



Comprehensive Master Plan



Land Use Report 2016



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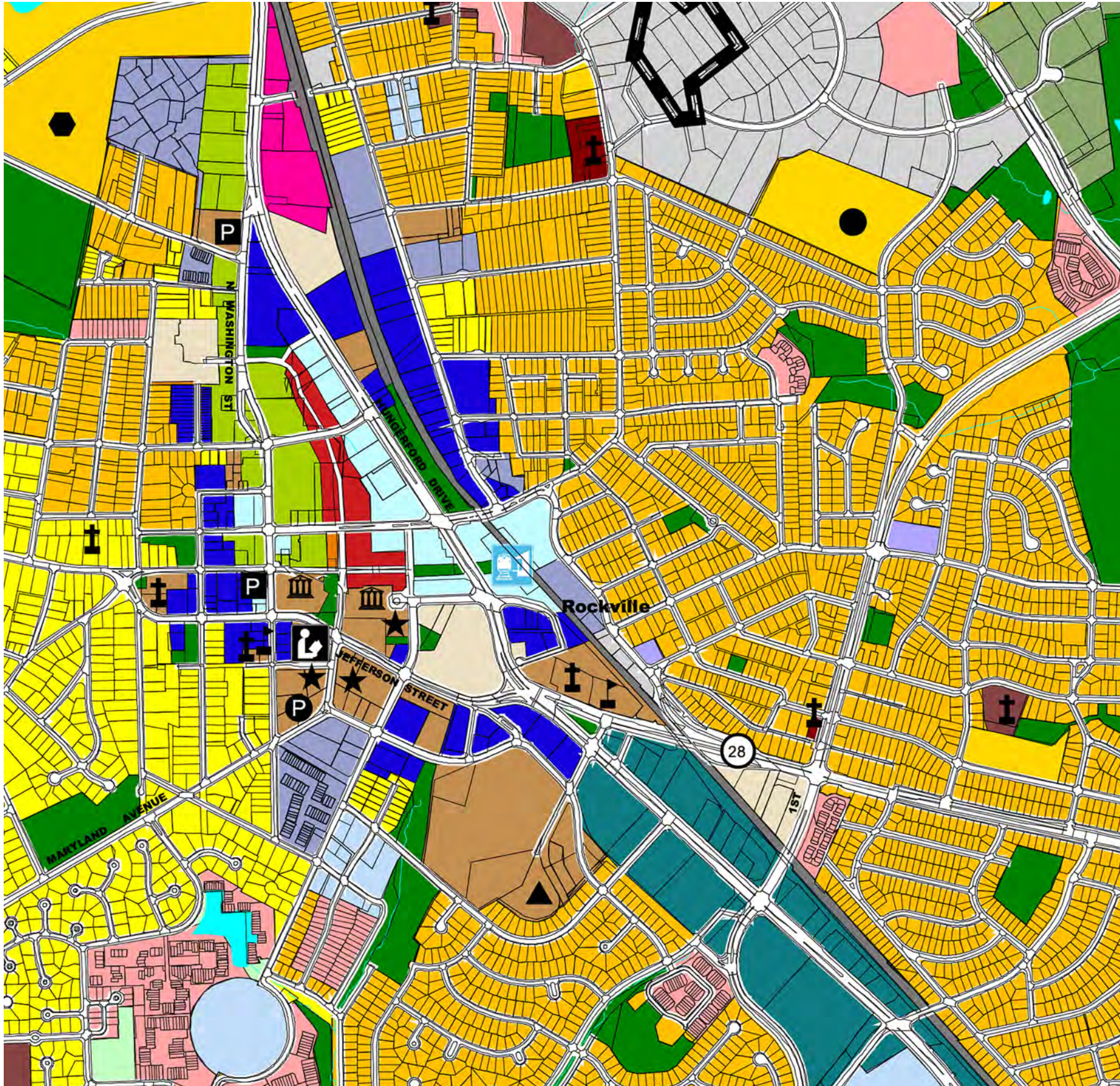
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The heart of Rockville, as depicted in the 2002 Comprehensive Master Plan, Planned Land Use graphic.

Introduction

As a first step in the process for establishing a new comprehensive master plan, the City of Rockville Department of Community Planning and Development Services (CPDS), working with other City departments, researched and composed a series of reports covering existing conditions, background and trends. This land use report covers one of the topics necessary to an official municipal comprehensive plan recognized by the State of Maryland. The Maryland Land Use Code Sec. 3-102 lists elements that are required to be addressed in a comprehensive plan by communities that exercise zoning authority: community facilities, areas of critical State concern, goals and objectives, land use, development regulations, sensitive areas, transportation, water resources, and municipal growth.

Through the application of its zoning authority the City of Rockville regulates the use of property and the City's master plan sets the basic policy for mapping of zoning districts. This authority makes the land use element a fundamental component of the master plan. Therefore, establishing an understanding of the existing land use pattern within the City of Rockville is important to setting policy for future land use. This analysis takes into account the land form and history of physical development of the city, and considers how construction of major transportation infrastructure and major real estate development projects have shaped the city as it exists at the beginning of this master planning process in 2015.

In order to present a clear picture of the existing land use, this report utilizes the data processing and mapping capabilities of the City's geographic information system (GIS) backed by parcel based data held by the State of Maryland Department of Assessment and Taxation (SDAT) to produce, for the first time, an accurate accounting of the existing land use for each of the city's 15,895 parcels. The data set presented was assembled in the fall of 2014; it is a representation of the land use at that time, and though individual parcels may change in use, the overall pattern described will remain accurate and relevant to the task of creating a new future land use plan.

While past City of Rockville master plan documents have nearly equated land use with zoning, the approach in this

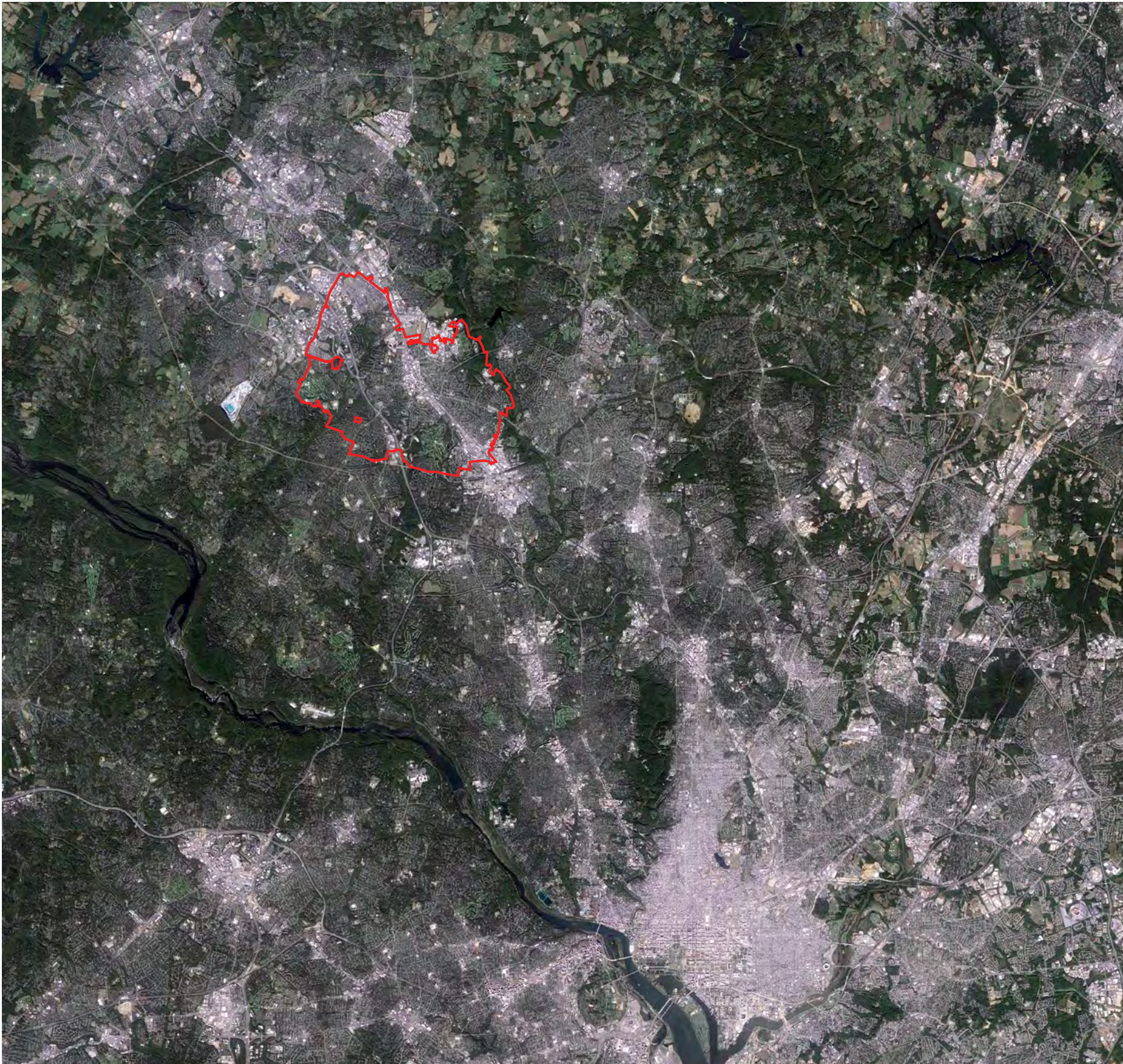
report is to establish a categorization of land use based on common planning practice tuned to the conditions in Rockville. The goal is to look at the actual use of the land rather than the zoning, which for some parcels may be quite different. After providing the basics of context, topography, and existing land use pattern, the exploration of land use in this document considers the development of the city's structure over time, with attention to changes to urban design, followed by a discussion of residential density.

The report looks at current and long range issues with an emphasis on land uses as specific types within the context of the real estate market, and with a secondary look at issues for that type by location. While it is tempting to believe that all land use issues are local and unique to each context, the broader market and how it interacts with local policy and regulations has profound impacts on the use of land in the city, because Rockville is 13.5 square miles within the larger urbanized portion of a dense county. Considering land use issues from this point of view, and using the data available to analyze and reveal patterns not readily apparent on the visible surface of the city, is useful to generate discussion on broad policy issues that the master plan will address.

Key land use issues explored in this report include:

- What is the basic pattern of land use in the city?
- How to protect existing single family neighborhoods?
- How is a lack of annexable land and rising land costs affecting real estate development and urban form?
- How are market forces affecting office, retail, service industrial, and residential land uses?
- What are the reuse trends for obsolete office sites?
- Should residential uses be allowed everywhere?
- What is the future of retailing and how might changes impact aging strip centers?
- What issues are presented by large tracts of post war housing?
- Where can Rockville benefit from the trend toward walkable, mixed use and transit oriented development?
- How will mandates to cut carbon emissions and support sustainable development impact planning in Rockville?
- What areas of the city are most likely to change?

Figure 1: Rockville Municipal Boundary On Regional Aerial Photograph



Regional Context

The City of Rockville is located in the central part of Montgomery County, Maryland, which borders the District of Columbia to the north and northwest. The southern boundary of the city is approximately 7 miles from the D.C. line and 12.5 miles from the Washington Monument in downtown Washington. As designated by the U.S. Office of Management and Budget, Rockville is part of the Silver Spring-Frederick-Rockville, MD Metropolitan Division (population 1,244,291) of the Washington–Arlington–Alexandria Metropolitan Division (pop. 4,616,051) of the larger Washington-Baltimore-Arlington Combined Statistical Area, which has a combined population of 9,331,587 as of the 2012 Census estimate.

Figure 1 is a composite aerial photograph of the region surrounding Rockville, showing agricultural lands in light brown and greens, woods and steep slopes with streams in dark greens, and rural estates and low density residential areas in a mix of greys and greens. The whites and light greys of more reflective surfaces—such as flat roofs, concrete walks and roads, and parking garages of commercial, institutional, and multifamily buildings—reveal the most intense areas of urbanization, including Washington D.C. in the lower right, which are also the areas with the least tree cover.

Rockville is located in the Interstate 270 corridor which runs northwest of Washington between the Potomac River and the Interstate 95 corridor connecting northeast to Baltimore and the rest of the east coast megalopolis. The rural estates and horse farms on both sides of the Potomac River create a large wedge of green to the west of the I-270 corridor, with a similar area of relatively low density development to the east, in keeping with Montgomery County’s ‘Wedges and Corridors’ land use plan dating to the 1960s. In fact Rockville was a small town set in the rural landscape of the county for much of its history, before successive application of transportation technologies, from turnpike roads, to steam railroad and interurban streetcar, and finally highways and commuter and heavy rail transit, brought increasing development that encompassed and surpassed the city.

Today Rockville is a major regional center in a line of urban nodes joined by I-270, MD 355, and the Metrorail Red Line. To the northwest of Rockville, unincorporated Germantown and the City of Gaithersburg sprawl along higher ground

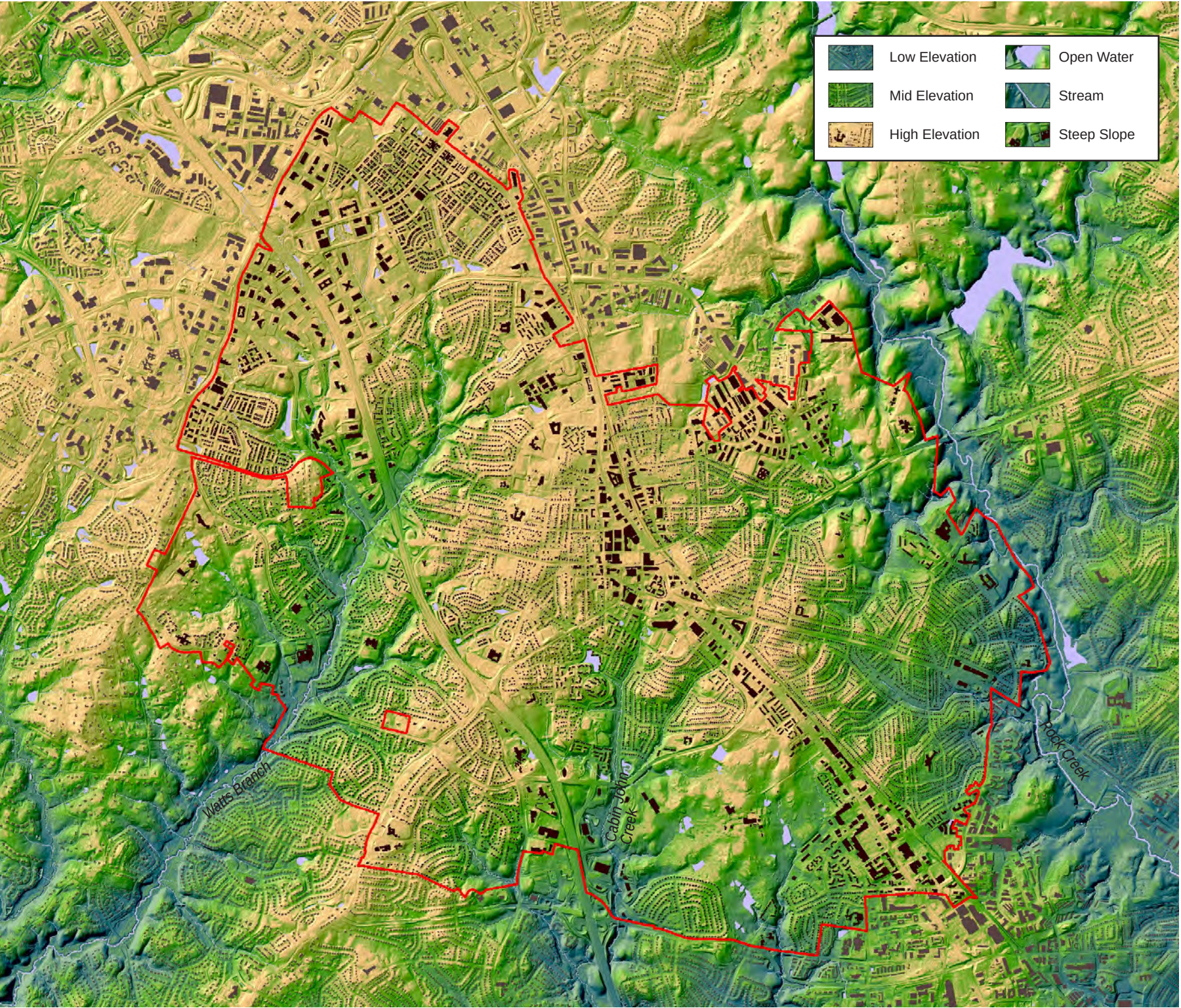
and arterial corridors that intersect with the freeway, with this loose pattern of development forming the northwestern part of the city where Shady Grove Road passes over the interstate. Rockville’s historic center is a major node served by the second to last station on the Metrorail line, flanked by lower density residential development to the west and east. A compact pattern of higher intensity uses follows the Red Line south into the District.

Less constrained by existing low density residential uses, the growing urbanization of the southern Pike in Rockville and North Bethesda (served by the Twinbrook and White Flint Metro stations) stands out as a significant regional center which is already larger in extent than Bethesda on the inner side of the Beltway. A pattern of low density residential use flanking a thin line of higher density mixed uses continues into the district following Wisconsin Avenue to Georgetown on the Potomac riverfront and the parallel route along Connecticut Avenue through northwest Washington to the dense urban core of the nation’s capital. East of Rockville the urbanized nodes of Wheaton and Silver Spring follow the eastern branch of the Red Line and Georgia Avenue, these communities connecting to Rockville via Veirs Mill Road.

Together with Gaithersburg and unincorporated portions of Montgomery County, Rockville is branded as part of the I-270 Technology Corridor. Given its physical location and infrastructure, the corridor is a distinct subregion within the metropolitan Washington area, shaped by Maryland law and also a history of federal investment. This investment has concentrated federal agencies and private firms focused on medical research, biotechnology, and genetics, anchored by the National Institutes of Health in Bethesda and National Cancer Institute just outside Rockville. The corridor also leads in social science research conducted at federal Health and Human Services and Food and Drug Administration offices and at the private Westat, Inc. in Rockville.

While Rockville provides residential opportunities in good neighborhoods and numerous job opportunities, its economy, housing, and land use cannot be considered in isolation of the regional context. Within the region Rockville and Montgomery County are known for excellent public schools, and employment opportunities, along with an active citizenry at the neighborhood level, all of which are reflected in the existing, historical pattern and regulated pattern of the city’s land use.

Figure 2: Topography as Shaded Relief Map from Digital Elevation Data



“Owing its success to the confluence of roads, the town was the hub from which six dirt roads radiated. Two led to tobacco shipping points; what is now the Rockville Pike was the road to George Town, and a combination of Veirs Mill Road and University Boulevard provided access to Bladensburg. Roads to Great Falls and to the Mouth of the Monocacy (later named Darnestown Road) took travelers westward , and by heading east beyond Sandy Spring one could eventually reach the fastest-growing city in America—Baltimore—and its port.”
— *Rockville Portrait of a City*, page 18-19 (2001).

Topography

The development pattern in Rockville has its basis in the topography of the city’s location. Historical accounts of the city’s founding mention the place as high ground along the rough road from Georgetown to Frederick Town, which would become known as Rockville Pike. The utility of the ancient path can be traced in Figure 2, as it climbs up the Piedmont foot hills, specifically a section called Parr’s Ridge, parallel to Rock Creek. The crossroads of the Great Road and the road east to the port at Blandensburg (now Veirs Mill Road) is on relatively level ground just north of the reach of Cabin John Creek. This is where Rockville’s history begins and it remains the city’s Town Center.

The historic West End neighborhood extends from the Town Center out to Watts Branch, while on the other side of town the east side of the Twinbrook neighborhood and the city limit are framed by the Rock Creek valley. Nearly every neighborhood outside the Town Center has a small tributary or water feature that is connected to one of the three main streams: Watts Branch, Cabin John Creek, and Rock Creek. Typically the street layout runs along higher ground and turns back to avoid stream crossings. Whether channelized or following a more natural course, these streams shape local amenities and park features. Examples include the green space of Ritchie Parkway in the Hungerford neighborhood which protects a tributary of Cabin John Creek, or the engineered lakeside lots of New Mark Commons on the other branch, which is in fact one of the headwaters of Cabin John Creek.

The higher ground of King Farm, and its relatively level and uninterrupted expanse of 450 acres, may have supported its use as a working farm longer than any other area in the city. Both the Woodmont and Lakewood Country Clubs combine lower ground where water features are shaped with the rolling uplands of the fall line.

Arterial roadways, for example Falls Road, generally follow ridge lines. Earthworks shaped by roadbeds or railroad embankments can also be discerned, for example the intersection of Veirs Mill Road and First Street. Interstate 270 is perhaps the largest man made feature that is imposed over the natural landscape, with an obvious less regard for following the contours of ridges and streams.



Ritchie Parkway flanks Cabin John Creek north of W. Edmonston Drive creating an urban design feature and a conservation open space.

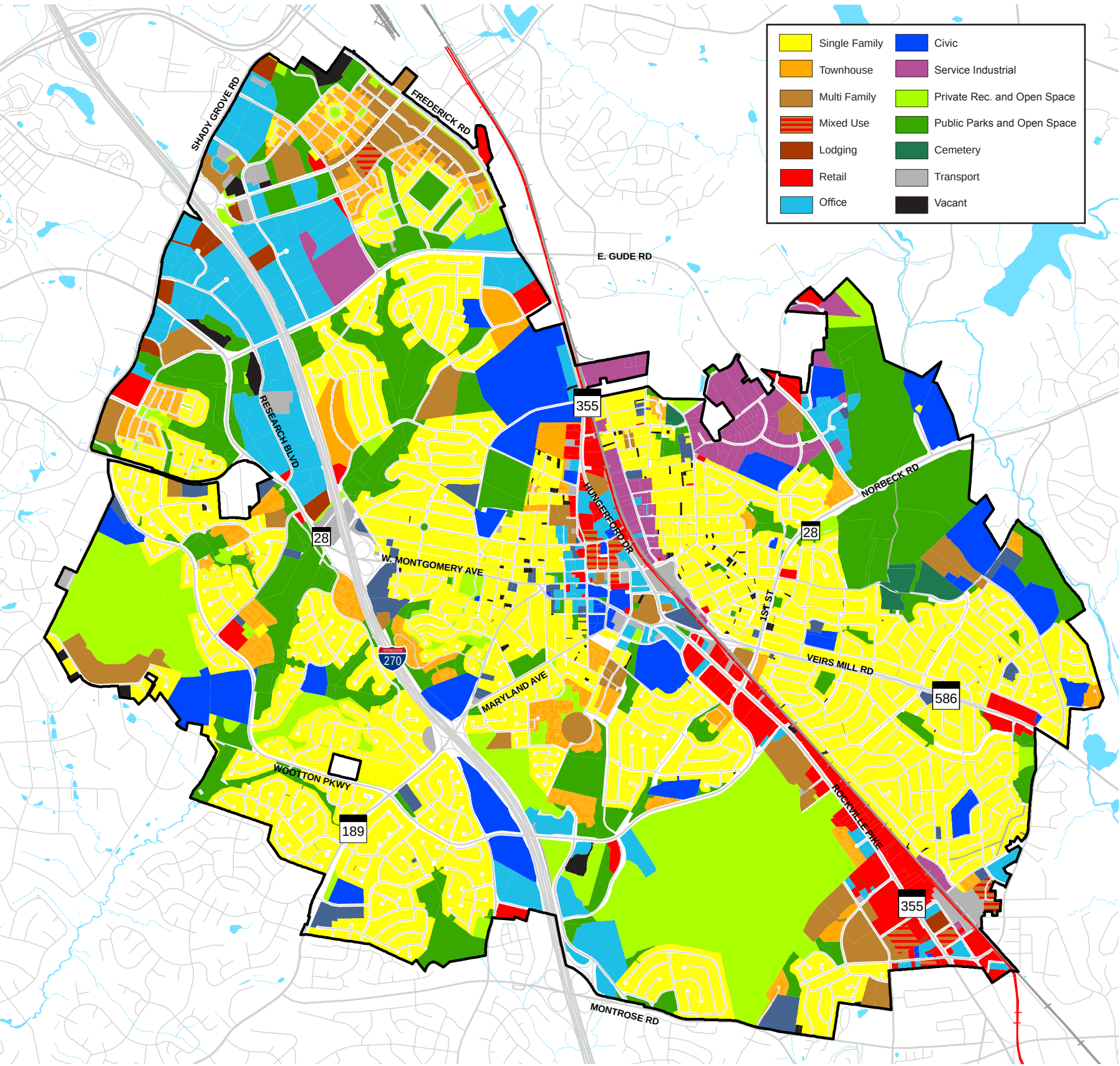


Above, view of Cabin John Creek looking south from W. Edmonston Drive.

Below, ponding area and open space creates a setting for office buildings near the headwaters of Watts Branch at the intersection of King Farm Boulevard and Gaither Road.



Figure 3: Existing Land Use 2014



Existing Land Use

The pattern of land use in Rockville, as shown in Figure 3, is shaped by its underlying natural topography and a transportation infrastructure of interstate and state highways, major arterials, and railroads superimposed over those features at the landscape scale. The basic layout of the city can be described as divided into three sections: one to the west of I-270, the middle portion from the interstate to Rockville Pike/MD 355, and the portion to the east of the Pike and the railroad corridor. Each of these three sections is roughly a mile to a mile and a third in width.

While the land use surrounding the historic crossroads, now the Town Center, is diverse and mixed, the overall pattern elsewhere is painted in broad brush strokes. Large areas of single-family detached residential uses are divided by the relatively narrow retail commercial corridor flanking MD 355 (along its Rockville Pike and Hungerford Drive segments) and by the office uses on either side of the I-270 corridor. Open space serving as conservation parks follow and protect steep slopes and streams, most prominently along Watts Branch—its tendrils of green open space stretching across I-270 in a south to north direction.

Expanses of additional green space are created by two large, private country clubs, the municipal golf course, and civic center properties. The Woodmont Country Club is so large that it stretches across the whole middle section of the city. Service industrial uses, which are more distribution and repair than production, lie along the east side of the railroad track and on the northern edge of the city accessed by Gude Drive. Multifamily apartment uses are distributed around the city, in most cases proximate to larger roadways and Metro stations. Small retail areas are also found along major roadways in a limited number of locations, nearly all on the edges of neighborhoods.

Within this overall pattern, a finer grain of new mixed use development emerges in the Town Center and near the Twinbrook Metro Station at the south end of Rockville Pike. These developments are creating a new pattern within the narrow commercial corridor that is vertically mixed, with retail uses on the ground level and residential uses on upper floors.

Table 1: Existing Land Use

LAND USE TYPE	ACRES	PERCENT OF PARCELED AREA
Residential, Single Family De-tached	2,434	34.2%
Residential, Single Family Town-house	332	4.7%
Residential, Multifamily	331	4.7%
Residential-Only, ALL	3,097	43.6%
Mixed Use Residential (Residential over Retail)	39	0.5%
Residential, ALL (subtotal)	3,136	44.1 %
Retail	266	3.7%
Lodging	41	0.6%
Office	594	8.4%
Civic	498	7.0%
Private Institution	112	1.6%
Service Industrial	211	3.0%
Park and Recreation	1,121	15.8%
Private Open Space and Recreation	898	12.6%
Cemetery	34	0.5%
Open Space ALL (subtotal)	2,053	28.9 %
Transport	142	2.0%
Vacant	56	0.8%
Total	7,110	100%

AREA TOTALS	ACRES	PERCENT
Total Area within City Boundary	8,670	100.0%
Total Area within Parcels	7,110	82.0%
Total Area Right of Way	1,560	18.0%

Land Use Pattern by Type

Defining and categorizing current land use is a basic necessity for planning future land use. For this review each parcel is categorized into one of 14 land use types as described below. Where ambiguities exist, for instance between some office or industrial uses, the narrative explains the criteria and argument for listing the use into one category or another. If a single parcel has two distinct land uses on it, the parcel is coded for the dominant use on the land use map graphic (Figure 3), or if necessary, the parcel was split manually and colored with the underlying use. Categories described below relate to the land use map graphic (Figure 3) and the data in Table 1 on the previous page.

Residential

The categorization of residential land use in this analysis is based on dwelling unit type, rather than density of dwellings (for instance ‘low density residential’). The three residential-only categories are: Single family detached, townhouse (single family attached), and multifamily dwellings. In addition, a category of mixed use residential is provided as described in the next section.

A single family detached dwelling is easily understood as a single house on a single lot without any party walls (i.e. walls shared with other dwellings) and with setbacks on all four sides. Single family detached residential is the most prevalent use of land in the City of Rockville in acres and percentage of the whole, at 2,434 acres and 34 percent of the parceled land.

Townhouses, or more specifically rowhouses, are also a commonly understood type of housing and land use. Rowhouses are a type of construction that share a party wall usually in a string of houses. Rockville has only a small number of duplex units, these being a rowhouse consisting of only two units. Technically, a townhouse is a legally defined type of rowhouse which includes a subdivided lot for each house that typically matches the footprint of the house with fee simple ownership of the lot and with a shared common lot surrounding the individual lots. Within the city there are also examples of rowhouse development without individual lots, legally organized as condominiums or as rental units; those are also represented here as townhouses.

For purposes of this analysis, the acreage totals and map display of the townhouse land use includes the main part of the common area as part of the townhouse use, rather than as private open space. In many cases the common area is dominated by surface parking, rather than greenspace, and it is analogous to a driveway or parking area of a detached house. Larger common areas, typically owned by a homeowners association for purposes of conservation or recreation (for instance a stream or steep slope area), are categorized under ‘private recreation and open space.’ Compared to detached dwellings, attached townhouse residential is a much smaller 332 acres and 4.7 percent of the land.

All other residential-only types that share corridors, walls, stairs, or elevators and have multiple dwelling units under a single construction are classified together as multifamily,

including senior housing and nursing homes. Again ownership type is not related to the land use, and parcels are included as multifamily whether or not it is divided into condominium units or rentals under a single owner.

All types of multifamily dwellings (including apartments, condominiums, or senior assisted living, but excluding mixed use residential) occupy 331 acres and 4.7 percent of the land. Combined, residential-only land uses occupy 3,100 acres of the 7,100 acre community, which is 44 percent of the land. Mixed use development adds another 39 acres of residential above ground level retail in vertically mixed use developments, as described below.

Mixed Use Residential

The mixed use residential category in this analysis is defined as a parcel with ground level retail, service, or office uses vertically mixed with upper level multifamily dwelling units in the same construction. Some of the parcels deemed to be mixed use may also include residential-only or retail-only buildings, for instance in the village center of King Farm, but somewhere on the parcel there is a vertical mix. This type of development, using 39 acres and 0.5 percent of the land, is relatively new to Rockville, at least since the beginning of the era of automobiles, and it is concentrated in recent developments in the Town Center and proximate to the Twinbrook Metro Station.

Retail

The retail use category includes stores of all types, from convenience to grocery and shopping center. It also includes a number of automobile oriented uses, such as dealerships, car washes, and service stations; however, other major repair businesses, such as auto body shops, are classified under industrial uses by the State of Maryland system and are included here in the ‘service industrial’ category. Restaurants are included under retail, which reflects both the activity and the location in shopping centers next to other types of stores. Funeral homes are also shown as a retail use, as are banks. The one movie theater in Rockville is shown as a retail use.

The Town Square development along Maryland Avenue (at right) is based on a vertical mix of ground level retail and restaurant uses and upper level multifamily residential.



Table 2: Residential Land Use by Dwelling Type

LAND USE TYPE	ACRES (NET)	NUMBER OF PARCELS	PARCELED AREA	2011 UNITS BY TYPE	2011 UNITS PERCENT OF TOTAL	DWELLING UNITS PER ACRE (NET)
Single Family Detached	2,434	11,294	34.2%	11,259	45%	4.8 DU/A
Townhouse	332	3,164	4.7%	3,555	14%	13.6 DU/A
Multifamily	331	130	4.7%	9,213	37%	27.4 DU/A
Mixed Use Residential	39	NA	0.5%	941	4%	24.1 DU/A
Residential, ALL	3,136	14,588	44.1%	24,968	100%	8.0 DU/A

Rockville’s reputation as a shopping destination is sustained on a surprisingly small amount of the city’s land: only 3.7 percent, or 263 acres. The ground floor retail in mixed use developments also adds to the amount of retail space, however the 39 acres for this use are only counted for ‘mixed use residential’ in order to avoid double counting that would result in a higher total than the total acreage of parceled land, and clearly the residential use is dominant. For the same reason, retail in primarily office buildings is also not included.

The retail use pattern is easy to see, with the majority of retail land uses in the narrow corridor of land along MD 355. Residential areas are served by nearby strip center retail areas, most located at arterial roadway intersections; though in reality residents drive to other retail areas for many of their shopping trips. Newer retail centers include the mixed retail and residential at King Farms and the shopping center at Falls Grove, as well as the retail on the ground floor of mixed use projects.

Lodging

The majority of lodging uses in Rockville are located to serve the I-270 technology corridor. There are seven hotels interspersed with the office campuses north of the West Montgomery interchange. Three of these have addresses on Shady Grove Road. Good access from the interstate is one advantage of this location, as is the ability to lodge visitors to the many technology companies or other institutions in the area. The Twinbrook station area also has a large hotel and a smaller hotel within walking distance of the rail station and with direct access to the Pike. The Town Center had been without a hotel for decades, but a new hotel (opened in 2015) is a key part of a mixed use development on Montgomery Avenue at Maryland Avenue. All totaled, lodging uses 41 acres.

Office

Categorization in the office land use is based on building types and activities, and is broadly inclusive of the many types of activities that occur within office buildings. Professional medical offices and biomedical research and design engineering uses, such as those found along Research Boulevard, look from the outside the same as other suburban office uses, and for the most part involve work routines that are performed at desks and in meeting rooms. However,

there is some overlap and ambiguity between what has been called an industrial use in the past, with the proposed categorization as ‘office.’

Past City of Rockville master plans categorized suburban style research parks as ‘restricted industrial’ (1970 Master Plan) or described the use by referencing a zoning district (2002 Master Plan). Current planning parlance recognizes that the use of the term ‘industrial’ is problematic and somewhat misleading as discussed below. The recommended categorization here emphasizes both office as a building type and activity type, where the majority of employees are situated in office space with desks and computers, while also recognizing that laboratory space maybe be part of the use, especially in suburban style campus settings.

Office uses, which total just over 600 acres and 8.5 percent of the parceled land area, are concentrated in two areas: the Town Center and the I-270 corridor, with additional office space scattered along MD 355 in between retail uses. While the aphorism that ‘if it looks like an office it should be categorized as an office’ helps in other parts of the city, two complications are found in the Town Center. First, while the administrative, executive, and legislative offices for Montgomery County and the City of Rockville are clearly an office activity, the public ownership and nature of courts and council functions argues for categorizing these as ‘civic’ uses. Second, a fair amount of private office space, primarily occupied by attorneys and medical professionals, on the west side of the Town Center is transitional office space in converted older houses and low rise buildings constructed to look like townhouses.

Office uses in the I-270 corridor benefit from direct access to the regional expressway network at the Shady Grove Road, West Montgomery Avenue, and Montrose Road interchanges. Campus office parks are located along both sides of the interstate north of Gude Drive. On the west side, MD 28 parallels the interstate north of its interchange defining a linear pattern of office land uses served by Research Boulevard to the city limit at Shady Grove Road. Additional office uses are clustered south of Wootton Parkway with access from the Montrose Road interchange in the Tower Oaks development.



Civic use in County and State office buildings in background and an office use in a converted historic house in the foreground in the Town Center.

A designated historic house on Adams Street is used for law offices, while more recently constructed law offices (in the background of the photograph) mimic a residential style of architecture.



Civic

Publicly owned land with uses that foster the civic life of the community are classified under the civic category, with the exception of parks and recreation which have their own category. Schools owned by the Montgomery County Public School system make up the majority of land in the civic category. The Rockville Memorial Library and Twinbrook Library branches of the Montgomery County Library are included, as are two post offices.

As the county seat, Rockville also hosts a number of Montgomery County offices, including buildings for the executive and legislative branches. While this activity is primarily organized as office space, the ownership by the government of these facilities, including City Hall, and the community and civic functions that also take place in these locations, such as court hearings and public meetings, are civic in nature.

Civic uses use just under 500 acres and 7 percent of the parceled land. These civic land uses are evenly dispersed across the city, with elementary schools arranged to serve neighborhoods and subdivisions. The Montgomery College campus north of Town Center is the largest single civic use at 85 acres.

Private Institution

Private institutions, including religious uses and private schools, account for 1.6 percent of the land use. Schools owned by religious organizations are listed as a private institutional use, as are properties with churches, rectories, mosques, or synagogues, which are typically on adjoining parcels. Other private institutions include fraternal and charitable organizations. Private cemeteries associated with religious organizations are listed under the separate cemetery category.

Service Industrial

Changes in industrial land use across the United States related to offshoring and technological efficiencies in heavy manufacturing and assembly work, has led to an examination of the terms used by planners to describe industrial land uses. In Rockville, lands zoned for heavy or light industry are in fact more often used for warehouses, automobile repair, or

building construction operations. While Rockville’s 2002 Comprehensive Master Plan uses the term “industrial” and refers only to the industrial zoning and a “service sector” (p. 2-9) rather than a land use, the 1993 Master Plan used the term “service industrial,” which communicates the service orientation of these uses and therefore is retained for this report. High tech or biological research is for the most part categorized as office.

Roughly 200 acres, or 3.0 percent of the city, is used for manufacturing, warehousing, and repair services. Historically, Rockville and Montgomery County were not centers of manufacturing, and the small amount of land devoted to industrial uses reflects that history. Nonetheless, two of the three main areas where service industrial uses are clustered are on the city boundary and bigger industrial areas are located immediately outside the city along and north of Gude Drive and south of the Twinbrook Metro Station in unincorporated Montgomery County.

Public Parks and Open Space

The City of Rockville has an extensive park system as a key amenity for residents, which the Recreation and Parks Department classifies into four types: Citywide, Neighborhood, Athletic, and Open Space. The parks are on over 1100 acres representing nearly 16% of parceled acreage. This total includes land used for indoor recreation centers and neighborhood centers. Neighborhood and athletic parks are dispersed across the city while specialized facilities, such as the Municipal Swim Center, serve the whole city from a centralized location. Open space conservation parks are land intensive, so that much of the total acreage in this category serves to protect steep slopes and streams as conservation parks.

Private Recreation and Open Space

The State of Maryland data includes a ‘recreation’ category for country club, golf course, roller/ice rink, sport complex, and swimming pool. By definition these are not publicly owned facilities, and they require a membership or fee for their use. While a private swimming pool may be essentially the same land use as a public pool, the distinction for this scan is helpful to understanding the overall pattern of land use, in particular in terms of potential land use change.



Automobile repair shops are the most common types of businesses in Rockville’s service industrial areas. Collision repair, body shops, radiator repair, and other major repairs are classified as service industrial uses, while gas stations that offer minor repairs are counted as a retail land use.

The amount of private open space comes close to matching the public parks, at 898 acres. Two country club properties with golf courses make up the majority of this space: Woodmont Country Club at 458 acres and Lakewood Country Club at 161 acres. While the majority of this category is open space other private recreational facilities are also included. A cluster of five large footprint buildings in the extreme northeast of the city provide space for indoor athletic facilities, including an ice rink, ‘sportsplex,’ and fieldhouse, all in an area zoned for light industrial uses, and buildings that are similar to light industrial warehouses. In addition, this category includes large open space parcels owned in common by home owner associations or townhouse commons, as described in the residential section above.

Cemetery

Two cemeteries make up this category: Rockville Cemetery and St. Mary’s Cemetery in the Town Center. Together they are 34 acres, or 0.5% percent of the land.

Transport

While much of the transportation function happens in the public right of way, which by definition is not on parceled land, there are transport uses that are on parcels, including railroad owned land. Large parking lots and parking structures are also included in this classification if the whole parcel is used for parking only, primarily at the Metro stations owned by WMATA. Even with these restrictions in the definition, this transport category uses nearly 178 acres and 2.5 percent of the land. If it were possible to actually account for the amount of all land used for parking cars it would be a much larger percentage of the city, perhaps even the biggest use of land.

Vacant

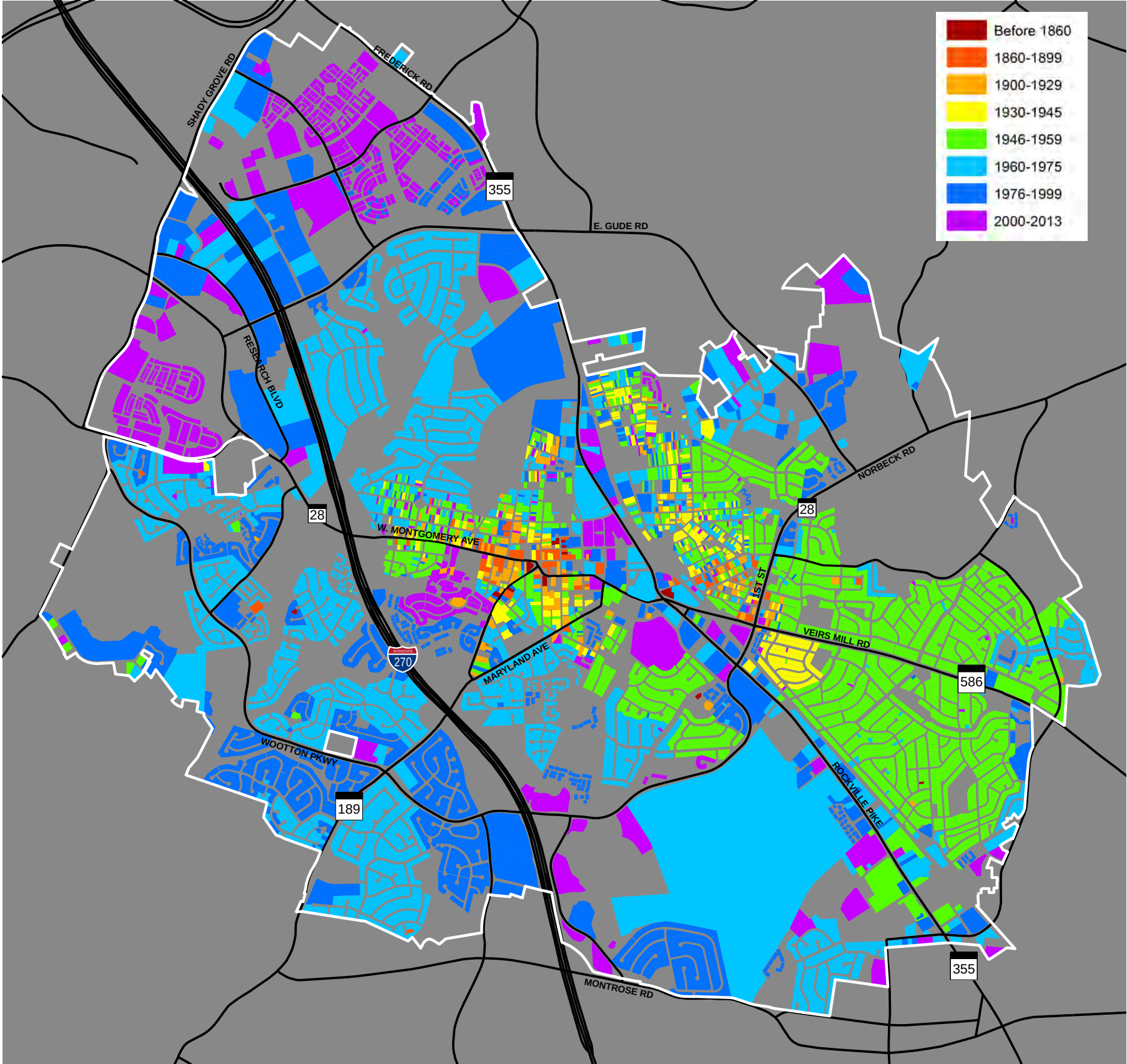
Private parcels that are without structures or other taxable improvements are classified as vacant. Very little of the land in Rockville is vacant, only 45 acres. This shows the strong market for land in Montgomery County. There are no large abandoned properties, for instance because of a closed factory. Instead, the vacant land is primarily scattered residential lots in old neighborhoods, some too small to develop.

Land Use Data and Analysis

Analysis of existing land use within the City of Rockville is based on land use descriptions provided by the State of Maryland Department of Assessment and Taxation (SDAT) available for each parcel of land within the state. The City of Rockville Department of Community Planning and Development Services (CPDS) utilizes four SDAT data fields—Commercial/Industrial Use, Tax Exempt Classification, Land Use, and Building Type—to perform a general analysis of land use, which is further refined and confirmed with aerial photography, city permit records, and local knowledge. CPDS standardized and reclassified land use descriptions so that each parcel is categorized as one of 14 different land use types : Single Family, Townhouse, Multifamily, Mixed Use Residential, Lodging, Retail, Office, Civic, Service Industrial, Private Recreation and Open Space, Park and Recreation, Private Institution, Cemetery, Transport and Vacant Land. Each of the 14 land use types is represented in map graphics as a color based on the American Planning Association’s standard land use colors.

Using the unique tax identification number, the analysis process matches the refined SDOT land use data for each parcel to the City’s geographic information system (GIS) database. The GIS database includes information on the size of each parcel, and therefore provides an accurate calculation of the total acres for each land use type. The GIS mapping ‘shapefile’ makes it possible to color code each parcel based on its land use type leading to the creation of the Existing Land Use 2014 map graphic shown in Fig. 3.

Figure 4: Year Built Analysis



Urban Design and Development Eras

Rockville’s oldest urban fabric dates to the 1780s, over two and a quarter centuries ago, including: Courthouse Square (1787); the city’s oldest remaining building (1793), the Jenkins/Miller/McFarland House at 5 North Adams Street; and streets and blocks from the first division of land into private lots and public right of way (1784 and 1803). Part of the history of settlement is revealed in ‘year built’ data available in SDAT records which indicate the year that the latest primary structure on a parcel was built. Figure 4 shows year built data grouped into eight broad social eras of roughly 15 to 30 year increments. The resulting pattern reveals development eras over Rockville’s history, including areas of expansion as well as redevelopment. Note that the SDAT data set is incomplete and some parcels lack information; in a small number of cases the map was revised manually.

Growth and Expansion

For the majority of its history, Rockville was a small settlement that could be easily traversed by foot. The arrival of the railroad in 1873 created an expanded market connecting Rockville to Washington, D.C. New plat additions were laid out and new houses constructed, most noticeably to the east of the railroad tracks and station. The most diverse area for age of structures is concentrated to the west of today’s Town Center along W. Montgomery Avenue and to the east to First Street. This area has a longer history of settlement spanning more of the eras, but it has also seen redevelopment of property over time.

Even without data for every property, the map reveals different eras of spatial growth of the city and something of how development types have changed over the decades, for instance lots sizes and street layout, which is explored in more detail below. This data also allows rough analysis of the pace of growth over time, however it does not show the whole record of development because many of the earliest structures have been demolished, particularly in the Town Center during the period of urban renewal from the 1960s into the 1970s. This area that would otherwise show in dark reds and orange (indicating the oldest structures) is instead colored turquoise and blue, indicating buildings from the 1970s. In the Town Square area of downtown, a plum color represents a second, more recent redevelopment effort for the area.

The map shows a dozen parcels with structures that predate the civil war, all except St. Mary’s Church lie to the west of Rockville Pike. There are many more remaining structures, (roughly 75 parcels) from the post Civil War period to the turn of the 20th century; and from the first three decades of the 20th century during the streetcar era in Rockville (200 parcels), leading up to the market crash of 1929. After this period, with the introduction of private automobiles, the pattern of settlement starts to rapidly expand outward from the historic center.

Interestingly, Rockville continued to grow during the Great Depression and World War II, actually adding more than 450 parcels in the 15 year period 1930-1945, which was more than double the growth in the 30 previous years. This is likely due to the continued expansion of the nation’s capital region out toward Rockville during expansion of the federal government under New Deal programs and then the war. A large part of that growth was the Rockcrest subdivision east of First Street and south of Veirs Mill Road, in the area that became Twinbrook. Houses in this subdivision date from the early 1940s, even prior to the formal entry into the war in December 1941. This is in contrast to most American cities that waited until after the war for the depression era halt in construction to end.

B&O Railroad station dates to the opening of the line in 1873. It was moved a short distance to make way for the Metro station.



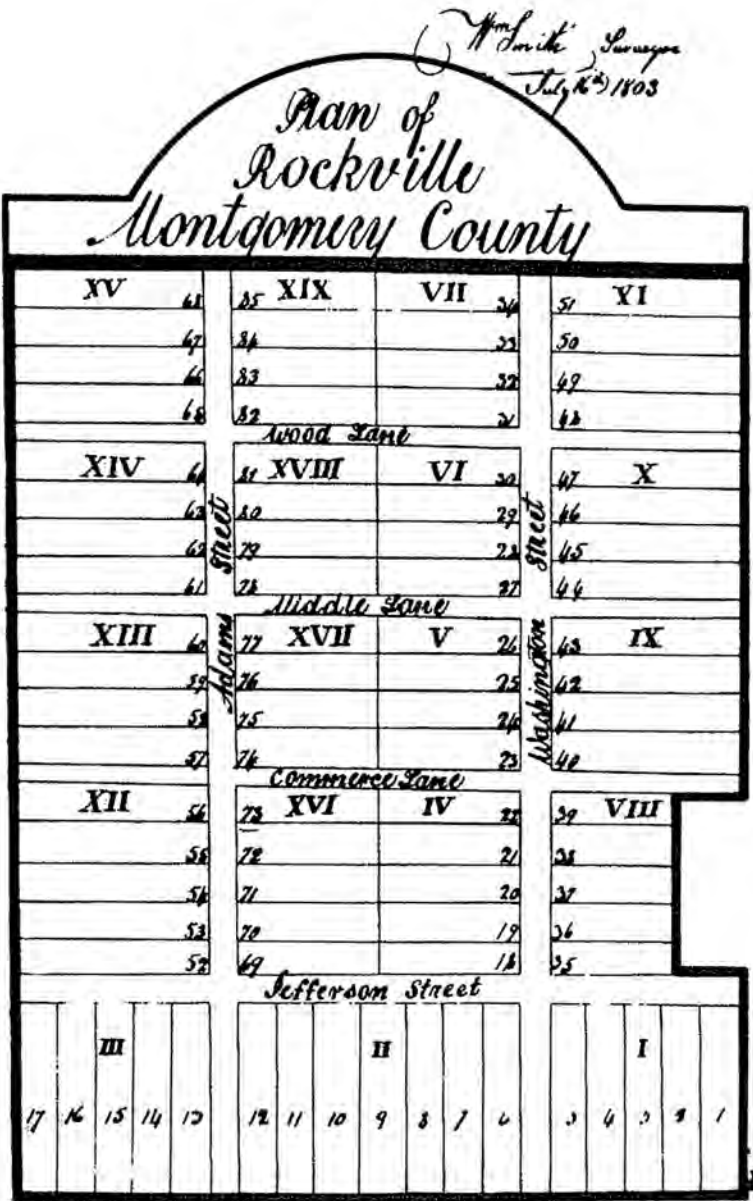
Still, the real explosive growth came in the immediate post war period between 1946 and 1959 when over 4,400 lots (or parcels) were platted, most continuing the expansion to the east side of the city. This 15-year period remains the highest growth era in the city’s history, but followed closely by the economic boom of the 1960s and early 1970s. Growth slowed significantly in the 24-year period from the mid-1970s to the end of the millennium, adding approximately 3000 parcels. Clearly the long 30-year growth period from the end of World War II to the end of the Vietnam war (1945-1975) was by far the biggest era of new development in the city’s history, adding 8,750 parcels, and one unlikely to ever be surpassed.

Urban Design Eras in Rockville

The manner in which land is divided into public right of way and private lots creates the basic character of a street, neighborhood, or town. The various shapes, orientation, and relationships between lots, streets, and open space are the basic component of each area’s urban design. It can be argued that this urban design layout predates land *use* planning in the history of many towns and cities, including Rockville, where lots and streets were first platted in an era when the use of lots was not specifically prescribed. Further, separation of uses was based primarily on the occupation and interests of the owner rather than regulation.

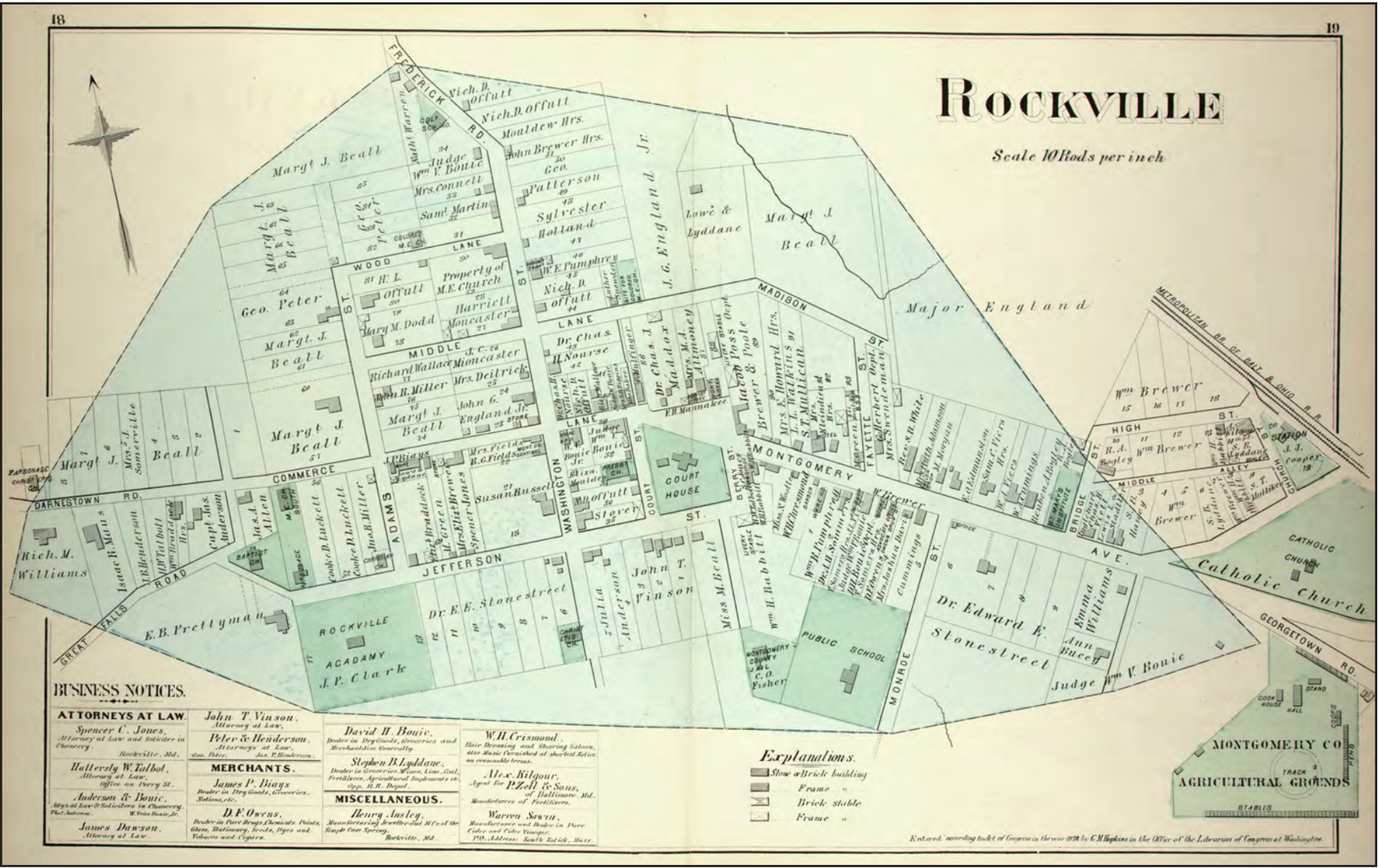
The 1803 plat for Rockville (at right) sets a corner beginning point for surveying streets and lots, and includes the first special urban design feature in the town: a courthouse square with its western half taken out of Block VIII between Jefferson Street and Commercial Lane. Actually Courthouse Square dates back to 1787, preceded the plat, which was commissioned to bring order and legal status to the grouping of inns and other constructs that comprised the settlement of the county seat.

The original Rockville plat created a grid of streets and rectangular blocks with fronting lots. However, this grid was not influential in setting a model for urban design in the city. Subsequent layout of streets and lots, in additions to the city, followed a wide variety of design styles, some responding to topographic features, others popular styles for real estate development in a particular span of time or development era. The next pages in this section explore urban design eras from the 1890s to today.



The first plan and plat for 'Rockville' dates to 1803, as shown above. The street and block layout is still recognizable 211 years later for the core section between Washington and Adams streets. The notch between Jefferson Street and Commerce Lane indicated the location of the courthouse.

Using the City's GIS to measure today's blocks, they are almost exactly 500 feet east to west by 250 feet north to south, and 600 feet from the east side of Washington Street to the west side of Adams Street. The block between Middle Lane and Commerce Lane (now Montgomery Avenue) is divided into eight lots, that are 62.5 feet by 250 feet. It is interesting that typical lot widths and depths in the city have not changed much over time, however the regularity of the 1803 plan's grid and orientation to the cardinal directions was not repeated anywhere else in the city.



An early map of Rockville from 1878 shows growth in the 75 years following the original 1803 plat. The regular spacing of streets and lots is abandoned with the first additions and the regional roads—including Montgomery Avenue/Georgetown Road, Frederick Road, and Great Falls Road—meet the grid at non-right angles. Narrow and deep lots along the main commercial street, Montgomery Avenue, are laid out to maximize frontage for businesses and shops.

The Great Road from Georgetown to Frederick passes through the heart of Rockville: Georgetown Road becomes Montgomery Avenue, which slices through Courthouse Square before continuing as Commerce Lane, then north on Washington Street and jogging again as Fredrick Road. This difficult circulation pattern would haunt the town center and bring on wholesale reordering of streets during the urban renewal of the 1960s, continuing to current time: an unusual uncertainty about the location of streets at the heart of a town that dates back to the 1770s. The sharp angle of the unlabeled Veirs Mill Road and Georgetown Road intersection would later become known as the 'mixing bowl.' The new railroad track hints at the coming expansion to the east.

Urban Design Eras in Rockville



City Beautiful Grid, Streetcar Suburb

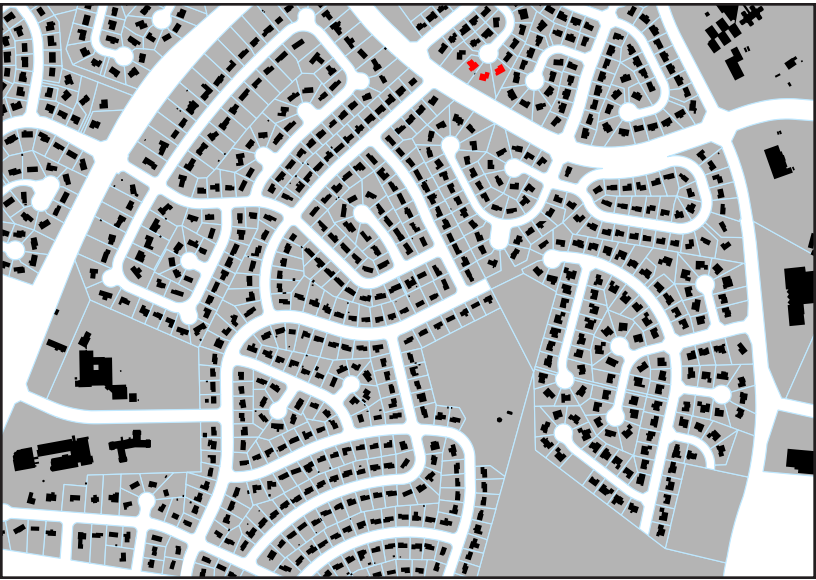
Lots: 50-100 x 180 ft. ROW: 52-56 ft. Grid with Beaux Arts circle

The West End Park subdivision was platted from the 500-acre West farm with long blocks oriented to the historic town center and rail-road station. A grand boulevard down Darnestown Road (now W. Montgomery Avenue) included a streetcar line to the Woodlawn Hotel resort and offered quarter acre lots backed by an alley. Cross streets had even larger lots, encouraging construction of big houses



1890s

in Victorian styles such as the Queen Anne example at the corner of Forest and Anderson avenues above. However, within ten years the development was in default and “all but 220 lots were auctioned at the courthouse door in 1900” (*Rockville: Portrait of a City*). It took decades for the remaining lots to be developed with a wide variety of house sizes and styles. (Note: red color on the graphic indicates structures shown in the photographs.)



Cul De Sac Subdivision

Lots: 85 x 120 ft. ROW: 57-63 ft. Labyrinth of short, terminal streets

The tension between an exclusive single family residential land use pattern that requires car ownership and driving for nearly all trips and the contradictory desire to keep traffic off residential streets found its expression in the cul-de-sac subdivisions of the Baby Boomer years of the 1960s, 70s, and 80s. This form is most prevalent in the neigh-



1960 to 1990s

borhoods to the west of I-270 (completed in 1960) where subdivision design was based on limited points of access from four lane arterial roads and a maze of cul-de-sac streets. Steep slopes and lack of crossings of the West Branch stream system reinforced the disconnected settlement pattern. House styles varied and grew in size over the decades of strong economic growth.



Post War 'Levittown'

Lots: 60 x 100-160 ft. ROW: 50 ft. Curvilinear partial grid

Pent up demand after 16 years of economic depression and world war was met by mass production of housing in places like the Twinbrook neighborhoods of Rockville. The largest annexations of land in the city's history were followed by the construction of 3500 single family houses to the north and south of Veirs Mill Road between the



1945 to 1960

end of the war in 1945 and 1960. Following the model set in Levittown, New York, the houses were generally smaller than previous eras, with the idea of expansion built in to the marketing. The repeated designs include Cape Cod style cottages with brick or wood siding moving to larger Ranch and Split Level styles in the later years of development. The street layout, while still a partial grid, begins a trend toward limiting connections and through traffic.



New Urbanist Village

Lots: SF 50 x 95 ft. or TH 20 x 64-100 ft. ROW: 46-60 ft.

A call from design professionals for a return to the traditional small town layout and mix of uses was matched with a period of fast rising land costs leading to the New Urbanist design of the King Farm development. The cul-de-sac is gone in favor of a connected grid of small blocks, many including alleys. The mixture of multifamily apartment



1995 to 2007

buildings with townhouses and single family detached dwellings is unlike anything built in the prior periods of Rockville's history. The walkable scale and grid provide access to the mixed use village center, which includes buildings with small storefronts and upper level apartments.

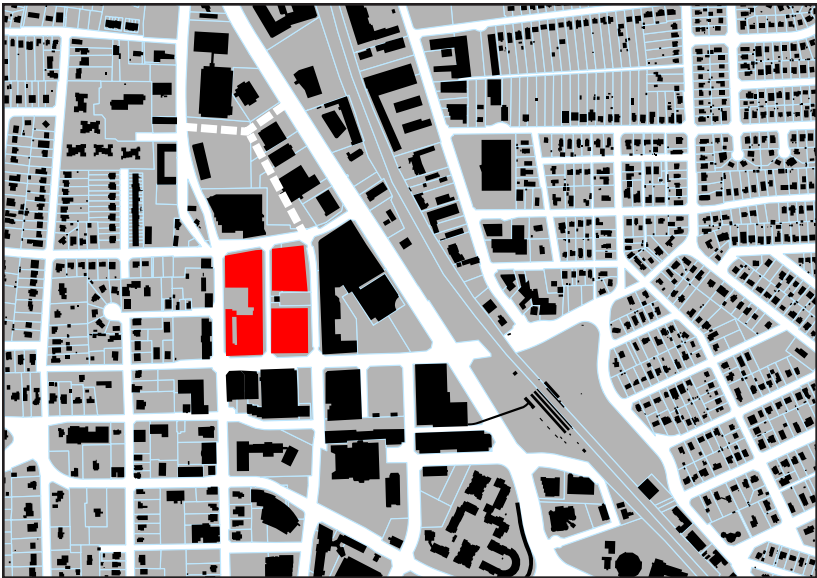
Urban Design Eras: The Urban Renewal Project and Town Square



Urban Renewal

Modernist super blocks and grade separation of modes

Rockville's most ambitious urban design experiment came during the urban renewal period of the 1960s and 70s. Beginning in 1960, with funding from the federal government, the City acquired nearly 50 acres in the heart of the city and demolished 111 buildings in an attempt to reinvigorate its central business district which struggled to compete with new auto-oriented retail centers. The urban design



Town Square: Block Based, Mixed Use Infill

Rectangular blocks, 220 x 300 ft. (or 600 ft.) Vertical mix of uses

Thirty years of failed development came to an end with the demolition of the Rockville Mall in October 1993. A new development plan, based on a more regular grid than the historic crossroads had ever had in previous eras, created standard downtown block sizes of 220 feet by 300 feet. The urban design approach shaped around streets



1960 to 1973

scheme was centered on an enclosed mall which was to attract a department store. Montgomery Street was vacated and traffic rerouted to Jefferson Street and the Hungerford Drive bypass. The pseudo superblock of the indoor mall and its huge parking garage blocked circulation and created a dead zone of underdeveloped land to the north. County offices in the Brutalist architectural style persist along with high rise residential buildings and the remaining part of the mall converted to offices and parking.



1990 to 2006

with sidewalks, on-street and structured parking, and street level shops provides a manageable and flexible development framework that fills blocks in a market driven time frame. The Town Square development on four new blocks created a traditional town center including a small public open space, anchored by a new public library, an art center, and a grocery. Planned extension of the grid is shown with a dashed line, with the Dawson Avenue segment under construction in 2014.

Urban Design Eras: TOD



Transit-Oriented Development

Phased infill with mixed use blocks and coordinated open space

Following a regional trend that puts a premium on walkable access to the Metro system, construction of new housing, retail, and office uses proceeds in close proximity to the Twinbrook Metro Station. The Twinbrook station opened in 1985 with surface park and ride lots to the east and west of the tracks. With rising land costs, new development is able to support structured parking for Metro patrons and for the new mixed use development. As the marketing banner reads (see photo), the new Twinbrook is 'Urban by Nature,' with an urban design that



A new apartment building fronting on Frederick Road (MD 355), a short walk from the Shady Grove Metro station.



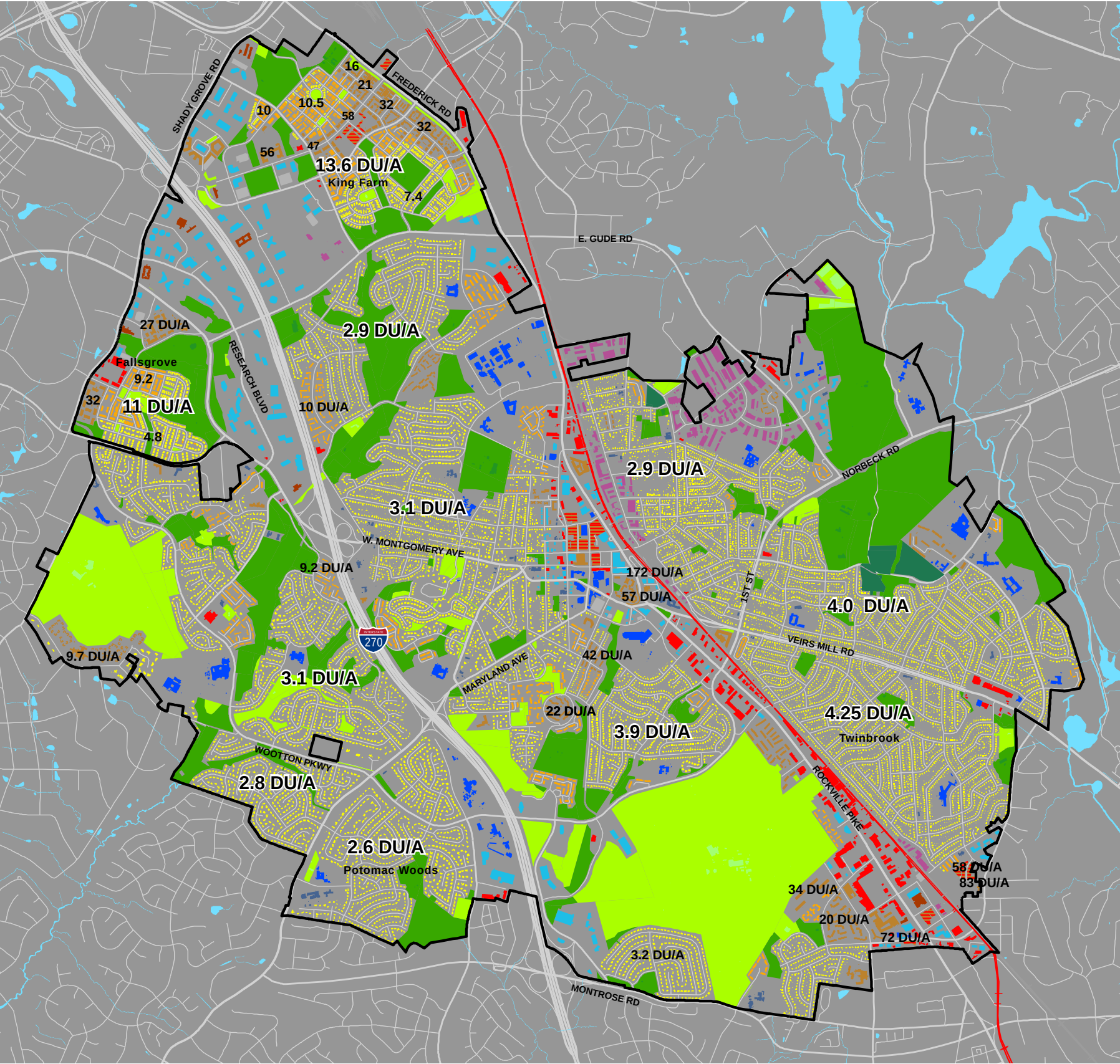
2008 to 2015

emphasizes the sidewalk and street scene over automobile access. New housing on upper levels provides some of the market to support small shops. On the west side of the station a new block sized project puts a major grocery on the ground level serviced by structured parking and five floors of apartments above. Market and demographic conditions, and growing experience with vertically mixed 'stick built' development in transit station areas, makes this type of development the new housing product for the early 21st century, in the same way that the nearby mid-20th century tract housing met the economic needs and tastes of that era.



The newest building in Rockville is a mixed use project with hotel, apartments, and retail on Montgomery Avenue at Maryland Avenue, opened in 2015. The hotel has quick access to the Rockville Metro station via the pedestrian bridge only a half block away.

Figure 5: Residential Density Analysis



Residential Density

A calculation of residential density is useful to gaining a better understanding of the pattern of land use in Rockville, for purposes of comparison of different areas within the city. It also helps in evaluating the density as it pertains to other issues, for instance transit service, retail markets, and fiscal analysis of provision of services. The standard measure of residential density is dwelling units per acres, or DU/A. The results are shown in Figure 5.

Analysis Methodology

The analysis methodology provides two types of calculations including an adjusted gross density for large areas, and a net density for selected individual parcels. The adjusted gross density at the broad neighborhood scale (in large type, Figure 5) includes the residential parcels and the public right of way, but does not include public parks or civic or institutional uses interspersed within the neighborhoods. The second analysis method, yielding a net density, was applied to a small sample of multifamily developments, each located on a single parcel.

The analysis includes calculations that allow for comparison of like to like, for instance single family detached areas to other similar areas, showing variations that account for different lot sizes and right of way widths, but also includes some smaller scale analysis areas that show how mixing of townhouses and multifamily into a neighborhood can increase the overall dwelling units per acre.

Pattern of Residential Density

For the majority of its two hundred year history, Rockville has annexed and subdivided land for low density single family detached residential development. The density of this single family detached development remained relatively low and stable, in a range between 2.6 to 4.25 dwelling units per acres. The historic West End Park subdivision from the 1890s has a density of 3.1 DU/A, as does the single family part of the Woodley Gardens subdivision dating from the 1960s, and also Rockshire on the other side of I-270 dating from the 1980s. Only part of this consistency over nearly 100 years can be attributed to the zoning ordinance, since the West End was developed before there was a zoning code and Rockshire, with the same density, was developed under the flexible Planned Development zoning district.

Density Calculation Method and Examples

The analysis was performed using the City’s GIS with both parcel based data and manually defined analysis areas based on a visual scan of parcel size and subdivision or neighborhood boundaries. For example, the Twinbrook neighborhood is easily discerned by its consistent pattern of lots and by its boundaries along the CSX track and Veirs Mill Road. A boundary was drawn around the single family detached area only, excluding newer townhouse developments at the corner of Veirs Mill Road and First Street and a townhouse development south of Halpine Road. All non-residential uses, including schools, parks, industrial and retail areas were excluded or subtracted from the area total generated by the GIS. This reduced the gross area of 453 acres by 25 acres of parks and schools internal to the boundary, resulting in an area of 428 acres. The GIS data identified 1,821 dwelling units within the defined area, in this case all on individual parcels. Dividing the total number of units by the acres provides a standardized measure of dwelling units per acre: 1,821/428 = 4.25 dwelling units per acre, or 4.25 DU/A.

Calculations for subareas within the King Farm and Falls-grove neighborhoods also show how different housing types relate to different densities. For instance, small lot single family detached units at 7.4 DU/A, versus town-houses at 10 DU/A, or apartments at densities of 21 to 56 dwelling units per acre.

The net density method was applied to a small sample of multifamily developments. This method of analysis provides precise data, for instance the distinctive Wadding-ton Circle (between New Mark Commons and Hunger-ford) is a single parcel that is 10.8 acres with 237 dwelling units which yields 22 DU/A net density.

Typical lot sizes in many suburban areas across the country range between a quarter acre and half acre, which corre-spond to a density range of 2 to 4 DU/A. Perhaps as import-ant as regulations is the historical pattern and the small town feel created and continued from a density of three houses per acre, especially when compared to the higher urban den-sities of older cities at the core of most metropolitan areas.

Within the single family detached range of densities, and ex-cluding the newer King Farm project, the greater Twinbrook neighborhood, to the north and south of Veirs Mill Road, is the highest in units per acre. To the north, Twinbrook Forest and Northeast Rockville have a density of approximately 4.0

DU/A, while to the south Twinbrook proper is slightly higher at 4.25 DU/A. Lot sizes do vary in Twinbrook but average around 0.2 acres. These houses, built in the 1940s and 1950s, are smaller than those found in neighborhoods from the 1960s to 1980s, but the lots are only slightly smaller than the later subdivisions, for example Potomac Woods, where the average is still roughly 0.2 acres for the majority of lots.

So what accounts for the higher density in Twinbrook, at 4.25 DU/A, than Potomac Woods, at 2.6 DU/A? In part, it is the wider right of way in Potomac Woods versus Twinbrook. The majority of streets in Twinbrook are 49 to 52 feet in width, while the right of way in Potomac Woods is 60 to 72 feet. The more generous buffer areas between the curb and sidewalk make the Potomac Woods lots seem bigger. Also the grid in Twinbrook is more efficient in terms of layout than the much greater number of cul de sacs in Potomac Woods. Potomac Woods has 34 cul de sacs on just under 300 acres, while Twinbrook has only five small turnarounds on its 450 acres. It is also less efficient to lay out lots around a cul-de-sac than on a grid with corners, and these irregular shaped lots radiating around the circle can range from 0.3 to 0.45 acres, driving down the overall density.

While most of the land developed in the second half of the 20th century in Rockville was built as single family detached dwellings, there are some post war neighborhoods that have modest diversity in housing types, including townhouses and garden apartments. Yet, there are very few duplexes or triplexes anywhere in Rockville. Typical townhouse densities are 9 to 10 DU/A, as found in two subdivisions on either side of I-270 to the southwest and northeast of the West Montgomery interchange. In terms of multifamily construction, a typical three story walk up apartment with surface parking is in the 14 to 22 DU/A range. Given similar construction and layouts, this density can be very consistent, for example, the Waddington Circle apartments, Woodmont Park apartments on Rockville Pike, and Woods Edge apartments on Baltimore Road all have the same 22 DU/A density.

A concentration of higher density multifamily development is located in the Montrose neighborhood, along Rollins Avenue and Jefferson Street. The Congressional Towers apartments adjacent to the Woodmont Country Club achieve a density of 34 DU/A in seven story concrete and steel structures. Because all of the parking is on the surface, without garages, the resulting parking lots surround the towers.



Relatively narrow streets is one factor in a higher density of development in the Twinbrook neighborhood at 4.25 DU/A.

The highest residential density building in the city is the ten story Town Center Apartments at the corner of Monroe Street and Monroe Place. The building has 110 units on 0.64 acres for a net density of 172 DU/A.



The winged eight story apartment building at the corner of Rollins Avenue and Jefferson Street is the highest density in the area, and one of the highest in the city, at 72 DU/A. This senior housing is also surface parked, but with a reduced number of spaces per unit.

Newer development in King Farm and Falls Grove have much higher densities than the historical pattern, likely reflecting the significant rise in land costs in Montgomery County in recent decades. The average density of the whole King Farm area is 13.6 DU/A, with 3,636 units on 267 acres. The housing mix includes the largest grouping of apartment buildings in the city, over three dozen individual buildings, at densities ranging from 21 to 58 DU/A. The townhouse section north of the village center is a typical 10 DU/A, while the single family detached and attached area south of the village center is an urban 7.4 DU/A, with minimal yards and setbacks and alleys. The design shows attention to mixing unit types at the block level. Given the factors that have led developers to create denser neighborhoods like King Farm, it is unlikely that new subdivisions in Rockville will have the low densities from previous eras. Only infill on existing single family lots will be built back at the historical densities, where planning policies and zoning regulations preclude evolution to denser housing types.

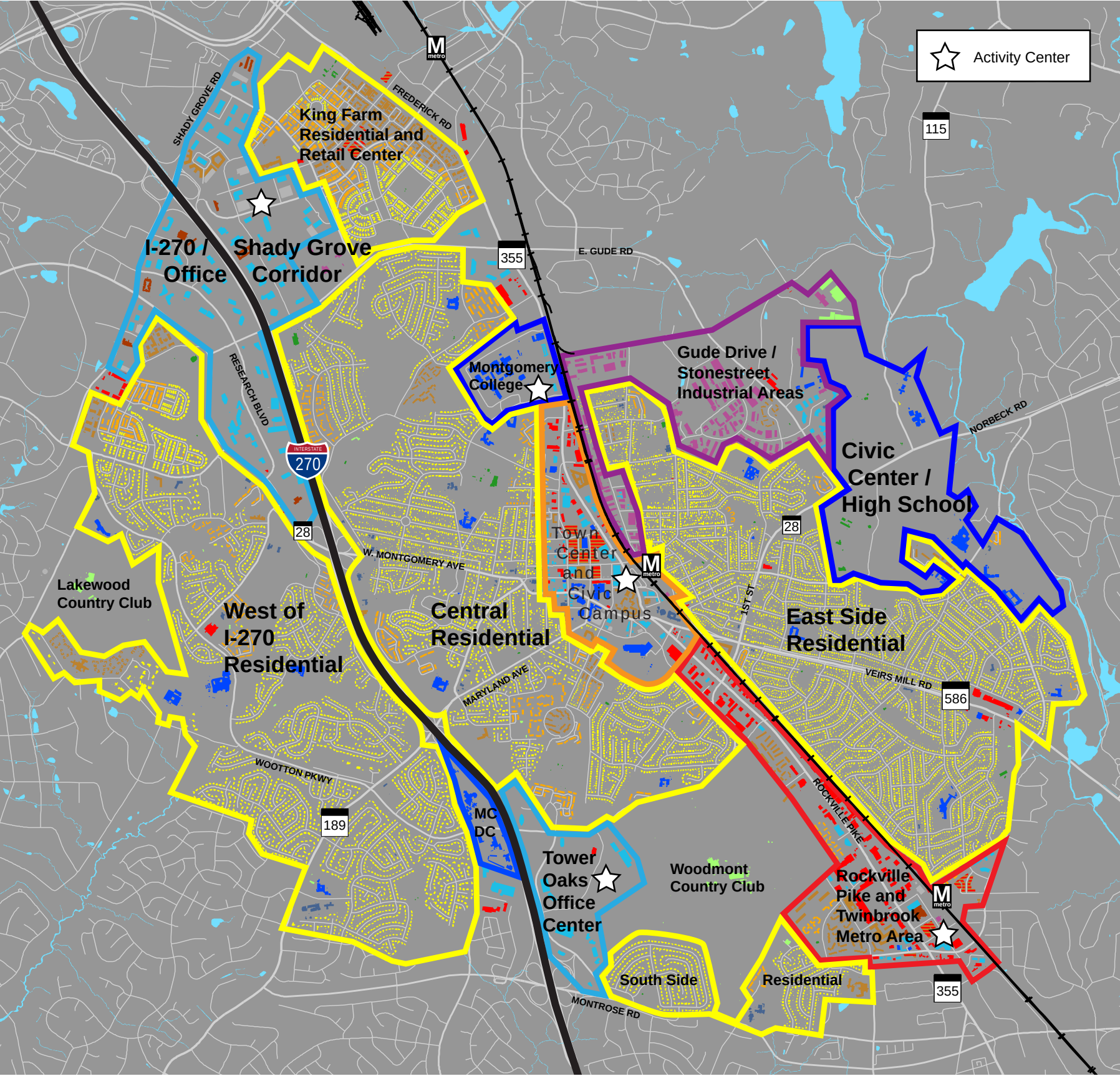


Some of the lowest residential densities in the city are found in Potomac Woods, at roughly 2.6 DU/A, where cul-de-sacs require extra right of way for turning and parcels fan out around the circle creating large back yards.

Small side and front yards and alley lanes instead of driveways helps to raise King Farm single family densities to an urban 7.4 DU/A.



Figure 6: Generalized Pattern Of Development



Land Use Issues by Type and Location

Land use issues can be considered in terms of a particular type of land use, but also in terms of location or area. For instance, regional market forces affect the demand for office space as a use, but there are also locational differences that may impact the future of office uses in a specific area. In order to address this analytical tension between the need to look at the big picture versus the specifics of each location, the approach in this section is to consider from a high vantage point issues regarding the four main uses that are affected by markets and value assessment: office, retail, industrial, and residential uses. This discussion is followed by an outline of issues specific to prominent locations for each of these land use types. Before turning to issues specific to each of these land uses, a brief outline of the broader grouping of land uses is provided.

Generalized Pattern of Development

Based on the broad pattern of land use and development, Figure 6 presents a graphical representation of the city divided into a dozen distinct areas:

- Eastside Residential
- Central Residential
- West of I-270 Residential
- Town Center and Civic Campus
- Rockville Pike and Twinbrook Metro
- I-270/Shady Grove Office Corridor
- King Farm Residential and Retail Center
- Montgomery College
- Gude Drive/Stonestreet Industrial
- Civic Center/High School
- Tower Oaks
- Southside Residential

Subareas are framed by transportation infrastructure, with the city roughly divided into thirds by the interstate and railroad track.

A good portion of the city is grouped as East Side Residential, Central Residential, and West of I-270 Residential areas. The smaller, isolated residential areas south of the Woodmont Country Club are labeled as Southside Residential.

With its intentional mix of retail at the center of its dense residential plan, the King Farm area is sufficiently different to be thought of as its own area. The I-270/Shady Grove Road Office Corridor is clearly a group of similar land uses and development types. It has some characteristics in common with the Tower Oaks Office Center, but is quite different from the cluster of office uses mixed with retail and high density residential in the Town Center and Civic Campus. A few outliers are difficult to group, specifically the retail part of the Falls Grove development which can be grouped either with its adjacent residential or with the other commercial uses along Shady Grove Road. Also, the office and retail development west of MD 355 at Gude Drive is difficult to group.

The primary retail area is along both sides of Rockville Pike, expanding at its southern end with a mix of retail and office uses near the Twinbrook Metro station, which is currently seeing growth in multifamily residential uses. The Gude Drive and Stonestreet industrial area is the city's only area with a large grouping of production, distribution, and repair uses along the east side of the railroad tracks and Gude Drive. Montgomery College is a distinct single use area. And finally, the large amount of land owned by the City and County on both sides of MD 28 in the Civic Center and Rockville High School, and Red Gate golf course are all public uses.

Activity Centers

The Metropolitan Washington Council of Governments asks its member jurisdictions to identify major activity centers for planning purposes. These activity centers (indicated on Figure 6 with a star symbol) are primarily based on existing employment concentrations, but are also planned for more intense development. Rockville designates the following areas as its MWCOC activity centers:

- King Farm/Rockville Research Center/Shady Grove
- Montgomery College
- Rockville Town Center
- Tower Oaks
- Rockville South / Twinbrook



Office land use in Rockville is expressed in a variety of structures that reflect the styles of their design eras, as well as different lease types and target markets. The classic square floor plate of the 51 Monroe building (top left) is leased to scores of individual office tenants, while the Rockville Metroplace (upper right) is primarily the headquarters of Choice Hotels International. Both buildings compete in the regional Class A market. Older structures, such as 1010 Rockville Pike (lower left) offer less expensive Class B and C space, which can fill an important role for professional service offices and entrepreneurs. Office buildings in the Piccard Drive and Research Boulevard corridor (lower right) tend toward larger floor plates, heights of two to three stories, and surface parking surrounding the building.



Land Use Issues by Type:

Office

Rockville is a major employment center in Montgomery County, the Washington metropolitan region, and the State of Maryland and most of that employment takes place within office buildings. The city has a diverse set of office users, including concentrations of Montgomery County administrative offices and federal agencies and contractors. The main concentrations of offices in Rockville are in Town Center and along I-270 and MD 355 with smaller concentrations along Shady Grove Road and E. Gude Drive. There are also significant office areas just outside the city in the Twinbrook Metro area, White Flint, Shady Grove Road, and Gaithersburg. Altogether, this office region is among the most important in the State of Maryland.

The use of land for office space in Rockville is influenced by the common real estate parameters of location, age and building condition, and regional demand. In this region, the actions and policies of the federal government are important factors influencing overall demand.

Multiple studies and publications have documented the weakness in the overall regional, and even national, market for office space. Montgomery County’s June 2015 report, entitled Office Market Assessment, Montgomery County, Maryland (conducted on behalf of the County by Partners for Economic Solutions) identified issues in the County’s office market. The study included some key locations in Rockville. It stated that, in the second quarter of 2014, Montgomery County had 11 million square feet of vacant office space. For reference, the two jurisdictions in the region with the largest amounts of office vacancy were Fairfax County (20 million square feet) and Washington, DC (15.6 million square feet).

Table 3: Rockville Office Space, CoStar February 2016

Number of Properties	Properties at Full Occupancy	Total Square Feet	Total Vacant Square Feet	Percent Vacant
230	85	12,444,236	1,970,269	16%



Among the report’s findings are that: “The most successful office clusters in Montgomery County are part of mixed-use development with a strong sense of place and a quality environment. Transit connectivity is increasingly important to office tenants.” It also finds that: “Single-use office developments without convenient transit or highway access are having difficulty in attracting tenants.” Some of Rockville’s office locations are better positioned than are many in Montgomery County to take advantage of the positive attributes identified in the report. As evidence, in 2009-2014, downtown Rockville was among the three best performing mixed-use business districts, with a 2014 second quarter vacancy rate of only 6.5% and a positive absorption of 233,000 square feet over those 5 years (p. 44-46). Furthermore, the area along I-270 between W. Gude Drive and Shady Grove Road was among the best performing office parks, with positive absorption of 446,000 square feet.

Citywide Trends for Office Uses

- The regional market for office space is currently weak.
- Demand for federal office space is uncertain and the end of recent leases in Rockville has led to vacancies.
- A documented regional preference for Metro accessible locations is not yet confirmed in Rockville.

Figure 7: Recent Changes in the Research/Piccard Area.



Issues in the Research/Piccard area of the Rockville I-270 Technology Corridor include:

- Buildings developed in early expressway era, 1960s to 1970s, need upgrades to stay competitive with new space.
- Potential for infill on the large five acre parcels previously required by zoning, but older structures are usually in the center of the site.
- Land use change from office to residential and retail is occurring on a site basis, which could result in an odd mix of residential in office parks.
- Older site layouts have a lower floor to area ratio (FAR) with surface parking (less than 0.5 FAR); newer developments have higher FAR and structured parking, likely due to land costs and desire for urban character.
-

One of the biggest questions regarding office land use is the fate of older structures in the I-270 corridor, for instance 1350 Picard Drive (right), which lost a federal tenant in 2014 and is currently vacant and for sale or lease in a weak regional office market.



- Approved office development projects in the Town Center and Twinbrook Metro station areas are not proceeding to construction at this time.
- Weak market is leading land owners and developers to switch from planned office to townhouses and strip retail.
- Growth in the Great Seneca area just beyond Rockville's border may affect market for office within the city.
- The 2002 master plan does not provide guidance on conversion of office to other uses, specifically in terms of appropriateness of residential uses in office parks.
- New zoning ordinance, adopted in 2009, does not have a district that requires or protects office land uses.
- Changes in the structure of workplaces, such as home based businesses, shared office space, and virtual offices may challenge demand for office land uses and current regulations.

Location Specific Issues for Office

I-270/Shady Grove Road Office Corridor

- Office buildings and laboratories built in the early expressway era are now 30 to 40 years old and are not competitive with newer office space.
- Weak market is leading to proposals to change from office to retail and residential uses on a site by site basis, without guidance from the master plan.
- King Farm and Upper Rock developments are near buildout with conversion of older and planned office to residential.

Town Center

- County office space demand supports the market for leased space.
- County and state facilities, including the courts, dominate the Town Center and generate demand for attorney offices and other support services.
- There are few major corporate offices.
- Demand for private office development is weak even with transit, walkability, and other amenities.
- Amenities in the downtown support office uses in other locations within an easy drive.
- Growth in mixed use residential development could preclude expansion of the Town Center office employment in the future, with limited sites available.

Rockville Pike

- Office buildings are scattered along the Pike.
- Cheaper space is leased by small businesses and professional services, especially medical offices.
- There is potential to cluster offices in the Halpine Road/Twinbrook Metro accessible area, but no policies or zoning requirement for office uses within a quarter mile of Metro.

Tower Oaks

- Five new office buildings have been constructed since 2000; but no new construction since 2008.
- Although these projects are mid rise in height (7-10 stories) with structured parking, buildings are widely spaced in a low intensity suburban style with few walkable amenities.
- Suburban style office projects may become less viable or marketable, leading to few projects being implemented.
- Recent application proposes to change the approved development plan from over 750,000 square feet of office to a mix of residential housing types.

Gude Drive

- The Redgate area near MD 28 includes an isolated cluster of office buildings.
- Vacant land zoned MXE adjacent to office uses on W. Gude Drive at MD 355 may switch from approved office development to residential.

Preliminary Issues for the Comprehensive Master Plan

1. Given recent land use change in older office park areas, what policies are appropriate to guide development in the Research Boulevard/Piccard Drive area?
2. Should the master plan seek to preserve or promote office uses in selected locations?
3. Are current office uses in favorable, competitive locations in regard to access and amenities?
4. Are office uses in more isolated locations viable?
5. Are current policies adequate to address home based businesses and their impacts?



The access mode for retail uses is a major factor in urban form. Where cars are the primary mode of getting to and from neighborhood retail locations the relationship between the storefront, the sidewalk, and parking emphasizes drive up proximity by locating parking spaces directly in front of the shop. All patrons must walk through the parking lot to get to the internal sidewalk.

In mixed use development, where walking is the primary mode of access, the sidewalk as a place has greater emphasis. Cafe seating and sandwich boards claim space for the private business and seek to engage the pedestrian as audience and potential patron.

Land Use Issues by Type

Retail

There are multiple factors challenging retail as a land use in the City of Rockville, some related to locational and policy issues, but the majority affecting retail business models across the society. Retail is the most dynamic land use, with a constant pressure to update and adapt to the newest methods of marketing and delivering goods and services. In the same way that mass ownership of automobiles and shopping centers with ample free parking put the city’s historic, walkable main street shopping area at a disadvantage, internet sales and home delivery are leading to the end of chain bookstores, record shops, and the corner video stores. Given these trends, the future demand for retail space is uncertain; as is the urban form that retail uses will take.

Enclosed malls, such as the failed Rockville Mall, that were a key feature of early suburbia are part of a bygone era now. Currently preferred models include drive up access to specific shops in the big box and “power center” site layout, locations along heavily trafficked commute corridors, and entertainment oriented mixed use centers, such as Town Square and developments just outside the city at Crown Farm and Pike and Rose. Rockville’s scattered neighborhood shopping centers and Rockville Pike provide that type of quick access, but are challenged by newer developments, some just a few miles down the road.

Rockville Pike is the city’s primary retail corridor. It saw rapid commercial development following World War II when car ownership and highway building introduced new forms of retailing based on access by car. The success of the Pike as a retail address continues to this day, with approximately 2.5 million square feet of leasable space and a relatively low



vacancy rate of 8.8 percent, according to a February 2016 analysis of CoStar data. Transformation of portions of the Pike to a more walkable urban form, as envisioned in the draft 2014 Rockville Pike Plan, is a long term goal based on a growing trend toward vertical mixing of retail with multi-family residential. Projects in the vicinity of the Twinbrook Metro and in the Town Center show the potential of this form, which builds a portion of its needed residential market base into the project.

Citywide Trends for Retail Uses

- There are some examples of transition from older office to retail, including the Upper Rock project, on a site facing Shady Grove Road, and one site on Research Boulevard near the I-270 entrance from W. Montgomery Avenue.
- Market position of some older strip centers is weak, with the Rockshire and Twinbrook shopping centers as examples.
- There is a growing trend to vertical mixed use developments with ground level retail.
- Competition from new retailing focused on placemaking and experience (for example Pike and Rose in White Flint) could cut into retail sales in Town Center and the Pike.
- Growth in ethnic groceries is a trend mirroring demographic changes to a more diverse community.

Table 4: Rockville Retail Space, CoStar February 2016

Number of Properties	Properties at Full Occupancy	Total Square Feet	Total Vacant Square Feet	Percent Vacant
224	197	4,354,446	197,853	5%



Location Specific Issues for Retail

Town Center

- At present, restaurants are predominant in Town Square, while boutique retail shops struggle.
- Variety of retail businesses are limited in the Town Center.
- Additional businesses front on Hungerford Drive.
- New hotel and additional housing units will add to market base.
- Movie theater and library are anchor destinations.
- Dawson’s Market grocery is an important amenity for Town Square residents and nearby neighborhoods.

Rockville Pike

- ‘The Pike’ is a regional, automobile-oriented shopping destination with 2.5 million square feet of retail space in the City of Rockville, plus additional space to the south.
- Sales of up to \$2 billion annually are estimated for retail and restaurant businesses (Federal Realty Investment Trust, 2014)
- Vacancies are low at 8.8 percent (CoStar, 2016).
- Traffic congestion and difficult access are issues at some locations, but the average daily traffic volume of 52,000 vehicles (MDOT, 2014 AADT) provide a strong customer base for retail uses.

King Farm

- Grocery store anchor serves surrounding neighborhoods.
- Mixed use structures with ground floor retail provide dining, exercise, and boutique shopping and services for residents.
- Rental and vacancy rates in the Village Center are a continuing concern.

Fallsgrove

- Shopping center is successful, following a traditional suburban, single level retailing model.
- Visibility from Shady Grove Road is good and supports retailing, as does easy access to the residential area of Fallsgrove.

Neighborhood shopping centers

- Locations are generally on the exterior of neighborhoods and along arterial roadways, promoting access by car.
- Aging neighborhood centers need capital investment to modernize, but may no longer have the market position to justify investment due to increased competition. Therefore some centers may struggle to maintain tenants, lease rates, and business mix.



Preliminary Issues for the Comprehensive Master Plan

1. How should the master plan address smaller older neighborhood retail centers?
2. How can the master plan sustain and improve the Pike as Rockville’s signature retail area.
3. Is the mix of businesses in the Town Center serving community needs for shopping and entertainment?
4. What policies or actions are available to the City to support the King Farm Village Center?
5. Are there opportunities for Rockville to further benefit from its growing ethnic marketplace?
6. What is the relationship between residential density and retail viability?
7. Are conflicts between retail and entertainment areas and residential areas being managed?
8. Are current parking policies tuned to actual demand; are parking policies preventing new businesses from locating in Rockville, especially in regard to older strip centers?

New mixed use concepts, like Town Square project (below), include apartment units directly above retail, thereby building in some of the population base to support the retail establishments, and providing walk up access as an amenity.





A common type of service industrial use found in the Southlawn industrial area is characterized by real estate professionals as ‘flex space.’ The linear buildings are divided into bays with business signage, individual addresses and entrances, and roll-up doors. The interior space is flexible and customizable with open floor warehouse space and small office.

A wide variety of small service industrial businesses lease this type of space: everything from a microbrewery to upholstery repair, to stone masons, and building contractors.

Land Use Issues by Type

Service Industrial

The economy in Rockville has never been focused on heavy or light manufacturing; it is not a factory town, nor does it have any neighborhoods that developed around a factory. The light industry that exists in Rockville is small scale and eclectic, including machine shops, sheet metal shaping, and electrical and mechanical engineering. Otherwise, the majority of land designated for industrial uses is used for service businesses, with a large percent of those focused on automobile service, such as body shops and collision repairs. Other types of businesses include building contractors, building supply (flooring, tile, cabinets, counters), electrical contractors (HVAC and refrigeration) and supply, dog kennels, movers, self storage, lawn service and small engine repair, upholstery, bakery and brewery, and janitorial services.

A study for the Montgomery County Planning Department (Industrial Land Use Montgomery County, Maryland, October 18, 2013) discusses two basic types of industrial space: industrial space for light assembly and flex space, which “is typically single-story space with a portion finished as office space and a portion retained for warehousing, repair, or production.” Prevalent in Rockville, these types of flex space buildings are sited perpendicular to the street and divided into modular leasable units with roll up garage doors, entrances to individual businesses, and visitor parking. The recent study notes that land costs for industrial uses in the county were 47 percent higher than the regional average and that the county’s flex space inventory grew from 1993 to 2003 by 27 percent, and then only 2.6 percent from 2003 to 2012. This matches with very little inventory growth in the City of Rockville since 1995. The report states that industrial space is scarce within the Beltway and becoming limited in the ‘down county’ areas, including Rockville. This is a concern in terms of providing services to the large population and business base located in the down county area.

The only industrial business that is a top employer in the city is EU Services, a printing and bulk mailing business in the Southlawn industrial area, that has roughly 300 employees. A ‘windshield’ level count found at least 63



individual automobile repair businesses in Rockville’s industrial areas, including 35 in Southlawn, 12 off of Westmore Road, and 16 on Stonestreet Avenue.

More detailed reporting on service industrial issues is forthcoming in a study undertaken in 2015 to consider land use and traffic issues in the Southlawn area.

Citywide Trends for Service Industrial Uses

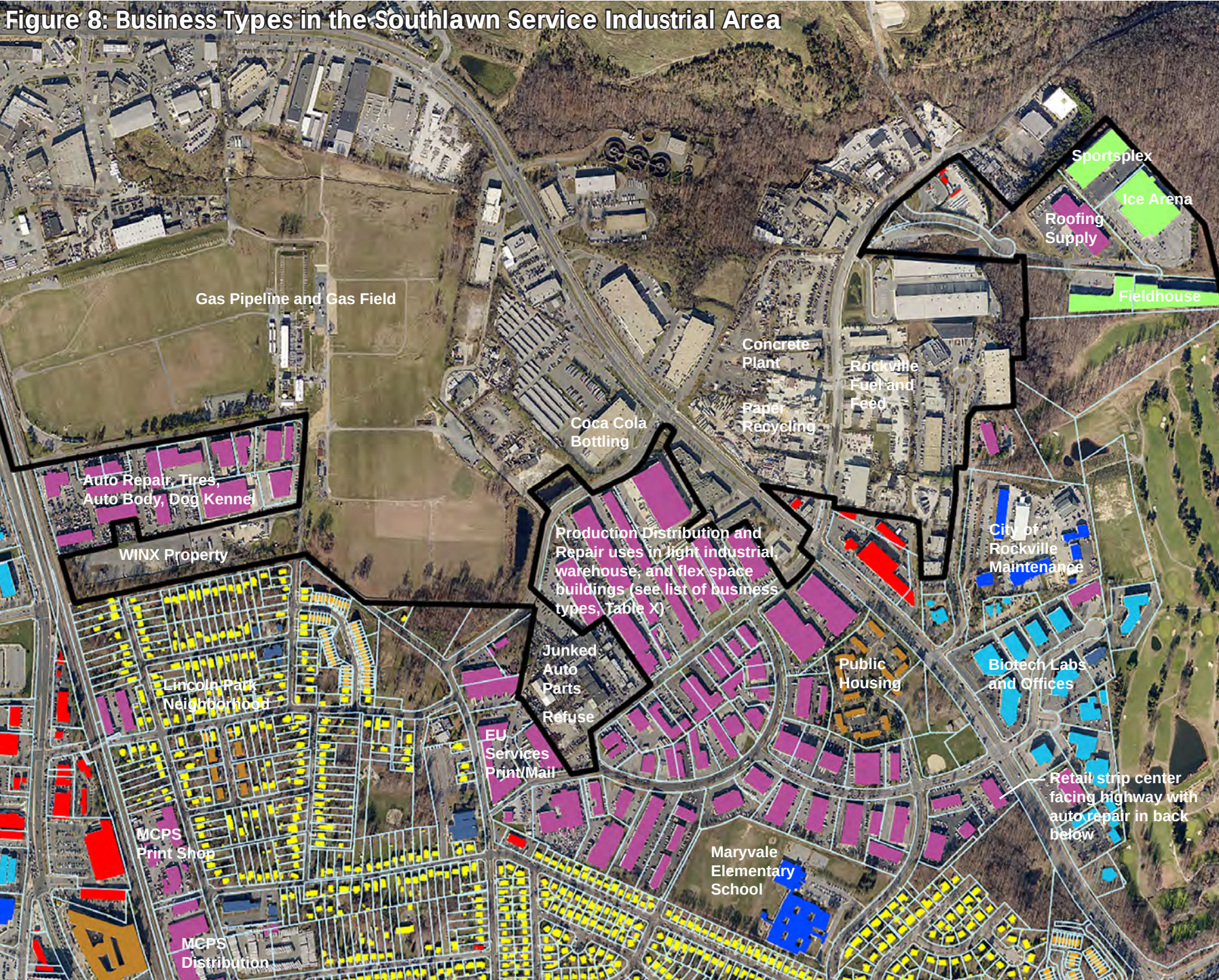
- Only five building permits were issued by the City for new construction of service industrial space since 1995.
- The service industrial market seems stable, with only 6 completely vacant buildings.
- Citywide, the amount of vacant service industrial space is approximately 6 percent (CoStar, February 2016).

Service Industrial Locations

Southlawn/Gude Drive

- Business operations are perceived by some residents as creating impacts that are not compatible with adjacent residential areas.
- Neighborhood plans ask for additional buffers between industrial and residential uses, and a zoning amendment was adopted in 2015 to require additional landscaping.

Figure 8: Business Types in the Southlawn Service Industrial Area



Southlawn is the city's largest industrial area, located on the north-east city limits with access from Gude Drive. The street and parcel layout along Taft Street, Lofstrand Lane, and Southlawn Lane is orderly, and most of the activities are contained within buildings. This pattern contrasts with heavier industrial uses located just outside the city limits, including a large gas field, paper recycling operation, concrete plant, and automobile salvage. A grouping of large indoor recreation structures are located in this industrial area on land zoned for light industry.

Table 5: Rockville Industrial Space, CoStar February 2016

Number of Properties	Properties at Full Occupancy	Total Square Feet	Total Vacant Square Feet	Percent Vacant
164	137	4,105,408	265,974	6%

Table 6 Service Industrial Business Types Located in the City of Rockville

Auto body and collision repair	Print shop (Montgomery County Public Schools)
Auto repair, general	
Auto repair, specialty	
Auto tires	Machining
Auto parts	Sheet metal fabrication
Auto glass	
Auto radiator	Truck rental
Auto painting	Moving
Auto towing	
	Catering
Contractor general building	Self storage
Contractor, kitchen remodeling	Lawn mover services
Plumbing	Small engine repair
Custom lighting	
Cabinet maker	Upholstery repair
Flooring	
Tile and counter supply	Restaurant, deli, lunch
Stone work	Bakery
Chimney sweep	Brewery
Dog grooming, kennel	Biomedical supply and engineering
Animal hospital	
	Cleaning, disaster recovery
Engineering, electrical	Janitorial supply
Engineering contractor	
HVAC contractor	Locksmith and safes
HVAC and refrigeration equipment	
	Entertainment, children's party space
Glass works	Recreation, ice rink, gymnastics, indoor baseball
Direct mail marketing services and printing	Warehouse and distribution

- Current neighborhood plans call for additional restrictions on truck movement in the adjacent neighborhoods.

Stonestreet

- Industrial uses are adjacent to railroad tracks and along east side of Stonestreet Avenue.
- Montgomery County Public Schools (MCPS) owns a number of large parcels along Stonestreet, some of which are underutilized.
- Neighborhood plans call for redevelopment to mixed uses, with reduction of industrial uses.
- Rezoning in 2009 to MXB Mixed Use Business has not yet led to any redevelopment or land use change.
- Plans call for additional/new street amenities as part of transition of uses.

Lewis Avenue

- Four parcels are zoned IL adjacent to the CSX railroad tracks.
- Infill redevelopment is planned for both sides of the Twinbrook Metro Station, on land owned by WMATA, to the south and west of the industrial use.

West Gude Drive

- Pepco owns a maintenance yard and service facility, which is the only industrial use in the vicinity.
- Forty acre Pepco site is zoned MXE, Mixed Use Employment.
- Adjacent properties include office uses to the west and north.

Preliminary Issues for the Comprehensive Master Plan

1. How important to Rockville is maintaining a core of service industrial uses within the community?
2. If there is interest in maintaining these uses, how might City policy apply to the different service industrial areas, including Southlawn, Stonestreet, and Lewis Avenue?
3. What other uses are acceptable in industrial areas?
4. What policies are helpful to minimize conflicts between service industrial uses and adjacent residential areas?
5. How should Rockville respond if market forces begin to replace service industrial with other uses?



Land Use Issues

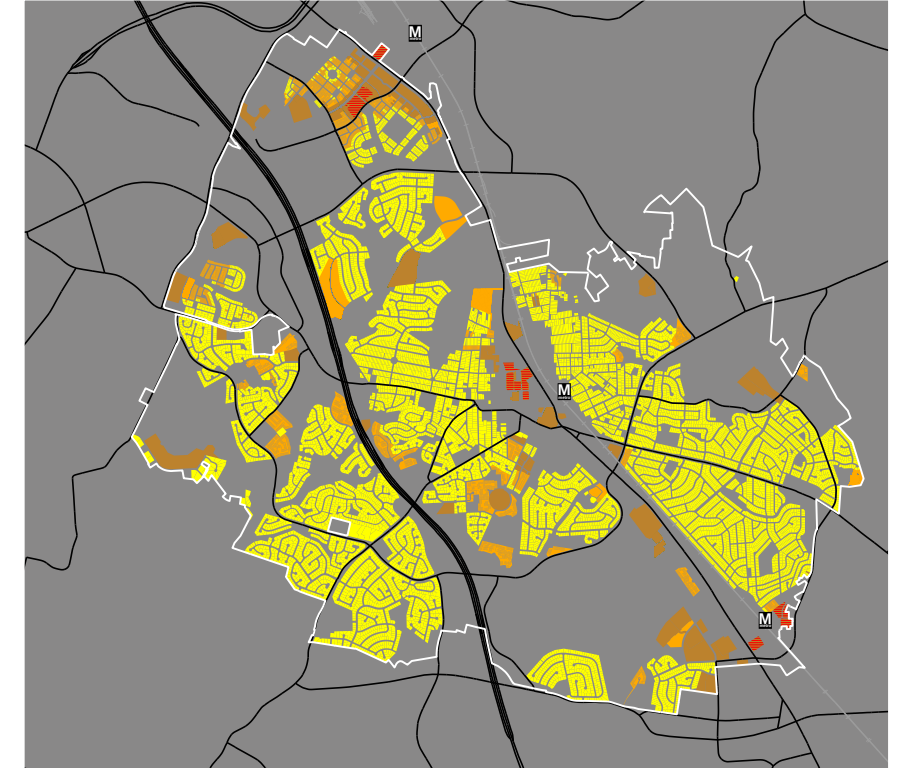
Residential

Residential land uses are dominant in Rockville in terms of physical space and in the community’s sense of itself. While the city is a major employment and retail center—with the city having more jobs than residents—a large portion of the Rockville is almost exclusively residential.

For the majority of Rockville’s history, single family houses were the primary type of housing available. Since the 1960s, however, the mix of types has become increasingly diverse, with the total number of townhouse and multifamily units now exceeding the total number of single family detached units. This new housing has not displaced single family detached units. Instead, it has come from newly developed areas (Fallsgrove and King Farm) and from redevelopment of commercial properties, usually bringing a mix of residential and commercial uses.

The increase in non detached housing can be attributed to a number of interrelated factors, including: the continued high demand for housing related to regional population growth, the lack of large undeveloped acreage to develop either within the city or through annexation, and the regional traffic congestion that makes concentrated housing valuable within walking distance of Metrorail Red Line stations.

Still (as shown in Table 2, page 8), single family detached residential holds 34 percent of parceled land in the city, while townhouse, multifamily, and mixed use development uses 10 percent. For many reasons, the demand for housing in the region and in Rockville is expected to be strong for the foreseeable future. Assuming that the City’s policies will continue to protect existing residential areas, as prior master plans have done, the demand for housing will be met in commercial areas that now have mixed use zoning. A key topic for this master plan is to consider how areas previously conceived of and planned for non-residential activity will become attractive places to live, so that residents living in these areas will also experience a high quality of life. This master plan should also consider how this evolution affects the long term fiscal health of the city and how to ensure that public facilities can meet new demands.

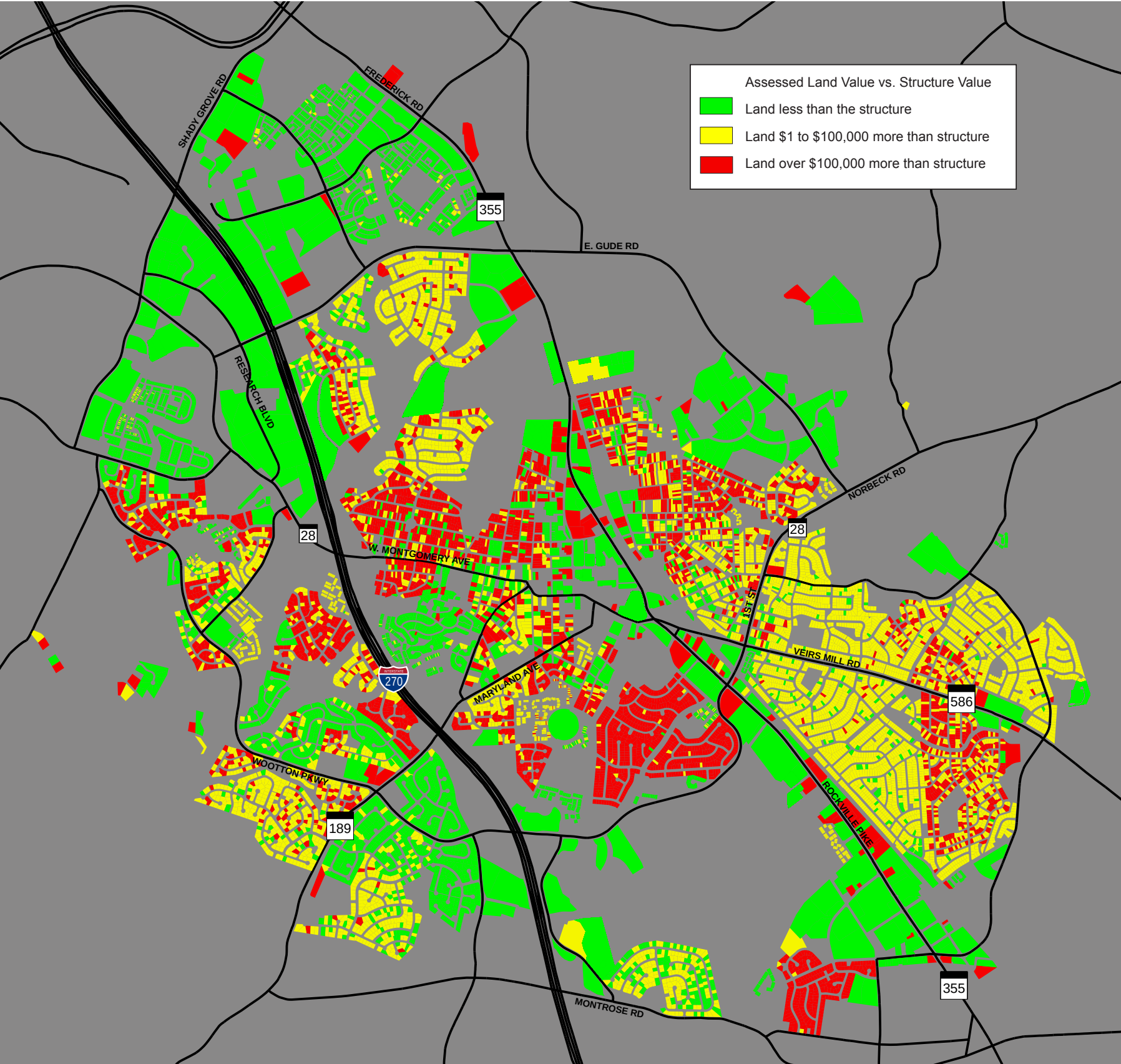


The high demand for housing in Rockville also creates other types of pressures withing existing neighborhoods. The high cost of land and housing makes tearing down smaller, older, or functionally obsolete housing and rebuilding with larger homes an option in some locations. Neighborhoods with older housing stock are experiencing differing levels of housing replacement activity. The master plan process can help to provide a forum for discussing these and other issues related to residential neighborhoods and set policies to sustain the city as one of the nation’s highest rated places to live.

Citywide Trends for Residential Uses

- Residential areas of Rockville remain stable and strong.
- There is a dramatic drop in production of single family detached units since the completion of the King Farm and Fallsgrove projects.
- Most housing development since 2005 has been multifamily. Recent development proposals have shown a resurgence of demand for townhomes.
- National, regional, and local trends favor neighborhoods where residents have the option to walk to recreation, retail, and services.

Figure 9: Assessed Land Value Vs. Structure Value



- Increased purchase and rental costs in the region and county make housing affordability in Rockville a significant policy issue.

Residential Locations

Residential uses are located throughout the city. The City’s geographic information system linked to SDAT data provides metrics that can be used to parse issues related to the housing stock, some of which can be mapped and tabulated. The age of structures was discussed previously (see Figure 4, page 14) along with different urban design styles. Two additional metrics are discussed below: the relative size of houses and the assessed value of land versus improvement or structure.

Housing Stock

Planning for the future of existing residential neighborhoods requires consideration of the housing stock as it is, and an attempt to identify potential issues regarding the state of the stock and how it may hold up over the decades to come. Houses can become functionally obsolete, as technology, family structure, and preferences change. They also age, leading to the need to replace major systems and make major renovations. The analysis provided in this land use report only begins to consider these complex issues based on the available data sets, assessed values, and anecdotal reports of existing conditions. Each neighborhood is different, and locational and construction methods lead to varying conditions across the city. Additional technical study of the housing market will be conducted in 2016 to further inform the master plan process.

House size and styles in a neighborhood represent the macroeconomic and social conditions during their period of construction. The oldest parts of the city have greater diversity because the city grew slowly during the first part of its history, and it took decades to fill in areas such as the West End, Lincoln Park, and East Rockville.

The method of housing construction changed radically following World War II. Mass production techniques developed for the war effort were applied to housing construction to meet the booming demand of postwar population growth. In Rockville this rapid production of new housing created the Twinbrook and Hungerford neighborhoods. In Twinbrook alone, 3455 houses were

constructed in a 15 year period, from 1945 to 1960.

One key feature of these postwar houses is that they were relatively small in size compared to previous eras, as well as those built in the 1960s and later. Also, in some areas, these houses were constructed on concrete slabs or with crawl spaces instead of full basements, because of high water tables. Many of the properties also lack garages or driveways.

A GIS analysis of SDAT data shows that the median size of houses in the greater Twinbrook area is currently 1,204 square feet, and there are blocks where houses are in the 800-to-1,000 square-foot range. When they were first designed in the 1940s and 50s these houses, like tens of thousands of others across the country, were marketed as starter homes with two bedrooms and one bath, which, as an original advertisement said: “May be easily and economically made into a three or four bedroom, or two bath house” (*Rockville: Portrait of a City*, p. 127, citing *Washington Post* September 1948 advertisement). Some of the 3,455 houses have been expanded, others not, yet current national trends continue to be for large houses. According to U.S. Census Bureau data, the median size of a new single family house completed in 2013 was 2,384 square feet, up from 1,525 in 1973 (the first year of the record). See Table 7 below for a comparison of house sizes across the city.

Table 7 House Square Footage by Neighborhood

Community/Neighborhood	Median Square Feet	Number of Dwellings in Calculation
Twinbrook and Twinbrook Forest	1,204	3,455
East Rockville and Lincoln Park	1,092	1,232
Hungerford	1,368	910
Orchard Ridge, Potomac Woods, Rockshire, Falls Ridge, and Fallsmead	2,279	2,407
West End and Woodley Park	2,063	2,027
King Farm and Fallsgrrove	3,312	621
Citywide	1,578	11,188

The sheer number of postwar houses all aging at the same time was a concern raised in the 1970 Master Plan (see sidebar). In addition, new houses offer updated interiors designed for today’s family life and new energy efficient windows, insulation, and furnaces. Older houses can be, and are, renovated; but for some properties the investment may not be recouped through higher valuation.

Meanwhile, the cost of underlying land to a buyer continues to rise. In some cases the assessed value of the lot is higher than the house on it. Figure 9 on page 42 is a graphic representation of this situation, showing that large parts of the city have parcels assessed at higher values than the structure on it, including areas where the land is assessed at \$100,000 (or more) over the value of the structure (shown in red).

When land values begin to exceed the value of the houses, at least three scenarios, or courses of action, emerge for property owners:

1. Leave the property in its current condition, making upgrades and renovations as needed. This result is most likely when the cost of rebuilding, or of major renovations or additions, would not be recouped in sufficiently higher property value.
2. Tear the house down and rebuild. This result is possible when the cost of the construction would be recouped by the value of the property with a new house.
3. If home values support neither renovations or replacement, there could be deferred maintenance and increasing rental.

While these three scenarios are occurring in different ways in different parts of Rockville’s neighborhoods, market pressures may change over time. Neighborhoods with proximity to Metro, which is bringing an increased value premium, may see increased pressures and more activity. In East Rockville and Twinbrook, housing prices have not yet justified significant amount of rebuild activity, but that trend may change. The master plan should ensure that policies are in place to manage these outcomes in accord with the community’s goals.

From the 1970 Rockville Master Plan (p 33):

Age and Condition

More than eighty-five percent of Rockville’s total housing stock is less than twenty years old. As a result, it is in generally good condition by national and metropolitan standards. If any problems can be anticipated as a result of the age of Rockville’s housing stock, they would probably stem from the fact that large areas of housing were built within a relatively short span following World War II, thus the entire housing stock in several large neighborhoods will approach maturity uniformly. Careful attention must be given to the condition of dwellings and public improvements within these areas to maintain the quality of the housing and neighborhood environment.

Housing replacement in the West End neighborhood, in a process commonly called a ‘teardown,’ where an existing house is demolished in order to build a new house. The West End neighborhood is seeing the highest number of teardowns in the city, most likely due to the high property values proximate to the Town Center and Metro, and a diverse housing stock with a variety of smaller houses mixed with larger higher value properties that makes the investment financially feasible.



Preliminary Issues for the Comprehensive Master Plan

1. How can the master plan continue to protect Rockville’s residential neighborhoods?
2. As residential uses are introduced into historically commercial or industrial areas, how should City policy respond?
3. How can City policy guide the development of new residential areas that are primarily townhouse and multifamily dwellings?
4. How should the master plan address the issue of teardowns and mansionization?
5. What locations are likely to see the greatest pressure for residential redevelopment and how should policies respond?
6. Are there opportunities to plan for increased density within walking distance of Rockville’s Metro stations?
7. What are possible issues related to Rockville’s post war housing stock?

Replacement of older housing with much larger dwellings is sometimes called ‘mansionization.’ The example shown below, is from Ritchie Parkway in the Hungerford neighborhood. At 3,128 sq. ft., the new house in the middle, completed in 2006, has twice the neighborhood average of 1,480 sq. ft. The house to the left is a single story ranch with 1,190 sq. ft. and the house at right is two story split level with 1,772 sq. ft., both built in 1963. The new house and a similar replacement also on Ritchie Parkway are the only two houses out of 910 in Hungerford where the value of the house is more than the lot (see Figure 9, p. 42).





Land Use and Sustainability

A large number of issues are captured under the general concept of sustainability, which can be explained in brief as the relationship between human actions creating impacts to natural systems and the capacity of those systems to sustain life over the long term. Clearly the use of land and the pattern of urban development are fundamental issues when considering how sustainable or unsustainable our current lifestyles are at the local, regional, and global scales. Indeed the land itself is a limited resource, and how we plan for land use has direct impacts on habitat for other species of plants and animals, the capacity of the land to produce food and fiber, transport mode choice, and the amount of waste and pollution in a highly mobile consumer economy.

The Rockville 2040 master plan is an important policy making process that should consider options for making Rockville more sustainable, including land use issues related to access, walkability, transit oriented development, and reduction in carbon emissions. However, the legacy of decades of planning for access via automobile presents difficult impediments to greater sustainability through land use planning. And yet there are locations and corridors where opportunities exist in the short and long term for regeneration and infill development. Rockville's Metrorail stations are critical infrastructure assets that the City's land use policies can utilize to shape new communities less reliant on the private automobile, creating places where a mix of higher intensity uses and pedestrian facilities encourage walking. Consumer preferences have shifted significantly since the last master plan, especially among young adults, and these environments are now considered attractive for many households.

Transport Technologies and Land Use Patterns

Past plans for the City of Rockville set policies that shaped land use, with ongoing implications in terms of overall sustainability. The city was originally settled and grew slowly based on human ambulation and animal power for transport, and then grew more quickly with the advent of steam locomotion and electric traction, yet the city remained small enough to conduct daily life via walking until the mass production of private automobiles and the expansion of the public roadway system in the middle of the 20th century. Early master plans for the city guided a separation of land uses beyond a walkable scale, encouraging and regulating

Between 2009 and 2030, VMT [vehicle miles traveled] is expected to increase by 42% while population is expected to grow by 19%. This development trend is primarily the result of dispersed land use patterns in Maryland, which have sprawled over the past five decades. The only method to ensure a reduction in overall transportation emissions over time is to sharply reduce the rate of growth in VMT, which will require a significant adjustment of land use patterns away from automobile-oriented development. County and municipal governments in Maryland use their land use planning and zoning authority to meet community needs.

Until an updated transportation model is in place that can adequately take into account the GHG reduction benefits of land use/location efficiency factors, MDP [Maryland Department of Planning] recommends additional metrics to determine progress. Examples include the number of people and businesses within a certain distance from transit stations and bus stops, and the share of land use within Maryland that is supportive of alternative transportation modes.

Maryland's Plan to Reduce Greenhouse Gas Emissions, December 31, 2011
The Land Use Sector, p. 253

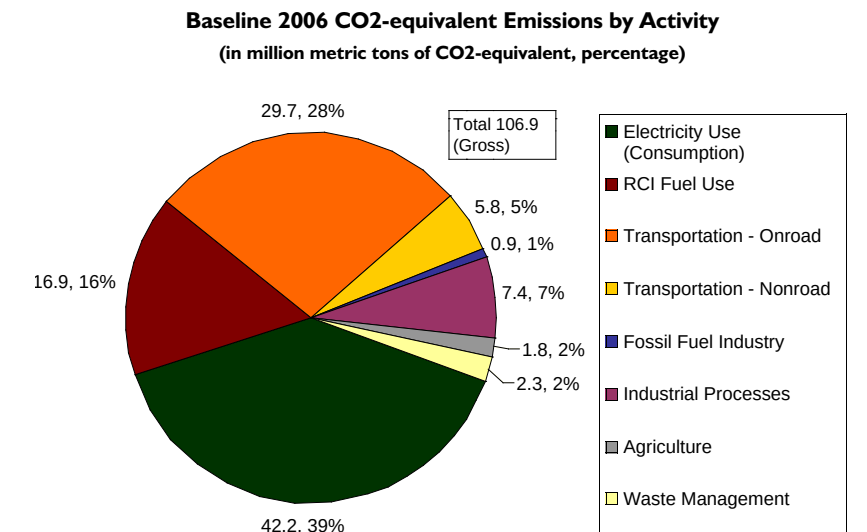


Chart from Maryland's Plan to Reduce Greenhouse Gas Emissions, December 31, 2011 shows carbons emission sources by activity.

a lifestyle dependent on increased consumption of land and energy in development patterns oriented to transport via private automobile. The increased role of driving in daily life led to urban forms that conversely sought to prohibit ‘cut through traffic,’ including disconnected subdivisions and cul de sac streets. Further prohibitions were placed on mixing retail land uses into residential neighborhoods based on the idea that such uses would generate unwanted vehicular traffic and create other conflicts.

Unfortunately this development pattern makes it difficult to run errands or make commute trips without using a private automobile, which in turn leads to more congestion on arterial roadways and to greater greenhouse gas (GHG) emissions. Federal, state, and regional policy actions seek to address these issue through ‘smart growth’ policies and initiatives to cut carbon emissions.

State and Regional Efforts to Reduce Carbon Emissions

The State of Maryland Greenhouse Gas Emission Reduction Act of 2009 required the State to develop and implement a plan to reduce greenhouse gas emissions 25 percent from a 2006 baseline by 2020. The 2006 baseline inventory calculates that nearly 28 percent of Maryland’s greenhouse gas emissions are from onroad transportation, i.e. cars and trucks. The draft plan published in December 2011 expects that the transportation and land use sector will contribute nearly a third of the necessary reductions in carbon emissions, equal to their share of emissions. The plan states that 84 percent of the current transportation emissions are from burning gasoline for private and commercial trips.

Among dozens of programs involving all state agencies, the plan outlines two major strategies related to cutting emissions that have bearing on the land use element of Rockville’s comprehensive master plan:

- “Doubling Transit Ridership by 2020” and
- “Reducing Transportation Emissions through Smart Growth and Land Use/Location Efficiency.”

In addition, the City of Rockville is a party to the Metropolitan Washington Council of Governments goal of reducing carbon emissions by 20 percent by 2020 and 80 percent by 2050. In short, the goal of 20 to 25 percent reductions by 2020 is to be met in the next 5 years, with additional sharp cuts during the 25 year planning horizon of the Comprehen-



Rockville Station, and the access it provides to the regional transportation system, has been impacting land use in its vicinity since the days of the steam railroad.

Heavy traffic on Rockville Pike presents significant obstacles to pedestrians.



Transit service is provided to the city's research and office park corridors, but the low intensity development and large building setbacks set in the old zoning ordinance challenge accessibility.

A pedestrian walks from the office area of King Farm toward the Village Center shops.



sive Master Plan update. At this time, the City of Rockville does not have a strategy to achieve this level of reduction in carbon emissions. The master plan update is a process to discuss possible strategies.

Connecting Land Uses Via Driving, Transit, or Walking

In the course of daily life Rockville residents use private automobiles to move between land use types separated in the landscape. The most common workday trip is from a residential land use to an employment land use, be it to an office, retail, or service industrial location. The work commute is done twice a day and, because the route is usually the same, the potential for completing this trip via public transit is higher than for many other types of trips. However, because of the wide variety of other types of trips, and their unpredictability, the private car is the option of choice for the majority of residents, combining trips to work with trips to school, trips to the store, and trips to after school activities. Time and scheduling constraints mean that the instant access a private car affords makes it the easy transportation choice, even for trips that are relatively short in distance which might be taken by foot or bicycle. Providing transport to school age children across the city and county for various activities is a major daily task for many parents in Rockville.

In terms of land use planning the potential to reduce these types of trips, for environmental, social, and health reasons, is limited given the overall structure of the society. However, historic and recent experience with mixed use locations, such as the Town Center, shows that providing a mix of uses at the scale of a pedestrian has the potential to shift some trips from cars to the much lower impact of walking. For instance, the recent addition of more restaurants to the Town Center is likely increasing pedestrian trips while reducing the number of lunch time car trips out to the Pike. Creating opportunities for walking trips within the context of low density single family detached neighborhoods, which make up the majority of Rockville’s land use, is a much more difficult proposition; and yet the potential to add walkable destinations over the next decades is worthy of consideration.

Walkability, Mixed Use, and Transit

Although much of Rockville is designed for automobiles, the concept of creating new, walkable communities has influenced recent projects, including King Farm, which exhibits principles of the New Urbanism, and infill development on



One of the most effective ways to encourage walking access from residential to commercial areas is to provide access to high capacity transit along the walking route. The planned station for the Corridor Cities Transitway in the median of King Farm Boulevard, as seen in the above photograph, will attract pedestrians to the sidewalks of King Farm Village Center. Some commuters who currently drive to work from their homes in King Farm, and then drive to the retail businesses because they are already in their cars, will switch modes for the commute trip via the bus rapid transit and walk through or past the village center. Businesses will benefit from additional customers passing their storefronts on the way to the new station and residents will gain health benefits from additional daily walk trips.

new blocks in the Town Center and Twinbrook Metro station area. The land use sections of the State and MWCOG sustainability plans both recommend that local municipalities “with land use authority adopt land use plans that allow for and incentivize walkable, higher density, mixed use, mixed income and/or transit oriented development in activity centers” (MWCOG, Climate Energy and Environment Policy Committee, Final 2013-2016 Action Plan, p. 3).

The idea is simple enough: if carbon emissions from automobile trips are causing climate change, then land use and development patterns should encourage walking as a mode choice, since walking is a carbon free form of transportation (not counting exhalation). An important strategy to facilitate walking is to mix land uses in higher density neighborhood development that is designed for walking and with access to transit. As noted in the urban design section of this report (see page 19), King Farm is designed on a grid of streets that provides direct connections from residential streets to the retail village center. The retail component is at the heart of the development, rather than at the edges like most automobile oriented strip centers. The shops and restaurants are provided as an amenity for residents, rather than excluded by single use zoning. Any walk trips taken for shopping instead of driving trips is carbon emissions avoided.

The high density of King Farm helps to support the local businesses and is a more efficient use of valuable land even though King Farm also has by far the largest average square footage houses in the city. The mix of small lot single family, townhouses, and apartment buildings will also support the planned high capacity bus rapid transit line that is built into the design of the neighborhood.

While King Farm has the best walkability of any recent subdivision, the historic Town Center with its multiplicity of uses—including a concentration of large office buildings, connected network of streets, and adjacent residential areas—makes it the most walked area of the city. Sidewalks are rarely crowded, but they are full of life, especially during the workday. New mixed use infill projects make a car free lifestyle possible, and Rockville Station’s access to regional rail and bus transit is a primary sustainability asset. Transit trips produce less carbon emissions per passenger trip than driving and, if combined with walk up access to the station, carbon emissions for commuter and other trips can be low. A WMATA survey in 2002 regarding access mode to the

Rockville Metro station found that walking was the second highest mode of access at 24 percent of daily trips, behind driving alone and parking at 30 percent. Given residential and employment growth since 2002, the number of walk up customers at the station has likely grown: a key sustainability benefit of transit oriented development.

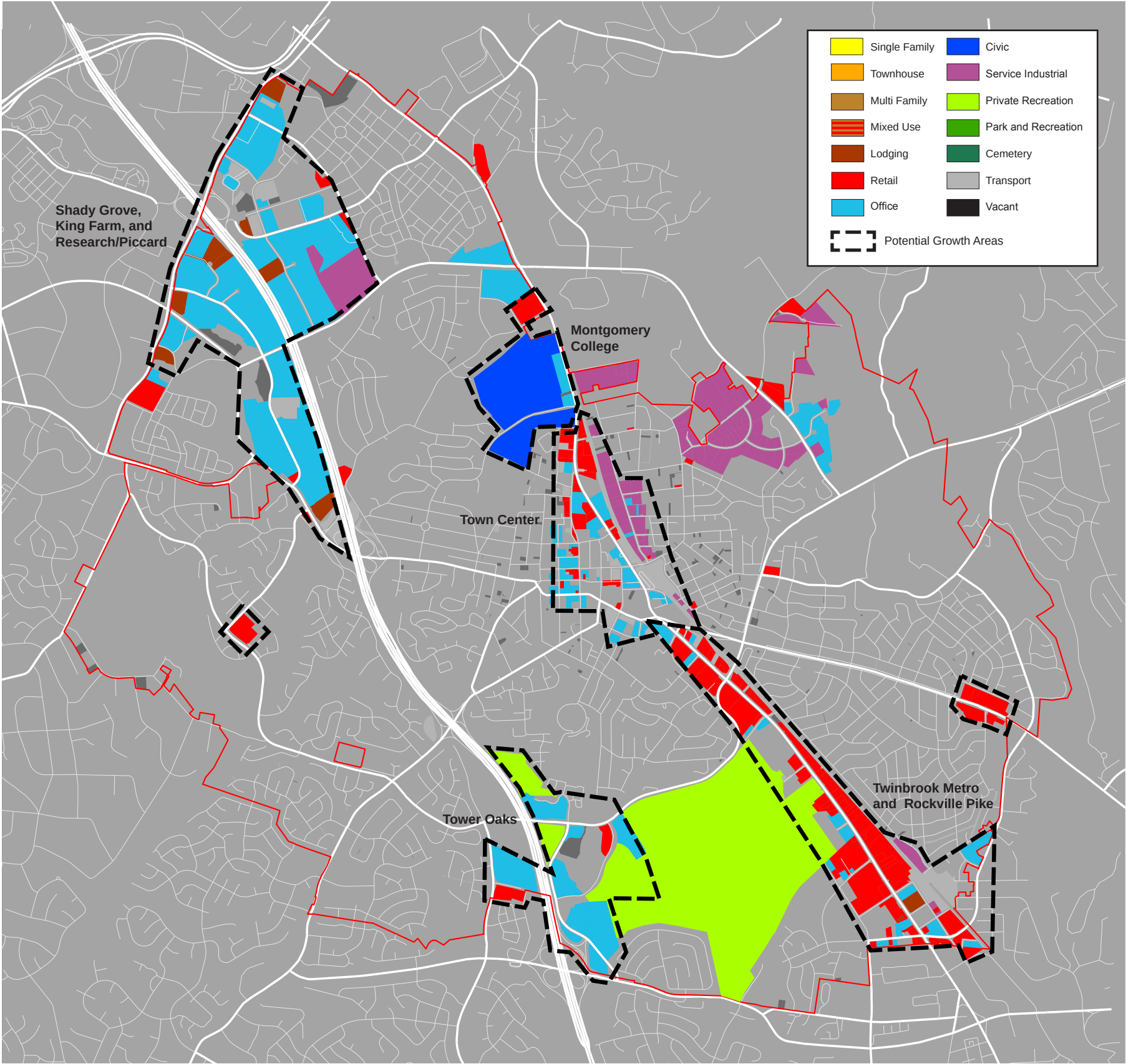
New transit oriented development within a short walk of the Twinbrook Metro Station is also an encouraging trend for Rockville’s sustainability. Hundreds of new multifamily units have been added on both sides of the tracks in recent years, with a key marketing point the walk access to the Red Line. New apartment buildings on the east side of Frederick Road are also being developed expressly for the purpose of providing quick walk access to the Shady Grove Metro Station. Rockville’s annexation policies in this area are helping to make this new land use pattern possible.

However, even with these examples of progress, the land use pattern in Rockville remains overwhelmingly oriented to automobile trips. Even if neighborhood groups showed any interest in mixing new retail or other uses into existing older parts of the city, it is not clear that the low density of residential development can attract and support new retail development, or even retain existing retail. In this regard, the proposed redevelopment of the Rockshire Village Center, which would change the land use from retail to all residential, is an important case for the master plan process to follow.

The 2009 Twinbrook neighborhood plan shows one potential method for redevelopment and infill, with policy recommendations and mixed use zoning now in place to allow mixed residential and retail redevelopment at the Twinbrook shopping center. This type of development would combine multifamily housing with new retail space, building in some of the needed additional population base to support local businesses. Creating new opportunities for residents to walk or bicycle for some of their daily shopping trips, currently always taken by car, would cut carbon emissions.

The State of Maryland and MWCOG goals to cut emissions by a quarter in the next five years, and by 80 percent by 2050, will require difficult policy choices pertaining to land use and transportation issues. Clearly, a community discussion about these state goals and the coming federal mandates on states to cut emissions, should be part of the master plan.

Figure 10: Land Use Types Most Susceptible to Change and Potential Growth Areas



Potential Growth Areas

One of the critical land use issues for the Comprehensive Master Plan is to consider where Rockville will accommodate the development of new housing units and commercial space. Looking at potential growth areas through a land use lens, the least protected types and therefore most susceptible to land use change are:

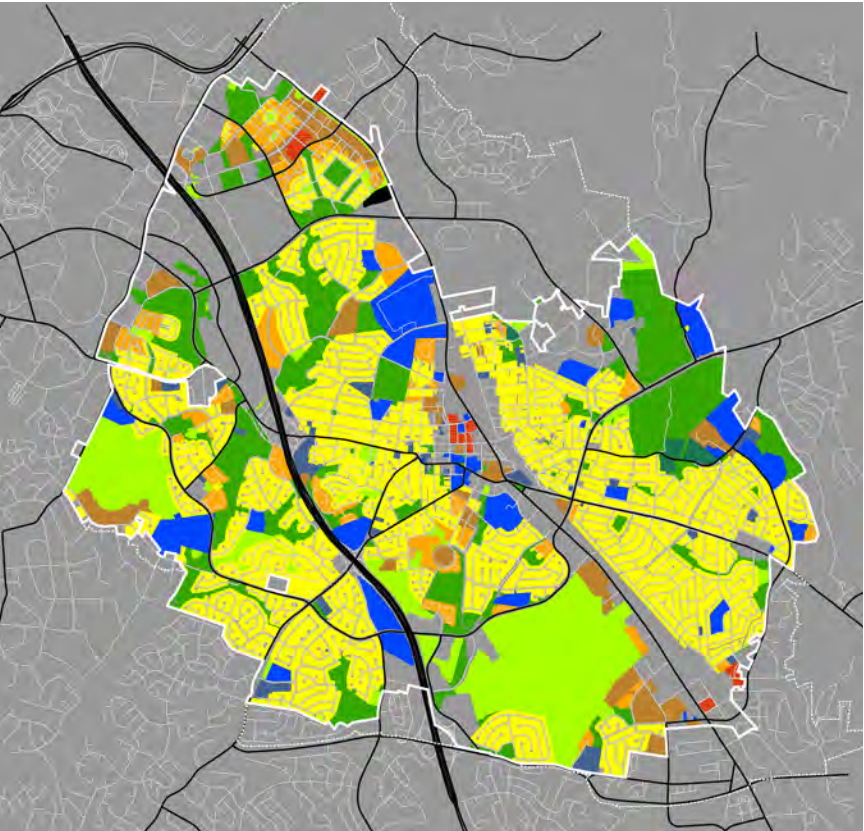
- Office
- Retail
- Service Industrial (in mixed use zoning districts)
- Transport
- and Vacant.

A map graphic of the location of these land use types is shown in Figure 10. Note that many of the specific properties shown in this analysis have substantial structures and investment that will not change during the planning period; the intent of the analysis is only to reveal the location and extent of areas with land uses susceptible to change. These are the areas where the current master plan and zoning say new commercial and residential growth should be accommodated. Figure 11 (at right) shows the opposite: the majority of the city where policies limit growth (residential or commercial) to preserve existing neighborhood character, sensitive environmental features, parks, schools, or private open space. Areas of recent redevelopment to mixed uses in the Town Center and near Twinbrook Metro station are also unlikely to change.

As noted in previous documents, including the Strategic Scan (2010) and the Municipal Growth Element (2010), there are no longer any large tracts of undeveloped land within the city or on Rockville’s periphery. The historic method of growth through annexation of large, undeveloped properties, such as King Farm, is not an option for the future. Therefore development will occur within the current city limits primarily as redevelopment and through annexation of individual parcels into the city as part of approved development projects, or for other reasons such as to connect to the City’s water and sewer systems.

Rockville offers many advantages for residents and business owners, including location in a growing county and region, schools that are attractive to families, access to highways and

Figure 11: Land Use Types and Areas Less Susceptible to Change



high capacity transit, and a generally strong local economy. As a result, the market for growth should remain steady. Assuming that current policies remain in place and that public facilities are built to support growth, projections are that Rockville’s 2015 population of over 65,000 will grow to approximately 90,000 by 2045 and that jobs will grow from the current 72,000 to approximately 95,000. (Draft projections for MWCOG Round 9.0).

Given the current context, which represents a substantially new situation for the city, future residential growth will be accommodated through redevelopment and infill, and in many cases involve a change in land use from commercial (office or retail) to multifamily residential. There are few locations with potential for large lot construction, so projections for construction of single family detached units are very low.

Policies set in the master plan and the zoning ordinance regulate where new growth will be allowed. The two most recent master plans (1993 and 2002) have included policies for protecting existing residential areas. With these policies



A last site in the King Farm project was approved for an office building, but due to the weak office market will now be townhouses.



Laboratory building, at the south end of Research Boulevard, built in the mid 1960s under demolition in 2015. The current proposal is to convert the property to a retail use with fitness center and shops.

The Rockshire Village Center mall is the only retail land use fronting on Wootton Parkway between Rockville Pike and Shady Grove Road. The grocery store space has been vacant for a number of years. Preliminary consideration of redevelopment to townhouses has been discussed.



in place and widely supported, single family neighborhoods will see little or no growth in dwelling units. In fact, the number of new single family detached houses built in the ten year period between January 2006 and December 2015 was 131 houses, for an average of only 13 houses per year (City building permit data). Some of those permits were for teardowns, which replaced one old house with one new house, so the actual growth in units is actually lower still. Yet, population growth is happening within some existing residential neighborhoods due to generational turnover that brings younger families with children. The construction of new commercial buildings is likewise relatively slow for the same ten year period, with only 31 new private buildings and 10 government owned buildings, for an average of 4 buildings per year.

Key Issues for Growth

- Rockville is becoming land locked, with no new ‘green-fields,’ or undeveloped land, to annex.
- Land use policy limits redevelopment and infill to commercial and industrial areas.
- Little to no new growth is allowed in existing single family residential areas.
- Weak market for office space is leading to redevelopment proposals for residential and retail uses.
- Whether or not industrial or office park areas are the best locations for residential growth is a question for the master plan.
- Mixed use zones allow for transition to residential uses, without any requirement for maintaining any commercial uses.
- Long term use of private recreational land, i.e. country clubs with multiple golf courses, is uncertain.

Potential Growth Areas

Locations where growth is anticipated include:

- Rockville Town Center
- Twinbrook Metro station area and Rockville Pike
- Tower Oaks and Woodmont Country Club
- Montgomery College
- Shady Grove, King Farm, and Research/Piccard

A brief outline of recent development activity and potential for additional growth in these areas is provided below.

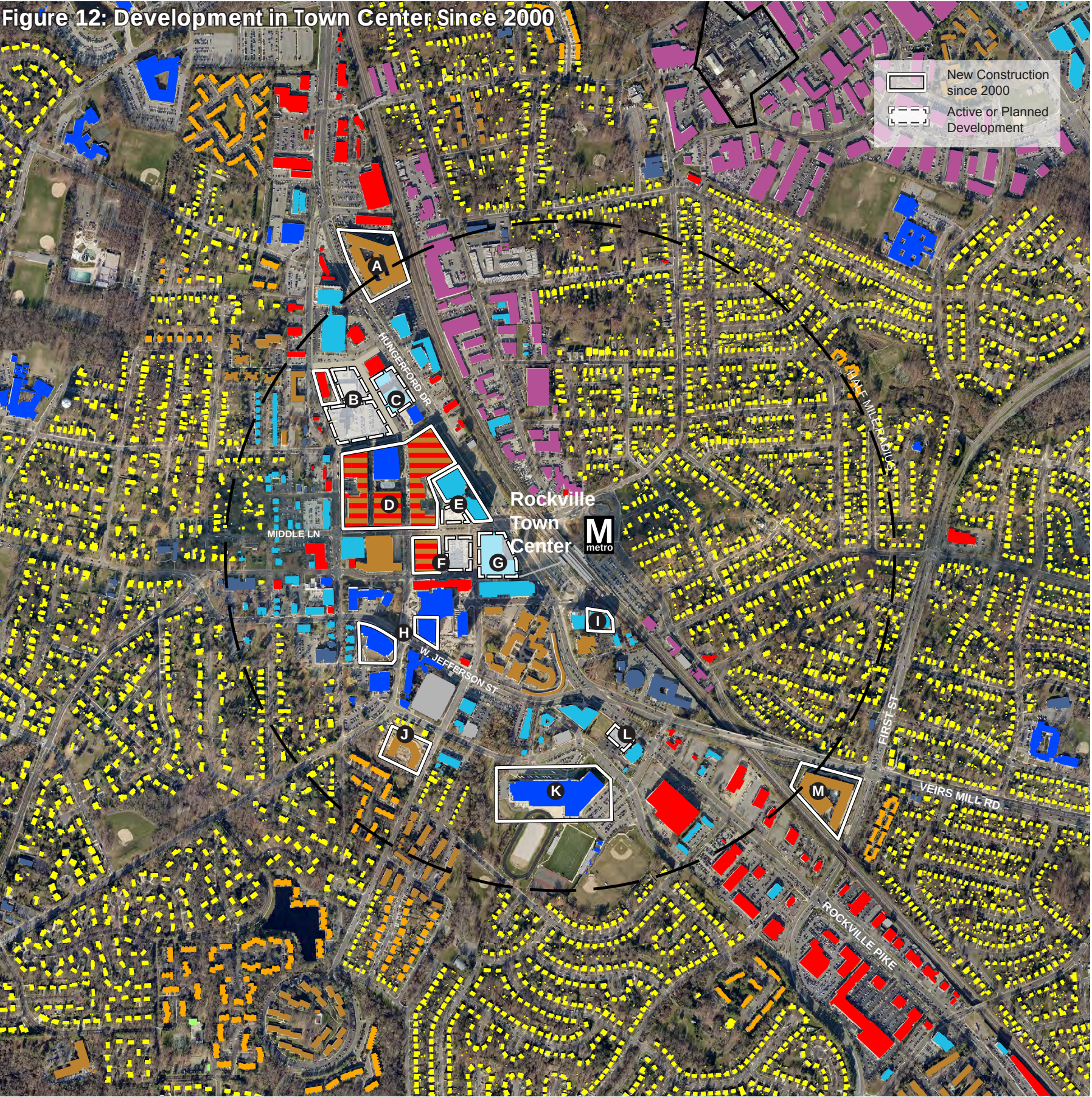


The Tower Oaks development is a hybrid of suburban and urban forms, including multistory office buildings surrounded by parking and rowhouse style townhouses with stoops and front facing garage doors and parking aprons.

A vacant single story office complex one block northeast of the Twinbrook Metro Station, approved for 240 multifamily dwelling units.



Figure 12: Development in Town Center Since 2000



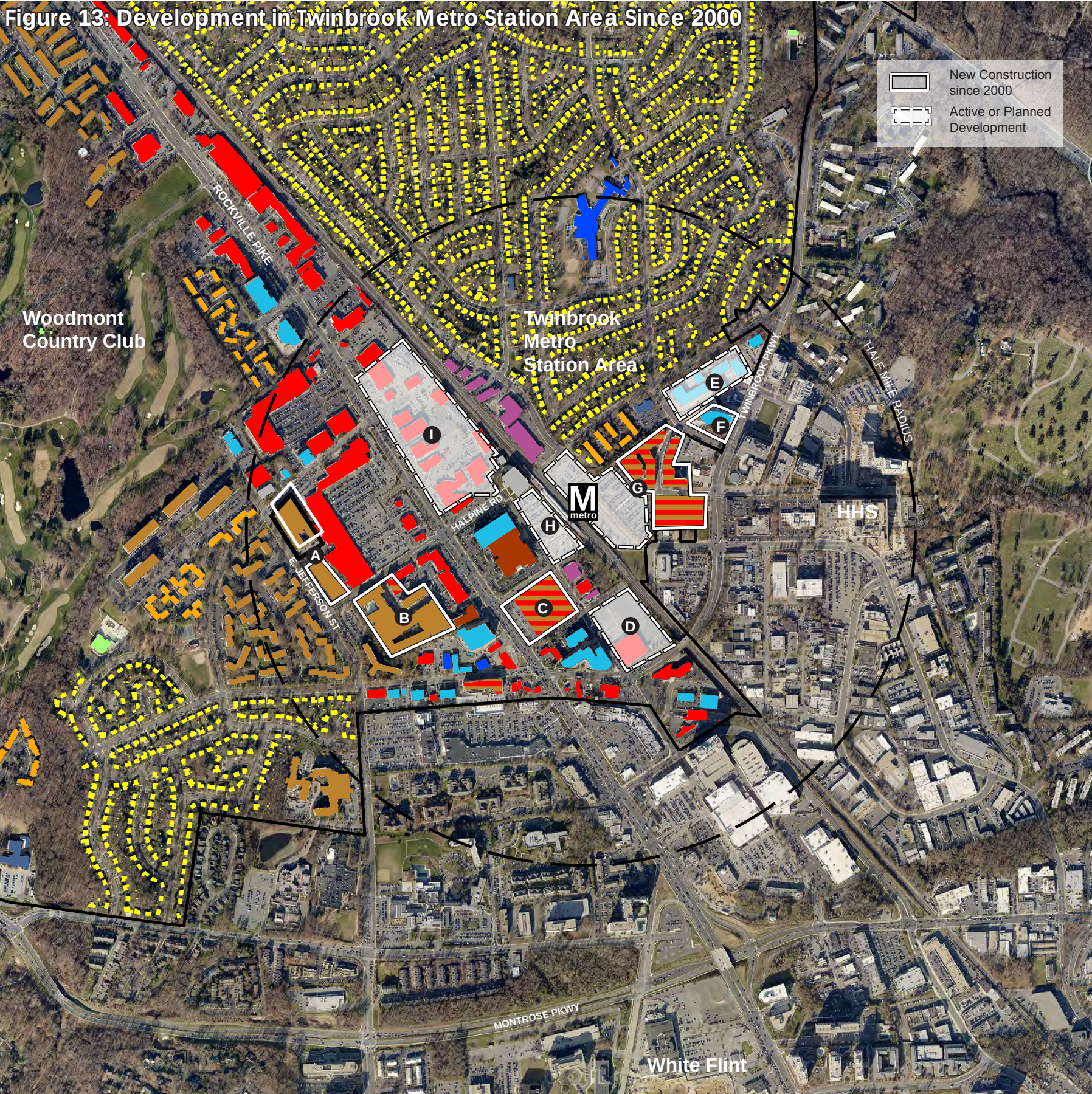
Rockville Town Center

Rockville's Town Center has been transformed since adoption of the Town Center Master Plan in 2001. Over a dozen major development projects have added hundreds of new dwelling units, while new courts and private office space confirm Rockville as a major employment center. Continued growth in the Town Center is underway north of Beall Avenue, with implementation of the second phase of the master plan focused on extension of Maryland Avenue to Dawson Avenue. Three development projects are under construction or nearing groundbreaking in this area and frontage along MD 355 is also planned for redevelopment. Construction on the last infill sites on former parking lots between Middle Lane and East Montgomery Avenue will be complete in the next few years. Most of the new space in these projects is for residential use. At this time there are not any pending projects to create new office space in the Town Center, but there is an approval for additional office space in the Rockville Metro Place project near the corner of MD 355 and East Middle Lane.

- A** The Fitz: 280 condominium units, 2003
- B** North of Beall: two story retail/office, 2015; 275 apartments (unbuilt); 195 senior living apartments (unbuilt)
- C** 414-416 Hungerford, planned redevelopment
- D** Town Square: mixed use, 649 apartments, library, grocery, retail, 2006
- E** Rockville Metro Plaza: 400,000 sq. ft. office, sq. ft. 2013; approved addition 183,000 sq. ft. office/retail (unbuilt)
- F** The Upton: 263 apartments, 2015; Cambria Suites hotel, 140 rooms, 2015; approved second phase 400 apartments with retail (unbuilt)
- G** 255 Rockville: planned redevelopment, office/retail
- H** District Court of Maryland 2010; Montgomery County Circuit Court, 2012
- I** Church St: 93,000 sq. ft. office, 2007
- J** Victory Court Senior Living, 2013
- K** Richard Montgomery High School, 2005
- L** Sandy Spring Bank, approved phase two, 126,000 sq. ft. office/retail (unbuilt)
- M** Westchester at Town Center, 192 apartments, 2009



Figure 13: Development in Twinbrook Metro Station Area Since 2000



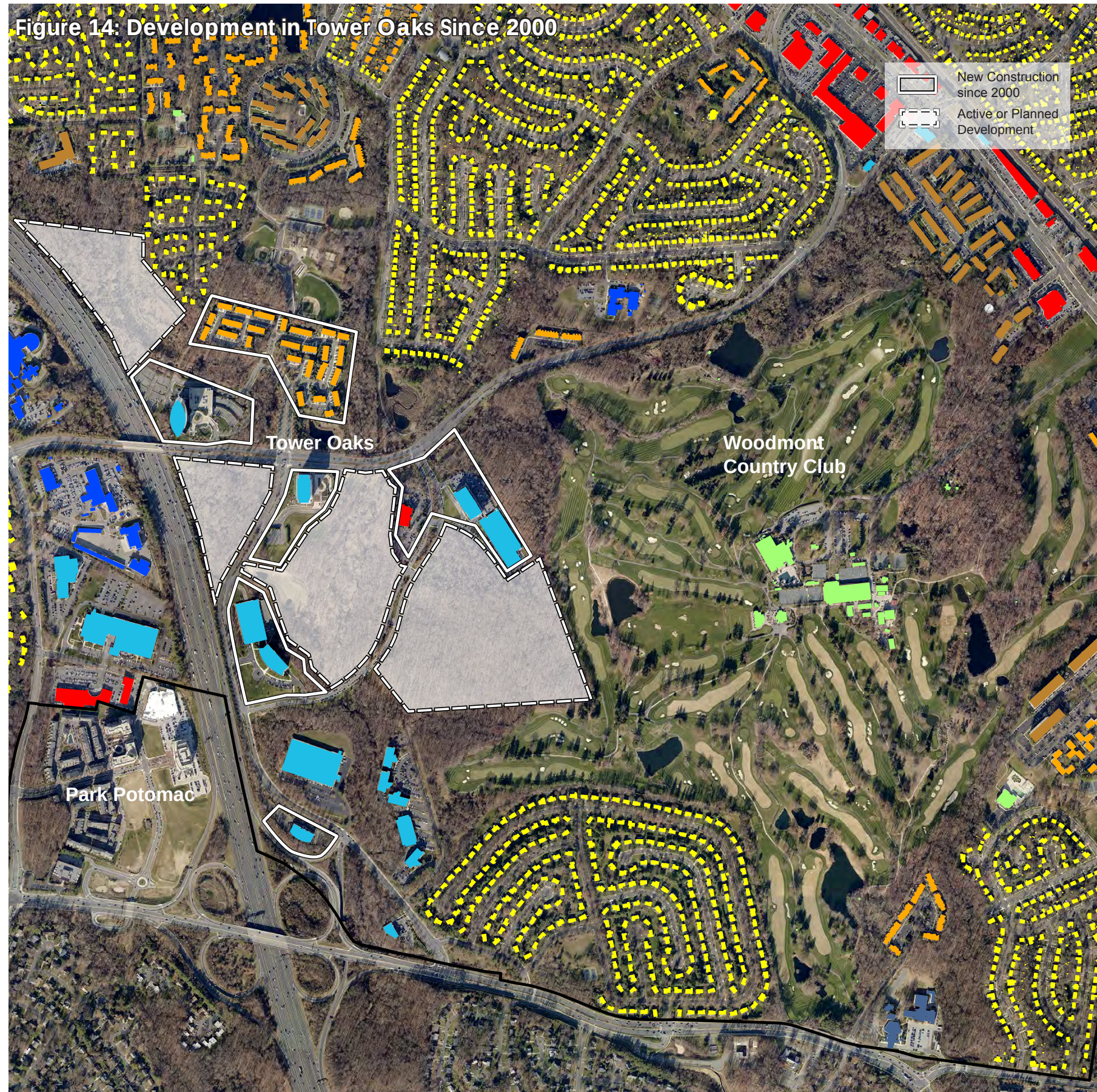
Twinbrook Metro Station Area

One of Rockville's fastest growing places is the Twinbrook Metro station area, on both sides of Rockville Pike and the CSX railroad tracks. Since the turn of the century nearly 1500 dwelling units have been constructed in the Twinbrook station area, with hundreds more approved or planned. These units are primarily in the form of apartments, some as part of mixed use projects with ground level retail space.

Walk access to the Metro station is a key attraction. Construction of a Metro parking garage and reconfiguration of access on the east side of the station made infill development possible on former commuter parking lots, more than 30 years after the station opened in 1984. Existing zoning permits continued redevelopment and infill along both sides of Rockville Pike.

- A** Crest I and II, 195 apartments, 2003/2015
- B** Residences at Congressional, 404 apartments, 2004
- C** The Galvan, 400 apartments, 90,000 sq. ft. retail (grocery), 2015
- D** 1900 Chapman, 317 apartments and 64 townhouses, 2015 groundbreaking
- E** Avalon at Twinbrook Station, 240 apartments (unbuilt)
- F** Twinbrook Place, seven story 150,000 sq. ft. office, 2009
- G** Twinbrook Station, 493 apartments with retail, Alaire 2010, Terano 2015, additional planned
- H** Twinbrook Station (West), 359 apartments, 425,000 sq. ft. office and retail (unbuilt)
- I** B.F. Saul site, 17 acre planned mixed use development, with apartments and retail





Tower Oaks and Woodmont Country Club

In contrast to transit oriented growth at Twinbrook, the Tower Oaks development offers quick access to the I-270 expressway. The Tower Oaks project, first approved in the 1980s, includes sites with townhouse development and mid rise office buildings with structured and surface parking in a loose suburban campus form. Large portions of Tower Oaks remain undeveloped (see p. 62), and the weak market for office space has slowed the pace since the economic downturn of 2007. Prior to that, five office buildings were constructed between 2000 and 2007. A development proposal was submitted to the City in 2015 to amend the Planned Development approval to allow a mixed density residential development of a large parcel instead of the previously approved office space.

Between Twinbrook and Tower Oaks, the Woodmont Country Club offers two 18 hole golf courses and other facilities to club members. Previous City master plans (1993 and 2002) considered the possibility that some portion of the country club might be developed in the plan time frame, but there has been no move toward developing any of the club's land. And yet, current national trends show a decline in the number of 18 hole players and some conversion of courses to other uses. The Comprehensive Master Plan update process can help to guide future land use and transportation infrastructure planning in this area.

Montgomery College

Expansion of Montgomery College's Rockville campus will continue over the next decades. The college's 2006–2016 Facilities Master Plan for the Rockville Campus projected an addition of over a quarter million square feet of classroom space (266,547 NASF, or net assignable square feet) to the campus. The current planning locates all of these additions within the current campus property. Montgomery County Public Schools owns property to the south of Mannakee Street, a portion of which the college leases for parking, which is a logical location for the college to consider expansion if necessary and feasible. As it currently functions, the college is a specialized single use area with little correspondence with the surrounding land uses. Rockville's planning effort might explore how the college can be better integrated into the city in ways that capture additional economic value and function as more than just a commuter college.

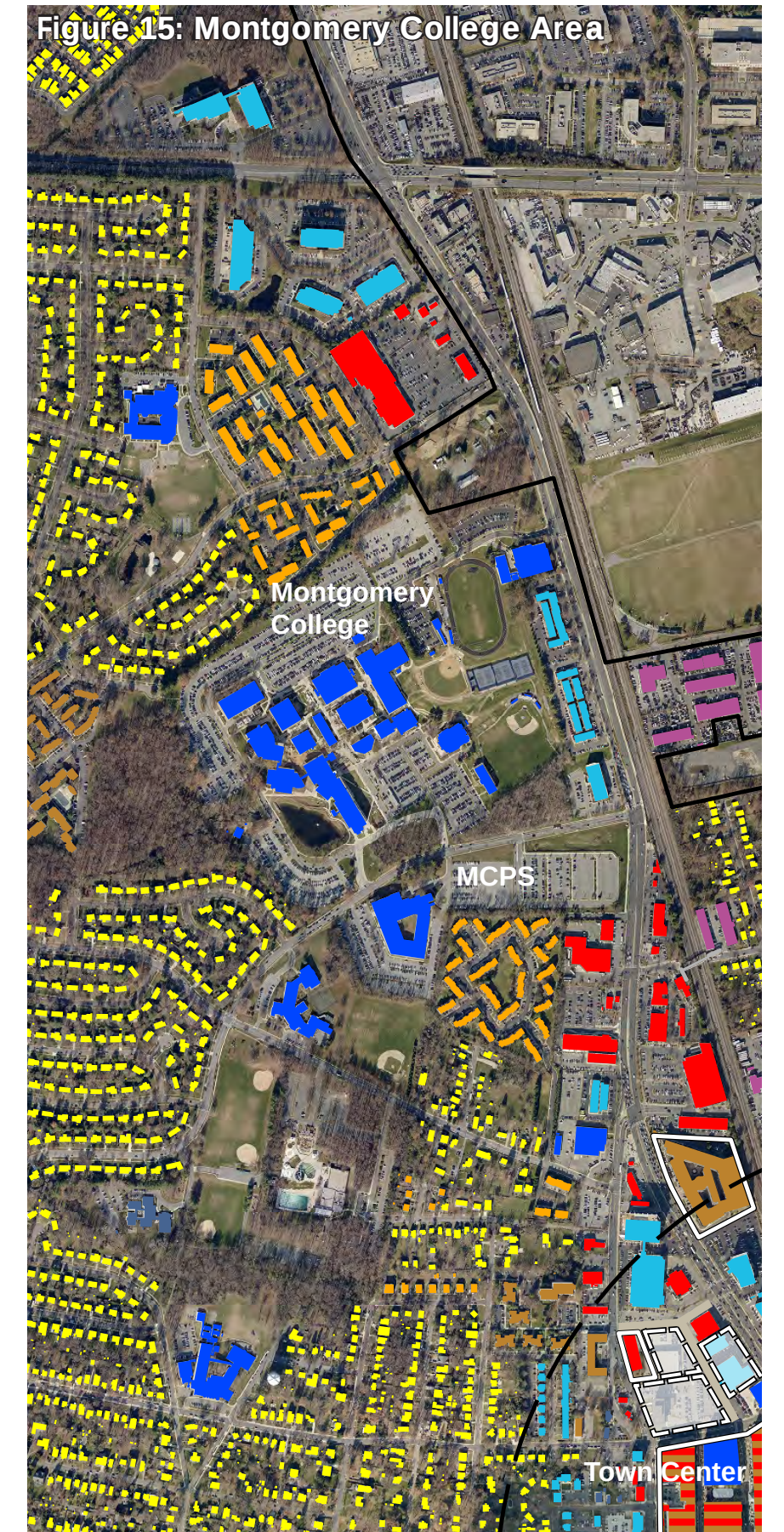
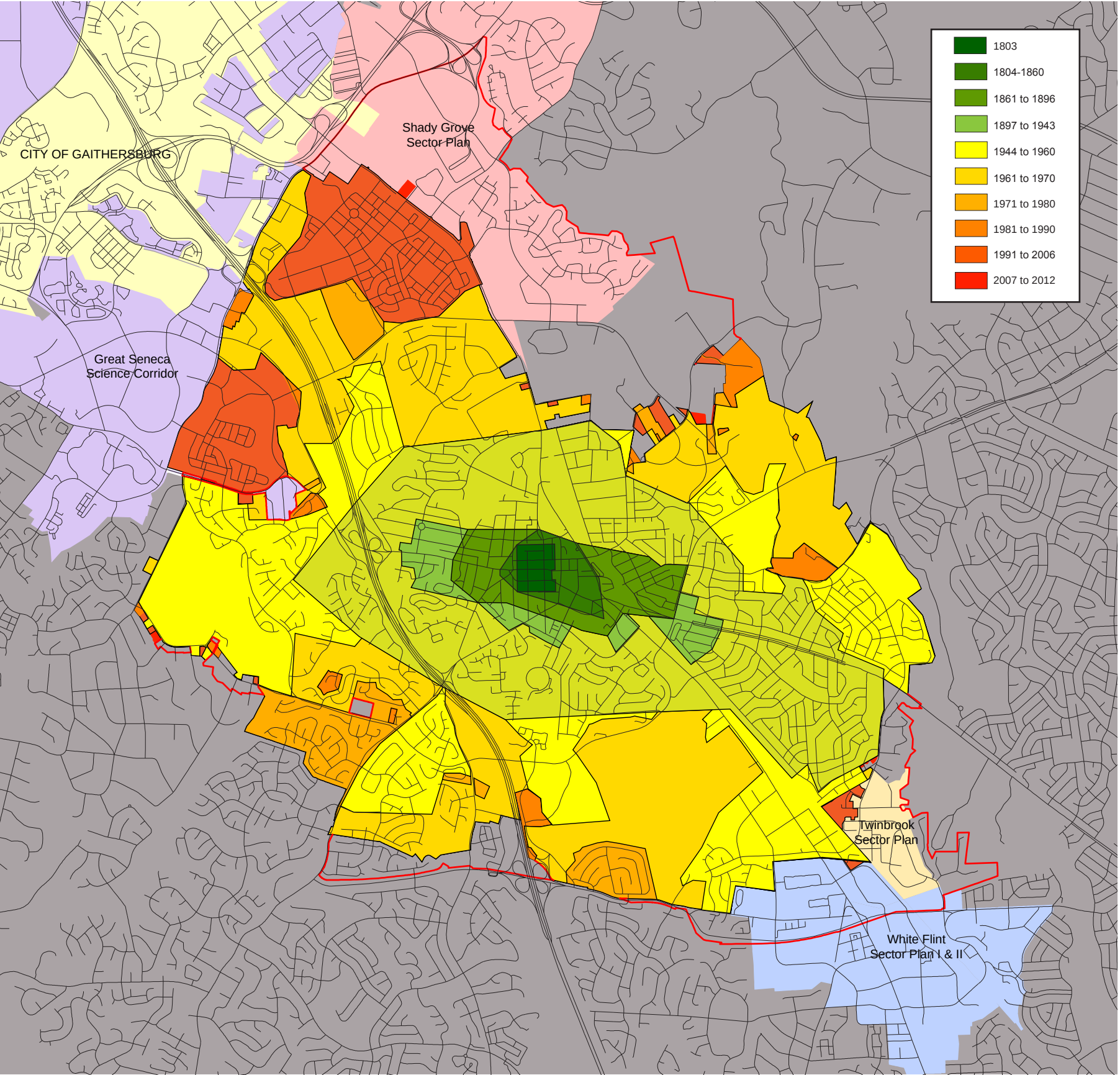


Figure 16: Annexation History, County Sector Plan Areas, and Maximum Expansion Limit



Shady Grove, King Farm, and Research/Piccard

The Shady Grove corridor is listed as an activity center in MWCOC planning. Rockville captured growth in this general area with the King Farm and Falls Grove projects, and additional projects will occur within Rockville city limits, for instance redevelopment in the Choke Cherry Road area is underway with more proposed. Yet, even more growth will occur to the west of Shady Grove Road in unincorporated Montgomery County and Gaithersburg, with additional office growth in the Great Seneca Science Corridor area and high intensity mixed use and retail in the Crown Farm development. The planned Corridor Cities Transitway will support this growth through a projected mode shift to transit. In addition, school sites supporting residential growth are reserved in Falls Grove, King Farm, and Crown Farm.

The King Farm development is nearly built out. The City of Rockville gave approval in 2014 to amend the project plan so that townhouses can be built on a site originally planned for offices. To the west, in the Research Boulevard and Piccard Drive area, site by site redevelopment that may bring incremental growth in the corridor is likely to continue, with aging office buildings being redeveloped to new uses. (See the discussion of office land uses on pages 28-31 for details.)

Growth Through Annexation

The City of Rockville has grown in size through annexation of land for over two hundred years, since the 1803 plan for Rockville established the first boundaries for the town, as recognized by the State of Maryland. Figure 16 (page 62) is a graphic representation of this annexation history, from 1803 (colored dark green at the center of the city) to the present, with the most recent annexation completed in 2012. Each of the different colored areas encompasses land that was annexed during the corresponding time period shown in the legend.

In the decades following 1803, the General Assembly in Annapolis surveyed first and second additions to the town, adding land and lots to the east of the original blocks. Those lots filled in slowly until the City of Rockville was incorporated as a municipality in 1860, with expanded town boundaries that allowed for additional growth.

Annexation continued at a slow pace until the 1940s and the unprecedented, rapid growth following World War II. The City continued to add large subdivisions during the 1960s,

70s, and 80s, but this growth has slowed substantially due to the lack of available, undeveloped land adjacent to Rockville's borders. King Farm and Falls Grove may be the last big annexations that are possible for the City, leading to a new situation where most population growth will need to be accommodated through redevelopment and infill.

Still, annexations will be proposed and adopted, particularly where commercial uses transition to residential uses. The City's most recent annexation was on the east side of Hungerford Drive near the Shady Grove Metro Station, for a new apartment building.

Maximum Expansion Limit

Maryland law requires the City to establish a maximum expansion limit (MEL) setting limits for the geographic growth of the city outside its existing city limit. The 1960 and 1970 master plans included graphics showing the MEL. The 1970 plan also includes criteria that helped to shape the city as it is today, including the concept that: "boundaries should be at generally equal distances from the center of the city" (1970 plan, p. 18). The city today still exhibits this character, retaining a rectangular shape centered near the historic courthouse.

The current master plan was updated in 2010 to include the state mandated "municipal growth element," which includes growth projections and capacity analysis. The 2010 MGE includes a MEL that shows where the city would consider annexation if petitioned by property owners in those areas. The current MEL is shown on Figure 12 as a red line outside the city limit.

Planned Growth Areas on Rockville's Borders

Montgomery County undertakes and adopts plans for land use, transportation, and community facilities in the unincorporated areas of the county that border on the City of Rockville. Typically these plans, approved by the Maryland-National Capital Park and Planning Commission and adopted by the County Council, are in the form of master or sector plans. As shown in Figure 12, there are four key areas where the County has adopted plans that border on Rockville.

These sector and master plan areas are:

- Shady Grove Sector Plan (2006)
- Great Seneca Science Corridor Master Plan (2010)
- Twinbrook Sector Plan (2009)
- White Flint Sector Plan (2010).

Because of their locations, the planned development within these areas will create issues for Rockville. New residents in these areas may stress the local roadway and transit infrastructure that Rockville depends on, and may generate demand for parks or other community facilities that are not met within their areas. School capacity is also an issue that may limit growth within Rockville.

From a strictly land use point of view, development in locations just outside the city may compete with commercial land uses within Rockville. For instance, the Pike and Rose node in White Flint, may attract retail customers away from Rockville’s Town Center or other businesses along Rockville Pike. But, the effect is not necessarily captured in a zero sum calculation, since the hundreds of new residents in these areas may also generate new customers for businesses within Rockville.

In a similar way, new laboratories and office space in the Great Seneca Science Corridor may compete with old buildings in the Research Boulevard/Piccard Drive area of Rockville, but investments made in major institutions such as the National Cancer Institute or Johns Hopkins University at Shady Grove will help to maintain the preeminence of the whole I-270 Technology Corridor, which should benefit biomedical businesses within Rockville as well. The Comprehensive Master Plan process should carefully consider actions and policies that the City of Rockville can take to make beneficial outcomes for the city more likely.



Summary of Land Use Discussion
Topics for Rockville 2040

The questions provided below summarize some of the most important issues regarding land use in the City of Rockville as discussed in this report. Additional issues and questions are sure to be raised by the community during the planning process. These questions are intended as a stimulus and framework for further discussion as necessary for formulating goals and policies for the future land use plan element of the master plan.

Land Use Pattern and Urban Design

- 1. As land values rise and denser developments patterns are proposed how should Rockville’s land use planning respond?
- 2. Are trends to mixed use, walkable developments likely to be sustained over the planning period and how can the master plan guide urban design of these new places?
- 3. How can planning efforts learn from past development eras and anticipate future land use needs and forms?

Office Uses

- 4. What should Rockville’s master plan policies be regarding office employment and development?
- 5. Are there policies and actions that can enhance the competitive positioning of Rockville’s older office areas?
- 6. Should areas planned for office uses since the 1960 and 1970 master plans be allowed to convert to a new mix of uses?
- 7. Will the introduction of residential uses into office park areas create land use conflicts, and how will services and community facilities be provided for these new residential areas?
- 8. Should the future land use plan designate certain areas for office/employment uses?

- 9. Are the 2009 zoning ordinance mixed use districts too flexible in terms of allowing residential in all MX districts, but not requiring a mix of uses in certain areas, including office uses?
- 10. Considering regional trends to locate office uses within a quarter mile of Metro stations, should the master plan indicate a preference for offices uses within some portion of these station areas?

Retail Uses

- 11. What should Rockville’s master plan policies be with respect to retail uses?
- 12. Given broad changes in how goods are sold, with major impacts from internet sales, and the dynamic nature of retailing, what are the important trends that are affecting Rockville’s shopping areas?
- 13. What should the master plan recommend in terms of future uses in neighborhood shopping center areas?
- 14. Should neighborhood serving shopping centers be allowed to redevelop with only residential uses if the market for retail space is weak?
- 15. What steps might the master plan recommend to support neighborhood shopping centers?
- 16. Is the trend to restaurants and entertainment businesses in the Town Center retail space a concern, or should policies be explored to support the sale of goods and services?
- 17. How can the master plan support and enhance Rockville Pike as the city’s primary shopping corridor?
- 18. What opportunities are created by the trend to a vertical mix of retail and residential in Metro station areas and the Town Center?

Citizen participants discuss planning for the future of the city at the May 2014 Rockville 2040 kickoff meeting.



Residential Uses

19. What should Rockville’s master plan policies be in regard to residential uses and areas?
20. How can master plan policies continue to protect the high quality of life in Rockville’s residential neighborhoods?
21. Should residential uses be allowed in Rockville’s traditional office, service industrial, and retail areas, and what policies should be in place to serve new residents?
22. As Rockville’s neighborhoods age, can the master plan anticipate issues related to large areas all constructed during the same time period, including an increase in teardowns and construction of large houses?
23. Can the master plan respond to growing interest and trends toward more walkable neighborhoods?

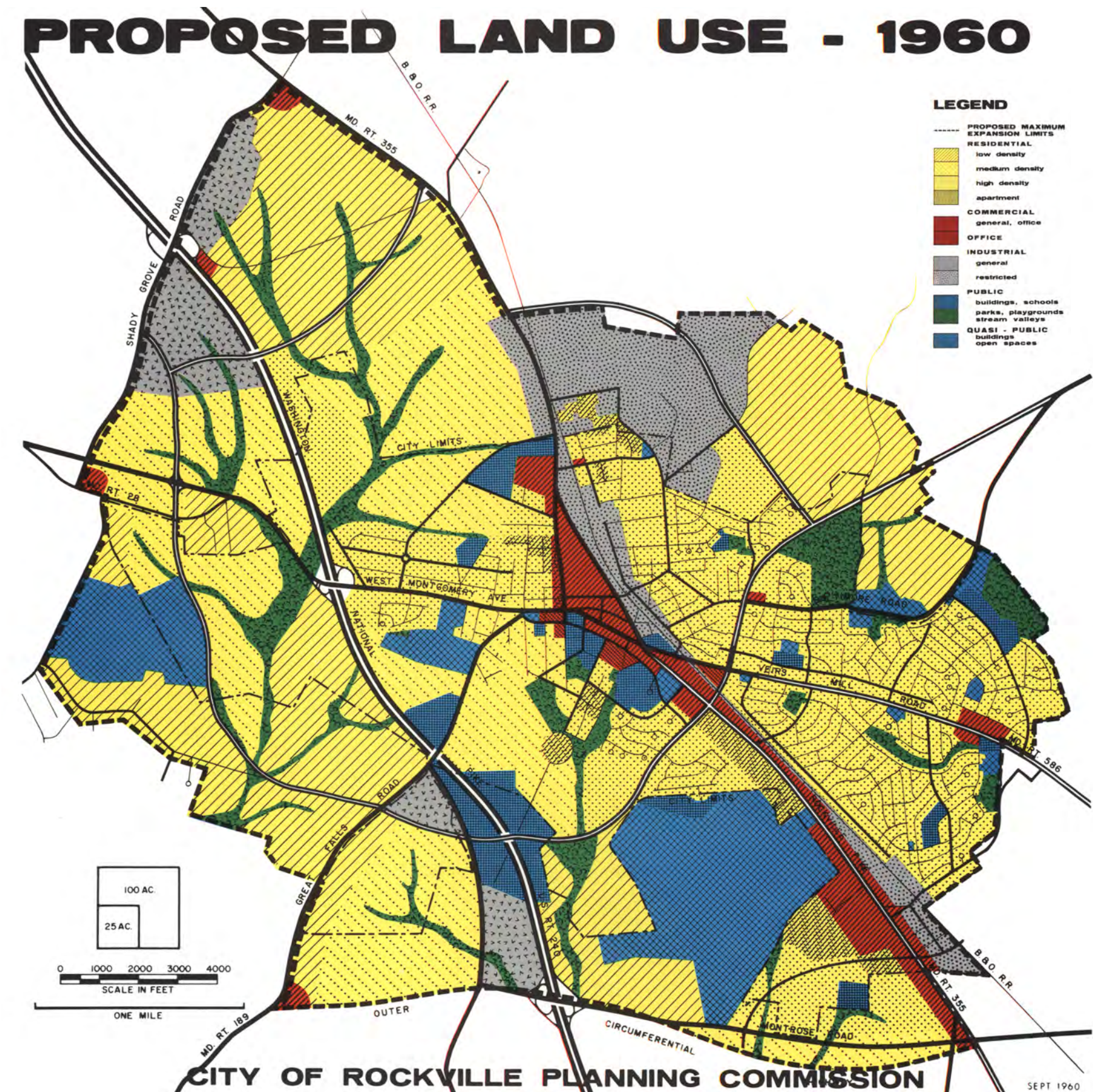
Sustainability

24. What strategies will Rockville use to achieve its portion of MWCOG agreements on regional sustainability?
25. How can future land use planning for Rockville anticipate and meet state and federal requirements to cut carbon emissions?
26. What steps can the master plan recommend to reduce vehicle miles driven and increase walking and transit use?
27. Are there associated quality of life benefits that might be attained through an integrated approach to sustainability and land use planning?

Potential Growth Areas

28. How should Rockville respond to continued and projected regional growth, both in terms of population and employment growth?
29. What are the challenges and opportunities to future growth in Rockville in terms of land use?
30. Given a lack of undeveloped land internal to the city, how should the master plan guide redevelopment and infill development projects?
31. Where should policy direct future residential growth?
32. How can the master plan help the city to maximize the opportunities available in its Metro station areas?
33. What policies should Rockville’s master plan have with respect to annexation and the maximum expansion limit?
34. What challenges and opportunities does growth just outside Rockville’s borders present?

1960 Land Use Plan Graphic



Appendix
Review of Previous Land Use
Master Plans

The City of Rockville Planning Commission has maintained a master plan for land use for over 55 years, since adoption of the City’s first comprehensive master plan in 1960. The Commission has updated and revised its master plan as follows:

- 1960 Master Plan
- 1970 Master Plan
 - 1973 Adopted changes
 - 1979 Town Center Urban Design Plan
 - 1981 Gude Drive amendment
 - 1981 Update to Land Use Plan
 - 1982 Twinbrook Neighborhood Plan
 - 1982 Croydon Park Neighborhood Plan
 - 1982 Neighborhood Plan Element
 - 1982 Historic Preservation Element
 - 1984 Lincoln Park Neighborhood Plan
 - 1985 Hungerford Neighborhood Plan
 - 1985 Westmont/Tower Oaks Neighborhood Plan
 - 1989 Rockville Pike Corridor Plan
 - 1989 West End/Woodley Gardens Neighborhood Plan
- 1993
- 2002
 - 2001 Town Center Master Plan
 - 2004 East Rockville Neighborhood Plan
 - 2007 Lincoln Park Neighborhood Plan
 - 2009 Twinbrook Neighborhood Plan
 - 2010 Municipal Growth Element

As indicated, the Planning Commission has produced four complete updates to the master plan, each of which has a Proposed Land Use Plan published as a stand-alone, insert map graphic.

1960 Master Plan
The basic structure of the city as mapped in the 1960 master plan (reproduced at left) is remarkably similar to the actual pattern of land use in 2015. In some areas the city limit is exactly the same as 1960, in other areas the City has in fact expanded out to the Proposed Maximum Expansion Limits. This is a testament to the plan and its implementation over

the decades, and to the careful and deliberate pace that the City has taken to annexation.

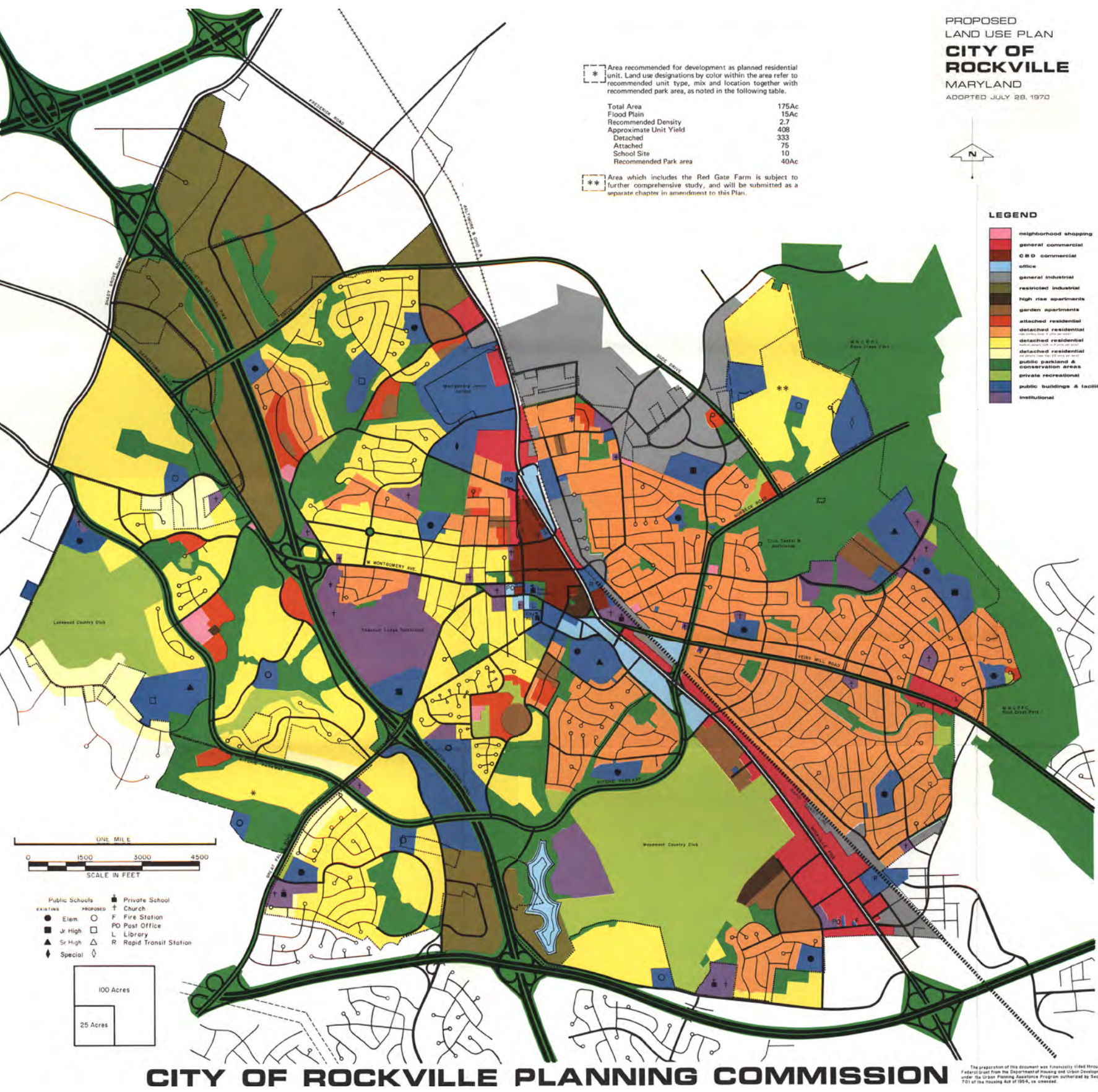
Development patterns that are taken for granted today were in fact the result of policies set in the 1960 and 1970 master plans. The establishment of large areas set aside for low density residential is obvious, but perhaps less understood is the plan for ‘restricted industrial’ uses in the I-270 corridor and the success that this planning had in bringing employment and tax base to the city. Other notable features of the plan that came to fruition include the conservation of land along Watts Branch as park open space, establishment of a pattern of low to medium density residential areas west of I-270 and apartments west of the Pike, and separation of land uses with minimal commercial areas outside of the downtown and Rockville Pike areas.

1970 Master Plan
The 1970 Master Plan served as the City’s primary planning document for the period from 1970 to 1993, with minor revisions, updates, and additions in the form of neighborhood plans. It is comprehensive and visionary in its approach and the presentation includes dozens of hand drawn concept diagrams explaining the existing conditions and proposed actions, as well as professional photography that is a record of life in Rockville in the late 1960s and early 70s period. Funding for the preparation of the document came in part from a grant from the Department of Housing and Urban Development.

Important planning precedents were set with the 1970 plan which have shaped the community and its planning process for decades and become standard practice. One of these was the establishment of “Criteria For Setting the Maximum Expansion Limits” which included: “The boundaries should be at generally equal distances from the center of the City, but the total size should be consistent with the philosophy of responsive government” (p. 18). This concept has kept the City size and shape consistent over half a century, resulting in the roughly square shaped city that exists in 2015. Note, however, that these criteria were set at a time when the area surrounding the city in unincorporated Montgomery County remained largely undeveloped.

The 1970 plan also established the idea of “Neighborhood Study Areas” and recommended 15 named study areas, which correspond to the Planning Areas recognized today.

1970 Land Use Plan Graphic



The plan states: “In order to undertake a neighborhood planning program, it is important to establish the relationship between the overall Master Plan and a Detailed Neighborhood Plan” (p. 6). It goes on to outline an approach which emphasizes that the Master Plan should “establish the broad pattern of land uses with the City” while the “Detailed Neighborhood Plans should deal with the precise location and extent of land uses” (p. 6).

In terms of the 1970 proposed land use plan, the pattern of land use represented in the graphic is more detailed than in the 1960 plan, specifically in areas where new local roads are shown along with new subdivisions. Symbols were also added to indicate proposed school sites. Montgomery College’s campus comes into focus, and the framework for the Southlawn industrial area is set.

Although the basic, planned pattern is very similar to the resulting pattern, areas that have not developed as planned can be found, which may indicate unforeseeable mismatches between the proposed land use and the real estate market or even areas that still have yet to reach their potential due to difficult locational or environmental issues. Notable is the stretch of office land uses planned for MD 355 to the north and south of the central business district (office shown in light blue). The plan recommends this area for “office parks” (p. 50); and while office buildings were constructed in this area, the Pike continued to express a preference for highway commercial land use in the strip center form.

The plan for what is now the Tower Oaks area is interesting in terms of the amount of land planned for conservation and parkland near the intersection of the proposed Ritchie Parkway extension to I-270, and also the large lake to be created as an impound on Cabin John Creek. A large site shown as institutional, adjacent and west of the country club, remains undeveloped to this day. The difficulty in planning for this area may be found in the basic topography of slopes, streams, and soils that are not suitable for development.

The creation of ‘restricted industrial’ low intensity office and research parks along the northern part of the I-270 corridor, as recommended in the 1960 plan, proved so successful that the 1970 master plan added more land to the east of the expressway for this use. Rockville’s reputation as a high tech, and life sciences employment center was built on this foundation set in planning policy for future land use.

1993 Master Plan

Adopted and published 23 years after the previous full master plan, the 1993 Master Plan takes a much different approach and tone. Where the 1970 plan is long term visionary and concerned primarily with citywide issues, the 1993 plan reflects the preceding decades of work on neighborhood plans and a mature community nearing build out. More attention is given to land use planning for the Urban Growth Areas outside the city, with detailed land use plans for the North Bethesda Area, Shady Grove Area, and Thomas Farm Area, than any other part of the city within the limits.

For the rest of the existing city, the tone is defensive and the approach is focused on small details of individual sites, called critical areas. The land use chapter is particularly short in its recommendations, with policies (p.25) such as:

“Give priority to residential land uses in areas of new development or redevelopment . . .”

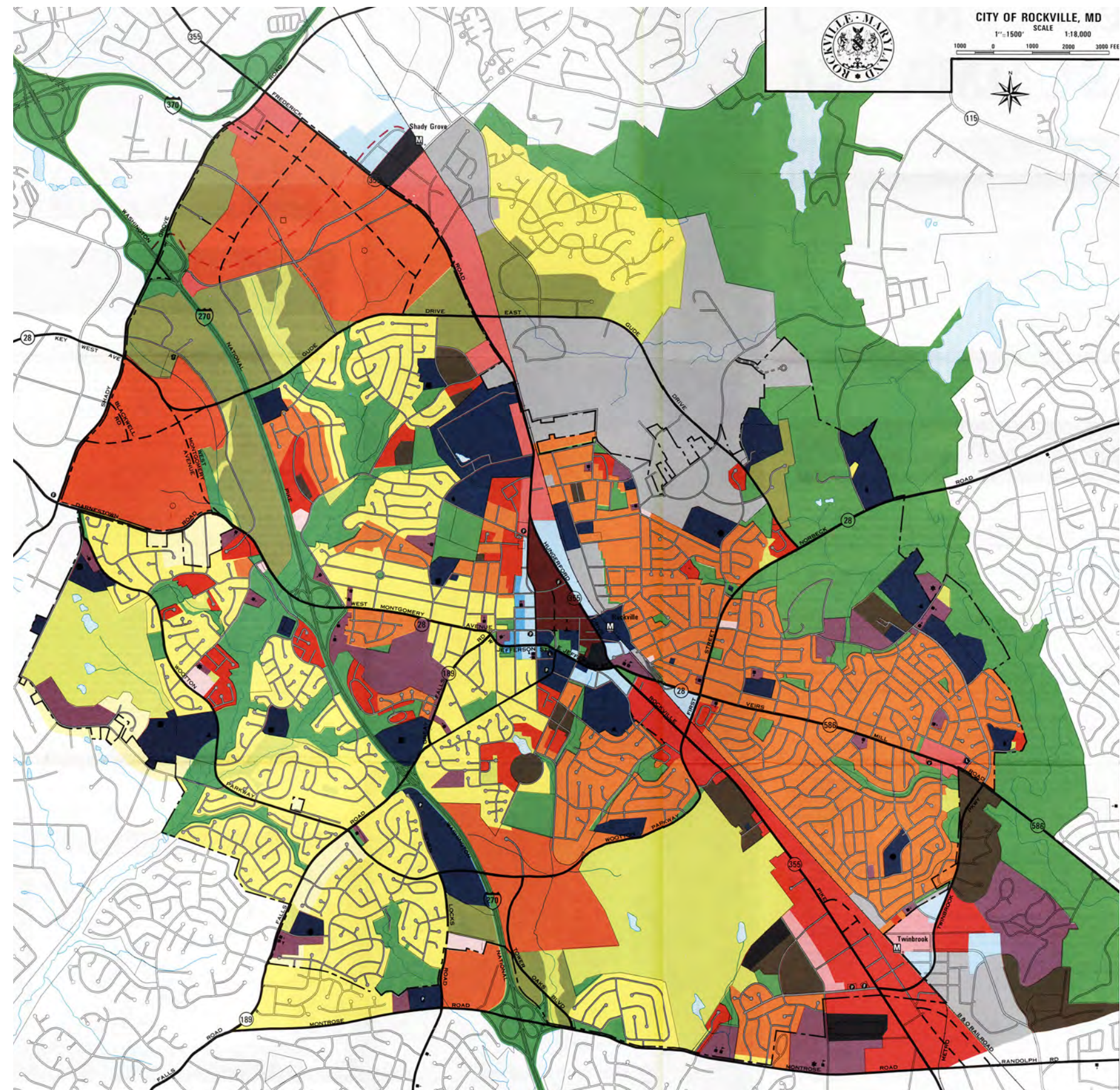
“Existing land use for all parcels should be retained and reconfirmed by this plan except for those parcels deemed critical and recommended for changes.”

“Nonresidential uses must not encroach into established residential neighborhoods; buffering techniques, such as landscaping, design treatment, and transition zones, should be encourage.”

“Development should be concentrated near mass transportation to take advantage of the public infrastructure investment and to lessen traffic congestion.”

The land use plan includes a list of six properties that are deemed to be “Critical Parcels/Areas” (p. 33). Two of these sites were in light industrial use: North Stonestreet Area and Halpine/Lewis Avenue. Recommendations for the Stonestreet area take direction from the 1984 Lincoln Park Neighborhood Plan. The plan recommends: “For the Board of Education site, residential use would be the only alternative to the current uses (storage, offices, etc.) that would be acceptable to the neighborhood, in accordance with the Lincoln Park Plan, and the current R-60 zoning.” For the privately held industrial lands, the plan notes that car repair services are convenient next to Metro stations and recommends retaining light industrial next to the railroad tracks.

1993 Land Use Plan Graphic



LEGEND



City of Rockville Planning Commission

PROPOSED LAND USE PLAN

Adopted October 25, 1993

Note that the legend for the 1993 land use plan introduces the concept of mixing zoning districts with land use types, including: "Comprehensive Planned Development, Rockville Pike Residential," etc., which are not technically land uses, but rather refer to development agreements or zoning regulations.

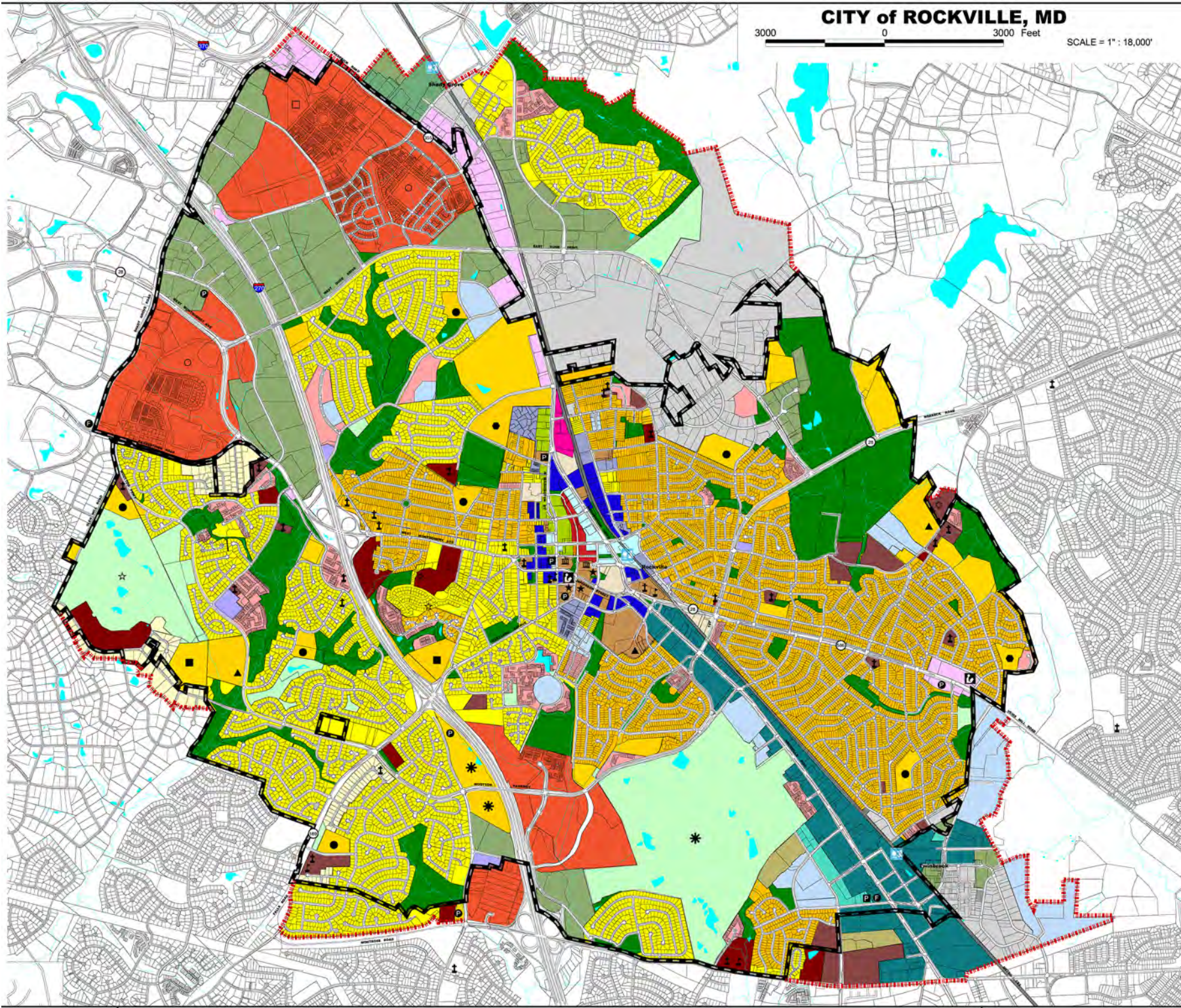
A similar analysis and recommendation is given for the industrial uses along Lewis Avenue, with particular attention to a single site, known as the Suburban Propane site. Noting the construction of townhouses along Halpine Road, the site is recommended for rezoning to R-60 for single family dwellings.

Given these detailed recommendations, the general policy to concentrate development near mass transit stations is not supported in these two critical areas, or the land use plan for either the Twinbrook or Rockville station areas east of the tracks.

The land use plan for the Town Center is expressed in its own chapter of the 1993 plan. The plan focuses on the need for a mixed use approach to redevelopment and mentions a proposal from the owners of the Rockville Mall to redevelop the core area as a grid of new streets. While recognizing the need for a new concept, the plan is tentative and contradictory, both recommending that the "bulk, density, and height of future development should be reduced from the current allowable levels (1992)" and on the same page that "overall densities in the mixed-use area should not be reduced from the current maximum of 6.0 FAR" (p. 69). The need for a better pedestrian environment and residential uses in the Town Center, as well as transit-oriented development, set the stage for renewal, but with concern about traffic and transitions to surrounding areas. This dichotomy between a recognition that growth and change is needed, at least in the Town Center, and concern regarding the potential impacts of that same change is the hallmark of the 1993 master plan.

In a major departure from previous master plans, the 1993 plan attempts to address land use issues in each of 16 planning areas (the number and extent of the designated planning areas changed a number of times in this period). These sections of the plan are divided into two chapters: Residential Neighborhood Areas and Non-Residential Neighborhood Areas. In establishing the concept of planning areas, the 1970 plan provided guidelines on the broad policies appropriate to a master plan and the detailed recommendations of neighborhood plans. The 1993 plan eschews this distinction and instead addresses small scale issues in each of the planning areas.

2002 Land Use Plan Graphic



Planned Land Use



Continuing an approach started with the 1993 plan, the 2002 Planned Land Use graphic combines land use types and a few zoning districts, for example areas color coded for 'Comprehensive Planned Development' or 'Rockville Pike Corridor Mixed Use Development.' The legend also includes ten different colors labeled with 'TC' that correspond to land use types identified in the 2001 Town Center Master Plan.

2002 Comprehensive Master Plan

The 2002 master plan continues the same general approach as the 1993 plan. The land use chapter describes the land use pattern in terms of zoning. The plan again divides the planning areas into residential and non-residential areas, while also acknowledging that there are residential uses in the Town Center, Rockville Pike, and Tower Oaks non-residential planning areas. The plan proposes addition of two new planning areas: Planning Area 17, King Farm and Planning Area 18, Fallsgrove. The plan notes: “Of major importance to the City’s growth potential is that there is very little vacant land left in Rockville, and there is little vacant land immediately adjacent to the city limits for annexation . . . Consequently, it is anticipated that future development within the existing corporate limits of Rockville will be of two types: redevelopment of existing sites and infill on the few remaining vacant lots” (p. 2-2).

The plan lists 10 general policies in the land use chapter. Statements are made that “new growth should be concentrated in Town Center” and that the plan should “encourage residential land use within the City so that the ‘Jobs to Houses’ ratio is reduced” (p. 2-1). The plan repeats in a number of chapters the need to “protect” and “buffer” residential areas.

The plan’s strongest large scale recommendation is in regard to the future of the Pike. While stating that the Pike is “Rockville’s most important retail area” (p. 2-6), the plan then says that: “A balance in the mix of retail, residential and office uses in the Rockville Pike corridor and at the Twinbrook Metro station is the preferred land use pattern.” It calls for the Rockville Pike plan from 1989 to be “reviewed and revised . . . to ensure that the corridor is transitioning toward this balance and away from the predominance of retail uses” (p. 2-7). Later, in the recommendations for the Rockville Pike planning area, the plan says: “Efforts should be continued to increase housing opportunities within the Rockville Pike Corridor . . .” (p. 12-9).

In language nearly the same as the 1993 plan, the plan states that: “The land use and zoning pattern in Rockville is well established and is generally appropriate for the future” (p. 2-14). However, the land use chapter identifies eight sites as “critical areas” “where an alternate land use or zoning category would provide greater compatibility with the surrounding neighborhood or where there are other land use or zoning alternatives to achieve either smart growth initiatives or environment protection” (p. 2-14).

These Critical Parcels/Areas are:

1. Chestnut Lodge
2. Buckingham Property
3. Carver Educational Service Center
4. Twinbrook Metro Station
5. Lewis Avenue/Halpine Road (also 1993)
6. Seven Locks Detention Center/Montgomery County Facilities (also 1993)
7. Woodmont Country Club (also 1993)
8. Lakewood Country Club (also 1993).

Four of the eight areas are holdovers from the 1993 plan. The Town Center is not on the list, but is mentioned as addressed in its own master plan. It should be noted that the four sites that are retained from 1993 (that is for the last 22 years) all remain essentially the same land use as before. In fact, the plan recommends retaining the same use for the industrial area along Lewis Avenue in 1993 and 2002. Why the land use chapter focuses on these specific sites in such detail is not entirely clear from reading the document, nor is the stated goal of greater compatibility or smart growth particularly satisfied.

In regard to the current status of the remaining critical areas, Chestnut Lodge was recommended to remain an institutional use, but its demolition by fire resulted in a new residential development in the neo-traditional style on the southern part of the property and a current proposal to redevelop the remainder of the site to townhouses. The adjacent Buckingham Property was recommended for tree conservation and single family detached residential, and was developed with three houses. The Carver Education Service Center was recommended for an educational facility with protection of views of the historic high school, and these protected view sheds were created.

At the Twinbrook Metro station area, the 2002 plan recommends placing the area in the Metro Performance District, which allowed higher density development. For the Suburban Propane site the plan calls for zoning that allowed offices and “detached one-family dwellings, semi-detached one-family dwellings, or townhouses” (p. 2-18) and recommended creating a park space. The adopted and current PD-TC zone for the area is allowing development of a primarily multifamily and mixed use development on both sides of the tracks.

The 2002 plan continues the 1993 approach of addressing each of the now 18 planning areas with its own section. In contrast to the 1993 plan, Town Center is only addressed as Planning Area 1, with a single paragraph and reference to the Town Center Master Plan completed the year before in 2001. Each of the other 17 planning areas has its own section that identifies critical issues and detailed recommendations, sometimes down to the issue of a single site or traffic light (p. 11-48). Buffers are frequently mentioned in regard to the interface between existing residential and non-residential areas.

In terms of stated recommendations for land use, 16 of the 18 planning areas recommend maintaining the existing land use pattern and zoning, and the majority recommend that no more detailed plan is needed. Only the Town Center and Rockville Pike are seen as amenable to land use change. The plan for King Farm and Fallsgrrove is to follow their approved concept plans, as is the plan for Tower Oaks, which refers back to the concept plan from 1985. The Research/Piccard area is seen as a place with potential for redevelopment to higher intensity office uses, but does not contemplate land use change to other uses.

Rockville’s current master plan, adopted in 2002, reflects a mature community with an established land use pattern. Its approach to land use change is to limit it to the Town Center, Rockville Pike, Twinbrook Metro station area, and a few scattered sites.