Industrial Land Use
Montgomery County, Maryland

Prepared for:
Montgomery County Planning Department

October 18, 2013

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Contents

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Executive Summary

Industrial land has not been a planning priority for Montgomery County largely because its economy and land use are dominated by non-industrial jobs that occupy office, retail and other types of space. Though industrial land uses represent not quite one percent of the county's developed land area (excluding the agricultural reserve), industrial development plays an important support role, serving county residents and businesses.[1]

Importance of Industrial Districts

Except for life sciences, most of Montgomery County's industrial space can be described as production, distribution and repair (PDR) uses, including a variety of important business and municipal uses that support day-to-day living. The county's industrial districts serve a number of purposes:

- opportunities for entrepreneurs and small businesses, including artists and other arts-related businesses;
- convenient access to repair and other services residents and businesses need;
- entry-level and vocational jobs for county residents;
- meeting public sector operational needs; and
- generating tax revenues.

Most industrial space in the county is used for service operations, such as auto and small engine repair, landscape maintenance, sign fabrication, catering, moving services, dog training, upholstery, rug cleaning, self-storage, and some social services. The few manufacturers include bakeries, coffee roasters, printers, woodworking, and custom furniture. Auto repair services, particularly body shops, are largely concentrated in industrial districts, representing 30 to 40 percent of users. Another major cluster is home improvement contractors and decorating services, with a number of showrooms for large items such as counter tops, appliances, and carpets. Others include larger footprint recreational uses, such as gymnastics training or paintball facilities, which often depend on the lower cost of industrial locations.

[1]This analysis does not address the needs of the life sciences industry, which is accommodated by the specialized life sciences zoning category.

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Industrial Space Trends

Industrial space is typically divided between industrial and flex space. Most industrial space in the area is designed for light production and assembly, distribution and repair/service operations (referred to as PDR uses), which have dominated industrial real estate construction over the last decade. In contrast, flex space is typically single-story space with a portion finished as office space and a portion retained as space for warehousing, repair or production.

Regional Context[2]

- The pace of industrial space construction has slowed sharply during the last decade as compared with the previous decade – averaging 1.19 million square feet from 2003 through 2012.
- From 1993, the region's supply of occupied industrial space grew by 27.2 million square feet or 23 percent to 2012.
- As occupancy lagged the pace of new construction, occupancy rates fell from 91.5 percent in 1993 to 89.7 percent in 2012.
- Flex space in the region totaled 68 million square feet at the end of 2012, a 50-percent increase over the 1993 level.
- Occupancy rates for flex space peaked at 93.5 percent in 2000 and fell to 84.7 percent in 2009 before recovering to 86.0 percent in 2012.
- **Occupancy rates for industrial and flex space throughout the region are below a healthy occupancy rate[3] of 92 to 95 percent.**

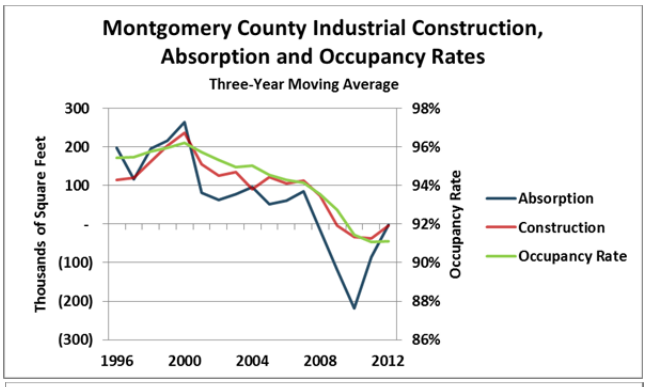
Montgomery County Trends

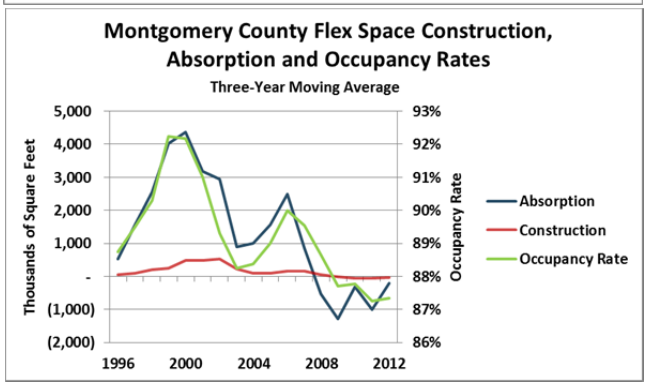
- Montgomery County had an industrial space inventory of 14.3 million square feet at the end of 2012, 1.8 million square feet or 14.3 percent higher than in 1993. The

[2] Defined to include the District of Columbia an Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[3] "Healthy occupancy rate" is an industry standard that allows for vacancies between tenants and provides some variety of spaces available to businesses seeking space. An individual building should have an occupancy of 95 percent or more. Area occupancies may dip to 92 percent when the inventory includes obsolescent space.

county saw a net reduction of 124,000 square feet from 2009 through 2012 as industrial space was demolished, probably to allow redevelopment for other uses. Despite the slow inventory growth over the last two decades, occupancy of industrial space fell from 94.1 percent in 1993 and the 96.6-percent peak in 1999 to 92.0 percent in 2012.





- The county's inventory of flex space grew by 2.5 million square feet or 27.4 percent from 1993 to 2003 and then by only 187,000 square feet or 2.6 percent from 2003 to 2012.

- Occupancy of flex space grew at a slower rate of 2.3 million square feet from 1993 to 2003 and 81,000 square feet from 2003 to 2012.

- **Like the region at large, Montgomery County's occupancy rates indicate a weak market when compared with the "healthy" rate of 92- to 95-percent occupancy.**

- Montgomery County industrial rents were 47 percent higher than the regional average in 2012 and 36 percent higher than the first-ring suburbs' average (Prince

George's, Frederick, Arlington and Fairfax counties and the cities of Alexandria, Fairfax and Falls Church).

Employment Trends

- Traditional industrial sectors – manufacturing, construction, wholesale trade, and transportation and warehousing – made up only 11.4 percent of the county's employment in 2011, down from 15.2 percent in 2000. This compares to 26.0 percent in the U.S. as a whole in 2012.

- Small businesses dominate the county's industrial sectors. More than three-quarters of all businesses in construction, manufacturing, wholesale trade, and transportation and warehousing had less than 10 employees in 2011.

- **The nature of space needs changes over time, and obsolete buildings need to be replaced with more efficient facilities that reflect changes in productivity, technology, and employment trends.**

Industrial Land Use Trends

- Over the past 20 years, Montgomery County has seen a significant share of the county's industrial land inventory converted to other uses: the 144 individual properties identified as changing from industrial use to a commercial or residential use had 3.0 million square feet of building space in 1993.

- Fifty-three percent of the changed properties were located within one mile of a Metro station with another 27 percent situated between one and five miles of Metro.

- **Losses are greatest in the county's urban areas, potentially leading to shortages of land for services needed by down-county residents.**

Policy Recommendations

While the county's recent industrial history suggests no need to expand the supply of industrially zoned land on a countywide basis, preservation of existing industrial space will be important to assure continued availability in locations convenient to the county's residents. The Planning Commission should seek to preserve industrial districts in each of the county's major subareas to retain support for each area's residents and businesses. It is

not sufficient to have plentiful industrial sites up-county where land is less expensive. A distribution of sites closer to the businesses' customers contributes to a more balanced economy accessible to customers and employees alike.

In the I-270 corridor, the existing industrial space supply is well dispersed. Industrial properties are extremely limited within the Beltway. The very limited supply of down-county industrial sites argues against any additional conversions.

The main issues for industrial zoning are the Brookville Road area, Howard Avenue in Kensington, and Parklawn/ Twinbrook. Losing those industrial lands would compromise the service industry's ability to serve down-county residents. The county has sufficient land zoned for heavy industry, and quarry sites can transition to other more intensive uses without negative economic impacts.

In keeping with the County's goal of maximizing the value of its transit infrastructure, properties within the immediate half-mile of a Metro station should be reserved for higher-density uses that provide transit access to a larger number of employees or residents. Industrially-zoned land more than one-half mile away from a Metro station should be preserved in the urbanized parts of the county, and new opportunities to rezone small areas to industrial zoning should be pursued to maintain a well-distributed balance of land uses.

The County should develop long-term facility strategies to assure that its future need for fleet maintenance, equipment storage, warehousing and other industrial functions can be met by the current supply of sites and facilities. If not, sites should be identified and protected with industrial zoning to prevent future loss.

Industrial zoning should restrict uses to industrial-type operations and facilities that are not well suited to commercial or employment zones. Inclusion of primarily commercial uses (e.g., office, retail, hotel) would increase land values and encourage conversion to non-industrial uses, reducing opportunities for affordable industrial space. The proposed zoning ordinance provides important protections by excluding most non-industrial uses. While a mix of office, retail and service space can be developed on industrially zoned land, it is limited in size to 35 percent of the mapped FAR.

Where possible, buffering should be required between industrial and residential uses either in the form of landscaping or intervening uses better suited for locations adjacent to residential neighborhoods. The proposed zoning rewrite includes 30- to 50-foot landscaped buffers between industrial and residential uses. Such buffering should be effective in mitigating the negative impacts; however, alternative approaches should be considered in the case of smaller sites that cannot spare a 30-foot strip for buffering.

In most cases, industrial zoning should exclude residential development. As proposed in the zoning rewrite, live/work units are permitted in Commercial/Residential and Employment zones, providing opportunities for artist studios, artisan workshops and other live/work spaces. Those are more appropriate locations than in industrial zones.

Any rezoning decision for industrial land should consider the potential impacts on existing businesses that could be forced to relocate by direct conversion of their site, by the introduction of residents whose presence would limit industrial operations, or by the resulting escalation in land values. One of the considerations should be the availability of industrial sites in near proximity.

In expanding commercial or commercial-residential zoning to industrial and service commercial areas, the Planning Commission should consider the potential impacts of creating premature incentives for land speculation and disinvestment. Rezoning should occur close to the time of anticipated commercial or mixed-use development.

The changing nature of the industrial market has implications for the FAR and height limits in the zoning code. The 50-foot height limit proposed in the zoning rewrite is compatible with the needs of modern warehousing. Most industrial and wholesale distribution developments will rely on surface parking with FARs up to 0.4 or 0.5. The Industrial Light (IL) zone is proposed to have an FAR limit of 1.0 with Industrial Moderate (IM) sites limited to FARs of 0.25 in rural areas up to 2.5. Industrial Heavy (IH) sites are proposed to have a maximum FAR of 2.5 and a height limit of 70 feet. The Industrial Floating Zone has the potential to increase maximum total density to 2.0 to 3.0 FAR depending on site size. The higher FAR limits could be useful in the event that a company wants to expand on site by adopting structured parking but are not likely to be used in the near term.

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I. The Need for Industrial Districts

Industrial land has not been a planning priority for Montgomery County, largely because its economy and land use are dominated by non-industrial jobs that occupy office, retail and other types of space. Though industrial land uses represent not quite one percent of the county's developed land area (excluding the agricultural reserve), industrial development plays an important support role, serving county residents and businesses.[4]

Importance of Industrial Districts

Except for life sciences, most of Montgomery County's industrial space can be described as production, distribution, and repair (PDR) uses, including a variety of important business and municipal uses that support day-to-day living. The county's industrial districts serve a number of purposes:

- opportunities for entrepreneurs and small businesses, including artists and other arts-related businesses;
- convenient access to repair and other services residents and businesses need;
- entry-level and vocational jobs for county residents;
- meeting public sector operational needs; and
- generating tax revenues.

Small Business Opportunities

Industrial buildings typically offer much lower rents than do most office or retail buildings. When usable in their as-is condition, these buildings are well suited to the needs of small businesses and entrepreneurs that need to minimize their occupancy costs. This is a particular concern for start-up businesses that need to conserve their limited capital for equipment and initial operating costs.

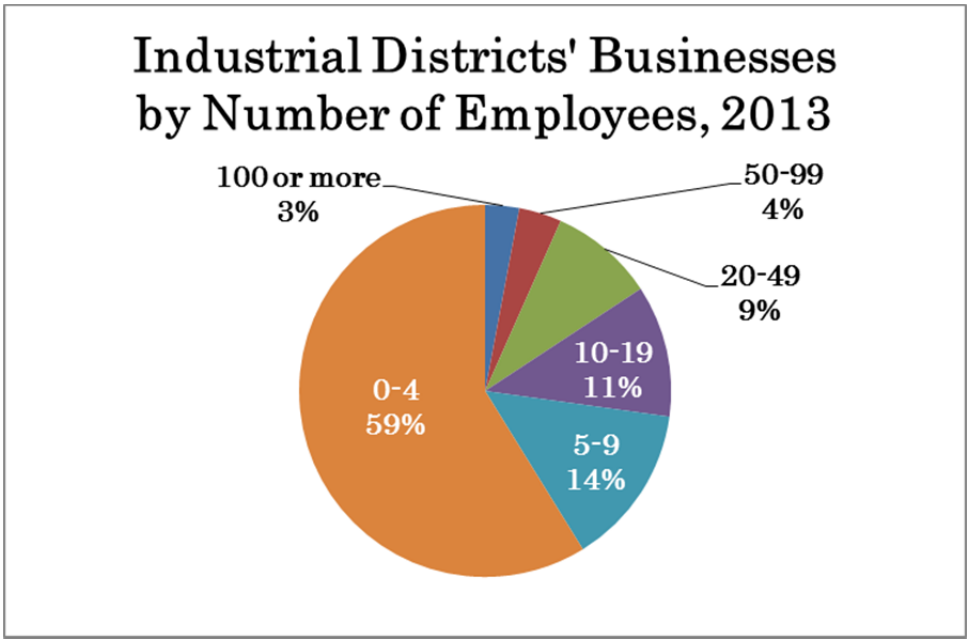
PES used Dun & Bradstreet information to profile businesses within five industrial districts around the county (maps of the areas used to generate data appear in Appendix A):

- E. Gude Drive in Rockville;
- Parklawn Drive/Wilkins Avenue in Twinbrook;

[4]This analysis does not address the needs of the life sciences industry, which is accommodated by the specialized life sciences zoning category.

- W. Howard Avenue in Kensington;
- WesTech Park in White Oak; and
- Brookville Road in Lyttonsville.

Almost three-quarters of the businesses represented in these districts have 10 or fewer employees. Seven percent of employers have 50 or more employees, but the average company in each district employs 5 to 18 workers, as shown in Appendix Table A-2.



Entrepreneurs, including a number of recent immigrants with specialized skills, have been attracted to many of the county's industrial areas to establish their businesses. Businesses in these five industrial districts include very few chain operations; almost all are local operations.

Support for Residents

Montgomery County's industrial properties are dominated by uses that focus on serving local residents.

The five sample industrial districts show a great diversity of uses ranging from repair to recreation. (See Appendix Table A-1.) Most users are service operations, providing auto repair services, lawnmower repair, landscape maintenance, sign fabrication, catering, moving services, dog training, upholstery, rug cleaning, self-storage, and some social services (e.g., the Jewish Council for the Aging and The Arc Vocational & Day Services).

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The few manufacturers include bakeries, coffee roasters, printers, woodworking, and custom furniture.

Auto repair services, particularly body shops, are largely concentrated in industrial districts, representing 30 to 40 percent of users. Another major cluster focuses on home improvement contractors and decorating services with a number of showrooms for large items such as counter tops, appliances and carpets.

Many are uses not needed on a daily basis but are still valuable to residents and their quality of life. For example, furniture repair and refinishing involves the use of varnishes and adhesives, whose odors are not compatible in a retail space alongside a

restaurant. Yet, residents value the option of refurbishing and repairing furniture rather than buying new – for aesthetic, economic and environmental reasons.

Larger footprint recreational uses, such as gymnastics training or paintball facilities, often depend on the lower cost of industrial locations relative to shopping center spaces.

Support for Businesses

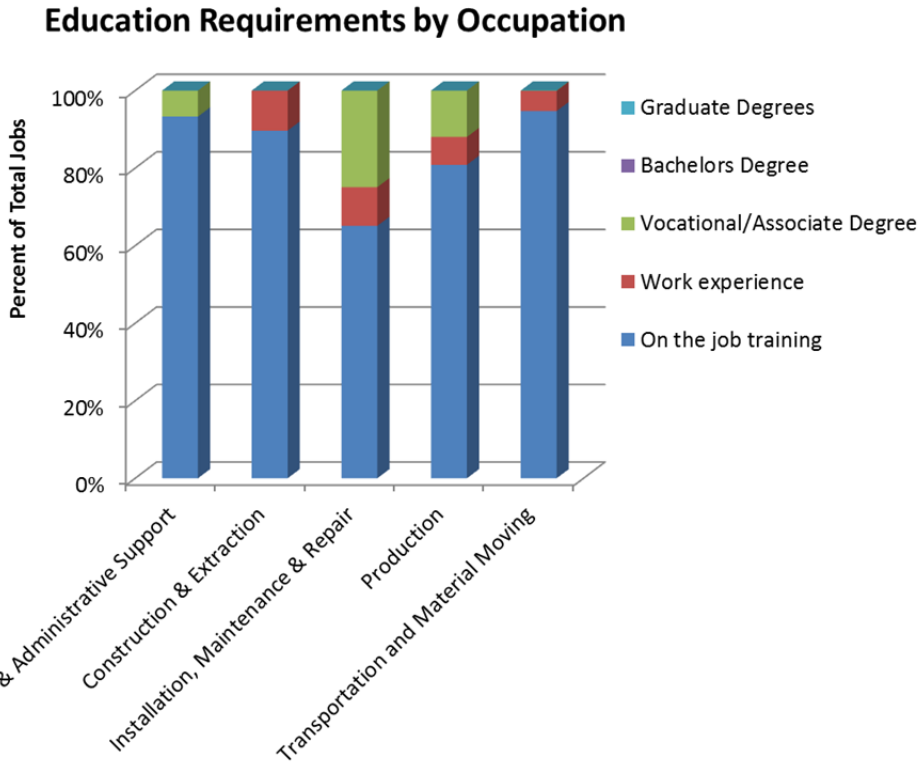
Parts suppliers allow the county's repair shops and contractors to meet their parts needs efficiently. Contractors and repair persons often need a specialized fitting or part that they do not stock routinely or carry on their trucks. Access to specialized suppliers within a reasonable distance directly impacts their efficiency and the cost of their services to their customers. For example, Blaine Windows in the Lyttonsville area carries an unmatched depth of window parts, including the smallest sash weights and fasteners for new and old windows.

Landscapers and construction contractors need places to store materials and equipment.

While the county's life sciences companies are focused in specialized zones, their suppliers are often more prosaic, such as distributors of industrial gases, and located in industrial districts. Again, such users are not suited to life sciences zones but are important to maintain within easy distance of their customers.

Entry-Level Jobs

PDR uses offer a range of jobs, most of which do not require a college education. Looking at the education requirements summarized in the following graphic for five industries – office and administrative support; construction and extraction; installation, maintenance and repair; production; and transportation and material moving – demonstrates the emphasis placed on on-the-job training, vocational skills, and work experience. Up to 90 percent of the occupations in these industries require only on-the-job training. Two-year vocational or associate degrees are sufficient to meet the required credentials for another 1 to 30 percent of these occupations.



In spite of the lower educational requirements for these jobs, their prevailing wages are significantly higher than those available in retail and restaurants. Production occupations in Montgomery County had a mean annual wage of $37,566 in 2012[5] with wages of $46,333 for experienced workers. Transportation and material moving occupations had a mean annual wage of $32,872. These compare with a mean annual wage of $26,620 for retail salespersons and $23,928 in food preparation and service.

Municipal Uses

The County itself depends upon an inventory of well-located industrial properties to support public works and other operations. Fleets of Ride-On buses, school buses, road maintenance equipment, and other vehicles need overnight storage lots and maintenance facilities. Sand and road salt needs to be positioned in domes around the county proximate to the roads to be treated during snow and ice storms. Storage of schoolbooks, other supplies, and voting machines takes additional facilities. While some of these facilities can

[5] Maryland Department of Labor, Licensing and Regulation, Occupational Wage Estimates as downloaded from http://www.dllr.state.md.us/lmi/wages/PAGE0293.HTM.

be relocated, there are limited locations in urban portions of the county for replacement facilities.

Property Tax Base

While industrial properties do not carry high values in comparison to higher-density office and retail uses, their tax revenues are not offset by significant public expenditures for schools and other costs associated with new housing. Industrial land uses represent 1.5 percent of the total assessed value of property countywide property and generate an estimated $20.7 million in annual real property tax revenues. Other revenues are generated by personal property, corporate income and utilities taxes paid directly by industrial businesses as well as income and other taxes paid by their workers.

Zoning Protections for Industrial Districts

Industrially zoned land protects and supports the continuation of industrial uses. Public commitment to retaining a good supply of industrially zoned land can reassure businesses as to their long-term stability. Before investing in facilities, they want to know that they won't be forced to move due to conversion to other uses or rapidly escalating rents.

Relative to other uses, industrial land typically has lower values. Existing and future industrial businesses depend on the availability of lower-cost space and land unencumbered by the restrictions typically imposed by neighboring residential uses. When market forces support conversion to uses with higher land values, industrial land is often replaced with other uses. In some cases, older industrial buildings are renovated and repurposed. Most often, though, they are demolished and new buildings constructed.

In some cases, redevelopment and conversion is the most appropriate and economically sound course from the public policy perspective. Because industrial development has historically followed rail corridors, which now also accommodate transit, many industrial properties lie in proximity to Metro and some future Purple Line stations. Development

that is focused in transit-served locations, allowing transit-oriented residential and office uses accessible by transit and without reliance on single-occupant vehicles, is encouraged by smart growth policies. Maximizing the value of those transit-adjacent properties can provide a much better return on the public transit investment. Much depends though on the particular location and other surrounding land use factors.

The challenge lies in assuring a sufficient supply of industrial land to serve each portion of the county without sacrificing these larger smart growth principles.

Commercial Zoning

Some of the repair uses that locate in industrial areas are allowed in some commercial zones as well. However, those zones also allow other commercial uses. In locations with good access and visibility that are suitable for office, retail, or apartment development, conversion to other uses is a long-term problem. Even in the near term – well in advance of market demand – property owners' expectations of higher prices associated with redevelopment and conversion can prevent long-term leases and/or reinvestment in the industrial buildings. In the last few years before demolition and redevelopment, the limited short-term returns associated with renovation for continued industrial use do not justify reinvestment in the buildings. Uncertainty about a district's future can encourage decline of otherwise viable industrial districts.

Continuing efforts to improve the quality and appearance of strip commercial areas will likely introduce new pressures to reduce the presence of auto and other heavy repair services. Industrial districts, which tend to be more tucked away and less visible, may need to absorb more of these users into the future.

Residential Encroachment

One of the most serious threats to an active industrial district is residential encroachment. Twenty-eight percent of the county's industrial properties (373 of 1,326 parcels) in 2012 adjoined residentially zoned land. Inevitably, new homeowners moving in next to an industrial district will soon forget that the industry was there before they were. Early morning loading, truck traffic, noise, odors or even a less than pristine appearance will lead them to seek operational constraints on their industrial neighbors. Knowing that pattern, industrial tenants try to avoid locations with adjoining residential development for fear of constraints that would limit their efficiency and ability to carry out their core business. In cases when a property owner sees an opportunity to achieve a higher density and increased economic returns by converting to another use, this opposition helps make the pressure for rezoning for residential or mixed uses almost irresistible.

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Summary: Implications for Industrial Land Use in Montgomery County

- Industrial zoning provides space for small businesses and entrepreneurs. Such uses are important generators of jobs for lower-skilled residents who do not have college degrees.

- Residents, employers, and government agencies frequently rely on repair, maintenance, construction, and numerous other services based in industrial districts.

- Protections for industrially-zoned land must be enacted that:

    - Ensure that industrial areas continue to provide adequate space for demand as evidenced by occupancy and absorption rates.
    - Do not allow other uses in industrial zones to eclipse industrial uses, but allow some supporting services for employees and patrons to relieve such pressure.
    - Provide appropriate buffers and mitigation to protect industrial land from nearby residential uses that would constrain business operations; conversely, ensure adjacent residential land is appropriately designed to take into consideration the abutting industrial uses.

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II. Industrial Space Trends

As Montgomery County develops land use plans and strategies, it often encounters choices about the future of industrially-zoned properties. To better inform those choices, the Montgomery County Planning Department commissioned Partners for Economic Solutions (PES) to analyze industrial land and employment trends in the county with comparisons to the region as a whole and by subareas.

Industrial and Flex Space

This analysis focuses on trends in the demand and supply of industrial space as reported by CoStar, which maintains a massive database that has covered private industrial buildings of 5,000 square feet or more over the past 20 years. Though the CoStar information excludes government-owned buildings and some owner-occupied structures, it provides an invaluable profile and history of industrial development in Montgomery County and throughout the Washington, DC region.

Industrial real estate includes a wide variety of facilities for a broad range of uses, including warehousing, distribution, manufacturing, service and repair. In some locations around the country industrial space includes major facilities for heavy manufacturing – steel mills, auto plants, etc. In Montgomery County and the rest of the Washington area, such uses are uncommon. Most industrial space is designed for light production and assembly, distribution and repair/service operations (referred to as PDR uses) or is fitted out with lab space for the biotechnology industry.


Warehouse and distribution space has dominated industrial real estate construction over the last decade or more. Major distributors now favor modern warehouses with clear spans and high ceilings (32 feet or higher) that can accommodate stacking and use of technology

and mechanized retrieval. Trucking and distribution operations focus on quick transfers of goods from one vehicle to another and often exceed 500,000 or even 1 million square feet.

Modern industrial buildings designed for manufacturers and assembly operation often vary with the specific industry, but speculative buildings are typically designed with 18- to 20-foot ceilings, truck docks, and open floor plans that can be subdivided and customized for multiple tenants.

Flex space, a particular type of industrial space, is singled out for focused attention because it serves a distinctly different market from other types of industrial space. Flex space is typically single-story space with a portion finished as office space and a portion retained as space for warehousing, repair, or production. Typically, it is developed as a long linear building with separate bays with separate entrances that can be combined to provide a range of space sizes from 1,000 to more than 20,000 square feet. Truck docks or roll-up doors are provided on the back of the building to facilitate movement of goods with office space at the front. The interior space can be customized to the specific tenant's needs to include more or less office space. For many cost-sensitive tenants, flex space provides lower-cost office space than is available in multi-story office buildings. Parking is typically provided in a surface lot, often at the front door.

Regional Trends

Twenty-year histories of industrial/flex supply and demand for the region reveal a pattern of wide swings from year to year. Part of this trend reflects the impacts of broader economic trends that impact business activity and employment. Those trends often are amplified by the tendency of real estate markets where multiple property owners respond to increased demand by building new space. The new supply overshoots the new demand because too many developers build at once and/or because demand turns down during the

time it takes to permit and build the new space. With an overhang of vacant space, rents fall as building owners compete for tenants. Lower rents and higher vacancies discourage developers and their lenders, and less space is built annually until occupancy rates improve and rents begin to rise again. Then the market cycle starts again.

Year-to-year changes in construction also can be abrupt because industrial buildings come in large chunks. A major project in one year can cause a significant swing in the construction pace. To smooth out those sharp year-to-year changes, the graphs in this section show a three-year moving average (e.g., the amount shown for 1996 is the annual average from 1994 through 1996). This smoothing of the data makes the longer-term trends more clear. The actual year-by-year data are shown in Appendix A.

Industrial Space

The Washington region[6] had a total inventory of 161 million square feet of industrial space at the end of 2012. Over the 1994-2012 period, the inventory increased by a net of 32.4 million square feet or 25 percent. The pace of industrial space construction has slowed sharply during the last decade as compared with the previous decade. Annual industrial space construction averaged 1.19 million square feet from 2003 through 2012 as compared with an average of 2.27 million square feet from 1994 through 2002 – a 48-percent drop. From 2009 through 2012, the inventory actually fell by 1.24 million square feet through demolition or conversion to other uses.

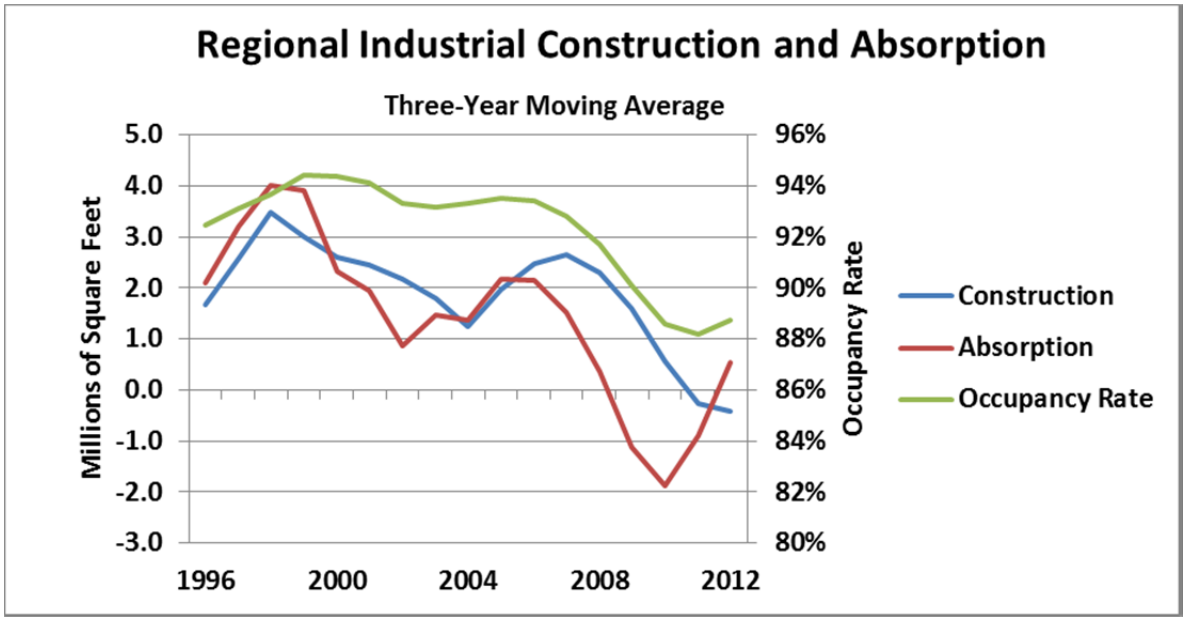
Net absorption[7] is measured as the change in the number of occupied square feet from one year to the next. From 1993 through 2012, net absorption totaled 27.2 million square feet, a 23-percent increase over the 1993 base of 118 million square feet. Occupancy rates started at 91.5 percent in 1993, somewhat below the "healthy"[8] level of 92 to 95 percent. After increases to 95.2 percent in 1999, the overall occupancy fell to 92.1 percent in 2007 as construction somewhat outstripped demand. The region saw major negative absorption of 5.65 million square feet from 2008 through 2010 during the Great Recession. By the end of 2010, the regional occupancy rate had fallen to 87.7 percent. Net absorption turned

[6] Defined to include the District of Columbia an Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[7] Net absorption includes the number of square feet of space leased during the period less the number of square feet vacated.

[8] "Healthy occupancy rate" is an industry standard that allows for vacancies between tenants and provides some variety of spaces available to businesses seeking space. An individual building should have an occupancy of 95 percent or more. Area occupancies may dip to 92 percent when the inventory includes obsolescent space.

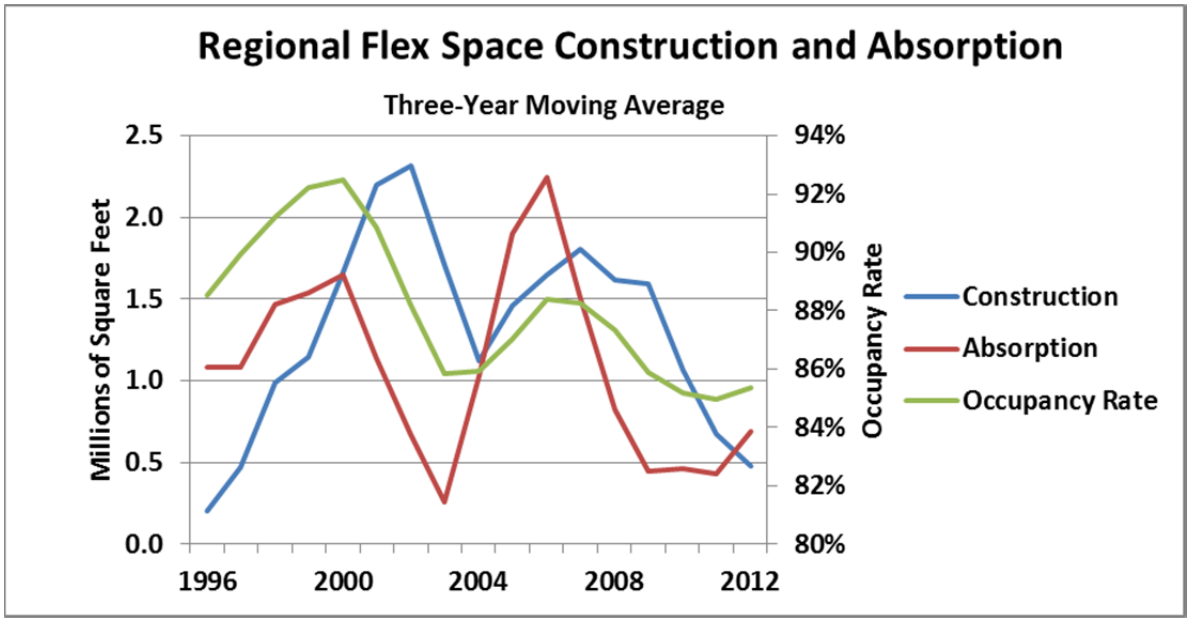
positive again in 2011 and 2012, adding 2.15 million square feet of occupied space and increasing the occupancy rate to 89.7 percent.



Flex Space

The region's inventory of flex space totaled 68 million square feet at the end of 2012, a 50-percent increase over the 1993 level. Unlike industrial space construction, which declined sharply during the last decade, the average annual pace of flex construction in the region remained relatively steady, averaging 1.29 million square feet annually from 1994 through 2012 and 1.22 million square feet from 2003 through 2012. Net absorption of flex space averaged 1.11 million and 1.09 million per year during the two decades, respectively. However, the 10-year averages mask a great variation – annual absorption reached 2.98 million square feet in 2005 but only 250,000 in 2007. Though slow through the Great Recession, averaging 461,000 annually from 2008 through 2010, absorption recovered to average 891,000 square feet in 2011 and 2012.

Occupancy rates peaked at 93.5 percent in 1999 and fell to 84.7 percent in 2009 before recovering to 86.0 percent in 2012. That is still well below the desired level of 95-percent occupancy.



Regional Trends by Subarea

To better understand the geographic patterns of construction and demand, the next analysis breaks down the activity into four geographic sectors (shown on the following map)

- the District of Columbia;
- first-ring suburbs including Montgomery and Prince George's counties in Maryland, and Arlington and Fairfax counties and the cities of Alexandria, Fairfax and Falls Church in Virginia;
- second-ring suburbs including Charles and Frederick counties in Maryland, and Loudoun and Prince William counties and the cities of Manassas and Manassas Park in Virginia; and
- third-ring suburbs including Fauquier, King George and Stafford counties in Virginia, and Berkeley and Jefferson counties in West Virginia.

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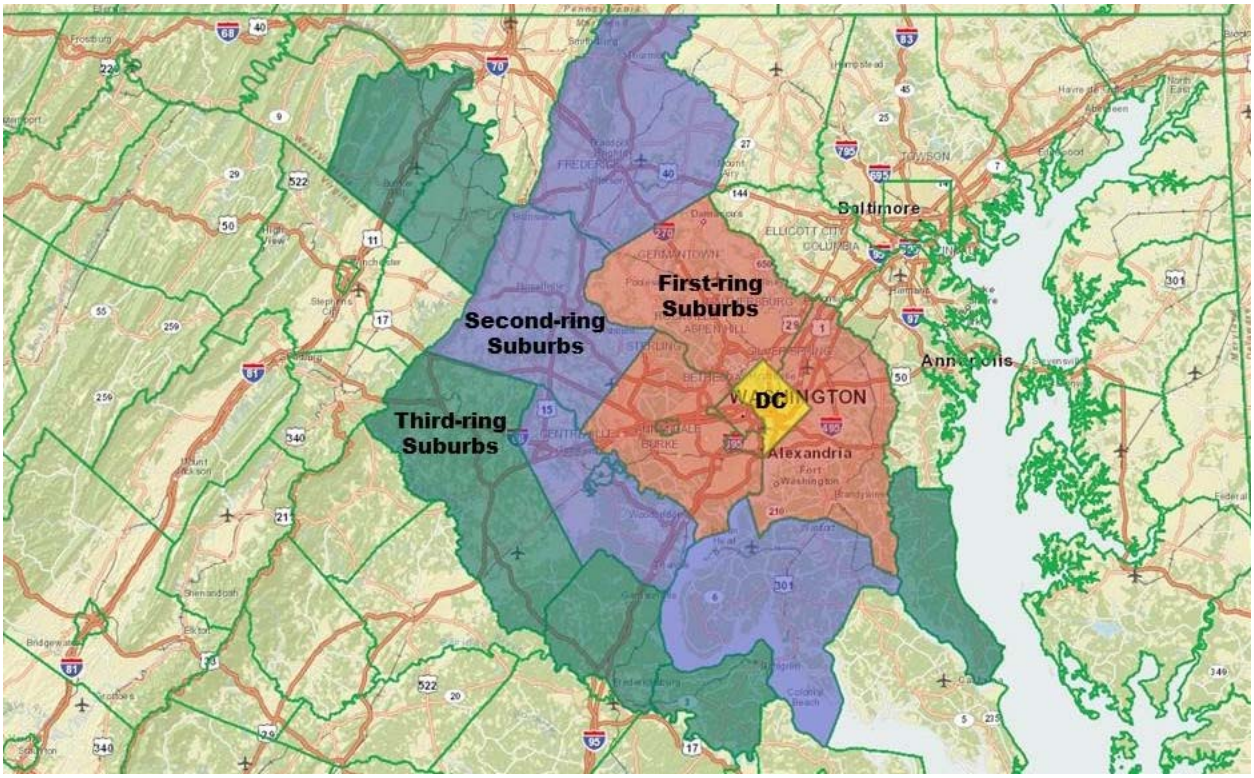
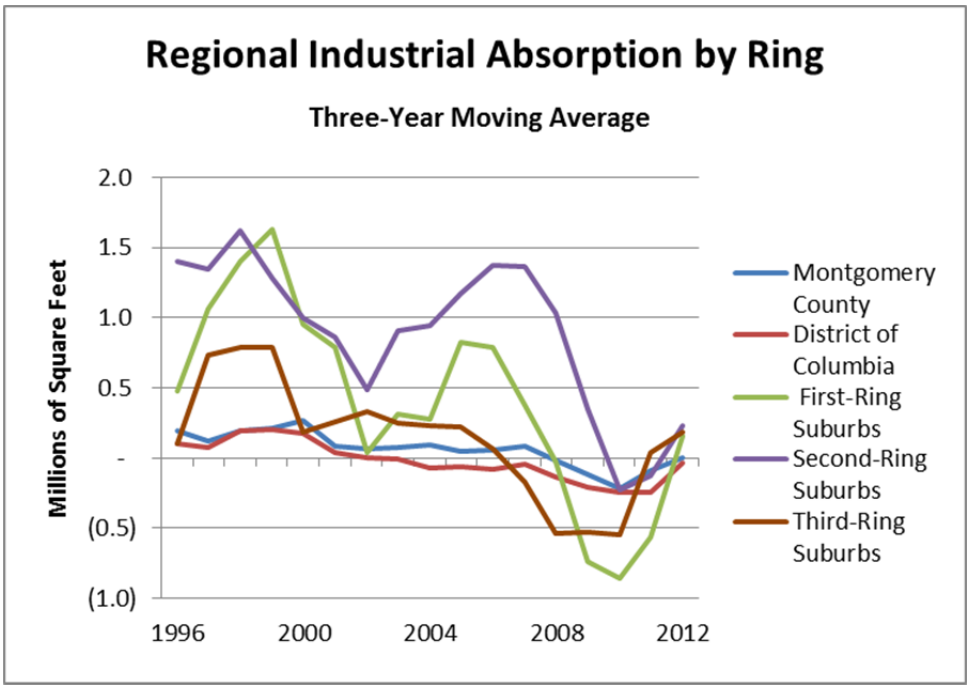
Regional Market Area by Ring



Industrial Space

The following graph illustrates the shift in industrial space demand by suburban ring. In the 1990s, first-ring suburbs captured roughly 33 percent of the industrial market as measured by net absorption. That share fell to about 28 percent in the 2000-2006 period. Then from 2007 through 2010, first-ring suburbs had a negative net absorption of 2.5 million square feet as second-ring suburbs gained 0.5 million square feet of occupied space. During 2011 and 2012, first-ring suburbs captured 25 percent of the region's demand. Over the full decade from 2003 through 2012, net absorption increased by only 721,000 square feet. At the same time (2003-2012), the District of Columbia experienced a 1.0 million square-foot loss in industrial occupancy. (See Appendix Table A-7 for construction activity and A-8 for more detail on absorption.)



The competition offered by third-ring suburbs has abated somewhat from the 1990s. With a 2.1 million square-foot absorption in 1997, the third-ring suburbs attracted 18 percent of new industrial tenancy during the 1990s. That rate fell to12 percent during the 2000-2006 period. The third-ring suburbs experienced a negative net absorption of 1.93 million square feet from 2007 through 2010. Over the last two years, the third ring captured 29 percent of regional absorption, but ended with a negative net absorption of 811,000 square feet for the last 2003-2012 decade.

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Table 1. Average Annual Industrial Construction and Absorption Trends, 1993-2012						
	Industrial Space Only		Flex Space Only		Industrial + Flex Space	
Geography	1993-2002	2003-2012	1993-2002	2003-2012	1993-2002	2003-2012
Construction						
Montgomery County	**147,000**	**47,000**	**270,000**	**32,000**	**417,000**	**79,000**
District of Columbia	(25,000)	(85,000)	(6,000)	(21,000)	(31,000)	(106,000)
First-Ring Suburbs[1]	811,000	243,000	620,000	331,000	1,431,000	574,000
Second-Ring Suburbs[2]	1,059,000	876,000	640,000	835,000	1,699,000	1,711,000
Third-Ring Suburbs[3]	431,000	158,000	34,000	73,000	465,000	231,000
Region[4]	**2,276,000**	**1,192,000**	**1,288,000**	**1,218,000**	**3,564,000**	**2,410,000**
Absorption						
Montgomery County	**164,000**	**(4,000)**	**250,000**	**11,000**	**414,000**	**7,000**
District of Columbia	28,000	(100,000)	(19,000)	8,000	9,000	(92,000)
First-Ring Suburbs[1]	485,000	104,000	649,000	243,000	1,134,000	347,000
Second-Ring Suburbs[2]	834,000	693,000	465,000	791,000	1,299,000	1,484,000
Third-Ring Suburbs[3]	367,000	(81,000)	11,000	43,000	378,000	(38,000)
Region[4]	**1,714,000**	**616,000**	**1,106,000**	**1,085,000**	**2,820,000**	**1,701,000**

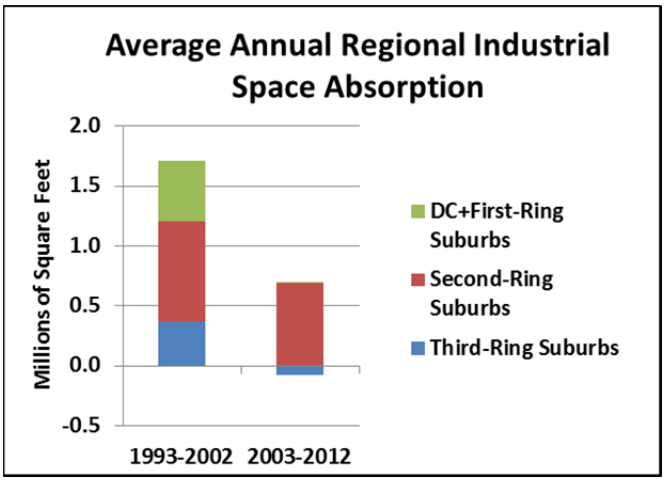
[1]Includes Arlington, Fairfax, Montgomery and Prince George's counties and the cities of Alexandria, Fairfax and Falls Church.

[2]Includes Charles, Frederick, Loudoun and Prince William counties and the cities of Manassas and Manassas Park.

[3]Includes Berkeley, Fauquier, Jefferson, King George and Stafford counties.

[4]Includes the District of Columbia and Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

Sources: CoStar; Partners for Economic Solutions, 2013.

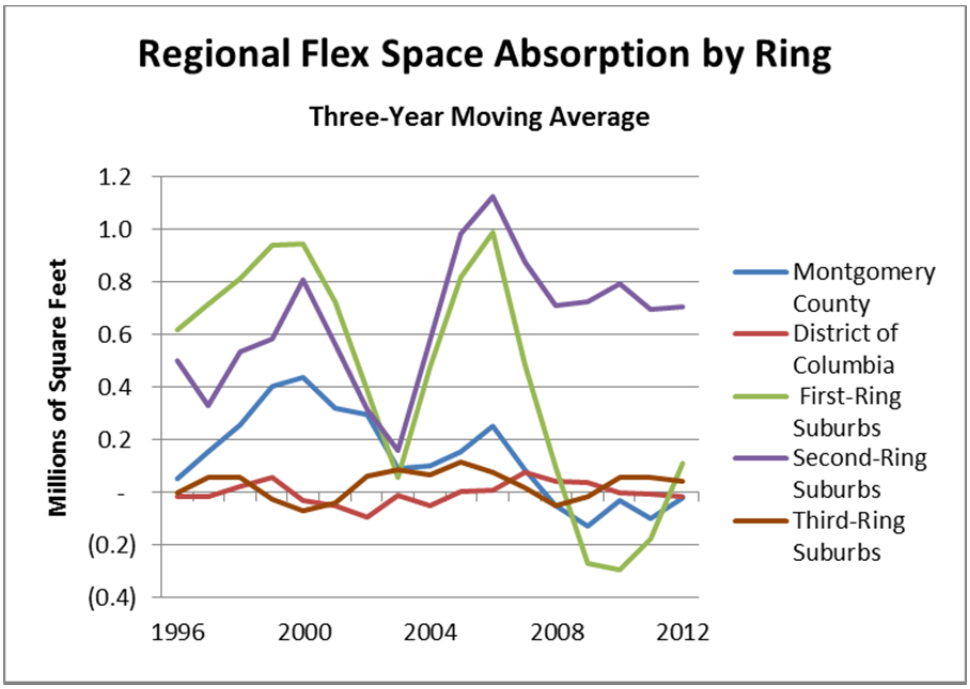


Flex Space

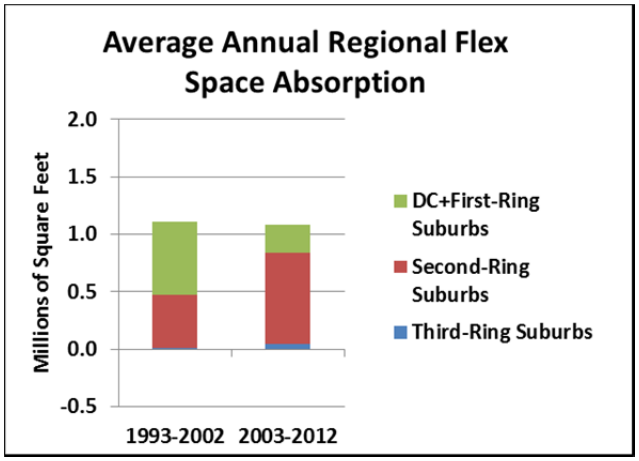
In the flex market, subareas show somewhat different trends. The first-ring suburbs attracted 60 percent of flex space tenancy from 1993 through 2000. Following a sharp decline to 22 percent from 2001 through 2003 during the "dot.com bust", 44 percent of the region's absorption occurred in first-ring suburbs from 2004 through 2006. Then from 2007

through 2010, first-ring suburbs suffered major occupancy losses, losing 1.0 million square feet of tenancy, as second-ring suburbs absorbed 2.8 million square feet. Over the last two years, first-ring suburbs have captured 30 percent of the region's demand. (Flex construction trends are documented in Appendix Table A-9 with absorption trends in A-10.)

The share of flex space absorption captured by the second-ring suburbs grew from 46 percent from 1993 through 2000 to 62 percent from 2001 through 2003 to 50 percent from 2004 through 2006. Over the last two years, the second-ring suburbs have captured 81 percent of net absorption. (The first- and second-ring absorption exceeds the regional total due to losses in the District of Columbia and third-ring suburbs.)

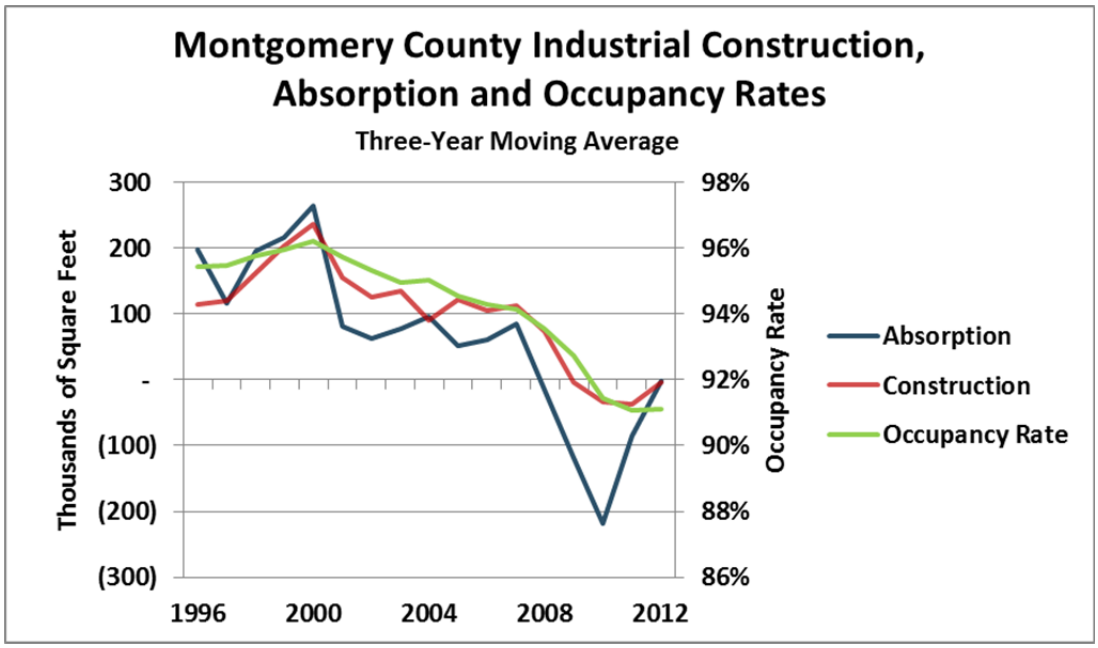


The following graphic shows the share of construction and absorption achieved by the various submarkets.



Montgomery County Trends

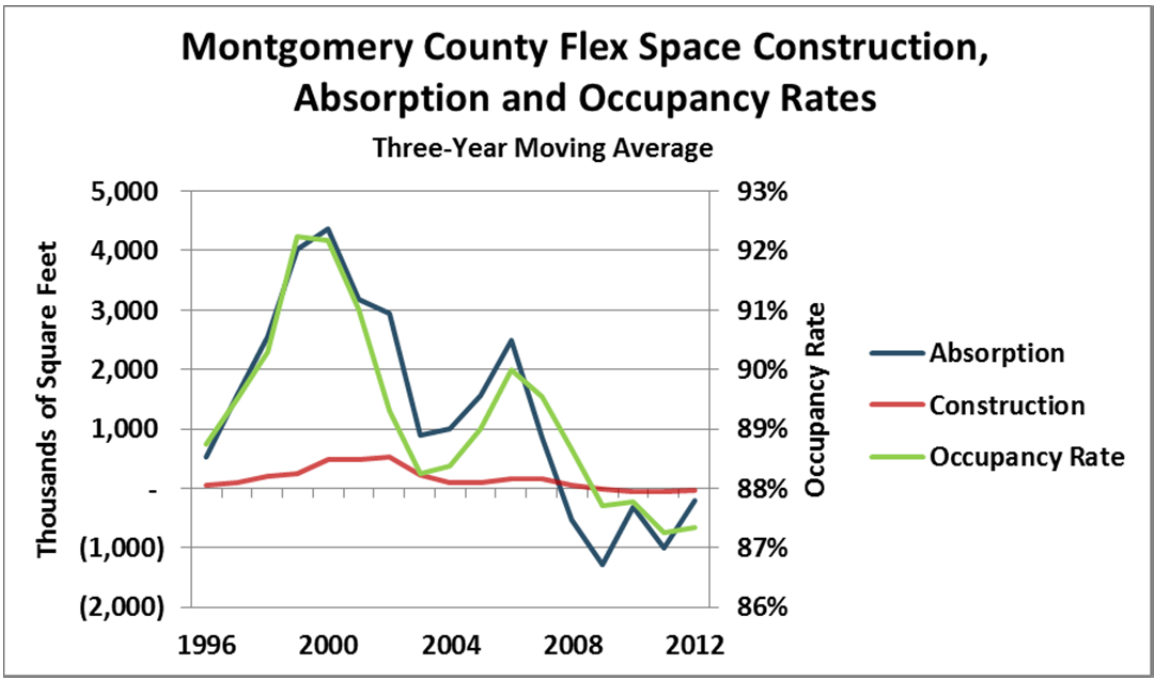
Montgomery County trends diverge somewhat from those of the region and even first-ring suburbs. Shown in the following graph and detailed in Appendix Table A-11, the county's industrial inventory has grown more slowly than in several other jurisdictions. The net change in inventory averaged 147,100 square feet annually from 1994 through 2002 and fell to 46,500 square feet from 2003 through 2012. The county added no industrial space on a net basis from 2009 through 2012 and actually saw a net reduction of 124,000 square feet as industrial space was demolished probably to allow redevelopment for other uses.



Despite the slow inventory growth over the last two decades, occupancy fell from 94.1 percent in 1993 and the 96.6-percent peak in 1999 to 92.0 percent in 2012. Over the last decade, the county's total occupied square feet actually fell by 162,000 square feet. This trend includes a loss of 655,000 square feet during the Great Recession, some of which has been recovered in 2011 and 2012.

Establishment data for the Silver Spring and Bethesda downtown business districts show a marked decrease in the availability of repair services for automobiles, consumer electronics and commercial equipment. Downtown Silver Spring and Lyttonsville (ZIP Code 20910) lost 15 of their 57 auto repair shops from 1998 to 2011 as well as four out of five consumer electronics repair shops as retail and housing uses expanded into formerly industrial areas, as shown in Appendix Table A-3. During the same period, Downtown Bethesda (ZIP Code 20814) lost one of its remaining 11 auto repair shops and two of its three furniture repair shops (Appendix Table A-4).

The county's flex space showed more robust growth over the last 20 years. (See Appendix Table A-12.) The inventory grew by 2.7 million square feet, a 31-percent increase. Most of that gain occurred from 1994 through 2002 with the addition of more than 2.4 million. From 2003 through 2012, the inventory grew by only 318,000 square feet as demolition of more than 150,000 square feet of space since 2007 offset new construction in 2005 and 2006.



Absorption of flex space averaged 204,000 square feet annually through 2002. Then annual absorption slowed to an average of less than 11,000 square feet with years of negative net absorption outnumbering years of positive absorption. These trends pushed down the overall occupancy rate. Occupancy exceeded 90 percent in only 5 of 20 years and exceeded 92 percent only once (in 1999). In 2012, occupancy stood at 87.6 percent. These rates indicate a weak market when compared with the "healthy" rate of 92 to 95 percent.

Research and development laboratories for the biotech industry represent a significant share of the county's flex space inventory, particularly in the I-270 corridor and the Great Seneca Science Corridor portion of the county.

Rent Trends

Though rent data from CoStar is somewhat spotty, it does provide some indication of rent levels and trends. Rents for Montgomery County industrial space averaged $6.97 per

square foot not including taxes, utilities, and janitorial fees in 1993. By 2005, that average rent had grown to $12.48 before declining to $10.81 in 2012. The region showed a similar pattern of rent growth from $5.29 per square foot in 1993 to a peak of $8.25 in 2005 before declining to $7.36 in 2012.

Montgomery County industrial rents were 47 percent higher than the regional average in 2012 and 36 percent higher than the first-ring suburbs' average. The gap was even higher in comparison with Prince George's County where industrial rents averaged $6.51 per square foot.

These disparities likely reflect a difference in the nature and quality of the industrial space (e.g., biotech space versus warehouse space) as well as clear differences in land. Cost is a factor for some tenants seeking generic industrial space, most of whom seek space outside the county unless they have specific links to Montgomery County consumer markets, institutions and/or other similar businesses that mandate a Montgomery County presence.

National Trends

National trends in e-commerce and logistics are changing the demand for distribution facilities. The growing importance of e-commerce has greatly expanded the need for distribution facilities to pack and deliver goods ordered on-line. Companies are focused on improving their distribution system to speed time to the customer and cut the costs of logistics. For many, this has meant turning to a third-party logistics provider (e.g., Amazon) to take advantage of the latest in modern technology and a well-developed distribution network. This places a premium on specialized distribution facilities proximate to major markets with good access to the interstate highway system, near to UPS and FedEx truck hubs with an ample labor pool, particularly during seasonal surges. In Maryland, such facilities have tended to favor the I-95 corridor between Washington and Baltimore for the ease of serving both regional markets. Some distribution companies are now considering sites within center cities, such as Philadelphia, for access to a pool of reliable workers willing to work for industry wages.

On a much smaller scale, manufacturers are beginning to move operations back to the United States. As shipping costs and automation reduce the savings achieved through off-sourcing, some companies are finding it is cost efficient to manufacture in the U.S. The ability for designers to work directly with production staff, customize the product and provide customers with quick turn-around are compelling advantages in some manufacturing industries. This is still an early trend that has not yet had a significant effect on the share of manufacturing output produced in the U.S., but it should continue to

grow over time. However, this trend is likely to have minimal implications for Montgomery County, however, given its limited base of manufacturing companies.

Summary: Implications for Industrial Land Use in Montgomery County

- Occupancy and absorption of industrial and flex space lag behind a healthy market rate, reflecting the non-industrial nature of the county economy and the high cost of space relative to other area jurisdictions.

- The large annual swings in absorption and construction activity indicate a need for a ready inventory of existing buildings and land ready for industrial development.

- Montgomery County businesses should be augmented by providing appropriate zoning, densities, and regulations to allow supporting uses.

- Building and land costs are a significant factor; commercial areas with lower lease rates could be targeted for rezoning for industrial uses.

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III. Employment Trends

Montgomery County has enjoyed a relatively stable economy over the last decade with total employment varying between 442,000 and 464,000, a variation of only 5.3 percent in spite of the most severe national recession since the Great Depression. Government employment provides a steady and growing base that protected the county's economy from the worst of the downturn. From 2002 to 2010, government employment increased from 83,000 to 83,400, followed by a major increase to 88,000 by 2012 with the shift of Federal personnel from Walter Reed Medical Center in the District to the National Military Medical Center in Bethesda.

As shown in Table 2 and detailed in Appendix Table A-13[9], private employment grew through the 2005-2007 boom before the recession cut private employment by 10,000 jobs from 2008 through 2010. Since that time, private employment has increased by 5,100 jobs or 1.6 percent.

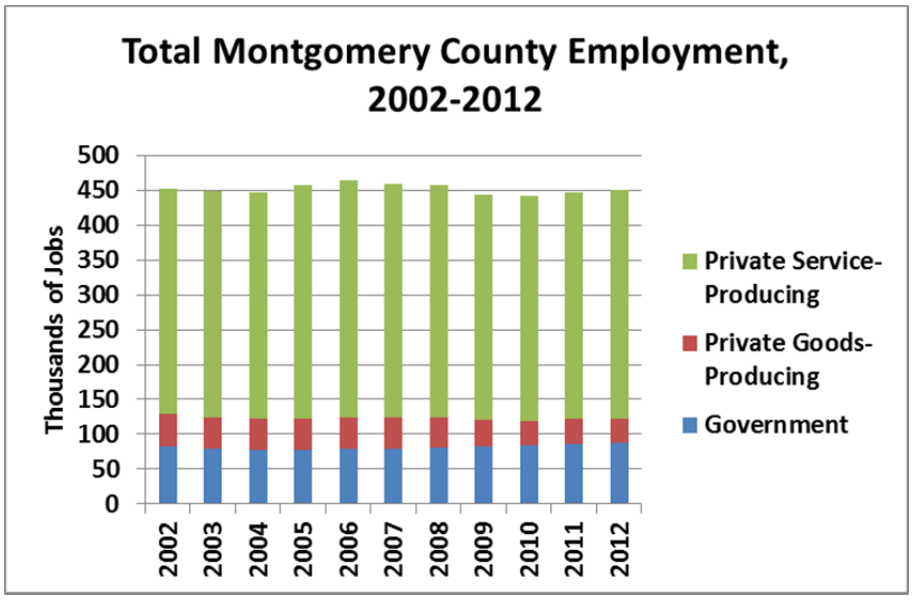
Table 2. Total Montgomery County Employment Trends, 2002-2012

					2002-2012 Change	
	2002	2007	2009	2012	Number	Percent
Number of Jobs						
Government	82,974	78,854	82,021	87,981	5,007	6.0%
Private Goods-Producing	46,709	45,818	38,373	35,091	-11,618	-24.9%
Private Service-Producing	322,548	334,002	322,738	327,802	5,254	1.6%
Total Employment	**453,145**	**459,346**	**443,305**	**450,880**	**-2,265**	**-0.5%**
Percent of Total Jobs						
Government	18.3%	17.2%	18.5%	19.5%		
Private Goods-Producing	10.3%	10.0%	8.7%	7.8%		
Private Service-Producing	71.2%	72.7%	72.8%	72.7%		
Total Employment	**100.0%**	**100.0%**	**100.0%**	**100.0%**		

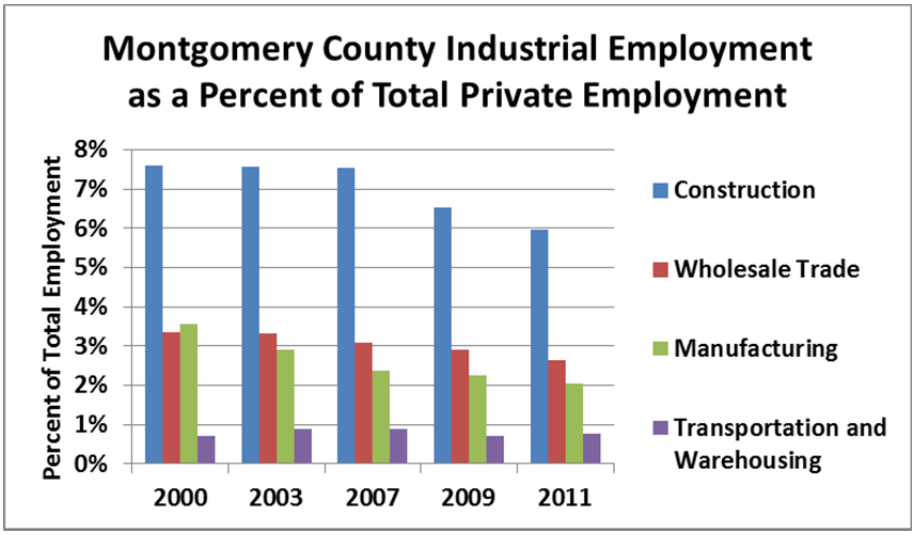
Source: Maryland Department of Labor, Licensing and Regulation, 2013; Partners for Economic Solutions, 2013.

[9] Appendix Table A-14 provides greater detail on county employment trends, drawing on data from the Census Bureau's County Business Patterns. These data vary somewhat from the State estimates shown in Table 2 due to different industry classifications, one week's payroll versus annual average data and the exclusion of public administration.

Montgomery County's employment base has shifted over time with goods-producing industries, those most often associated with industrial land use, shrinking as a share of total employment from 10.3 percent in 2002 to 7.8 percent in 2012.



The following graph highlights changes in four industrial sectors: construction; wholesale trade; manufacturing; and transportation and warehousing. Each has dropped as a share of the county's total private employment from 2000 through 2011. Manufacturing dropped from 3.6 percent of total private employment in 2000 to 2.0 percent in 2011 while wholesale trade declined from 3.4 percent of private employment to 2.6 percent.



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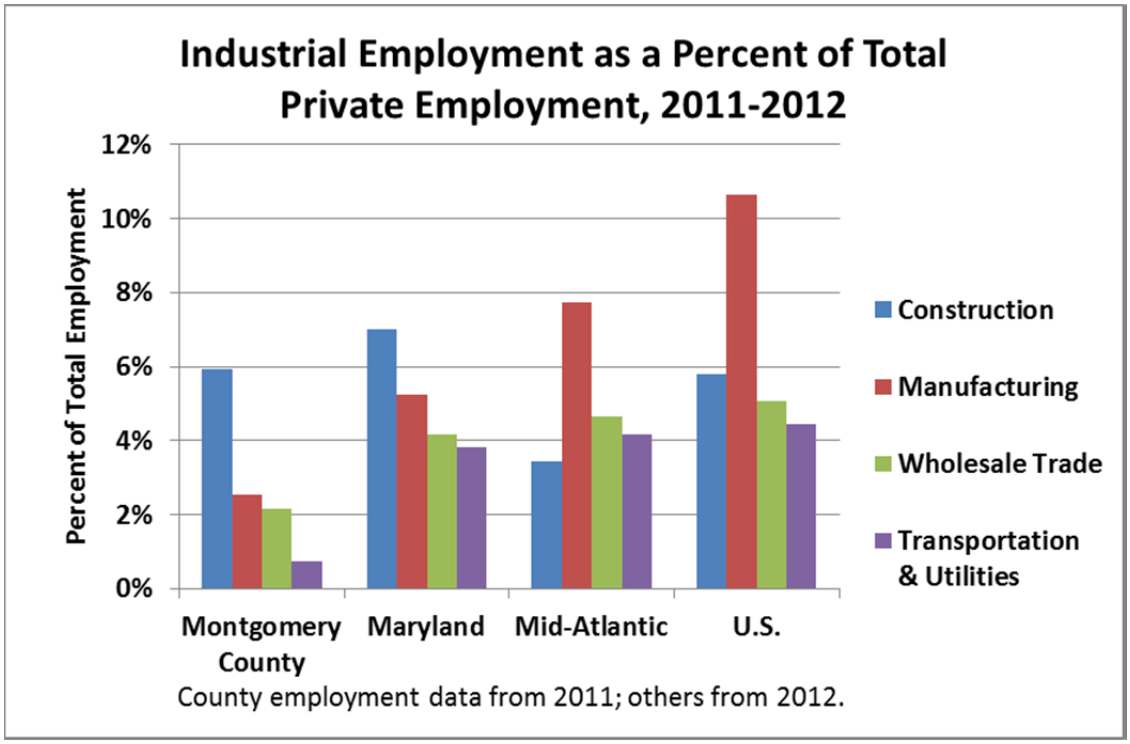
Comparison with State, Regional and National Employment

Montgomery County's economy has a markedly different structure than the state, regional or national economies. Shown in the following graph and Appendix Table A-16, the share of the private economy represented by traditional industrial sectors in Montgomery County is substantially smaller than that of comparison geographies. Manufacturing represents only 2.5 percent of Montgomery County's private employment as compared with 5.2 percent for Maryland, 7.8 percent for Mid-Atlantic states and 10.7 percent for the U.S. as a whole. Wholesale trade, which constitutes 4.2 to 5.1 percent of the state, regional and national private economies, represents only 2.2 percent of Montgomery County's private employment. Only the construction sector's share of private employment is consistent with the national level. Over time, the share of Montgomery County's represented by wholesale trade has declined from 3.6 percent in 2000 to 2.2 percent in 2011 while its share of national employment fell much less from 5.3 to 5.1 percent.



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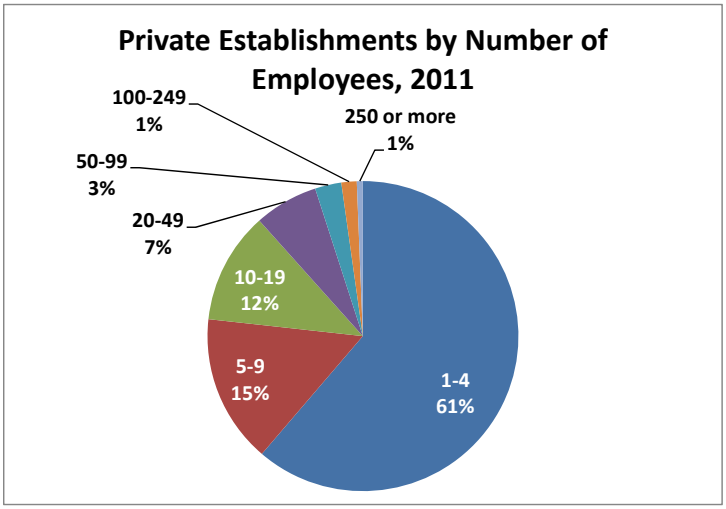
Establishment Size

Small businesses dominate the industrial sectors in the county. Shown in Table 3, more than three-quarters of all businesses in construction, manufacturing, wholesale trade and transportation and warehousing had less than 10 employees in 2011. More than three out of five had fewer than five employees. From 2000 to 2011, the trend has been toward a somewhat larger share of small business. Only 23 businesses have 250 employees or more, and only two have 1,000 or more employees.

Table 3. Key Industries' Establishments by Number of Employees, Montgomery County, 2000-2011

Number of Employees	Manufacturing		Wholesale Trade		Transportation & Warehousing		Construction		Total	
	2000	2011	2000	2011	2000	2011	2000	2011	2000	2011
Number of Establishments										
1-4	235	187	535	482	174	180	1,348	1,408	2,292	2,257
5-9	105	56	157	150	39	47	361	317	662	570
10-19	72	75	108	69	31	27	271	258	482	429
20-49	49	27	92	73	13	21	194	124	348	245
50-99	19	11	29	25	6	3	48	62	102	101
100-249	17	10	12	9	1	7	27	33	57	59
250-499	7	5	2	3	3	1	9	8	21	17
500-999	1	1	-	1	-	-	1	2	2	4
1,000 or more	2	1	1	1	-	-	2	-	5	2
Total	507	373	936	813	267	286	2,261	2,212	3,971	3,684
Percent of Establishments by Number of Employees										
1-4	46.4%	50.1%	57.2%	59.3%	65.2%	62.9%	59.6%	63.7%	57.7%	61.3%
5-9	20.7%	15.0%	16.8%	18.5%	14.6%	16.4%	16.0%	14.3%	16.7%	15.5%
10-19	14.2%	20.1%	11.5%	8.5%	11.6%	9.4%	12.0%	11.7%	12.1%	11.6%
20-49	9.7%	7.2%	9.8%	9.0%	4.9%	7.3%	8.6%	5.6%	8.8%	6.7%
50-99	3.7%	2.9%	3.1%	3.1%	2.2%	1.0%	2.1%	2.8%	2.6%	2.7%
100-249	3.4%	2.7%	1.3%	1.1%	0.4%	2.4%	1.2%	1.5%	1.4%	1.6%
250-499	1.4%	1.3%	0.2%	0.4%	1.1%	0.3%	0.4%	0.4%	0.5%	0.5%
500-999	0.2%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
1,000 or more	0.4%	0.3%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: County Business Patterns, U.S. Bureau of the Census, 2013; Partners for Economic Solutions, 2013.



Industry Detail

Shifts in employment among a large industry sector, such as manufacturing, often mask different, countervailing shifts among subsectors. Examining employment trends on the basis of smaller industry breakdowns can reveal industry sectors that are growing in spite of decline in the larger sector. This section analyzes employment trends within manufacturing, wholesale trade, and transportation and warehousing as well as subsectors within information, other services and administrative, support, waste management and remediation services, which also make use of industrial facilities. Appendix Tables A-18 to A-23 provide employment data by detailed industry for 2005 and 2011.

Industry sectors that grew from 2005 to 2011 are shown in Table 4. The list is relatively limited, in part, due to the effects of the Great Recession. Detailed data are available only through 2011; some industries may have regained enough jobs in 2012 and the first half of 2013 to reverse losses shown in the 2005-2011 trends. There also may have been gains not evident from the data due to the practice of showing the number of employees by ranges in cases where there were less than three businesses in the category, or one of the businesses had a disproportionately high percentage of the sector's employee count.

During the 2005-2011 period, county job growth was strongest among:

- software publishers;
- wired telecommunications carriers;
- janitorial services;
- in-vitro diagnostics, and other pharmaceutical and medicine manufacturing;

- convention and trade show organizers;
- other information services; and
- remediation and other waste management services.

Growing industry sectors in the overall DC metropolitan area are shown in Table 5. They include software publishers, other telecommunications, broadcasting (except Internet), other information services, grocery and related product wholesalers, transportation equipment manufacturing (presumably related to the relocation of VW America to Northern Virginia), pharmaceutical and medicine manufacturing, and ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing.

Table 4. Industrial Employment Sectors Demonstrating Employment Growth 2005-2011, Montgomery County

		Employees		2005-2011 Change	
NAICS code	Industry	2005	2011	Number	Percent
325	Chemical manufacturing	590	868	278	47%
325413	In-vitro diagnostic substance manufacturing	e	761	NA	NA
335	Electrical equipment, appliance, and component manufacturing	213	225	12	6%
424	Merchant wholesalers, nondurable goods	3,735	3,822	87	2%
4242	Drugs and druggists' sundries merchant wholesalers	835	1,419	584	70%
4247	Petroleum and petroleum products merchant wholesalers	54	129	75	139%
48422	Specialized freight (except used goods) trucking, local	117	156	39	33%
4853	Taxi and limousine service	c	301	NA	NA
5612	Facilities support services	1,979	i	NA	NA
5617	Services to buildings and dwellings	15,813	17,066	1,253	8%
56171	Exterminating and pest control services	399	508	109	27%
56172	Janitorial services	10,811	11,843	1,032	10%
56173	Landscaping services	3,931	4,085	154	4%
5619	Other support services	586	g	NA	NA
561920	Convention and trade show organizers	307	g	NA	NA
56199	All other support services	265	329	64	24%
5629	Remediation and other waste management services	86	350	264	307%
5112	Software publishers	1,812	3,390	1,578	87%
512110	Motion picture and video production	262	439	177	68%
5171	Wired telecommunications carriers	3,563	4,828	1,265	36%
519	Other information services	327	659	332	102%
51913	Internet publishing and broadcasting and web search portals	NA	578	NA	NA
812	Personal and laundry services	5,593	5,818	225	4%

Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees

North American Industry Classification System (NAICS) codes nest industries within larger sectors. A four-digit code represents a subsector within the three-digit industry (e.g., 4242 Drugs and druggists' sundries merchant wholesalers is a subsector of 424 Merchant wholesalers, durable goods).

Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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Table 5. Industrial Employment Sectors Demonstrating Employment Growth 2005-2011, DC Metropolitan Area					
NAICS Code	Industry	Employees		2005-2011 Change	
		2005	2011	Number	Percent
Manufacturing					
336	Transportation equipment manufacturing	2,204	3,750	1,546	70%
325	Chemical manufacturing	3,368	3,421	53	2%
3344	Semiconductor and other electronic component manufacturing	3,099	3,191	92	3%
3254	Pharmaceutical and medicine manufacturing	1,944	2,466	522	27%
3334	Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	175	750	575	329%
312	Beverage and tobacco product manufacturing	381	492	111	29%
3119	Other food manufacturing	435	459	24	6%
335	Electrical equipment, appliance, and component manufacturing	344	415	71	21%
3114	Fruit and vegetable preserving and specialty food manufacturing	b	399	NA	NA
3328	Coating, engraving, heat treating, and allied activities	175	198	23	13%
3351	Electric lighting equipment manufacturing	173	180	7	4%
3335	Metalworking machinery manufacturing	167	175	8	5%
3366	Ship and boat building	a	175	NA	NA
3359	Other electrical equipment and component manufacturing	60	148	88	147%
3343	Audio and video equipment manufacturing	40	122	82	205%
316	Leather and allied product manufacturing	a	b	NA	NA
3113	Sugar and confectionery product manufacturing	a	b	NA	NA
3169	Other leather and allied product manufacturing	a	b	NA	NA
3324	Boiler, tank, and shipping container manufacturing	a	b	NA	NA
3365	Railroad rolling stock manufacturing		b	NA	NA
3325	Hardware manufacturing	a	17	NA	NA
3151	Apparel knitting mills	-	a	NA	NA
Wholesale Trade					
424	Merchant wholesalers, nondurable goods	17,500	18,592	1,092	6%
4244	Grocery and related product wholesalers	7,500	8,895	1,395	19%
4242	Drugs and druggists' sundries merchant wholesalers	1,750	2,256	506	29%
4239	Miscellaneous durable goods merchant wholesalers	1,750	2,202	452	26%
4247	Petroleum and petroleum products merchant wholesalers	485	503	18	4%
Information					
5111	Newspaper, periodical, book, and directory publishers	17,500	19,746	2,246	13%
5112	Software publishers	10,300	15,600	5,300	51%
515	Broadcasting (except Internet)	7,500	9,786	2,286	30%
519	Other information services	3,750	5,957	2,207	59%
5121	Motion picture and video industries	3,750	4,071	321	9%
5179	Other telecommunications	567	3,750	3,183	561%
5152	Cable and other subscription programming	3,500	3,581	81	2%

Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees

North American Industry Classification System (NAICS) codes nest industries within larger sectors. A four-digit code represents a subsector within the three-digit industry (e.g., 4242 Drugs and druggists' sundries merchant wholesalers is a subsector of 424 Merchant wholesalers, durable goods).

Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

The following table provides a comparison of these uses with job growth in the metropolitan area and the zones in which they are allowed under the current zoning ordinance and the proposed zoning ordinance rewrite.

Use	Current Zoning Ordinance	Proposed Zoning Ordinance
Transportation equipment manufacturing	I-1, I-3, I-4, R&D (aircraft)	IH (heavy manufacturing)
Chemical manufacturing	I-2	IL, IM (medical/scientific manufacturing)
Electronic manufacturing	I-1, I-3, I-4, R&D	IL, IM, IH (light manufacturing)
Pharmaceutical manufacturing	I-1, I-3, I-4, R&D, LSC	IL, IM (medical/scientific manufacturing)
HVAC manufacturing	I-1, I-2, I-3, I-4, R&D	IL, IM, IH (light manufacturing)
Beverage/tobacco manufacturing	I-1, I-2, I-4	IL, IM, IH (light manufacturing)
Electrical equipment/appliance manufacturing	I-1, I-3, I-4, R&D, LSC	IL, IM, IH (light manufacturing)
Food manufacturing	I-1, I-2, I-4	IL, IM, IH (light manufacturing)
Coating, engraving, heat treating	I-2	IH (heavy manufacturing)
Electric lighting equipment manufacturing	I-1, I-3, I-4, R&D, LSC	IL, IM, IH (light manufacturing)
Metalworking	I-1, I-2, I-3, I-4, R&D	IL, IM (artisan manufacturing)
Audio and video manufacturing	I-1, I-3, I-4, R&D, LSC	IL, IM, IH (light manufacturing)
Merchant wholesalers	I-1, I-3, I-4	IL, IM, IH (L, retail)
Grocery wholesalers	I-1, I-3, I-4	IL, IM, IH (L, retail)
Drug wholesalers	I-1, I-3, I-4	IL, IM, IH (L, retail)
Durable goods wholesalers	I-1, I-3, I-4	IL, IM, IH (L, retail)
Petroleum wholesalers	I-1, I-2	IL, IM, IH (L, retail)
Print publishers	I-1, I-3, I-4, R&D	IL, IM, IH (light manufacturing)

Software publishers	I-1, I-3, R&D (office)	IL, IM, IH (L, retail)
Broadcasting	I-1, I-2, I-3, I-4, R&D, LSC	IL, IM (C), and IH
Information services	I-1, I-3, R&D (office)	IL, IM (L, office)
Motion picture/video industry	I-1, I-2, I-3, I-4, R&D, LSC	IL, IM, IH
Telecommunications	I-1, I-3, I-4, R&D, LSC	IL, IM, IH (L)
Cable and programming	I-1, I-2, I-3, I-4, R&D, (SE) and LSC	IL, IM, IH (C)

LSC and I-3 are being moved to mixed-use "Employment" zones, I-1 = IM, I-2 = IH, I-4 = IL; SE = C (special exception/conditional use), L = limited use (restricted standards).

Summary: Implications for Industrial Land Use in Montgomery County

While the employment statistics over the past few years show a stagnant to declining industrial presence, that would not eliminate the need for new spaces that meet the particular needs of growing companies.

- Goods-producing businesses have declined significantly over the past decade and make up less than eight percent of Montgomery County employment.
- Increased productivity through greater use of technology is reducing employee densities so that more space is required to accommodate fewer employees; allowed density must accommodate this expansion if employee numbers are maintained.
- Shifting among industry subsectors and, more importantly, among individual businesses can persist despite an overall decline in the larger industry. As one company provides a new product or better service, it can be growing even as total employment in the sector declines.
- The nature of space needs changes over time. Many warehouses built in the 1960s are not suitable for automated retrieval systems or inventory stacking. Obsolete buildings need to be replaced with more efficient facilities.
- Changing regulations, such as the Food and Drug Administration's food safety requirements, can render existing facilities obsolete.
- Increased gasoline costs and traffic congestion can change a distribution company's calculus in evaluating the trade-off of cheaper land in a far suburb versus on-going operating costs.
- Available space in one portion of the county may not serve the needs of a company with a consumer base in another portion of the county.

- Demand from cost-sensitive retailers shifts some flex space to primarily retail use, which is not reflected in the industrial employment statistics.
- The blurring of the line between traditional office space and flex office space means that demand for flex space often involves a wide range of non-industrial tenant types.
- Potential returns from redevelopment or conversion to other uses will continue to result in removal of well-located urban properties from the industrial land inventory.

Also not reflected in the employment statistics are the County's own basic needs for facilities and sites for municipal functions. The County continues to require sites for industrial uses such as vehicle and equipment maintenance and repair, warehousing, parking of buses and road equipment, etc. Though County land use is not subject to zoning, it does need to respect the land use policies inherent in the small area plans and zoning maps.

The County should consider the potential impacts of rezoning on small businesses and the services they provide to residents and other businesses.

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IV. Industrial Land Use Trends

Over the past 20 years, Montgomery County has seen extensive development and redevelopment. In the process, a significant share of the county's industrial land inventory has been converted to other uses. This section tracks the changes in industrial land use from 1993 to 2012 using information from the Planning Department's Geographic Information System (GIS) databases.

Methodology

To evaluate trends impacting the supply of industrial land in the county, PES analyzed changes in industrial land use using GIS databases from 1993 and 2012. These databases identify current use and zoning for each of roughly 275,000 parcels countywide.

Comparing the conditions across a 20-year period, however, is complicated by changes in the GIS over the same period. The 2012 data are based on polygons that replicate the property's boundaries and dimensions, while 1993 information is point data that links the descriptive data to a single point (that often sits in the right-of-way next to the actual land parcel). Matching data between the two databases depends on linking the information using a single unique identifier – the property's tax account number. For the 1,326 parcels identified as being occupied by industrial uses in 1993, only 782 matched to parcels with the same account number in 2012. Properties often change tax account numbers with a subdivision of a parcel or change in the use. Of these properties, 49 changed from industrial use between 1993 and 2012. For the remaining 544 parcels, PES superimposed the 1993 points on the 2012 land use parcel map to determine whether the property changed use from industrial to retail, office, residential or another use. From those properties, PES identified 95 properties that changed from industrial to other uses based on a best judgment as to which 2012 parcel was most closely situated to the 1993 point. This visual inspection undoubtedly introduced some errors due to the uncertain associations among 1993 and 2012 properties, so the data representing the 2012 use are not as accurate as those associated with 1993. Those parcels which changed from industrial use were then analyzed and mapped with their acreages and building square footages summed for 1993 (and 2012 where possible).

Nineteen industrial properties (four percent of properties) with no matching 2012 data had 1993 acreages exceeding 50 acres. After comparing the sites to 2012 land use information, those were determined to be a decimal place mistake and were adjusted by dividing by 100. Similar adjustments were required for 197 properties (25 percent of properties) that did have 2012 information with matching tax account numbers. PES also adjusted the

acreages of 10 of the 95 parcels (11 percent) that changed from industrial use but had no matching 2012 data.

The parcels identified as having changed use from the 1993 base were then analyzed to determine geographic patterns using two primary characteristics – proximity to Metrorail stations and proximity to I-270 interchanges. These two locational factors are closely linked to market demand, land values and demand for office, retail and residential development. For Metro locations, PES categorized each property as being within one mile of a Metro station, one to five miles or beyond five miles. Each property also was characterized by its proximity to I-270, using the same criteria.

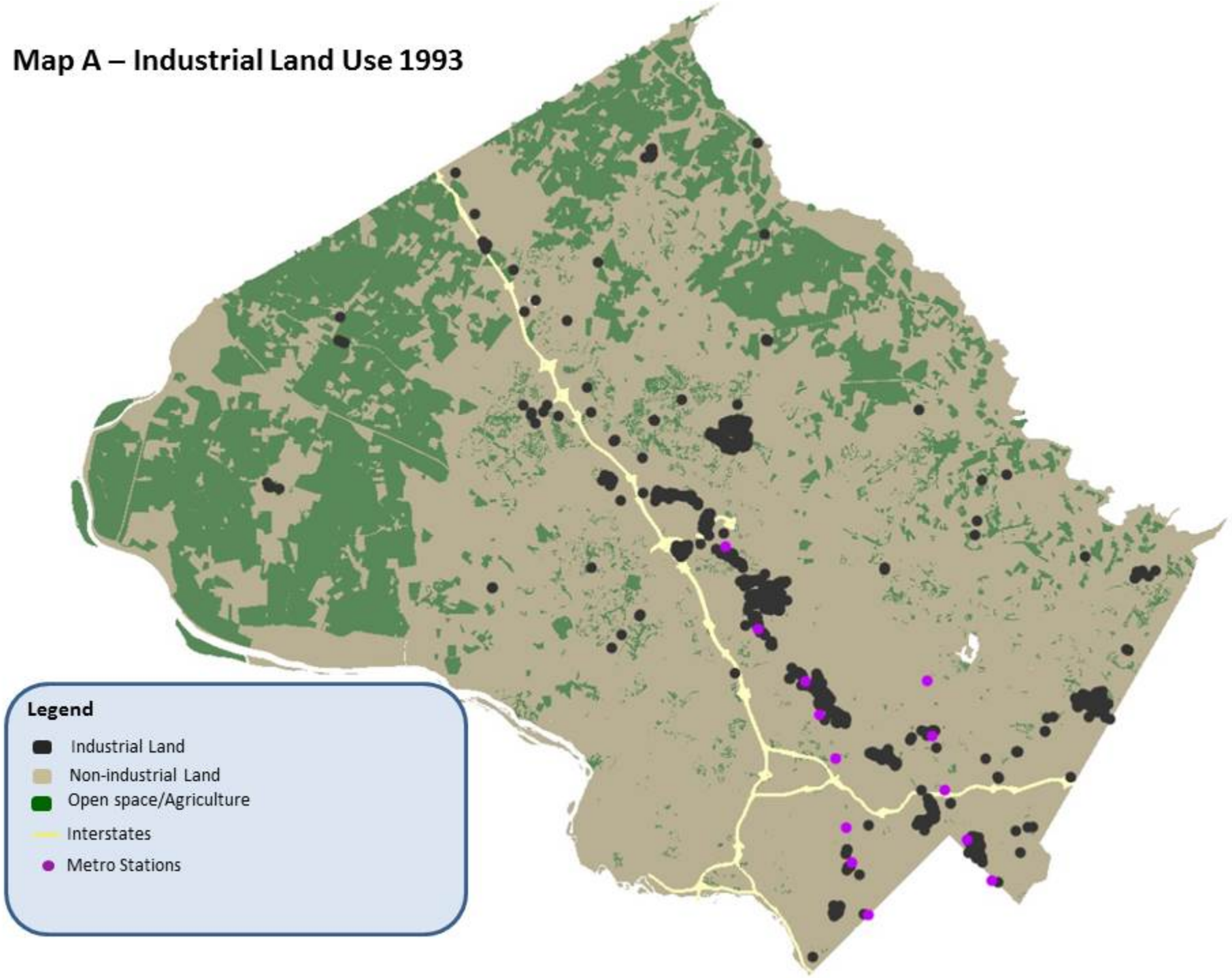
Findings

In 1993, Montgomery County had 2,490 acres of land in industrial use (1,326 properties) with a total of 19.3 million square feet of building space. Map A shows the geographic distribution of that inventory. By 2012, the county's inventory of industrial land had shrunk to 1,952 acres and 27.0 million square feet of building space. Map B provides the distribution of industrial land uses in 2012.

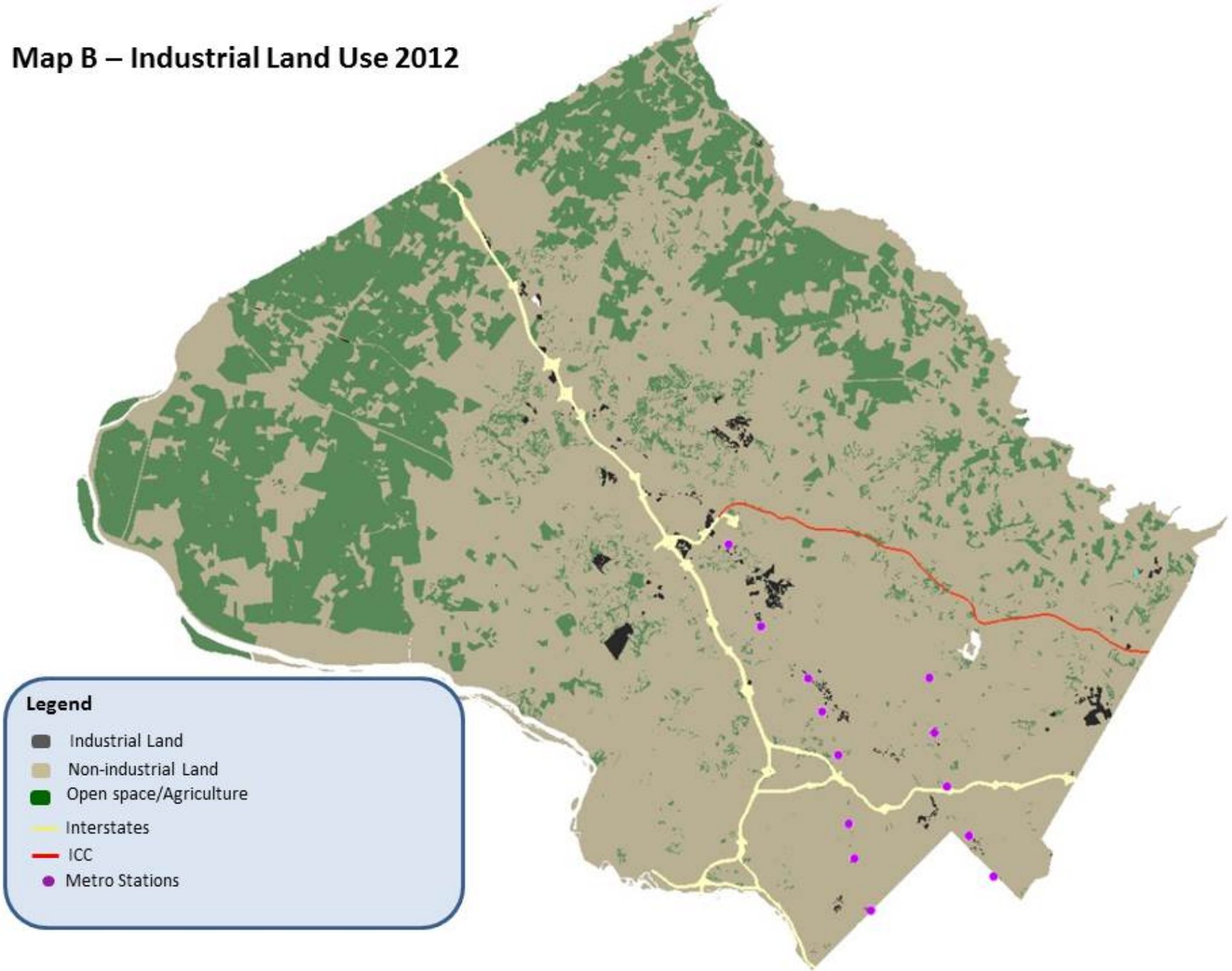
From the 1993 inventory, the 144 individual properties identified as changing from industrial use to a commercial or residential use had 566 acres of industrial land in 1993 along with 3.0 million square feet of building space. Map C shows the locations of these transformed properties.

Clusters of converted properties exist in Bethesda, Silver Spring, Rockville and Wheaton. For example, much of the Bethesda Row development occurred on land formerly used for industrial operations. Silver Spring residential and office developments located between East-West Highway and the Metro/ CSX line redeveloped auto dealerships, repair shops, a Canada Dry bottling plant and other industrial uses. Currently, much of the industrial property between Metro and Georgia Avenue is being converted to high-rise residential use. At the Shady Grove Metro station, the County is relocating its Eastern Operations and Maintenance Center from nearby property to other parts of the county so as to free up that land for transit-oriented development.

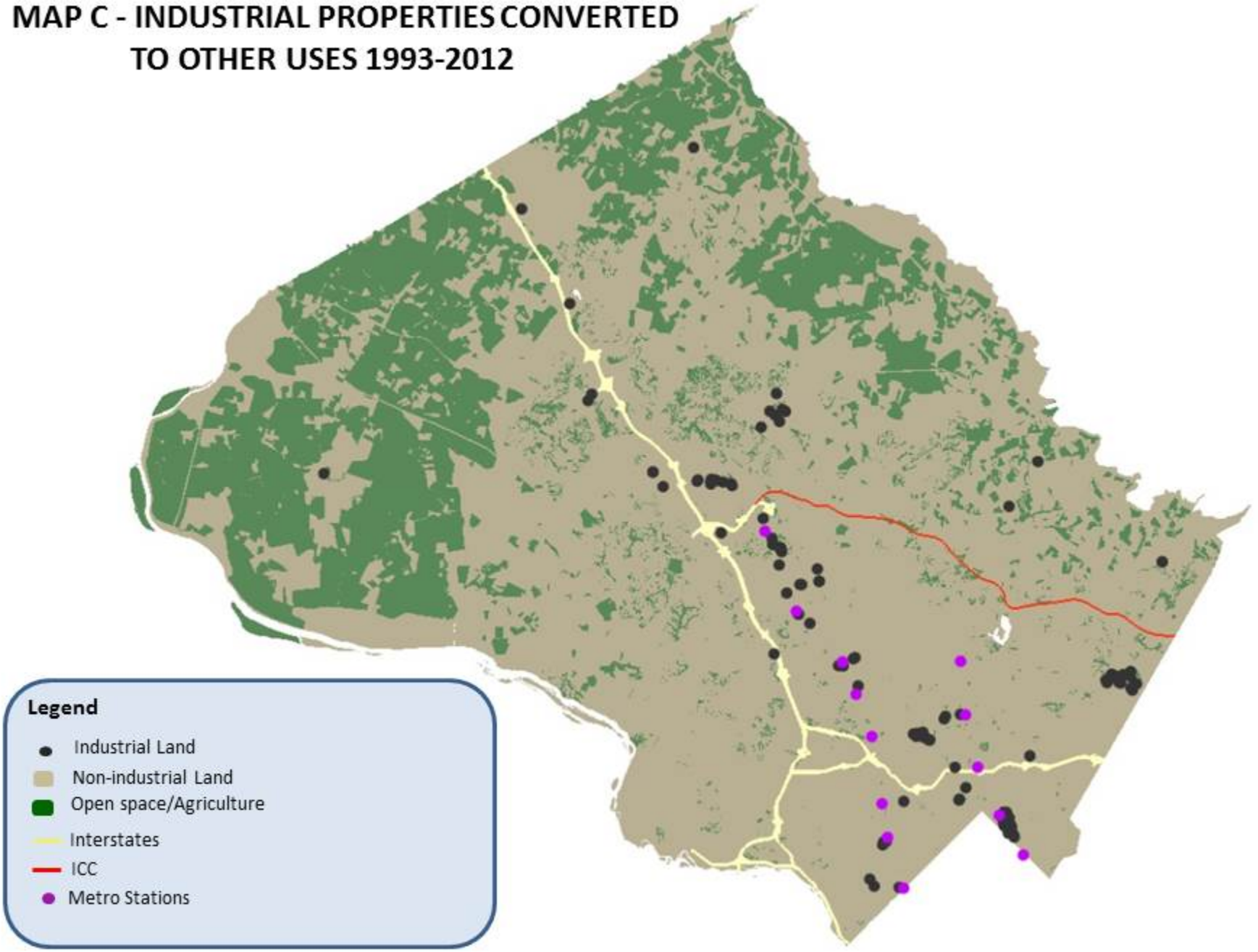
Map A – Industrial Land Use 1993



Map B – Industrial Land Use 2012



MAP C - INDUSTRIAL PROPERTIES CONVERTED TO OTHER USES 1993-2012



Fifty-three percent of the changed properties were located within one mile of a Metro station with another 27 percent situated between one and five miles of Metro. On an acreage basis, the shift to commercial and residential uses in close proximity to a Metro station was more restrained due to a smaller average parcel size. Thirty percent of the changed acreage was located within one mile of Metro; 27 percent was within one to five miles of Metro.

Table 6. 1993 Industrial Acreage and Building Square Footage on Parcels That Change Use from 1993 to 2012

	Number	Acres	Square Feet
Total Properties That Changed Use	**144**	**566**	**3,017,296**
Properties That Changed Use Within One Mile of a Metro Station	77	167.8	1,306,428
Percent of Total	53%	30%	43%
Properties That Changed Use One to Five Miles of a Metro Station	39	128	762,502
Percent of Total	27%	23%	25%
Properties That Changed Use Within One Mile of an I-270 Interchange	11	217.4	776,057
Percent of Total	8%	38%	26%
Properties That Changed Use One to Five Miles of an I-270 Interchange	61	217.2	1,372,077
Percent of Total	42%	38%	45%

Sources: Montgomery County Planning Department GIS; and Partners for Economic Solutions, 2013.

Conversion patterns were more limited near I-270 interchanges. Areas within one mile of an interchange included eight percent of the converted properties with 38 percent of the land. The broader area, defined as between one and five miles of the interchanges, included 42 percent of the properties that changed uses and 38 percent of the land.

Summary: Implications for Industrial Land Use in Montgomery County

Loss of industrial land in Montgomery County is based on several factors, including market trends, availability of less expensive land further out, and rezonings through master plans. Given the growth in some industrial sectors, the propensity for industrial jobs to favor small businesses, and many other important benefits of a strong industrial sector, Montgomery County should:

- Resist rezonings of industrial land, particularly down-county sites and sites near freight facilities and adjacent to important employment clusters that rely on research, production, manufacturing, or warehousing;

- Maintain well-dispersed "pods" of industrial land for artisans, repair facilities, and industrial services for residents, employers, and government agencies; and

- Maintain an adequate supply of sites suitable for municipal support services, such as salt domes, fleet maintenance and repair, equipment storage, and materials warehousing.

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V. Policy Recommendations

While the county's recent industrial history suggests no need to expand the supply of industrially zoned land on a countywide basis, preservation of existing industrial space will be important to assure continued availability in locations convenient to the county's residents. Though commercial zones allow development of services often housed in industrial space, the higher costs of commercial land strain the rent-paying ability of many service businesses. The Planning Commission should seek to preserve industrial districts in each of the county's major subareas to retain support for each area's residents and businesses. It is not sufficient to have plentiful industrial sites up-county where land is less expensive. A distribution of sites closer to the businesses' customers contributes to a more balanced economy accessible to customers and employees alike.

Geographically, clusters of industrially zoned land in the county are focused along rail lines through Kensington, Twinbrook and Shady Grove, a former rail line in Lyttonsville, at the Montgomery Corporate Airpark in Gaithersburg, and in White Oak. The largest industrial sites are associated with two major quarries. Additional independent sites are located along I-270. In the I-270 corridor, the existing industrial space supply is well dispersed.

As shown on Map B in Section IV, industrial properties are extremely limited within the Beltway. The very limited supply of down-county industrial sites argues against any additional conversions. The zoning map proposed by the PHED Committee calls for maintenance of Industrial Light (IL), Industrial Moderate (IM), and Industrial Heavy (IH) zoning in existing locations.

The main issues for industrial zoning are Brookville Road area, Howard Avenue in Kensington, and Parklawn/ Twinbrook. Losing those industrial lands would compromise the service industry's ability to serve down-county residents. The county has sufficient land zoned for heavy industry, and quarry sites can transition to other more intensive uses without negative economic impacts.

In keeping with the County's goal of maximizing the value of its transit infrastructure, properties within the immediate half-mile of a Metro station should be reserved for higher-density uses that provide transit access to a larger number of employees or residents. Industrially-zoned land more than one-half mile away from a Metro station should be preserved in the urbanized parts of the county, and new opportunities to rezone small areas to industrial zoning should be pursued to maintain a well-distributed balance of land uses.

The Floating Industrial Zone[10] offers the potential to convert commercial zones to light manufacturing, warehouse and related uses.

Industrial zoning should restrict uses to industrial-type operations and facilities that are not well suited to commercial or employment zones. Inclusion of primarily commercial uses (e.g., office, retail, hotel) would increase land values and encourage conversion to non-industrial uses, reducing opportunities for affordable industrial space. The proposed zoning ordinance[11] provides those important protections by

- restricting education uses to trade, artistic and technical schools[12],
- limiting retail/service uses to building and food service supply, home design and furnishings, computer programming and software sales and service, and wholesale trades to industrial and commercial users[13];
- limiting ancillary retail/service, office and restaurant use to 35 percent of the mapped FAR[14], and
- excluding hotels[15].

The inclusion of large recreational and entertainment facilities for up to 1,000 persons[16] is probably a neutral factor. Large-format recreational uses (e.g., gymnastics gym) are very appropriate for industrial areas given their rent sensitivity. Nightclubs do not enhance the industrial uses, but they do benefit from locations removed from residential constraints. A few new facilities are unlikely to shift land values significantly.

The County should develop long-term facility strategies to assure that its future need for fleet maintenance, equipment storage, warehousing and other industrial functions can be met by the current supply of sites and facilities. If not, sites should be identified and protected with industrial zoning to prevent future loss.

Where possible, buffering should be required between industrial and residential uses either in the form of landscaping or intervening uses better suited for locations adjacent to residential neighborhoods. The on-going zoning rewrite calls for 30-foot landscaped buffers

[10] Ibid, Section 2.1.10.
[11] Chapter 59: Zoning Code, Montgomery County, Maryland. Revised Preliminary Planning, Housing and Economic Development (PHED) Committee Draft, October 11, 2013
[12] Ibid, Sections 3.1.6 and 3.4.5.
[13] Ibid, Sections 3.1.6 and 3.5.11.B.
[14] Ibid, Sections 3.1.6, 3.5.3.B, 3.5.8.A, and 3.5.11.B.
[15] Ibid, Sections 3.1.6, 3.5.6.C, and 3.5.10.C.
[16] Ibid, Sections 3.1.6 and 3.5.10F, 3.5.10.G, and 3.5.10.H.

and six-foot fences, walls or berms between light industrial (IL and IM zones) and residential uses. For heavy industrial zones (IH zone), the buffering requirement is 50 feet. The Twinbrook (TB) Overlay Zone increases that buffer zone to 50 feet. Such large setbacks constrain industrial uses, particularly on smaller sites, but should be effective in mitigating the negative impacts of living near a light industrial use. The proposed zoning code also provides for an alternative method of compliance if the intent is satisfied, the functional results are met or exceeded, and it is in the public interest.[17] Such alternative approaches should be considered in the case of smaller sites that could not spare a 30-foot strip for buffering.

In most cases, industrial zoning should exclude residential development. As proposed in the zoning rewrite, live/work units are permitted in Commercial/Residential and Employment zones[18], providing opportunities for artist studios, artisan workshops and other live/work spaces. The Industrial Mixed Use – Twinbrook zone[19] allows for multi-family units in less than 40 percent of the total floor area. Those are more appropriate locations than in IL, IM and IH industrial areas.

Any rezoning decision for industrial land should consider the potential impacts on existing businesses that could be forced to relocate by direct conversion of their site, by the introduction of residents whose presence would limit industrial operations, or by the resulting escalation in land values. One of the considerations should be the availability of industrial sites in near proximity.

In expanding commercial or commercial-residential zoning to industrial and service commercial areas, the Planning Commission should consider the potential impacts of creating premature incentives for land speculation and disinvestment. Rezoning should occur close to the time of anticipated commercial or mixed-use development.

The changing nature of the industrial market has implications for the FAR and height limits in the zoning code. The 50-foot height limit proposed in the zoning rewrite is compatible with the needs of modern warehousing. Most industrial and wholesale distribution developments will rely on surface parking with FARs up to 0.4 or 0.5. The IL zone is proposed to have an FAR limit of 1.0 with IM sites limited to FARs of 0.25 in rural areas up to 2.5. IH sites are proposed to have a maximum FAR of 2.5 and a height limit of

[17] Ibid, Sections 7.4.5, 7.4.6, and 4.8.3.
[18] Ibid. Sections 3.1.6 and 3.3.3.I.
[19] Ibid, Section 4.8.3.A.

70 feet.[20] The Industrial Floating Zone has the potential to increase maximum total density to 2.0 to 3.0 FAR depending on site size.[21] The higher FAR limits could be useful in the event that a company wants to expand on site by adopting structured parking but are not likely to be used in the near term.

[20] Ibid, Zoning Translation matrix.
[21] Ibid, Section 5.5.5..

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Appendix Maps and Tables

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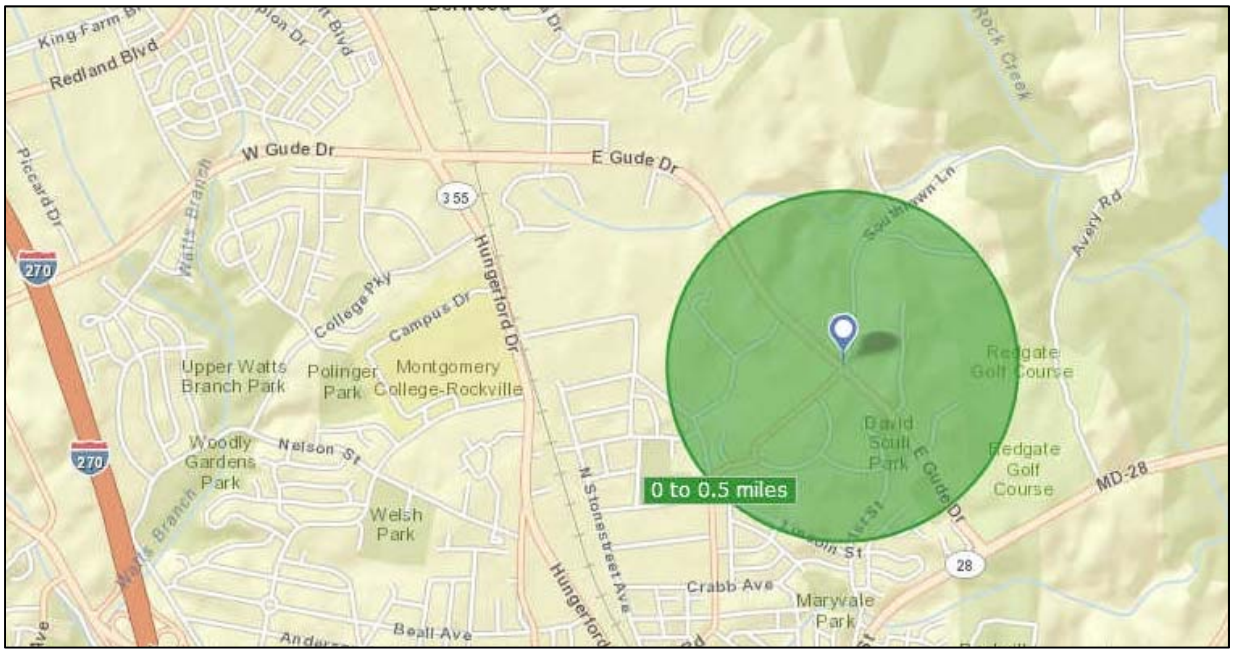
E. Gude Drive Industrial District, Rockville



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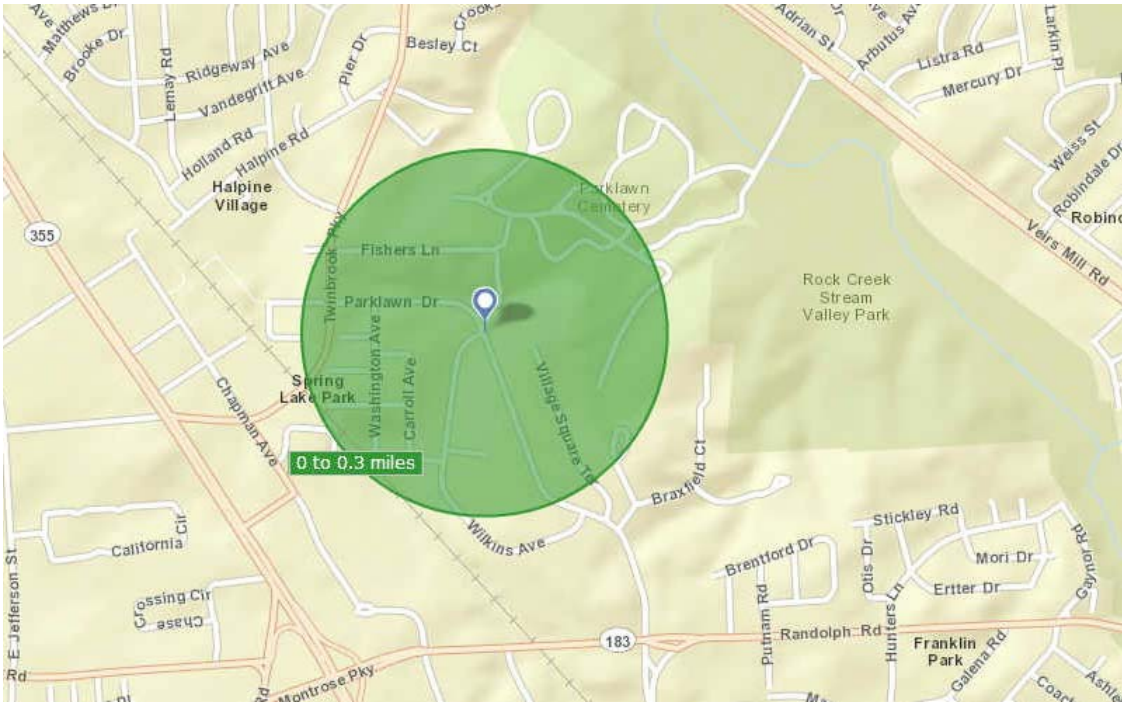
Parklawn Drive and Wilkins Avenue, Twinbrook



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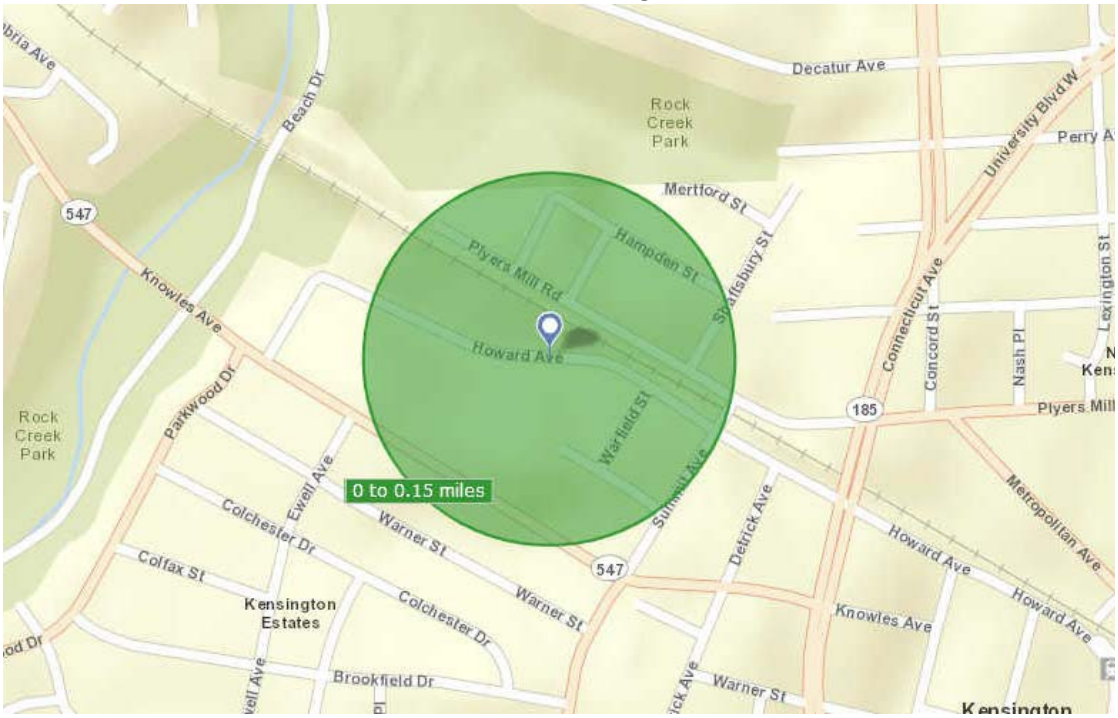
W. Howard Avenue Industrial District, Kensington



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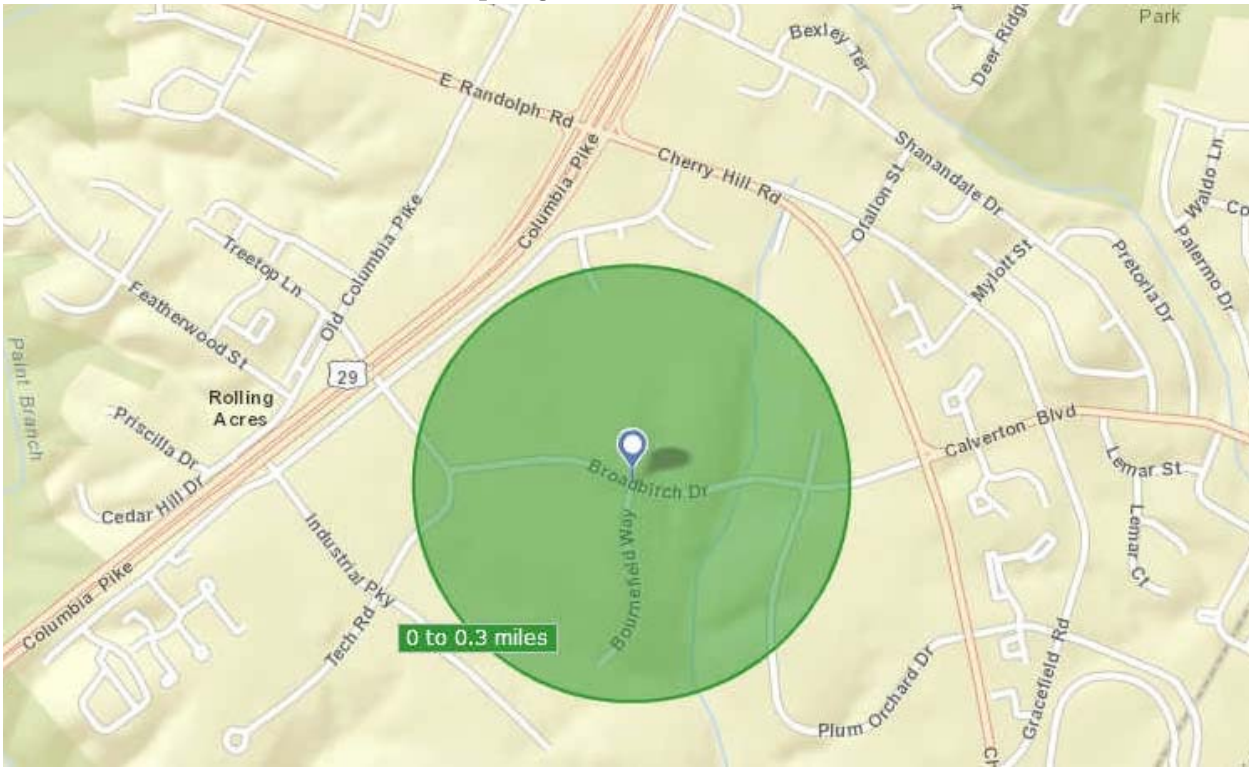
White Oak/WesTech Park, Silver Spring



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Brookville Road Industrial District, Lyttonsville

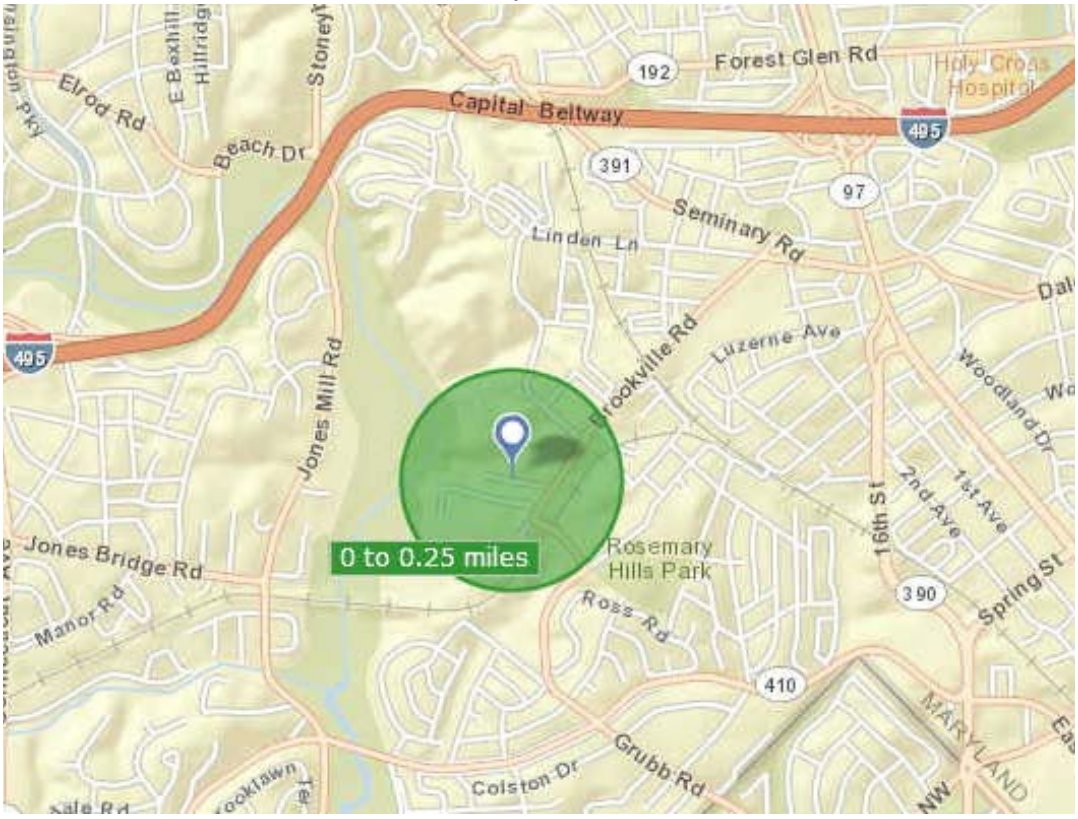

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Table A-1. Businesses by Type in Example Industrial Districts					
	Industrial District				
Industry Group	E. Gude Drive[1]	Twinbrook[2]	W. Howard Avenue[3]	White Oak[4]	Lyttonsville[5]
Agriculture, Forestry, Fishing & Hunting	1	0	1	0	1
Utilities	0	0	0	0	0
Construction	59	23	12	2	17
Manufacturing	22	9	4	3	8
Wholesale Trade	32	15	6	3	15
Retail Trade	40	23	11	4	19
Transportation & Warehousing	9	8	2	1	4
Information	6	9	2	3	2
Finance & Insurance	12	6	1	4	1
Real Estate, Rental & Leasing	19	10	1	2	4
Professional, Scientific & Technical Services	54	30	7	6	28
Management of Companies & Enterprises	2	0	0	0	0
Administrative & Support & Waste	44	18	8	6	16
Educational Services	12	5	2	0	4
Health Care & Social Assistance	20	15	3	6	4
Arts, Entertainment & Recreation	12	5	2	0	3
Accommodation & Food Service	19	8	1	3	3
Other Services (Except Public Administration)	56	34	11	3	17
Public Administration	5	26	0	0	1
Total	**424**	**244**	**74**	**46**	**147**

[1]Defined by a 0.5-mile radius from the intersection of E. Gude Drive and Southlawn Lane.

[2]Defined as 0.3-mile radius around 12349 Parklawn Drive, Rockville

[3]Defined as 0.15-mile radius around 4100 W. Howard Avenue, Kensington

[4]Defined as 0.3-mile radius from the intersection of Broadbirch Drive and Bournefield Way, Silver Spring

[5]Defined as 0.25-mile radius around 2700 Garfield Avenue, Silver Spring

Source: Dun & Bradstreet, ESRI, 2013; Partners for Economic Solutions, 2013.

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Table A-2. Businesses by Type in Example Industrial Districts					
	Industrial District				
Industry Group	E. Gude Drive[1]	Twinbrook[2]	W. Howard Avenue[3]	White Oak[4]	Lyttonsville[5]
Agriculture, Forestry, Fishing & Hunting	7	0	0	0	3
Utilities	0	0	0	0	0
Construction	22	20	8	14	18
Manufacturing	14	0	3	39	7
Wholesale Trade	10	6	4	9	7
Retail Trade	5	9	3	48	7
Transportation & Warehousing	10	4	21	21	7
Information	14	41	5	41	1
Finance & Insurance	6	8	40	28	0
Real Estate, Rental & Leasing	4	5	1	7	5
Professional, Scientific & Technical Services	8	12	2	15	10
Management of Companies & Enterprises	3	4	0	0	0
Administrative & Support & Waste	10	10	7	6	4
Educational Services	27	17	2	0	7
Health Care & Social Assistance	32	3	2	10	3
Arts, Entertainment & Recreation	10	4	2	0	2
Accommodation & Food Service	3	6	11	5	3
Other Services (Except Public Administration)	5	5	3	7	4
Public Administration	29	77	0	0	450
Average	**11**	**18**	**5**	**18**	**11**

[1]Defined by a 0.5-mile radius from the intersection of E. Gude Drive and Southlawn Lane.

[2]Defined as 0.3-mile radius around 12349 Parklawn Drive, Rockville

[3]Defined as 0.15-mile radius around 4100 W. Howard Avenue, Kensington

[4]Defined as 0.3-mile radius from the intersection of Broadbirch Drive and Bournefield Way, Silver Spring

[5]Defined as 0.25-mile radius around 2700 Garfield Avenue, Silver Spring

Source: Dun & Bradstreet, ESRI, 2013; Partners for Economic Solutions, 2013.

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Table A-3. Repair Businesses by Type, Downtown Silver Spring and Lyttonsville (ZIP Code 20910), 1998-2011					
Industry Code	Industry Code Description	Establishments		1998-2011 Change	
		1998	2011	Number	Percent
811111	General automotive repair	34	26	-8	-24%
811112	Automotive exhaust system repair	2	0	-2	-100%
811113	Automotive transmission repair	4	4	0	0%
811118	Other automotive mechanical and elec. repair	0	1	1	NA
811121	Automotive body, paint, and interior repair and maintenance	15	10	-5	-33%
811122	Automotive glass replacement shops	1	1	0	0%
811191	Automotive oil change & lubrication shops	1	0	-1	-100%
811211	Consumer electronics repair and maintenance	5	1	-4	-80%
811212	Computer and office machine repair and maintenance	5	2	-3	-60%
811310	Commercial machinery repair and maintenance	5	1	-4	-80%
Source: County Business Patterns, U.S. Census Bureau, 2013; Partners for Economic Solutions, 2013.					

Table A-4. Repair Businesses by Type, Downtown Bethesda (ZIP Code 20814), 1998-2011					
Industry Code	Industry Code Description	Establishments		1998-2011 Change	
		1998	2011	Number	Percent
811111	General automotive repair	4	5	1	25%
811118	Other automotive mechanical and elec. repair	1	1	0	NA
811121	Automotive body, paint, and interior repair and maintenance	3	3	0	0%
811122	Automotive glass replacement shops	3	1	-2	-67%
811211	Consumer electronics repair and maintenance	1	1	0	0%
811212	Computer and office machine repair and maintenance	6	0	-6	-100%
811420	Reupholstery and furniture repair	3	1	-2	-67%
811430	Footwear and leather goods repair	3	3	0	0%
811490	Other personal and household goods repair and maintenance	4	3	-1	-25%
Source: County Business Patterns, U.S. Census Bureau, 2013; Partners for Economic Solutions, 2013.					

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Table A-5: Industrial Space Trends, All Jurisdictions, 1993 to 2nd Quarter 2013							
Year	Total Square Feet	Net Change in Inventory	Vacant Square Feet	Occupied Square Feet	Occupancy Rate	Net Absorption	Average Rent[1]
Annual							
1993	128,343,635	NA	10,570,229	117,773,406	91.5%	(3,439,060)	$5.29
1994	128,851,579	507,944	9,787,559	119,064,020	92.1%	1,117,164	$4.97
1995	129,887,209	1,035,630	9,157,388	120,729,821	92.6%	1,597,080	$5.05
1996	133,332,057	3,444,848	9,060,765	124,271,292	92.8%	3,562,390	$5.06
1997	136,585,145	3,253,088	7,890,626	128,694,519	93.9%	4,467,811	$5.58
1998	140,315,242	3,730,097	7,729,358	132,585,884	94.2%	3,967,608	$5.33
1999	142,340,692	2,025,450	6,635,516	135,705,176	95.2%	3,299,449	$5.25
2000	144,376,877	2,036,185	8,394,779	135,982,098	93.6%	(332,690)	$6.70
2001	147,640,035	3,263,158	8,739,218	138,900,817	93.5%	2,844,762	$6.24
2002	148,827,876	1,187,841	9,914,939	138,912,937	92.8%	61,435	$6.15
2003	149,775,630	947,754	9,432,080	140,343,550	93.2%	1,473,542	$6.94
2004	151,342,872	1,567,242	8,859,927	142,482,945	93.9%	2,595,422	$7.59
2005	154,738,082	3,395,210	9,831,486	144,906,596	93.4%	2,420,850	$8.25
2006	157,208,110	2,470,028	10,753,810	146,454,300	92.9%	1,416,181	$8.24
2007	159,293,139	2,085,029	12,067,299	147,225,840	92.1%	750,669	$8.16
2008	161,670,240	2,377,101	15,057,640	146,612,600	90.1%	(1,116,528)	$7.93
2009	162,001,146	330,906	18,355,972	143,645,174	88.0%	(3,011,065)	$7.42
2010	160,983,136	(1,018,010)	18,912,895	142,070,241	87.7%	(1,525,079)	$7.10
2011	160,899,676	(83,460)	16,855,615	144,044,061	88.8%	1,834,621	$7.29
2012	160,753,261	(146,415)	15,749,596	145,003,665	89.7%	1,313,252	$7.36
2Q, 2013	161,165,100	411,839	16,298,767	144,866,333	89.5%	21,882	$7.46
2000-2012 Change							
Amount	16,376,384		7,354,817	9,021,567	-3.9%		$0.66
Percent	11.3%		87.6%	6.6%	-4.2%		9.9%

Includes the District of Columbia and Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[1]Average net rent, excluding taxes, utilities and janitorial.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Table A-6: Flex Space Trends, All Jurisdictions, 1993 to 2nd Quarter 2013							
Year	Total Square Feet	Net Change in Inventory	Vacant Square Feet	Occupied Square Feet	Occupancy Rate	Net Absorption	Average Rent[1]
Annual							
1993	44,885,291	NA	6,821,519	38,063,772	84.4%	(589,689)	$6.67
1994	44,932,616	47,325	5,750,110	39,182,506	86.9%	1,159,807	$7.06
1995	44,824,860	(107,756)	4,915,716	39,909,144	88.3%	539,657	$7.23
1996	45,478,217	653,357	4,076,636	41,401,581	90.4%	1,539,226	$7.53
1997	46,342,557	864,340	3,770,273	42,572,284	91.2%	1,156,520	$8.71
1998	47,794,052	1,451,495	3,583,953	44,210,099	92.0%	1,705,600	$9.02
1999	48,902,883	1,108,831	2,934,346	45,968,537	93.5%	1,760,865	$10.21
2000	51,331,668	2,428,785	3,834,024	47,497,644	92.0%	1,489,199	$10.66
2001	54,390,435	3,058,767	6,191,714	48,198,721	87.1%	162,387	$12.42
2002	55,848,055	1,457,620	7,249,610	48,598,445	85.5%	352,106	$12.64
2003	56,469,709	621,654	7,725,238	48,744,471	85.0%	260,842	$12.60
2004	57,758,047	1,288,338	6,868,863	50,889,184	87.3%	2,460,774	$11.84
2005	60,232,762	2,474,715	6,344,552	53,888,210	88.7%	2,984,190	$12.74
2006	61,411,737	1,178,975	6,205,999	55,205,738	89.1%	1,293,759	$13.13
2007	63,177,406	1,765,669	7,688,943	55,488,463	87.0%	250,113	$13.38
2008	65,085,503	1,908,097	8,487,406	56,598,097	85.9%	925,734	$13.02
2009	66,193,830	1,108,327	9,381,257	56,812,573	84.7%	161,095	$11.95
2010	66,377,724	183,894	9,487,863	56,889,861	84.9%	294,708	$11.77
2011	67,103,122	725,398	9,730,724	57,372,398	85.2%	839,821	$11.79
2012	67,623,983	520,861	9,187,621	58,436,362	86.0%	943,137	$11.54
2Q, 2013	67,618,237	(5,746)	9,266,564	58,351,673	85.8%	(97,156)	$11.74
2000-2012 Change							
Amount	16,292,315		5,353,597	10,938,718	-6.0%		$0.88
Percent	31.7%		139.6%	23.0%	-6.5%		8.3%

Includes the District of Columbia and Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[1]Average net rent, excluding taxes, utilities and janitorial.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Table A-7: Industrial Space Construction Trends, All Jurisdictions, 1993 to 2nd Quarter 2013

	Net Changes in Inventory in Square Feet						
Year	Montgomery County	Prince George's County	Region[1]	District of Columbia	First-Ring Suburbs[2]	Second-Ring Suburbs[3]	Third-Ring Suburbs[4]
Annual							
1993	NA	NA	NA	NA	NA	NA	NA
1994	21,848	161,124	507,944	-	260,947	49,137	197,860
1995	319,347	255,367	1,035,630	(189,463)	877,143	269,472	78,478
1996	-	567,032	3,444,848	(20,100)	1,078,086	2,361,838	25,024
1997	43,000	333,437	3,253,088	(32,800)	500,917	696,992	2,087,979
1998	442,194	1,722,670	3,730,097	-	2,286,268	1,181,156	262,673
1999	122,507	701,589	2,025,450	-	817,856	1,189,694	17,900
2000	146,517	253,379	2,036,185	40,812	497,320	1,013,411	484,642
2001	194,917	669,809	3,263,158	-	700,417	2,089,901	472,840
2002	33,824	210,878	1,187,841	(27,000)	282,258	679,087	253,496
2003	172,735	40,873	947,754	(12,000)	307,849	634,444	17,461
2004	65,279	191,175	1,567,242	(4,600)	279,632	1,093,110	199,100
2005	129,622	757,945	3,395,210	-	976,007	1,970,433	448,770
2006	118,249	244,059	2,470,028	(318,176)	868,829	1,653,563	265,812
2007	91,000	288,864	2,085,029	(75,906)	349,686	1,467,070	344,179
2008	12,210	729,435	2,377,101	(52,131)	741,645	1,460,443	227,144
2009	(113,252)	170,582	330,906	(62,608)	(170,823)	491,987	72,350
2010	-	(53,788)	(1,018,010)	(179,044)	(300,974)	(521,792)	(16,200)
2011	-	-	(83,460)	(58,941)	(226,834)	202,315	-
2012	(10,748)	(279,093)	(146,415)	(85,027)	(391,718)	312,330	18,000
2Q, 2013	-	235,236	411,839	-	236,292	175,547	-
Period Totals							
1993-2002	1,324,154	4,875,285	20,484,241	(228,551)	7,301,212	9,530,688	3,880,892
2003-2013	465,095	2,325,288	12,337,224	(848,433)	2,669,591	8,939,450	1,576,616
1993-2013	1,789,249	7,200,573	32,821,465	(1,076,984)	9,970,803	18,470,138	5,457,508

[1]Includes the District of Columbia and Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[2]Includes Arlington, Fairfax, Montgomery and Prince George's counties and the cities of Alexandria, Fairfax and Falls Church.

[3]Includes Charles, Frederick, Loudoun and Prince William counties and the cities of Manassas and Manassas Park.

[4]Includes Berkeley, Fauquier, Jefferson, King George and Stafford counties.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Table A-8: Industrial Space Absorption Trends, All Jurisdictions, 1993 to 2nd Quarter 2013							
	Net Absorption in Square Feet						
Year	Montgomery County	Prince George's County	Region[1]	District of Columbia	First-Ring Suburbs[2]	Second-Ring Suburbs[3]	Third-Ring Suburbs[4]
Annual							
1993	215,927	(687,759)	(3,439,060)	(660,271)	(1,600,736)	(1,185,803)	7,750
1994	188,276	(614,582)	1,117,164	166,127	(74,870)	828,047	197,860
1995	227,899	409,559	1,597,080	636	866,335	651,631	78,478
1996	174,784	(28,646)	3,562,390	147,855	653,481	2,736,030	25,024
1997	(53,166)	1,008,276	4,467,811	65,767	1,659,000	655,065	2,087,979
1998	466,234	977,546	3,967,608	355,480	1,883,238	1,466,217	262,673
1999	237,197	482,451	3,299,449	201,177	1,356,255	1,724,117	17,900
2000	90,257	159,556	(332,690)	(35,903)	(382,647)	(188,285)	274,145
2001	(86,360)	1,092,233	2,844,762	(50,436)	1,380,092	1,042,266	472,840
2002	183,498	(512,594)	61,435	88,731	(887,736)	614,044	246,396
2003	137,564	53,979	1,473,542	(48,965)	436,738	1,068,308	17,461
2004	(35,754)	892,050	2,595,422	(247,080)	1,271,328	1,155,977	416,697
2005	52,241	675,810	2,420,850	111,278	771,896	1,299,514	238,162
2006	165,345	(111,383)	1,416,181	(103,815)	323,331	1,652,495	(455,830)
2007	38,713	148,103	750,669	(147,785)	33,404	1,142,874	(286,054)
2008	(250,738)	471,247	(1,116,528)	(140,401)	(421,256)	316,005	(864,146)
2009	(143,351)	(864,889)	(3,011,065)	(334,035)	(1,834,537)	(409,478)	(434,931)
2010	(260,514)	661,971	(1,525,079)	(263,142)	(327,447)	(582,056)	(349,018)
2011	145,740	63,344	1,834,621	(126,887)	467,876	603,713	889,919
2012	110,585	892,361	1,313,252	298,090	321,882	678,308	16,472
2Q, 2013	(43,632)	(36,971)	21,882	(91,822)	211,458	185,018	(285,772)
Period Totals							
1993-2002	20,585,009	939,434	1,428,619	2,973,799	6,453,148	9,529,132	3,663,295
2003-2013	6,173,747	(1,094,564)	(83,801)	2,845,622	1,254,673	7,110,678	(1,097,040)
1993-2013	26,758,756	(155,130)	1,344,818	5,819,421	7,707,821	16,639,810	2,566,255

[1]Includes the District of Columbia and Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[2]Includes Arlington, Fairfax, Montgomery and Prince George's counties and the cities of Alexandria, Fairfax and Falls Church.

[3]Includes Charles, Frederick, Loudoun and Prince William counties and the cities of Manassas and Manassas Park.

[4]Includes Berkeley, Fauquier, Jefferson, King George and Stafford counties.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Table A-9: Flex Space Construction Trends, All Jurisdictions, 1993 to 2nd Quarter 2013							
	Net Changes in Inventory in Square Feet						
Year	Montgomery County	Prince George's County	Region[1]	District of Columbia	First-Ring Suburbs[2]	Second-Ring Suburbs[3]	Third-Ring Suburbs[4]
Annual							
1993	NA	NA	NA	NA	NA	NA	NA
1994	-	-	47,325	-	15,375	31,950	-
1995	79,461	11,506	(107,756)	-	123,641	48,603	-
1996	80,000	42,232	653,357	-	122,232	531,125	-
1997	133,063	-	864,340	-	434,641	346,890	170,809
1998	381,310	43,169	1,451,495	-	969,187	482,308	-
1999	205,775	149,672	1,108,831	(49,915)	504,285	847,461	-
2000	878,800	99,834	2,428,785	-	1,520,721	933,814	13,466
2001	373,805	87,322	3,058,767	-	1,291,807	1,682,083	92,599
2002	301,188	175,563	1,457,620	-	601,519	854,726	29,900
2003	21,108	356,776	621,654	(200,000)	563,249	242,255	16,150
2004	(33,033)	160,000	1,288,338	25,000	586,278	690,653	19,440
2005	289,912	124,046	2,474,715	-	938,292	1,327,515	208,908
2006	202,305	81,848	1,178,975	-	325,325	607,733	135,357
2007	(26,500)	36,120	1,765,669	-	252,005	1,410,777	153,387
2008	-	122,507	1,908,097	(12,000)	122,507	1,688,990	108,600
2009	(25,196)	155,785	1,108,327	-	155,785	977,943	22,370
2010	(110,560)	78,240	183,894	-	149,750	205,494	(13,840)
2011	-	-	725,398	-	137,014	733,315	81,875
2012	-	-	520,861	(19,400)	76,116	464,145	-
2Q, 2013	(110,000)	40,980	(5,746)	-	40,980	150,000	-
Period Totals							
1993-2002	10,962,764	(49,915)	2,433,402	609,298	5,583,408	5,758,960	306,774
2003-2013	11,770,182	(206,400)	208,036	1,156,302	3,347,301	8,498,820	732,247
1993-2013	22,732,946	(256,315)	2,641,438	1,765,600	8,930,709	14,257,780	1,039,021

[1]Includes the District of Columbia and Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[2]Includes Arlington, Fairfax, Montgomery and Prince George's counties and the cities of Alexandria, Fairfax and Falls Church.

[3]Includes Charles, Frederick, Loudoun and Prince William counties and the cities of Manassas and Manassas Park.

[4]Includes Berkeley, Fauquier, Jefferson, King George and Stafford counties.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Appendix Table A-10: Flex Space Absorption Trends, All Jurisdictions, 1993 to 2nd Quarter 2013							
	Net Absorption in Square Feet						
Year	Montgomery County	Prince George's County	Region[1]	District of Columbia	First-Ring Suburbs[2]	Second-Ring Suburbs[3]	Third-Ring Suburbs[4]
Annual							
1993	(205,066)	59,675	(589,689)	(138,700)	(406,922)	34,025	-
1994	6,014	122,047	1,159,807	(1,421)	645,482	534,580	-
1995	181,781	158,453	539,657	(22,640)	486,789	78,605	-
1996	(30,331)	86,350	1,539,226	(31,154)	725,425	881,371	-
1997	316,361	38,641	1,156,520	(1,000)	929,701	34,932	170,809
1998	478,225	26,056	1,705,600	96,060	777,104	680,209	-
1999	412,074	344,899	1,760,865	72,040	1,115,372	1,035,632	(255,027)
2000	418,823	211,249	1,489,199	(256,600)	943,640	708,391	48,526
2001	123,551	(80,087)	162,387	28,400	120,638	(51,303)	88,899
2002	339,452	82,249	352,106	(51,676)	100,213	280,877	45,240
2003	(195,872)	(130,325)	260,842	(12,818)	(52,642)	249,312	127,190
2004	157,424	295,282	2,460,774	(94,228)	1,382,569	1,199,351	28,440
2005	506,352	191,806	2,984,190	110,213	1,124,334	1,499,047	195,621
2006	85,655	265,754	1,293,759	6,509	460,412	672,124	(1,196)
2007	(335,017)	63,172	250,113	111,015	(131,121)	459,401	(140,782)
2008	92,496	(192,050)	925,734	2,402	(48,573)	1,005,039	(7,938)
2009	(140,854)	(196,606)	161,095	4,683	(630,738)	710,116	105,197
2010	(48,289)	(28,363)	294,708	(6,128)	(204,951)	669,679	67,612
2011	(111,803)	54,708	839,821	(20,372)	308,487	700,647	(1,717)
2012	96,419	95,481	943,137	(23,639)	220,023	740,610	54,069
2Q. 2013	(142,937)	(58,815)	(97,156)	(2,954)	(294,406)	301,706	47,298
Period Totals							
1993-2002	9,865,367	(167,991)	2,245,950	989,857	5,844,364	4,183,294	98,447
2003-2013	10,317,017	74,683	(36,426)	360,044	2,133,394	8,207,032	473,794
1993-2013	20,182,384	(93,308)	2,209,524	1,349,901	7,977,758	12,390,326	572,241

[1]Includes the District of Columbia and Arlington, Berkeley, Calvert, Charles, Fairfax, Fauquier, Frederick, Jefferson, King George, Loudoun, Montgomery, Prince George's, Stafford and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

[2]Includes Arlington, Fairfax, Montgomery and Prince George's counties and the cities of Alexandria, Fairfax and Falls Church.

[3]Includes Charles, Frederick, Loudoun and Prince William counties and the cities of Manassas and Manassas Park.

[4]Includes Berkeley, Fauquier, Jefferson, King George and Stafford counties.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Table A-11: Industrial Space Trends, Montgomery County, 1993 to 2nd Quarter 2013							
Year	Total Square Feet	Net Change in Inventory	Vacant Square Feet	Occupied Square Feet	Occupancy Rate	Net Absorption	Average Rent[1]
Annual							
1993	12,516,280	NA	705,664	11,810,616	94.1%	215,927	$6.97
1994	12,538,128	21,848	521,636	12,016,492	95.4%	188,276	$7.64
1995	12,857,475	319,347	606,333	12,251,142	94.8%	227,899	$6.56
1996	12,857,475	-	481,863	12,375,612	96.2%	174,784	$7.56
1997	12,900,475	43,000	569,266	12,331,209	95.4%	(53,166)	$7.08
1998	13,342,669	442,194	566,726	12,775,943	95.8%	466,234	$7.84
1999	13,465,176	122,507	434,516	13,030,660	96.6%	237,197	$8.61
2000	13,611,693	146,517	471,194	13,140,499	96.3%	90,257	$9.44
2001	13,806,610	194,917	768,593	13,038,017	94.3%	(86,360)	$9.76
2002	13,840,434	33,824	622,033	13,218,401	95.4%	183,498	$10.39
2003	14,013,169	172,735	656,155	13,357,014	95.2%	137,564	$10.77
2004	14,078,448	65,279	760,599	13,317,849	94.5%	(35,754)	$11.59
2005	14,208,070	129,622	840,484	13,367,586	94.0%	52,241	$12.48
2006	14,326,319	118,249	780,593	13,545,726	94.4%	165,345	$11.48
2007	14,417,319	91,000	841,625	13,575,694	94.0%	38,713	$11.11
2008	14,429,529	12,210	1,115,623	13,313,906	92.2%	(250,738)	$11.03
2009	14,316,277	(113,252)	1,065,856	13,250,421	92.0%	(143,351)	$10.46
2010	14,316,277	-	1,367,066	12,949,211	90.1%	(260,514)	$10.27
2011	14,316,277	-	1,173,546	13,142,731	91.2%	145,740	$10.61
2012	14,305,529	(10,748)	1,109,601	13,195,928	92.0%	110,585	$10.81
2Q, 2013	14,305,529	-	1,171,470	13,134,059	91.7%	(43,632)	$11.12
2000-2012 Change							
Amount	693,836		638,407	55,429	-4.3%		$1.37
Percent	5.1%		135.5%	0.4%	-4.4%		14.5%

[1]Average net rent, excluding taxes, utilities and janitorial.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Table A-12: Flex Space Trends, Montgomery County, 1993 to 2nd Quarter 2013							
Year	Total Square Feet	Net Change in Inventory	Vacant Square Feet	Occupied Square Feet	Occupancy Rate	Net Absorption	Average Rent[1]
Annual							
1993	8,949,699	NA	1,025,255	7,924,444	88.2%	(205,066)	$8.59
1994	8,949,699	-	1,008,041	7,941,658	88.3%	6,014	$10.21
1995	9,029,160	79,461	856,669	8,172,491	89.5%	181,781	$10.12
1996	9,109,160	80,000	925,716	8,183,444	88.4%	(30,331)	$10.38
1997	9,242,223	133,063	746,629	8,495,594	90.6%	316,361	$11.19
1998	9,623,533	381,310	698,314	8,925,219	91.9%	478,225	$11.48
1999	9,829,308	205,775	552,604	9,276,704	94.2%	412,074	$11.22
2000	10,708,108	878,800	885,262	9,822,846	90.4%	418,823	$11.69
2001	11,081,913	373,805	1,054,600	10,027,313	88.4%	123,551	$15.34
2002	11,383,101	301,188	988,018	10,395,083	89.1%	339,452	$15.45
2003	11,404,209	21,108	1,154,492	10,249,717	87.2%	(195,872)	$13.53
2004	11,371,176	(33,033)	1,099,632	10,271,544	88.8%	157,424	$14.05
2005	11,661,088	289,912	839,488	10,821,600	91.0%	506,352	$17.10
2006	11,863,393	202,305	996,168	10,867,225	90.1%	85,655	$17.45
2007	11,836,893	(26,500)	1,247,375	10,589,518	87.5%	(335,017)	$17.87
2008	11,836,893	-	1,115,778	10,721,115	88.3%	92,496	$18.66
2009	11,811,697	(25,196)	1,317,762	10,493,935	87.3%	(140,854)	$16.72
2010	11,701,137	(110,560)	1,274,778	10,426,359	87.7%	(48,289)	$16.49
2011	11,701,137	-	1,476,370	10,224,767	86.8%	(111,803)	$15.90
2012	11,701,137	-	1,370,147	10,330,990	87.6%	96,419	$14.61
2Q, 2013	11,591,137	(110,000)	1,385,389	10,205,748	87.2%	(142,937)	$15.14
2000-2012 Change							
Amount	993,029		484,885	508,144	-2.8%		$2.92
Percent	9.3%		54.8%	5.2%	-3.1%		25.0%

[1]Average net rent, excluding taxes, utilities and janitorial.

Sources: CoStar; Partners for Economic Solutions, 2013.

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Table A-13. Employment Trends, Montgomery County, 2002-2012											
Industry	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Government											
Federal Government	41,181	41,189	40,661	39,968	39,785	40,319	41,543	43,158	45,072	46,460	47,080
State Government	1,109	1,118	1,062	1,043	1,068	1,066	1,080	1,029	1,199	1,186	1,232
Local Government	40,684	36,328	36,105	36,935	37,397	37,469	37,860	37,834	37,140	38,450	39,669
Total Government	**82,974**	**78,635**	**77,828**	**77,946**	**78,250**	**78,854**	**80,483**	**82,021**	**83,411**	**86,096**	**87,981**
Private-Sector Employment											
Goods-Producing Sectors											
Natural Resources and Mining	516	611	682	709	745	806	873	719	796	620	393
Construction	28,795	28,856	29,117	29,444	30,891	30,449	28,503	24,223	22,291	23,425	23,263
Manufacturing	17,398	16,233	15,463	14,714	14,303	14,563	14,459	13,431	12,356	11,787	11,435
Total Goods-Producing	**46,709**	**45,700**	**45,262**	**44,867**	**45,939**	**45,818**	**43,835**	**38,373**	**35,443**	**35,832**	**35,091**
Service-Producing Sectors											
Trade, Transportation, and Utilities	66,019	65,032	64,367	64,990	64,349	62,631	61,075	56,566	57,287	57,440	58,193
Information	15,908	15,019	14,832	15,105	15,208	14,089	14,335	14,117	12,818	12,634	12,232
Financial Activities	33,722	35,444	34,598	36,127	35,797	35,371	34,312	31,908	30,830	30,474	30,586
Professional and Business Services	95,707	95,937	96,406	101,111	106,477	103,189	102,413	99,577	100,075	101,751	99,317
Education and Health Services	52,260	53,280	55,205	56,698	58,365	58,983	60,422	61,977	63,188	64,234	65,780
Leisure and Hospitality	37,504	38,455	38,331	39,505	37,878	37,614	38,133	37,133	36,894	37,523	39,115
Other Services	21,428	21,874	21,307	21,701	21,962	22,125	21,918	21,460	21,637	21,800	22,579
Total Service-Producing	**322,548**	**325,041**	**325,046**	**335,237**	**340,036**	**334,002**	**332,608**	**322,738**	**322,729**	**325,856**	**327,802**
Unclassified	914	533	646	618	608	672	592	173	0	0	6
Total Private Employment	**370,171**	**371,274**	**370,954**	**380,722**	**386,583**	**380,492**	**377,035**	**361,284**	**358,172**	**361,688**	**362,899**
Total Employment											
Total Employment	**453,145**	**449,909**	**448,782**	**458,668**	**464,833**	**459,346**	**457,518**	**443,305**	**441,583**	**447,784**	**450,880**

Source: Maryland Department of Labor, Licensing and Regulation, 2013; Partners for Economic Solutions, 2013.

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Table A-14. Private Employment Trends by Industry, Montgomery County, 2000-2011

Industry	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Agriculture, Forestry, Fishing and Hunting	C	136	87	87	B	B	B	69	71	82	B	84
Construction	30,753	30,409	31,130	29,782	32,898	32,978	37,571	32,958	31,527	26,947	23,788	24,650
Mining	97	89	88	B	B	C	B	C	C	168	118	112
Manufacturing	14,375	12,660	13,034	11,380	11,232	10,367	10,861	10,329	10,375	9,262	8,613	8,443
Wholesale Trade	13,612	14,428	12,974	13,097	13,267	13,936	14,423	13,462	12,256	11,959	10,205	10,867
Retail Trade	48,665	49,678	48,302	47,825	50,994	51,355	50,503	48,235	47,468	44,868	44,116	44,819
Transportation and Warehousing	2,826	2,354	2,954	3,446	3,774	4,002	5,241	3,951	3,065	2,977	3,012.0	3,140
Utilities	E	396	393	F	683	884	435	E	E	E	E	E
Information	26,043	23,338	20,144	21,033	23,938	22,724	21,158	20,655	19,230	17,027	17,074	17,078
Finance and Insurance	21,246	21,976	23,185	24,395	26,638	23,340	25,632	24,379	23,410	22,566	19,218	19,352
Real Estate and Rental and Leasing	13,080	13,186	12,230	12,575	13,211	13,163	13,661	14,647	14,636	13,854	12,223	11,827
Professional, Scientific, and Technical Services	62,228	67,690	61,426	62,881	65,046	65,117	66,619	82,013	80,587	68,301	67,568	75,667
Management of Companies and Enterprises	10,444	11,166	11,659	12,277	13,129	13,586	13,306	15,603	17,019	17,115	16,734	14,554
Administrative and Support and Waste Management	42,677	42,642	33,050	35,870	38,233	38,018	43,221	45,130	49,862	45,930	48,240	48,150
Educational Services	8,670	9,640	9,706	9,741	9,602	9,602	10,394	10,367	10,683	10,540	10,348	10,831
Health Care and Social Assistance	43,010	43,897	46,671	50,979	51,842	51,557	53,499	54,715	57,080	59,303	58,655	58,791
Arts, Entertainment, and Recreation	6,903	6,293	5,828	6,380	6,719	6,956	7,519	6,393	6,344	6,419	6,324	6,436
Accommodation and Food Services	26,451	27,048	25,861	27,102	28,159	28,504	29,156	29,996	30,247	29,628	29,712	31,428
Other Services (except Public Administration)	23,540	23,137	24,864	23,067	22,539	22,386	23,029	24,017	24,538	24,286	23,620	25,671
Unclassified establishments	529	344	51	C	C	85	C	B	B	B	C	B
Auxiliaries (exc corporate, subsidiary & regional mgt)	8,433	8,263	7,942	**	**	**	**	**	**	**	**	**
Public Administration[1]	**	**	**	**	**	**	**	**	**	**	**	**
Total Jobs	**404,150**	**408,770**	**391,579**	**392,870**	**412,188**	**408,715**	**426,478**	**437,542**	**439,067**	**411,814**	**400,239**	**412,473**

Note: B=20-99 employees, C=100-249 employees, E=250-499 employees, F=500-999 employees

[1]Data source does not provide counts of government jobs.

Sources: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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Table A-15. Private Employment Trends by Industry as a Percent of Total Private Employment, Montgomery County, 2000-2011												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Agriculture, Forestry, Fishing and Hunting	NA	0.0%	0.0%	0.0%	NA	NA	NA	0.0%	0.0%	0.0%	NA	0.0%
Construction	7.6%	7.4%	7.9%	7.6%	8.0%	8.1%	8.8%	7.5%	7.2%	6.5%	5.9%	6.0%
Mining	0.0%	0.0%	0.0%	NA	NA	NA	NA	NA	NA	0.0%	0.0%	0.0%
Manufacturing	3.6%	3.1%	3.3%	2.9%	2.7%	2.5%	2.5%	2.4%	2.4%	2.2%	2.2%	2.0%
Wholesale Trade	3.4%	3.5%	3.3%	3.3%	3.2%	3.4%	3.4%	3.1%	2.8%	2.9%	2.5%	2.6%
Retail Trade	12.0%	12.2%	12.3%	12.2%	12.4%	12.6%	11.8%	11.0%	10.8%	10.9%	11.0%	10.9%
Transportation and Warehousing	0.7%	0.6%	0.8%	0.9%	0.9%	1.0%	1.2%	0.9%	0.7%	0.7%	0.8%	0.8%
Utilities	NA	0.1%	0.1%	NA	0.2%	0.2%	0.1%	NA	NA	NA	NA	NA
Information	6.4%	5.7%	5.1%	5.4%	5.8%	5.6%	5.0%	4.7%	4.4%	4.1%	4.3%	4.1%
Finance and Insurance	5.3%	5.4%	5.9%	6.2%	6.5%	5.7%	6.0%	5.6%	5.3%	5.5%	4.8%	4.7%
Real Estate and Rental and Leasing	3.2%	3.2%	3.1%	3.2%	3.2%	3.2%	3.2%	3.3%	3.3%	3.4%	3.1%	2.9%
Professional, Scientific, and Technical Services	15.4%	16.6%	15.7%	16.0%	15.8%	15.9%	15.6%	18.7%	18.4%	16.6%	16.9%	18.3%
Management of Companies and Enterprises	2.6%	2.7%	3.0%	3.1%	3.2%	3.3%	3.1%	3.6%	3.9%	4.2%	4.2%	3.5%
Administrative and Support and Waste Management	10.6%	10.4%	8.4%	9.1%	9.3%	9.3%	10.1%	10.3%	11.4%	11.2%	12.1%	11.7%
Educational Services	2.1%	2.4%	2.5%	2.5%	2.3%	2.3%	2.4%	2.4%	2.4%	2.6%	2.6%	2.6%
Health Care and Social Assistance	10.6%	10.7%	11.9%	13.0%	12.6%	12.6%	12.5%	12.5%	13.0%	14.4%	14.7%	14.3%
Arts, Entertainment, and Recreation	1.7%	1.5%	1.5%	1.6%	1.6%	1.7%	1.8%	1.5%	1.4%	1.6%	1.6%	1.6%
Accommodation and Food Services	6.5%	6.6%	6.6%	6.9%	6.8%	7.0%	6.8%	6.9%	6.9%	7.2%	7.4%	7.6%
Other Services (except Public Administration)	5.8%	5.7%	6.3%	5.9%	5.5%	5.5%	5.4%	5.5%	5.6%	5.9%	5.9%	6.2%
Unclassified establishments	0.1%	0.1%	0.0%	NA	NA	0.0%	NA	NA	NA	NA	NA	NA
Auxiliaries (exc corporate, subsidiary & regional mgt)	2.1%	2.0%	2.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA
Public Administration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Jobs	**99.9%**	**100.0%**	**100.0%**	**99.8%**	**99.9%**	**100.0%**	**99.9%**	**99.9%**	**99.8%**	**99.9%**	**99.8%**	**99.9%**

Note: NA denotes industries for which employment data have been suppressed to avoid disclosure of individual firms' employment. Columns do not total to 100.0 percent due to suppressed data.
Sources: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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Table A-16. Employment Trends by Industry, Maryland, Mid-Atlantic and U.S., 1990-2012									
	Maryland			Mid-Atlantic			United States		
	Annual Average			Annual Average			Annual Average		
Industry	1990	2000	2012	1990	2000	2012	1990	2000	2012
Agriculture, Forestry, Fishing and Hunting	**	**	**	**	**	**	**	**	**
Construction, Mining, and Logging	160.1	160.9	145.2	786.0	806.7	750.4	6,028.0	7,386.0	6,492.0
Manufacturing	198.6	172.2	108.6	3,181.9	2,691.8	1,687.7	17,695.0	17,263.0	11,919.0
Wholesale Trade	92.7	92.9	86.4	1,108.4	1,090.1	1,013.7	5,268.4	5,933.2	5,672.7
Retail Trade	289.8	298.8	285.0	2,742.8	2,904.1	2,836.5	13,182.3	15,279.8	14,874.9
Transportation and Utilities	60.0	79.7	79.3	863.6	952.3	904.5	4,215.6	5,011.6	4,968.6
Information	47.3	58.5	39.9	680.2	809.9	572.5	2,688.0	3,630.0	2,678.0
Finance and Insurance	93.1	100.7	99.4	1,321.6	1,356.8	1,262.7	4,976.4	5,772.8	5,834.3
Real Estate and Rental and Leasing	44.4	46.2	43.6	391.3	429.0	408.9	1,637.1	2,010.6	1,952.0
Professional, Scientific, and Technical Services	144.1	197.0	234.8	1,265.7	1,729.3	1,979.4	4,538.2	6,701.7	7,892.6
Management of Companies and Enterprises	11.2	16.8	24.4	271.9	340.0	459.8	1,667.4	1,796.0	2,008.3
Administrative and Support and Waste Management	102.9	155.7	150.9	980.3	1,449.5	1,436.9	4,642.8	8,168.3	8,029.4
Educational Services	37.4	54.3	74.7	527.7	666.5	983.0	1,688.0	2,390.4	3,347.0
Health Care and Social Assistance	189.1	254.5	340.5	2,257.7	2,945.0	3,771.4	9,295.8	12,718.0	16,971.5
Arts, Entertainment, and Recreation	24.0	32.0	37.8	230.5	287.7	404.4	1,132.0	1,787.9	1,965.4
Accommodation and Food Services	160.8	170.9	206.6	1,508.4	1,708.3	2,048.5	8,155.6	10,073.5	11,780.2
Other Services (except Public Administration)	96.3	114.3	112.2	918.7	1,132.9	1,255.6	4,261.0	5,168.0	5,437.0
Public Administration	421.5	449.9	505.2	4,203.8	4,282.2	4,480.0	18,415.0	20,790.0	21,917.0
Total Jobs	**2,173**	**2,455**	**2,575**	**23,241**	**25,582**	**26,256**	**109,487**	**131,881**	**133,740**

Note: All Employees, In Thousands

Sources: Bureau of Labor Statistics; Partners for Economic Solutions, 2013.

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Table A-17. Employment as a Percent of Private Employment, Maryland, Mid-Atlantic and U.S., 1990-2012									
	Maryland			Mid-Atlantic			United States		
Industry	1990	2000	2012	1990	2000	2012	1990	2000	2012
Agriculture, Forestry, Fishing and Hunting	**	**	**	**	**	**	**	**	**
Construction, Mining, and Logging	9.1%	8.0%	7.0%	4.1%	3.8%	3.4%	6.6%	6.6%	5.8%
Manufacturing	11.3%	8.6%	5.2%	16.7%	12.6%	7.8%	19.4%	15.5%	10.7%
Wholesale Trade	5.3%	4.6%	4.2%	5.8%	5.1%	4.7%	5.8%	5.3%	5.1%
Retail Trade	16.5%	14.9%	13.8%	14.4%	13.6%	13.0%	14.5%	13.8%	13.3%
Transportation and Utilities	3.4%	4.0%	3.8%	4.5%	4.5%	4.2%	4.6%	4.5%	4.4%
Information	2.7%	2.9%	1.9%	3.6%	3.8%	2.6%	3.0%	3.3%	2.4%
Finance and Insurance	5.3%	5.0%	4.8%	6.9%	6.4%	5.8%	5.5%	5.2%	5.2%
Real Estate and Rental and Leasing	2.5%	2.3%	2.1%	2.1%	2.0%	1.9%	1.8%	1.8%	1.7%
Professional, Scientific, and Technical Services	8.2%	9.8%	11.3%	6.6%	8.1%	9.1%	5.0%	6.0%	7.1%
Management of Companies and Enterprises	0.6%	0.8%	1.2%	1.4%	1.6%	2.1%	1.8%	1.6%	1.8%
Management	5.9%	7.8%	7.3%	5.1%	6.8%	6.6%	5.1%	7.4%	7.2%
Educational Services	2.1%	2.7%	3.6%	2.8%	3.1%	4.5%	1.9%	2.2%	3.0%
Health Care and Social Assistance	10.8%	12.7%	16.5%	11.9%	13.8%	17.3%	10.2%	11.4%	15.2%
Arts, Entertainment, and Recreation	1.4%	1.6%	1.8%	1.2%	1.4%	1.9%	1.2%	1.6%	1.8%
Accommodation and Food Services	9.2%	8.5%	10.0%	7.9%	8.0%	9.4%	9.0%	9.1%	10.5%
Other Services (except Public Administration)	5.5%	5.7%	5.4%	4.8%	5.3%	5.8%	4.7%	4.7%	4.9%
Total Jobs	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Sources: Bureau of Labor Statistics; Partners for Economic Solutions, 2013.

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Table A-18. Manufacturing Employment by Detailed Industry, Montgomery County, 2005-2011

		Employees	
NAICS code	Industry	2005	2011
311	Food manufacturing	485	466
312	Beverage and tobacco product manufacturing	b	b
313	Textile mills	a	a
314	Textile product mills	b	b
315	Apparel manufacturing	b	7
316	Leather and allied product manufacturing	a	a
321	Wood product manufacturing	102	b
322	Paper manufacturing	a	a
323	Printing and related support activities	2,051	1,141
323110	Commercial lithographic printing	1,483	767
324	Petroleum and coal products manufacturing	a	a
325	Chemical manufacturing	590	868
3254	Pharmaceutical and medicine manufacturing	f	813
325413	In-vitro diagnostic substance manufacturing	e	761
326	Plastics and rubber products manufacturing	73	22
327	Nonmetallic mineral product manufacturing	382	330
331	Primary metal manufacturing	a	-
332	Fabricated metal product manufacturing	239	152
33232	Ornamental and architectural metal products manufacturing	77	47
3327	Machine shops; turned product; and screw, nut, and bolt manufacturing	81	32
333	Machinery manufacturing	e	c
334	Computer and electronic product manufacturing	4,844	4,170
3342	Communications equipment manufacturing	h	2,561
3344	Semiconductor and other electronic component manufacturing	e	360
33451	Electronic instrument manufacturing	g	1,086
334612	Prerecorded compact disc (except software), tape, and record reproducing	b	84
335	Electrical equipment, appliance, and component manufacturing	213	225
336	Transportation equipment manufacturing	a	22
337	Furniture and related product manufacturing	301	155
3371	Household and institutional furniture and kitchen cabinet manufacturing	192	116
33712	Household and institutional furniture manufacturing	79	60
3372	Office furniture (including fixtures) manufacturing	c	34
339	Miscellaneous manufacturing	546	471
	Total manufacturing	**10,367**	**8,443**

Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees

Highlighting denotes industry sectors that increased employment from 2005 to 2011.

Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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Table A-19. Wholesale Trade Sector Employment by Detailed Industry, Montgomery County,2005- 2011			
		Employees	
NAICS code	Industry	2005	2011
423	Merchant wholesalers, durable goods	9,795	6,684
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers	356	e
4232	Furniture and home furnishing merchant wholesalers	553	425
4233	Lumber and other construction materials merchant wholesalers	360	320
4234	Professional and commercial equipment and supplies merchant wholesalers	5,996	3,287
4235	Metal and mineral (except petroleum) merchant wholesalers	139	c
4236	Electrical and electronic goods merchant wholesalers	892	609
4237	Hardware, plumbing and heating equipment and supplies merchant wholesalers	345	171
4238	Machinery, equipment, and supplies merchant wholesalers	557	789
4239	Miscellaneous durable goods merchant wholesalers	597	551
424	Merchant wholesalers, nondurable goods	3,735	3,822
4241	Paper and paper product merchant wholesalers	363	265
4242	Drugs and druggists' sundries merchant wholesalers	835	1,419
4243	Apparel, piece goods, and notions merchant wholesalers	b	87
4244	Grocery and related product merchant wholesalers	835	807
4245	Farm product raw material merchant wholesalers	a	a
4246	Chemical and allied products merchant wholesalers	318	97
4247	Petroleum and petroleum products merchant wholesalers	54	129
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	159	155
4249	Miscellaneous nondurable goods merchant wholesalers	1,096	855
425	Wholesale electronic markets and agents and brokers	406	361
	Total wholesale trade	**13,936**	**10,867**
Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees			
Highlighting denotes industry sectors that increased employment from 2005 to 2011.			
Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.			

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Table A-20. Transportation and Warehousing Sector Employment by Detailed Industry, Montgomery County, 2005-2011			
		Employees	
NAICS code	Industry	2005	2011
481	Air transportation	b	22
483	Water transportation	c	237
483111	Deep sea freight transportation	c	232
484	Truck transportation	951	876
4841	General freight trucking	181	152
4842	Specialized freight trucking	770	724
48421	Used household and office goods moving	641	544
48422	Specialized freight (except used goods) trucking, local	117	156
485	Transit and ground passenger transportation	1,188	778
4853	Taxi and limousine service	c	301
486	Pipeline transportation	a	a
487	Scenic and sightseeing transportation	a	a
488	Support activities for transportation	454	407
48841	Motor vehicle towing	373	217
492	Couriers and messengers	812	639
493	Warehousing and storage	302	174
	Total transportation and warehousing	**4,002**	**3,140**

Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees

Highlighting denotes industry sectors that increased employment from 2005 to 2011.

Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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Table A-21. Administrative, Support, Waste Management and Remediation Sector Employment by Detailed Industry, Montgomery County, 2005-2011			
		Employees	
NAICS code	Industry	2005	2011
561	Administrative and support services	37,284	47,144
5611	Office administrative services	3,082	3,882
5612	Facilities support services	1,979	i
5613	Employment services	8,437	11,245
5614	Business support services	2,090	1,354
56143	Business service centers	333	338
561431	Private mail centers	38	51
561439	Other business service centers (including copy shops)	295	287
56144	Collection agencies	571	96
5615	Travel arrangement and reservation services	467	649
56151	Travel agencies	341	516
56159	Other travel arrangement and reservation services	110	115
5616	Investigation and security services	4,830	5,724
5617	Services to buildings and dwellings	15,813	17,066
56171	Exterminating and pest control services	399	508
56172	Janitorial services	10,811	11,843
56173	Landscaping services	3,931	4,085
56174	Carpet and upholstery cleaning services	301	242
5619	Other support services	586	g
561920	Convention and trade show organizers	307	g
56199	All other support services	265	329
562	Waste management and remediation services	734	1,006
5621	Waste collection	516	519
5622	Waste treatment and disposal	132	c
5629	Remediation and other waste management services	86	350
	Total administration, support, waste management and remediation	**38,018**	**48,150**

Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees

Highlighting denotes industry sectors that increased employment from 2005 to 2011.

Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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Table A-22. Information Sector Employment by Detailed Industry, Montgomery County, 2005-2011			
		Employees	
code	Industry	2005	2011
511	Publishing industries (except Internet)	4,520	5,170
5111	Newspaper, periodical, book, and directory publishers	2,708	1,780
51112	Periodical publishers	1,492	786
51113	Book publishers	555	218
51119	Other publishers	b	b
5112	Software publishers	1,812	3,390
512	Motion picture and sound recording industries	1,061	995
512110	Motion picture and video production	262	439
5122	Sound recording industries	131	109
515	Broadcasting (except Internet)	2,904	2,676
5151	Radio and television broadcasting	f	490
5152	Cable and other subscription programming	g	2,186
517	Telecommunications	10,177	5,661
5171	Wired telecommunications carriers	3,563	4,828
5172	Wireless telecommunications carriers (except satellite)	789	e
5174	Satellite telecommunications	4,316	200
518	Data processing, hosting and related services	3,462	1,917
519	Other information services	327	659
51913	Internet publishing and broadcasting and web search portals	NA	578
	Total information	**22,724**	**17,078**

Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees

Highlighting denotes industry sectors that increased employment from 2005 to 2011.

Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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Table A-23. Other Services Sector Employment by Detailed Industry, Montgomery County, 2005-2011			
		Employees	
NAICS code	Industry	2005	2011
811	Repair and maintenance	4,323	3,339
8111	Automotive repair and maintenance	2,822	2,435
8112	Electronic and precision equipment repair and maintenance	541	421
811212	Computer and office machine repair and maintenance	350	243
8114	Personal and household goods repair and maintenance	556	228
812	Personal and laundry services	5,593	5,818
81233	Linen and uniform supply	a	a
81291	Pet care (except veterinary) services	218	251
812921	Photofinishing laboratories (except one-hour)	91	b
	Total other services (except public administration)	**22,386**	**25,671**

Note: a=0-19 employees, b=20-99 employees, c=100-249 employees, e=250-499 employees, f=500-999 employees, g=1,000-2,499 employees, h=2,500-4,999 employees, i=5,000-9,999 employees

Highlighting denotes industry sectors that increased employment from 2005 to 2011.

Source: County Business Patterns, U.S. Bureau of the Census; Partners for Economic Solutions, 2013.

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