



Working Draft of the 2016 Subdivision Staging Policy



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Description

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Attached in the Working Draft of the 2016 Subdivision Staging Policy.

Summary

The Subdivision Staging Policy, or SSP, is a set of policy tools that guide the timely delivery of public facilities (schools, transportation, water, sewer, and other infrastructure) to serve existing and future development. These policy tools are the guidelines for the administration of the Adequate Public Facility Ordinance, or APFO.

The Working Draft of the 2016 Subdivision Staging Policy contains new ideas that essentially rethink how we approach evaluating transportation and school adequacy. It provides a more context-sensitive, multi-modal approach to both the regional and local tests for transportation, and aims to forge a better connection between the individual school experience and its measure of adequacy. It also includes information about environmental sustainability and the growing need for urban parks that could be addressed in future policies.

The 2016 Subdivision Staging Policy

Working Draft

May 2, 2016

Introduction

Montgomery County is entering a new phase in its growth, and this Subdivision Staging Policy recognizes that different approaches and ways of thinking about growth are needed. The County has long had an innovative approach to managing growth that has focused on transportation (primarily roads) and school capacity, in an effort ensure that this vital infrastructure is provided in an equitable and timely way. Although this is still a key goal of the Subdivision Staging Policy, the focus needs to shift from a “one size fits all” set of rules to a *collection* of policies and rules tailored to the disparate contexts of communities throughout the County.

Over the past four decades, as Montgomery County repositioned itself from a bedroom community of commuters to a regional job center, change in the County was marked by its population growth. Now, this diverse, populous jurisdiction has settled into a mature growth stage. The County has an annual population growth rate of around 1 percent, which is expected to slow over the next 30 years. It is important to note, however, that 1 percent growth still equates to almost 200,000 new residents by 2045.

Additionally, there is limited unconstrained land left to accommodate new growth – only approximately 15 percent of the County remains unconstrained and available for development or redevelopment, according to a 2013 suitability study. There is also consensus that important policies – such as the sanctity of single family neighborhoods and the preservation of open space and farmland in the Agricultural Reserve – should not be revisited.

What this means is that growth and development patterns in Montgomery County must be more efficient in how land is developed and in how transportation goals are achieved. In other words, while accommodating the continuing growth of our population and economy, we must minimize the land and resources consumed, be cost effective, and promote more community interaction and physical activity. **Growth is no longer about spreading out, but rather is about filling in.**

This changing landscape means that it is essential for the 2016-2020 Subdivision Staging Policy to recommend ways to revise our transportation analyses as well as our school capacity measurements, looking at these procedures within a larger context of community character, both to understand changing trends and to broaden our thinking about the infrastructure of community.

Overview

[What is Subdivision Staging Policy?](#)

The Subdivision Staging Policy, or SSP, is a set of policy tools that guide the timely delivery of public facilities (schools, transportation, water, sewer, and other infrastructure) to serve existing and future

development. These policy tools are the guidelines for the administration of the Adequate Public Facility Ordinance, or APFO.

Although commonly referred to as a separate ordinance, the APFO is actually part of Montgomery County's subdivision regulations: Section 50-35 (k) of the County Code. The introductory sentence of the APFO states, "A preliminary plan of subdivision must not be approved unless the Planning Board determines that public facilities will be adequate to support and service the area of the proposed subdivision." How, exactly, the Planning Board makes that determination is the focus of the Subdivision Staging Policy.

How does the Subdivision Staging Policy relate to our County master plans and the CIP?

The SSP's main focus is on the timing or staging of development and public facilities and comes into play primarily during the regulatory process. The County's General Plan, as amended by approved and adopted master, sector and functional plans, determines the amount, pattern, location, and type of development within the County. The master planning process is aspirational, creating a long term vision for our communities. The SSP has a more focused, shorter term view. Its purpose is to evaluate individual proposals for development, determining if our transportation network and schools have sufficient capacity to accommodate the additional demand.

County master plans identify where growth is appropriate and at what levels or densities this growth should occur. They provide a vision for the future of the County – from the very conceptual level with the General Plan to much more detailed recommendations with small area plans. For each master plan, some high level analysis is done about infrastructure needed to accommodate the vision outlined in the master plan. This analysis is different from the SSP, although it may result in recommended capital improvements that could be implemented by either the County government or the private sector.

The Capital Improvements Program, or CIP, is the vehicle through which the County increases the capacity of its public facilities to support existing development and future growth. One role of the SSP is to determine how much additional growth can be supported by public facilities that are included in the CIP. Another is to help prioritize which additional public facilities should be funded in a future CIP.

The policy tools recommended by this report will be established by a County Council resolution. The resolution will describe the facility standards that must be met, and prescribe the contributions necessary from the public and private sectors to ensure that infrastructure keeps pace with new development.

What's New in the 2016-2020 Subdivision Staging Policy?

This subdivision staging policy contains a lot of new ideas that essentially rethink how we approach transportation and schools. There are also ideas for future topics that we need to address above and beyond transportation and schools. The following highlights our recommended changes, each of which is discussed in greater detail in the report.

Transportation:

- Recognizing that there is not a “one size fits all” set of rules.
- Organizing policy areas into four groups that recognize current land use patterns, the prevalence of modes of travel other than the single occupant vehicle, and the planning vision for different parts of the County.
- Creating a spectrum of policy area-based transportation tests that are appropriate for each group, with a strong focus on transit accessibility. Some groups – such as the “Core” and the “Rural” areas will not have policy area transit accessibility tests.
- Updating trip generation rates for areas that still have transportation tests to reflect current land use patterns and travel behavior.
- Creating an ability to adjust trip generation rates based on reduced parking.
- Creating a new system for evaluating local area transportation conditions that does not rely solely on Critical Lane Volume, but rather focuses on other tools such as Synchro, Vehicle Miles Traveled, and NADMS rates.
- Directing transportation impact taxes to the geographic area where they are being collected for the “Core” policy areas.
- Creating the ability to adjust transportation impact taxes to better incentivize reduced parking.

Schools:

- Utilizing student generation rates that are associated with residential structures built over the prior 10 years only – so as to capture the enrollment impact of relatively new housing.
- Implementing a hybrid annual school test that combines cluster utilization tests with individual school capacity deficit tests.
- Creating a system to regularly update the school facility payment formulas so as to keep up with the latest generation rates and school construction costs.
- Limiting the use of “placeholder” capacity to two years so that there is clarity about the timing and the likelihood of real capacity improvements.
- Updating the school impact taxes to reflect the latest generation rates and school construction costs.
- Reintroducing school facility payments and school impact taxes in former Enterprise Zones.

Future topics for next SSP:

- Sustainability
- Water Quality as a Growth Offset Factor
- Adequate Green Infrastructure: Urban Parks
- Urban Environmental Design Guidelines

The 2016 SSP continues this position by providing a more context-sensitive, multi-modal approach to both the regional and local tests for transportation. The new policy aims to forge a better connection between the individual school experience and its measure of adequacy, providing information that can shape how the County spends taxpayer funds to create the needed facilities and services. Finally, it includes information about environmental sustainability and the growing need for urban parks that could be addressed in future policies.

Growth Status and Trends

Montgomery County's future can be seen as a series of challenges and opportunities that affect our quality of life. The two primary challenges focus on the character of change, particularly our shifting demographics, and how we can enhance the historic pattern of development to better serve this changing population. The Subdivision Staging Policy ensures that the change in our communities as a result of new development is accompanied by the public infrastructure necessary to support it.

The character of change and the pattern of development are linked. Increases in the number of millennials and seniors will create new infrastructure needs and social service demands. Travel, mostly in single-occupancy vehicles, taxes our roadways and makes it difficult for others to enjoy more active modes of transportation such as bicycling and walking. Older development, built before stormwater controls, degrades our natural environment. A lack of developable greenfield sites and the abundance of single family housing has broadened our approach to new housing.

With these challenges come opportunities to refine our approach to growth so that we can provide new choices in housing and transportation for all members of the community. The County already has seen an increase in development applications in transit-served areas as well as more private funds and projects directed to providing timely infrastructure.

Character of Change

Over the past four decades, as Montgomery County repositioned itself from a bedroom community of commuters to a regional job center, change in the County was marked by its population growth. Now, this diverse, populous county has settled into a mature growth stage. The County has an annual

population growth rate of around 1 percent, which is expected to slow even further over the next 30 years. The changing character of the County’s residents is now more notable than its population growth.

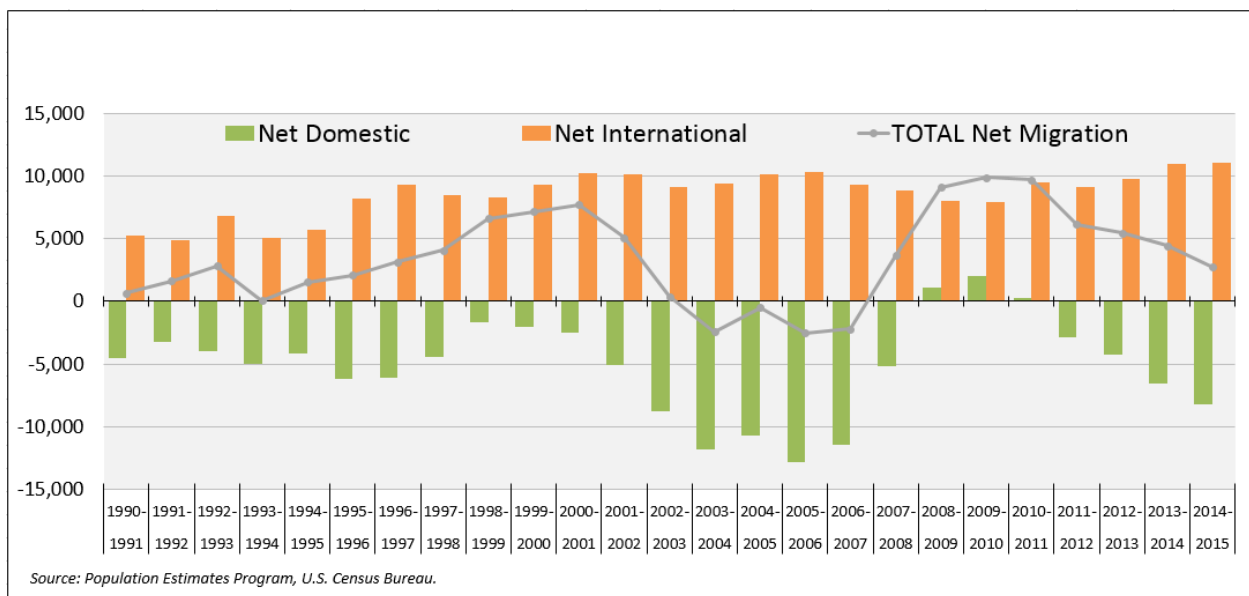
Demographic trends in the number of people moving in and out of the County, the natural increase in population (births exceeding deaths) and the inevitable aging of County residents affect the make-up of the County’s population. Economic forces also shape demographic trends; the past decade’s economic downturn altered not only the pace of demographic change, but its character as well.

The movement of people in and out of Montgomery County is instrumental in changing its residential character. In 2014, 63,200 people moved in (including from abroad) and 56,600 residents moved out of the County to other parts of Maryland or to another state.

In the past five years, the typical new resident moving into the County was a young adult between the ages of 20 and 34, African American, Hispanic, or Asian, who holds a graduate degree, and lives in a household with an income of \$100,000 or more. Residents leaving Montgomery County were similar in age, but also included college-age residents, 18 to 19 year olds. They are usually less diverse, the majority are non-Hispanic white, are more likely to have a college degree and less likely to have household incomes of \$100,000 or more. The most significant change to neighborhoods is from residents moving *within* the County. In 2014, 57 percent of those who moved (146,300 people) stayed within the County, compared to 22 percent moving from a different state - 12 percent from abroad, and 10 percent from elsewhere in Maryland.

Residents moving into the County from abroad contributes significantly to the County’s growth and cultural diversity, resulting in a net gain of 9,600 people per year over a span of 15 years. This increase offsets the average net domestic loss of 5,800 residents relocating within the region or elsewhere in the United States.

Figure 1. Population Migration 1990-2015



After dipping during the Great Recession, international movement into the County set a record net gain of 11,000 foreign immigrants in 2015. With one-third of the County's population foreign-born, Montgomery County is ranked first in the Washington, D.C. region and fifteenth among counties nationwide in this respect.

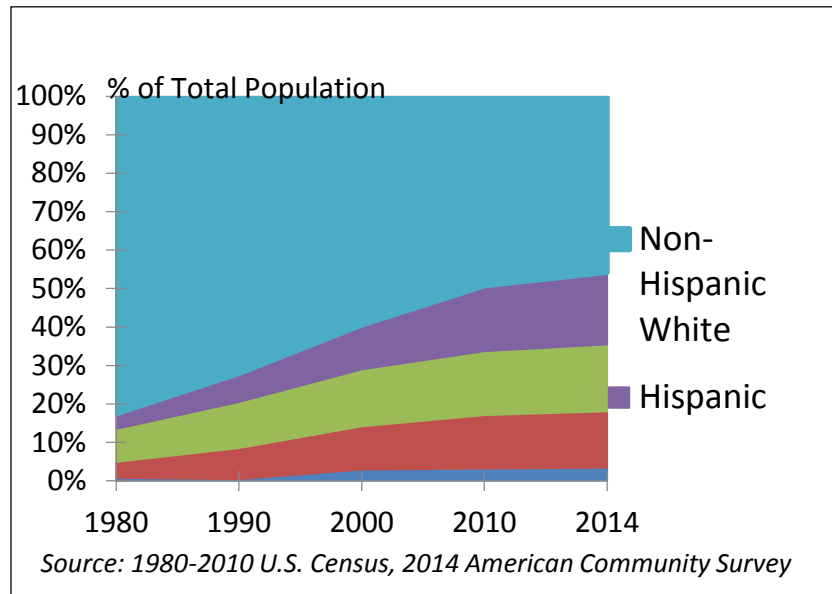
The origins of the County's foreign-born residents are widely diverse with 38 percent arriving from Latin America and 36 percent from Asia. With the draw of its existing large foreign-born population base, economic opportunities, and welcoming social and political environment, Montgomery County is expected to continue to attract international immigrants moderated by world and national politics and regional and global economic cycles.

The natural increase in Montgomery County's population, where births are typically more than double the number of deaths, is another major component of growth and change in the population. Natural increase accounted for more than half of the County's 68,000 net population gain between 2010 and 2015; however, a comparatively smaller gain occurred during the uncertain economic time of the Great Recession. After peaking at the onset of the recession at 13,800 in 2007, births in the County declined by 6 percent over six years until 2014, when the first uptick to 13,200 births occurred.

In Montgomery County, as in the rest of the country, women in the millennial generation are delaying childbirth as birthrates for local women ages 25 to 34 continue dropping to new lows. However, the number of births are expected to gradually increase as fewer young women postpone motherhood and the forecasted number of women of child-bearing age increases over the next 20 years.

In addition to contributing to the population's growth, births change the racial and ethnic composition of Montgomery County. In 1990, the combined percentages of Hispanic, African-American, and Asian births in the County totaled 40 percent and, rose to 63 percent of all births in 2014. During this period of increasingly diverse in-migration and births, the County's minority population (any group other than non-Hispanic white) increased from 28 percent in 1990 to 54 percent in 2014.

Figure 2. Race & Hispanic Origin, 1980-2014



The Montgomery County public school student population, the bellwether of racial and ethnic change in the County, gained majority minority status eight years before the County’s general population did in 2010. Currently, Hispanic students are the largest racial or ethnic group in kindergarten through second grade and, across the system, they are almost equal in number to non-Hispanic white students. In comparison, the County’s population is 46 percent non-Hispanic white, 19 percent Hispanic or Latino, 17 percent African American and 15 percent Asian in 2014.

Continued growth in the minority population is expected, assuming sustained migration patterns and minority birthrates. By 2040, the Maryland Department of Planning predicts 68 percent of the County’s population will belong to a minority group. Not until 2044 will the minority population become the majority across America according to projections by the United States Census Bureau.

The baby boom-generation, born between 1946 and 1964, is an enduring agent of change, locally and nationally, as these Americans age through life-cycle events to the brink of retirement. The leading edge of the boomer generation turned 65 in 2011 and by 2030, all will be 65 and older. The aging boomers will drive growth in the County’s 65-plus population from about 120,000 residents, or 12 percent of the population, in 2010 to 18 percent in 2030 - a 69 percentage increase over 20 years. The swelling of the senior ranks by boomers with high home ownership rates (79 percent), making up almost half of all homeowner households in 2010, has the potential to transform the housing market in the County.

Depending on their housing decisions and timing of boomer homeowners, the potential exists for a significant number of houses to enter the resale market if they choose to downsize, relocate in retirement, or if they die. Within the next 10 years, the release of housing may coincide with the likely housing demand of young adults, known as the millennial generation, who have previously delayed homeownership and other decisions such as getting married and starting families. Millennials fall into the age group most likely to move (20 to 34 years old) and correspond to the age of the typical new

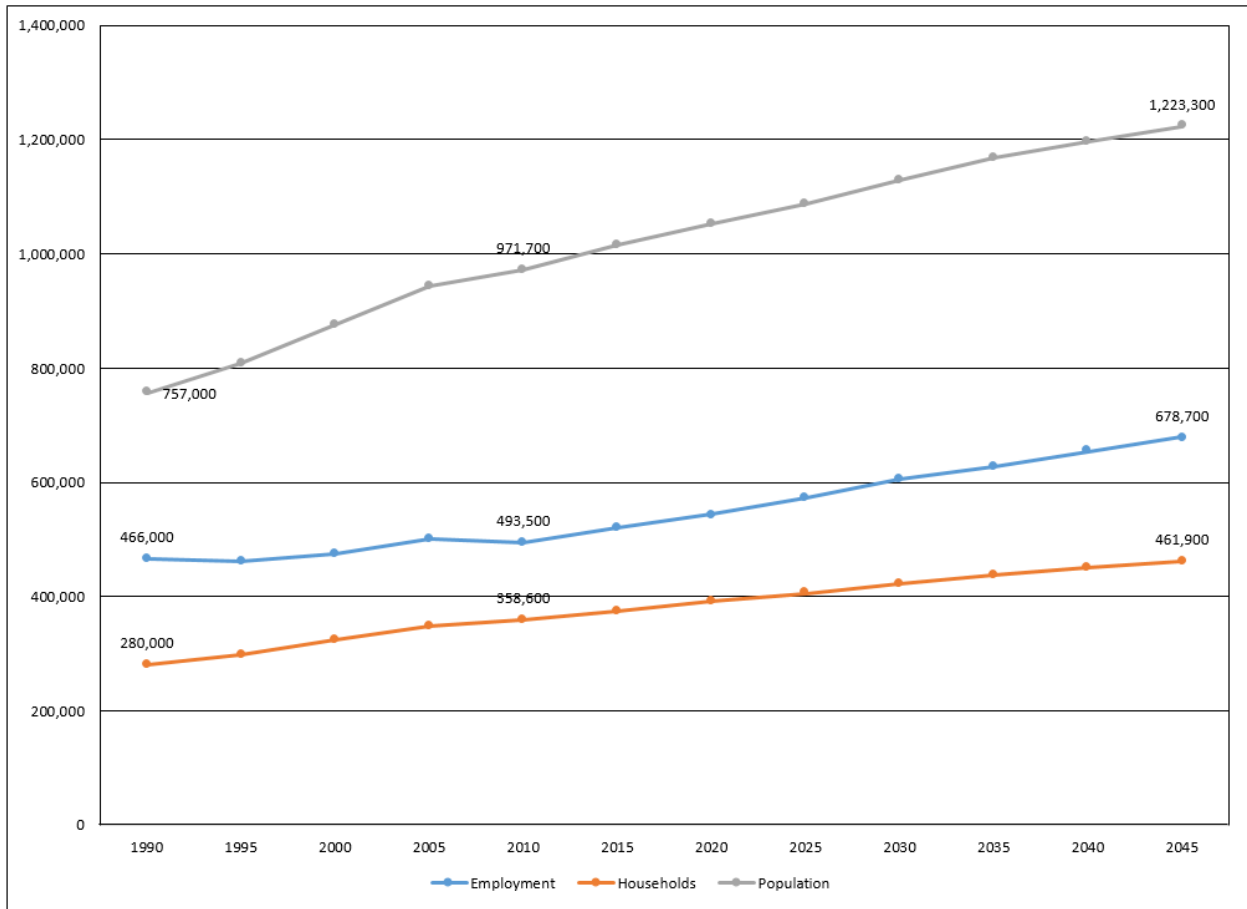
resident moving into the County. Montgomery County remains competitive for this young adult and family market, offering job opportunities, housing choices spanning from rural and suburban neighborhoods to walkable, transit-oriented communities, all with a highly regarded public school system, and desirable quality of life.

Alternatively, the baby boomer household may choose not to move and age in place after postponing retirement, either by choice or financial necessity. If a significant number of seniors decide to age in place or delay moving out, these actions may depress housing turnover in the neighborhood, stalling the traditional “housing ladder” opportunity for young families to move into and revitalize the area. The limited supply of houses reaching the market may increase the difficulty for younger buyers to find or afford a home. The next 10 years will tell whether economic and housing market conditions will generate competing housing needs or an ample housing market supply as aging baby boomers and millennials debate their next life-cycle decisions.

Pace and Pattern of Growth

Montgomery County is expected to face considerable growth in population and employment in the coming years. County households are forecasted to increase from about 358,600 in 2010 to 461,900 in 2045—a 103,300 household increase in 35 years (or 28.8 percent). In this same period, the population is also expected to increase by 25.9 percent or 251,600 persons, totaling a population of approximately 1.2 million in 2045. Likewise, by 2045 the County is forecasted to have 678,700 non-homebased jobs, a 37.5 percent (or 185,200 jobs) increase over 2010.

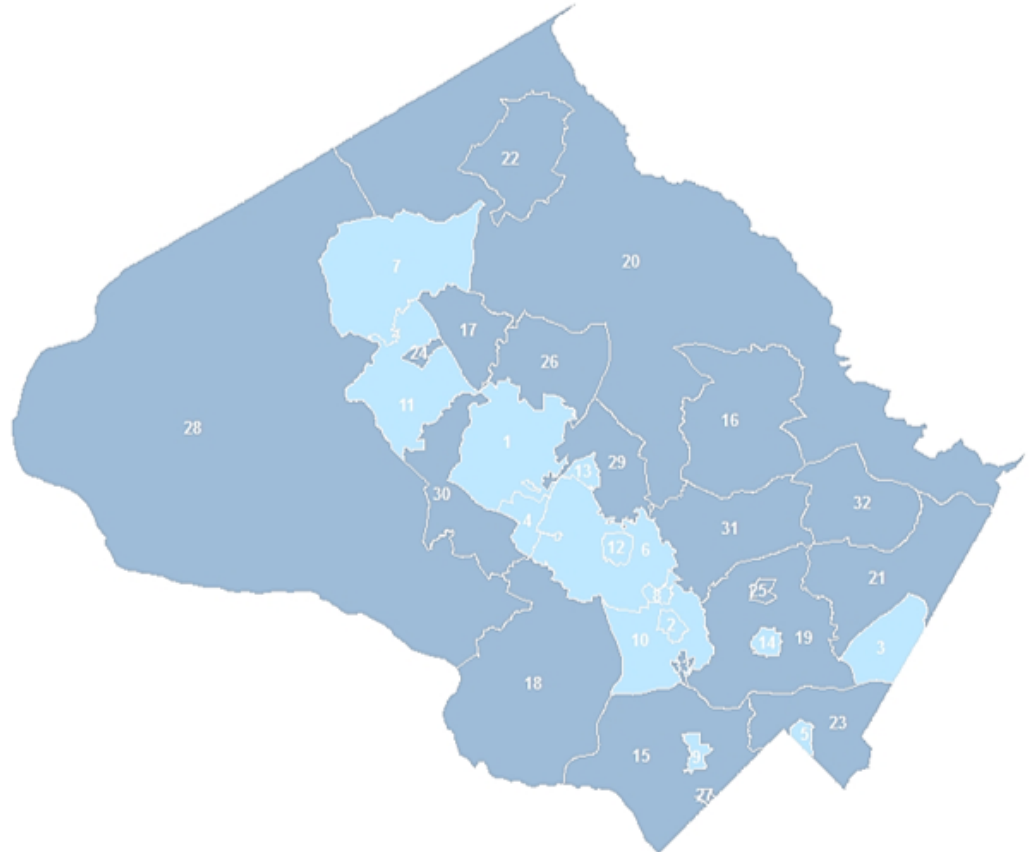
Figure 3. Employment, Household, and Population (1990 to 2045)



The pattern of this growth will be increasingly concentrated in policy areas along the Interstate-270 corridor and in Down-County urban areas, ranked 1 through 14 in *Map 1*. These policy areas, which account for about 14 percent of the County’s land, will take in the largest share of the growth in jobs and housing; they will absorb approximately 82 percent of new jobs, 76 percent of new households, and 73 percent of population growth.

Map 1. Forecasted Patterns of Growth (2010 to 2045)

Rank	Policy Area Name
1	Gaithersburg City
2	White Flint
3	White Oak
4	R&D Village
5	Silver Spring CBD
6	Rockville City
7	Clarksburg
8	Twinbrook
9	Bethesda CBD
10	North Bethesda
11	Germantown West
12	Rockville Town Center
13	Shady Grove Metro Station
14	Wheaton CBD
15	Bethesda/Chevy Chase
16	Olney
17	Germantown East
18	Potomac
19	Kensington/Wheaton
20	Rural East
21	Fairland/Colesville
22	Damascus
23	Silver Spring/Takoma Park
24	Germantown Town Center
25	Glenmont
26	Montgomery Village/Airpark
27	Friendship Heights
28	Rural West
29	Derwood
30	North Potomac
31	Aspen Hill
32	Cloverly
33	Grosvenor



Note: Rank for share of growth calculated by averaging each policy area's employment growth rank and household growth rank.

Source: 2010 to 2045 figures, Round 9.0 Cooperative Forecast. All data tabulated by the Research & Special Projects (RSP) Division.

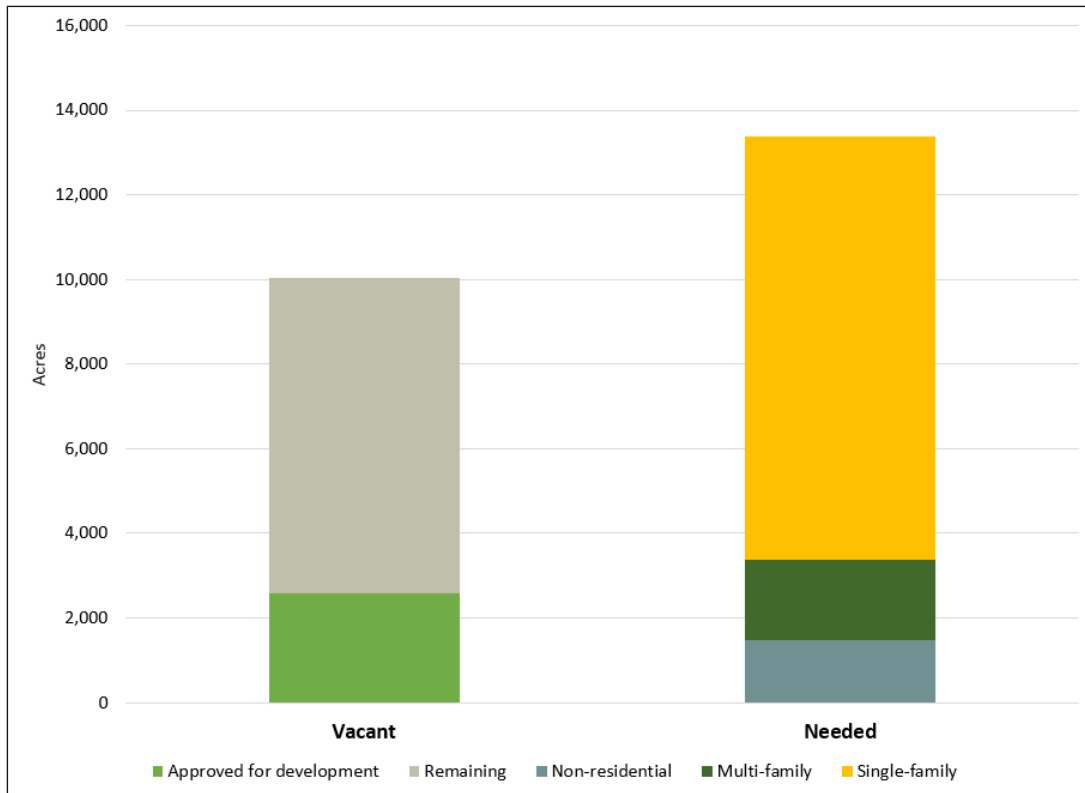
Two factors explain the concentration of forecasted growth in these policy areas: the lack of vacant, developable land throughout the County and recent master plans calling for increased zoning capacity to incentivize the redevelopment of areas with existing infrastructure.

When looking at County land outside the cities of Rockville and Gaithersburg, about 299,400 acres, only three percent (or 10,031 acres) of that land is vacant and developable. Of this vacant land, 2,576 acres, or 26 percent, is already in the pipeline of approved development projects. The vacant land remaining is fragmented and scattered. Many of these parcels measure a third of an acre or less and some have environmental restrictions, such as steep slopes, that make their development potentially unfeasible.

The forecasted growth in the County outside of Rockville and Gaithersburg cannot be accommodated on the small amount of vacant developable land remaining. A more efficient development pattern is needed to accommodate new residents and businesses. Using average densities approved for new construction since 1996, it is estimated that about 1,470 acres will be required to support the new commercial development needed to accommodate expected job growth from 2010 to 2045. However,

some of this development pressure could be alleviated by using vacant office space outside of Rockville and Gaithersburg. As of the first quarter of 2016, this equaled approximately 8.3 million sq. ft., potentially reducing the estimated need for additional office space by about 136 acres. Using average lot sizes for existing homes by type and area of the County, forecasted single-family household growth will require about 9,980 acres, and multifamily growth will require almost 1,920 acres by 2045. This total demand for commercial and residential land (about 13,370 acres) surpasses the total amount of developable vacant land by more than 3,340 acres (see *Figure 2*).

Figure 4. Estimate of Land Needed for Forecasted Growth (2010 to 2045)



For the next 20 years, and certainly beyond, more *efficient* use of land is essential. Our master planning efforts reflect this reality and have taken advantage of real opportunities for economic development, environmental mitigation, and healthier lifestyles that this future presents. Plans like the Westbard and White Flint sector plans can be a catalyst for redeveloping older structures and large parking lots into high-quality, mixed-use communities that take full advantage of their close-in or Metro accessible locations.

Future growth will also need to be accompanied by the need to preserve the environmental resources and health benefits valuable of the open space. Saving important resources and enhancing those degraded by past development practices promise a greener, healthier future for our County. Both the park acquisitions recommended in our master plans and the Forest Conservation Program continue to

provide the green areas that serve our communities. Expanded efforts to integrate green areas in our more urban master and sector plans are essential to ensuring livable neighborhoods.

How we grow affects the costs of such growth for both County and household budgets. Growth patterns also have cost implications for our natural environment and human health. The County's pattern of dispersed single-family home development has led to large public expenditures on infrastructure requiring ongoing maintenance costs. Compact, transit-accessible, walkable, mixed-use redevelopment in our urban centers allows cost-effective reuse of existing infrastructure. For example, with 50 percent of our large water mains in need of replacement, redevelopment presents a real opportunity to upgrade the existing system as part of the redevelopment process. Adding new residents to an already served area increases revenue that can be used to offset the cost of repairs, as opposed to the cost of adding new water and sewer pipes in greenfield areas. Furthermore, redevelopment decreases per capita energy use in buildings and brings down total vehicle miles travelled by giving residents greater multi-modal options for accessing employment, retail, and cultural activities.

Household budgets also feel the impact of dispersed development. When examining the costs of a mortgage or rent costs combined with commuting expenses, it is clear that density and transit access can keep affordability at manageable levels. Data on Montgomery County from the Chicago-based Center for Neighborhood Technology shows that households in urban centers near transit tend to spend less than 45 percent of their incomes on combined housing and transportation costs, while other households spend a higher percentage.

Higher densities and mixed uses also mean more efficient growth in tax revenues. On average, the County reaps more than three times the tax yield per acre from a townhouse than from a single-family detached house. The revenue per acre of office and multifamily buildings of five or more stories dwarfs that of other land uses. Mixed uses bring even higher revenue per acre—even with buildings of less than five stories. A mixed-use high rise averages more than twice the tax revenue per acre than an office high rise and 50 percent more than a multifamily high rise.

Quality of place also adds value. Buildings near parks and open space can be valued as much as 20 percent higher than others. Quality urban parks and open space can provide community gardens, play and gathering spaces, as well as programmed spaces for events and farmers' markets. These opportunities create a more vibrant community as well as an environmentally sound way to distribute food while spurring the local economy.

The County's current development pattern places a burden on our natural resources. The costs of the clean air and water we enjoy are often internalized by government entities that must restore streams and wetlands, replace bridges and repair deteriorating building and/or paving materials. These costs could be reduced by encouraging development patterns that enhance environmental conditions.

The County's plan for growth through redevelopment can help reduce pollution by incorporating stormwater controls where there were none before. Turning parking lots and low density commercial

areas into mixed-use buildings with underground parking and integrated green spaces can improve water quality, especially in areas that were previously developed with inadequate green space and stormwater management. Redevelopment can help improve air quality by reducing the use of automobiles and providing more energy-efficient communities, streets, and buildings. Redevelopment will play an important role not only in improving the County as a place to live, but also in achieving local and regional air and water quality standards.

An environmental approach to redevelopment involves urban design that incorporates innovative and creative community design. It considers enhanced and networked urban green space and tree canopy, Environmental Site Design (ESD), and greener building design to achieve multiple objectives. Enhanced urban green spaces can improve human health and quality of place in concert with local parks, as well as through networks of urban greenways linked to other communities and to the County's wealth of natural green areas and abundant parklands.

Development patterns focused on a single mode of transportation and single land use often decrease walking or biking, create the need for a car in order to get anywhere, and add more emissions to the air and Earth's atmosphere. Our future growth must provide multi-modal transportation options and make active transportation—human-powered modes like walking and biking—a viable way to access goods and services and improve our health at the same time.

We cannot build enough roads to allow room for the majority of County residents to drive in single-occupant vehicles for all of their daily needs. The County's proposed bus rapid transit (BRT) network will increase accessibility and mobility for many residents without requiring them to drive. Investments in complete, multi-modal streets and safer pedestrian and bike accessibility around transit stops will increase mode share in non-auto modes of travel and will play a role in curbing vehicle emissions and trimming our waistlines. The BRT network may also provide connections to future mixed-use centers.

Preservation of and access to parks, open space and the beauty of the natural world contributes to the health of both the environment and residents. A recent change to our forest conservation laws now allows some of the mitigation money provided by developers to be used to meet urban tree canopy goals, such leafy shade will improve the quality of place, air, and health in the urban areas where we wish to concentrate growth. Trees increase the energy efficiency of buildings, reduce heat island effect, and create wildlife habitat, making our urbanizing centers more attractive, pleasant, and livable.

Additionally, park planning has become increasingly integral to the master plan and sector plan process as traditional centers are redeveloped. Greener pedestrian and bike trails that connect to natural resources outside urban areas, as well as internal recreational loops like those proposed in White Flint and the Great Seneca Science Corridor, give residents greater opportunities and incentives for a healthy and active lifestyle, with parks, recreation centers, and other public facilities accessible by active transportation.

Infrastructure Conditions

Planning for the future requires the use of more sophisticated tools to meet changing conditions and opportunities than the simplistic approach of allowing or withholding development approvals based on the capacity of the infrastructure. Our focus has shifted to addressing the needs of the system in advance of development, employing the help of those who wish to build. This section summarizes how the current SSP manages growth with respect to transportation, schools, water and sewer, and environmental conditions.

Transportation

Inherent in the SSP is the consideration of appropriate tools and resulting measurements for assessing current and future travel conditions in terms of adequacy and; - by extension, the approach used to assess land use and transportation balance in master plans.¹ Several issues need to be taken into account when evaluating different tools and metrics, as they are currently applied or might be applied in the future.

Do the tools and resulting metrics measure what is important to the community?

This question has been at the center of discussions about SSP since the last review of the policy in 2012. While there appears to be a general acknowledgement that the County has a technically sound and relatively well documented and time-tested approach, some stakeholders are concerned that select tools and metrics lack transparency and relevancy, especially in terms of alignment with master plan goals and other policy guidance. The discussion more often than not is focused on the two main components of determining the adequacy of the transportation network under SSP – the local area test and the policy area test.²

Local Area Transportation Review (LATR)

Local Area Transportation Review (LATR) is the local test used to evaluate the capacity of intersections affected by proposed development. Currently, a primary tool used for determining adequacy with respect to LATR is estimating Critical Lane Volume – the maximum traffic volume per lane – at roadway intersections. The CLV estimates are determined through conventional Traffic Impact Studies that take into account existing traffic volumes, new surrounding approved development, and programmed improvements to the transportation

¹ For the purposes of this discussion, “tools” consist of travel forecast models, GIS applications, real time data collection, automatic passenger counters, Synchro traffic software, etc. that produce “metrics” or measurements of performance like forecast traffic volumes and speeds, transit ridership, and measurements of delay – usually expressed against some recognized standard.

² It is important to note that different metrics can be – and most often are – used in different contexts. Some metrics may be limited to monitoring while others may be used in assessing different land use scenarios in master plans. Others may be used only in a regulatory context. Additional discussion related to this topic is presented later in this report.

network. Level of Service (LOS) is a traffic engineering term that describes the relative operating conditions and congestion levels on a segment of roadway or an intersection. There are six levels ranging from free flowing (Level of Service A) to very heavy traffic, extremely unstable flows and long delays (Level of Service F).

Critics note that in their purest form, LOS and CLV metrics, as currently used, measure adequacy in terms of how well an intersection accommodates autos (only) and that intersections are for the most part, analyzed in isolation with little or no consideration given to the overall transportation network. The typical “fix” dictated by this approach is to provide additional through or turn lanes at the expense of pedestrian and bike level of service and safety. Proponents of the tools note that the CLV metric has served as a reasonable and valuable screening tool for identifying traffic impacts at specific intersections – especially in more auto-centric areas of the County, and that the policy area thresholds vary to reflect different settings.

Transportation Policy Area Review (TPAR)

The current area-wide test for travel by auto is based on a level of service threshold for arterial roadway segments (as opposed to intersections) within any specific policy area. The key metric is the percentage of free flow speed attainable in the peak travel direction in the evening peak period with the results weighted by vehicle miles of travel to reflect the effect on the overall network. The tool that produces the metric is the Planning Department’s Regional Travel Demand Model. The model itself is a source of concern to some stakeholders as being too opaque, dependent on changing land use forecasts, and providing a snapshot of a condition that is too often dependent on land use and transportation facilities outside of the policy area in question. However, one of the most common views in favor of the tool is that the measurement is a close approximation of what drivers care the most about - travel time - now and in the future.

TPAR also includes a transit “test” that includes three metrics – service frequency, service coverage, and hours or span of service. The transit test was specifically noted in the last SSP review as needing modification. The variables do not readily transfer from a Capital Improvements Program or a Long Range Plan and are therefore difficult to forecast. In the case of the Countywide BRT network it is unclear how the network and resulting impact would be evaluated using the current metrics of service frequency, coverage, and hours or span of service. In summary the issue is not so much one of not being able to measure relative service levels among policy areas using the transit test as it is the open-ended nature of assumptions that would have to be made regarding the three variables since they cannot be predicted.

School Capacity

The SSP defines adequacy for school capacity by establishing thresholds for school use. These thresholds are used in the annual school test to determine whether residential development within a particular

area will be subject to an assessment (School Facility Payment) or a moratorium on residential construction.

The adequate school capacity calculation compares projected enrollment numbers with existing and planned facility capacity. The current SSP school test uses a definition of facility capacity based on Montgomery County Public School (MCPS) program capacity. Program capacity is the number of students planned per classroom per school level (elementary, middle or high school) based on curriculum standards. In other words, a typical high school classroom can hold up to 25 students; however, if it is used for ESOL instruction, it can only hold a maximum of 15 students.

Since 2007, there has been a marked increase in school system enrollment—especially at the elementary school level. One factor in this growth was the state mandate for public schools to provide full-day kindergarten programs.

The enrollment factors are, in some years, difficult to predict. One unexpected consequence of the recession was an unprecedented surge in enrollment that began in 2008. This sudden change in the enrollment trend was particularly pronounced in Down-County elementary schools (Bethesda-Chevy Chase, Walter Johnson, and Richard Montgomery clusters), communities that have seen little new housing construction. Catching up to these rapid increases in enrollment is challenging, and may take several years as school capacity projects are planned and funds requested through the County's Capital Improvements Program (CIP).

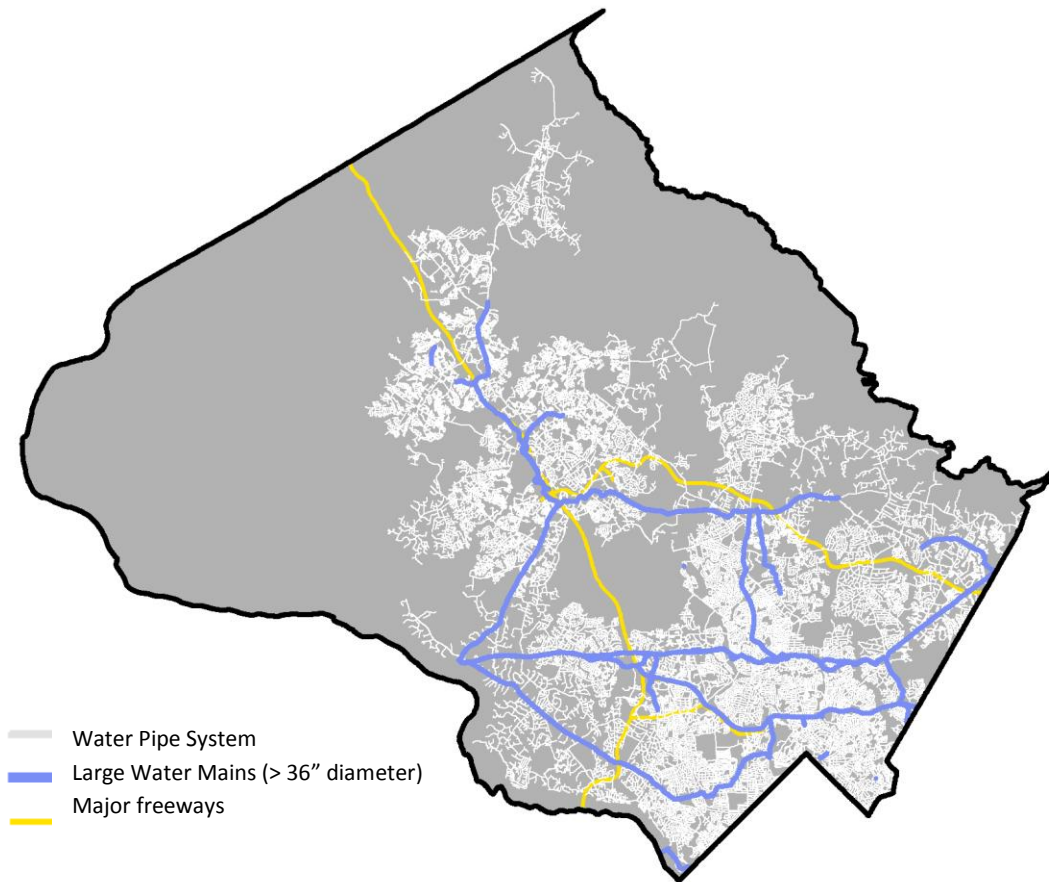
The Annual School Test evaluates school utilization levels in the County's 25 school cluster areas at the elementary, middle, and high school levels (referred to in the SSP Resolution as grade levels). Each year, MCPS prepares the data on school cluster utilizations for the Annual School Test; the Planning Board adopts the results to become effective starting on July 1 and the standards apply to the following fiscal year. These results indicate whether a School Facility Payment is required or if a certain school level within a cluster will be in moratorium.

Water and Sewer Service

The Washington Suburban Sanitary Commission (WSSC) delivers drinking water from the Patuxent and Potomac Rivers to consumers in Montgomery County through filtration plants, a series of pumping facilities, transmission mains and storage facilities. Once this water is used, the sewerage system collects and conveys it to sewage treatment plants in the County and the District of Columbia. The County's water distribution and sewage collection system is aging, and maintenance and replacement of this infrastructure is vital for continued adequate public water service. The system provides for fire suppression and a potable water supply, along with treatment of sewerage before it is discharged to our rivers and the Chesapeake Bay. WSSC also strives to prevent stream erosion and adverse water quality impacts that result from water and sewer line breaks.

One important concern in the upkeep of this infrastructure is the monitoring and eventual replacement of large, high pressure water mains. These mains distribute water to all parts of the system and help maintain adequate service and pressure. Unfortunately, some of the materials in these pipes are beginning to fail and can cause catastrophic consequences from explosions and flooding if the potential for failure is not caught in time. While these pipes are closely monitored and WSSC has allocated substantial funds to repair and replace them, it is difficult to take them out of service and still maintain proper water distribution and pressure. More than 88 miles of these pipes extend through Montgomery County.

Map 2: Water Pipe Infrastructure



Accommodating the County's future growth through redevelopment of traditional centers presents excellent opportunities for improving and funding water supply and wastewater treatment infrastructure without extending water and sewer service beyond the current service area. Redevelopment and infill adds revenue and users to the existing infrastructure, allowing more funds to be used for system repairs and replacement. However, a determination of whether the existing infrastructure in these centers is sufficient to handle the projected increase in development is necessary.

Environment

Montgomery County is an integral part of the Washington, DC metropolitan area and its decisions affect the overall health and sustainability of the region. Meeting and maintaining increasingly stringent environmental standards remain an ongoing challenge, especially in light of continued growth. This is true for both water and air quality standards.

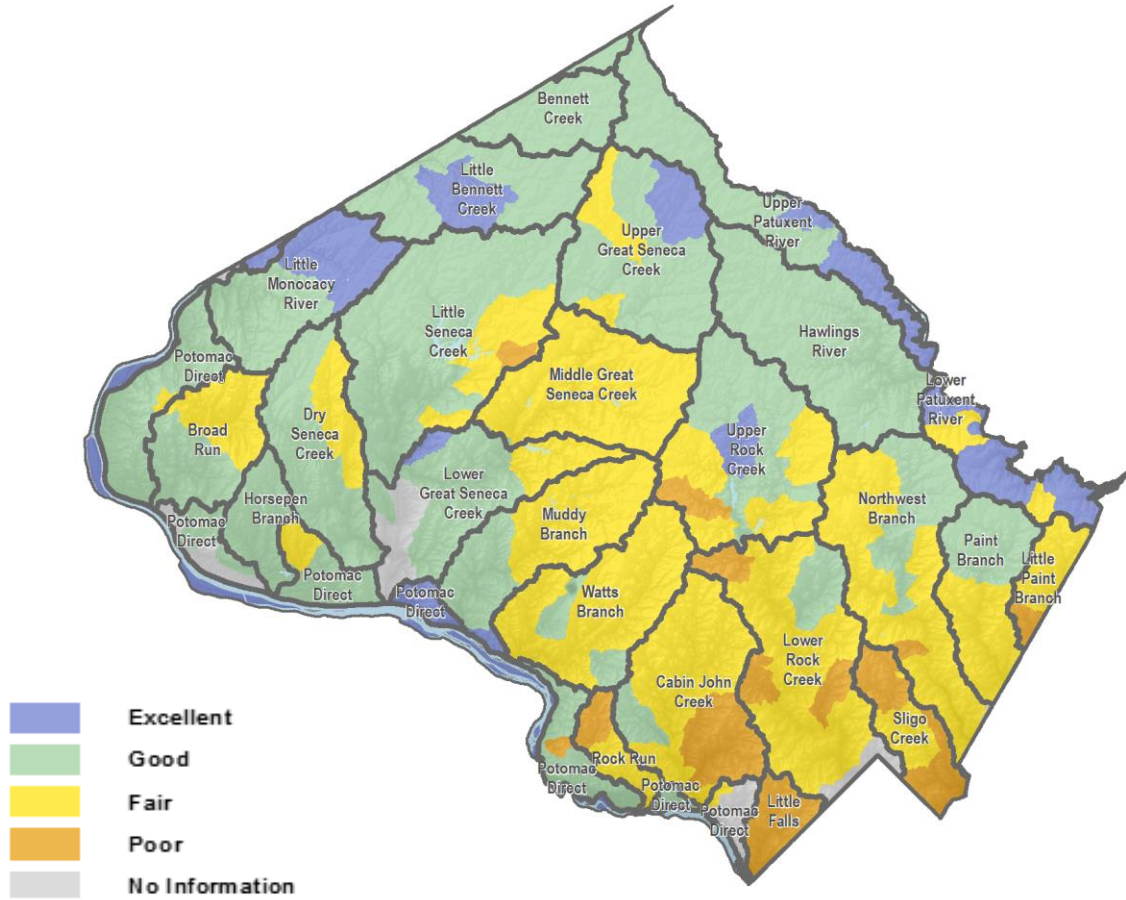
Although there are as yet no Adequate Public Facility Ordinance-like tests for environmental quality, as the County continues to develop, environmental health is becoming an increasingly important factor in deciding how we grow. Currently, environmental issues associated with growth and development are being handled through existing planning and regulatory processes. With continued growth, however, clean water and air will continue to increase in importance as vital components of achieving overall sustainability.

As a result, ways of optimizing the environmental values of redevelopment and infill development are being pursued in master plan updates and development review processes. In the future, environmentally-related issues may become more prominent in Subdivision Staging Policy updates, with some aspects, such as the adequacy of urban parks, potentially being included in APFO considerations.

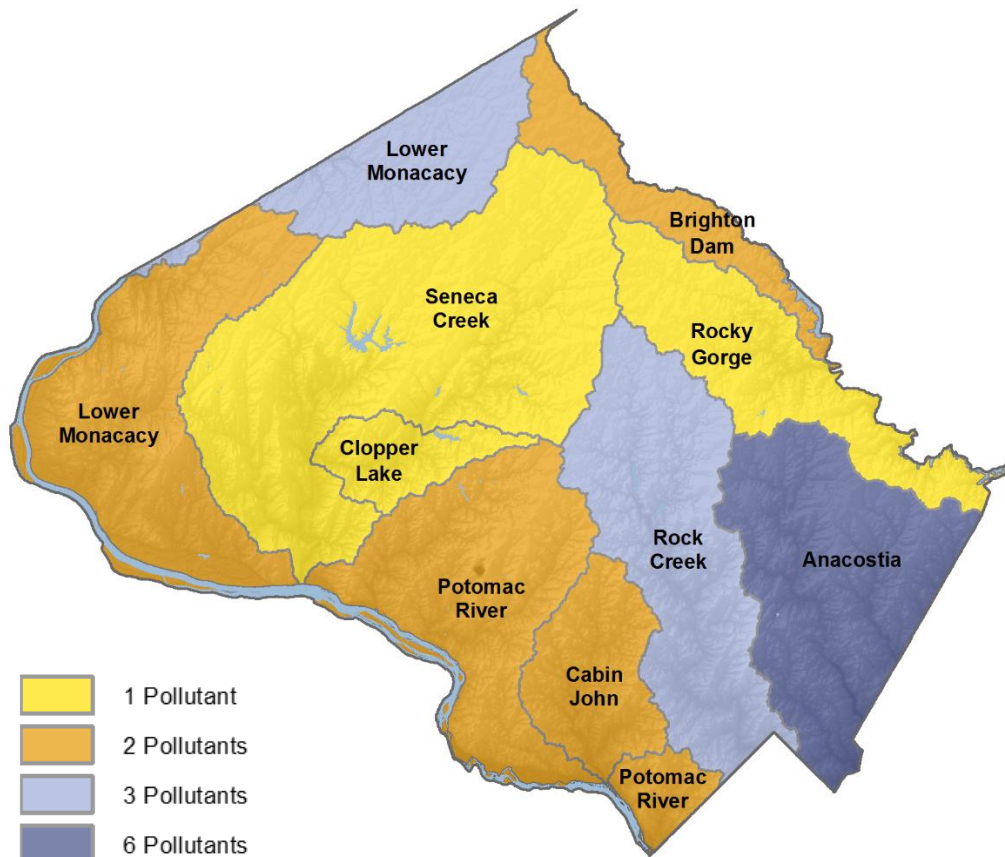
Water Quality

Decreased natural land cover and continuing losses, increased impervious surfaces and associated stormwater runoff are reflected in the steady decline of water quality in the County's streams. A general pattern of declining stream health follows the pattern of development (see *Map 3*). The worst conditions are in areas developed before strict requirements were in place to reduce pollution and the amount of runoff. Degraded water quality has led to new state and federal government regulations to improve degraded streams to meet water quality standards. These requirements are known as total maximum daily loads (TMDLs)—the maximum amount of a pollutant that a water body can receive and still meet water quality standards (see *Map 4*).

Map 3: Stream Conditions 2013



Map 4: Restricted Pollutants by Watershed, 2016



For jurisdictions throughout the Chesapeake Bay watershed, reducing pollutants to meet these requirements and continuing to meet them while the population and employment base continue to grow, will require a significant commitment and investment. The County is in the process of determining how to reduce pollutant loads to meet and maintain water quality standards.

To help reduce the costs of meeting TMDLs and increase the range of implementation options available to local jurisdictions, the state is looking at how pollutant trading and growth offset programs might work to counterbalance increased pollution contributed from new development, especially in greenfield areas. The County, in turn, is considering how it might use these programs to achieve its pollutant control and growth goals.

Since potential for greenfield development in the County is limited, expected growth is planned to be accommodated mostly through redevelopment and infill. This infill will allow most of the expected increases in population to occur within existing developed areas that already have transportation and water and sewer infrastructure. Redevelopment affords the potential not only for socio-economic enhancements, but also environmental improvements over existing conditions. It offers opportunities

to improve stormwater management, tree canopy and other green spaces in older developed areas that are environmentally-impaired.

Air Quality

As with water quality, the County's air quality has been negatively affected as the County has continued to grow. Air quality standards exist and ongoing monitoring tracks the County's and the region's compliance with those standards. Both the County and the region continue to show non-attainment of ground-level ozone air quality standards.

In 2009, the County adopted a Climate Protection Plan that specified a number of goals and recommendations. Achieving these goals is turning out to be even more challenging than expected. As a result, it is becoming increasingly important to seek new ways to enhance air quality in growth-related decisions.

As with water quality, redevelopment provides opportunities to increase local and regional air quality, not only through improving transit options, decreasing vehicle use, increasing walkability and bikeability, and creating more energy-efficient buildings, but also through incorporating green spaces and green buildings as integral parts of communities.

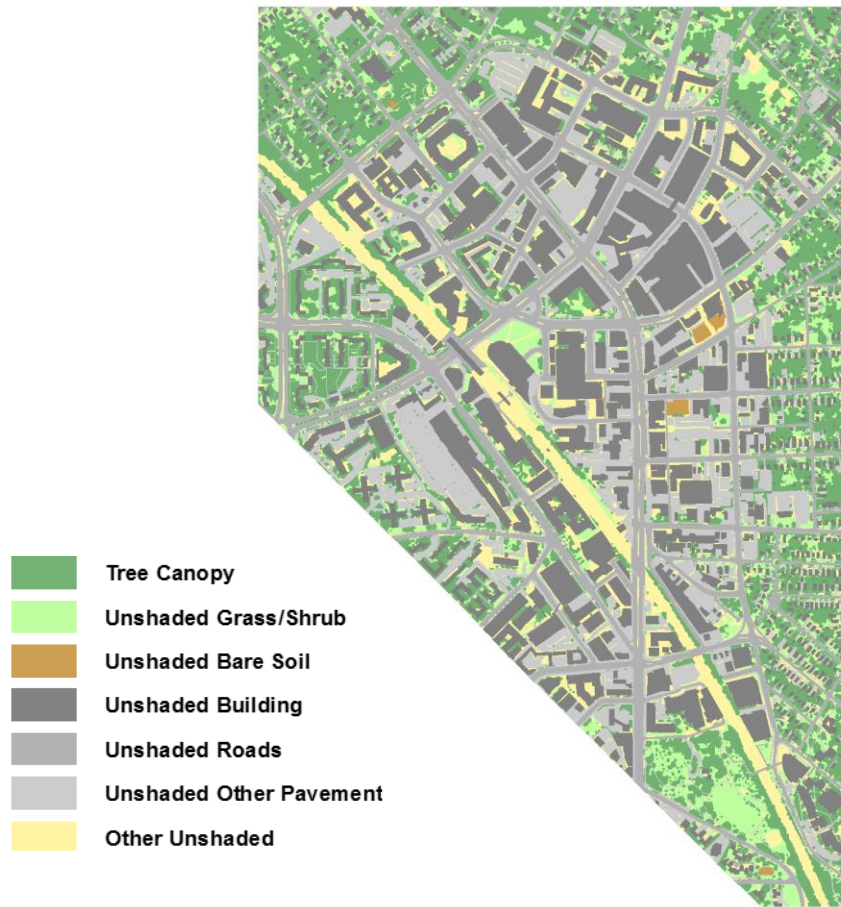
Forest and Urban Tree Canopy

In both local design and networked green spaces, forest and tree canopy are essential elements of quality of place and livability. Trees increase energy efficiency, reduce heat island effect, improve air quality, extend pavement life, enhance pedestrian-vehicular safety, boost real estate values, make retail areas more attractive, absorb water pollution and carbon emissions, and slow stormwater runoff and erosion.

Recent analysis shows forest cover has stabilized at around 30 percent of the County's land area. Much of that cover is situated in our parks and rural areas. In addition, approximately 20 percent of the County is shaded by street trees, individual trees and small groves in local parks and on private property.

While our combined forest and tree canopy of almost 50 percent is commendable, our urban centers are often a sea of buildings, roads and parking lots with very little tree cover to shade hot pavement, filter air and water, and provide relief to those who live and work in these areas. Redevelopment in traditional centers is an opportunity to improve urban tree canopy, air and water quality, and our quality of life. *Map 5* shows the Silver Spring, CBD as an example of a highly urbanized area.

Map 5: Silver Spring CBD, land cover



Parks

With the scarcity of developable land and the increase in density in urban areas, park planning in area master plans has become more critical to creating livable and healthy communities. The trend in real estate development is to replace lower density residential development with higher density residential and mixed-use buildings. The significant increase in density makes parks and open space areas the “outdoor living rooms” for many of these new communities. Without space for large private backyards, public parks and trails play an increasingly important role in improving public health and promoting social interaction and equity. Access to urban parks is a critical and necessary element of achieving one of the primary County goals, to promote community welfare and quality of life.

With the increased competition for land, a mix of uses and an integration of infrastructure should occur within the same site. One example would be to build rain gardens to manage stormwater run-off and also serve as landscape features. Integrating parks and recreation areas with other services can reduce costs by providing local amenities within walking distance, reducing impervious surfaces and recharging groundwater supply, and removing pollutants from water.

Sustainability requires integration of efforts and preventive measures to avoid waste of resources. This approach is especially critical in urban areas where high density puts a strain on older infrastructure. A

level of coordination among different County agencies, including alignment of objectives, development schedules, and dedicated funds will be required.

The heightened focus on parks in our most populated areas has resulted in many urban park recommendations in area master plans. The greatest challenge for implementing these new urban parks is land acquisition. Existing acquisition tools are insufficient to create all the parks that are needed.

While we can expect some new urban parkland to be created by the traditional tool of dedication through the regulatory review process, many properties are too small to fit both development and adequate open space. Typically, building footprints and infrastructure require the majority of the site, leaving only small fragments of open space.

Even with current and newly proposed zoning to encourage dedication, some new urban parks will need to be directly purchased with public funds. Urban parkland acquisition can be very challenging as property owners often wish to pursue development to maximize their investment, rather than sell at the current market value, resulting in very few willing sellers in urban areas.

New zoning tools have been proposed to make dedication of public parkland easier in urban areas. For instance, the Bethesda Downtown Sector Plan draft proposes a density-transfer mechanism that creates incentives to transfer density from proposed park sites to locations where development is desired. The Parks Department would then acquire the sites, from which the density was transferred with no development potential, at a much-reduced price.

There is no guarantee that the public sector will be able to acquire all the urban parks recommended in area master plans, even with the tools that are existing or under consideration. The SSP is one of several potential tools for this potential acquisition that needs more study.

Recommendations

Transportation

The Subdivision Staging Policy (SSP) transportation elements serve a single purpose: ensuring that new development provides adequate public facilities in an appropriate manner and to an appropriate extent. The SSP is the process by which the County defines the term “adequacy” and by which it defines the nexus between development and transportation adequacy. In particular, the SSP defines the processes for assessing how the travel demand generated by new development contributes to the need for, and the provision of, transportation facilities and services that are explicitly defined in master plans or consistent with those plans.

Key objectives of the SSP transportation element include:

- Recognizing that the County’s communities span a variety of land use environments with a continuum of place-types across urban, suburban and rural areas, and the County’s area master plans, zoning and other supporting policies reflect the varied expectations in each environment for convenience of travel by car, transit, bike or on foot.
- Ensuring that both private sector development and public sector infrastructure proceed in a coordinated fashion toward the end state envisioned in master plans.
- Incentivizing development attributes that improve the efficiency of the planned transportation infrastructure through the management of travel demand and parking.

There are four means by which the development approval process affects the provision of transportation capacity, described below from the broadest to the narrowest focus:

- The Transportation Impact Tax assesses the degree to which all development contributes to funding the provision of significant master-planned transportation projects that the County is responsible for constructing. The impact tax, governed by Section 52 of the County Code, is not technically part of the SSP, but it is integral to the consideration of transportation impacts. The Working Draft recommends changes to the impact tax that would be implemented concurrently with the SSP revisions.
- The policy area review process, currently called Transportation Policy Area Review (TPAR), assesses the degree to which conditions in the development site’s Policy Area are adequate from an aggregate perspective.
- The Local Area Transportation Review (LATR) process assesses the degree to which conditions in the immediate vicinity of the development site are adequate, where the vicinity of the site is determined by the size of the project.
- Finally, many site development approval conditions related to transportation are derived from other elements of the regulatory process, notably site design, access and circulation, based on design standards that are independent of the SSP.

Motivation for changes to the transportation adequacy tests

Extensive outreach has demonstrated several concerns about the transportation test in the current SSP, with the concerns generally captured by the following overarching problems that are addressed in this Working Draft.

- Too complex and unpredictable:
 - The level of complexity and uncertainty in conducting LATR is confusing to many members of the public.
 - The cost and uncertainty of LATR can be a deterrent to the private sector applicant, particularly for smaller infill sites in more developed areas.
 - Too many LATR studies result in a finding of no impact. Many studies that do identify impacts lead to solutions that are more effectively implemented by the public sector, particularly in more developed areas.
- Too focused on auto-oriented problems and solutions:
 - The current processes, LATR and TPAR, rely too heavily on analysis of roadway capacity.
- Assessment of adequacy does not reflect a traveler's actual experience:
 - LATR relies heavily on intersection critical lane volume (CLV), which does not reflect travel time, delay or queuing that can result from congested conditions.

Considering Land Use Context

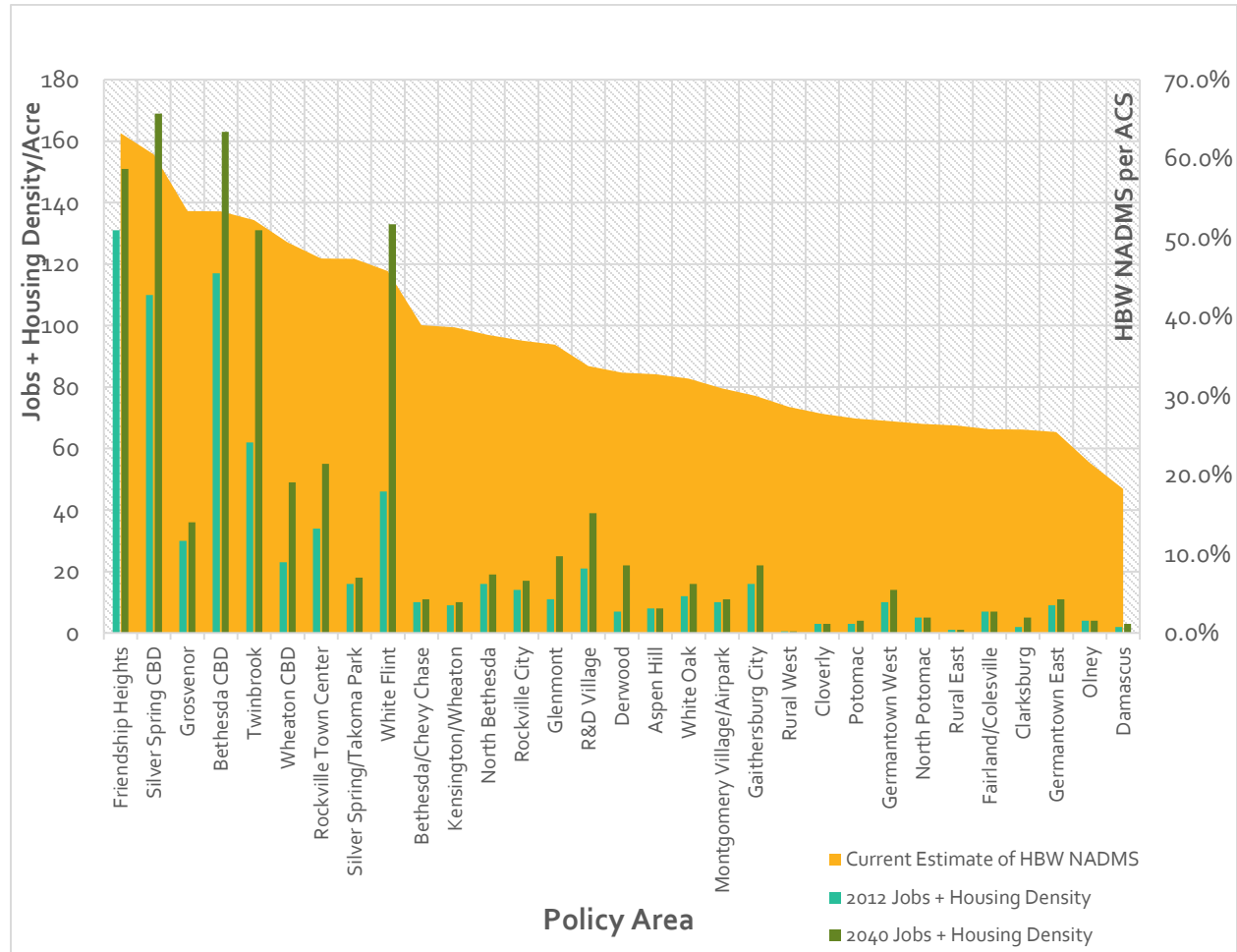
Montgomery County is diverse, ranging from Metrorail-served Central Business Districts like Bethesda and Silver Spring to the rural Agricultural Reserve, with a wide range of built environments in between. The Subdivision Staging Policy has long recognized that the County's transportation needs are not satisfied by a one-size-fits-all approach, but instead require a context-sensitive approach to defining transportation system adequacy, assessing impacts and developing and implementing solutions.

Montgomery County's organizing approach has been to identify Policy Areas that broadly gauge the diversity of places within the County and help assess transportation needs from an area-wide perspective. The County is divided into 40 different Policy Areas that are currently classified in the Subdivision Staging Policy as urban, suburban or rural. However, Policy Areas vary greatly by many characteristics, such as density, land use types, function and capacity of the road network, and availability of transit, bike and pedestrian facilities and services.

Most importantly, the transportation network serving each Policy Area has performance expectations that are established through the master plan process describing how these characteristics are to change over time. A more quantitative accounting as to how Policy Areas differ now and in the future was developed as part of the SSP review process as a means of distinguishing among place types so that the eventual "tests" for adequacy might better align with existing conditions as well as the future vision.

Using existing Policy Area geographies, the Policy Areas were categorized by: (1) observed Non-Auto Driver Mode Share (NADAMS) for work trips; (2) observed land use density and (3) land use density forecasts. The resulting new Policy Area grouping is better aligned with the *1993 General Plan*, area master/sector plans and Road Code guidance regarding place types.

Figure 5: Comparing Existing and Future Density with Current HBW NADAMS by Policy Area



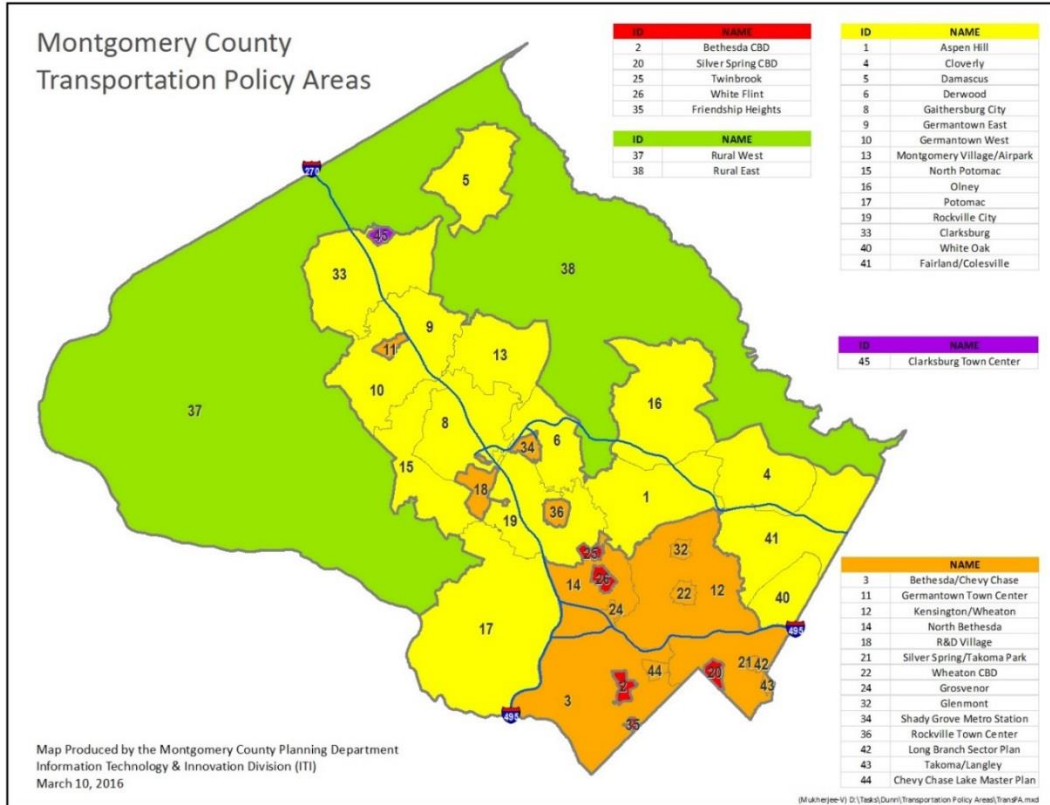
Recommendation: Organize the County Policy Areas into four (4) key categories described as follows and depicted in the map below:

Core: Down County Central Business Districts and Metro Station Policy Areas characterized by high-density development and the availability of premium transit service (i.e., Metrorail/MARC).

Corridor: Emerging Transit-Oriented Development (TOD) areas where premium transit service (i.e., Corridor Cities Transitway, Purple Line/Bus Rapid Transit) is planned.

Residential: The low-density residential areas of the County.
Rural: The County’s agricultural and rural wedge.

Map 6: Policy Areas based on 4 key Categories



One of the challenges inherent in “grouping” the Policy Areas is the need to acknowledge the goal and intent for change over the near and intermediate term – the four to 10-year window on which the SSP analytics are focused. Clarksburg Town Center presents an example of that challenge. It is a place that in the near term will be much closer in context to the original vision of a walkable, mixed-use activity center, but is unlikely, in that same time period, to be served by high quality transit.

Nevertheless, the determination of what might be considered adequate in terms of the transportation network within the Town Center itself would be best served by acknowledging the longer term goals. As a result, the recommendation is to establish a new Town Center Policy Area to reinforce the original vision and eventual extension of the Corridor Cities Transitway to Clarksburg.

Three additional Policy Areas are recommended for the Corridor group in response to the fact that construction funds are now programmed for the Purple Line (scheduled to begin revenue service in 2022). and the Council has adopted three related master plans along the corridor since the last SSP

review – Chevy Chase Lake (October 2013), Long Branch (November 2013) and the Montgomery County part of the Takoma/Langley Crossroads Sector Plan (June 2012).

Recommendation: Establish four new Policy Areas: a Clarksburg Town Center Policy Area categorized as a “Corridor” Policy Area in recognition of the original vision for the Town Center and the planned high-quality transit service to be provided by the Corridor Cities Transitway, and three additional Policy Areas also categorized as “Corridor” Policy Areas due to the programming of construction funds for the Purple Line - Chevy Chase Lake, Long Branch and Takoma/Langley Crossroads (within Montgomery County).

Policy Area Based Transportation Test

In lieu of the current Policy Area transportation test (TPAR), a new transportation adequacy test based on transit accessibility (defined as the number of jobs that can be reached within a 60-minute travel time by walk-access transit) is desirable to better reflect existing and planned multi-modal travel options and transit supportive land use densities, and to better align growth with the provision of adequate public facilities. The proposed definition of Policy Area adequacy is based on the proportion of transit accessibility that can be achieved within the next 10 years based on changes in land use and the implementation of transportation facilities within this timeframe. It is the estimated share of the Master Plan vision, reflecting a 25-year (master) planning horizon, attainable within the next 10 years.

This assessment recognizes that not all Policy Areas are planned to have high levels of transit accessibility. The degree to which areas have high transit accessibility scores is dependent upon the balance and intensity of jobs and households in each area of the County, and the degree to which the area is well connected by transit to jobs elsewhere in the region. The degree of transit accessibility is therefore highly correlated to proximity to the Washington, DC core, where the number and density of jobs are the greatest.

The recommended proposed measure of accessibility is not total transit accessibility, but rather the degree to which the **planned increase in transit accessibility is proceeding at an acceptable pace.**

The transit accessibility metric considers three conditions:

- Current (year 2015) transit accessibility.
- Planning horizon (year 2040) transit accessibility with improvements recognized as fiscally feasible from a regional planning perspective and therefore included in the Constrained Long Range Plan (CLRP)³. Examples of the improvements include the Purple Line and the Corridor Cities Transitway.

³ Planned BRT service in the County is **not** currently reflected in the CLRP.

- Regulatory horizon (year 2025) transit accessibility with improvements included in the state Consolidated Transportation Program (CTP) and County Capital Improvements Program (CIP). Notably, the Purple Line is fully funded for construction by 2025 in the current state CTP, but the Corridor Cities Transitway is not funded for construction at all by the state or County.

These conditions were evaluated in the context of an analysis reflecting the following land use/transportation scenarios:

- **Scenario I:** Year 2015 transportation network in combination with year 2015 land use (Current conditions)
- **Scenario II:** Year 2025 transportation network **excluding the Corridor Cities Transitway (CCT)** in combination with year 2025 land use
- **Scenario III:** Scenario II described above **including the CCT**
- **Scenario IV:** 2040 Constrained Long Range Plan (CLRP) network in combination with year 2040 land use

A general conceptualization of these scenarios and the relevant policy area transit accessibility results are summarized and depicted in Figure 3 and Figure 4, respectively.

The 10-year regulatory horizon (from 2015 to 2025) is 40 percent as long as the 25-year planning horizon (from 2015 to 2040). Areas that have at least 40 percent of their planned 2015-2040 transit accessibility by 2025 are, therefore, considered to be “on pace” with respect to reaching a key indicator of future non-auto travel options and are therefore considered “adequate.” The remaining areas are “behind pace” and are considered to have inadequate transit accessibility. The recommendation is that these areas should pay a 25 percent surcharge on their transportation impact taxes to help fund transit capital projects or transit-access capital projects.

This new Policy Area test addresses concerns that the current process is too auto-centric. It elegantly combines a robust and context-sensitive measure of accessibility with a simple objective of tracking whether or not each Policy Area is on pace to achieve long range objectives for better transit services. The transit accessibility metric is sensitive to the introduction of high-quality transit service such as bus rapid transit (BRT) and to changes in land use density and mix. In addition, the proposed transit accessibility metric can be used to forecast future conditions. The proposed metric is consistent with the transit accessibility metric included in the state’s Open Transportation Investment Decision Act, which became law in April 2016.

The recommended new approach for determining Policy Area adequacy does not mean the TPAR metric of the forecasted percent of free flow speed over major roadway segments within a Policy Area would be entirely abandoned. Staff recognizes that our current TPAR methodology continues to have utility in the planning process and should be retained for use in assessing proposed master plan recommendations, evaluating capital programming needs and supporting travel monitoring efforts. The recommended focus on making transit accessibility the key metric in a regulatory context as part of the Subdivision Staging Policy is an acknowledgment that there will continue to be a limited number of

locations where we will want to widen existing roads or build new roads. As a result, the more practical approach is for the policy to reflect the fact that providing infrastructure improvements that encourage modes of travel other than the single occupant auto, although challenging, is the best way to achieve and maintain adequacy – both in the near and long term.

Figure 6: Conceptualization of Transit Accessibility

The transit accessibility bar charts show the number of jobs accessible by transit within a 60-minute commute for each policy area. For a hypothetical area below, the chart shows that:

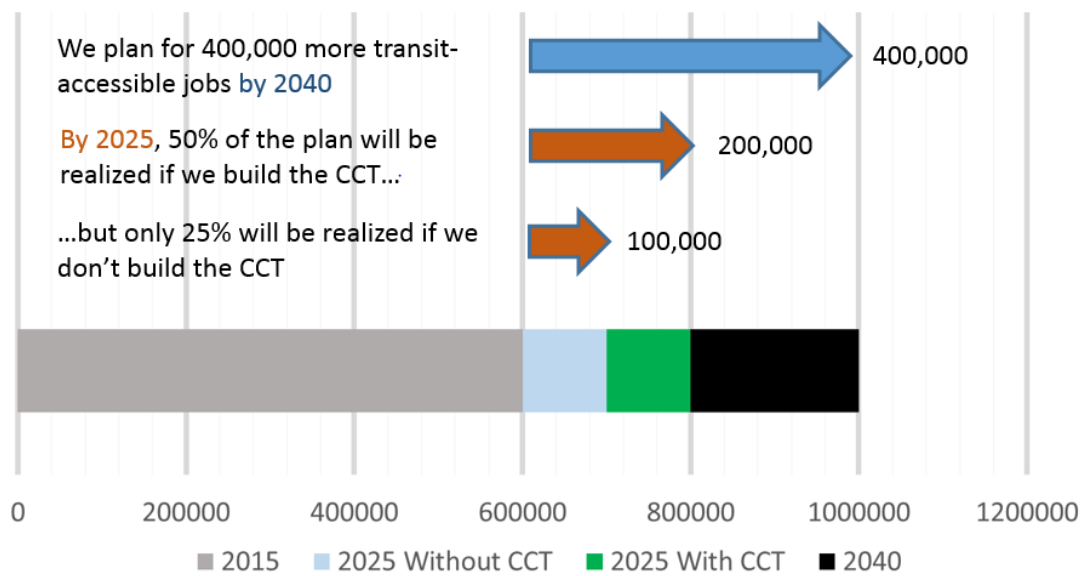
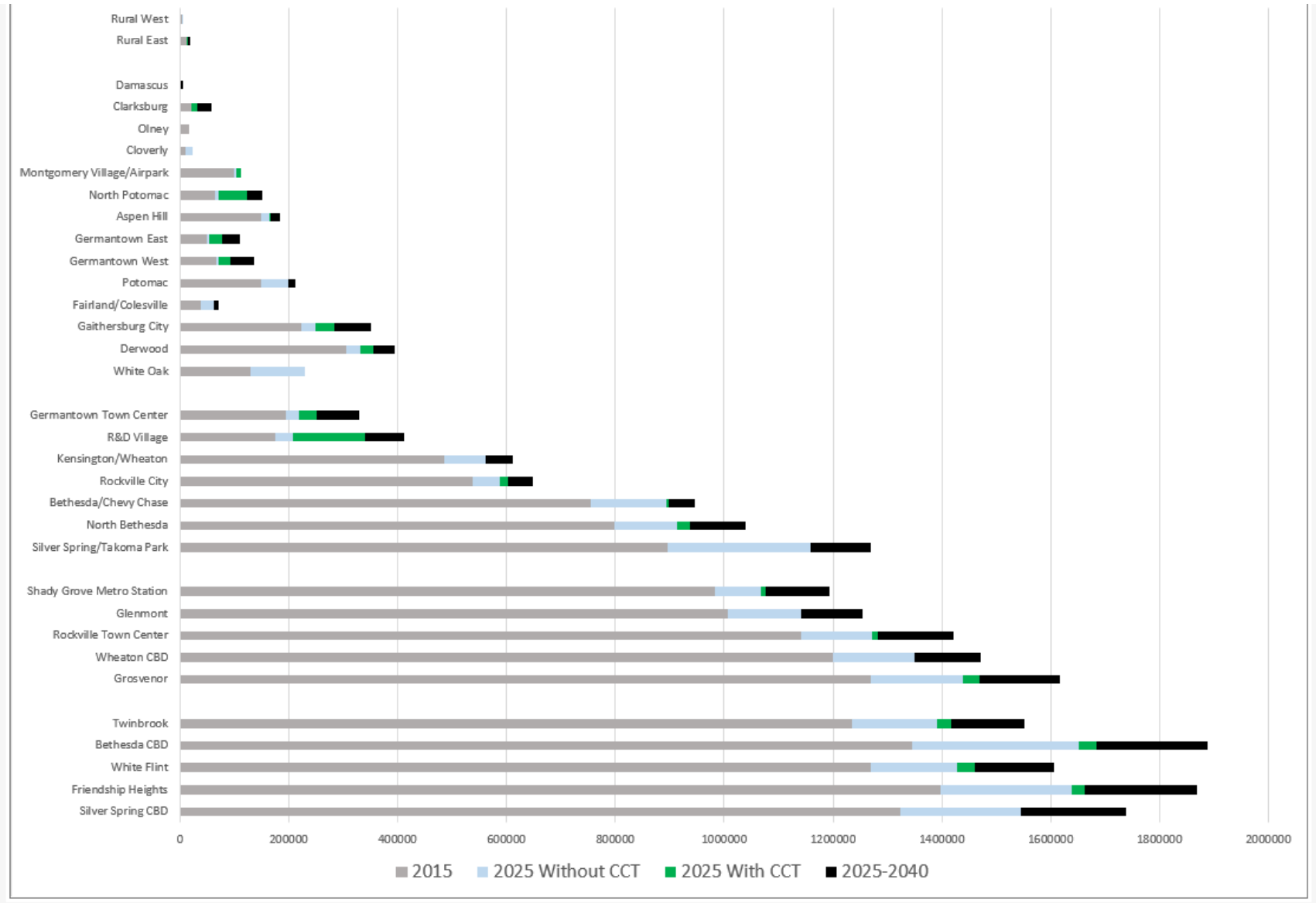


Figure 7: Transit Accessibility to Jobs within 60 minutes by Policy Area



Recommendation: Adopt a new Policy Area transportation test based on transit accessibility.

There would be no need to apply the transit accessibility test in the core Policy Areas as they, by definition (in terms of land use development density and current NADMS), have good accessibility. The Policy Area Test would also not apply in the rural areas since attaining adequate high quality transit in these areas is neither desired nor likely.

Recommendation: Do not apply the Policy Area transit accessibility test in “Core” or “Rural” areas.

Two other metrics considered for application as a Policy Area transportation test were **non-auto driver mode share** (NADMS) - defined as the percentage of journey-to-work trips by travel modes other than single-occupant auto within each Policy Area - and **vehicle miles of travel** (VMT) - defined as average trip length by auto drivers from households within each Policy Area. Staff’s evaluation of these metrics determined that their utility is best suited in other planning applications, as briefly described below.

- **NADMS** - This metric is well suited as a performance goal to be achieved as set forth in master plan or sector plan recommendations. In addition, this metric was also found to have utility for grouping Policy Areas as described in the Policy Area Characteristics section of this report.
- **VMT** – This metric is found to have great utility in the context of developing factors that can be used to adjust Institute of Transportation Engineers (ITE)-set trip generation rates and transportation impact tax rates so that the length of vehicle trips is explicitly reflected in travel demand estimation and the travel mitigation fee payment structure.

A more detailed discussion of the evaluation of each of these three metrics (i.e., transit accessibility, NADMS and VMT) will be provided an Appendix to this report.

Local Area Transportation Test

The **current** local area transportation test, called Local Area Transportation Review or LATR, has two main components: a screening threshold that determines whether a development applicant is required to complete a local area transportation review (based on the number of vehicle trips generated by the project), and an adequacy threshold (based on critical lane volume or CLV) that determines a mitigation requirement for projects that do not meet the adequacy test. For any project found to have an

intersection operating at or beyond 1600 CLV, a Highway Capacity Manual (HCM) analysis that incorporates queuing and delay may be used to determine the extent of traffic impacts.

The 2016 Subdivision Staging Policy proposes significant changes to **both** of the primary components of LATR. The first recommended change involves vehicle trip generation rates. Following the 2012 SSP, the County Council directed Planning staff to update the vehicle trip generation rates used in support of transportation impact studies. Currently, vehicle trip generation rates are identified in the 2013 LATR/TPAR Guidelines and reflect a combination of vehicle trips rates specified in the Institute of Transportation Engineers (ITE) Trip Generation Manual and vehicle trip rates derived from a Montgomery County-focused trip generation study performed in 1989.

Recommendation: Adopt new vehicle trip generation rates based on updated land use and travel behavior data.

A proposed set of new vehicle trip generation rates have been calculated based on current land use data and travel mode choice.

Table 1: ITE Vehicle trip Adjustment Factors

		ITE Vehicle Trip Adjustment Factors			
Policy Area #		Residential	Office	Retail	Other
2	Aspen Hill	97%	98%	99%	97%
3	Bethesda CBD	79%	63%	61%	62%
4	Bethesda/Chevy Chase	87%	81%	85%	79%
6	Cloverly	99%	100%	100%	100%
7	Damascus	100%	100%	100%	100%
8	Derwood	94%	94%	87%	94%
11	Gaithersburg City	88%	86%	74%	85%
12	Germantown East	95%	90%	95%	91%
14	Germantown West	93%	87%	92%	88%
13	Germantown Town Center	85%	89%	77%	88%
17	Kensington/Wheaton	91%	92%	96%	92%
18	Montgomery Village/Airpark	93%	100%	93%	100%
19	North Bethesda	83%	87%	71%	82%
20	North Potomac	97%	100%	100%	100%
21	Olney	99%	100%	99%	100%
22	Potomac	97%	98%	96%	98%
23	R&D Village	89%	88%	80%	90%
24	Rockville City	88%	94%	87%	98%
29	Silver Spring CBD	77%	65%	58%	65%
30	Silver Spring/Takoma Park	83%	83%	82%	84%
32	Wheaton CBD	85%	85%	76%	84%
16	Grosvenor	81%	84%	75%	80%
31	Twinbrook	81%	80%	74%	79%
33	White Flint	79%	78%	72%	78%
15	Glenmont	90%	91%	96%	91%
5	Clarksburg	100%	100%	100%	100%
28	Shady Grove Metro Station	89%	88%	77%	88%
10	Friendship Heights	78%	70%	73%	70%
25	Rockville Town Center	79%	80%	70%	79%
27	Rural West	100%	100%	100%	100%
26	Rural East	99%	99%	98%	100%
34	White Oak	89%	90%	91%	88%
9	Fairland/Colesville	96%	96%	99%	97%

In addition to updating vehicle trip rates, Planning staff believes there is value in moving from a traffic study screening tool based solely on vehicle trips to one that looks at the **person** trips associated with new development. Person trips, broken down into the proportion of trips made using the various transportation modes – vehicle, transit, pedestrian, provide a more complete snapshot of the relative impact a development is likely to have on the nearby transportation network. Moving away from a solely auto-focused metric, staff recommends replacing the current 30 peak hour vehicle trip threshold for an LATR study with new person-trip thresholds.

Applicants may propose methods to shift vehicle trips to other modes to manage travel demand and reduce traffic impacts by one of two methods. First, they may propose reduced on-site parking below

the minimum amounts with specific complementary travel demand management actions as specified in the zoning code.

Research suggests that there is a correlation between parking supply and vehicle trip generation, particularly when applied in a supportive parking-pricing environment with alternative transportation options. The 2016 SSP identifies person trip generation rates that allow the use of vehicle trip generation rates up to 40 percent lower than ITE vehicle trip generation rates based on the location and type of development.

In addition, applicants may further reduce trip generation rates if, per Section 59.6.2.4 of the County Code, they propose parking ratios lower than the baseline minimums that include specific supportive actions identified to reduce parking demand. For residential uses, each 2 percent reduction in parking below the minimum number of spaces yields a 1 percent reduction in vehicle trip generation rates for that use. For office uses, each 3 percent reduction in parking below the minimum number of spaces yields a 1 percent reduction in vehicle trip generation rates for that use.

Secondly and alternatively, an applicant may develop a customized TDM program and enter into a Traffic Mitigation Agreement to monitor program success.

[Recommendation: Replace the 30 peak hour vehicle trip threshold for an LATR study with a 75 person trips per hour threshold in Metro Station Policy Areas and a 50 person trips per hour threshold in other areas of the County, where LATR remains applicable.](#)

If a proposed development exceeds the 75/50 person trip threshold, an auto-mode transportation study will be required. If the development will also produce more than 50 transit trips, a transit-mode analysis will be required. And, if the development produces more than 100 pedestrian trips, a pedestrian-mode analysis will be required. If the proposed new development is below the 75/50 person trip threshold, no transportation studies will be required.

The new person trip thresholds may result in slightly fewer LATR studies as they are generally equivalent to about 30 to 45 vehicle trips depending on the specific type of use and Policy Area. Updating vehicle trip rates and moving to person trips will reflect lower vehicle trip generation rates calculated for smart growth locations (addressing a common critique of the ITE data), define new thresholds for quantitative study (including off-site impacts for non-motorized and transit facilities) and provide a baseline non-auto driver mode share for the assessment of TDM programs where applicable.

The scoping of an LATR study under the recommended approach would be a multi-step process and include the following:

1. Define proposed development size and type of use.
2. Identify ITE vehicle trips.
3. Apply Policy Area adjustment factors to identify the number of person trips by travel mode.
4. Apply site-specific adjustment factors, as appropriate, for:
 - a. Transit station proximity
 - b. Reduced parking
 - c. TDM programs
5. Define modal study requirements:
 - a. No study requirements in Core areas.
 - b. Traffic study, if more than 75 person trips in other Metrorail Station Policy Areas, more than 50 person trips elsewhere.
 - c. Transit study, if more than 50 transit trips.
 - d. Pedestrian study, if more than 100 pedestrian/bicycle trips.

The second main component of LATR is the transportation study. Once screening has established the need for, and type of, quantitative analysis (there will always be an auto analysis and may be transit and pedestrian analyses), the number and locations of intersections required to be studied is defined by the current LATR guidelines based on number of auto trips generated.

Currently, most projects requiring an LATR study look at critical lane volume, or CLV, as the measure of adequacy. CLV provides a snapshot of intersection performance at a particular place and time. Due to its simplistic nature, CLV has been the focus of considerable criticism under the current SSP. Its primary advantage is that it is a very simple and economical way to quickly gauge whether an individual intersection is operating near its design capacity. Its noted disadvantages are that it does not reflect travel time or delay, is insensitive to operational improvements like signal timing and does not reflect upstream or downstream conditions. Basically, CLV levels may not correspond to the experience of drivers in many of our communities.

Two other transportation analyses can address the limitations of CLV: an analysis of intersection operations and an analysis of network operations. The tools used for the intersection and network analysis provide measurements and in some cases, simulations, that are more readily identifiable as representing current conditions by more of the general public. There is still merit in retaining CLV as simply a screening tool that is **not** directly used in the traffic analyses. Another aspect of the recommended changes to the current process is that the threshold needed to trigger the more robust analysis should be set lower than the current 1600 CLV to account for the many different settings that can be created by the variables in play (intersection spacing, special generators, network configuration, etc.).

Recommendation: Retain CLV **only** as a screening tool to be applied in a strategic manner in all areas outside the “Core” Policy Areas of the County. Employ more robust, delay-based transportation analysis tools in these areas as described below.

A three-tiered approach to implementing the recommended process is proposed below. All intersections are screened based on their observed CLV (except “Core” areas where no traffic studies are required). For any intersection found to have an observed CLV greater than 1350, an operations analysis or a network analysis will be required according to the thresholds set in the table below:

Table 2: CLV as a Screening Tool

Tier	CLV used to determine:	Required for:	Features		
			Complexity	Addresses Delay	Addresses Adjacent Intersections
1	Whether a Traffic Impact Study is required.	All areas (except “Core” areas)	Low	No	No
2	Type of study required: Intersection Operations Analysis	Development that increases the intersection demand by 10 CLV and total future CLV greater than 1350	Moderate	Yes	No
3	Or a Network Operations Analysis	Intersection with a total future CLV greater than 1600, or Intersection with a total future CLV greater than 1450, where development increases intersection demand by 10 CLV and either: (a) the intersection is on a congested arterial with a travel time index greater than 2.0 as documented by monitoring reports, or (b) the intersection is within 600’ of another traffic signal	High	Yes	Yes

This new system for evaluating local area transportation conditions sets a lower threshold for triggering a more robust analysis. The rationale for using a 1350 CLV “baseline” is consistent with the lowest CLV Policy Area standard currently employed (i.e., in Rural East and Rural West). If the traffic impact of a proposed development is less than 1350 + 10 CLV, no mitigation is required.

Lastly, the most robust “tier 3” network operations analysis (e.g., Synchro, CORSIM, etc.) is triggered at 1600 CLV **or** if the intersection in question is located on an identified “congested arterial roadway” list per available traffic monitoring reports (e.g., MWCOG Congestion Monitoring Report, MDSHA Maryland State Highway Mobility Report and Montgomery County Mobility Assessment Report).

The local area test would not be applied in the “Core” areas, as the focus in those areas would be on enhancing accessibility through improvements to the pedestrian and bike networks, not improvements to intersections to increase vehicle capacity or reduce delay. Likewise, White Flint and White Oak should not be subject to an LATR test due to the recognition of White Flint as a Special Taxing District, and White Oak as a recently established “pro rata share” district.

Recommendation: Exempt the White Flint Metro Station Policy Area from the local area test in recognition of the Special Tax District process in that area. Similarly, retain the elimination of LATR in the White Oak Policy Area in favor of the recently established “pro rata share” district process in that area.

Mitigation

The consideration of land use context in defining appropriate transportation solutions extends beyond the Policy Area geography. For example, the implementation of transportation facilities is governed by Section 49 of the County Code, also known as the “Road Code.” As with Policy Areas, the Road Code also defines portions of the County as urban, suburban or rural, and these definitions are also adopted by County resolution (while being more finely-grained than the Policy Area definitions).

The Road Code urban areas, such as the Olney Town Center or Damascus Town Center, reflect nuances within a Policy Area where the land use is expected to generate a higher proportion of walking and bicycling. Accordingly, there should be slower speed limits, wider sidewalks and similar design elements associated with a walkable town center. These Road Code urban areas are places where the right-of-ways are busiest; not only due to the concentration of pedestrian activity, but also due to smaller parcels with multiple connections to utility lines, more closely spaced driveways and intersections, and more overlapping activities for capital improvements and maintenance within both public and private realms.

The identification and implementation of transportation solutions in these areas therefore tend to be the most complex. It is more efficient in these areas for the public sector to implement transportation solutions in a coordinated fashion. Therefore, in Road Code urban areas where an applicant needs to mitigate an LATR impact, the applicant should make a payment in lieu of construction as the first course of action rather than a measure of last resort.

Recommendation: For LATR mitigation, require payment-in-lieu of construction in Road Code urban areas.

Table 3: Summary of Local Area Test Features by Policy Area Category

Local Area Test	Core	Corridor	Residential	Rural
Scoping:				
When is a traffic impact study needed:	None required. Public sector monitoring replaces private sector studies.	For projects resulting in more than 75 person trips in an MSPA, or 50 person trips elsewhere in the corridor	More than 50 person trips	
When is a transit or non-motorized impact study needed:		For projects resulting in more than 50 transit trips, or more than 100 pedestrian trips	More than 50 transit trips, or more than 100 pedestrian trips	
Testing:				
When is an operational analysis, including travel delay, performed:	None required. Public sector monitoring replaces private sector studies.	When a proposed development increases the intersection demand by 10 CLV and total future CLV is greater than 1350		
When is a network analysis, using Synchro-type evaluation tool, performed:		When an intersection has a total future CLV greater than 1600, or When an intersection has a total future CLV greater than 1450, and the proposed development increases intersection demand by 10 CLV and either: <ul style="list-style-type: none"> (a) the intersection is on a congested arterial⁴ with a travel time index greater than 2.0 as documented by monitoring reports, or (b) the intersection is within 600' of another traffic signal 		
Mitigation:				
What determines the type of mitigation required:	Mitigation payment no required.	In Urban Road Code areas: It is more efficient for the public sector to implement transportation solutions in a coordinated fashion. Therefore, in these areas a mitigation payment in lieu of construction should be made. The mitigation payment (based upon a percentage of the base impact tax) must be used in the Policy Area in which it is collected. In Non-Urban Road Code areas: an applicant must mitigate transportation impacts.		Applicant must mitigate transportation impacts.
Impact Tax:				
	Required, retain for funding transit accessibility improvement within the Policy Area	Required	Required	Required

⁴ Per MWCOG list of congested arterials

Table 4: Summary of Policy Area Test Features by Policy Area Category

Policy Area Test	Core	Corridor	Residential	Rural
Scoping:				
Where does the policy area test apply:	Does not apply as these areas by definition (in terms of land use development density and current NADMS) have good accessibility to regional jobs via transit	Applies	Applies	Does not apply as attaining adequate high quality transit in these areas is neither desired nor likely.
Testing:				
What determines policy area adequacy:	N/A	The 10-year staging horizon (from 2015 to 2025) is 40 percent as long as the 25-year planning horizon (from 2015 to 2040). Areas that have at least 40 percent of their planned 2015-2040 transit accessibility by 2025 are, therefore, considered to be “on pace” with respect to reaching a key indicator of future non-auto travel options and are therefore considered “adequate.”		
Mitigation:				
When is a mitigation payment required:	N/A	When a Policy Area is below 40% in 2025 they are “behind pace” and have inadequate transit accessibility. The recommendation is that these areas should pay a 25 percent surcharge on their transportation impact taxes to help fund transit capital projects or transit-access capital projects.		
Impact Tax:	Core	Corridor	Residential	Rural
	Required, retain for funding transit accessibility improvement within the Policy Area	Required	Required	Required

Coordination with Municipalities and Implementing Agencies

Ideally, transportation impact study requirements and procedures applied by the County should be consistent with the practices of the following entities:

- Cities of Rockville and Gaithersburg
- Neighboring jurisdictions of the City of Takoma Park and Prince Georges County
- Maryland State Highway Administration

An open dialogue with these entities regarding proposed changes to the County’s LATR process is essential in order to avoid or minimize issues associated with transportation impact studies that may overlap jurisdictional boundaries and/or impact access requirements on roadways maintained by the state. Staff recognizes the need to work closely with these entities so that they are aware of the LATR-related recommendation proposed in the SSP Working Draft.

Other recommendations as a result of modifications to the policy area test and LATR

Recommendation: Eliminate a LATR study requirement for the Alternative Review Procedure in Metro Station Policy Areas (MSPAs).

This current procedure would be rendered irrelevant given the recommendation to eliminate local area traffic impact studies in “Core” Policy Areas.

Recommendation: Remove the Provisional Adequate Public Facilities (PAPF) provision from the LATR/TPAR Guidelines as there are other regulatory tools in place that accomplish the same function.

The Provisional Adequate Public Facilities provision allows the Planning Board to approve a partial finding of Adequate Public Facilities for applicants that provide an advanced dedication of land, but have not yet filed a preliminary plan application. Per the Planning Board SSP Worksession discussion on April 14, 2016, the PAPF provision will not be incorporated in the 2016 SSP as the Planning Board has noted that there are other regulatory tools in place that that accomplish the same function as the PAPF provision. Accordingly, this provision should be removed from the next update of the LATR/TPAR Guidelines.

Recommendation: Continue the production of the Mobility Assessment Report on a biennial schedule as a key travel monitoring element of the SSP.

This recommendation recognizes and supports the need for an increased reliance on the travel monitoring that will be required going forward in response to the proposed changes to LATR traffic study requirements.

Transportation Impact Tax

The authority to impose a Transportation Impact Tax on new development is in Chapter 52 (Article VII – Development Impact Tax for Transportation Improvements) of the County Code. The purpose of the tax is to provide funds to increase the capacity of the transportation network (through a combination of

approaches) so that trip making associated with new residential and commercial growth can be adequately accommodated.

The Code contains policy guidance that provides context for any review of the tax. Examples include the following:

- The amount and rate of growth in certain Policy Areas will place significant demands on the County for provision of major highways to support and accommodate that growth.
- Imposing a tax that requires new development to pay its pro-rata share of the costs of the improvements necessitated by that development in conjunction with other public funds is a reasonable method of raising funds.
- The County retains the power to determine the impact transportation improvements to be funded by development impact taxes, to estimate the cost of such improvements, to establish the proper timing of the construction of the improvements to meet Adequate Public Facilities Ordinance (APFO) standards in areas where they apply, and to determine when changes to the Capital Improvement Program (CIP) are necessary.

In summary, the tax is needed to contribute to the funding of improvements to accommodate new development with the understanding that the amount of the tax and the programming of the funds generated by the tax are set by County policy and can change over time. There is also an acknowledgement that other public funds will likely be necessary to fund the improvements and that some of the improvements are likely to be needed for reasons other than just the accommodation of new development (e.g., mitigate existing conditions).⁵

The Transportation Impact Tax is collected by the Department of Permitting Services within 6 months of filing for a building permit or when filing for a Use & Occupancy permit, whichever comes first. The tax varies by District and the type of land use. The current rates by District are shown below in Table 5.

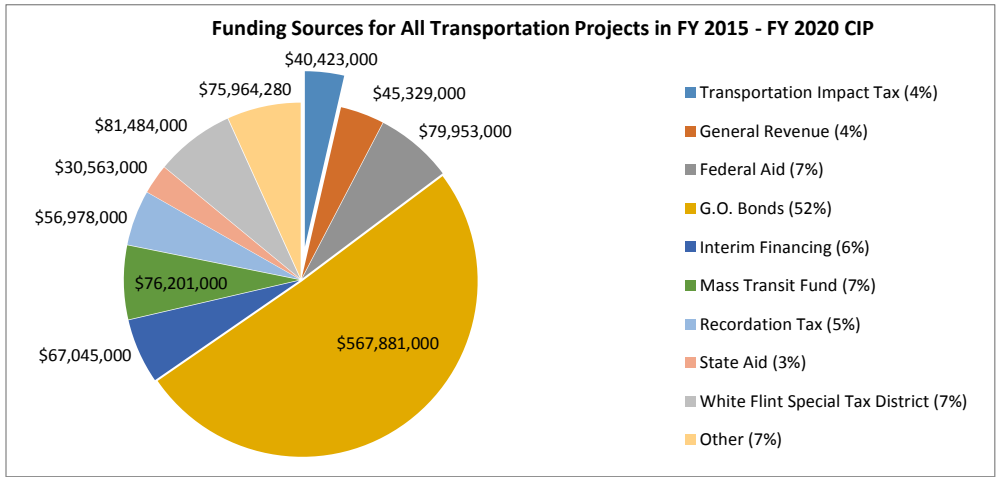
⁵ This important question is explored in more detail later in this narrative.

Table 5 – Transportation Impact Tax Rates effective July 1, 2015

Building Type	Metro Station	Clarksburg	General
Single Family (SF) Detached Residential– Per Dwelling Unit (DU)	\$6,984	\$20,948	\$13,966
SF Attached Residential – Per DU	\$5,714	\$17,141	\$11,427
Multifamily Residential (Garden Apartments) – Per DU	\$4,443	\$13,330	\$8,886
High Rise Residential – Per DU	\$3,174	\$9,522	\$6,347
Multifamily – Senior Residential – Per DU	\$1,269	\$3,808	\$2,539
Office - Per Square Foot (GFA)	\$6.35	\$15.30	\$12.75
Industrial – Per Square Foot (GFA)	\$3.20	\$7.60	\$6.35
Bioscience Facility – Per Square Foot (GFA)	\$0	\$0	\$0
Retail – Per Square Foot (GFA)	\$5.70	\$13.70	\$11.40
Place of Worship – Per Square Foot (GFA)	\$0.35	\$0.90	\$0.65
Private Elementary and Secondary School – Per Square Foot (GFA)	\$0.50	\$1.35	\$1.05
Hospital – Per Square Foot (GFA)	\$0	\$0	\$0
Social Service Agency – Per Square Foot (GFA)	\$0	\$0	\$0
Other Non-Residential - Per Square Foot (GFA)	\$3.20	\$7.60	\$6.35

The FY2015–2020 Capital Improvement Program (CIP) for the County reflects an assumption that the tax will provide about 4 percent of the total amount of funds (about \$1.1 billion) dedicated for all transportation improvements, including State and Federal funds (see below) over that six-year period.

Figure 8 – Funding Sources for All Transportation Projects in The CIP



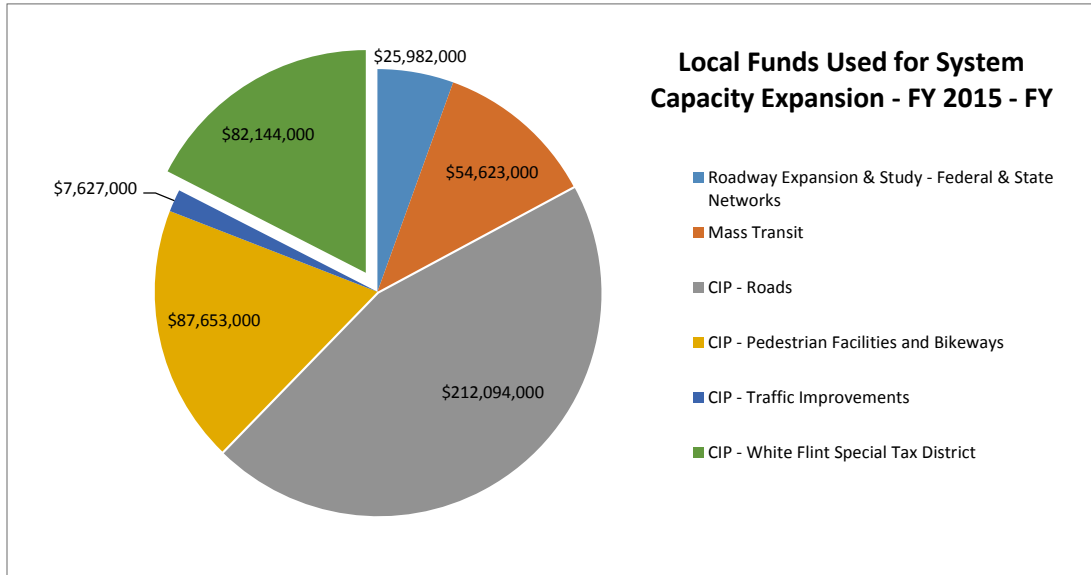
Since the tax is intended to support projects that increase network capacity, it is useful to review assumptions related to that aspect of the funding profile. The specific types of improvements the tax is to be used for are noted in Section 52-58 of the Code:

- New road, widening of an existing road, or total reconstruction of all or part of an existing road required as part of a widening of an existing road that add highway or intersection capacity or improves bicycle commuting
- New or expanded transit center or park and ride lot
- Bus added to the Ride On fleet, but not a replacement bus
- New bus shelter, but not a replacement bus shelter
- Hiker-biker trail used primarily for transportation
- Bicycle locker that holds at least 8 bicycles
- Bike-sharing station (including bicycles approved by the Department of Transportation)
- Sidewalk connector to a major activity center or along an arterial or major highway
- The operating expenses of any transit or trip reduction program.

The tax receipts (estimated at \$40.4 million over the CIP period as noted above) represent about 9 percent of the total local funds allocated for system or network capacity expansion as shown in the chart below.⁶

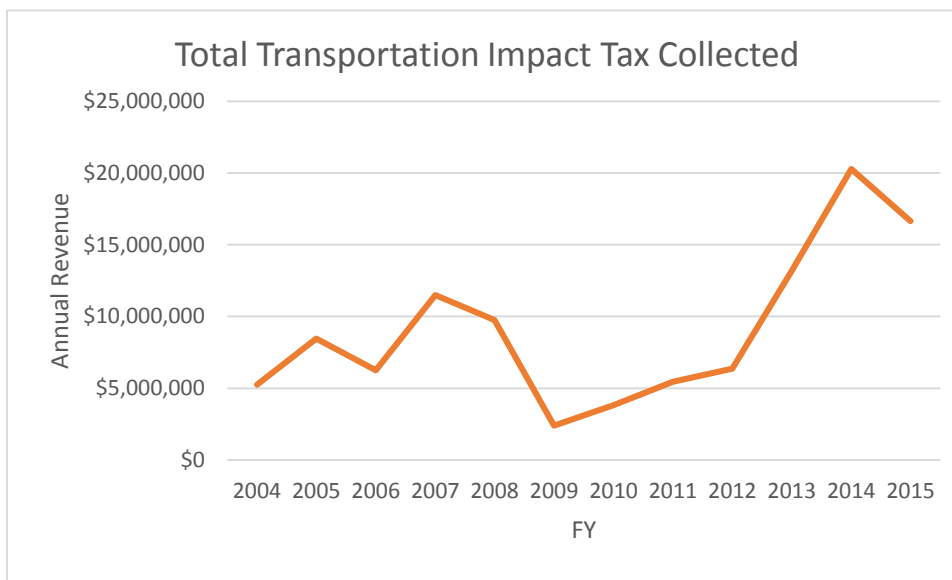
⁶ The total of the local funds shown in the pie chart is approximately \$470 million. The exclusion of the White Flint Special Tax District (the \$82.1 million piece of the pie) reduces the total to about \$388 million and the percentage the impact tax represents of total local funds dedicated to system expansion increases to a little more than 10 percent.

Figure 9 – Allocation of Local Funds in The CIP for System Capacity Expansion



An important aspect of the current funding profile is the extent to which the total transportation impact tax collections can vary by year. A number of factors contribute to the variation. The overall economic environment is a primary reason for the variance and is clearly evident in the graph below where collections during the Great Recession were well below other years.

Figure 10 – Annual Transportation Impact Tax Collected Since 2004



Source: Montgomery County Finance Department

Other factors that contribute to the variation include geographical areas and/or types of development that are either exempt from the tax or pay a reduced rate. Examples include:

- Moderately priced dwelling units (MPDUs) built under Chapter 25A (exempt)
- Any development located in a current or former Enterprise Zone (exempt)⁷
- Any building located within one-half mile of a MARC station (payment reduced to 85 percent of rate)

Impact tax credits are also available to property owners who provide additional network capacity in the form of an improvement that the tax is intended to fund (see list above).

Finally, it should be noted that the graph above includes revenue collected within the Cities of Gaithersburg and Rockville. Funds collected within Gaithersburg and Rockville are designated for projects within those jurisdictions.

Transportation Impact Tax Rate Update

The tax in its current form was first levied during the last half of FY 2004. The rates were raised significantly (70 percent across the board) on December 1, 2007 after analysis done as part of the 2007 Growth Policy. While the rate increase resulted in an increase in overall collections for FY 2007, it was introduced at the beginning of the recession. The total revenue collected did not reach FY2007 levels again until FY2013. The rate increases introduced in 2007 are shown below in Table 6.

⁷ State-designated Enterprise Zones include Burtonsville, Glenmont, Long Branch, Wheaton and Olde Town in the City of Gaithersburg.

Table 6 – Comparison of Pre-2007 Rates and 2007 Rates

Land Use	General District		Metro Station Areas		Clarksburg District	
	Pre-2007 Rates	2007 Rates	Pre-2007 Rates	2007 Rates	Pre-2007 Rates	2007 Rates
Residential (per DU)	Pre-2007 Rates	2007 Rates	Pre-2007 Rates	2007 Rates	Pre-2007 Rates	2007 Rates
Single-Family Detached	\$6,264	\$10,649	\$3,132	\$5,325	\$9,396	\$15,973
Single-Family Attached	\$5,125	\$8,713	\$2,563	\$4,357	\$7,688	\$13,070
Garden Apartments	\$3,986	\$6,776	\$1,993	\$3,388	\$5,979	\$10,164
High-Rise Apartments	\$2,847	\$4,840	\$1,424	\$2,420	\$4,271	\$7,261
Multi-Family Senior	\$1,139	\$1,936	\$569	\$968	\$1,708	\$2,904
Non Residential (per SF – GFA)	Old Rates	New Rates	Old Rates	New Rates	Old Rates	New Rates
Office	\$5.70	\$9.69	\$2.85	\$4.85	\$6.85	\$11.65
Industrial	\$2.85	\$4.85	\$1.40	\$2.43	\$3.40	\$5.78
Bioscience	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Retail	\$5.10	\$8.67	\$2.60	\$4.34	\$6.15	\$10.46
Place of Worship	\$0.30	\$0.51	\$0.15	\$0.26	\$0.40	\$0.68
Private School	\$0.45	\$0.77	\$0.20	\$0.39	\$0.60	\$1.02
Hospital	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Social Service Agencies	N/A	\$0.00	N/A	\$0.00	N/A	\$0.00
Other Non-Residential	\$2.85	\$4.85	\$1.40	\$2.43	\$3.40	\$5.78

As previously noted, the last time the rate was examined was during the review of the 2007 Growth Policy. The methodology used in support of the analysis at that time is summarized in Table 7 below and involved the following steps (referencing the respective rows in Table 7):

- Row A – the capital funding requirements (local funds) contained in the CIP and regional Constrained Long Range Plan (CLRP) for projects adding network capacity
- Rows B, C, and D - the forecast growth in County households (single family and multi-family) and jobs (office, retail, industrial, or other) from the Regional Cooperative Land Use Forecast

- Rows E and F - the estimate of the new daily trips generated by the new growth
- Row G – the cost attributable to that specific land use based upon the proportion of trips
- Estimate Tax Rate (last row) – the computed rate by land use based on the allocated costs (Row G) divided by the number of units (Row C) or square feet (Row D) as applicable

Table 7 – Arriving at an Initial General Rate for the Transportation Impact Tax

A	County Capital Improvement Program (CIP) Local \$ for Projects adding Network Capacity Expansion – 25 Year Estimate					
B	New Residential 25 Year Growth Estimate		New Commercial Growth 25 Year Growth Estimate			
C	Residential Units		Office Jobs	Retail Jobs	Industrial Jobs	Other Jobs
D	Single-Family	Multi-Family	Office SF	Retail SF	Industrial SF	Other SF
E	Trip Rate	Trip Rate	Trip Rate	Trip Rate	Trip Rate	Trip Rate
F	New Daily Trips	New Daily Trips	New Daily Trips	New Daily Trips	New Daily Trips	New Daily Trips
G	Cost (A) Allocated by Trips (F)	Cost (A) Allocated by Trips (F)	Cost (A) Allocated by Trips (F)	Cost (A) Allocated by Trips (F)	Cost (A) Allocated by Trips (F)	Cost (A) Allocated by Trips (F)
Est. Tax Rate	G/C	G/C	G/D	G/D	G/D	G/D

The next series of tables provide a comparison of 2007 and the present using essentially the same methodology used in the review of the Transportation Impact Tax in 2007.⁸ A summary of the variables and resultant unit rates (for broad land use categories) for 2016 is shown in Table 8.

⁸ While staff has not conducted a comprehensive review of the methodology used in other jurisdictions, the approach of considering the capital costs of projects programmed or planned, the growth in households and commercial building space, the application of trip rates and the eventual calculation of a rate at least in part related to the type of land use is relatively common.

Table 8 – 2016 Rate Using the 2007 Methodology

Variable	SF Residential	MF Residential	Office	Retail	Industrial	Other Commercial
Forecast Growth 2015-2040 ⁹	11,218 DU	71,419 DU	128,822 Jobs	30,697 Jobs	12,180 Jobs	11,418 Jobs
SF of Commercial ¹⁰			32,205,500	12,278,800	5,481,000	5,709,000
Vehicle Trip Gen Rate ¹¹	9.52 per DU	6.65 per DU	3.32 per job	21.47 per KGSF	2.77 per job	2.77 per job
Daily Vehicle Trip Ends	106,795	474,936	427,689	263,626	33,739	31,628
% of Total Trip Ends	8.0%	35.5%	32.0%	19.7%	2.5%	2.4%
Proportional Allocation of \$1.6 Billion ¹²	\$129M	\$574M	\$517M	\$318M	\$41M	\$38M
Resultant Unit Impact Tax Rates	\$11,499 per DU	\$8,032 per DU	\$16.04 per GSF	\$25.93 per GSF	\$7.43 per GSF	\$6.69 per GSF

A comparison of how the calculated rates in Table 8 compare with the rates calculated in 2007 using the same methodology is shown in Table 9 below.

⁹ Round 8.3 Regional Cooperative Land Use Forecast – Montgomery County Growth Only

¹⁰ Estimate arrived at by applying SF factor by job type (250 SF/job for Office, 400 SF/job for Retail, 450 SF/job for Industrial, and 500 SF/job for Other Commercial).

¹¹ ITE Trip Generation Manual, 9th Edition

¹² \$1.6 Billion estimate is arrived at by dividing the \$388 million total shown in Table 2 by the number of years in the CIP (6) and multiplying that annual number by 25 – the number of years the forecast growth is based upon.

Table 9 – Comparing Calculated (Resultant) Rates with Current Rates

Variable	SF Residential	MF Residential	Office	Retail	Industrial	Other Commercial
Resultant Unit Impact Tax Rates – 2015-2040	\$11,499 per DU	\$8,032 per DU	\$16.04 per GSF	\$25.93 per GSF	\$7.43 per GSF	\$6.69 per GSF
Resultant Unit Impact Tax Rates 2005-2030 ¹³	\$8,380 per DU	\$5,884 per DU	\$11.56 per GSF	\$18.80 per GSF	\$5.39 per GSF	\$4.85 per GSF
Current-General	\$13,966 per DU	\$8,886 per DU	\$12.75 per SF SF GFA	\$11.40 per SF GFA	\$6.35 per SF GFA	\$6.35 per SF GFA
Current-Metro Station	\$6,984 per DU	\$4,443 per DU	\$6.35 per SF GFA	\$5.70 per SF GFA	\$3.20 per SF GFA	\$3.20 per SF GFA
Current - Clarksburg	\$20,948 per DU	\$13,330 per DU	\$15.30 per SF SF GFA	\$13.70 per SF GFA	\$7.60 per SF GFA	\$7.60 per SF GFA

A look at comparative percent increases of key variables is useful in attempting to arrive at any conclusion with respect to what might be a “reasonable” rate. In doing so, staff focused on two primary questions:

- How does the difference between the two calculated rates (2007, and 2016 using 2015 data) compare with the difference in the actual rate over the same period of time?
- Does the current rate meet the fair-share or pro-rata objective of the County Code?

In its simplest form, the first question can be addressed by comparing the rates for single family dwelling units:

- The calculated rate resulted in the single family dwelling unit rate increasing from \$8,380 per unit in 2007 to \$11,499 per unit now, an increase of 37% over 8 years or an average of 4.6% per year.
- The current rate for a single family dwelling unit has **actually** increased from \$10,649 per unit in 2007 to \$13,966 per unit in 2015, an increase of 31% over 8 years or an average of 3.9% per year.

¹³ The eventual adopted rates were not the same as the calculated rates arrived at during the review of 2007 Subdivision Staging (Growth) Policy. See Table 6 for the actual adopted rates.

The rate of the increase between the calculated rate compared to the current rate for a single family residence is relatively close and all other things being equal, one could therefore conclude that there may be a basis for an increase of around ½ percent (but not much more) as the increase in the current rate trails the increase in the calculated rate by a small amount.

The second or pro-rata question might be addressed by comparing the growth forecast with the percentage of expansion projects funded by the Transportation Impact Tax.

- The Round 8.3 Regional Cooperative Forecast for Montgomery County households estimates an increase from 377,500 in 2015 to 460,200 in 2040, an increase of 22 percent or 0.90 percent per year. Over a six year CIP period, this would amount to a total increase of 5.4 percent.
- The same forecast for employment for Montgomery County estimates an increase from 532,000 in 2015 to 715,000 in 2040, an increase of 34 percent or an average of 1.4 percent per year. Over a six year CIP period, this would amount to a total increase of 8.4 percent.

As previously noted (see Figure 9), the Transportation Impact Tax is estimated to provide \$40,423,000 in funds over the six- year life of the current CIP. Excluding the White Flint Special Tax District projects, this amount of revenue represents 10.4 percent of the total \$388 million in local funds used over the six- year period.

In terms of the percent of local funds supporting transportation projects that expand network capacity, one could conclude the current level of the Transportation Impact Tax (based on the estimates in the current CIP) is contributing slightly above its pro-rata share by somewhere between 2 and 5 percent when compared to the overall growth forecast (comparing the 10.4 percent portion of the CIP with the 5.4 or 8.4 percent increase for households and employment, respectively).

The comparison of the increase in the calculated rates (2007 vs 2016) therefore suggests an increase of about ½ percent may be in order; however, comparing the percent of local funds the tax provides given the growth forecast suggests the tax is covering (or exceeding) that “share” by a margin of between 2 to 5 percent. **Given the potential variances in the growth forecast, construction costs and timing, and other factors, there does not appear to be a strong argument for recommending any significant change in the rates at this time other than the annual adjustments to account for inflation related to construction costs¹⁴.**

In summary, it appears the Transportation Impact Tax is at a reasonable level, i.e., the current level is estimated to provide funding reasonably consistent – on a historical percentage basis - with anticipated growth and programmed capital costs for system expansion met through local funding sources.

¹⁴ It should be noted that the calculated resultant rates are generally below the corresponding existing residential rates and above the corresponding existing commercial rates. The final rates set in 2007 established this pattern (when compared to the calculated rates at that time - see Table 6 and the second row of Table 9).

Adjustments to Base Rate

The current transportation impact tax rate varies by District and land use. The variance in the rates in relation to the General Rate is shown in the table below. As an example, the rates in Metro Station Areas are 50 percent of the rate in the rest of the County (excluding Clarksburg which is higher). The basis for the variation is a general acknowledgement that on a unit basis, it costs more to provide public facilities for development in areas of lower density.

Table 10 – Variance in Relationship to Transportation Impact Tax Base (General District) Rates

Current Rate Adjustments	SF Residential	MF Residential	Office	Retail	Industrial	Other Commercial
District						
General	1.0	1.0	1.0	1.0	1.0	1.0
Metro Station	0.5	0.5	0.5	0.5	0.5	0.5
Clarksburg	1.5	1.5	1.2	1.2	1.2	1.2

The extent to which the rates in Metro Station areas and Clarksburg vary from the rest of the County has been a point of discussion over the years and as a result, it is worthwhile to consider whether other metrics are available to consider if the variance should remain the same or change.

Staff recommends consideration of current estimated Vehicle Miles of Travel (VMT) for trips to work¹⁵ as a readily available – and relevant – measurement to use in establishing Policy Area specific rates for residential development. A similar and complementary metric for commercial development is the non-auto driver mode share for trips to work. A potential stratification of the adjustment factor for new residential and commercial development is depicted in the table below.

¹⁵ Trips to work are referred to as Home Based Work (HBW) trips because they have home at one end of the trip and work at the other.

Table 11 – Recommended New Adjustment Factors to Transportation Impact Tax Base Rates

Policy Area Type	Residential HBWVMT	Ratio of impact to County Average	Proposed as Policy	Commercial HBW NADMS	Ratio of impact to County Average	Proposed as Policy
County Average	11.5			32.6%		
Core	3.6	31%	0.25	48.9%	76%	0.75
Corridor	7.8	68%	0.75	31.5%	102%	1.00
Residential	14.8	129%	1.25	19.4%	120%	1.25
Rural	25.5	222%	2.00	10.4%	133%	1.25

Comparing Existing Rates with New Rates Derived from New Adjustment Factors

As noted previously there appears to be no basis for an absolute increase in the rate other than an adjustment for inflation related to construction costs. Staff is however recommending consideration of a modification to how the rate varies by Policy Area or District (the current descriptor in the Code for the three areas - General, Metro Station Policy Areas, and Clarksburg) based upon the rationale and resulting adjustment factors noted above (see Table 11). A comparison of how the potential new rates (unadjusted for inflation to simplify the comparison at this point) for the four new Policy Area groups relates to the current set of rates is presented in the table below.

Table 12 – Comparison of New Rates by Policy Area Groups with Existing Rates and Districts

Policy Area Group or Tax District	SF Residential	MF Residential	Office	Retail	Industrial	Other Commercial
Core	\$3,492 per DU	\$2,222 per DU	\$9.56 per SF GFA	\$8.55 per SF GFA	\$4.76 per SF GFA	\$4.76 per SF GFA
Corridor	\$10,475 per DU	\$6,665 per DU	\$12.75 per SF GFA	\$11.40 per SF GFA	\$6.35 per SF GFA	\$6.35 per SF GFA
Residential	\$17,478 per DU	\$11,108 per DU	\$15.94 per SF GFA	\$14.25 per SF GFA	\$7.94 per SF GFA	\$7.94 per SF GFA
Rural	\$27,932 per DU	\$17,772 per DU	\$15.94 per SF GFA	\$14.25 per SF GFA	\$7.94 per SF GFA	\$7.94 per SF GFA
Current-General	\$13,966 per DU	\$8,886 per DU	\$12.75 per SF GFA	\$11.40 per SF GFA	\$6.35 per SF GFA	\$6.35 per SF GFA
Current-Metro Station	\$6,984 per DU	\$4,443 per DU	\$6.35 per SF GFA	\$5.70 per SF GFA	\$3.20 per SF GFA	\$3.20 per SF GFA
Current - Clarksburg	\$20,948 per DU	\$13,330 per DU	\$15.30 per SF GFA	\$13.70 per SF GFA	\$7.60 per SF GFA	\$7.60 per SF GFA

Adjustment to Transportation Impact Tax to Incentivize Reduced Parking

Progressive parking management that more accurately reflects the cost and utilization of private and public parking has been shown to be a key component of transportation demand management. The County has a number of incentives currently in place through its zoning code, Parking Lot Districts (PLDs), and Transportation Demand Management (TDM) programs. Additional incentives for reducing parking in the form of granting a reduction in the impact tax could supplement these existing programs.

An example of how this might apply is shown below.

Table 13: Multiplier for Transportation Impact Tax Reduction – Parking Incentive

Percentage Parking Supply is Below Baseline Minimum	Percentage Reduction in Transportation Impact Tax After Policy Area Adjustment											
	Core Policy Area				Corridor Policy Area				Residential Policy Area			
	Residential	Office	Retail	Other	Residential	Office	Retail	Other	Residential	Office	Retail	Other
X	3X	3X	3X	3X	2X	2X	2X	2X	X	X	X	X

This approach would further incentive development to minimize parking capacity – especially in areas where options may exist for access by modes other than auto.

Schools

Student Generation Rates

A student generation rate identifies the number of students yielded by a particular type of housing in a specific geographic area. These generation rates are used to project future enrollment, estimate the impact of new residential development on school enrollment and calculate the financial burden placed by new development on the County to build new school facilities.

When the Subdivision Staging Policy was last updated in 2012, student generation rates were estimated by using data from the County’s triennial Census Update Survey conducted in 2008. The County no longer conducts the survey, but the Planning Department has worked with Montgomery County Public Schools (MCPS) to develop a more accurate method of calculating student generation rates. MCPS data containing student addresses and grade-level information (stripped of any confidential information) are combined with Planning Department parcel data that contain information on the type of residential structure associated with every address in the County. The results are generation rates that reflect the actual location and housing structure of virtually every MCPS student.

The generation rates were first calculated using this new methodology in 2013. Due to the extensive amount of work associated with these calculations, the generation rates will be updated on a biennial basis for use in estimating the impact of new development on schools. The most recent calculations were conducted using data from the start of the 2015-16 school year. Planning staff were able to match 96.1 percent of the County’s public school students to a parcel and a type of residential unit. As a result, these generation rates are much more accurate than those previously calculated using the Census Update Survey data.

The availability of such accurate and comprehensive data makes it possible to analyze generation rates for various parcel and neighborhood characteristics. Over time, these data will help the County to better understand the variables that impact school enrollment and improve the accuracy of MCPS’s enrollment projections.

With respect to the Subdivision Staging Policy, county-wide student generation rates are used to calculate School Facility Payments for four types of residential units: single-family detached, single-family attached, multi-family low to mid rise, and multi-family high rise. They are similarly used to calculate the School Impact Tax for each of these four types of units.

Recommendation: Calculate School Facility Payments and the School Impact Tax using student generation rates associated with residential structures built over the prior 10years.

Since the School Facility Payments and School Impact Tax are intended to mitigate the school construction costs associated with new development, it makes logical sense to use generation rates that only capture the enrollment impact of relatively new housing. The table below identifies the recommended student generation rates:

Table 14: Student Generation Rates, 2015

Unit Type	County-wide Student Yield Rates for New Development ¹⁶ (students generated per unit)			
	Elementary	Middle	High	Total (K-12)
Single-Family Detached	0.358	0.161	0.168	0.687
Single-Family Attached	0.201	0.081	0.095	0.377
Multi-Family Low to Mid Rise	0.067	0.024	0.037	0.129
Multi-Family High Rise	0.036	0.013	0.014	0.064

These rates are similar to the rates calculated using 2013 enrollment data with the exception of the rates for multifamily housing. These new multifamily rates are approximately half the rates used from the 2013 data. In large part, this is due to the fact that the multifamily housing rates in 2013 included multifamily units of any age.

Annual School Test

After the Capital Improvements Program (CIP) or CIP amendment is adopted each May, MCPS works with Planning Department staff to conduct tests of school adequacy. Currently, the tests are conducted based on a cluster’s utilization rate across each school level:

- If a level (elementary, middle or high) within a cluster meets or exceeds the 105 percent utilization threshold, the cluster’s service (attendance) area is considered inadequate and School Facility Payments are required for each new residential unit in the service area.¹⁷ The School Facility Payments are determined and applied by level. Therefore, payments are only required for levels for which inadequacy has been determined.
- If a level within a cluster meets or exceeds the 120 percent utilization threshold, the cluster’s service area is placed in moratorium and no new residential development may be approved.

The annual school tests are conducted by comparing a cluster’s existing and planned program capacity in the sixth year of the adopted CIP or CIP amendment to the corresponding projected enrollment for

¹⁶ Defined as housing units built within the past 10 years.

¹⁷ Certain exemptions apply, and these are discussed further in the section on School Facility Payments.

that year. Planned program capacity includes the impact of any capital project included in any year of the six-year CIP. The program capacity of a facility is determined by the space requirements of the educational programs in the facility and student-to-classroom ratios.¹⁸

The enrollment projections used in the annual school tests are calculated by the MCPS Division of Long Range Planning using a model that considers the following factors:

- Birth rate
- Aging of the school-age population
- Migration of residents into and out of Montgomery County
- New home construction and sales

The tests are conducted at a cluster level, meaning that enrollment and capacity are summed across all schools in a cluster for a particular school level (elementary, middle and high). Tests are not currently conducted at an individual school level. The assumption is that if capacity is adequate across a cluster, but not for an individual school, MCPS could redraw service area boundaries to alleviate any inadequacies that might exist. For a variety of reasons, including the cost of conducting boundary studies, such actions are not easy to implement, and therefore not frequently used to address capacity issues at individual schools.

Due to the large variation in the size of schools (for instance, the built capacity of middle schools in the county currently ranges from 468 to 1,289), MCPS does not use percentage utilization thresholds to identify schools with inadequate capacity. Instead, MCPS uses a seat-capacity deficit to determine when an individual school should be considered for an addition:

- An elementary school is considered for an addition when forecasted enrollment in the sixth year of the CIP exceeds capacity by four classrooms, or 92 students.
- A middle school is considered for an addition when forecasted enrollment in the sixth year of the CIP exceeds capacity by six classrooms, or 150 students.
- A high school is considered for an addition when forecasted enrollment in the sixth year of the CIP exceeds capacity by eight classrooms, or 200 students.

The point behind these capacity deficit thresholds is that the number of 92 students is 92 students – whether they are at a school with capacity of 400 or a school with a capacity of 700. When these MCPS thresholds are met, feasibility studies are conducted to determine the viability of adding capacity to the school in question.

There are two potential outcomes from a feasibility study:

- The identification of multiple alternatives for adding capacity on the school’s property.

¹⁸ Program capacity should not be confused with staffing ratios, which are determined through the annual operating budget process, or “state rated capacity,” which uses different student-to-classroom ratios (in particular treats special education differently). Staffing ratios generally produce higher capacities than program capacity calculations.

- The determination that the school's property cannot accommodate additional school capacity, and therefore capacity must be sought elsewhere (i.e., alleviating the enrollment burden at the school by shifting students to another school with capacity or where adding capacity is feasible).

A feasibility study typically takes one year and involves MCPS staff, a contracted architect and numerous meetings with community stakeholders. The average cost of a feasibility study is about \$50,000.

The current cluster level tests conducted through the SSP mask the problems that exist at individual schools. This situation is particularly true at the elementary school level, where a cluster could have an individual school that is grossly over-enrolled, but five or six other elementary schools with adequate capacity. The cluster level test also ignores the costs incurred by MCPS to conduct a feasibility study and/or boundary study when an individual school meets the MCPS capacity deficit threshold.

[Recommendation: The implementation of a hybrid annual school test that combines cluster utilization tests with individual school capacity deficit tests.](#)

To create a better nexus between the Subdivision Staging Policy and MCPS practices, and to help mitigate the costs incurred by MCPS when an individual school qualifies for a feasibility analysis, the County will implement a hybrid annual school test as follows:

Table 15: Summary of School Test Thresholds

Test	Thresholds			Action	Change from Current Policy
	Elementary	Middle	High		
Cluster Utilization Test	105% utilization projected in the sixth year of the CIP, across all elementary schools in the cluster	105% utilization projected in the sixth year of the CIP, across all middle schools in the cluster	105% utilization projected in the sixth year of the CIP for the cluster's high school	School Facility Payment applies for the appropriate level, across the entire cluster's service area	No change
Cluster Utilization Test	120% utilization projected in the sixth year of the CIP, across all elementary schools in the cluster	120% utilization projected in the sixth year of the CIP, across all middle schools in the cluster	120% utilization projected in the sixth year of the CIP for the cluster's high school	Moratorium applies across the entire cluster's service area if any one level surpasses the threshold	No change
Individual School Capacity Deficit Test	92-seat capacity deficit at any individual elementary school	150-seat capacity deficit at any individual middle school	N/A ¹⁹	School Facility Payment only applies to the applicable school service area	New Element
Individual School Capacity Deficit Test	120% utilization projected in the sixth year of the CIP, or 110 seat capacity deficit, whichever is the greater deficit	120% utilization projected in the sixth year of the CIP, or 180 seat capacity deficit, whichever is the greater deficit	N/A	Moratorium only applies to the applicable school service area, unless a capacity project is planned elsewhere (as either an addition or a new school), specifically identified in the CIP to relieve over-enrollment at the school failing this adequacy test ²⁰	New Element

¹⁹ An individual test at the high school level is not necessary as there is only one high school per school cluster.

²⁰ When a capacity project at one school is intended to relieve enrollment burdens at another, the Annual School Test will continue to show a capacity deficit at the burdened school until MCPS approves a service area boundary change, shortly before construction of the additional capacity is complete.

School Facility Payments

School Facility Payments are levied on new development located in an area with inadequate school facilities, as determined by the Annual School Test. The following exemptions apply:

- Units built within current and former State of Maryland-designated Enterprise Zones
- Units that are age-restricted for seniors
- Moderately priced dwelling units (MPDUs)

School Facility Payments are assessed when a building permit is issued, based on the adequacy status at the time of the project’s preliminary plan approval. If a cluster’s service area requires school facility payments at the time of a project’s preliminary plan approval, but subsequently falls into a moratorium, the project may still move forward during the moratorium and the School Facility Payments still apply.

Likewise, if a cluster’s service area requires school facility payments at the time of a project’s preliminary plan approval but a subsequent Annual School Test deems the service area to have adequate school facilities, the School Facility Payments still apply to the project. Currently, projects retain the conditions of their APF approval for at least five, but not more than 10 years. This approval duration is known as the validity period. Since the Great Recession, the County Executive has extended the validity period multiple times for all projects that have not yet been built.

The School Facility Payment represents 60 percent of the cost of a student seat generated by a new residential unit and is calculated as follows:

$$0.6 \times (\text{per student construction cost}) \times (\text{countywide student generation rate for type of unit})$$

The School Facility Payments currently used were last calculated with the update of the Subdivision Staging Policy in 2012, using school construction costs from 2012. Per-pupil school construction costs vary by school level and have generally fluctuated over the past decade due in part to the Great Recession’s impact on the construction industry and the increasing size of schools.

Table 16: School Construction Cost per Student Seat

Level	Total Cost per Student			
	2007	2009	2012	2016
Elementary School	\$32,525	\$35,135	\$32,399	\$37,192
Middle School	\$42,352	\$46,000	\$35,417	\$39,600
High School	\$47,502	\$40,625	\$50,000	\$46,875

School Facility Payments are relatively new. Initially implemented with the 2003 Growth Policy, these payments have generated just under \$4.2 million in school capital funding since FY2011. When a School Facility Payment is administered, the funds collected are dedicated for use in the cluster and at the school level that generated the payment. The table below summarizes the School Facility Payments that have been collected, by cluster, since FY2011:

Table 17: School Facility Payments Collected

Fiscal Year	Cluster									Total
	Bethesda-Chevy Chase	Clarksburg	Gaithersburg	Northwest	Northwood	Rockville	Wootton	Walter Johnson	Whitman	
2011									\$6,244	\$6,244
2012	\$163,918									\$163,918
2013							\$15,250			\$15,250
2014	\$24,794		\$58,171	\$952,402		\$12,354	\$123,050	\$237,600		\$2,008,371
2015	\$22,228	\$3,060	\$724,354	\$375,920	\$64,544			\$577,684		\$1,967,790
Total	\$210,940	\$3,060	\$782,525	\$1,328,322	\$64,544	\$12,354	\$138,300	\$815,284		\$4,161,573

[Recommendation: Update the calculation of the School Facility Payments on a biennial basis using the latest generation rates and school construction cost data.](#)

The payment amounts should be updated with the quadrennial adoption of the Subdivision Staging Policy and mid-term as part of the adoption of the Annual School Test in June of the Subdivision Staging Policy's second year. Updating the School Facility Payments for the 2016 Subdivision Staging Policy results in the following:

Table 18: Comparison of School Facility Payment Rates, 2012 to 2016

Type of Unit	Current (2012) School Facility Payments			Recommended (2016) School Facility Payments		
	ES	MS	HS	ES	MS	HS
	Single-family detached	\$ 6,940	\$ 3,251	\$ 4,631	\$ 7,989	\$ 3,825
Single-family attached	\$ 4,160	\$ 1,743	\$ 2,754	\$ 4,485	\$ 1,925	\$ 2,672
Multi-family low to mid rise	\$ 2,838	\$ 1,169	\$ 1,877	\$ 1,495	\$ 570	\$ 1,040
Multi-family high rise	\$ 1,166	\$ 531	\$ 804	\$ 803	\$ 309	\$ 394

The decrease seen in the School Facility Payments for multi-family units is largely due to the decrease (discussed earlier) in the generation rates used to calculate the payments.

Placeholder Projects

When a cluster's service area is placed in moratorium and capital funding for the area's schools is most in need, School Facility Payments are not being levied because no new development is being approved. Placeholder projects have been the County Council's way of taking quick action to reserve funds for needed school capacity, while also ensuring a cluster's service area does not fall into moratorium. Placeholders allow development to move forward and for School Facility Payments to continue to be collected. Lacking a thorough capacity study, the placeholder project simply adds enough capacity to pull the cluster out of moratorium, and serve as a reminder that capital programming should be forthcoming.

One criticism of this practice is that the cost associated with a placeholder project, which is assumed to add capacity to the sixth year of the approved CIP, does not equal the ultimate cost of the capacity project that is required. Another concern is that the placeholder project undermines the intent of the Subdivision Staging Policy, which is to ensure that adequate public facilities exist prior to approving new development. The placeholder prevents a moratorium from being imposed, allowing new development to be approved, despite not having a full-funded capital project required to ensure adequate school facilities are programmed.

Some members of the community have expressed concern that some placeholder projects never materialize into real capital projects. A review of all the placeholders that have been used to prevent a moratorium shows this lack of realization, in general, not to be the case. There have been 11 placeholders added to the CIP, all since FY2011:

- One resulted in a capital project that was built a year earlier than the placeholder would have suggested.
- One was removed the year after it was approved by the Council and replaced with a moratorium. That moratorium was removed the following year by a capital project that remains in the current recommended CIP. The project's completion date was three years later than the original placeholder would have suggested.
- Another was removed the year after it was approved and not replaced with any capital project (nor did the cluster qualify for a moratorium).
- Three were removed the year after being approved by the Council and were replaced by capital projects in the CIP. Of these:
 - One has a timeline consistent with the original placeholder.
 - One has a completion date one year later than the original placeholder.
 - One has a completion date two years later than the original placeholder.
- Five have remained as placeholders for a second consecutive year (four of these were initially included in the FY2016 school test and will continue as placeholders according to the Draft FY2017 school test).

Table 19: Placeholder Projects

Cluster	Level	School Year / Fiscal Year						
		2010-11 FY11	2011-12 FY12	2012-13 FY13	2013-14 FY14	2014-15 FY15	2015-16 FY16	2016-17 FY17 ²¹
Richard Montgomery	ES	PL 2015	MOR	CP 2017	CP 2017	CP 2018	CP 2018	CP 2018
Northwood	ES		PL 2016	CP 2015	CP 2015	CP 2015	CP OPEN	
Northwest	ES		PL 2016	CP 2017	CP 2017	CP 2018	CP 2018	CP 2018
Bethesda-Chevy Chase	MS		PL 2016	CP 2017	CP 2017	CP 2017	CP 2017	CP 2017
Bethesda-Chevy Chase	HS			PL 2017	PL 2018	CP 2018	CP 2018	CP 2018
Northwood	MS						PL 2020	CP 2020
Northwood	HS						PL 2020	PL 2021
Gaithersburg	ES						PL 2020	PL 2021
Wheaton	MS						PL 2020	
Einstein	HS						PL 2020	PL 2021
Walter Johnson	HS						PL 2020	PL 2021

KEY
PL 2015: Placeholder for capacity in 2015-16 school year
CP 2017: Capital project scheduled to open in 2017-18 school year
MOR: Cluster placed in moratorium
CP OPEN: Capital project open
Red text: Change in timeframe from previous year

Recommendation: Placeholder capacity for a particular cluster level or school can only be counted as capacity in the annual school test for two years.

After two years, the placeholder must be either replaced in the CIP with a capital project, removed because the cluster or school would no longer qualify for a moratorium, or be replaced with the appropriate moratorium. Prior to FY2017, every placeholder has been replaced within one year by either a capital project or a moratorium. However, large capital budget shortfalls in recent years have resulted in many capital projects being delayed, regardless of whether the project was preceded by a placeholder.

School Impact Tax

The School Impact Tax is levied on all new development in the county, regardless of school adequacy. The following exemptions apply:

- Units built within current and former State of Maryland designated Enterprise Zones
- Units that are age-restricted for seniors
- Moderately priced dwelling units (MPDUs)

The School Impact Tax is assessed when a building permit is issued, based on the applicable tax per unit in effect at the time of the payment. Impact taxes calculations can be updated any time; however, it is

²¹ Based on preliminary drafts of the FY2017-2022 CIP and FY17 Annual School Test.

not unusual to consider an update to the calculations as part of the Subdivision Staging Policy review process in order to update the student generation rates used in the calculation.

The impact tax represents 90 percent of the cost of a student seat generated at all levels (elementary, middle and high) by a new residential unit and is calculated as follows:

$$0.9 \times (\text{per student construction cost}) \times (\text{countywide student generation rate for type of unit})$$

The School Impact Tax makes a significant contribution to the funding of school construction projects. In FY2015, the MCPS capital budget was about \$250 million and the impact tax collected nearly \$32.7 million. Unlike School Facility Payments, the School Impact Tax funds capital projects throughout the County. The collected funds are not restricted for use in the cluster within which they are collected because they are not tied to adequacy. The table below summarizes the School Impact Tax collections since FY2004:

Table 20: School Impact Tax Collections 2004-2015

Fiscal Year	School Impact Tax Collections
2004	\$434,713
2005	\$7,695,345
2006	\$6,960,032
2007	\$9,562,889
2008	\$6,766,534
2009	\$7,925,495
2010	\$11,473,071
2011	\$14,480,846
2012	\$16,462,394
2013	\$27,901,753
2014	\$45,837,273
2015	\$32,676,773

Recommendation: Update the School Impact Tax amounts to reflect current school construction costs and updated student generation rates.

The per-student construction cost was last used in the calculation of impact taxes in 2007. Since then, the construction cost component has been updated on a biennial basis using a construction index. This change has caused the construction cost component to increase faster than actual per student school construction costs have increased. The table below shows the recommended changes to the impact taxes based on updating the construction costs and generation rates to use current actual data:

Table 21: Comparison of School Impact Tax 2007 to 2016

Unit Type	Current (2007) Impact Tax per Unit	Proposed (2016) Impact Tax per Unit
Single Family Detached	\$26,827	\$24,809
Single Family Attached	\$20,198	\$13,623
Multi-Family Low- to Mid-Rise	\$12,765	\$4,659
Multi-Family High-Rise	\$5,412	\$2,259

Recommendation: Remove the 0.9 multiplier in the School Impact Tax, so as to capture the full cost of school construction associated with a new residential unit.

The 0.9 multiplier was applied to the calculation when the impact tax was significantly revised in 2007. Prior to 2007, the school impact tax represented less than 50 percent of the cost of a student seat. There has been criticism from some in the community that the impact tax does not do enough to capture the true school capital cost associated with new construction. In particular, the calculation does not incorporate the cost of land acquisition for new school facilities.

The additional 10 percent that would be captured by removing the 0.9 multiplier could be placed in the MCPS Advance Land Acquisition Revolving Fund (ALARF), to be used strictly for the purchase of property for new MCPS schools. Over the last three fiscal years, this change would have resulted in nearly \$12 million dedicated to school land acquisition.

Enterprise Zone Exemptions

The Maryland Enterprise Zone (EZ) Program designates areas of the state meeting certain requirements as targets for employment growth. A business owner in an Enterprise Zone may apply for income tax credits based on the number of jobs created by the business within the zone. Property tax credits are also available for businesses that hire new employees or invest in capital improvements. The EZ designations are for a period of 10 years, and in Montgomery County there are currently four Enterprise Zones:

- Olde Towne Gaithersburg (designation expires on June 14, 2018)
- Glenmont (June 14, 2023)
- Long Branch – Takoma Park (June 14, 2023)
- Wheaton (June 14, 2019)

Former Enterprise Zones in Montgomery County include Downtown Silver Spring, which had a designation that expired in 2006.

The purpose behind exempting Enterprise Zones from the School Impact Tax and School Facility Payments was to encourage revitalization and support economic growth within the zone by making

development more affordable. The 2007 Growth Policy proposed significant increases in the Transportation Impact Tax and School Facility Payment; it also added the School Impact Tax.

Recognizing that the Silver Spring Central Business District had recently had its designation as an Enterprise Zone expire and was only beginning to experience redevelopment, the Planning Board and County Council extended the school impact tax and payment exemptions to Downtown Silver Spring as a former Enterprise Zone. Now that 10 years have passed since the expiration of Silver Spring CBD's Enterprise Zone designation, there is little rationale for maintaining this exemption.

[Recommendation: Reintroduce the School Impact Tax and School Facility Payments in former Enterprise Zones through a phased approach.](#)

For the first three years following the expiration of the Enterprise Zone designation, the standard School Impact Tax and School Facility Payments (if applicable) are discounted by 50 percent. After three years, the tax and payments will increase to the full level. Upon adoption of this policy, all former Enterprise Zones currently exempt from the School Impact Tax and School Facility Payments would enter into the three-year discount phase, regardless of the length of time since the Enterprise Zone designation expired.

[Recommendation: Conduct further research to develop the criteria and process by which an area of the County can be exempted from the School Impact Tax and School Facility Payments.](#)

Recordation tax

One common misperception of the annual school test is that imposing a moratorium will prevent a cluster's enrollment from continuing to grow. The vast majority of the county's school enrollment growth over the last decade, however, has come from turnover within the existing housing stock – not from the construction of new homes.

The school construction cost impact of this turnover is mitigated through the collection of a recordation tax on the sale of every home. The tax rate is currently set at \$3.45 per \$500 of the home sale and this tax is paid by the home buyer at settlement. Only a portion of this – \$2.50 per \$500 – is dedicated to Montgomery County Public Schools.

[Recommendation: Further investigate options to increase the recordation tax to better capture the school construction cost associated with a home sale.](#)

In 2014, nearly 11,000 of the County's existing homes were sold. In that same year, about 3,800 new homes started construction, for a ratio of existing home resales to new home starts of nearly 3:1. Over the 13-year period from 2002 to 2014, that same ratio is 3.6 to 1. With the vast majority of home sales

in Montgomery County coming from the existing housing stock, the County needs to better capture the school construction cost implications of these transactions.

Future Approaches

County Sustainability Efforts

In 2014, the County Council created the Office of Sustainability within the Department of Environmental Protection. The goal of the Office is to promote sustainability in Montgomery County in collaboration with residents, businesses and community-based organizations through activities related to energy efficiency and renewable energy, green business development, trees and forests, environmental education and outreach, and other environmental programs.

The Office also coordinates and reports on progress toward implementing the County Climate Protection Plan, benchmarking the County against others with regard to energy efficiency and other sustainability-related policies and programs, and is currently evaluating a broader Countywide sustainability reporting framework. The most recent Office of Sustainability Annual Report details progress made in these areas, and introduces a comprehensive sustainability reporting framework (Star Communities <http://www.starcommunities.org/>) for achieving the County's sustainability goals and objectives. The Report also includes tables and graphics that show where the County stands relative to sustainability metrics related to a wide variety of issues including transportation, energy, solid waste and the environment. The 2015 Annual Sustainability Report is available at <https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Sustainability/2016-Office-of-Sustainability-Report-Final.pdf>.

The Subdivision Staging Policy is based on the need to ensure sustainability as the County grows, particularly with respect to transportation and schools. As the County continues to explore and track the full range of sustainability issues, the results of those efforts may be useful in considering future revisions of the Subdivision Staging Policy.

Water Quality as a Growth Offset Factor

Many of the County's local waters are failing to comply with state water quality standards. This lack of compliance is also the case on a larger regional scale. The Chesapeake Bay, for example, is failing to meet water quality standards and pollutant reduction requirements (TMDLs) have been issued for local jurisdictions, including Montgomery County, that drain to the Bay. To comply with the standards, existing nutrient and sediment loads must be reduced as well as those from all future development. For counties with remaining greenfield opportunities, the required compliance can pose a significant challenge.

In Montgomery County, new greenfield development will be required to reduce pollutant loads. The State is currently working to develop a growth offset policy and regulations to address this issue. The guidance for such an offset program is not yet available, but should be considered in developing the 2020-2024 Subdivision Staging Policy.

Adequate Green Infrastructure: Urban Parks

Current park acquisition tools when applied to urban areas are limited and new financial tools must be explored. To create the networks of parks, trails and recreation envisioned in County master plans,

additional funding from development taxes/fees should be considered. However, prior to establishing any specific value for fees or requirements for land dedication, an assessment of County government's ability to administer this additional service is needed.

In addition to taxes or fees, mechanisms such as potential partnerships with non-governmental organizations (NGOs), developers, other agencies, businesses and land owners should be explored. In the meantime, the Parks Department proposes to initiate its survey of alternative funding sources and collect more updated information from other jurisdictions. This information and lessons learned will benefit the development of new practices for the County's Park, Recreation and Open Space (PROS) and Urban Parks Functional Plans.

An initial process to identify, quantify and qualify a potential impact tax or mitigation payment for parks could include the following steps:

1. Identify the need
 - Following recommendations in the most current PROS and master plans, identify which County areas should be a priority for parkland acquisition and parks improvements.
2. Identify Funding Tools + Partnerships
 - Engage with NGOs, community residents and all stakeholders involved, including other agencies, to explore creative funding mechanisms, including impact taxes or developer fees.
3. Test for Adequacy
 - Identify and establish metrics and targets for adequacy of parkland and park facilities per capita for specific areas of the County.
 - Identify tracking system – accountability and maintenance.
 - Analyze outcomes from tests.
4. Select Best Option
 - Establish calculation criteria for both land dedication and fees in lieu, based on population, number of units and/or square footage of construction in a defined area. Fees in lieu should consider alignment with construction costs and limited time frames to implement improvements or acquire land.
 - Land Dedication – Recognize not only the quantity of parkland but also its quality and strategic location, based on an integrated approach among the different stakeholders and agencies to define the best location for parks and other infrastructure services. Pursue overlapping functions, such as stormwater management with active recreational activities.
 - Fee in lieu - Develop criteria for both impact taxes and mitigation payments. The nexus between taxes and payments needs to be established and supported by master plans and existing regulatory documents.
5. Implement governance structure
 - Establish mechanisms and tools to design, program and operate parks and recreational facilities once a school project gets finalized. Partnerships with NGOs are encouraged as a way to have a dedicated and committed ally to review specific projects.
 - Develop an evaluation matrix to evaluate facilities performance and adaptation to emergent technologies and sustainable practices. This matrix serves as a tool to evaluate the need for updates in the ordinance.

The process needs to consider a clear path for developers and land owners to understand where their payments are being applied, and whether the requirements are equitable and fair. Government should be able to assess and promote how well new parks contribute direct and indirect health, social and environmental benefits to park users, developers and the public via the tax base.

Urban Environmental Design Guidelines

Finding ways to provide additional environmental benefits over existing conditions in redeveloping areas is becoming increasingly important as suburban areas become more complex and urban in design. Exploring creative ways of incorporating more tree canopy, green roofs, green buildings, green stormwater management, along with improved walkability and bikeability will help to meet a variety of important objectives.

These goals include meeting and maintaining air and water quality standards, and optimizing community health, quality of place and life, and long-term economic benefits. Local conditions and constraints can affect the degree to which some of these objectives can be achieved, especially in urban areas. Looking at specific areas and sites creatively, however, will often reveal approaches to achieving more objectives than might seem possible at first glance.

One potential way to facilitate these efforts would be to develop Urban Environmental Design Guidelines to steer new development, including housing, schools and parks. Such guidelines are being increasingly adopted in jurisdictions across the country. They have been especially helpful to communities struggling to accommodate population growth through redevelopment, meet increasingly stringent water and air quality standards, and provide more attractive, livable, healthy and economically viable urban areas.