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**DRAFT**

# Twinbrook

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Urban Design Guidelines

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February 11, 2010

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## **Urban Design Guidelines**

### **Twinbrook Sector Plan**

#### ABSTRACT

These guidelines are intended to implement the recommendations in the Twinbrook Sector Plan. They are approved by the Planning Board for staff use in reviewing development proposals and should be used as well by developers in shaping their projects, and by citizens interested in the pattern and character of development in their community.

#### SOURCE OF COPIES

The Maryland-National Capital Park and Planning Commission

8787 Georgia Avenue

Silver Spring, MD 20910-3760

On line at: <http://www.montgomeryplanning.org/community/twinbrook/index.shtm>

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## Principles

Reconfigure existing mobility networks to improve connectivity between neighborhoods and to provide alternatives for moving safely through the area.

Combine responsible natural resource management with public open space design to create integrated and sustainable urban forms.

Promote architectural excellence and encourage sustainable and efficient building design and construction practices.

Implement land use patterns that reinforce successful local businesses and services while encouraging the emergence of complementary new ones.

Identify and incorporate distinctive local character into the development of new and vibrant urban centers.

# Foreword

The Urban Design Guidelines are intended to assist in achieving design excellence in community building. They are part of a creative initiative by the Planning Department to assist in implementing the recommendations in approved and adopted Master Plans or Sector Plans. The structure of the planning process follows:

- Master Plans and Sector Plans – Provide the vision for a specific area
- Zoning Ordinance – Establishes the regulations and implementation tools
- Design Guidelines – Provide the inspiration and paint a graphic picture of the vision

The Design Guidelines are organized as follows:

- Principles – Identify the overarching urban design objectives in accordance with the vision established in the Plan
- Conceptual Framework – Establishes a design concept for each planning area
- Case Studies – Review examples of built projects that illustrate the basic ideas outlined in the Conceptual Framework
- Building Blocks of the Community:
  - Districts: Graphic and written descriptions of the recommended characteristics of each district in accordance with the vision of the Master Plan.
  - Elements: General design guidance for streets, spaces for public use, and buildings

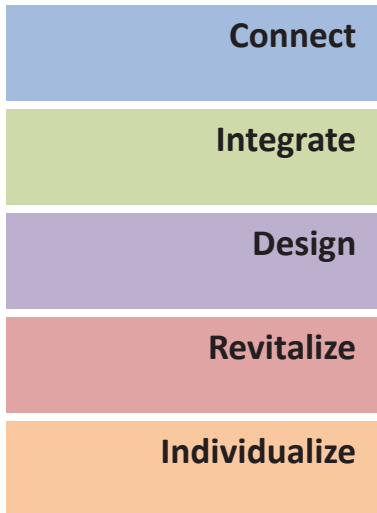
The Guidelines are developed through work with property owners, residents, institutions, interest groups, and the County Executive. They are approved by the Planning Board for use in developing and evaluating proposed building

projects and other applications. They will be revised to reflect new technologies and field conditions, and updated comprehensively at least once every six years.

With the exception of street standards and other specific recommendations included in the Plan, the Guidelines are not regulations that mandate specific forms and locations for buildings and open space. They illustrate how Plan recommendations and principles might be met, and encourage applicants to propose designs that create an attractive and successful public realm by careful consideration of the following:

- Streets – These guidelines conform to the Road Code, and are binding unless a waiver is granted by the Planning Board to achieve context sensitive design. The layouts of local streets are illustrative and not mandated.
- Open Space – The guidelines are illustrative except for specific recommendations for open spaces
- Buildings – The guidelines are illustrative and are intended to create an urban environment.

To allow payment instead of onsite improvements, Section 59-D-2.31 of the Zoning Ordinance requires the Planning Board to issue guidelines. The guidelines establish the opportunity for a payment in lieu of on-site public use space and amenities.





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# Introduction

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## Conceptual Framework

Successful urban centers stitch together different neighborhoods by combining newly developed areas with older, more established communities. In up and coming areas, where densities are low and urban fabric is mostly non-existent, the energy introduced by new development and the efficiency associated with new systems and services are necessary to establish an attractive destination. Creating a synergy between these new enclaves and their older counterparts ensures their longevity.

In larger and more established cities, communities have a consistent urban fabric consolidated over time that often proves malleable enough to allow the city to reposition itself to weather development cycles. To ensure the long term success of any of the County's emerging centers, the creation of such an adaptable urban fabric must be fostered, in conjunction with newly constructed mixed-use development.

Several of the County's emerging centers have areas that can be encouraged to develop organically, to fulfill the role this base fabric plays in major centers. The creation of such urban fabric will be essential

for the endurance of the emerging Twinbrook urban center, and a priority for these Guidelines.

The Twinbrook Sector Plan recommends concentrating biotechnology and technology uses, adding residential uses to improve the balance of jobs and housing, while retaining and maximizing existing light industrial uses that support the advanced technology industry.

The Guidelines use these priorities to create neighborhood character based on encouraging a combination of attitudes toward development, instead of issuing specific design directives. The Twinbrook area will transition from street facing buildings and retail-oriented development near the Metro station, into the high-tech employment district, and then to the manufacturing community and mixed uses of the light industrial district.

Distinctive local character will be achieved by the creative reuse of many existing industrial structures, and by considering the long-term adaptability potential of any proposed construction.

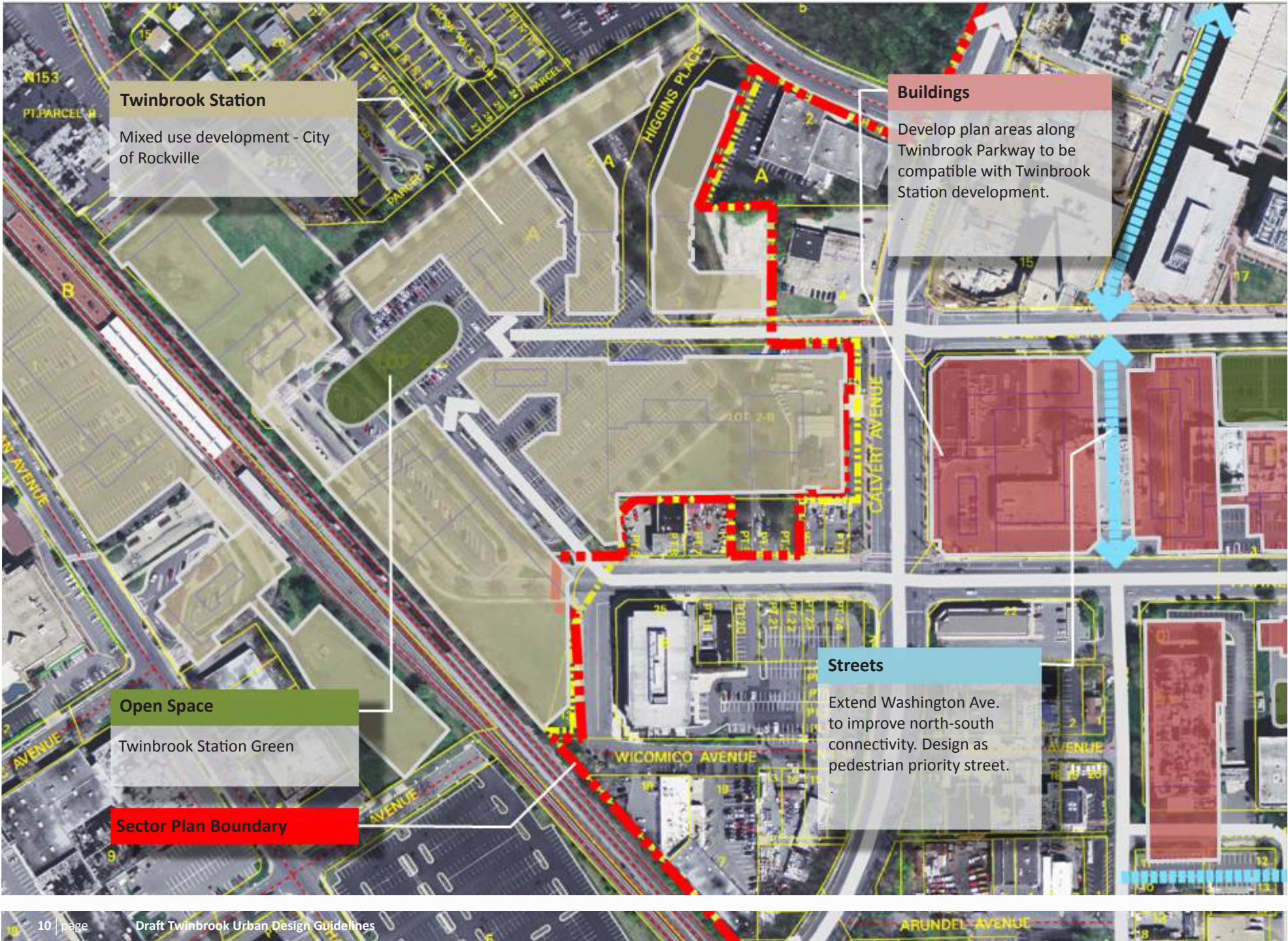


*Twinbrook Station Development  
Rockville, MD*





*Longwood Center Labs, Boston MA :Top  
Alkermes Research Labs, MIT :Middle  
Industrial Live/Work units, Greymouth NZ :Background*



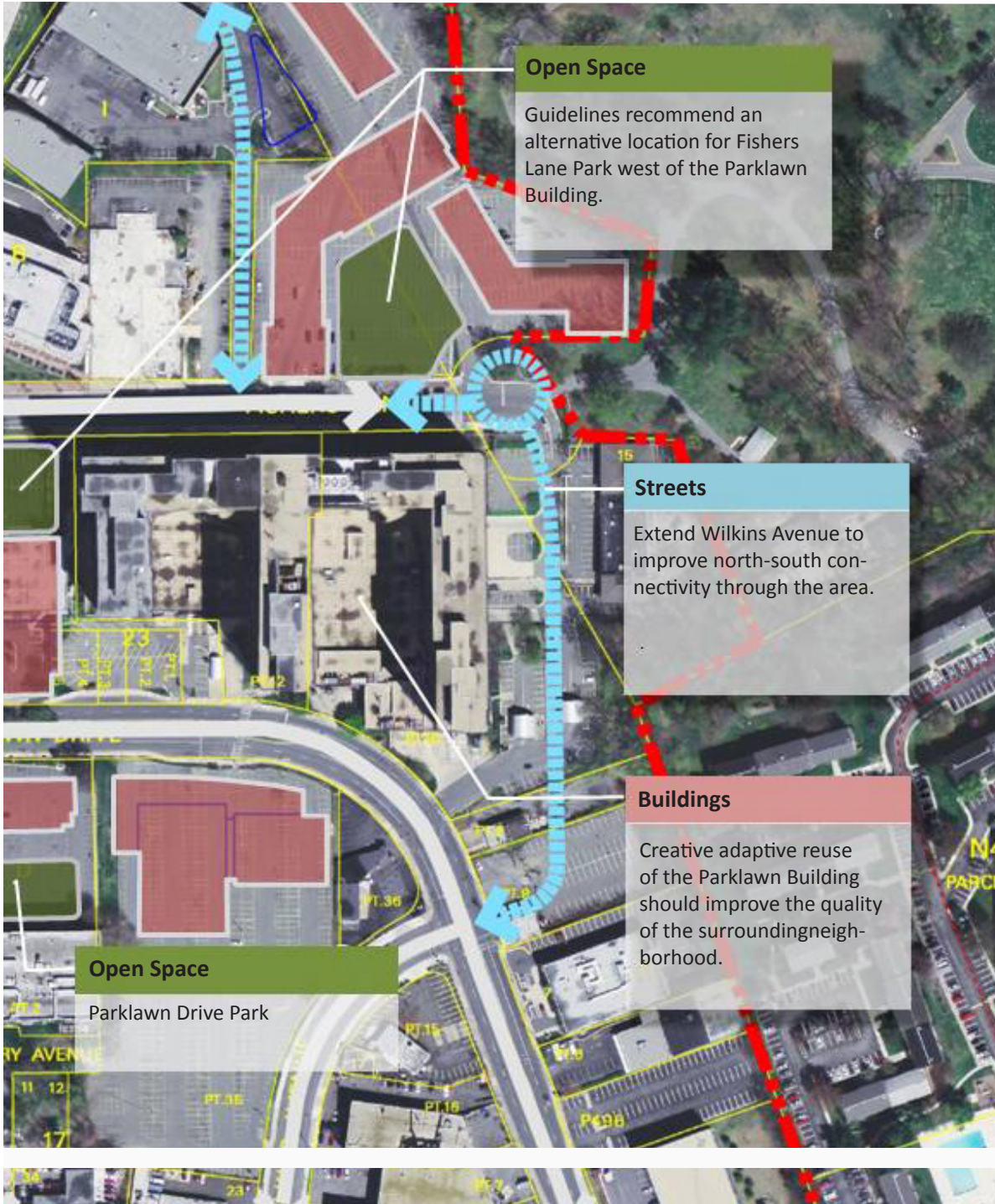
**Twinbrook Station**  
Mixed use development - City of Rockville

**Buildings**  
Develop plan areas along Twinbrook Parkway to be compatible with Twinbrook Station development.

**Open Space**  
Twinbrook Station Green

**Streets**  
Extend Washington Ave. to improve north-south connectivity. Design as pedestrian priority street.

**Sector Plan Boundary**



**Open Space**  
 Guidelines recommend an alternative location for Fishers Lane Park west of the Parklawn Building.

**Streets**  
 Extend Wilkins Avenue to improve north-south connectivity through the area.

**Buildings**  
 Creative adaptive reuse of the Parklawn Building should improve the quality of the surrounding neighborhood.

**Open Space**  
 Parklawn Drive Park

## Opportunities Overview

Twinbrook’s center of activity will be its central corridor, the blocks between Fishers Lane and Parklawn Drive, running east and west to the Plan’s boundaries. The properties and streets will link the employment area with proposed development around the Twinbrook Metro Station, and will include the connections serving as points on entry to the light industrial district to the south.

### Adjacent Development

The proposed redevelopment of areas around the Twinbrook Metro Station will play the primary role in establishing the character along the western edge of the planning area’s central corridor.

### Open Space

Twinbrook Station’s central green will serve as the western anchor for the Fisher’s Lane corridor. The Sector Plan includes recommendations for two additional public spaces (Fisher’s Lane Park and Parklawn Park).

### Streets

Streetscape improvements will be required along existing major roads (Fishers Lane, Parklawn Drive). These improvements will also be extended westward to meet new roads in the proposed development around Metro. In addition, new north-south business roads will complete a network that improves mobility within the area and alleviates congestion at Twinbrook Parkway.

### Buildings

A few key properties present possibilities for extending, improving, and re-establishing local neighborhood character. Recognizing each district has its own distinctive potential, the Design Guidelines use the case studies in the following chapter to illustrate development attitudes that can inform how key properties redevelop.



*Cady's Alley, Washington DC  
Macinturff Architects*

### Relationship to the Twinbrook Sector Plan

The Twinbrook Sector Plan specifically provides for the transformation of:

- Office Buildings - Rezone the Parklawn Building property to allow adaptive reuse that would keep the building viable and generate employees, residents, and street activity at an urban scale.
- Industrial Buildings - Amend industrial zoning to preserve the existing mix of light industrial and retail uses, and to encourage redevelopment on existing small sites, rather than assembled lots, with minimal improvements to the public realm.

A primary goal of the Guidelines is to support the Plan's recommendations for improving the existing urban environment by fostering the creation of sustainable urban fabric. The case studies are intended to expand the discussion on the possibilities of adaptive reuse, while strongly recommending consideration of reuse attitudes similar to those described in the Plan on other existing properties throughout the planning area, as they redevelop.

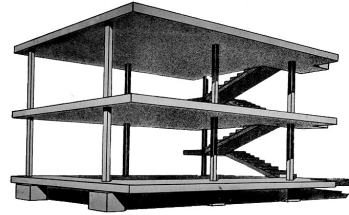
# Case Studies

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## Adaptive Buildings

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## Adaptive Reuse



*Dom-ino House, Le Corbusier*

Existing buildings offer good opportunities for community redevelopment through adaptive reuse. Older structures can be retrofitted for new purposes when original uses become outdated. Architects can change the structure's primary function, while retaining architectural details that make the building unique.

Adaptive reuse is driven by the demand to accommodate changing use, performance, and size requirements needed to maintain the utility of existing buildings. Often spurred by technological factors, fast growing industries in science, technology, and other research-driven fields require flexibility to evolve and expand operations to remain competitive. At the same time, rising energy costs have placed a premium on long-term investments in efficient building technologies and better quality building. Finally, changing lifestyle preferences and household demographics present opportunities to redevelop outmoded structures for previously unimagined uses.

Encouraging a philosophy of adaptive reuse avoids the polar extremes of preservation and demolition, and opposes stylistic imitations solely for the purpose of achieving contextual compatibility. Instead adaptive reuse allows most salient characteristics of existing buildings to be retained for future use while replacing undesirable aspects.



*Feria de Mataderos  
Buenos Aires, Argentina*

## Advantages of Adaptive Reuse

Depending on the structural integrity of an existing building, cost savings could be achieved by adapting and reusing or repurposing key building elements. For nonconforming buildings, renovation and reuse may be the only way to improve a property without sacrificing density on the site.

### *Reduce Construction Waste*

The EPA estimates that 170 million tons of building-related construction and demolition debris was generated in the U.S. in 2003, with 61 percent coming from non-residential sources. Adaptive reuse substantially reduces construction waste by salvaging existing materials while reducing demand for new ones. This process decreases the size of a building's carbon footprint in part by driving down its embodied energy – the energy required for raw material extraction, transport, manufacture, assembly, installation, disassembly, deconstruction and/or decomposition.

### *Build On Existing Character*

A neighborhood's personality is defined by its buildings. The adaptive reuse of buildings can help to anchor a neighborhood and community leading to a social and economic revitalization. Urban form is shaped over multiple generations of building and resident use. Through adaptive reuse there is an opportunity to extend the dialogue between old and new built forms, and to create neighborhoods that are vibrant and visually distinct.

GAS/SSA Teleservice Center, Auburn WA  
TVA Architects



## In Twinbrook



While adaptability could be an applicable principle for all new development in Montgomery County, it is particularly salient in the Twinbrook Sector Plan area where building functions – living, research, government employment, and small business and industrial uses – reflect a need for accommodating change. In the Technology Employment area, anticipated growth of laboratory functions calls for the implementation of adaptable design principles – high ceilings, flexible floor space arrangements, energy efficiency – to ensure the long-term viability of these buildings. At 40-years-old, the 935,000-square-foot Parklawn Building is also ripe for rehabilitation to attract new tenants. Meanwhile, the Twinbrook Sector Plan reaffirms its vision of the Light Industrial area as an incubator for crucial service and small business operations. Located in the oldest part of the Twinbrook neighborhood, development in this area can strengthen the urban fabric by linking and associating with the interspersed warehouses and industrial buildings.

### Adaptability Considerations

Convertible	Adaptable	Divisible	Expandable	Flexible
How can a building be designed to allow its use to change? How can a building accommodate new functions?	How can buildings be taken apart, in part or whole to allow for building expansion, new uses, and enhanced performance?	Can building materials be separated and recycled or repurposed?	How can buildings increase capacity and volume?	How is the building arranged to allow reconfiguration of interior space? How can the floor plan be made more efficient?



## Types of Adaptive Reuse



Multi-tenant Office, San Diego, CA  
Graham Downes Architecture

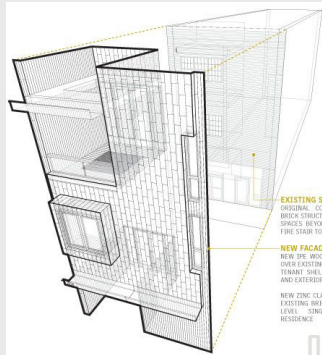


## Conversion

Building conversions result in a change of function, usually due to the obsolescence of the property use or the transition to a new building type.

## Refurbishment

Refurbishment projects result in an improvement of the building's performance, usually including upgrades to the exterior to improve energy efficiency and interior conditions.



EXISTING STRUCTURE  
ORIGINAL CONCRETE AND  
BRICK STRUCTURE AND ALL  
SPICES BEYOND EXISTING  
FIRE STAIR TO REMAIN

NEW FACADE  
NEW STEEL CLADDING  
OVER EXISTING FIRE STAIR,  
TOWER SHAPE, ENTRANCE,  
AND EXTERIOR TERRACE

NEW ZINC CLADDING OVER  
EXISTING BRICK AT UPPER  
LEVEL - SINGLE FAMILY  
RESIDENCE

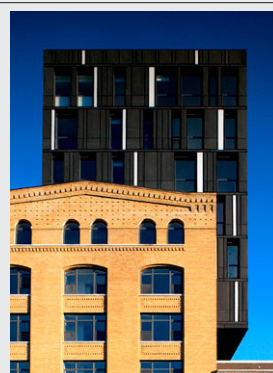
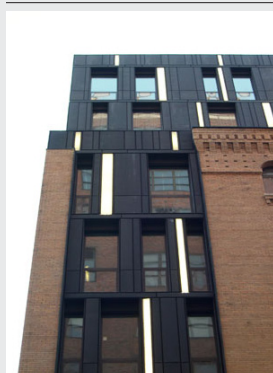
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304 South Gay Street, Knoxville, TN  
Sanders Pace Architecture

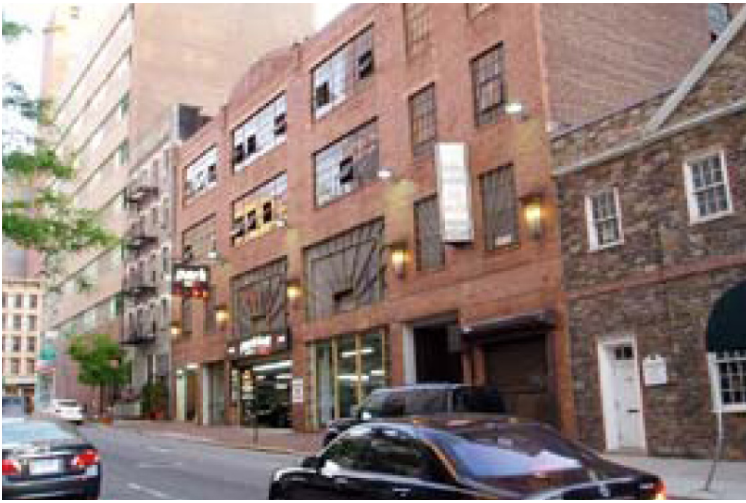
## Renovation / Expansion

Changes in size resulting from renovation and expansion are usually the result of an increasing demand for space to improve, expand or diversify the structure's use.



Porter House, New York, NY  
SHoP Architects

## Buildings



### Parking Garage Conversion

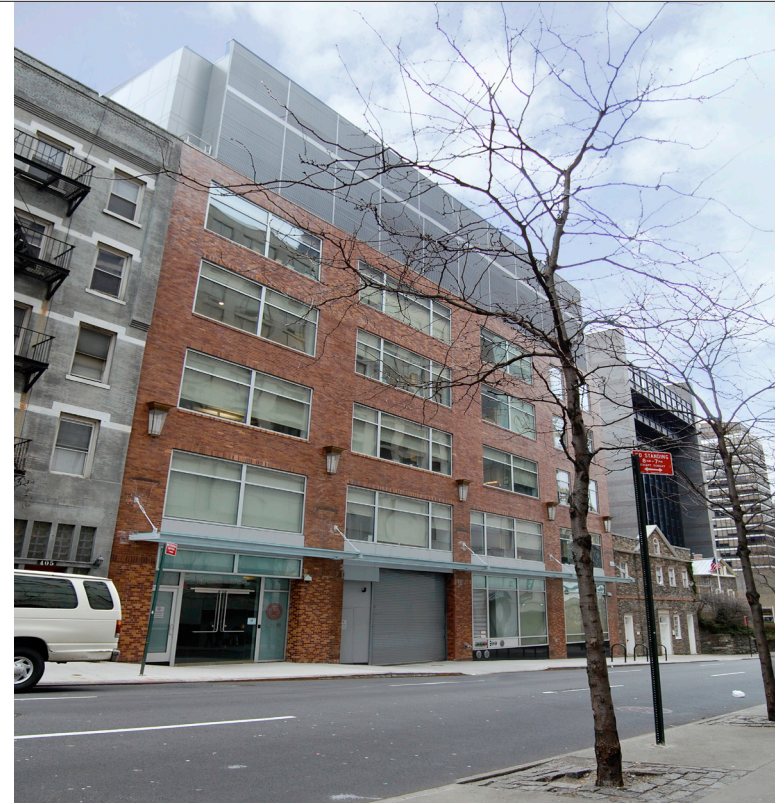
**Project:** Weill Cornell Medical College Laboratories  
**Architect:** Stonehill & Taylor Architects and Planners  
**Reuse Type:** Building Conversion and Expansion  
**Location:** New York, NY

In seeking to expand their medical facilities on New York's Upper East Side, the Weill Cornell Medical College (WCMC) was constrained by both a lack of available land and leasable space that met their unique specifications. With few available locations in close proximity to the school's main campus, the college opted to purchase a parking garage located in a former Rolls Royce showroom to be home to a 65,300 square-foot laboratory and office building. Maintaining the century-old façade, Stonehill & Taylor Architects utilized the existing steel structure to accommodate new concrete floor slabs and an additional 26,300 square-feet, extending two-stories above the existing roofline. The first two floors of the building are used for administrative offices as well as videoconferencing and common facilities. The third through fifth floors are devoted to laboratory space.



To augment the existing structure, additional columns were added to ensure the building could withstand the additional load of a fifth floor and rooftop mechanical system. As a result, the basement was expanded by 7,000 square feet, requiring construction workers to dig through bedrock. Despite these challenges, the building was fast-tracked and completed in less than 18 months.

This type of construction exemplifies the versatility of existing structures to accommodate seemingly incompatible uses. Though Twinbrook has only one above ground parking structure, others have been proposed to consolidate existing parking on surface lots. As land availability in the Twinbrook area shrinks, the development potential of parking structures may become increasingly appealing, whether for partial conversion for ground floor uses, or wholesale renovation. How these structures are designed today has long-lasting implications for their future use.



## Buildings



### Energy Efficient Retrofit

<b>Project:</b>	Norwegian University of Science
<b>Designers:</b>	Oyvind Aschenhoug and Dagfinn Bell
<b>Reuse Type:</b>	Refurbishment
<b>Location:</b>	Trondheim, Norway

As part of a research effort sponsored by BP Solar, the University installed a second facade on the exterior of an existing laboratory to mitigate energy loss from leaky, inefficient windows. The double facade system created an additional layer of air between the outer skin and the main wall, improving the building's thermal insulation, while photovoltaic cells generated energy and regulated sunlight into the building.

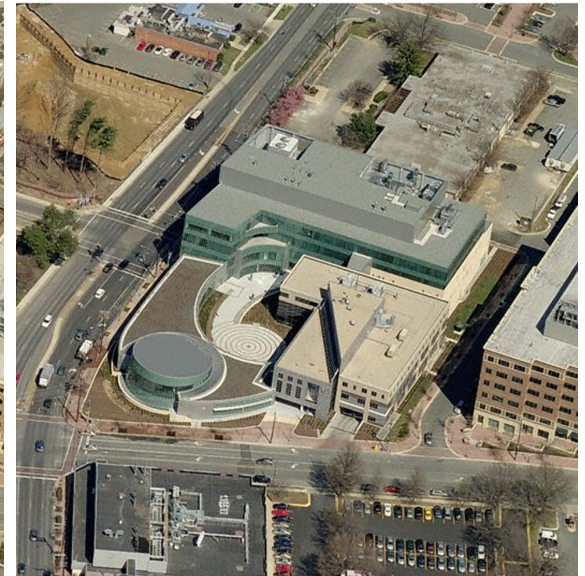
The double facade used on this building was constructed with glass panels mounted in a standard aluminum framing system with vertical steel frames bolted to the building's concrete floors to carry the skin's load. Temperature regulation in the air cavity is controlled by sensors that trigger motor-operated vents. Open-grate platforms are installed at each floor for monitoring, maintenance, and cleaning purposes.



Over the course of the trial year, the photovoltaic system generated 7200-kilowatt hours (kWh) while operating at about 16% efficiency. The facade installation reduced carbon emissions by about 0.7 tons/year and total heating demand by seven to eight percent. User response to the building's indoor air quality was resoundingly positive. During the winter, satisfaction rose from 54 percent pre-construction levels of 54 to 82 percent after the facade was installed. More importantly, less than 10 percent of respondents report being dissatisfied with the working environment.

In many areas, glass facades and curtain walls built during the second half of the 20th Century have had an unexpectedly short lifespan, either because rapid deterioration or poor performance in terms of energy efficiency. Complete facade replacements allow property owners to update the building's appearance and performance without investing in an entirely new building. Because these exterior skins are non-load bearing, replacement is relatively easy, and in some situations can be performed without first removing the existing facade. In situations that do not allow for a total facade replacement, a double facade can be implemented.

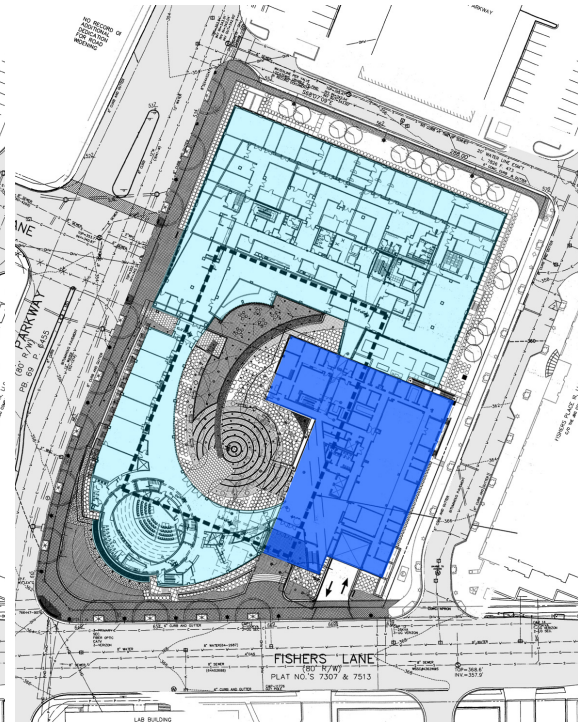
## Blocks



## Laboratory Adaptive Reuse

**Project:** US Pharmacopeia  
**Architect:** Hellmuth, Obata, Kasselbaum (HOK)  
**Reuse Type:** Renovation and Expansion  
**Location:** Rockville, MD

Underway while the Plan's recommendations were being developed and completed in 2006, the U.S. Pharmacopeia building is at a signature site in the plan area. The project comprises three separate functions: conference center, laboratory, and office building. Retaining the existing three-story brick structure, the design introduced two additional buildings of varying height to create a unified campus environment. This new building centers on a large private courtyard that is accessible both from the conference and meeting rooms housed in the Twinbrook Parkway wing, and also the staff cafeteria located on the ground floor of the laboratory expansion. The expansion added 79,173 square feet of laboratory space, 36,216 square feet for research and development, as well as 355 underground parking spaces. The building also features a partially vegetated rooftop.



## Blocks



### Warehouse Adaptive Reuse

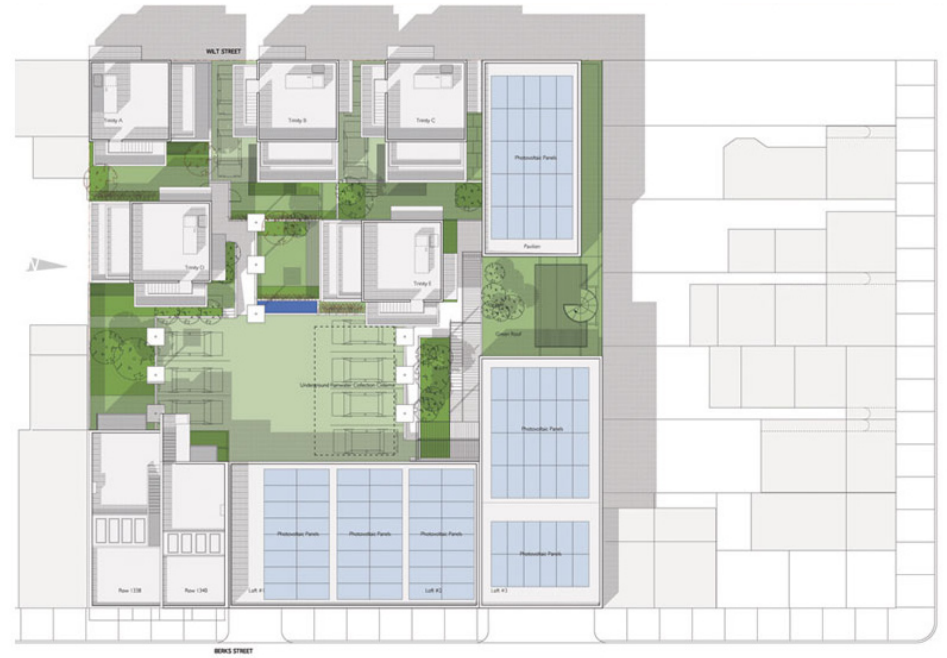
**Project:** Rag Flats  
**Architect:** Onion Flats  
**Reuse Type:** Conversion and Expansion  
**Location:** Philadelphia, PA

Rag Flats is an 11-unit residential renovation and expansion of a former factory in Philadelphia's Fishtown neighborhood. Designed by a small team of architects that took responsibility for all aspects of the project, Rag Flats displays a vibrant eclecticism that is artfully woven into the existing urban fabric, creating a development that both complements its neighbors and differentiates between them. At the front of the site, new construction fills a gap between the existing warehouse and a neighboring lot, unifying the street front. With access from the side alley, five 400-square foot new stand-alone units rise three stories and enclose the courtyard, which provides parking and access to the interior units.



Rag Flats incorporates numerous sustainability features. The courtyard is constructed of permeable pavement that filters stormwater to reduce stormwater runoff, while a 6,000-gallon rain cistern collects rooftop water. A 32-kilovolt photovoltaic system is located on top of the retrofitted warehouse. The remaining roof area accommodates an 8" deep green roof.

In Twinbrook's Light Industrial area, the I-4 zone allows accessory residential units to occupy up to 40 percent of the site. This provision was created during the development of Twinbrook Sector Plan process to encourage a community where business owners and employees live near or above their place of work. Much like Philadelphia's Fishtown neighborhood, the industrial area is composed of small lots, and numerous individual landholders. Rag Flats provides an excellent example of how adaptive reuse can strengthen neighborhood character, and creatively provide housing in industrial contexts.



## Neighborhoods



## Neighborhood Revitalization

**Project:** Arlington Road District  
**Architect:** Various Architects and Designers  
**Reuse Type:** Renovation/Expansion/New Construction  
**Location:** Bethesda, MD

The southwest area of the Bethesda CBD was formerly a light industrial area with surface parking, free standing buildings, a concrete mixing plant, and strip retail centers. Over twenty years, new uses and the conversion of existing buildings and streets have transformed the area into a lively urban area. New buildings surround an existing public parking structure to create the Bethesda Row development. A free-standing grocery store and surface parking were relocated, replaced with retail, housing, and open space. Buildings located across Bethesda Avenue and Hampden Avenue has been converted to retail space. New housing units oriented to the streets have been added to improve the balance of housing and commercial space and increase daily pedestrian activity. The existing blocks have been transformed by eliminating surface parking and orienting buildings to activate the streets. New street lighting, wide sidewalks and streetscaping support the area's character as a distinct urban neighborhood.





Right: Bethesda Lane



Above: Bethesda Row

Right: Bethesda Cinema



Above Right: Apple Store



Right: proposed Woodmont Avenue Apartments





## Twinbrook Sector Plan

The Twinbrook Sector Plan makes recommendations for three districts:

- *Metro Core District*: To extend the character of the adjacent Twinbrook Station development, by providing incentives that allow the creation of an active mix of residential, retail, and office uses in a pedestrian friendly environment.
- *Technology Employment Area*: To improve the existing urban environment while building on its concentration of technology uses, and to create an employment district with a high quality public and private realm to serve residents and employees.
- *Light industrial Area*: To preserve a portion of the existing industrial potential by amending existing development standards to better suit a Transit Station Development Area. The Plan recognizes the realities of development within the existing pattern of small lots, and structured the amendment to allow local businesses to evolve without relocating.

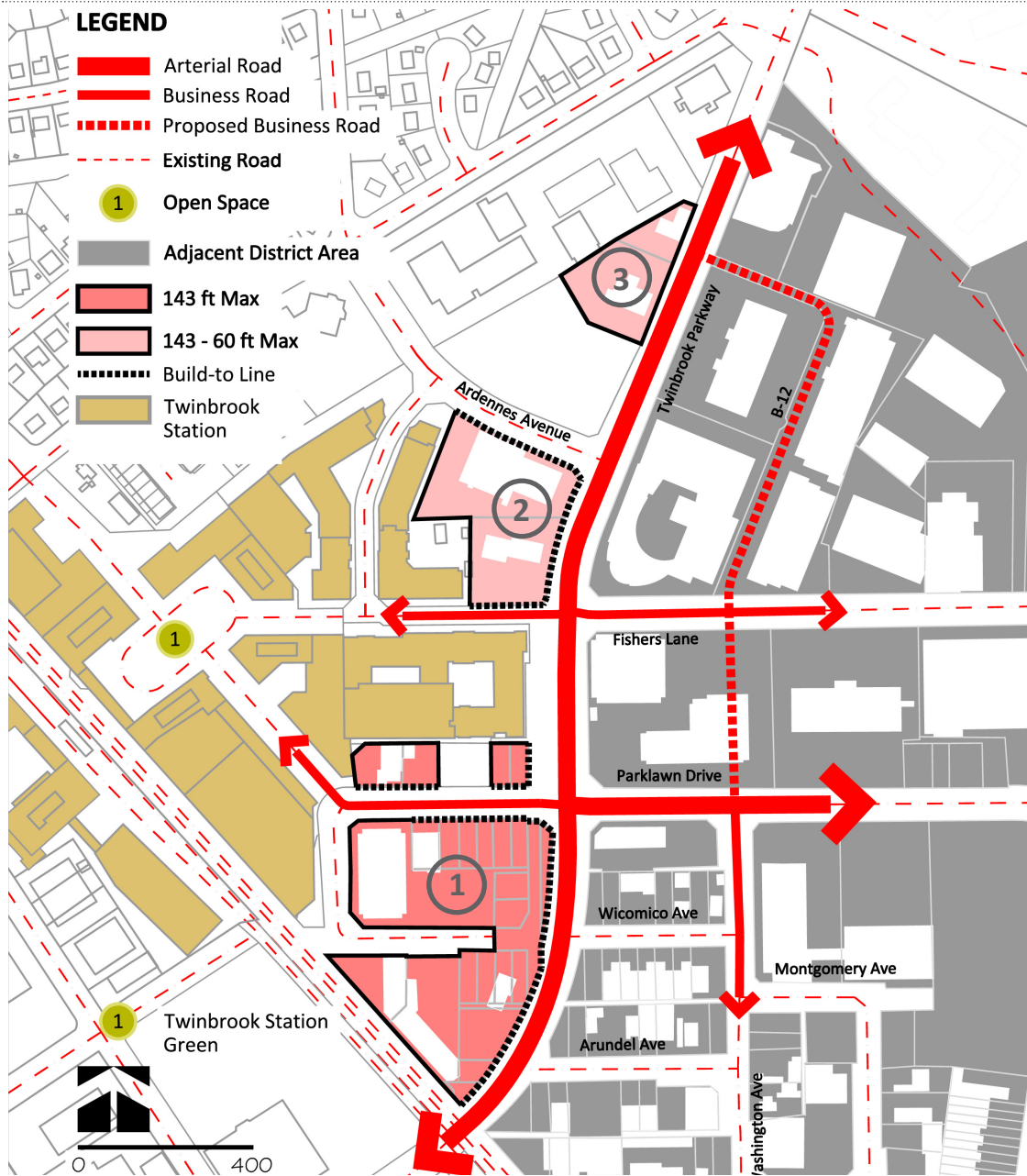
# Districts

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## Area Recommendations

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# Metro Core District



Consisting of several properties along the western edge of Twinbrook Parkway, this district is closest to the Twinbrook Metro Station. The Guidelines recommend developing these parcels to be compatible with the Twinbrook Station development, and to continue its pattern of street-oriented buildings.

## Open Space



Proposed development around the Metro station will include a central civic green, which will be the main public gathering space for this area, located just outside the Plan's boundaries. Individual projects must satisfy the public use space requirements in the Zoning Ordinance, while avoiding large open spaces between buildings and significant setbacks from the street.

## Streets



Twinbrook Parkway is the eastern edge of the district. Streetscape improvements are required along its length and will be implemented incrementally, on a project-by-project basis. Fishers Lane and Parklawn Drive extend as business streets west through the district, connecting to the Twinbrook Station development. All roads shall be constructed to business district standards, following the requirements of the County's Road Code. Significant intersection improvements will be required at both Fishers Lane and Parklawn Drive, to improve connectivity and pedestrian safety between the western and eastern sides of Twinbrook Parkway.

## Buildings



Buildings shall have street-defining facades, extending the character of the Twinbrook Station development. Parking should be shared and located in the rear or center of the block.

Building heights shall be a maximum of 143 feet, to be increased only as permitted to accommodate MPDU's or workforce housing bonus. Building height should step down to a maximum of 60 feet next to residential neighborhoods to the north, adjacent to the city of Rockville.

A minimum of 25 percent of the total building area in the district must be residential.

### Block Key:

#### Block 1

Structured parking should be located along the railroad tracks. Redevelopment should provide a pedestrian link from the Light Industrial Area underneath Twinbrook Parkway to the Twinbrook Metro Station.

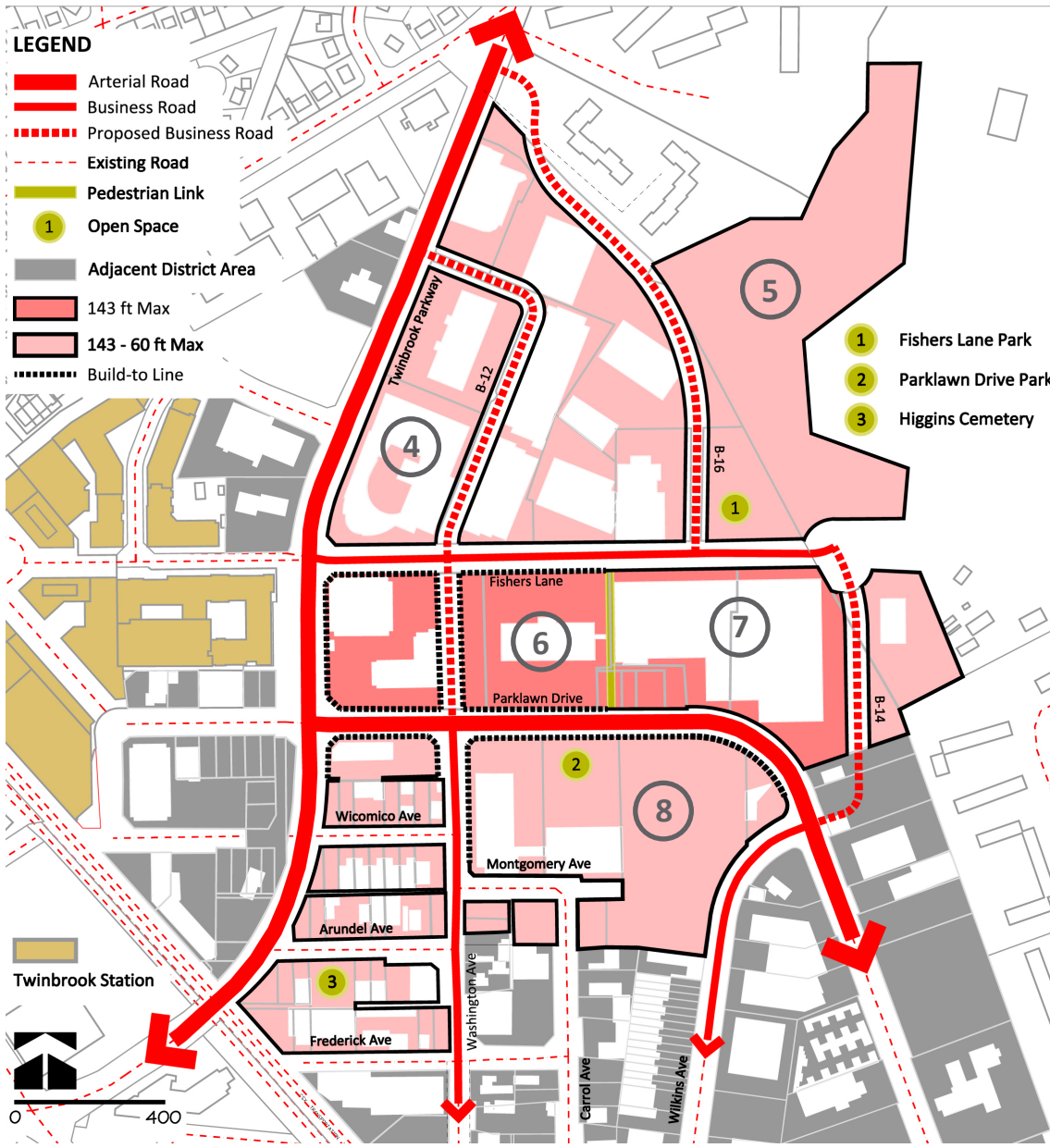
#### Block 2

Located north of Fishers Lane, this block forms the entrance to the Metro Core Area. Development should continue the pattern of street oriented buildings.

#### Block 3

Buildings should be limited to 60 feet in height, tapering to heights that provide a suitable transition to adjacent residential neighborhoods.

# Technology Employment District



The Technology Employment Area will be an area for biotechnology and advanced technology employers. Housing and retail will also be permitted. The Parklawn Building is the most prominent in the area, and it is appropriate for renovations that should enhance the existing structure and the surrounding streets. The streets and sidewalks along Fishers Lane and Parklawn Drive will be significantly enhanced to improve the quality of the pedestrian connections to the Metro station.

The guidelines allow a variety of building heights from high-rises (143 feet) along Fishers Lane and Parklawn Drive to low-rise buildings (60 feet) adjacent to the existing garden apartments along the area's northern boundary. The guidelines emphasize creating an urban environment.

## Open Space

### Block Key:

#### Block 4

This area contains the U.S. Pharmacopeia building, which frames the entrance to the Technology Employment Area along the northern side of Fishers Lane. The remainder of this block includes the existing Fishers Place development and a larger commercial center that could be redeveloped for advanced technology companies. Extending Wilkins Avenue will provide access north of Fishers Lane. The Plan-designated Fishers Lane public open spaces are located in this block.



The open space network for this area includes spaces identified in the Plan and others that can be created as part of the development review process. *Fishers Lane Park* - Located near the eastern end of Fishers Place, this public space is designated in the Sector Plan, and is intended to balance the central green proposed adjacent to Metro Station.

*Parklawn Drive Park and Public Use Space* - This approximately ¼ acre open space is designated in the Sector Plan. It will be located on the south side of Parklawn Drive, and coordinated with the location of the pedestrian connections between Fishers Lane and Parklawn Drive designated in the Plan.

*Higgins Cemetery* - This existing open space has been designated on the Master Plan of Historic Sites.

## Streets

#### Block 5

This area provides an opportunity for housing and office use. It includes two existing parcels of approximately nine acres currently used as surface parking lots for the Parklawn Building.

#### Block 6

South of Fishers Lane, redevelopment of this area provides an opportunity for Washington Avenue to be extended to Fishers Place.

#### Block 7

This area includes the existing Parklawn Building, which should improve the quality of its surroundings through its creative, adaptive reuse. Options range from a major remodeling of the existing office space to renovating the existing building to accommodate a variety of uses including office, laboratory, housing, hotel, and retail uses. This area includes a pedestrian connection between Fishers Lane and Parklawn Drive adjacent to the western side of the Parklawn Building that should be upgraded through redevelopment.

#### Block 8

South of Parklawn Drive, redevelopment will provide an opportunity to create an urban pattern with buildings edging the street, a new public open space, and pedestrian sidewalks along Parklawn Drive and Washington Street. Buildings should be a maximum of 143 feet high.

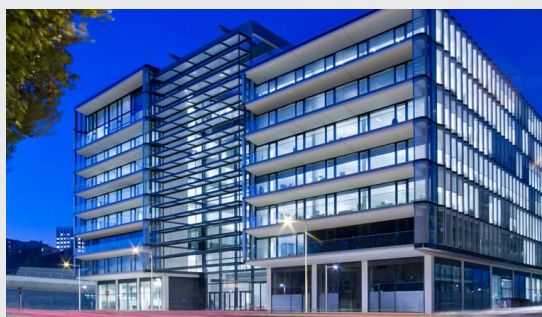


Existing streets include Fishers Lane and Parklawn Drive. Streetscape improvements are recommended for both, to improve the quality of existing pedestrian connections. These improvements shall be implemented incrementally, as individual properties redevelop. Both streets shall include provisions for off-peak parallel parking. New local streets include an extension of Washington Avenue northward between Parklawn Drive and Fishers Lane, continuing north of Fishers Lane connecting to the upper reaches of Twinbrook Parkway. Wilkins Avenue will also be extended north in two segments. All streets shall be built to arterial or business district standards, and follow the requirements of the County's Road Code.

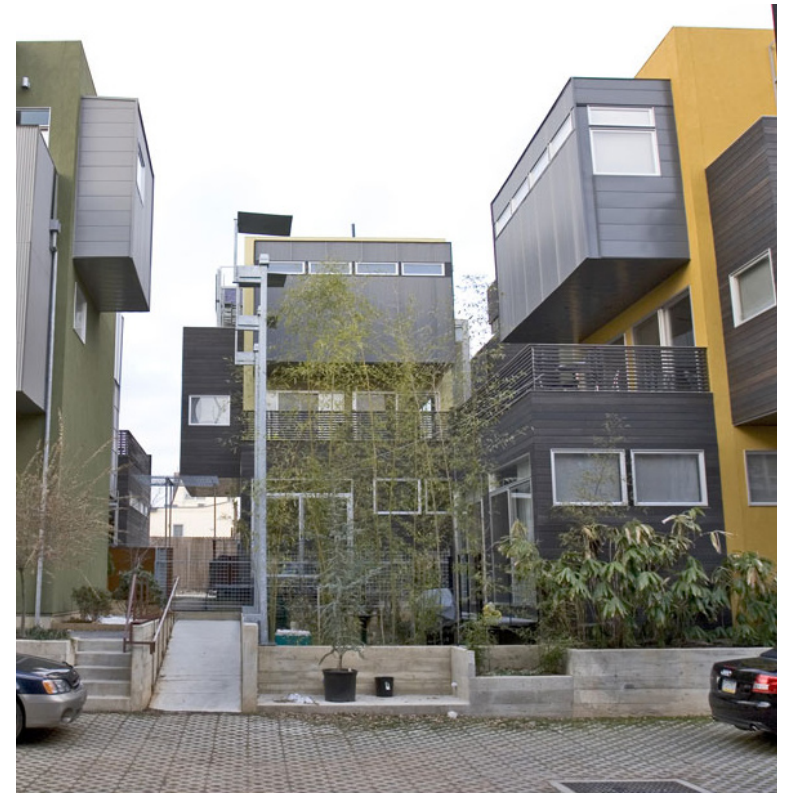
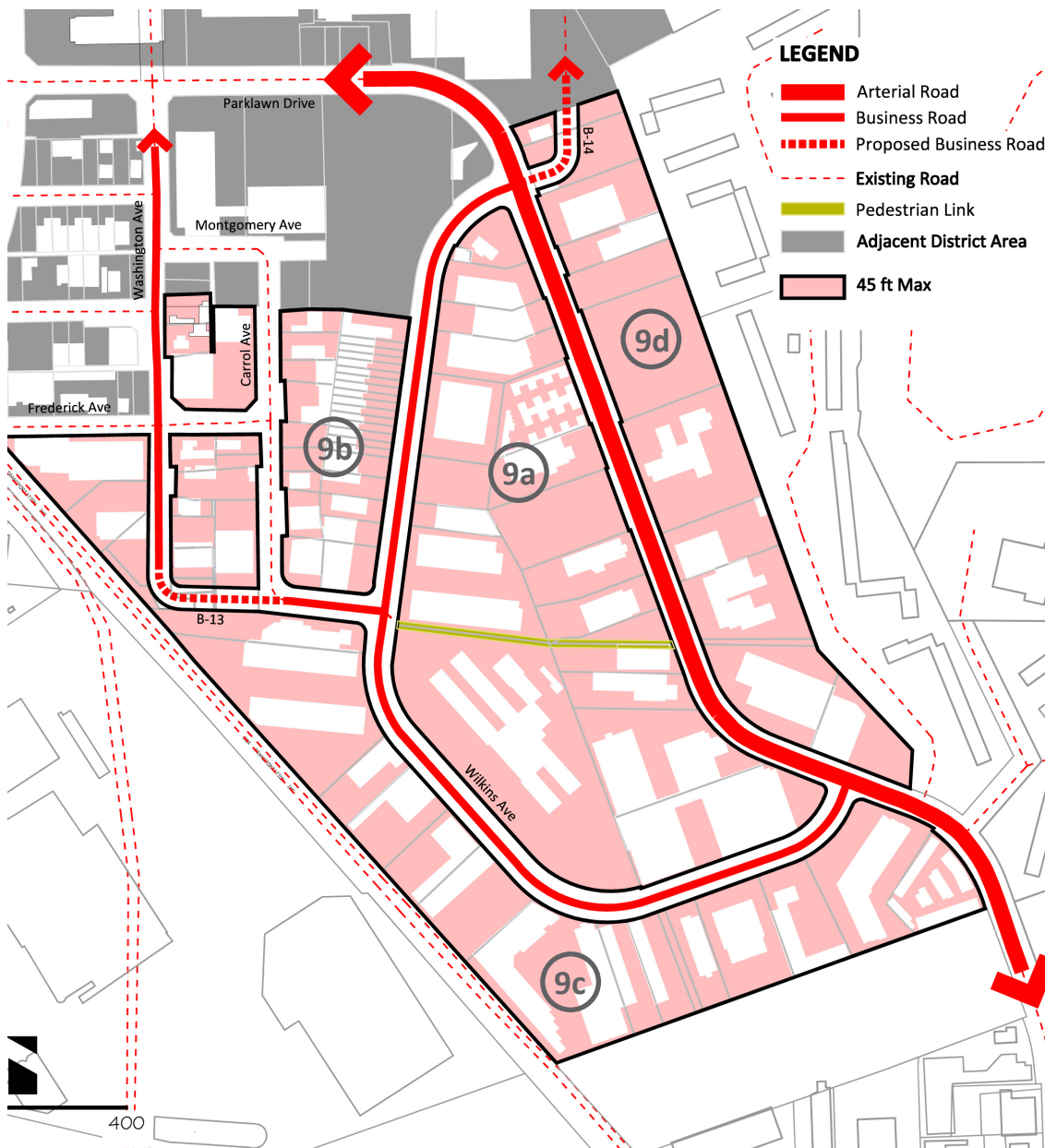
## Buildings

This district will serve as the primary location for advanced technology and biotechnology uses, but some residential uses are permitted.

The tallest buildings (143 feet) are located along Fishers Lane and Parklawn Drive. The remaining sites should provide a transition between Fishers Lane and the adjacent residential areas located along the northern boundary of the district.



## Light Industrial District



Approximately 109 acres of the 2,500 total acres of industrial land in Montgomery County are located in Twinbrook. The Light Industrial Area is located along Wilkins Avenue and Parklawn Drive with direct access to the future Montrose Parkway. Limited housing for the on-site workforce and retail space will also be permitted in this district.

The Guidelines encourage redevelopment that fosters the retaining and enhancing this important land resource in the central portion of Montgomery County. The Light Industrial Area will also provide complementary science and technology resources. Following the Plan's recommendation to preserve and enhance the existing mix of uses, the Guidelines support the adaptive reuse of existing buildings alongside new building construction. Building height will be limited to 42 feet.



## Open Space

Green Area - The I-4 Zone requires 10 to 20 percent of the net lot area to be green. This space should enhance redevelopment by providing landscape features for the benefit of the building's occupants. Given the zone's modified requirements, and the Guidelines' recommendation to retain existing viable structures as part of redevelopment, options for the location of the required green area can be explored during the plan review process.

### Block Key:

#### Block 9a

This block is the central portion of the Light Industrial Area. Redevelopment should occur through adaptive reuse and small additions to existing buildings, wherever feasible. Buildings should be oriented to the street. Sidewalks shall be completed where needed to improve access between properties.

#### Block 9b

This area is located along both sides of Washington Avenue and west of Wilkins Avenue. Buildings should be oriented to Washington Avenue to encourage pedestrian connections to the Employment Area. Large setbacks of buildings from the streets should be avoided. Infill development shall be encouraged.

#### Block 9c

This block is located south and west of Wilkins Avenue. It includes laboratories, small offices, and service and commercial uses. Additions to existing buildings and adaptive reuse are encouraged. Large setbacks of buildings from the streets should be avoided. Sidewalks should be completed to improve access between properties and to address safety.

#### Block 9d

This area provides a transition from the buildings along Parklawn Drive to the adjacent garden apartments. Buildings should be oriented to Parklawn Drive to accommodate a preferred setback of 50 feet from the adjacent garden apartments. The Planning Board may approve a lesser setback if no adverse impact occurs.

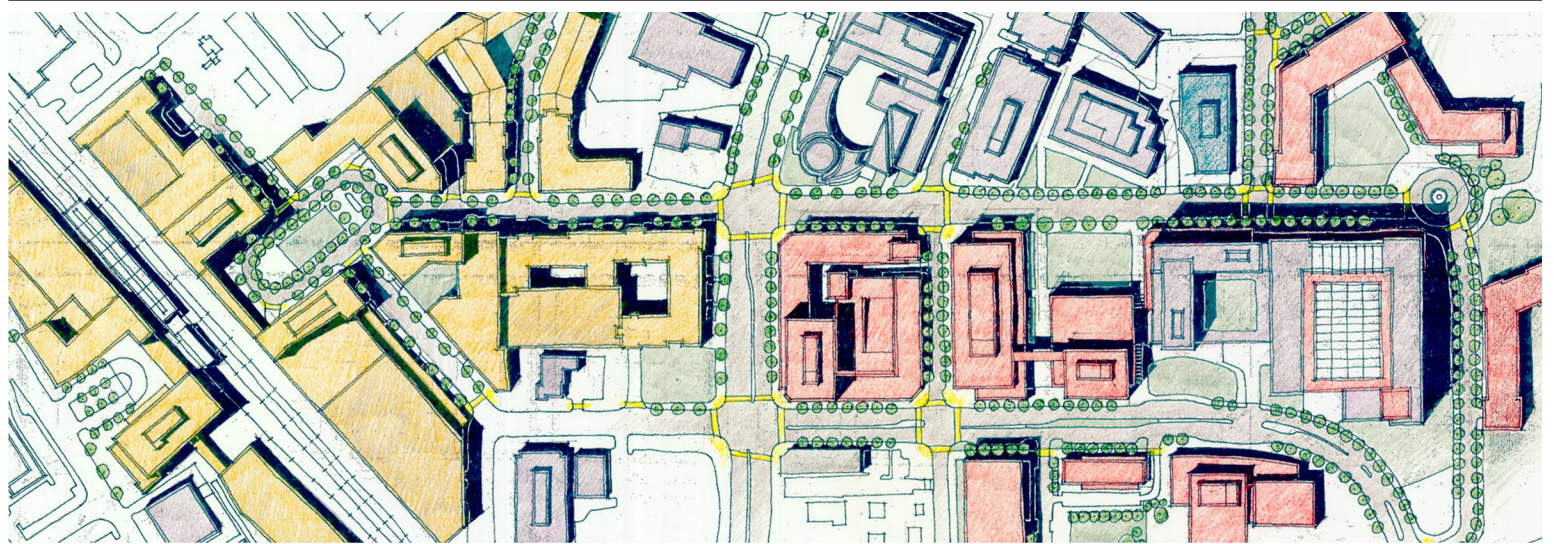


## Streets

Several streets are built to standards that pre-date the current road code. Given the Plan's recommendations to preserve the area's existing mix, these roads shall remain with minimal improvements, if their performance is adequate.

## Buildings

The design guidelines do not recommend extensive building and parking setbacks in the Light Industrial Area. The minimum one-acre lot size does not apply in this area. The purpose is to provide a more urban setting for this industrial area and to encourage its continued availability for light industrial uses. The Guidelines encourage retaining small lots, constructing smaller buildings, and renovating and expanding existing buildings. Adaptive reuse of the existing buildings should be a hallmark of the building form in this area. Streetscape should focus on improving access for pedestrians and safety.



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# Elements

Specific Recommendations

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## Guidelines for Streets

### Twinbrook Sector Plan

Twinbrook’s existing street pattern is characterized by roads built both to recent County standards, and to standards dating from the initial residential subdivision as a community. The Plan recommends that several of these older roads remain with minimal improvements if their current performance is adequate. The remaining roads, including those recommended by the Plan as new, shall adhere to current standards. The guidelines apply to all properties and the final route and right-of-way details will be determined through the review process.

Specific standards for the number of lanes and the width of the right-of-way for Arterial Streets and Business District Streets are shown in the Sector Plan. Additional standards shown in the guidelines are more flexible. The street details shown in the Design Guidelines are also more flexible.

### Grid of Streets

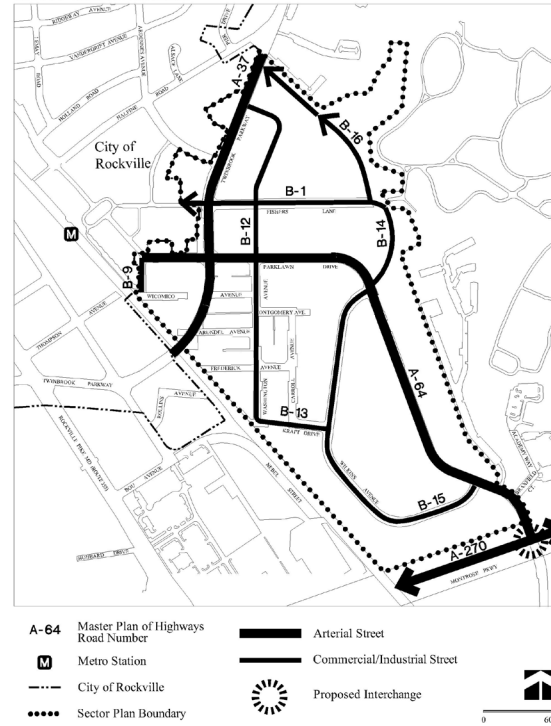
Establish a grid of interconnected streets that will create short blocks to provide better connections throughout the Twinbrook Area. The grid system should improve access for vehicles, pedestrians, and bicyclists. Improvements should address the safety of pedestrian crosswalks.

### Arterial Streets

Improve the character of Twinbrook Parkway and Parklawn Drive. Provide sidewalks along both sides, closely-spaced street trees, improved crosswalks, and pedestrian-scaled street lighting. On-street parking and special streetscape should be emphasized.

### Business District Streets

Extend Wilkins Avenue and Washington Avenue to Twinbrook Parkway. Improve the character of all Business District Streets. Allow on-street parallel parking, closely spaced street trees, and pedestrian scaled street lighting. Two-lane streets with permanent on-street parking, a single row of trees, and sidewalks on both sides will provide internal circulation within each district.



### Intersections

Improving the intersection of Twinbrook Parkway and Fishers Lane and Twinbrook Parkway and Parklawn Drive is a priority to establish an east-west pedestrian connection from the Twinbrook Metro Station to the Technology Employment and the Light Industrial Areas. Improvements should include:

- Special crosswalk paving
- Raised and/or planted medians
- Pedestrian priority signal timing
- Extensions of Washington Avenue and Wilkins Avenue to reduce traffic at the intersections at Fishers Lane and Parklawn Drive

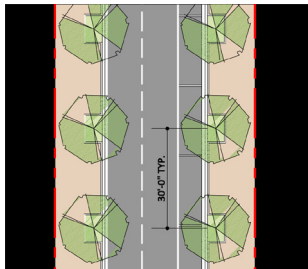
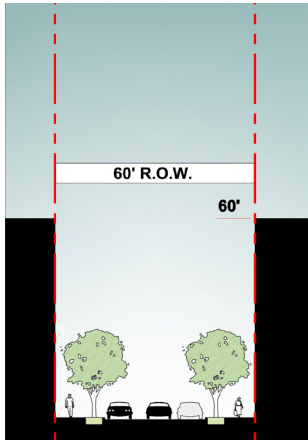
### Utilities

All utilities should be accommodated underneath sidewalk paving within the ROW limits, to be coordinated by MCDOT and utility companies.

### Streetscape

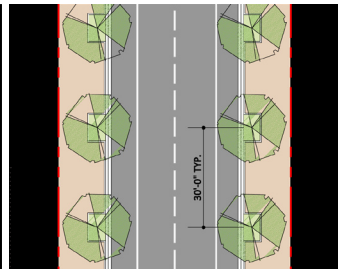
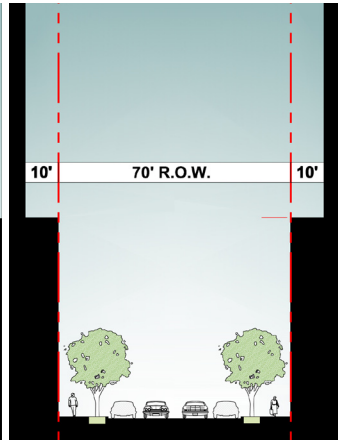
The Twinbrook area will have a Streetscape Plan that specifies the different tree types for each street. Closely-spaced street trees will be included along all streets. The above detail specifies the spacing and location of street trees for Business Streets.

**B-16 / Unclassified  
Business District Streets**



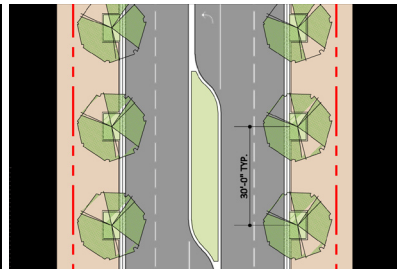
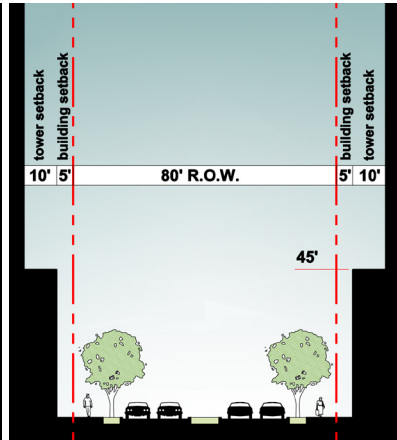
**Lanes:** 2 - Two way travel  
**Parking:** One Side  
**Trees:** 30-35' o.c.  
**Sidewalk :** Per road code  
**Building setback:** None  
**Street wall:** 60' high max  
**Median:** None  
**Security:** Wilkins Avenue extended may require a private street and a minor change in location and width of paving

**B-12 / B-14  
Business District Streets**



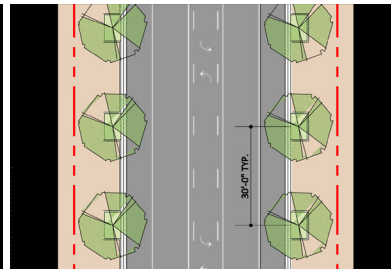
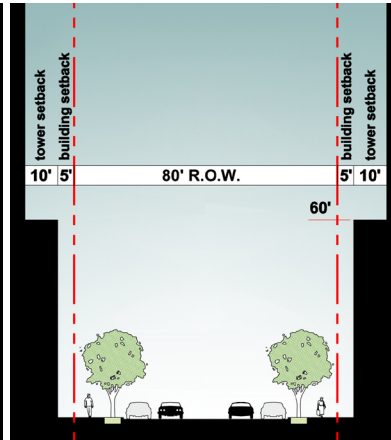
**Lanes:** 2 - Two way travel  
**Parking:** Both sides  
**Trees:** 30-35' o.c.  
**Sidewalk :** Per road code  
**Building setback:** None  
**Street wall:** 60' high max  
**Median:** None

**Fishers Lane  
Business District Street**



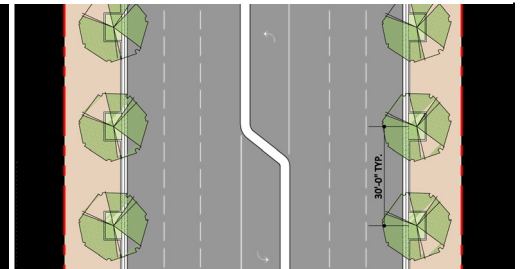
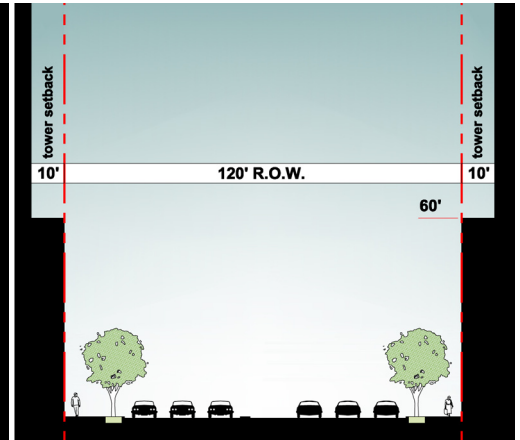
**Lanes:** 4 - Two way travel  
**Parking:** Off-Peak  
**Trees:** 30-35' o.c.  
**Sidewalk :** Per road code  
**Building setback:** 5' from ROW  
**Street wall:** 45' high max  
**Median:** Planted with turn lanes

**Parklawn Drive  
Arterial Street**



**Lanes:** 4 - Two way travel  
**Parking:** Both sides  
**Trees:** 30-35' o.c.  
**Sidewalk :** 20' wide  
**Building setback:** 5' from ROW  
**Street wall:** 60' high max  
**Median:** Left turn lane

**Twinbrook Parkway  
Arterial Street**



**Lanes:** 4/6 - Two way travel  
**Parking:** Both sides between Halpine Drive and Parklawn Drive  
**Trees:** 30-35' o.c.  
**Sidewalk :** Per road code  
**Building setback:** None  
**Street wall:** 60' high max  
**Median:** Left turn lanes

## Guidelines for Open Space

### Relationship to the Twinbrook Sector Plan

The Twinbrook Sector Plan includes recommendations for open spaces as follows:

- *Public Facilities and Amenities:* The Plan recommends incorporating parks, paths, and other public facilities into redevelopment projects to provide community facilities to serve new residents and an increased employee population.
- *Recreation Facilities:* New development should explore innovative approaches to providing public and private recreation facilities for all age groups, to include landscaping and seating areas, and public art that improves the working and living environment.

The Design Guidelines provide a flexible approach to implementing the open space recommendations in the approved Sector Plan. The Design Guidelines provide additional detail for the designated open spaces. Public use spaces and pedestrian links are to be implemented as part of the requirements in the TMX-2 Zone.



### Designated Open Space

Twinbrook Station Green is under construction in the City of Rockville. In addition to this space, two other open spaces have been designated in the Twinbrook Sector Plan area. These additional spaces provide important open spaces to support activities in the Technology Employment Area.



### Public Use Space

These small public open spaces will be created during the review of specific projects for public use. These spaces are specifically not designated in the Twinbrook Sector Plan. They will be important outdoor areas for public gathering.



### Pedestrian Links

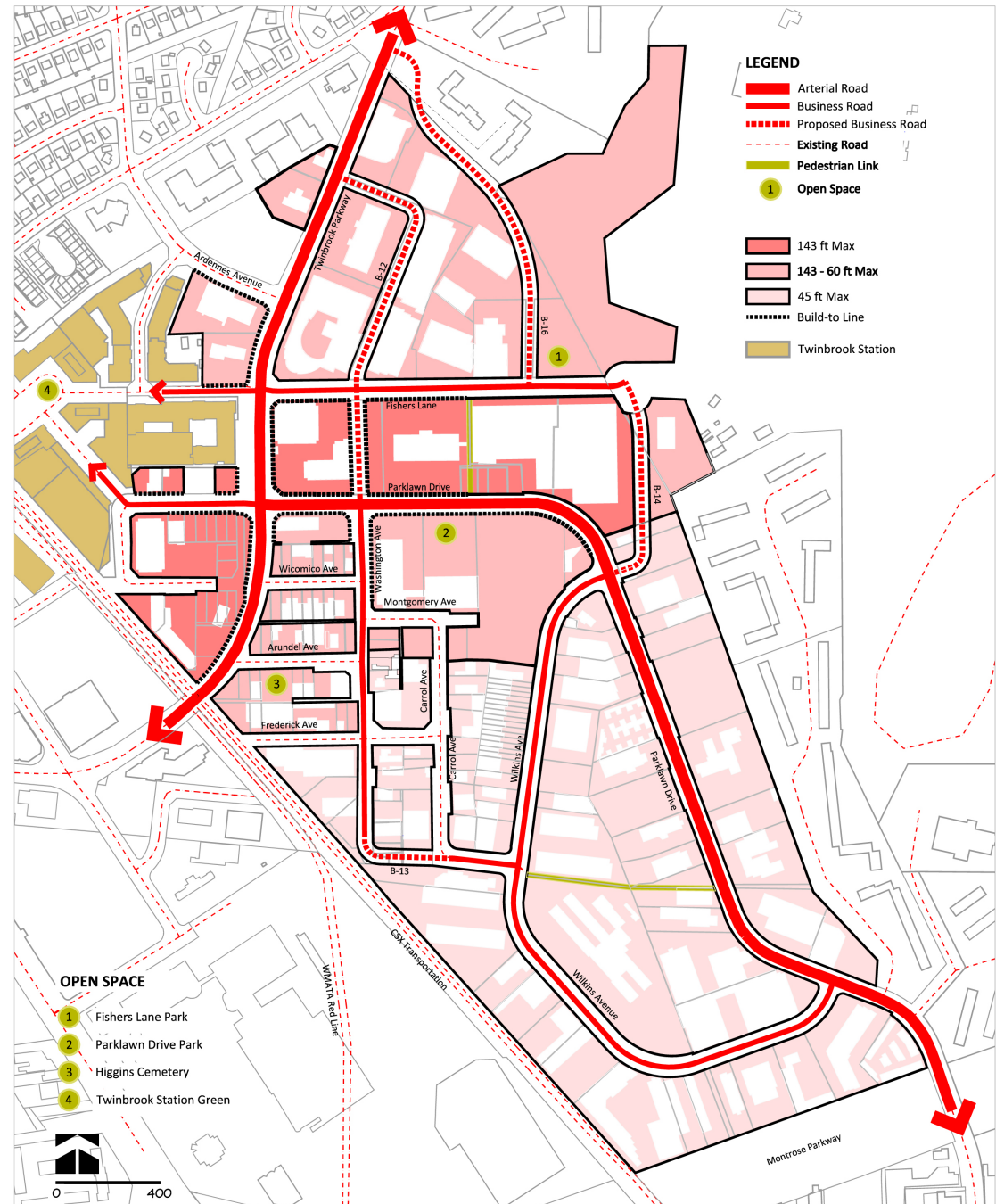
Two areas have been recommended as through block connections in the Twinbrook area. Both connections provide important access for pedestrians between designated streets.

## Open Space Locations

Open space contributes to the quality of place. The best urban places incorporate substantial green elements as well as paved areas. Open space provides opportunities for recreation, socializing outdoors, collaborating, and maintaining a connection to nature. They include trees and plants for shade, cooling, and cleansing of water and air. Open space also contributes to a community's identity, character, and civic pride. The compact development pattern in Twinbrook will include a system of comfortable, attractive open spaces that provide a range of experiences.

The open spaces include:

- Twinbrook Station Green, City of Rockville
- Fishers Lane Park and Parklawn Drive Park, two designated open spaces in the Technology Employment Area
- Public Use Open Space
- Higgins Cemetery, historic site
- Pedestrian Links



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## Guidelines for Designated Open Space

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### Recommended Open Space

Two large open spaces have been designated in the Twinbrook Area. These spaces provide important open areas to support the Technology Employment Area. Fishers Lane Park located at the eastern end of Fishers Lane near the Parklawn Building will mirror the similar Twinbrook Station Green located at the western end of Fishers Lane. Parklawn Drive Park will be located approximately halfway between Fishers Lane Park and the Twinbrook Station Green along Parklawn Drive.

Each of these open spaces should include the following:

- Approximately ¼ to ½ acre
- Substantial grass area
- Substantial pervious area
- Tree canopy of over 50 percent
- Variety of seating locations, orientations and arrangements
- Pedestrian access and visibility.



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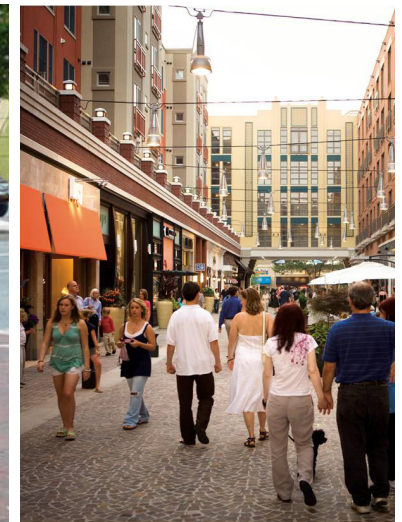
### Public Use Space

These spaces can be active or passive and should be included as part of each development. Public use open space is part of the requirement for the approval of a Project Plan in the TMX-2 Zone.

These outdoor public spaces will often be smaller than the designated spaces. Locating these spaces to separate buildings from public streets is discouraged. They must be visible and designed to invite people of various ages and mobility. Outdoor public use spaces can be combined from several projects to create a larger public use area.

These spaces should include:

- Variety of seating locations, orientations and arrangements
- Special lighting and electric outlets
- Visibility from adjacent streets
- Tree canopy of 50 percent
- Public art







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### **Pedestrian Links**

These spaces can be active or passive and should be included as part of each development. Two pedestrian connections have been designated in the Twinbrook Sector Plan. One space connects Fishers Lane with Parklawn Drive adjacent to the Parklawn Building. The other pedestrian space connects Wilkins Avenue to Parklawn Drive. In both examples, these pedestrian connections are designed to reduce the size of the existing blocks and improve pedestrian access.

These spaces should include:

- Retail activity that complements street-oriented retail without compromising retail located along public streets
- Windows overlooking the connections for safety
- Special lighting
- Opportunities for public art

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### **Higgins Cemetery**

Historic Site (Higgins Family Cemetery) -This space is located in the 5700 block of Arundel Avenue. The plot holds 11 known burials of Higgins family members important in state and local history. A grass-roots community project led to the incorporation of the Higgins Cemetery Preservation Association.

Future plans should include:

- Removal of invasive plants and debris
- Reconstructed Higgins monument
- Repair of gravestones
- Recreating a fence
- Installing appropriate landscaping
- Interpretive signs for future generations

## Guidelines for Buildings

The Twinbrook Sector Plan includes limited recommendations for building design in each of the districts, including:

- Street-oriented buildings in the Metro Core and Technology Employment Areas
- Extending the design character of the Twinbrook Station project into the Plan area
- Tallest buildings at the Metro, stepping down to adjacent residential neighborhoods
- Retail located in concentrated areas, designed to serve pedestrians

The Design Guidelines implement the recommendations in the approved Sector Plan for each of the design of buildings and blocks. The more flexible recommendations for the design of buildings and blocks shown in the Urban Design Guidelines enhance the recommendations in the Sector Plan without delineating specific standards. The intent is to identify in graphic form the key design characteristics and to encourage high-quality design.

### Environmental Guidelines

The Sector Plan also establishes environmental provisions to improve air and water quality while creating “a recognizably green setting in function and appearance.” The plan specifically calls for measures that:

- Reduce stormwater runoff and urban heat island effect
- Implement sustainable and energy-efficient building strategies
- Increase tree canopy coverage
- Contributes to a pedestrian-friendly environment.

Accommodation of environmental provisions should be implemented in a manner that is compatible with other urban design goals.

### Building Height, Form, and Mass

- Accommodate the tallest buildings with a maximum of 143’ along Twinbrook Parkway at Parklawn Drive and Fishers Lane
- Step-down building heights from Twinbrook Parkway at Fishers Lane from 143’ to 60’ at the northern and eastern boundary of the Planning area to establish compatibility with the adjacent garden apartments.

### Building Transparency

- Incorporate transparent material on at least 60 percent of the ground floor on priority retail streets such as Fishers Lane

### Sustainability

Reduce heat island effect

- Minimize surface parking
- Use open grid or permeable paving materials for any surface parking
- Use green roof technology
- Reference LEED standards

Increase building water efficiency

- Utilize low-flow, and water conserving plumbing and appliances
- Use graywater cisterns and stormwater reuse for non-potable uses such as irrigation, toilet flushing, and custodial uses.

Increase building energy efficiency

- Orient building and include architectural features that maximize natural lighting of interior spaces.
- Orient building, articulate floor plans, and include architectural features to allow for temperature control and natural ventilation such as operable windows.
- Use energy-generating technologies to reduce grid energy consumption

## Metro Core Area

The buildings in the Metro Core Area provide a mix of residential, retail and office uses. Development in the Metro Core Area requires a minimum of 25 percent residential space.

### Elements include:

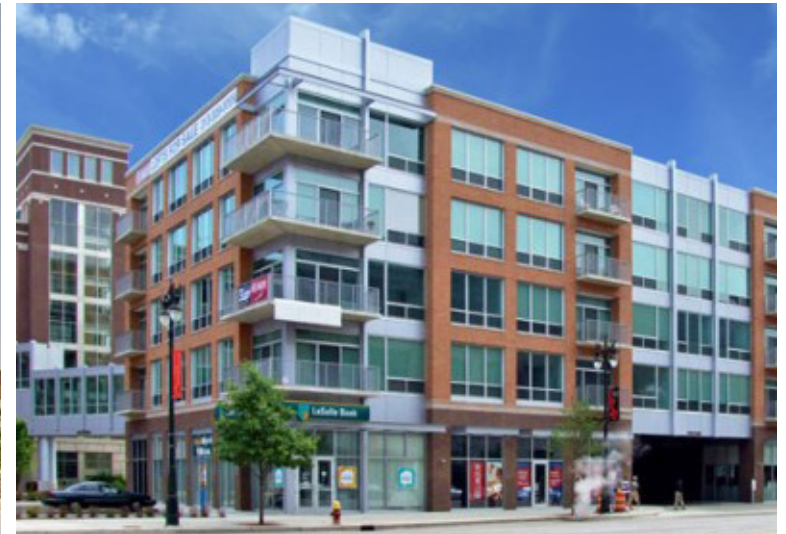
- Retail activation at the street level of Fishers Lane and Parklawn Drive with office and residential uses above
- Variety of residential unit types
- Two to five story base for buildings
- Retail for corner buildings at the intersection of Fishers Lane and Parklawn Drive
- Vary building heights
- Buildings entrances along all streets with significant glass
- Establish compatibility with the Twinbrook Station project through use of a similar material palette and building mass.
- Wrap parking garages behind buildings



Above:  
City Vista, Washington, D.C.  
*Torti Gallas and Partners*

Below left:  
Q14 Condominium, Washington, D.C.  
*Bonstra Haresign Architects*

Below right:  
Langston Lofts, Detroit, Michigan





## Technology Employment Area

Buildings will be designed to meet the needs of the advanced technology industries. These buildings will accommodate the mix of uses needed to create a dynamic world class, public-private area. Guidelines for buildings in this area include:

- Public buildings - Renovation for the existing Parklawn Building by the General Services Administration or as a private development
- Private buildings - For innovation in the advanced technology industries including restaurants and services
- Access to transit and to high quality outdoor open space is critical to the employees in these industries
- High-quality interior and exterior space
- Mix of uses including laboratories, offices, conference space, and light manufacturing of prototype.

### Building Height, Form, and Mass

- Accommodate the tallest buildings with a maximum of 143' along Parklawn Drive at Fishers Lane
- Step down building heights from Twinbrook Parkway Drive at Fishers Lane from 143' to 60' at the north boundary of the Planning area to establish compatibility with the adjacent garden apartments.



Above:  
Biomedical Science Research Building, Ann Arbor, MI  
*Polshek Partnership*

Below left:  
Peter L. and Clara M. Scott Laboratory, Columbus, OH  
*Polshek Partnership*

Below right:  
Leslie Dan Faculty of Pharmacy, Toronto, ON  
*Norman Foster + Partners*

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## Light Industrial Area

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Buildings in the Light Industrial Area will be designed to provide space for service industries and supplies for advanced technology companies, storage buildings for residential and commercial users, and small-scale stores. New construction should take advantage of opportunities to adapt and reuse existing structures, and to strengthen the contextual relationship with surrounding buildings. Guidelines include:

- Control runoff through permeable pavers
- Use a minimum setback from streets and between buildings
- Orient buildings to streets
- Inclusion of accessory residential units is encouraged.

Below left:  
Rag Flats, Philadelphia, PA  
*Onion Flats*

Below right:  
Cady's Alley Building, Washington, D.C.  
*McInturff Architects*

