Submarket's performance.

The Rockville Submarket contained 7,765,737 square feet in 148 buildings at the end of the fourth quarter of 2007. This represents 12.2 percent of Montgomery County's office inventory of 63.6 million square feet in the same quarter. Of the submarket's share, 1.5 million (19.8 percent) is located in the ¾-mile area surrounding the study area. (See Figure 9.20.)

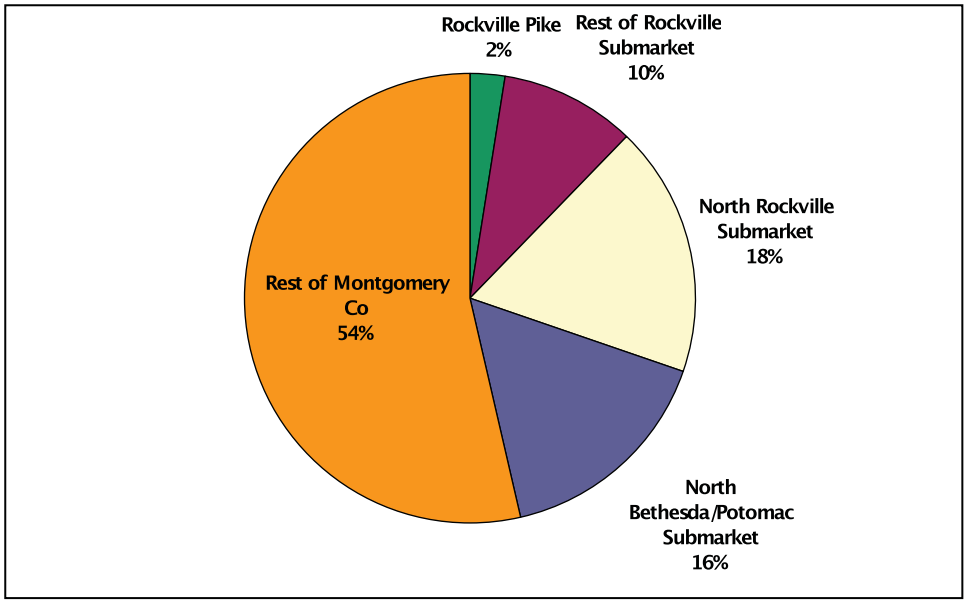
Figure 9.20: Share of Montgomery County Office Supply, Q1 2007 (Square Feet)
Source: CoStar; ERA



Vacancy in the Rockville Submarket was at 8.6 percent at the end of 2007, which is in line with the 8.3 percent vacancy experienced by the County as a whole. Along the Rockville Pike Corridor area, the vacancy was higher: 14.6 percent.

The Rockville Pike corridor has experienced an overall negative absorption in the last five years, including a negative absorption of 172,000 square feet in 2007. This loss likely contributed to the submarket's negative net absorption of 101,000 square feet. The County had a positive direct net absorption of approximately 283,000 square feet.

Figure 9.21: Share of Montgomery County Office Supply, 2007
Source: CoStar; AECOM, February 2008.



c. Residential

Overall, the housing market has experienced a slowdown. This is evident in projects near the study area, although the area has not been as hard hit as other areas of the country. To assess the current state of the market, ERA examined residential building permits, sales data, and project performance for primarily rental and for-sale multifamily product. (See Figure 9.22.)

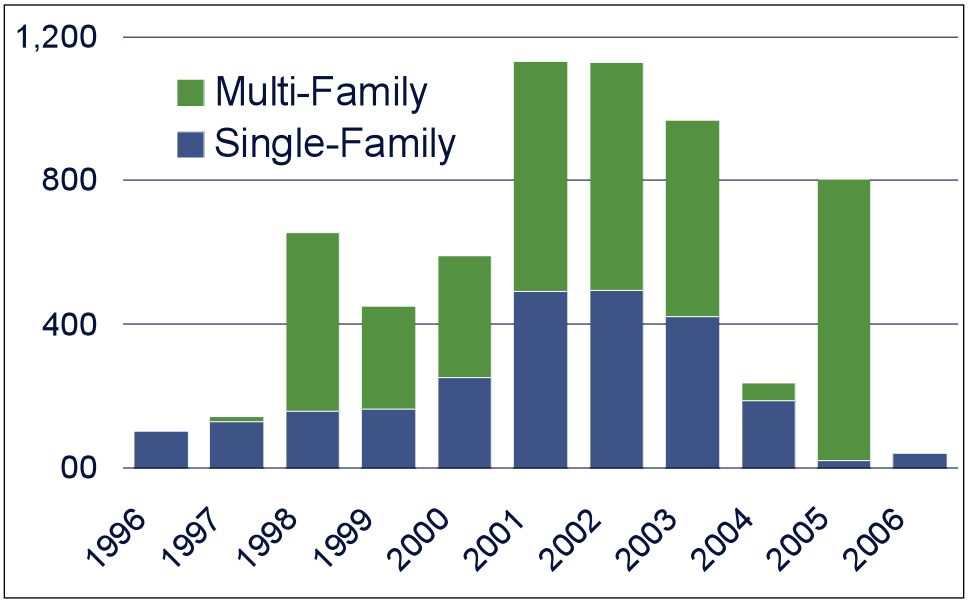


Figure 9.22: City of Rockville Residential Building Permit Activity, 1997-2006
Source: HUD; ERA

Approved residential units peaked in Rockville in 2001, with 1,131 units permitted. In the last available year of data, 2006, there were only 43 units, all single family. Between 1997 and 2006, the majority of units in Rockville were multifamily (62 percent). This contrasts with Montgomery County as a whole where the inverse is true - 60 percent of all residential permits were single family - and in the metro area, where nearly three-quarters of all permits are single-family. The total permits in the County have steadily declined since 2001, when 5,249 units were approved. Residential activity has been strong, and though the recent economic slowdown in the housing market will lower growth in the short term, long-term prospects for the region and corridor remain strong.

3. Market Demand

a. Retail

Retail is the primary use in the study area of Rockville Pike. This use will likely remain a key strength of the Pike as it adapts and changes to meet additional needs in the future. The demographics of the trade area were assessed to determine the likely demand for retail in the near and longer term, and the quantity and type of retail. Drawing reasonable trade areas based on competitive projects and customer behavior, the total retail expenditures of these trade area households by store type

was assessed and capture rates for the Rockville Pike corridor was estimated to determine potential sales. Using average productivity rates expressed as sales per square foot, there will be an estimated 2.7 million to 3.3 million supportable square feet in the corridor by 2012. This represents an increase from the existing market totals of 2.2 million square feet and will be driven by continued growth in regional household incomes and development in the northwest DC and Montgomery County corridor. Realistically, constraints on the traffic network may restrict and limit some of that additional growth in the coming years, although a large part of that demand has been addressed in development planning and will be absorbed by the Twinbrook Station.

The size of individual retail developments depends on the type of retail, and on evolving retail trends. "Big box" stores range from 25,000 square feet to over 200,000 square feet. Retail formats, however, are constantly changing to keep pace with advances in technology and consumer behavior and preferences. For example, specialty retail stores have decreased in size as delivery services have eliminated the need for 80-100 foot deep stores to store seasonal inventory on site. Most specialty store depths now average 60-70 feet, translating into somewhat smaller stores than in the 1950s and 60s. The recent significance of big box retail formats is also likely to change as the economic downturn has affected the number of big box store tenants.

b. Office

The need for new workplace uses is determined by increases in employment—or users of that space—and by the relative attractiveness of the area as a workplace destination, as determined by historic trends in office real estate performance and share of employment growth. Based upon projections, there will be approximately 225,000 square feet of annual office demand - a total of 821,700 square feet between 2007 and 2012 - in Montgomery County. To determine what share of this demand may apply to the Pike, an assessment was done of the proportion of existing office space occupied by the Rockville Submarket and the Pike study area within Montgomery County. At the present, the Rockville office submarket has 12 percent of Montgomery County's office space and the corridor has 2 percent. It is assumed that the area will augment its share of the overall market over time, as the area transitions to new uses. However, the office market is slow to adapt, so this is unlikely to happen rapidly. This process resulted in a small amount of Class A, large-scale office demand in Rockville Pike, largely due to the demand generated in the White Flint area and along Interstate 270. This demand suggests office space in redeveloped areas should focus on small footprint, small business offices that will serve local residents and employees and will fit within a retail, foot-traffic environment. Large-scale office space can be incorporated into developments but should be analyzed on a project-by-project basis to determine demand potential.

c. Residential – For-Sale Multifamily

To determine the market for new, market-rate housing, household change in the defined trade areas was examined using data from ESRI. The primary trade area is expected to add 1,502 new households between 2007 and 2012, and the secondary trade area will add an additional 15,705 new households. The analysis considers both demand from new households, demand from existing households that will be moving, and households that currently rent but will convert to home ownership. Each market segment was income-qualified to those households that can afford to purchase a unit, to those who own, and to those with a propensity for multifamily housing. A move rate, based on U.S. Census data, is applied to determine the number of households moving within designated areas. The total available households were then narrowed down to a reasonable capture for Rockville Pike. This methodology yielded an annual absorption potential of 70 for-sale multifamily units for the corridor. Considering the potential for investors or second homeowners, the annual potential could reach 73 units per year.

d. Residential – For-Rent Multifamily

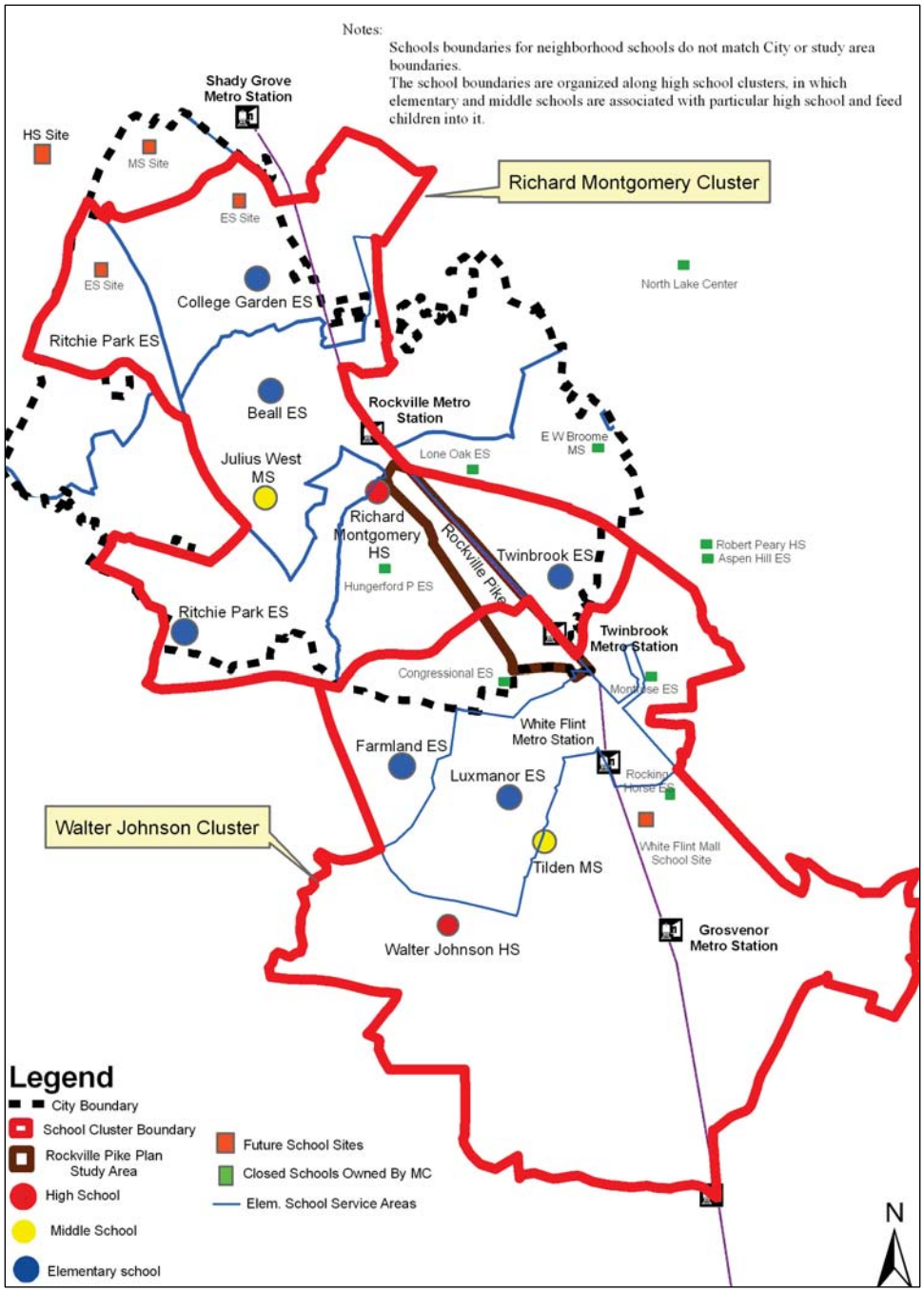
A similar analysis to determine the support for new for-rent multifamily properties was conducted. Within the trade areas, there will be a total of 6,241 new households—1,248 annually—between 2007 and 2012. It is estimated that Rockville Pike could achieve a 25 percent capture of households in the primary trade area and 5 percent from the secondary. Through a similar process as with for-sale residential, this analysis derives an annual absorption of 154 households for a for-rent multifamily project. If demographic patterns continue for the next 20 years as they are expected to in the next five years, there will be demand for a total of 1,577 for-sale multifamily units and 3,312 for-rent multifamily units in the study area by 2027.

D. SCHOOL CAPACITY

Along with the traffic analysis and its relationship to the City's APFO, there is a similar situation with school capacity. The City's APFO establishes that no child-generating development can take place if the new residences will be within the boundaries of a school that has enrollment of 110% or more of the school's program capacity, as defined by Montgomery County Public Schools (MCPS). The Rockville Pike Plan study area is located within two school clusters: The Richard Montgomery and Walter Johnson High School clusters. (Please see Table 9.23 on the following page). The northern and middle sections of the Pike Plan study area are within the Richard Montgomery High School cluster, which includes four elementary schools, one middle school, and one high school. The southernmost section is within the Walter Johnson School cluster, which has more capacity.

MCPS data show that *all four elementary schools either exceed 110% or are projected to exceed 110% within the next five years*. The middle school is also projected to exceed 110% within five years.

Table 9.23: Study Area School Clusters



Source: Montgomery County Public Schools, 2010

Table 9.24: School Enrollment Capacity

School	2010-2011 Enrollment/Capacity	2016-2017 Projected Enrollment/Capacity
Beall ES	136%	155%
College Gardens ES	118%	123%
Ritchie Park ES	133%	150%
Twinbrook ES	104%	117%
Julius West MS	104%	136%
Richard Montgomery HS	93%	95%

Source: Montgomery County Public Schools, 2010.

If Rockville Pike's redevelopment is to accommodate residences for families, school capacity must be addressed. Montgomery County Public Schools Board of Education has approved studying expansion of three of the four elementary schools and Julius West Middle School, as well as the potential to build a fifth elementary school within the Richard Montgomery cluster.

The form code for the Rockville Pike Plan study area is, by its nature, flexible and is based on street frontage rather than on land use. Both the balance of residential and commercial uses and the sizes of residential units that will be built in the corridor will be driven by prevailing market conditions. The timing and locations for future or expanded schools cannot be accurately projected but it is expected that students will be generated by redevelopment within the Pike corridor. The City will need to negotiate with developers, Montgomery County, and the state for funding to produce the additional school space that will be needed.

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Appendix C – Case Studies and Funding Mechanisms

OVERVIEW

This appendix presents additional reference material that may be useful to the Rockville community as it undertakes implementation of its new plan and vision for the Pike. It is divided into two sections:

A. **Case Studies** presents two case studies that examine how other communities in the U.S. have utilized Transportation Management Associations, Tax Increment Financing, and other tools recommended in the *Rockville's Pike* plan in order to facilitate transportation alternatives, support redevelopment, encourage economic vitality.

B. **Funding Mechanisms** outlines a variety of funding mechanisms that the Rockville community can utilise in order to support redevelopment along the Pike.

A. CASE STUDIES

The case studies presented in this section are intended to provide details about how other communities have benefitted from some of the innovative planning elements recommended in *Rockville's Pike*. Although the context may differ from Rockville, the lessons of another community's transformation through the use of transportation, planning, and redevelopment tools may serve as a helpful reference as the Rockville community proceeds with implementing its vision for the Pike.

Chapter 5 – A Plan for the Rockville Pike Corridor identifies creating a ***Transportation Management Association*** *as a key element for managing congestion along the Pike.*

1. Lloyd District Traffic Management Association, Portland, Oregon

The Lloyd District, located across the Willamette River from downtown Portland, currently consists of approximately 650 businesses and 21,000 employees, including a major convention center, a mall, medical clinics, hotels, and office buildings. Since 1995, the Lloyd District Transportation Management Association (LDTMA) has worked to promote the area's economic vitality by providing transportation programs and services to improve access to the district.

The LDTMA has 69 member businesses representing approximately 9,000 employees. It manages several programs to improve and promote walking, cycling, ridesharing, and transit. The LDTMA works to improve walking and bicycling facilities, improve public transit services, and in various ways promotes use of alternative modes, including the Passport Transit Pass Program, an annual all-zone transit pass employers can purchase at a reduced rate per employee for all qualified employees. It manages Commuter Connection, a retail transportation store that brings a new level of convenience for access to transportation information and services. A staff of Transportation Coordinators acts as liaisons between the LDTMA and employees.

In 1997, 76 percent of all employee commute trips to the Lloyd District were made in an automobile; 60 percent were drive alone trips and 16 percent were by carpool. Despite the rise and fall in the number of participating employees from one year to the next, the percentage of drive alone trips has decreased steadily since then, and transit ridership has increased, particularly among Passport Transit Pass members. By 2007, the drive-alone share had decreased to 43 percent. This has reduced about 1,000 daily peak period vehicle trips and about 3.9 million annual vehicle-miles. The district's ultimate target is 42 percent transit and 10 percent bike commute mode splits. According to its 2007 Employee Commute Choice Survey, the TMA is close to meeting its target for transit share (currently at 38 percent). It has shown overall progress toward meeting its bicycle share (currently at 4 percent of all trips.)

Table 10.1: Lloyd District Commute Mode Split

Commute Mode	1997	2007	% Change
Drive alone	60%	42.4%	-42%
Rideshare	16%	10.5%	-24%
Bus/MAX	21%	38.4%	91%
Bicycle	3%	4.6%	53%
Walk	2%	2%	0%
Telecommute	0%	1.3%	NA
Compressed Work Week	0.5%	1.0%	100%

2. Old Pasadena, Pasendena, California

Old Pasadena is a historic district located in Pasadena, California. This district underwent a large redevelopment effort to establish itself as a successful mixed-use center. Old Pasadena has two light rail stations, set approximately one mile apart. The light rail links Los Angeles and Pasadena.

In the 1970s, Old Pasadena was a deserted area comprised of vacant storefronts. The City originally planned to demolish the entire district and build corporate offices. A group of citizens, however, petitioned the City to invest in the historic district. The City obliged and established the area as a "Redevelopment Project Area," which provided the City better access to state tools and programs. The City also established the area as an historic district, which allowed the property owners to receive state and federal historic tax credits. Throughout the redevelopment, the City utilized a number of innovative programs and financing tools, such as Tax Increment Financing, the parking zoning credit program, and the "Old Pasadena Streetscape and Alleyways Plan."

In redevelopment, the City's primary financial tool was Tax Increment Financing (TIF). The City utilized TIF funds to build two parking structures totaling 2,000 parking spaces on land the City had acquired. In addition, the City used TIF funds to fund façade improvement grants, which provided property owners with a funding match to pay for façade improvements.

*Chapter 5, page 5.39 points to **Tax Increment Financing** as a tool to help defray the costs of roadway and streetscape improvements along the Pike boulevard.*

In order to spur development, the City established a parking zoning credit program. This program assumed that because of the projected variety of uses for the district, the parking garage would not ever be completely full. This allowed the City to oversubscribe parking by 50 percent. For example, physically, there were 2,000 parking spots. However, in records, the City stated there were 3,000 spaces, assuming that all 2,000 spaces would not all be used at the same time. This increase in recorded parking allowed more businesses to meet their parking obligation and be able to open, while still complying with the zoning code. The City sold these parking credits to the businesses, and the revenue was used to pay down the debt of the parking structures. As a result, the parking zoning credit program intensified land use in the area.

*Page 5.22 suggests establishing **reduced parking requirements** for the Pike.*

Another strategy the City employed to spur redevelopment was the creation of the "Old Pasadena Streetscape and Alleyways Plan," which was used to implement an improved pedestrian network, including new street trees, pedestrian-oriented lighting and signage, and other amenities. Old Pasadena contains numerous alleys, which were underutilized and blighted. As part of this Plan, the City used these alleys to create a network between streets. The alleys were paved and cleaned, with some closed to cars, providing a space for outdoor dining. In order to finance the elements of the plan, the City installed parking meters throughout the district, which provided the City with additional revenue.

*Chapter 5, section F (beginning on page 5.26) addresses elements related to **making the Pike walkable** and **greening the Pike.** Page 5.16 addresses the need to **expand the street network** in the Pike study area.*

B. FUNDING MECHANISMS

Several programs exist at various levels of government that could support redevelopment along the Pike. These programs may or may not be appropriate to specific projects, but provide a wide range of tools for consideration in enhancing development opportunities.

1. Montgomery County Small & Minority Business Assistance Programs

The Montgomery County Department of Economic Development conducts programs, sponsors events, and engages in various other activities to reach minority businesses. Minority Business Enterprises are defined in accordance with the Chapter 11B-58 of the Montgomery County Code and under the State of Maryland's procurement law. The program offers several opportunities to support small businesses, including:

- "StartRight" seminars at the Business Resource Center offer new and existing entrepreneurs the opportunity to learn about County resources for business creation and expansion
- Technical assistance to clients on how to prepare loan packages, for example:
  - *Small Business Loan Fund, Inc.* - Assists small businesses that may be experiencing problems by making funds available on more flexible terms and conditions.
  - *Small Business Revolving Loan Fund* - Provides loans to acquire fixed assets, contract financing, expansion capital, and/or to finance the acquisition or construction of real estate.
  - *Economic Development Fund* - Offers assistance to private employers in targeted industries to either retain jobs already in the County or attract new jobs to the County.
  - *Technology Growth Program* - Provides gap financing for emerging technology-based companies with innovative products or services.
  - *Montgomery Skills Alliance* - Provides matching funding to County employers who invest in the professional development of low-wage earners working for their company.
  - *Microenterprise Funds* - Serves as partner with the Development Credit Fund, Inc. (www.developmentcredit.com) to provide small loans to minority businesses in Maryland.

2. Montgomery County New Jobs Tax Credit

Montgomery County offers a real and personal property tax credit for businesses that:

- Re-locate or expand into at least 5,000 square feet of newly constructed or previously unoccupied premises
- Employ at least 25 individuals in new permanent full-time positions within a 24-month period in the new or expanded premises

Qualifying businesses will receive a Montgomery County tax credit against real and personal property taxes for a period of six years. The tax credit per year equals the following percentages of the tax imposed on the assessment of the new or expanded premises: 52 percent during the first two taxable years, 39 percent during the third and fourth taxable years, and 26 percent in the final two taxable years.

In addition, a qualifying business will also receive a State of Maryland tax credit, which is applied against individual or corporate income tax, insurance premiums tax, or financial institution franchise tax. The State credit is equal to a percentage of the amount of property tax imposed on the assessment of the new or expanded premises as follows: 28 percent in the first two taxable years, 21 percent during the third and fourth taxable years, and 14 percent in the final two taxable years.

3. Montgomery County Enhanced New Jobs Tax Credit

An enhanced real and personal property tax credit is available for large businesses generating or creating major economic impacts in Montgomery County. The criteria for the enhanced tax credit are as follows:

For businesses relocating to Montgomery County:

- Purchase or lease (and relocate into) at least 250,000 square feet of newly constructed or previously unoccupied premises
- Employ at least 1,250 individuals in new permanent full-time positions, paying at least 150 percent of the federal minimum wage, at the new premises

For business expanding within Montgomery County:

- Purchase, lease, or build (and relocate or expand into) at least 250,000 square feet of newly constructed or previously unoccupied county premises
- Continue to employ at least 2,500 individuals in existing permanent full-time positions, paying at least 150 percent of the federal minimum wage
- Employ at least 500 individuals in new permanent full-time positions, paying at least 150 percent of the federal minimum wage, at the new premises

Qualifying businesses will receive a 12-year tax credit equal to 58.5 percent of the amount of the property tax imposed on the increase in assessment of:

- The new or expanded premises
- Newly renovated real property improvements adjoining or otherwise neighboring the new or expanded premises

- The personal property located on the new or expanded premises, or adjoining renovations

In addition, qualifying businesses will also receive a State of Maryland Tax Credit equal to 31.5 percent of the amount of County property tax imposed on the increase in assessment of the real and property. The credit will be granted for the first 12 taxable years after the business qualifies for the Enhanced New Jobs Tax Credit and the credit can apply towards individual or corporate state income tax, insurance premiums tax, or financial institution franchise tax.

4. Community Legacy

Maryland's Community Legacy program, administered through the Department of Housing and Community Development, provides funding for projects aimed at strengthening and revitalizing the community through activities such as business retention and attraction, encouragement of homeownership, and commercial revitalization.

Funding, through grants and loans, is available for projects located in Priority Funding Areas and is meant to complement and supplement other state funding programs. Projects/activities typically include, but are not limited to:

- Mixed-use development, consisting of residential, commercial and/or open space
- Business retention, expansion, and attraction initiatives
- Streetscape improvements
- Increasing homeownership and home rehabilitation among residents
- Residential and commercial façade improvement programs
- Real estate acquisition, including land banking and strategic demolition
- Establishing funds to provide loan guarantees and credit enhancement to leverage other public or private financing

Communities participating in this program must have a completed comprehensive revitalization plan.

5. Local Government Infrastructure Financing Program

Through the Local Government Infrastructure Financing Program, the Maryland Department of Housing and Community Development provides a cost effective way for municipalities to finance capital projects. The Department of Housing and Community Development issues bonds, on behalf of counties, municipalities and/or their agencies, to finance projects that serve the community at large. These projects can include, but are not limited to:

- Streetscape improvements
- Transportation enhancements
- Water system and waste water treatment facilities

Bonds issued through the program are triple-A rated by virtue of municipal bond insurance and interest rates are fixed and tax-exempt. Local governments receive loans from the bond proceeds. Local governments must repay the debt incurred through the bond financing and pay their pro-rata share of the costs of issuance of the pooled bonds. Local Government Infrastructure Financing is effective for municipalities that:

- Do not routinely issue bonds
- Have limited access to capital markets
- Do not have the resources to initiate a public offering on their own

All Maryland counties, municipalities and/or their agencies are eligible, provided they have legal authority for:

- Constructing, operating, and maintaining the proposed project
- Pledging security for and repaying the proposed loan
- Pledging income tax payments and various other shared revenue from the State
- Public safety vehicles and equipment
- Water production, treatment, storage and distribution systems
- Storm water control and sewer collection and treatment facilities
- Government office and meeting facilities
- Refinancing of existing debt for eligible projects
- Computer hardware and software systems
- Police, fire, transportation, education, health, recreation, maintenance and other service related facilities

6. The Miller Bill

The Miller Bill is a property tax credit program offered through the City of Rockville for qualified new and expanding businesses. The program is focused on enhancing development opportunities for Class A office space by providing incentives to employers for increasing employment. Eligibility requirements are as follows:

- *Offices:* Construct or expand by at least 5,000 square feet of premises in the Town Center, by buying, building, or leasing new premises for office use above the first floor of the new premises, or by 60,000 square feet elsewhere in the city
- *Hotels:* Construct or expand by at least 100,000 square feet of premises in the Town Center on which the business entity conducts business by buying, building, or leasing new premises for hotel use, or by 200,000 square feet elsewhere in the city
- Employ at least 25 persons in new, permanent, full-time positions within the new or expanded premises in the city during a two-year period

- All credits are passed through to the tenants who are required to pay the city property tax

The tax credit that a taxpayer may claim against the city real and personal property taxes is the following percentages of property tax imposed on the new or expanded premises:

- 52 percent first and second taxable years in which a credit is allowed
- 39 percent third and fourth taxable years in which a credit is allowed
- 26 percent fifth and sixth taxable years in which a credit is allowed

A taxpayer also may claim a tax credit against certain state taxes (individual or corporate income tax, insurance premiums tax, or financial institution franchise tax) in the following percentages of property tax imposed on the new or expanded premises:

- 28 percent first and second taxable years in which credit is allowed
- 21 percent third and fourth taxable years in which a credit is allowed
- 14 percent for the last two taxable years in which a credit is allowed

7. Community Parks and Playgrounds

Maryland's Community Parks and Playgrounds Program provides a dedicated funding source to allow the state to focus on restoring existing parks and creating new park and green space systems in Maryland's cities and towns.

With the support of the Governor and the Maryland General Assembly, a total of $39.9 million has been approved so far to restore 388 park and playground projects. Last year, $5 million in CPP FY 2009 funds were included in the Maryland Executive Budget for 44 new parks and playground projects and have received funding approval of the Board of Public Works.

The Community Parks and Playgrounds Program provides flexible grants to local governments to respond to the unmet need to: rehabilitate, expand, or improve existing parks; develop environmentally-oriented parks and recreation projects; create new parks; or purchase and install playground equipment in older neighborhoods and intensely developed areas throughout the state.

8. Federal Low-Income Housing Tax Credit Program

Maryland administers the Federal Low Income Housing Tax Credit Program to support the development of affordable multi-family rental housing. Credits are awarded competitively in conjunction with the state's Rental Housing Program funds and federal HOME funds. Tax credits are allocated in accordance with federal IRS rules and Maryland's Qualified Allocation Plan. Credits are subject to recapture for failure to comply with all IRS requirements.

Appendix D – History and Historic Preservation

A. HISTORY OF THE ROCKVILLE PIKE CORRIDOR

As a transportation artery for centuries, Rockville Pike (Maryland Route 355) can claim to be the oldest road in Montgomery County. It is identified in the City of Rockville's 1986 Historic Resources Management Plan as a historic resource within the theme of Transportation. It was one of the longest thoroughfares in the Maryland colony and one of the first paved state roads in the county. It continues to be one of Montgomery County's most traveled roads.[1]

Historical names for the Pike have included the Sinquea Trail, the Road from Frederick to Georgetown, the Great Road, the Rolling Road, Braddock's road, the Turnpike Road, Rock Creek Road, and, as one of the prominent retail corridors in the metropolitan area, the Golden Mile. Even today, as one heads north from Wisconsin Avenue in the District of Columbia, the same length of road changes names to Rockville Pike, Hungerford Drive, Frederick Road, Urbana Pike, and to Market Street in Frederick.

Pike travelers have included Native Americans, colonial farmers, American presidents, fugitive slaves, Confederate and Union troops, wealthy Washingtonians retreating to their summer homes, and modern day commuters and shoppers.

[1] Eileen S. McGuckian, Rockville, Portrait of a City. (Tennessee: Hillsboro, 2001) 3.

1. Early History

The Pike began as a foot trail for local Native American tribes more than 10,000 years ago. Most trails in this area ran along rivers, but the Pike was a less typical inland route that led to the Potomac River. The use of the trail was taken over by European settlers in the 1690s. Early land patents and surveys (1690s-1740s) contain references to a trail or path used by local Indians.

What is now Rockville was a crossroads hamlet in a sparsely settled frontier area in the 18th century. Travelers could stop at taverns (also known as "ordinaries") for food, drink, and lodging and local residents gathered at them as well.[2] Plantations were established by English and Scottish settlers and tobacco became the prime crop in the region as well as the legal tender. A system of "rolling roads" was ordered by the Maryland Assembly in 1716 to facilitate the transportation of tobacco casks from plantations to market centers. Large barrels of tobacco, weighing as much as 1,000 pounds each, were "rolled" to market with the aid of horses, oxen, and slave labor on roads that were scarcely more than unimproved footpaths through forest, barely wide enough to accommodate the casks. By the mid-1700s, "Fredericktown" (now Frederick) to the north was well-established and the route (now Rockville Pike) became a rolling road connecting it to the port of Georgetown where tobacco was shipped to distant markets. The road was one of the longest in the Maryland colony.

Despite the importance of this road, maintenance was poor and mostly consisted of filling in major ruts and holes and clearing obstructions. Efforts to place planks over the ruts were abandoned because of a lack of funds. General Edward Braddock and his aide-de-camp, George Washington, traveled the road in 1755. Its crude condition was cited as a reason for their military defeat at Fort Duquesne (Pittsburgh) that year during the French and Indian War. An act of the Maryland Assembly of 1790 was intended to straighten and mend the public roads in the county, including the road from Frederick to Georgetown.[3]

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[2] The mid –1700s Pike area was scattered with taverns, including Owens Ordinary, located 16 miles north of Georgetown. Owens Ordinary (1755) was replaced with Hungerford Tavern in 1774.

[3] Rockville was still part of Frederick County at that time. Montgomery did not become a separate independent county until September 6, 1776. Rockville was chosen as the County seat but was not called Rockville until 1803.

2. The Turnpike

The need for reliable and passable roads continued to be a problem at the turn of the 19th century. The Washington Turnpike Company was chartered by the Maryland General Assembly in 1805 to try again to improve the road. Turnpikes were based on a "pay as you go" system. Gates, consisting of long poles covered with spikes ("pikes"), were opened only when the toll was paid. The "Rockville Turnpike", as it was known by 1818, became a two-lane roadway "paved" with small angular stone fragments, ten inches deep over soft dirt and rock. The road became stronger and more compact with use and over time.[4] Guideposts and milestones along the way informed travelers of distances to toll gates and destinations. Twice a week, stage coaches stopped in Rockville carrying passengers and mail along the toll road from Georgetown. Four horses were used to haul the coach as far as Rockville. Two of them continued the journey to Frederick.[5]

The Washington Turnpike Company used revenue collected from tolls for maintenance and repair. The road was heavily used by stagecoaches, herded cattle and sheep, and horses. More damaging traffic such as herds of cattle or horse-drawn carriages were charged higher tolls than pedestrians or single riders. The tolls were abandoned in the 1880s as there was never enough revenue to keep up with the needed repairs.

Toll Rates on the Rockville Pike, 1820

Per score (20) of sheep or hogs	12 ½ cents
Per score of cattle	25 cents
Horse and rider or led horse	6 ¼ cents
Coach or stage with 2 horses & 4 wheels	25 cents
Carriage with 4 horses	37 ½ cents

Source: Rockville Portrait of a City, Eileen S. McGuckian, p. 29

Toward the last years of the 19th century, the most extensive road construction in Maryland was the rebuilding of the turnpike between Rockville and Georgetown. According to an 1899 report by the Maryland Geological Survey, "no road in the county was more in need of improvement both on account of its condition and its importance as the direct road from Rockville to Washington. It has long been known as one of the worst pieces of main highway in the state."[6] At that time, there were

[4] John L. McAdam, a Scottish engineer who was largely responsible for transforming road building into a science, developed this road construction technology. The term "macadam" came to be applied to a variety of other road surfaces in later years.
[5] Mary Deegan Dunham, Rockville: Its History and Its People (1976).
[6] 1899 Maryland Geological Survey, Volume III, p. 242

835 miles of road in Montgomery County and 95% of them were dirt roads. The remainder were stone and most of them were toll roads. [7]

3. The Civil War Era

Rockville was a crossroads and camping site for thousands of soldiers, both Union and Confederate, during the Civil War years, 1861-1865. In September 1862, 150,000 troops passed through Rockville and camped at the Fairgrounds (today the Richard Montgomery High School site). The courthouse was used as a temporary hospital for the wounded. The Pike was used heavily for troop movements and was the site of many skirmishes. Union troops scoured for food and horses among farms that lined the road. During the same era, fugitive slaves followed routes that paralleled the Pike as they followed the Underground Railroad to stops in the county and to freedom in the North.

4. Trains and Trolleys

The coming of the railroad and electric street cars in the late 19th century had a profound effect on the siting of summer resorts and houses in Rockville and along the Pike. Wealthy Washingtonians purchased farmland between Bethesda and Rockville around the turn of the 20th century. Only a few that were located along the Pike in Rockville remain from this era, including the Lyddane-Bradley House and

The Estate-Bordered Pike

The convenience of the railroad, the trolley, and general road improvements to the Pike around the turn of the century led to the construction of country estates. Prominent houses that once lined the Pike but that are now gone include:

The Tyler –Wheeler Funeral Home (c. 1899), was a 2 ½-story frame, vernacular late Victorian house that was part of the small "Autry Heights" subdivision that was platted c. 1890 to take advantage of the trolley line along the Pike. Only a few houses were ever built there and the residential subdivision gave way to commercial development. The house was demolished in 1959 to allow for expansion of a shopping center.

The Simmons House, at 706 Rockville Pike, was a 2 ½-story Victorian with a wide front porch and was built in 1888/89 for Rebecca Offutt. It was converted to commercial use in the mid-20th century and served at various times as a tourist home, the Rockville Chamber of Commerce and the Rockville bureau of the Gazette newspapers. The house was considered for local historic designation in 2002, but was found to be ineligible due to extensive alterations.

11520 Rockville Pike, just north of Nicholson Lane and south of Rockville's border, was the site of a large three-story, 14-room wood house built in 1902 for Herman Hollerith, who invented a punch card method for tabulation of the 1890 census and founded the company that later became IBM. The house was purchased in 1926 by Frank Abbo who operated the "Villa Roma Club". It featured dinner, a 14-piece band and dancing. Entertainers included Kate Smith who performed there until the Great Depression brought it to a close and it reverted back to a residence. It then became the "Rainbow Motel" before it was demolished in 1983.

The Sprigg Poole House, 1300 Rockville Pike, was located across from Lyddane-Bradley Farm. This was an unusually large estate type of late Victorian building of frame construction. It was sheathed in German siding and sited on a wooded, landscaped knoll above Rockville Pike along the railroad tracks. A tenant house, smaller in size but built of similar materials, sat directly on the Pike. It was once owned by Sprigg Poole, a prominent county businessman. It was demolished sometime after 1975.

[7] ibid, p. 241

outbuildings (now part of Woodmont Country Club) and the Dawson farmhouses (on Copperstone Court), once the homesteads of working farms.

The Metropolitan branch of the B&O Railroad was completed in 1873 and provided passenger train service between Washington, DC and Rockville. While it provided competition for the Pike as a means of travel, it also spurred development and business prosperity in the area by improving access to the greater metropolitan areas of Washington and Baltimore. The 16-mile trip from Rockville to Washington, DC took about 45 minutes.

Although trolleys, or street cars, were found in American cities before the Civil War, a line did not connect Washington, D.C. to Rockville until the turn of the century. The Tenallytown & Rockville Electric Railway Company opened a line from Wisconsin Avenue in Georgetown to Bethesda Park, an amusement destination in Alta Vista (off Old Georgetown Road, near present-day National Institutes of Health) in 1891. The Washington & Rockville (W&R) Electric Railway Company then formed in 1897 to bring street cars as far north as Rockville. By 1900, tracks led to Courthouse Square, but the Mayor and Council of Rockville refused to permit service inside the town to begin until the W&R fulfilled its agreement to build the last section to the western limits of the town. This extension was made through Rockville on Montgomery Avenue to the Woodlawn Hotel (which later became Chestnut Lodge) in 1904.

The agreement between the town of Rockville and the W&R Railway Company lasted for 35 years. From 1900 to 1935, street cars, powered by overhead electric wire, ran on the track from Wisconsin and M Streets, N.W., in the District up Wisconsin and Old Georgetown Roads, over a steel trestle just before the cars approached Georgetown Preparatory School. From there, they continued through dense woods at Montrose and onto the Rockville Pike, through Rockville along Montgomery Avenue, to Laird Street, and back again. Major stops along the line included Georgetown, Alta Vista, Bethesda, Montrose, Halpine, the Fairgrounds, Courthouse Square, and ending at Chestnut Lodge.

In 1929, W&R operated 24 trips a day between 6:30 a.m. and 12:30 a.m. to connect Rockville and Washington. However, the successful trolley service was eventually eclipsed by the growing popularity of the automobile and was halted in August 1935. [8]

The Halpine Store – *The Halpine Store, also known as the Lenovitz General Store, was built on the Pike in 1898, taking advantage of the prime location on the trolley and railroad lines and the Pike. The proprietors, Benjamin and Anna Lenovitz, lived on the second floor. The building burned in 1923 and a new fire-resistant brick building was constructed in its place. This building, at 1600 Rockville Pike, became a Radio Shack store.*

Figure D. 1 – *Trolley bound for Rockville.*
Source: Peerless Rockville

Streets Cars – *Street cars could be driven from either end. Six switching stations and side tracks allowed street cars to pass in different directions. Street cars could reach speeds up to 60 mph but traveled at 12 mph or less in populated areas.*

[8] William J. Ellenberger, "History of the Street Car Lines in Montgomery County", The Montgomery County Story, Vol. 17, No. 2 May 1974

Figure D.2 *– Congressional Plaza sign on Rockville Pike.*
Source: Peerless Rockville, c. 1960

5. Post-WWII Suburbanization & Popularity of the Automobile

Speed Limits: *The first automobile speed limit laws were enacted in the U.S. around 1900. In 1905, the speed limit on Rockville roads was six miles per hour according to the book "Rockville: Its history and Its People"*

The automobile was introduced and became hugely popular in the early 20th century. The prevalence of automobiles ushered in a new era for the Pike. In 1923, there were 16 service stations and automobile dealers in Rockville.[9] The Pike became a two-lane asphalt-paved road in 1925, but there were no traffic lights between Bethesda and Rockville, the major residential centers along the Pike. Rockville installed the county's first electric traffic signal in 1927 at the intersection of Commerce Lane (West Montgomery Avenue) and Washington Street.

Commercial development on Rockville Pike was contested even in the 1920s. According to a Washington Post article in September 25, 1929, residents along the Pike opposed industrial encroachment on what they claimed was "the most beautiful pike in the country" when Congressional Airport applied for a rezoning of 300 feet of street frontage at Halpine from residential to commercial. According to the Post, "The action of the commissioners in refusing the plea of the aviation field is construed as indicating that the demand of the residents that the Pike be kept free from commercial enterprises so that it might develop as a beautiful residential area is concurred in by the commissioners and to indicate that no such encroachment will be permitted."[10]

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[9] Fitzgerald's Rockville: A guide to Rockville, Maryland in the 1920s, Eileen McGuckian and Lisa A. Greenhouse, 1996, p.9
[10] The Washington Post, "Rezoning Refused on Rockville Pike", September 25, 1929

Despite the opposition to commercial development, the Pike changed with the emergence of auto-friendly development such as gas stations, car dealerships, tourist cabins, restaurants, and produce stands, though the character remained primarily agricultural through the 1930s. The number of cars owned by Montgomery County residents doubled between 1928 and 1938, totaling 23,600 in 1938.

Rockville's business center ran east to west on State Route 240, from the Rockville Pike through town to Washington Street. The business district, anchored by East Montgomery Avenue, contained a variety of businesses, homes, and places of worship. Properties owned by blacks were segregated from white-owned establishments and segregated along Middle Lane and Washington Street. Montgomery County government facilities and offices associated with public business dominated the center of town.

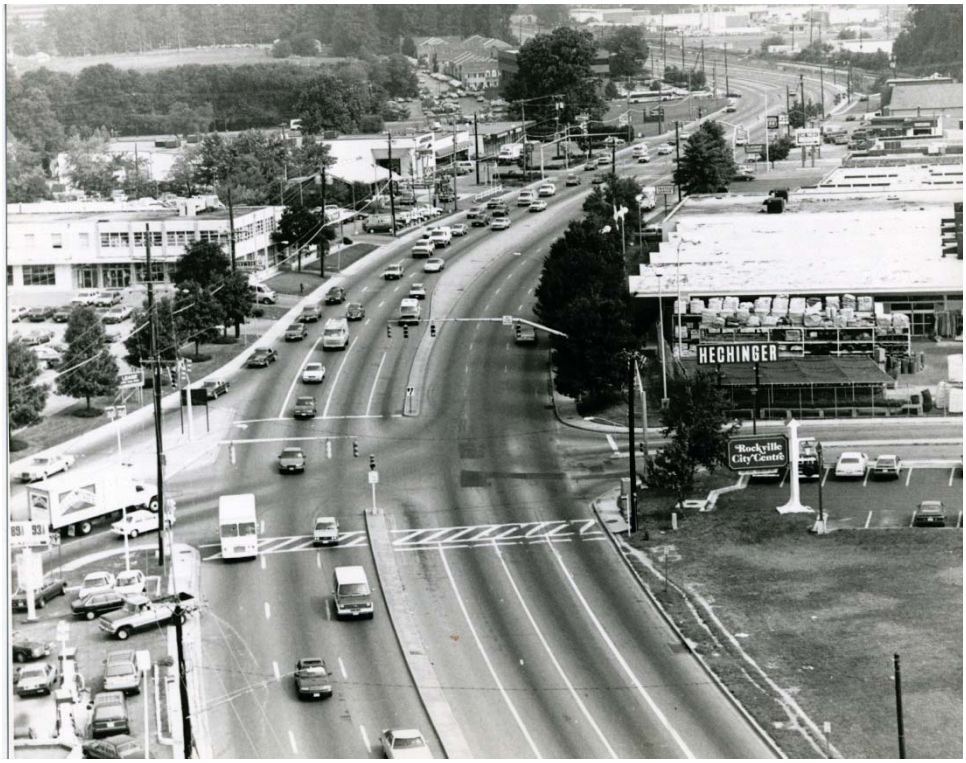

Figure D.3 *–Rockville Pike in 1988.*
Source: Peerless Rockville

Automobiles clogged the narrow streets and parking, though permitted on most streets and behind many commercial buildings, was inadequate by the 1930s. Rockville Pike was widened to four lanes in 1953-55 to relieve the increasing congestion and a bypass was created to separate through traffic from vehicles with a Rockville destination. Rockville Pike no longer jogged west onto Montgomery Avenue, past the courthouse, and north onto Washington Street. Instead, a new 1.4 mile roadway, starting at St. Mary's Church, ran parallel to the railroad tracks northward to bypass the center of town. The bypass opened in 1951 and was named Hungerford Drive a year later. It was successful in diverting traffic away from

Parking – *Parking was a strip shopping center's greatest attraction in the 1950s and 1960s. According to a 1997 article in The Washington Post reflecting on the Pike's history, mid-century strip center owners displayed parking "like a grocer fills windows with fruits and vegetables."*

Rockville's traditional business district on the main street, yet downtown parking remained a significant problem. Cutting off the old main street, the lack of downtown parking, and the emergence of new shopping centers elsewhere in town led to the demise of the town center and the decision to undertake a federal urban renewal program. Forty-six acres in the town center were bought, old and new buildings were demolished, and street patterns were changed. In their place rose the residential Americana Centre, more county buildings, high-rise offices, and Rockville Mall which had underground parking.

Watergate Fame *– During the Senate Watergate hearings, conspirator James McCord said he received his orders to burglarize the Democratic National Committee Headquarters at a phone booth outside the Blue Fountain Inn on Rt. 355, about 1.5 miles north of the Rockville depot.*

The Pike accommodated 16,650 automobiles per day in 1958.[11] The Washington National Pike Interstate was built that year and later renamed I-270, taking on some of the through traffic that the Pike had served. In 1974-75, the Pike was widened again, to six lanes. Between 1975 and 1986, the Pike continued to attract many more shoppers than the town center and approximately 1.8 million square feet of new retail, office, and hotel development was added along the Pike.

Several nightclubs, some with neon signs, sprung up along the Pike in the booming 1950s and 1960s. Some residents saw these as eyesores and City Councilman Edward Mack called for "Operation De-Uglification" in 1966 to curtail the movement.

Big Box Retail: *Rockville gained national attention in 2000 when it enacted limitations on the sizes of individual retail stores following the construction of "big box" retailers Marlo Furniture and Best Buy on the Pike in the mid- and late 1990s.*

The "Car Culture" also brought the area's first McDonald's restaurant, complete with golden arches, to the Pike in the mid-1960s.[12] A McDonald's restaurant is still in the same location at 1390 Rockville Pike but its appearance has changed with the times. Dixie Cream Donuts (later Montgomery Donuts and now a Subway) at 1402 Rockville Pike is another example of small, mid-20th century commercial development along the Pike.

6. Bus and Rapid Rail Service

Bus service had begun in 1924 and, together with private automobiles, replaced the trolleys. The Blue Ridge Transportation Company provided bus service for Rockville and Montgomery County from 1924 through 1955. There was no real effort to develop a public transportation infrastructure in Rockville for the next 20 years until the Washington Metropolitan Area Transit Authority (WMATA) began work to extend the Red Line of the Metrorail system into Rockville (running parallel to the Pike) and extend Metrobus service into Montgomery County.

Metrobus service was augmented by Montgomery County's Ride-On bus service starting in 1979. The Rockville station of Washington Metrorail opened on July 25,

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[11] Rockville Pike Corridor Neighborhood Plan, April 1989, p. 3. Traffic count in front of Congressional Plaza.

[12] An attorney representing McDonald's requested an interpretation of the City's sign regulations as they pertained to the illumination of the restaurant's trademark golden arches; however, the City did not grant an exception to the regulations. Rockville Mayor and Council minutes, December 8, 1959.

1984 and the Twinbrook station began service on December 15, 1984. MARC, Maryland's Rail Commuter service, began serving Rockville in 1984 with its Brunswick line. From Rockville, MARC provides service to Union Station in Washington D.C. (southbound) and to Frederick and Martinsburg, WV (northbound), as well as intermediate points. With these public transit improvements, free-standing office buildings and mixed-use development began to join the automobile-oriented strip retail centers along the Pike.

Yet, automobile traffic continued to increase. Approximately 80,000 cars per day were traveling the Pike in 1995; five times the number that traveled it four decades earlier. There were more than twenty shopping centers within a six-mile stretch of the Pike and 38% of all jobs in Montgomery County (more than 178,000) were located in the mile-wide corridor in 1997.[13] A 1997 article in The Washington Post noted that "Humans fit comfortably in this environment only when sealed within their cars. Once drivers become pedestrians, they are vulnerable and out of place, as lost and endangered as someone trying to cross a busy airport tarmac."[14]

7. The Rockville Pike Corridor Neighborhood Plan, 1989

By the mid-1980s, downzoning was viewed as the solution to traffic congestion and commercial overdevelopment of the Pike. A Rockville Pike Advisory Committee (RPAC) was formed to continue the work of the Economics Amenities Committee (that had been established by the Mayor and Council in 1982 to examine the function and appearance of the Pike) and a temporary building moratorium went into effect in 1984 to temporarily reduce pressures for intense office development along the Pike following the opening of the Metrorail red line stations in Rockville. The Committee presented a series of recommendations to the Mayor and Council in 1985, including a reduction in Floor Area Ratio (FAR) and the creation of an optional method of development that would provide performance standards for increased density in mixed-use projects. The RPAC also recommended a comprehensive plan for the corridor that would focus on urban design and transportation system management strategies. The Planning Department issued a draft plan based on the recommendations of the RPAC in January 1987. The plan was revised at the direction of the Planning Commission and the Mayor and Council and the final plan was adopted by the Mayor and Council in April 1989 as the Rockville Pike Corridor Neighborhood Plan. This Plan has provided the guidelines for development and design of the Rockville Pike Corridor for the past 20 years. In 2007, the City determined that an update to the Plan was needed and initiated *Rockville's Pike: Envision a Great Place*.

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[13] The Washington Post, "Is Rockville Pike at its Peak?", December 26, 1997
[14] The Washington Post, "Taking a Peak at the Pike", December 26, 1997

B. HISTORIC PRESERVATION IN ROCKVILLE

1. Historic Designation

a. Local Designation:

Any building that meets one or more of the City's criteria for architectural, cultural, historical or archaeological significance is potentially eligible for historic designation. At this time, the Rockville Pike Plan area does not contain any locally designated historic sites.

Properties must meet certain criteria to be eligible for historic designation. (See http://www.rockvillemd.gov/historic/hd-criteria.html for more information.) Historic districts may be a single site or may contain multiple contiguous sites. Potentially eligible properties are reviewed by Historic District Commission (HDC) staff and may be evaluated and recommended for designation by the HDC to the Mayor and Council. This review is initiated if a demolition application for a potentially eligible property is submitted to the City. A site also may be nominated for designation by the owner or another party.

Exterior alterations to designated properties are reviewed by the HDC to insure that they are appropriate and compatible with the historic district. Ordinary maintenance, such as painting or repairs using the same materials and design, are not reviewed by the HDC; nor is any interior work. County and state tax credits are available to owners of designated properties to offset the costs of eligible rehabilitation work. Federal tax credits are also available to owners of designated income-producing property.

b. National Register of Historic Places:

Unlike locally designated properties, alterations to properties listed on the National Register of Historic Places are not reviewed unless state or federal funding or permitting are involved in a project that may adversely affect the listed property. Some properties in Rockville are both locally designated and listed on the National Register; a few are only on the National Register and not locally designated. At this time, the Rockville Pike Plan area does not contain any National Register sites. National Register properties are also eligible for some tax credits.

Other properties throughout the City are *potentially* eligible for historic designation, meaning that they would be further evaluated for architectural, historic, cultural, or archeological significance if they became the subject of a demolition application. This process allows architectural and genealogical documentation to be completed and ensures that significant properties are not lost to demolition or neglect. In addition, owners of these properties may choose to nominate them for designation so that they may enjoy the many benefits of owning a designated property, including tax credits for eligible rehabilitation

work. It is City policy to encourage property owners to nominate their houses rather than have the City initiate historic designation for a potentially significant property unless it is threatened with demolition.

2. Rockville Pike's Historic Places

Rockville Pike has been the location of many significant historic sites, many of which have been demolished to make room for new development. Congressional Airport became Congressional Plaza Shopping Center, for example, when its land value increased to a point that made redevelopment financially appealing. Historic places still exist in the Pike, including some of those described below, and may meet the criteria for local designation and/or listing in the National Register but more research would be required to determine eligibility. In addition, there are other resources that are located near, but outside of, the study area boundary.

a. Congressional Airport, in operation 1929-1958, was the only private airfield in Montgomery County as well as one of the first and busiest private flying fields in the Washington area. In 1928, 275 acres of farmland (previously the Wagner Farm) was leased to the Congressional School of Aeronautics and private airport. In 1929, the lease was converted to a sale and the land was deeded to Arthur Hyde, President of Congressional Airport for $30,000. There were about 65 aircraft at Congressional at any given time, many of which were privately owned. Pilots had to fly over the high tension wires along the Pike to land on the single grass landing strip.

The 1920s and 1930s were the golden age of aviation. In August 1942, all civilian airports in the Eastern Vital Defense Zone were closed by order of the First Fighter Command. Flying was halted for three years during the War. A brief post-war flying boom collapsed in the early 1950s. Warehouses were built and leased out to earn revenue and flying became an incidental activity at the site. The flying school closed for good in 1951. The Congressional Roller Skating Rink opened in one of the aircraft hangars in 1957 and was very popular but it was demolished in 1984 to make room for a new hotel and restaurant.[15] The Womack Building (131 Congressional Lane) is the only remaining remnant of the airport.

b. Congressional Plaza was built on the airport site by Arthur Hyde in 1958 in response to the population and housing boom in Rockville and the increasing retail value of the land following World War II. It was one of the first retail developments of its size and kind in Montgomery County. A similar shopping center in Silver Spring was the first in the county, built in 1939 and Wheaton

[15] The Montgomery Journal, "Bulldozer Rips Into Old Rink to Make Way for New Hotel", January 3, 1984.

Plaza opened in 1960, or at about the same time as Congressional. These are among the first regional shopping centers constructed outside of urban town centers. However, Congressional was the first alternative to traditional downtown shopping in Rockville. The shopping center was originally conceived as a 30-acre site on the west side of Rockville Pike south of Woodmont Country Club and was to be named Congressional Shopping City. The City of Rockville only approved the central 20 acres for retail development in 1956. It became known instead as Congressional Plaza and was anchored by J.C. Penney (Rockville's first national chain clothing store), Giant Food and S.S. Kroesge Company.

The shopping center was designed as a one-story strip of shops in an "L" shape with approximately 35 stores. Anchor stores were accentuated by being slightly taller. The exteriors were comprised of brick with fieldstone facing and plate glass display windows and flat roofs with deep overhangs. The buildings were set far back from the Pike with a vast expanse of surface parking separating them from the Pike. There have been alterations and additions over the years and new clusters of buildings have been added to the north and south of the original center.

Parking and signage were immediate problems for the shopping center. The parking spaces and access lanes were too narrow to accommodate the average 1950s 7.5-foot wide car and had to be re-designed, resulting in fewer spaces. Initially, signage also did not meet City regulations.

Congressional Plaza, like many suburban strip shopping centers, has been extensively altered. Its significance is that it was an early example of this type and scale of suburban retail development, but there are other examples in the county. The Silver Spring Shopping Center has been designated as the earliest example of this development type in the county.

c. Lyddane/Bradley Dairy Farmstead (1853) at Woodmont Country Club, 1201 Rockville Pike. James and Harriet Lyddane purchased the 282-acre parcel in 1858 for $11,000 and soon afterwards constructed the brick L-shaped main house. It was located one mile east of Rockville at the Autrey Park Station on the B&O Railroad, abutting the Turnpike. The house was oriented toward, but set far back from, the Pike.

There are two sections of the elegant brick house; a 3 by 4 bay full two-story block with Federal and Italianate style overtones with a very low hipped roof on the west and a lower 1.5-story 2 by 2 bay gable roofed section on the east side. Numerous original farm buildings also remain and should be included in any historic evaluation of the property.

The farm was advertised in The Montgomery County Sentinel as a Trustees' Sale of Real Estate in July 1905 by heirs after Harriet Lyddane died in 1903.

Described as "282 acres, 1 Rood and 38 square perches of land", and "one of the most desirable farms in Montgomery County" it was improved with a brick 12-room house, stable, corn house, spring dairy, two tenant houses and other outbuildings. The public sale produced no buyer so one of the Lyddane sons purchased it for $21,000. He sold it three years later to a buyer who died eight days later. Joseph and Anna Bradley from Washington, DC purchased it in 1908 and added to the property by acquiring a number of neighboring farms. The property, then called Rosemont, passed to Bradley heirs who sold it to a country club around 1950. It later became Woodmont Country Club.

The farmstead is significant as an excellent example of a farm complex belonging to a well-to-do Montgomery County farmer during the second half of the 19th century.

d. Edmonston Bridge and Monument. The bridge over the B&O Railroad tracks opened in 1950 and connected Rockville Pike with Rockcrest. It was named for Corporal John C. Brown, Maryland's first fatality in the Korean War. There is a monument at the northeast corner of Rockville Pike and Edmonston in his honor, which is actually a re-used headstone. It is inscribed "Margaret S. Fletcher, 1916-1942" under the bronze plaque.

3. Recent Past Resources

Several buildings that still exist along Rockville Pike are identified as potential "Recent Past" resources, built in the latter half of the 20th century. Peerless Rockville, Ltd. has identified these as part of a larger scope of work. Some of them are included in Rockville's 2010 Historic Buildings Catalog. Like any other potential resources in the City, these buildings would require further research to determine their level of significance if nominated for historic designation or if owners applied for demolition.

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Appendix E: Critical Lane Volume Analysis

The Critical Lane Volume Analysis from Current Traffic and Approved Development on Rockville Pike Technical Memorandum was prepared by AECOM for the City of Rockville on November 9, 2010

1.0 PURPOSE AND INTRODUCTION

The purpose of this memorandum is to describe an analysis undertaken in conjunction with the *Rockville's Pike: Envision a Great Place* neighborhood redevelopment plan. The analysis used the locally-accepted Critical Lane Volume (CLV) method of calculating intersection capacity to estimate an order-of-magnitude level of development that could be permitted under the City of Rockville's existing Comprehensive Transportation Review system of concurrency management. In a somewhat unconventional use of the CLV method, the consulting team estimated available capacity.

The City opted to pursue this analysis in order to understand the practical limits of plan implementation under current systems of review and infrastructure concurrency requirements. One of the key reasons for this analysis was because AECOM's original analysis in the first iterations of the draft plan showed some intersections in the planning area at or close to failing levels of service under existing (2008) conditions. This did not take into account the additional traffic expected to be generated by approved developments. The outcomes of this memorandum are not intended to serve as Rockville's Pike plan recommendations, but rather to identify the potential (based on existing traffic conditions) that the City has for allowing development as envisioned under the Plan and to present general conclusions in guiding next steps.

2.0 PRIMARY ANALYSIS

The analysis used intersection turning movement counts from February 2008, originally collected for the Rockville's Pike plan traffic analysis work undertaken in advance of and during the May 2008 design workshop.

Per City staff recommendation, one traffic count (for the intersection of Congressional Lane and Rockville Pike) was substituted with a 2004 count from the Maryland State Highway Administration to correct for a northbound through movement volume that was significantly and unusually higher than comparable movements at nearby intersections.1 To these volumes, it added traffic estimated to be generated from currently approved but as-of-yet unconstructed development along the Pike. The analysis of capacity and development potential followed four principal steps. Each of these is detailed in the following sections.

2.1 Generation of Trips from New Development

The City provided the planning consulting team with formal Transportation Reports for 11 approved developments. Because of the scale of most of these developments, the majority was not expected to generate 30 or more peak-hour trips and as such was not required to submit full Transportation Reports for review, providing only a total number of generated trips. The planning team used the balance of inbound and outbound trips for appropriate land uses in the peak hour as defined in the Institute for Transportation Engineers (ITE) Trip Generation Handbook to determine this balance for traffic distribution onto the roadway network.

In addition, the City and planning consulting team considered the proposed Mid-Pike Plaza development which, although outside of the Rockville city limits, is relatively large in scale and could be expected to generate significant impact even within the City. The effects of this development on the overall network were determined separately from those developments entirely within the City; this is discussed in more detail in Sections 3 and 4.

2.2 Distribution of Traffic onto the Roadway Network

The planning team used the two Transportation Reports with distribution patterns as the basis for applying rates of distribution to traffic added through the trip generation step described in Section 2.1. One of these patterns was from the Wootton Crossing Bank development report and the other was from the Twinbrook Station development report. The first of these was termed Pattern A and any development occurring in the area of the Pike north of Congressional Lane was distributed on this basis (with this set of developments referred to generally as Group A). The second was termed Pattern B and was applied to any development occurring south of Congressional Lane.

This division was made in order to account for the potential differences in east-west traffic dispersion. In the case of each distribution model, east-west streets closer to the given development site are used more heavily to distribute traffic than east-west streets farther away in the corridor. For example, the Woottons Crossing Bank is assumed to distribute more traffic to streets such as Wootton Parkway and Edmonston Drive than it is to Twinbrook Parkway. By considering both and dividing the corridor accordingly, the traffic impacts of each particular development (and particularly turning movements from Rockville Pike that they generate) can be better understood and evaluated.

The City recommended that certain distribution factors from these Transportation Reports be adjusted to more closely match real-world conditions. The planning team made these adjustments per the City's recommendations as follows:

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[1] The 2008 turning movement was unusually high compared to other data, especially the counts representing the intersections immediately to the north and south of that intersection at the same time. Traffic counts on Rockville Pike can change from year to year (and even day to day). For example, another count taken at the same location in 2009 was lower than the 2004 count referenced and used in the analysis. The planning consulting team used the 2004 count as a median value because it was generally consistent with the through-moving volumes at adjacent points on the corridor.

Table 2.2.1 Intersection CLV Based on Current Traffic and Approved Development

Group A Movement Pattern	Previous Assumption (from Twinbrook Station TR)	Revised Assumption (per City staff advisory)
To/from the North along Rockville Pike-Hungerford Drive	25%	30%
To/from the North along First Street/Norbeck Road	10%	10%
To/from the West along Wootton Parkway	10%	10%
To/from the East along Veirs Mill Road	10%	20%
To/from the East along Ritchie Parkway	25%	10%
To/from the South along Rockville Pike	20%	20%

Table 2.2.2 Intersection CLV Based on Current Traffic and Approved Development

Group B Movement Pattern	Previous Assumption (from Twinbrook Station TR)	Revised Assumption (per City staff advisory)
To/from the North along Rockville Pike	25%	20%
To/from the North along First Street/Norbeck Road	6%	6%
To/from the West along Wootton Parkway	3%	3%
To/from the Northwest along Jefferson Street	2%	2%
To/from the East along Veirs Mill Road	1%	1%
To/from the South along Aspen Hill Road	8%	8%
To/from the East along Randolph Road	12%	12%
To/from the South along Rockville Pike	16%	21%
To/from the West along Montrose Road	27%	27%

Each of these distribution movement patterns was tied to the related turning movements at a given intersection. If a portion of a particular development project's anticipated traffic generation passed through one of these points, that number was assigned to the relevant traffic movements in each of the Pike study area intersections through which it would pass.

2.3 Aggregation of New Traffic Volumes

The traffic volumes resulting from the trip generation and distribution in Sections 2.1 and 2.2 were added back to the February 2008 to estimate the actual traffic likely to use the roadway system once this development is constructed. The volumes to be added were calculated by applying the regional distribution factors to specific turns at each intersection studied and adding the resulting turn movements to the current intersection volumes. Tables 2.3.1 and 2.3.2 (on the following pages) depict existing and new volumes for AM and PM peak hours, respectively.

2.4 Calculation of Critical Lane Volumes

The planning team used the Critical Lane Volume method described in the City of Rockville's *Comprehensive Transportation Review Guidelines* (CTR) to calculate critical lane volume for each intersection in the Pike study area in both AM and PM peak hours. The team compared this volume to the City's accepted thresholds, which may vary from intersection to intersection and even from one peak hour to the other based on the specific signal timing and phasing, to determine remaining capacity in terms of CLV.

The City's description of its methodology uses a two-phase signal timing scheme as its example. Many of the study area signals' use more complex phasing than this, often allowing lead-lag phasing to give left turn movements at least partial protection. In the cases where a left turn movement is given protected-permissive phasing, the number of left turns to be counted against the opposite direction's through movements was modified based on an assumption of free-flow turn lanes. This assumption was that 1,200 vehicles per hour can clear a free-flow turn lane, and the number of peak-hour left turning vehicles able to clear during a protected left turn phase would be that fraction of the hour given to all occurrences of this phase multiplied by 1,200.

CLV was calculated in this manner for both AM and PM peak hours. Several intersections show a deficiency of capacity suggesting that they cannot accommodate added traffic through development. The significant portions of traffic moving to and from locations outside of the immediate Rockville Pike study area further suggest that the corridor in general is limited in accommodating new traffic as well. This is discussed in greater detail in Section 4 of this memorandum.

Table 2.3.1 AM Traffic Counts with Additions for Approved Development

	Rockville Pike and Jefferson (MD 28) - Veirs Mill											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	0	422	471	0	953	796	252	645	0	497	2722	48
Added Counts from Development	0	5	14	9	79	15	199	105	5	14	173	0
Total Counts with Development	0	427	485	9	1032	811	451	750	5	511	2895	48
	Rockville Pike and Richard Montgomery - Dodge											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	30	63	84	32	83	9	65	859	15	0	3310	37
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	30	63	84	32	83	9	65	859	15	0	3310	37
	Rockville Pike and Wootton Parkway - 1st Street											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	163	278	32	382	559	47	45	935	151	32	1706	160
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	163	278	32	382	559	47	45	935	151	32	1706	160
	Rockville Pike and Edmonston Drive											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	0	213	345	115	361	110	96	1058	24	30	2093	10
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	0	213	345	115	361	110	96	1058	24	30	2093	10
	Rockville Pike and Country Club-Best Buy Entrance											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	3	0	6	9	2	9	15	601	6	31	3012	25
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	3	0	6	9	2	9	15	601	6	31	3012	25
	Rockville Pike and Templeton Place											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	31	5	24	38	5	5	75	1061	12	12	2486	17
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	31	5	24	38	5	5	75	1061	12	12	2486	17

Rockville Pike and Congressional Lane

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	163	10	62	29	19	16	50	1137	10	38	2568	208
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	163	10	62	29	19	16	50	1137	10	38	2568	208

Rockville Pike and Halpine

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	51	76	77	27	45	140	34	851	16	200	2489	28
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	51	76	77	27	45	140	34	851	16	200	2489	28

Rockville Pike and Twinbrook-Rollins

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	3	232	95	1	343	52	71	890	119	180	1935	29
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	3	232	95	1	343	52	71	890	119	180	1935	29

Rockville Pike and Federal Plaza Entrance

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	2	1	55	5	2	17	25	1012	18	18	2265	18
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	2	1	55	5	2	17	25	1012	18	18	2265	18

Rockville Pike and Bou Avenue

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	2	1	55	5	2	17	25	1012	18	18	2265	18
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	2	1	55	5	2	17	25	1012	18	18	2265	18

Rockville Pike and Hubbard Drive

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	15	2	13	84	7	28	33	1412	98	56	2476	25
Added Counts from Development	0	0	0	0	0	0	0	0	0	0	0	0
Total Counts with Development	15	2	13	84	7	28	33	1412	98	56	2476	25

Table 2.3.2 PM Traffic Counts with Additions for Approved Development

	Rockville Pike and Jefferson (MD 28) - Veirs Mill											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	0	640	370	0	484	460	425	1543	1	629	1480	77
Added Counts from Development	0	73	181	14	25	24	64	306	17	22	231	0
Total Counts with Development	0	713	551	14	509	484	489	1849	18	651	1711	77
	Rockville Pike and Richard Montgomery - Dodge											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	111	101	190	43	36	9	146	1841	25	0	1882	31
Added Counts from Development	0	0	0	0	0	0	0	387	0	0	426	0
Total Counts with Development	111	101	190	43	36	9	146	2228	25	0	2308	31
	Rockville Pike and Wootton Parkway - 1st Street											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	182	492	5	244	323	53	115	1681	405	88	1421	89
Added Counts from Development	60	2	30	51	1	26	40	301	71	46	278	102
Total Counts with Development	242	494	35	295	324	79	155	1982	476	134	1699	191
	Rockville Pike and Edmonston Drive											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	0	332	231	67	158	103	270	2099	104	214	1427	40
Added Counts from Development	0	0	0	1	0	0	0	412	1	0	359	0
Total Counts with Development	0	332	231	68	158	103	270	2511	105	214	1786	40
	Rockville Pike and Country Club-Best Buy Entrance											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	9	1	4	59	0	16	13	2315	30	43	2177	18
Added Counts from Development	0	0	0	0	0	0	0	411	0	0	358	0
Total Counts with Development	9	1	4	59	0	16	13	2726	30	43	2535	18
	Rockville Pike and Templeton Place											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	108	3	71	66	3	12	33	2757	22	20	1587	30
Added Counts from Development	0	0	0	0	0	0	0	411	0	0	358	0
Total Counts with Development	108	3	71	66	3	12	33	3168	22	20	1945	30
	Rockville Pike and Congressional Lane											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	417	31	124	106	31	78	348	3081	7	59	1707	206
Added Counts from Development	-1	0	-3	0	0	0	-6	412	0	0	361	-3
Total Counts with Development	416	31	121	106	31	78	342	3493	7	59	2068	203

	Rockville Pike and Halpine											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	122	73	112	63	169	308	153	3088	25	148	1645	32
Added Counts from Development	0	0	0	3	0	0	0	406	0	1	357	0
Total Counts with Development	122	73	112	66	169	308	153	3494	25	149	2002	32

	Rockville Pike and Twinbrook-Rollins											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	3	303	112	2	364	134	89	2508	182	200	1556	31
Added Counts from Development	-13	-3	-27	0	-3	72	-27	619	0	98	865	-13
Total Counts with Development	-10	300	85	2	361	206	62	3127	182	298	2421	18

	Rockville Pike and Federal Plaza Entrance											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	97	14	158	18	23	47	188	2142	40	47	1707	23
Added Counts from Development	0	0	0	0	0	0	0	592	0	0	838	0
Total Counts with Development	97	14	158	18	23	47	188	2734	40	47	2545	23

	Rockville Pike and Bou Avenue											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	31	43	46	307	34	15	43	1912	437	116	1444	8
Added Counts from Development	0	0	0	0	0	0	0	592	0	0	838	0
Total Counts with Development	31	43	46	307	34	15	43	2504	437	116	2282	8

	Rockville Pike and Hubbard Drive											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Counts	49	14	39	161	7	129	42	2500	252	132	2004	17
Added Counts from Development	0	0	0	0	0	0	0	592	0	0	838	0
Total Counts with Development	49	14	39	161	7	129	42	3092	252	132	2842	17

3.0 OUTCOMES OF CLV ANALYSIS

The results of the CLV analysis are given in the table below. Highlighted items represent those intersections exceeding the City-adopted CLV standard for that intersection. CLV standards vary by intersection based on the number of phases and cycle lengths. The maximum intersection capacity MD 355 does not exceed 1600 and 1700 vehicles per hour in the A.M. and P.M. peak hours, respectively.

Table 3.0.1 Intersection CLV Based on Current Traffic and Approved Development

TAZ	Intersection	AM CLV	Intersection CLV Standard	AM Remaining CLV	AM V/C	AM LOS	PM CLV	Intersection CLV Standard	PM Remaining CLV	PM V/C	PM LOS
714	Jefferson - Veirs Mill	**1908**	**1500**	**-408**	**1.27**	**F**	**1695**	**1650**	**-45**	**1.03**	**F**
	Richard Montgomery - Dodge	1507	1600	93	0.94	E	1184	1700	516	0.70	C
695	Wootton Parkway - 1st Street	**1425**	**1400**	**-25**	**1.02**	**F**	**1594**	**1550**	**-44**	**1.03**	**F**
	Edmonston	1447	1600	153	0.90	E	1637	1650	13	0.99	E
	Templeton	1134	1500	366	0.76	C	1355	1650	295	0.82	D
696	Country Club - Best Buy	1233	1500	267	0.82	D	1149	1650	501	0.70	C
691	Congressional Lane	1231	1400	169	0.88	D	**1731**	**1550**	**-181**	**1.12**	**F**
	Halpine	1141	1500	359	0.76	C	**1682**	**1650**	**-32**	**1.02**	**F**
	Rollins - Twinbrook	1093	1500	407	0.73	C	**1688**	**1650**	**-38**	**1.02**	**F**
Outside of City	Federal Plaza - Pike Center	1017	1500	483	0.68	B	1185	1650	465	0.72	C
	Bou	1100	1400	300	0.79	C	1266	1550	284	0.82	D
	Hubbard - Flagship Center	1152	1600	448	0.72	C	1594	1700	106	0.94	E

As the table shows, several intersections already exceed available capacity under the CLV calculation method. And although an intersection may have available CLV capacity in one peak period, the lesser capacity of the two peak hours is effectively what it can accommodate, as built development and physical street infrastructure cannot be changed from one peak hour to the other. This does not mean that these intersections absolutely cannot handle more development. It is worth bearing in mind that CLV is derived from the dominant direction of movement in each traffic signal phase, and in several cases there is significant 'space' left in the non-dominant direction to handle more traffic before balance of CLV between different component phases of an intersection is changed. Nonetheless, the CLV method is the City's adopted standard, and intersections already unable to add traffic capacity may be considered effective constraints on new development.

Although the minimum scale of development review requires consideration of only four adjacent intersections to a particular development's site, the distribution of intersections already exceeding CLV complicates the selection of any site that would be able to avoid consideration of at least one of them.

4.0 ADDITION OF MID-PIKE PLAZA

Montgomery County is in the process of approving a major development to the south of the Rockville city limits, Mid-Pike Plaza. Although not in the City of Rockville's municipal jurisdiction, the scale of this development suggests that it will have noticeable impact on the Pike and other transportation facilities nonetheless. The original

development potential estimated through the steps described in Sections 2.1 through 2.4 was recalculated with this development in mind. The intent of this was to demonstrate the difference in potential between the smaller-scale developments that the Rockville portion of the Pike currently supports (as a function of potential site yield, itself a balance of parking requirement and useable floor area) and the development potential that would remain if a major project outside of Rockville's city limits is approved and constructed.

The Mid-Pike Plaza trip generation was calculated based on the ITE *Trip Generation Handbook*. It assumed a development program equivalent to 90 percent of each of the specific land use categories as specified by Federal Realty in its initial program estimates; this slightly reduced program was assumed to account for constraints and inefficiencies in site layout that may keep a developer from realizing the fully entitled program. In addition, a 10 percent internal capture rate and 10 percent pass-by trip rate were assumed for the development to recognize its variety of complementary land uses and its large retail component. Trips were assigned to the roadway network using the Pattern B distribution, meaning that any southbound trips from the development were not counted in the Rockville Pike corridor.

The following table details the resulting CLV of Rockville Pike intersections after the addition of Mid-Pike Plaza traffic.

Table 4.0.1 Intersection CLV Based on Current and Approved Traffic, including Mid-Pike Plaza

TAZ	Intersection	AM CLV	Intersection CLV Standard	AM Remaining CLV	AM V/C	AM LOS	PM CLV	Intersection CLV Standard	PM Remaining CLV	PM V/C	PM LOS
714	Jefferson - Veirs Mill	**1931**	**1500**	**-431**	**1.29**	**F**	**1813**	**1650**	**-163**	**1.10**	**F**
	Richard Montgomery - Dodge	1531	1600	69	0.96	E	1251	1700	449	0.74	C
695	Wootton Parkway - 1st Street	**1474**	**1400**	**-74**	**1.05**	**F**	**1651**	**1550**	**-101**	**1.07**	**F**
	Edmonston	1482	1600	118	0.93	E	**1718**	**1650**	**-68**	**1.04**	**F**
	Templeton	1168	1500	332	0.78	C	1436	1650	214	0.87	D
696	Country Club - Best Buy	1268	1500	232	0.85	D	1231	1650	419	0.75	C
691	Congressional Lane	1265	1400	135	0.90	E	**1813**	**1550**	**-263**	**1.17**	**F**
	Halpine	1175	1500	325	0.78	C	**1763**	**1650**	**-113**	**1.07**	**F**
	Rollins - Twinbrook	1127	1500	373	0.75	C	**1846**	**1650**	**-196**	**1.12**	**F**
Outside of City	Federal Plaza - Pike Center	1051	1500	449	0.70	C	1297	1650	353	0.79	C
	Bou	1135	1400	265	0.81	D	1378	1550	172	0.89	D
	Hubbard - Flagship Center	1187	1600	413	0.74	C	**1706**	**1700**	**-6**	**1.00**	**F**

The addition of this development suggests that Rockville is likely to experience additional traffic and impacts as expressed in CLV, even if it no longer approves its own development. The regional nature of traffic and travel patterns in Montgomery County means that traffic typically passes through multiple jurisdictions, and that traffic impacts may be experienced by communities not immediately responsible for approving the development that generated these impacts.

5.0 POTENTIAL ADDITIONS OF FUTURE DEVELOPMENT

The City's Comprehensive Transportation Review (CTR) only requires measurement of intersection capacity and determination of development traffic impact when a development is expected to generate at least 30 trips in the peak travel hour. Although it is theoretically possible for development to be permitted when it generates traffic below this threshold, such a pattern of development is not consistent with the vision of the *Rockville's Pike* plan, nor is it likely to occur given the current land values of the corridor and the costs of development. In particular, this kind of an approach to allowing development is potentially threatening to larger developments proposed at future dates along the Rockville Pike corridor—when those developments undertake the CTR process in conjunction with their applications, the traffic counts they collect as the basis for their analysis will reflect the impacts and reduction in available intersection capacity coming from this added small-scale development. The City's CTR also emphasizes an acknowledgement of the potential impacts of small-scale development:

> *"The intent of the off-site threshold may not be circumvented through the submission of piecemeal development and permit applications or other approval requests. Upon submitting a preliminary plan of subdivision that generates less than 30 total peak hour site trips, the applicant must agree in writing that if future applications or approval requests result in 30 or more total peak hour site trips generated at one location, then the applicant will be required to complete and submit all TR components for the cumulative development package."*

5.1 Testing a Sample Development Project

To consider the conditions that a development more representative of the plan's vision would face, a hypothetical concept development project in the middle section of the Pike study area was tested for impact. Based on the critical lane volumes of intersections as reported in Table 3.0.1, at first glance it may appear that the area near the Best Buy entrance and Templeton Place intersection is the best suited to accommodate additional traffic impact. This location includes the portion of TAZ 696 within the Pike study area, the only TAZ not to have a currently failing intersection. Using a conceptual development program featuring vertical mixed uses such as those envisioned in the *Rockville's Pike* plan, a development in this area could feasibly include between 50,000 and 100,000 square feet of retail space and between 400 and 600 residential dwelling units. Considering either end of these ranges for both land uses, this would result in such potential traffic additions as shown in the table below:

Table 5.1.1 Potential Development Scenarios from Conceptual Development Program for Middle Pike development

Development Increment	AM Peak Hour Trips	PM Peak Hour Trips	Total Daily Trips
Concept A: 50K SF retail, 400 dwelling units	303	627	6,881
Concept B: 50K SF retail, 600 dwelling units	401	733	8,196
Concept C: 100K SF retail, 400 dwelling units	356	857	9,345
Concept D: 100K SF retail, 600 dwelling units	454	962	10,659

One important factor to consider in the CLV method of capacity calculation is that not all trips 'added' to an intersection will impact that intersection's composite CLV measure. This is because the composite CLV is a sum of the 'heaviest' directional volumes in each major set of movements through the intersection. For example, if a northbound movement is heavier than its opposing southbound movement but these two movements occur during

the same signal phase (which is a common occurrence and the typical model of signal timing on Rockville Pike), traffic volume added to the southbound movement through new development does not factor into the CLV measure unless it causes the southbound volume to exceed the northbound volume, thus becoming the new critical volume for that phase.

The City of Rockville's CTR requirements list the following as the minimum number of intersections to be studied in a Transportation Review. These numbers of intersections are determined by the peak hour trip generation from a proposed development.

Table 5.1.2 City CTR Requirements for Traffic Impact Study Area

New Peak Hour Site Trips	Minimum Number of Intersections to be analyzed (or all intersections within specified distance radius, whichever is greater)
0-29	No intersection study needed (Transportation Review not required)
30-150	4
151-350	8
351-700	12 or all intersections within a 0.45-mile radius
More than 700	16 or all intersections within a 0.5-mile radius

As the table of expected trip generation illustrates, even the minimum-intensity scenario as described in the concept development would generate 627 peak hour trips, enough to warrant study of 12 signalized intersections along Rockville Pike (the greater number of the two choices, as a 0.45-mile radius from the site only includes intersections along Rockville Pike). In the PM peak hour, assuming that this development follows the traffic distribution Pattern A, this sends 80 percent of exiting trips northbound (which is the peak direction of travel and usually defines the critical lane volume for the northbound/southbound signal phase) from this section of the Pike. The intersections of Templeton and Edmonston currently have capacity to absorb additional northbound development, although Edmonston has only 13 CLV vehicles remaining in its capacity. As the northbound movements determine capacity in the overall CLV measure, the expected addition of northbound vehicles would exceed this number, causing the intersection's overall CLV to exceed its threshold amount and fall to a failing level of service. Beyond this, the requirement of examining 12 intersections also needs to include Wootton Parkway and Maryland SR 28, which do not have capacity under existing conditions. Addition of northbound traffic to this intersection will only increase its overall CLV, as the northbound movement is already one of the critical volumes used to generate the component CLV.

The analysis of this minimum-intensity scenario is detailed in Table 5.1.3 on the following page, using the PM peak hour as the basis for analysis due to its higher impact from the proposed development program and because the PM peak hour already has a higher number of capacity limitations. The sample development discussed used Concept A from Table 5.1.1 and compared it to the available capacity in Table 3.0.1, or Rockville Pike traffic with approved development but *not* including the Mid-Pike Plaza in Montgomery County.

Table 5.1.3 PM Peak Hour Trips Generated from Middle Pike Concept Development

	Volume	Intersections where this volume can be absorbed in critical northbound/ southbound volume (with remaining CLV capacity)	Intersections where this volume cannot be absorbed in critical northbound/southbound volume
Inbound Trips	347		
Coming from South per Pattern A	69	Hubbard (up to 106) Bou (up to 284) Federal Plaza (up to 465) Country Club-Best Buy (NBL + EBL + EBR can equal up to 501)	Templeton (up to 295) Congressional (CLV determined by northbound, already exceeded by 181) Halpine (CLV already exceeded by 32) Twinbrook-Rollins (CLV already exceeded by 38)
Coming from North per Pattern A	278	Richard Montgomery-Dodge (up to 516) Edmonston (up to 292 SB vehicles before SB becomes dominant movement in phase and determines intersection CLV)	Jefferson-Veirs Mill (CLV determined by both northbound and southbound movements; already exceeded by 45) Wootton Parkway (northbound is greater by 104 trips and currently determines intersection CLV; Pattern A would assign 60 percent of all inbound trips, or 208 trips, to SBT and thus increase existing CLV over threshold)
Outbound Trips	280		
Traveling South per Pattern A	56	Templeton (up to 295) Congressional (up to 527 SB vehicles before SB becomes dominant movement in phase and determines intersection CLV) Halpine (up to 552 SB vehicles before SB becomes dominant movement in phase and determines intersection CLV) Twinbrook-Rollins (up to 261 SB vehicles before SB becomes dominant movement in phase and determines intersection CLV) Federal Plaza (up to 70 SB vehicles before SB becomes dominant movement in phase and determines intersection CLV; 465 CLV vehicles remain in capacity beyond that) Bou (up to 82 SB vehicles before SB becomes dominant movement in phase and determines intersection CLV; 284 CLV vehicles remain in capacity beyond that) Hubbard (up to 179 SB vehicles before SB becomes dominant movement in phase and determines intersection CLV; 106 CLV vehicles remain in capacity beyond that)	None
Traveling North per Pattern A	224	Country Club-Best Buy (NBL + EBL + EBR can equal up to 501)	Edmonston (CLV determined by northbound, only has capacity for 13 vehicles) Wootton Parkway (CLV already exceeded by 44) Jefferson-Veirs Mill (CLV already exceeded by 45)

It is worth noting that even the lowest-intensity scenario has several limitations relative to intersection CLV capacity. Although the CLV capacity measurement method can allow intersections to add traffic without affecting overall CLV (only if that traffic movement does not occur in the direction of critical volume), the traffic distribution models used in this analysis have both assigned traffic in both directions. In some cases, this sample development would add trips that would directly affect overall CLV of some intersections, many of which are already in excess of their CTR-determined thresholds. Traffic added to the peak direction in intersections that are already failing under the CLV method will only increase their volume-to-capacity ratio past 1.00 which, according to the City CTR process, either requires that the development applicant will need to mitigate this impact through costly physical improvements to the Pike intersections or suggests that the development cannot be permitted. For this reason, even the traffic analysis zone summaries of capacity do not necessarily reflect if and where development can be accommodated: based on the City's CTR requirements, the area of analysis is all but guaranteed to include intersections already unable to accept more vehicle trips in the peak hour.

6.0 RESULTS AND CONCLUSIONS

The City's current CLV standard results in several intersections not having adequate capacity for traffic movement. This effectively limits development along the Rockville Pike corridor and presents challenges in implementation of the Rockville's Pike plan.

6.1 Conclusions

The City's CTR system of development review does not readily allow development consistent with the *Rockville's Pike* plan vision to occur in the planning area. Development on a small scale (i.e. generating fewer than 30 vehicle trips in the peak travel hour) may occur, but this development does not serve to implement the vision plan and further reduces the corridor's capacity to accommodate new development. The City may consider the following alternative approaches if it wishes to accommodate new growth and development.

a. Implement engineering-based changes that increase intersection capacity. In many cases on Rockville Pike, intersection congestion occurs not only because of the volume of traffic using the intersection but also the ways in which that traffic is operating.

These changes can include physical changes to the roadway and intersection design, such as the addition of turn lanes. They can also include changes to traffic control, such as the replacement of signal infrastructure to allow different turning movement patterns and the re-phasing and retiming of signals to improve efficiency. Throughout the *Rockville's Pike* planning process, the planning team noted constraints to right-of-way, although these are not universally located along the corridor and some intersections may have opportunities to use this approach.

Increases in capacity from engineering-based solutions will allow additional traffic to pass through the intersection while maintaining acceptable levels of service. For this reason, any such approaches should be considered in tandem with an increase in CLV, primarily so that any commitment of resources to implement engineering changes is not foregone by a standard of measurement that does not recognize them.

b. Increase the CLV standard. As demonstrated in Table 3.0.1, certain intersections already exceeding the CTR-determined CLV threshold would not be in excess if the standard were to be raised. This would not require physical changes to street and roadway infrastructure but would rather adjust the City's adequate public facility policy to permit additional traffic in dominant movements.

As the City CTR specifies different CLV thresholds dependent on a specific intersection's signal cycle length and phasing, the amount by which standards could be increased would vary. However, if Mid-Pike Plaza is not considered, increasing CLV thresholds by 100 for each cycle length-phasing combination would restore each intersection except Congressional Lane to an acceptable level of service and open a greater range of the corridor to accommodating new development. If Mid-Pike Plaza is considered, this would need to be raised by a greater amount.

c. Develop a broader set of concurrency review measures, focused more on the corridor and the Plan area than on specific intersections. A focus on intersections as a basis for concurrency and adequate public facility management may pose problems when certain intersections reach their capacity limits. This is especially true in corridor-based districts, where the principal thoroughfare inevitably carries a large share of local traffic generated within the corridor. In these cases, traffic impact from new development is often reviewed over a greater length of the corridor than simply at the single intersection where development is located.

The draft Plan introduces a variety of techniques in use in other communities across the United States in order to introduce such an alternative system. Among other suggestions, it proposes the establishment of an infrastructure capacity tracking system where land uses—even after development is approved and the use is permitted occupancy—that demonstrate a reduction in vehicle impact restore capacity to the system. Most notably, the draft Plan recommends developing policies that strive for a greatly reduced share of trips related to the Pike being made by single-occupant vehicles, pointing to the Pike's two Metrorail stations, Montgomery County Ride On Transit, and an enhanced street network and the potential for pedestrian access that it suggests as ways to achieve this modal transfer. This in turn is intended to allow development projects to seek a greater program yield by creating an environment in which parking requirements can be relaxed or reduced in conjunction with a multimodal approach to travel demand management. Although the draft Plan's suggestions have been used in environments similar to the Rockville Pike corridor, they should be refined and vetted against complementary policies and current political will in order to develop a formal policy of multi-modal, place-based concurrency review.

6.2 Substitution of Development Program through Traffic Impact Equivalency

In the course of its development review process, the City may wish to use a traffic impact equivalency system to work with applicants to try to mitigate impact by pursuing different development program components. Table 6.2.1 on the following page is a sample matrix to facilitate the application of such a system. It is based on rates of PM peak hour traffic impact for a variety of land uses as reported in the ITE *Trip Generation Handbook* and provides multipliers to determine 'exchange rates' for different land uses based on an equal amount of traffic impact. Its intent is to allow a development applicant flexibility in changing components of the land use program once development has been approved without requiring the applicant to undergo further review of the modification. In short, once a certain level of traffic generation has been reviewed and approved, the applicant may use the equivalency system to substitute land uses provided that the resulting traffic generation stays within the approved amount.

Table 6.2.1 Equivalency Matrix for Substituting Development Program on Traffic Impact[2]

FROM \ TO	Single Family (DU)	Multi-Family (DU)	Townhouse/ Condo (DU)	Senior Housing, Detached (DU)	Senior Housing, Attached (DU)	Hotel (Rooms)	Retail (0-49 KSF)	Retail (50-99 KSF)	Retail (100-199 KSF)	Retail (200-299 KSF)	Retail (300-399 KSF)	Retail (400-499 KSF)
Single Family (DU)	1.00 DU	1.08 DU	1.29 DU	2.58 DU	6.09 DU	0.94 Rms	0.07 KSF	0.10 KSF	0.12 KSF	0.15 KSF	0.16 KSF	0.18 KSF
Multi-Family (DU)	0.93 DU	1.00 DU	1.19 DU	2.38 DU	5.64 DU	0.87 Rms	0.06 KSF	0.09 KSF	0.11 KSF	0.13 KSF	0.15 KSF	0.16 KSF
Townhouse/Condo (DU)	0.78 DU	0.84 DU	1.00 DU	2.00 DU	4.73 DU	0.73 Rms	0.05 KSF	0.08 KSF	0.10 KSF	0.11 KSF	0.13 KSF	0.14 KSF
Sr. Housing, Detached (DU)	0.39 DU	0.42 DU	0.50 DU	1.00 DU	2.36 DU	0.37 Rms	0.03 KSF	0.04 KSF	0.05 KSF	0.06 KSF	0.06 KSF	0.07 KSF
Sr. Housing, Attached (DU)	0.16 DU	0.18 DU	0.21 DU	0.42 DU	1.00 DU	0.15 Rms	0.01 KSF	0.02 KSF	0.02 KSF	0.02 KSF	0.03 KSF	0.03 KSF
Hotel (Room)	1.06 DU	1.15 DU	1.37 DU	2.73 DU	6.45 DU	1.00 Rms	0.07 KSF	0.10 KSF	0.13 KSF	0.15 KSF	0.17 KSF	0.19 KSF
Retail (0-49 KSF)	15.04 DU	16.26 DU	19.38 DU	38.77 DU	91.64 DU	14.20 Rms	1.00 KSF	1.46 KSF	1.84 KSF	2.19 KSF	2.46 KSF	2.68 KSF
(50-99 KSF)	10.33 DU	11.16 DU	13.31 DU	26.62 DU	62.91 DU	9.75 Rms	0.69 KSF	1.00 KSF	1.27 KSF	1.50 KSF	1.69 KSF	1.84 KSF
(100-199 KSF)	8.16 DU	8.82 DU	10.52 DU	21.04 DU	49.73 DU	7.70 Rms	0.54 KSF	0.79 KSF	1.00 KSF	1.19 KSF	1.33 KSF	1.45 KSF
(200-299 KSF)	6.87 DU	7.42 DU	8.85 DU	17.69 DU	41.82 DU	6.48 Rms	0.46 KSF	0.66 KSF	0.84 KSF	1.00 KSF	1.12 KSF	1.22 KSF
(300-399 KSF)	6.12 DU	6.61 DU	7.88 DU	15.77 DU	37.27 DU	5.77 Rms	0.41 KSF	0.59 KSF	0.75 KSF	0.89 KSF	1.00 KSF	1.09 KSF
(400-499 KSF)	5.61 DU	6.06 DU	7.23 DU	14.46 DU	34.18 DU	5.30 Rms	0.37 KSF	0.54 KSF	0.69 KSF	0.82 KSF	0.92 KSF	1.00 KSF
Fast Food Rest.	49.97 DU	54.00 DU	64.38 DU	128.77 DU	304.36 DU	47.15 Rms	3.32 KSF	4.84 KSF	6.12 KSF	7.28 KSF	8.17 KSF	8.90 KSF
High Turnover Rest.	16.21 DU	17.52 DU	20.88 DU	41.77 DU	98.73 DU	15.30 Rms	1.08 KSF	1.57 KSF	1.99 KSF	2.36 KSF	2.65 KSF	2.89 KSF
Quality Rest.	11.18 DU	12.08 DU	14.40 DU	28.81 DU	68.09 DU	10.55 Rms	0.74 KSF	1.08 KSF	1.37 KSF	1.63 KSF	1.83 KSF	1.99 KSF
Bank (KSF)	81.75 DU	88.34 DU	105.33 DU	210.65 DU	497.91 DU	77.14 Rms	5.43 KSF	7.91 KSF	10.01 KSF	11.91 KSF	13.36 KSF	14.57 KSF
Convenience w/Gas (KSF)	90.46 DU	97.76 DU	116.56 DU	233.12 DU	551.00 DU	85.37 Rms	6.01 KSF	8.76 KSF	11.08 KSF	13.18 KSF	14.78 KSF	16.12 KSF
Movie Theater (Seats)	0.21 DU	0.23 DU	0.27 DU	0.54 DU	1.27 DU	0.20 Rms	0.01 KSF	0.02 KSF	0.03 KSF	0.03 KSF	0.03 KSF	0.04 KSF
Medical Office (KSF)	5.46 DU	5.90 DU	7.04 DU	14.08 DU	33.27 DU	5.15 Rms	0.36 KSF	0.53 KSF	0.67 KSF	0.80 KSF	0.89 KSF	0.97 KSF
Medical Clinic (KSF)	7.73 DU	8.35 DU	9.96 DU	19.92 DU	47.09 DU	7.30 Rms	0.51 KSF	0.75 KSF	0.95 KSF	1.13 KSF	1.26 KSF	1.38 KSF
Hospital (beds)	0.31 DU	0.33 DU	0.40 DU	0.80 DU	1.88 DU	0.29 Rms	0.02 KSF	0.03 KSF	0.04 KSF	0.04 KSF	0.05 KSF	0.05 KSF
Asst. Care Living Facility (units)	0.26 DU	0.28 DU	0.34 DU	0.67 DU	1.59 DU	0.25 Rms	0.02 KSF	0.03 KSF	0.03 KSF	0.04 KSF	0.04 KSF	0.05 KSF
Office (0-49 KSF)	3.19 DU	3.45 DU	4.12 DU	8.23 DU	19.45 DU	3.01 Rms	0.21 KSF	0.31 KSF	0.39 KSF	0.47 KSF	0.52 KSF	0.57 KSF
(50-99 KSF)	3.24 DU	3.50 DU	4.17 DU	8.35 DU	19.73 DU	3.06 Rms	0.22 KSF	0.31 KSF	0.40 KSF	0.47 KSF	0.53 KSF	0.58 KSF
(100-199 KSF)	2.46 DU	2.66 DU	3.17 DU	6.35 DU	15.00 DU	2.32 Rms	0.16 KSF	0.24 KSF	0.30 KSF	0.36 KSF	0.40 KSF	0.44 KSF
(200-299 KSF)	2.15 DU	2.32 DU	2.77 DU	5.54 DU	13.09 DU	2.03 Rms	0.14 KSF	0.21 KSF	0.26 KSF	0.31 KSF	0.35 KSF	0.38 KSF
(300-399 KSF)	2.01 DU	2.18 DU	2.60 DU	5.19 DU	12.27 DU	1.90 Rms	0.13 KSF	0.20 KSF	0.25 KSF	0.29 KSF	0.33 KSF	0.36 KSF
(400-499 KSF)	1.94 DU	2.10 DU	2.50 DU	5.00 DU	11.82 DU	1.83 Rms	0.13 KSF	0.19 KSF	0.24 KSF	0.28 KSF	0.32 KSF	0.35 KSF
Fitness Center	3.08 DU	3.33 DU	3.97 DU	7.94 DU	18.78 DU	2.91 Rms	0.20 KSF	0.30 KSF	0.38 KSF	0.45 KSF	0.50 KSF	0.55 KSF

[2] Units of development for each use are expressed in abbreviations as follows: 'DU' is dwelling unit; 'KSF' is thousands of square feet.

To take the conceptual Middle Pike development as an example, Concept A projected a trip generation of 627 PM peak hour trips, based on 400 multi-family dwelling units and 50,000 square feet of retail. If the City chose to permit this development—leaving aside, for purposes of this discussion, the aforementioned traffic impacts and CLV capacity—it could allow the developer to substitute, for example, 25,000 square feet of retail for 279 additional residential units. Likewise, if the developer desired to add retail beyond this scenario and had already been permitted, s/he could add 10,000 square feet of retail by reducing the residential portion of the program by 112 units. These calculations are detailed as follows:

Table 6.2.2 Example Equivalency-Based Substitutions from Conceptual Middle Pike Development

Substitution Desired	Amount of Adjustment	Equivalent of Component Land Use In Terms of Traffic
Less retail, additional residential	25,000 fewer SF of retail	279 units (1,000 SF of retail is equal to 11.16 multi-family units; 11.16 x 25 = 279)
More retail, less residential	10,000 additional SF	Reduction of 112 units of residential (1,000 SF of retail is equal to 11.16 multi-family units; 11.16 x 10 = 111.6, rounding up a unit as not to exceed agreed-upon traffic amount)
Added office, less residential	20,000 SF of office added to program	Reduction of 69 units of residential (1,000 SF of office is equal to 3.45 multi-family units; 3.45 x 20 = 64.8, rounding up a unit as not to exceed agreed-upon traffic amount)

6.3 Concluding Points on CLV

Revisions to the CLV standard or engineering-based changes, whether related to roadway design or signal timing, may help to realize additional efficiency under the current CLV-based traffic concurrency review system. However, any new development that these changes enable is likely eventually to exhaust the added margin of capacity and introduce a similar set of challenges to those documented in this memorandum. The following points are worthy of attention when considering changes of this nature.

1. CLV is derived based on the dominant travel movements at a given time. For this reason, an intersection near the limits of an adopted CLV standard may actually add more traffic than what appears feasible, provided it is not in the dominant direction and therefore does not alter the balance of individual signal phase CLVs. However, when this occurs, the actual operations of the signal are likely to appear more congested and burdened, mostly because they require a greater share of green time in the signal timing scheme. Many of the heavy northbound and southbound through movements on Rockville Pike are allowed equal signal time, regardless of which is dominant in a given peak hour. However, turning movements and cross-street movements are not necessarily timed in the same way; additions to these movements are likely to require added signal time in order to reduce delay, and this may come at the expense of major movements such as those on Rockville Pike.

2. Increases in CLV may also be exhausted by traffic generated from developments outside of Rockville. If an intersection-specific policy approach is to be retained in the City, it is important to coordinate development review with neighboring jurisdictions to understand the scale of impact and the threshold for concurrency that is acceptable and allows the City to realize added development.