

SUBDIVISION STAGING POLICY



Abstract

The 2016 Subdivision Staging Policy (SSP) contains many new ideas that essentially rethink how we approach growth and its effect on our public facilities – particularly our schools and our transportation network. This SSP provides a more context-sensitive, multi-modal approach to both the regional and local tests for transportation. It organizes policy areas into 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.

It moves away from policies focused predominantly on car travel by creating multi-modal adequacy tests that look at how areas of the county are meeting their transit accessibility goal, and by measuring person trips associated with new development instead of only vehicle trips. When vehicle trips are evaluated, this SSP provides updated trip generation rates that reflect current land use patterns and travel behavior. It also recognizes the important connection between vehicle trips and parking – allowing for adjustments to vehicle trip rates and transportation impact taxes based on reduced parking.

The 2016 Subdivision Staging Policy recognizes the value of coordinated infrastructure improvements in our Metro Station Policy Areas (MSPAs), and proposes that impact taxes collected in the MSPAs be used to fund facilities needs within these areas.

With respect to school facilities, the 2016 SSP 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 provide needed facilities and services. It utilizes student generation rates that are associated with all residential structures regardless of year built – so as to capture the enrollment impact of new housing over its lifetime, and it implements a hybrid annual school test that combines cluster utilization tests with individual school capacity deficit tests, an adequacy test long-desired by our parent community.

This SSP creates a system to regularly update the school facility payment formulas and impact tax rates so as to keep up with the latest student generation rates and school construction costs. It limits the use of “placeholder” capacity to two years so that there is clarity about the timing and the likelihood of real capacity improvements. And it sets aside a portion of the impact tax for the acquisition of land for schools, and allows for credit in certain land dedication cases.

The 2016 Subdivision Staging Policy moves Montgomery County forward to a future that will be more multi-modal, more diverse, more populous, and require increasingly more innovative ideas on how to provide public facilities that support our quality of life.

Sources of Copies

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Subdivision Staging Policy

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Table of Contents

Introduction 1

Overview 3

What is Subdivision Staging Policy	3
How does the Subdivision Staging Policy relate to our County master plans and the CIP?	3
What's New in the 2016-2020 Subdivision Staging Policy?	4

Growth Status and Trends 5

Character of Change	5
Pace and Pattern of Growth	8
Infrastructure Conditions	11
Transportation	11
School Capacity	12
Water and Sewer Service	12
Environment	15
Water Quality	15
Air Quality	15
Forest and Urban Tree Canopy	16
Parks	16

Transportation Recommendations 17

Motivation for Changes to the Transportation Adequacy Tests	18
Considering Land Use Context	18
Policy Area Based Transportation Test	21
Local Area Transportation Test	24
Scoping	25
Adequacy	27
Mitigation	30
Coordination with Municipalities and Implementing Agencies	32

Other Recommendations as a Result of

Modifications to the Policy Area Test and LATR 32

Transportation Impact Tax 32

Transportation Impact Tax Rate Update	35
Adjustments to Base Rate	39
Comparing Existing Rates with New Recommended Rates Derived by Applying Recommended Locational Adjustment Factors Related to Per Capita VMT and NADMS	39
Comparing Current Rates and Recommended Rates Across Policy Areas and Land Uses	41
Adjustment to Transportation Impact Tax to Incentivize Reduced Parking	44
Clarksburg Placetype Considerations	44
Land Use Context	44
Planning History	45

School Recommendations 46

Student Generation Rates 46

Annual School Test 47

School Facility Payments 49

Placeholder Projects..... 51

School Impact Tax..... 52

Enterprise Zone Exemptions	54
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Future Approaches..... 55

County Sustainability Efforts	55
Water Quality as a Growth Offset Factor	55
Adequate Green Infrastructure: Urban Parks	56
Urban Environmental Design Guidelines	56

List of Figures and Tables

Tables

Table 1: Transit Accessibility Mitigation Requirements by Policy Area	23
Table 2: ITE Vehicle Trip Adjustment Factors	26
Table 3: Intersection Analysis Approach.....	28
Table 4: Congestion Standards for CLV and Average Vehicle Delay	29
Table 5: Summary of Changes to Local Area Test Features and Relation to Transportation Impact Tax	31
Table 6: Transportation Impact Tax Rates effective July 1, 2015	33
Table 7: Comparison of Pre-2007 Rates and 2007 Rates	35
Table 8: Updated Calculated 2016 Rates Using the 2007 Methodology.....	36
Table 9: Comparing Calculated 2016 and 2007 Rates with Current Rates	37
Table 10: Recommended Base (General District) Rates Using Difference Between 2007 Calculated and 2007 Adopted Rates	38
Table 11: Current Locational Adjustment Factors to Transportation Impact Tax Base (General District) Rates	39
Table 12: Recommended Locational Adjustment Factors to Transportation Impact Tax Base Rates.....	39
Table 13: Comparison of Recommended Rates by Policy Area Groups with Base Rates	40
Table 14: Comparison of Current and Proposed Transportation Impact Tax Rates.....	41
Table 15: Comparison of Current and Proposed Transportation Impact Tax Rates.....	42
Table 16: Recommended Rates with Commercial Policy Adjustment in MSPAs	43
Table 17: Multiplier for Transportation Impact Tax Reduction – Parking Incentive.....	44
Table 18: Student Generation Rates, 2016	47
Table 19: Summary of School Test Thresholds.....	48

Table 20: School Construction Cost per Student Seat	49
Table 21: School Facility Payments Collected.....	50
Table 22: Comparison of School Facility Payment Rates, 2012 to 2016.....	50
Table 23: Placeholder Projects	52
Table 24: School Impact Tax Collections 2004-2015	53
Table 25: Comparison of School Impact Tax 2007 to 2016	53
Table 26: Former Enterprise Zone Exemption Phase-out	54

Maps

Map 1: Forecasted Patterns of Growth (2010 to 2045).....	9
Map 2a: Water Pipe Infrastructure.....	13
Map 2b: Sewer Pipe Infrastructure.....	13
Map 3: Stream Conditions 2013	14
Map 4: Restricted Pollutants by Watershed, 2016	14
Map 5: Silver Spring CBD, Land Cover	15
Map 6: Policy Areas based on 4 key Categories.....	20

Figures

Figure 1: Population Migration 1990-2015.....	6
Figure 2: Race & Hispanic Origin, 1980-2014.....	7
Figure 3: Employment, Household, and Population (1990 to 2045).....	8
Figure 5: Compares Existing and Future Density with Current Home Based Work (HBW) NADMS by Policy Area	19
Figure 6: Conceptualization of Transit Accessibility.....	21
Figure 7: Transit Accessibility to Jobs within 60 minutes by Policy Area	22
Figure 8: Funding Sources for All Transportation Projects in The CIP	34
Figure 9: Allocation of Local Funds in The CIP for System Capacity Expansion	34

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.
- 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 operational and network analyses.
- Directing transportation impact taxes to the geographic area where they are being collected for our Metro Station 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

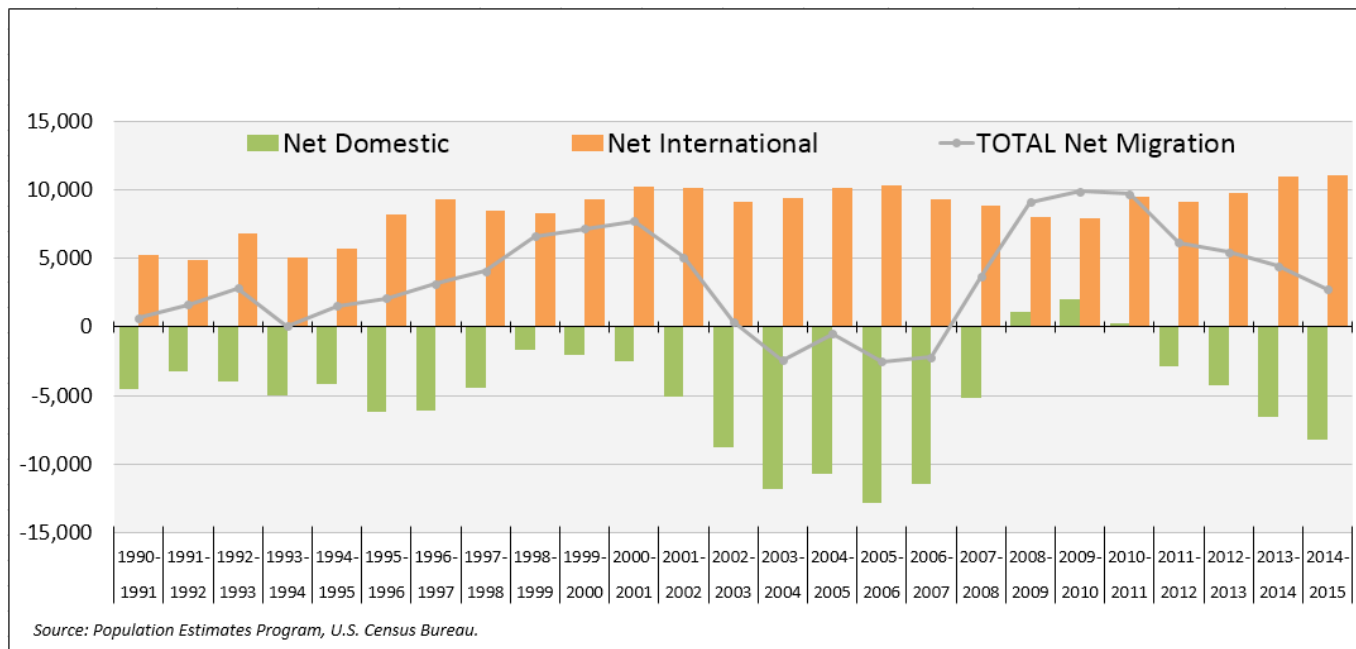
Over the past four decades, as Montgomery County repositioned itself from a bedroom community of commuters to a regional job center, change in the County was marked by its population growth. Now, this diverse, populous county has settled into a mature growth stage. The County has an annual population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

Figure 1: Population Migration 1990-2015



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

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.

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.

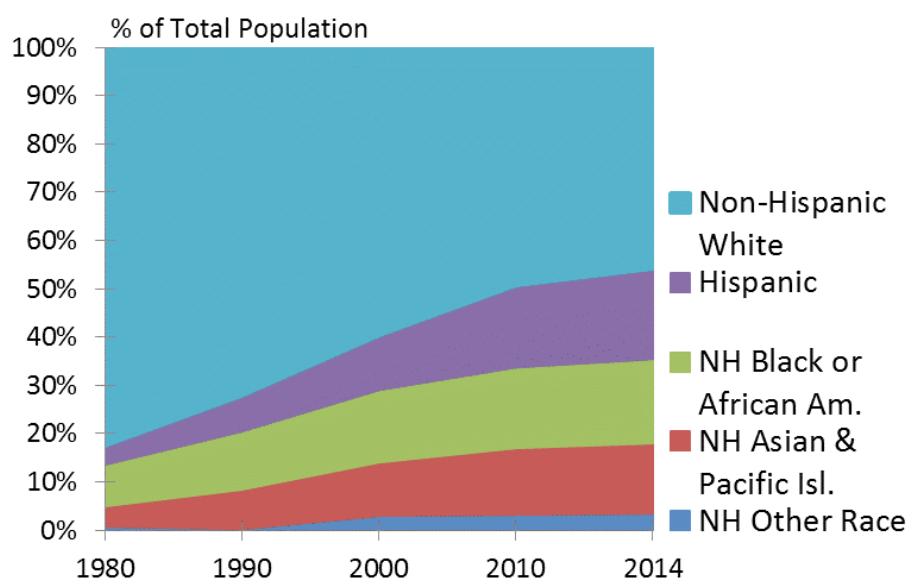
Continued growth in the minority population is expected, assuming sustained migration patterns and minority birthrates. By 2040, the Maryland Department of Planning predicts 68 percent of the County's population will belong to a minority group. Not until 2044 will the minority population become the majority 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.

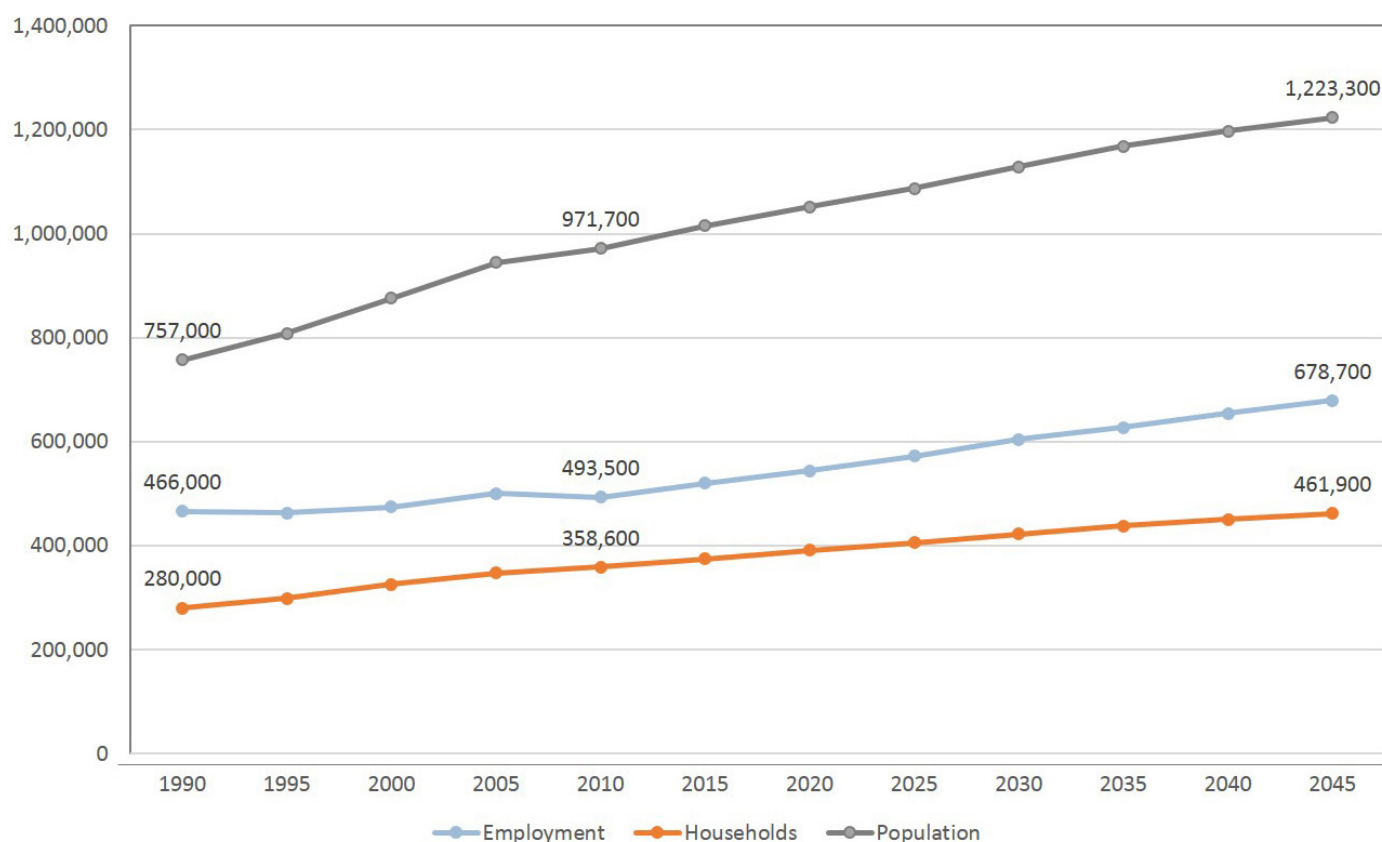
Alternatively, the baby boomer household may choose not to move and age in place after postponing retirement, either by choice or financial necessity. If a significant number of seniors decide to age in place or delay moving out, these actions may depress housing turnover in the neighborhood, stalling 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.

Figure 2: Race & Hispanic Origin, 1980-2014



Source: 1980-2010 U.S. Census, 2014 American Community Survey

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



Source: 1990 and 1995 figures, historical Round 6.1 forecasts. 2000 and 2005 figures, historical Round 7.0 forecasts. 2010 to 2045 figures, Round 9.0 Cooperative Forecast. All data tabulated by the Research & Special Projects (RSP) Division.

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.

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.

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 4).

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

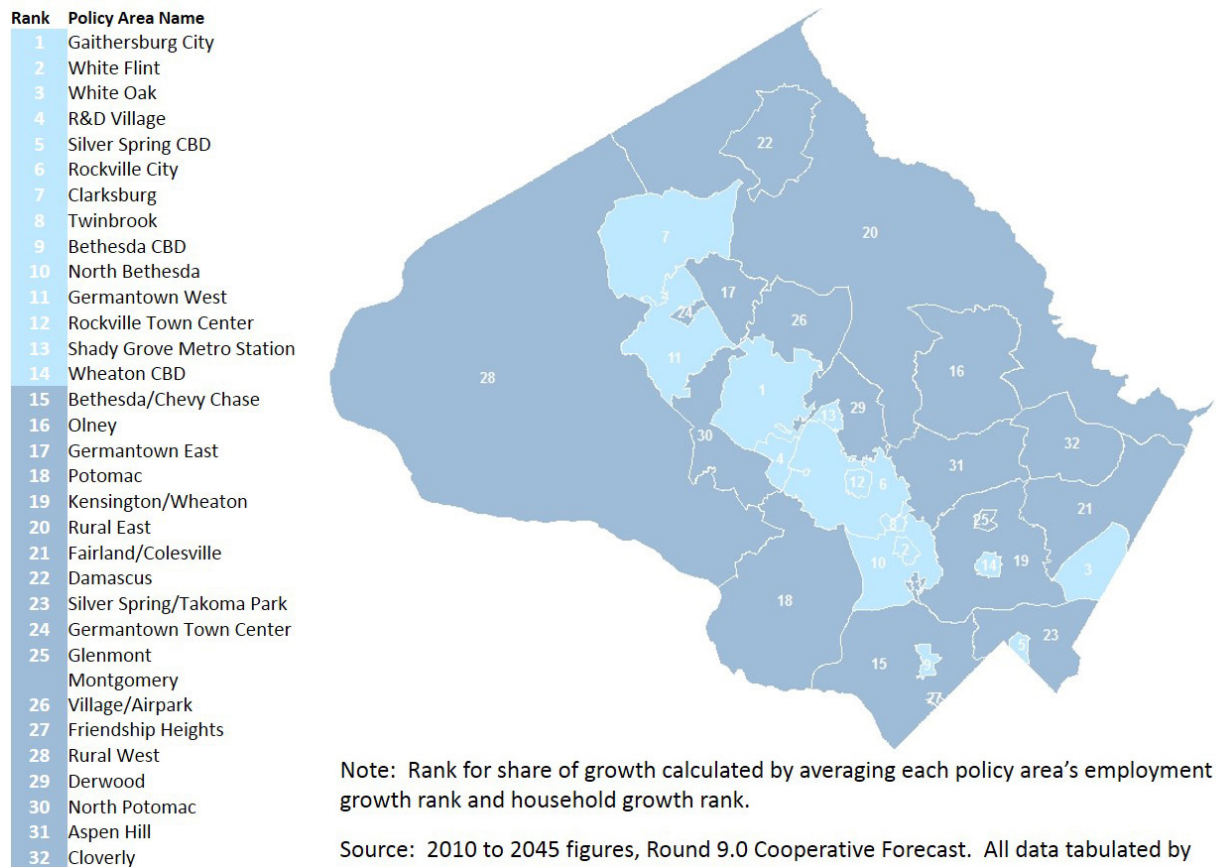
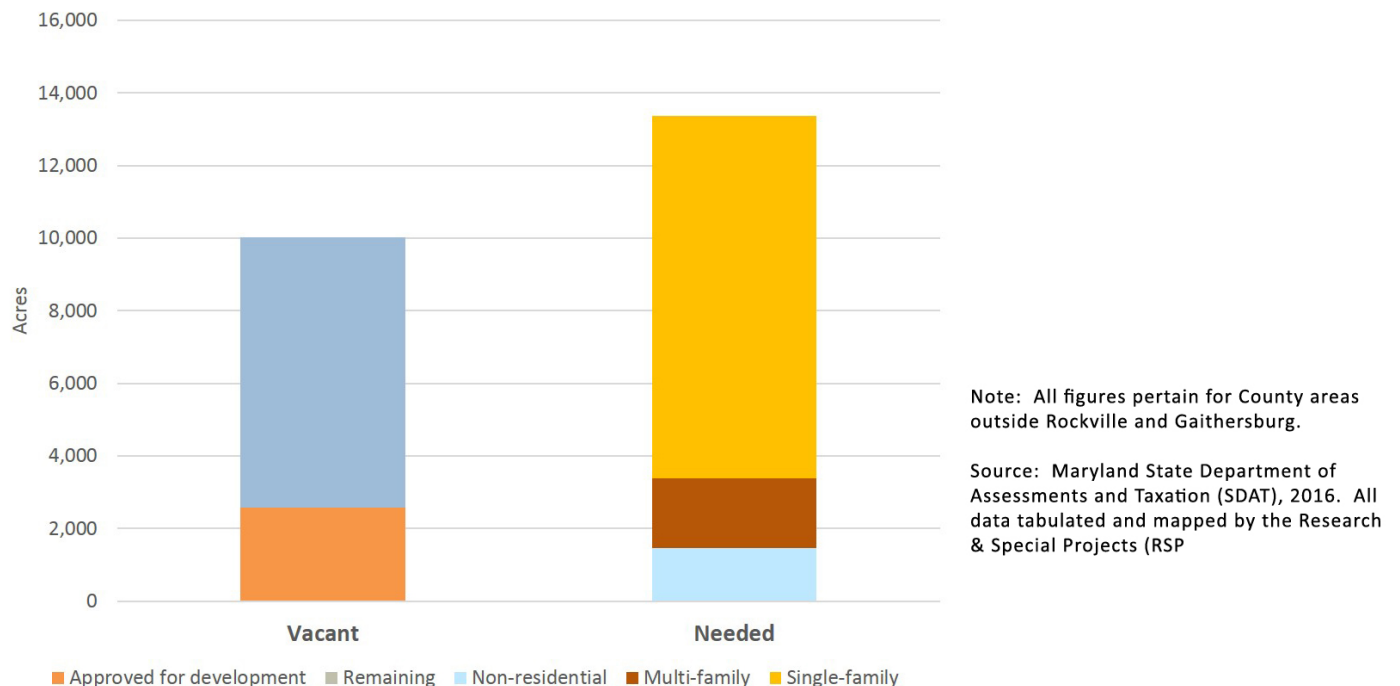


Figure 4: Estimate of Land Needed for Forecasted Growth (2010 to 2045)



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, traffic derived from new surrounding approved development, and programmed improvements to the transportation 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 during 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

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.

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 metric is that the measurement is a close approximation of what drivers care the most about- travel speed- 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.

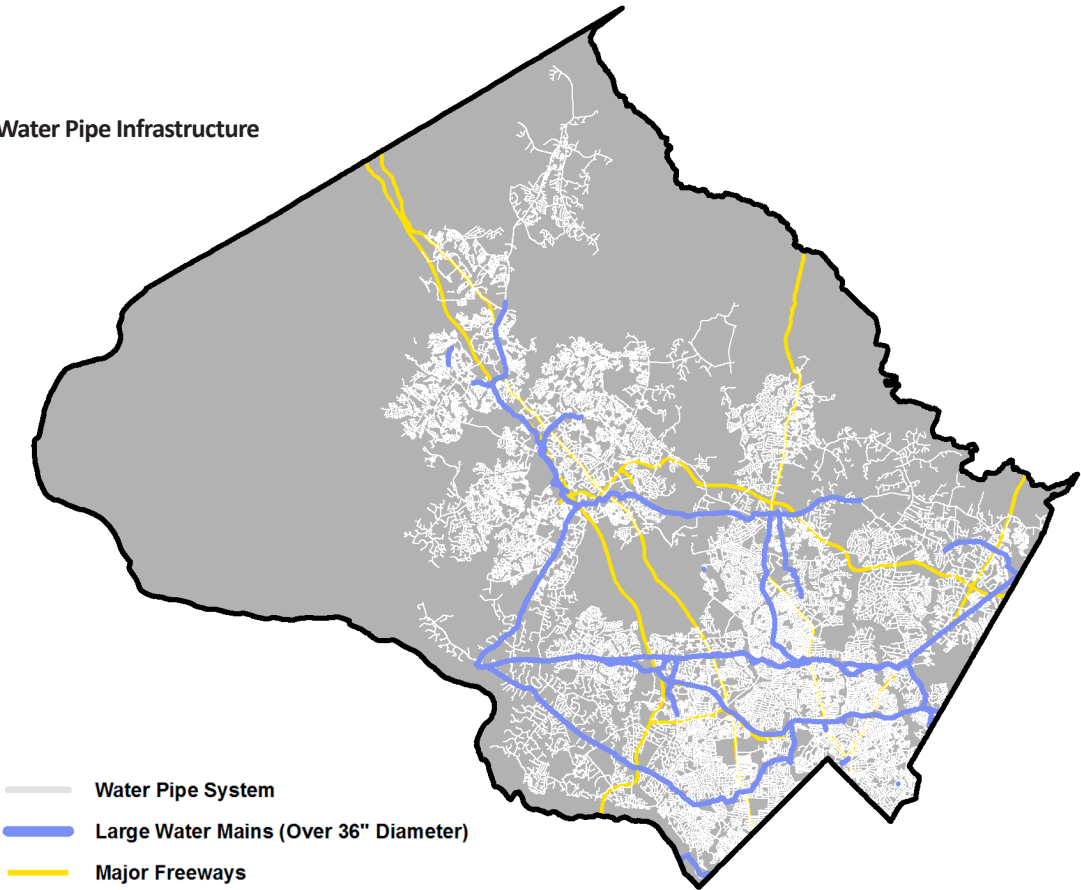
Water and Sewer Service

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.

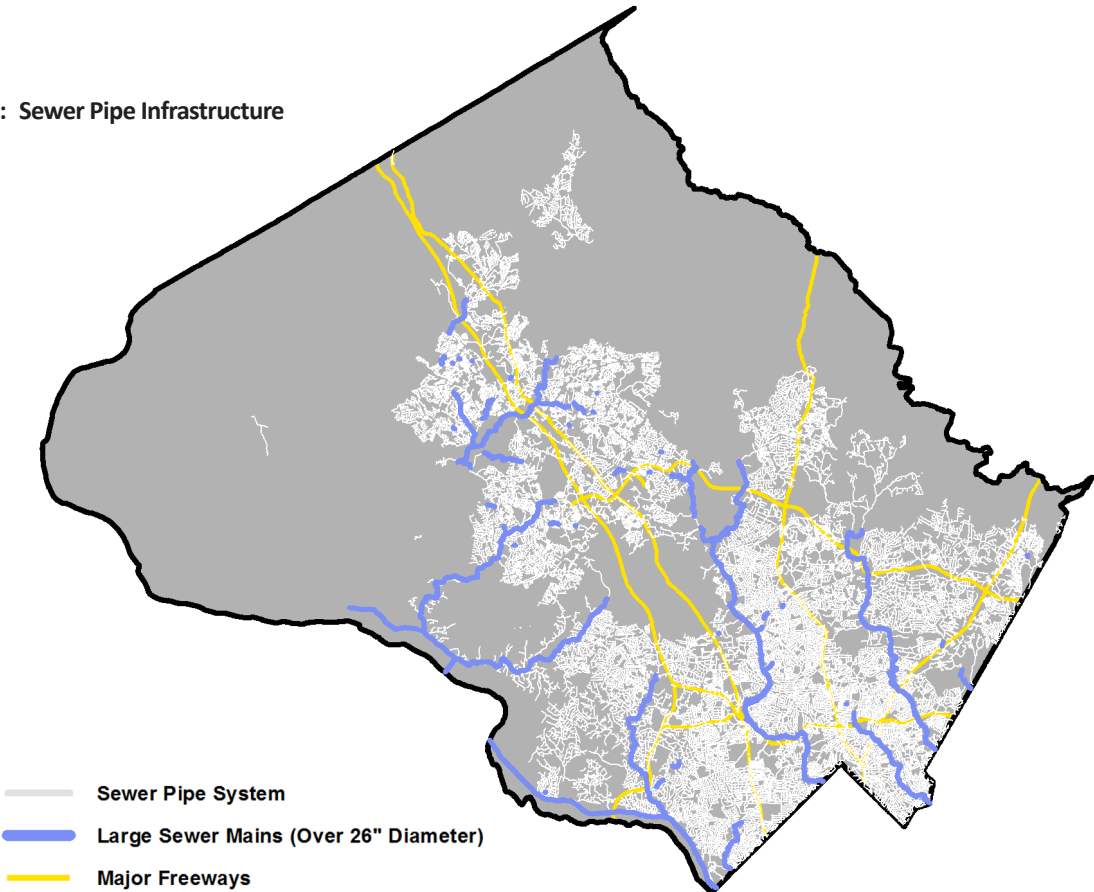
One important concern in the upkeep of this infrastructure is the monitoring and eventual replacement of large, high pressure water mains. These mains distribute water to all parts of the system and help maintain adequate service and pressure. Unfortunately, some of the materials in these pipes are beginning 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.

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.

Map 2a: Water Pipe Infrastructure



Map 2b: Sewer Pipe Infrastructure



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.

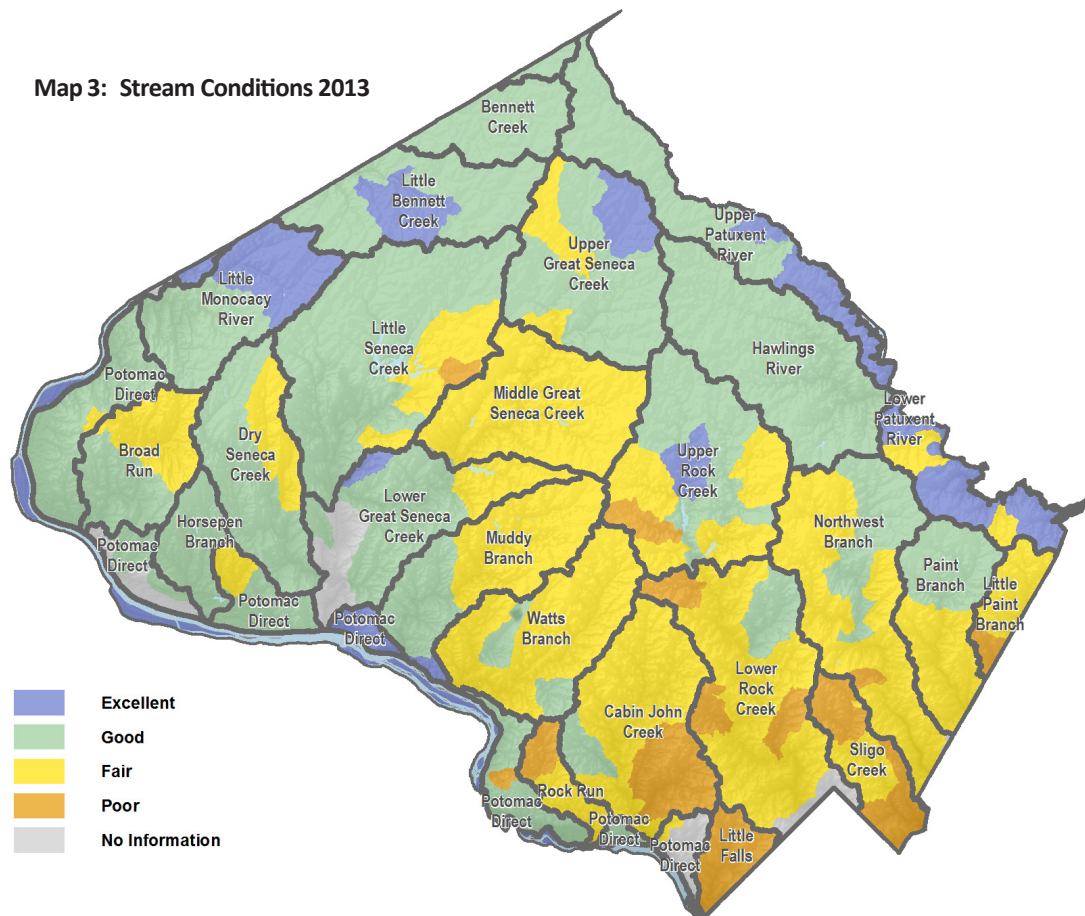
Water Quality

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).

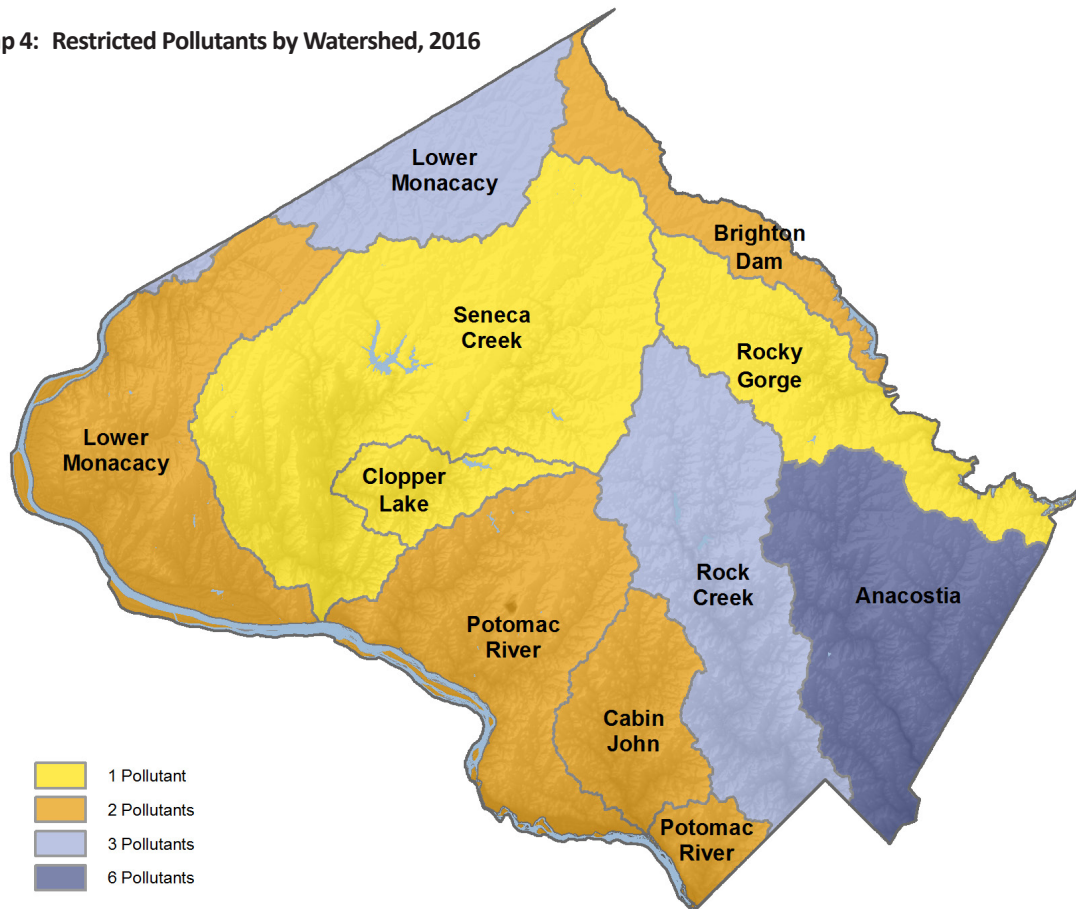
For jurisdictions throughout the Chesapeake Bay watershed, reducing pollutants to meet these requirements and continuing to meet them while the population and employment base continue to grow, will require a significant commitment and investment. The County is in the process of determining how to reduce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

Map 3: Stream Conditions 2013



Map 4: Restricted Pollutants by Watershed, 2016



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.

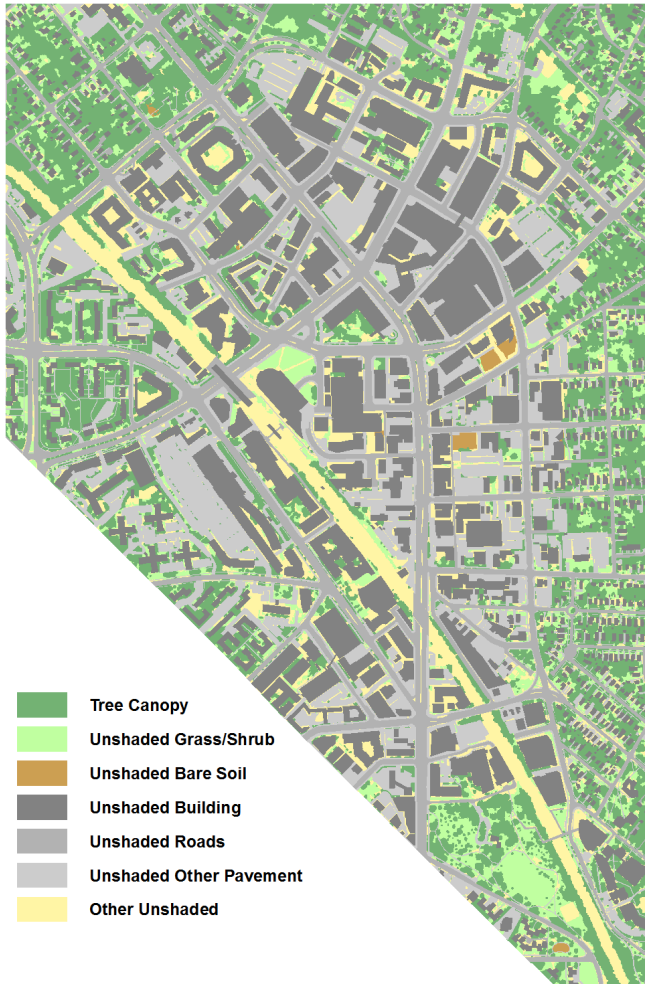
As with water quality, redevelopment provides opportunities to increase local and regional air quality, not only through improving transit options, decreasing vehicle use, increasing walkability and bikeability, and creating more energy-efficient buildings, but also through incorporating green spaces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

Map 5: Silver Spring CBD, Land Cover



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.

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.

Transportation Recommendations

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 Planning Board 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 the Planning Board Draft.

- Too complex and unpredictable:
 - o The level of complexity and uncertainty in conducting LATR is confusing to many members of the public.
 - o The cost and uncertainty of LATR can be a deterrent to the private sector applicant, particularly for smaller infill sites in more developed areas.
 - o 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:
 - o The current processes, LATR and TPAR, rely too heavily on analysis of roadway capacity and level of service.
- Assessment of adequacy does not reflect a traveler's actual experience:
 - o 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.

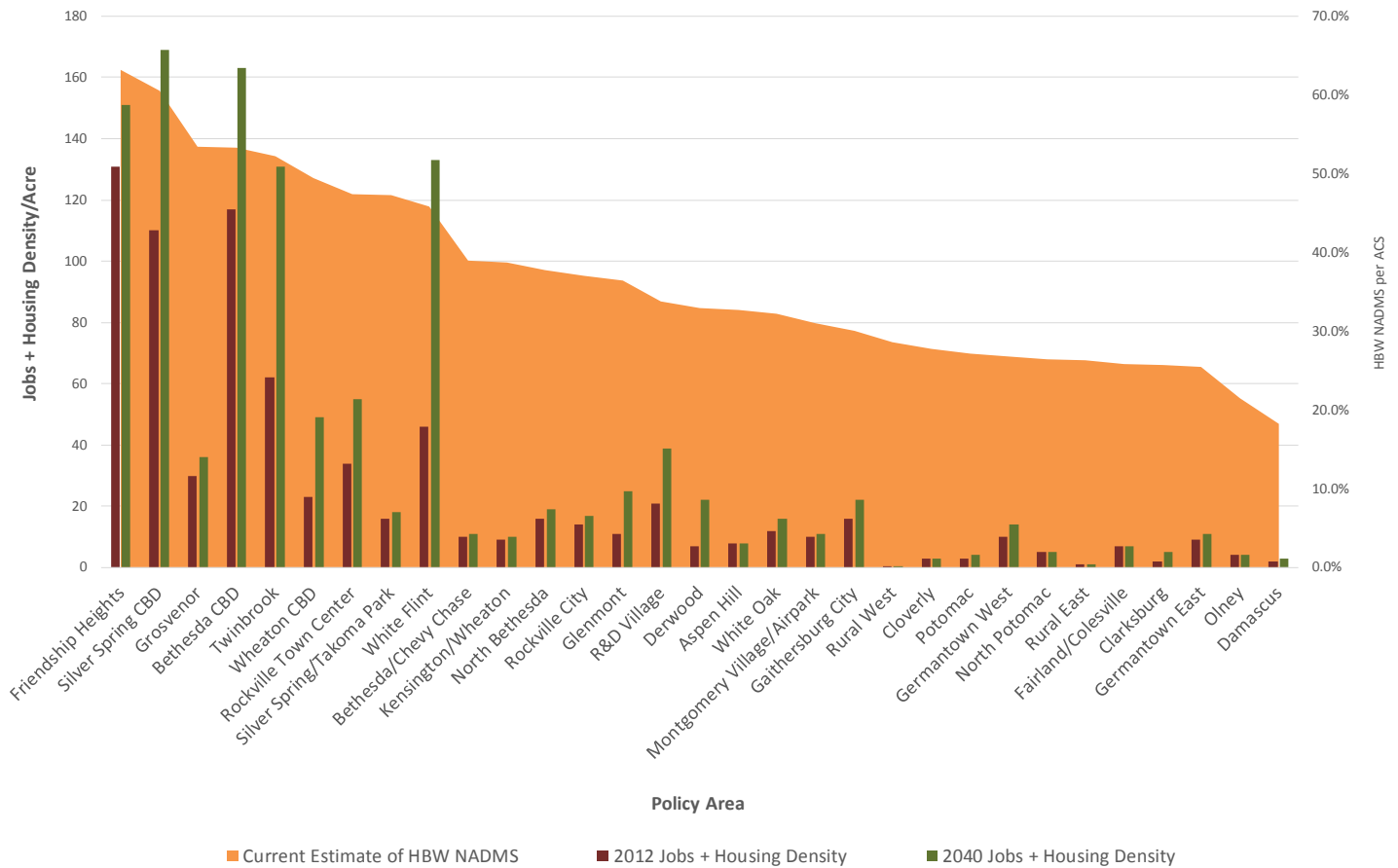
Montgomery County's organizing approach has been to identify Policy Areas that broadly gauge the diversity of places within the County and help assess transportation needs from an area-wide perspective. The County is divided into 33 different Policy Areas that are currently classified in the Subdivision 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 this 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 (as depicted in the figure below) 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: Compares Existing and Future Density with Current Home Based Work (HBW) NADMS by Policy Area

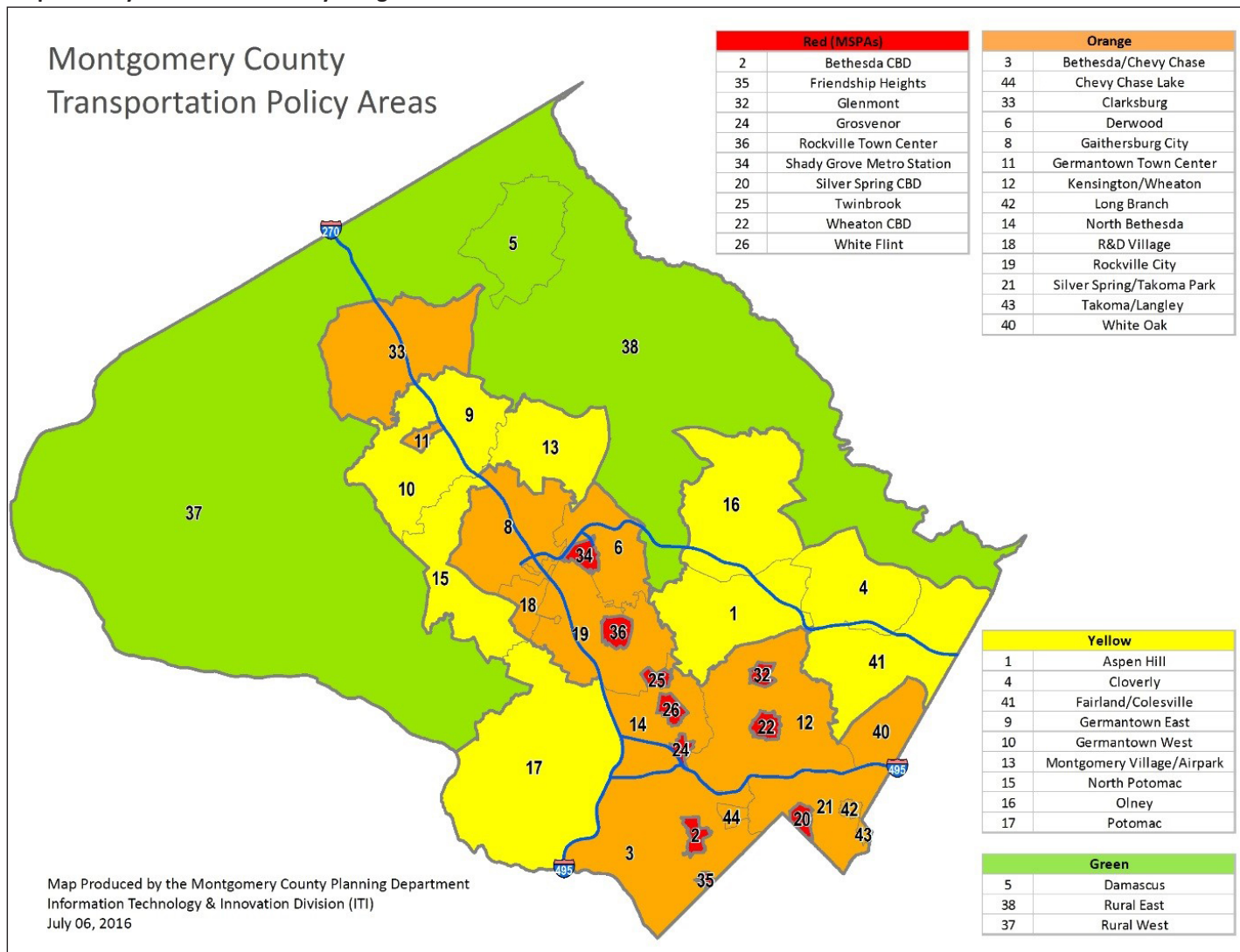


The block group data used to summarize the NADMS data are from the latest U.S. Census Bureau's release, 2009-2013 American Community Survey, 5-year estimates. Most of the policy areas aligned nicely with Block Group boundaries; Damascus is the poorest match. Block Groups could not be aggregated for two small policy areas, Germantown Town Center and Shady Grove Metro Station.

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

- **Red Policy Area (MSPAs):** 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).
- **Orange Policy Area:** Corridor cities, town centers, and emerging Transit-Oriented Development (TOD) areas where premium transit service (i.e., Corridor Cities Transitway, Purple Line/Bus Rapid Transit) is planned.
- **Yellow Policy Area:** Lower density areas of the County characterized by mainly residential neighborhoods with community-serving commercial areas.
- **Green Policy Area:** The County's agricultural reserve and rural areas.

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. The Clarksburg Policy Area presents an example of that challenge. It is a place that in the near term will be moving closer to the original vision of a walkable, mixed-use community, 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 Policy Area would be best served by acknowledging the longer term goals. As a result, the recommendation is to place the Clarksburg Policy Area in the “Orange” category to reinforce the original vision and eventual extension of the Corridor Cities Transitway to Clarksburg.

Three new Policy Areas are also recommended for the “Orange” category 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/sector 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: Place the Clarksburg Policy Area in the “Orange” category in recognition of the original vision for this area and the planned high-quality transit service to be provided by the Corridor Cities Transitway, and establish three new Policy Areas also categorized as “Orange” 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 transportation improvements recognized as fiscally feasible from a regional planning perspective and therefore included in the Constrained Long Range

Plan (CLRP) such as the Purple Line and the Corridor Cities Transitway. These transportation improvements are assumed in combination with the Countywide Transit Corridors Functional Master Plan (CTCFMP) network reflecting service attributes in the non-CCT corridors which are largely by average speeds that are faster than local bus service but less than speeds that would be attained operating in fully dedicated lanes.⁸

- **Regulatory horizon (year 2025) transit accessibility** with transportation 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.

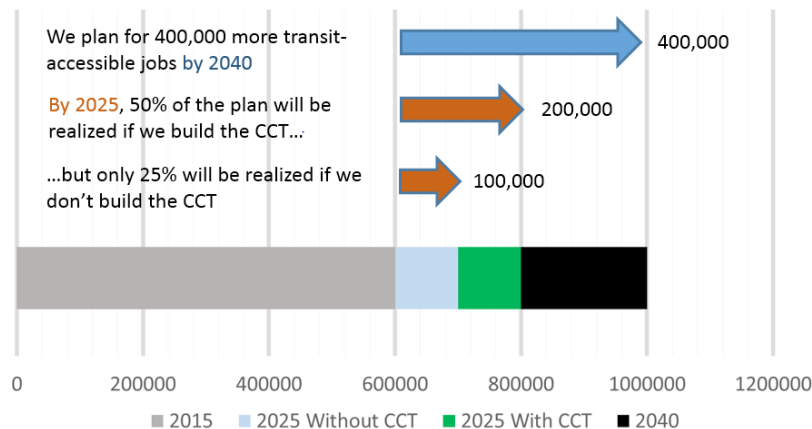
These conditions were evaluated in the context of an analysis reflecting the following land use/transportation scenarios:

- **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 the CTCFMP network and year 2040 land use

A general conceptualization of these scenarios and the derived transit accessibility results by policy area are summarized and depicted in Figure 6 and Figure 7, respectively.

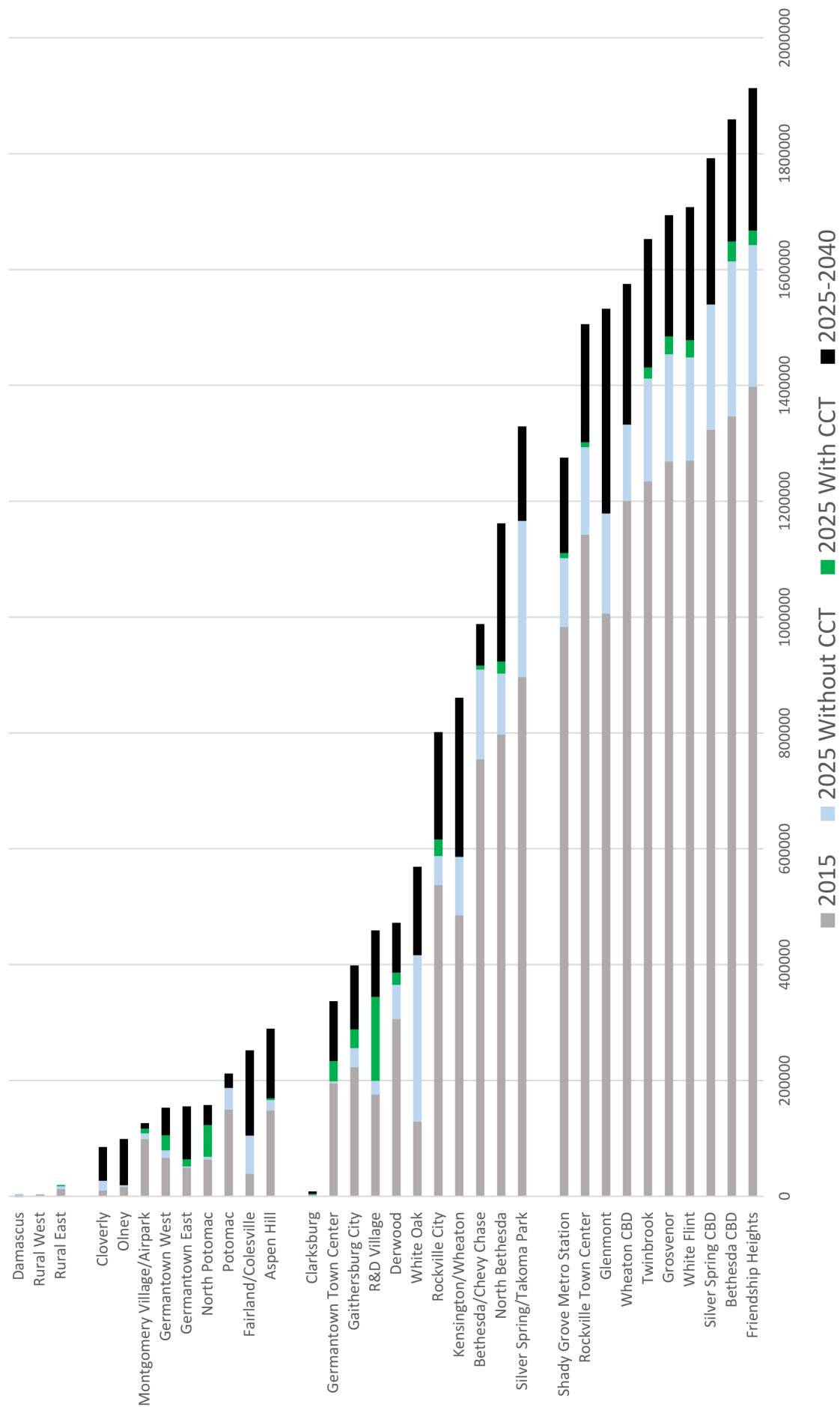
Figure 6: Conceptualization of Transit Accessibility

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, this chart shows that:



⁸ It is anticipated that the CTCFMP network for the applicable horizon year will be adjusted in subsequent SSP reviews to reflect service attributes resulting from more detailed facility planning efforts as these studies are completed.

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



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 the mitigation requirement for these areas to help fund transit capital projects or transit access projects should be specified as follows:

- If transit accessibility in 2025 is between 30% - 40% of 2040 transit accessibility, a partial mitigation payment of 15% of the applicable transportation impact tax is required.
- If transit accessibility in 2025 is less than 30% of 2040 transit accessibility, a full mitigation payment of 25% of the applicable transportation impact tax is required.

The results of the transit accessibility test by policy area are reported in Table 1 below.

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 roadway metric of the forecasted percent of congested speed relative to free flow speed over major roadway segments within a Policy Area would be entirely abandoned. Staff recognizes that the 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. Similarly, the TPAR transit metrics (i.e., headway, coverage and span of service) which focus on the evaluation of local transit service should also be retained as a tool to support the evaluation of capital programming needs. The recommended focus on making transit accessibility

Table 1: Transit Accessibility Mitigation Requirements by Policy Area

Policy Area	Transit Accessibility Mitigation
Red Policy Area	
Bethesda CBD	Exempt
Friendship Heights	Exempt
Grosvenor	Exempt
Glenmont	Exempt
Rockville Town Center	Exempt
Shady Grove Metro Station	Exempt
Silver Spring CBD	Exempt
Twinbrook	Exempt
Wheaton CBD	Exempt
White Flint	Exempt
Orange Policy Area	
Bethesda/Chevy Chase	Adequate
Clarksburg	Inadequate, Full Mitigation
Derwood	Inadequate, Partial Mitigation
Gaithersburg City	Inadequate, Full Mitigation
Germantown Town Center	Inadequate, Full Mitigation
Kensington/Wheaton	Inadequate, Full Mitigation
North Bethesda	Inadequate, Full Mitigation
R&D Village	Inadequate, Full Mitigation
Rockville City	Inadequate, Full Mitigation
Silver Spring/Takoma Park	Inadequate, Full Mitigation
White Oak	Adequate
Yellow Policy Area	
Aspen Hill	Inadequate, Full Mitigation
Cloverly	Inadequate, Full Mitigation
Fairland/Colesville	Inadequate, Partial Mitigation
Germantown East	Inadequate, Full Mitigation
Germantown West	Inadequate, Full Mitigation
Montgomery Village/Airpark	Adequate
North Potomac	Inadequate, Full Mitigation
Olney	Inadequate, Full Mitigation
Potomac	Adequate
Green Policy Area	
Damascus	Exempt
Rural East	Exempt
Rural West	Exempt

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.

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 Red Policy Areas (MSPAs) as these areas, by definition (in terms of land use development density and current NADMS), have good transit accessibility. The Policy Area Test would also not apply in the Green (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 the “Red” (MSPAs) or the “Green” (rural) policy areas, consistent with current Policy Area test exemption for these areas.

Local Area Transportation Test

The current local area transportation test, called Local Area Transportation Review or LATR, has three main components:

- a scoping 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),
- an adequacy threshold (based on critical lane volume or CLV) that determines satisfactory conditions, and
- a mitigation approach defining the process for addressing needed improvements for projects that do not meet the adequacy test.

The 2016 Subdivision Staging Policy proposes significant changes to each of these main components of LATR. The general philosophy behind the screening and adequacy threshold addresses the twin objectives:

- Streamline the LATR approach in areas where prior transportation system investments make smart growth development most efficient from a transportation perspective, and
- Improve considerations of multimodal system performance with more robust analytic assessments for those sites where an LATR study is required.

Streamline LATR in smart growth areas	Improve multimodal considerations
Eliminate LATR studies in Metro Station Policy Areas.	Include Comprehensive Local Area Transportation Review, with a multimodal perspective, in biennial monitoring reports prepared by the public sector for each Metrorail Station Policy Area.
Increase the threshold for the number of trips generated by a site to trigger an LATR study, depending on the size of the project and the type of development proposed. Allow for consideration of transit proximity and proposed on-site parking reduction as part of trip generation.	Consider person trip generation rather than vehicle trip generation and conduct transit and non-motorized LATR analyses for sites generating significant numbers of transit trips and non-motorized trips.
Allow for a mitigation payment in lieu of construction for improvements in Road Code Urban Areas and Bicycle Pedestrian Priority Areas where approved mitigation requires coordination across multiple projects or offsite right-of-way acquisition.	Consolidate construction of multiple/overlapping improvements to reduce multimodal disruptions due to construction impacts.

The individual recommendations are described below for each component.

Scoping

Recommendation: Eliminate the LATR study requirement for Metrorail Station Policy Areas.

The Metrorail Station Policy Areas share several characteristics that make the application of the traditional LATR study approach problematic:

- Land development is most desirable from a transportation efficiency perspective to leverage the significant investment in the Metrorail system so the objective to streamline the approval process is most important in these areas
- The transportation infrastructure is the most complex, and master planned improvements are most likely to be multimodal and operational in nature rather than the construction of capacity improvements for any single mode.
- The multimodal environment supports the long-standing policy acceptance of high levels of traffic congestion (an 1800 CLV standard); combined with the fact that most MSPAs have a robust street grid the result is that relatively few LATR studies in MSPAs result in required transportation improvements.

For these reasons, the proposed SSP eliminates the LATR study requirement for MSPAs. Instead, the assessment of transportation system performance should be performed through the biennial monitoring program, including a Comprehensive Local Area Transportation Review, to identify and prioritize master planned infrastructure implementation needs.

Recommendation: Adopt person-trip generation rates that reflect different land use context and travel behavior data.

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.

The Board proposes to adopt a new set of trip generation rates in the LATR Guidelines that are based on travel patterns unique to each policy area and facilitate the application of vehicle trip generation rates that adjust those published by ITE to fit the transportation characteristics in each policy area based on the Department's travel

demand model. These rates also provide person trip generation rates for transit trips and non-motorized trips. The relationship of the number of peak hour vehicle trips by different land use types and policy area, as a percentage of the ITE vehicle trip generation rates, are reported in Table 2. The LATR Appendix also includes related tables that define the default mode share for transit and non-motorized trips for each policy area.



Table 2: 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 50 person trips per hour threshold in areas of the County where LATR remains applicable.

The proposed Subdivision Staging Policy describes the proposed thresholds for different quantitative, modally focused (for auto, transit, and pedestrian/bicycle) studies as being a significant number of trips that is to be defined in the Planning Board's LATR Guidelines. The proposed description of significant number of trips is as follows for each mode:

- If a proposed development exceeds the 50 person trip threshold, an auto-mode transportation study will be required.
- If the development will produce more than 50 transit trips, a transit-mode analysis will be required.
- If the development produces more than 100 pedestrian trips (including those walking or bicycling to transit), a pedestrian-mode analysis will be required.
- If the proposed new development is below the 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 as indicated in the tables in the LATR Appendix.

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 Metrorail Station Policy Areas (MSPAs).
 - b. Traffic study, if more than 50 person trips.
 - c. Transit study, if more than 50 transit trips.
 - d. Pedestrian study, if more than 100 pedestrian/ bicycle trips (including transit trips).

Adequacy

The second main component of LATR is the transportation study. Once scoping 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 except Metrorail Station Policy Areas. 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 (see Table 3). All intersections are screened in Tier 1 based on their total future CLV (the CLV that reflects existing traffic plus that generated by previously approved developments and the subject site, without any improvements assumed other than those already programmed). For any intersection found to have a total future CLV greater than its Policy Area standard, an Intersection Operations analysis (Tier 2) or a Network Operations (Tier 3) analysis will be required according to the thresholds set in the table below:

Table 3: Intersection Analysis Approach

Tier	Approach	Required for:	Features		
			Complexity	Address Delay	Address Adjacent Intersections
1	Total future CLV determines whether an intersection requires further analysis.	All areas (except development in MSPAs)	Low	No	No
2	Type of study required: Intersection Operations Analysis suffices if Tier 3 prerequisites do not apply.	Total future CLV greater than Policy Area CLV standard	Moderate	Yes	No
3	Or a Network Operations Analysis	Tier 2 prerequisite plus: Intersection has 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 roadway 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 Tier 2 approach considers vehicular delays for individual intersections where the intersection operations can fairly be assessed independent of upstream or downstream conditions.

The most robust “Tier 3” network operations analysis is triggered at 1600 CLV or if the intersection in question is either located on an identified congested 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) or is in close proximity (600’) to another signalized intersection.

The adequacy of the transportation system for intersections is based on the correlation between intersection level of service and delay in the 2010 Highway Capacity Manual and shown in Table 3. Adequacy is achieved when the average vehicle delay in the total future with mitigation condition does not exceed either the congestion standard in Table 4 or the average vehicle delay in the background condition, whichever is higher.

Table 4: Congestion Standards for CLV and Average Vehicle Delay

CLV Congestion Standard	Policy Area	Average vehicle delay equivalent (seconds/vehicle)
1350	Rural East/ West	41
1400	Damascus	48
1425	Clarksburg Germantown East Germantown West Gaithersburg City Montgomery Village/Airpark	51
1450	Cloverly North Potomac Potomac Olney R&D Village	55
1475	Derwood Aspen Hill Fairland/Colesville	59
1500	Rockville City	63
1550	North Bethesda	71
1600	Bethesda/Chevy Chase Kensington/Wheaton Silver Spring/Takoma Park Germantown Town Center White Oak	80
1800	Bethesda CBD Silver Spring CBD Wheaton CBD Friendship Heights CBD White Flint Twinbrook Grosvenor Glenmont Rockville Town Center Shady Grove	120

Pedestrian system adequacy is defined as providing LOS D capacity or better (at least 15 square feet per person) in any crosswalk. Any site that generates at least 100 peak hour pedestrians (including transit trips) must:

- Fix (or fund) ADA non-compliance issues within a 500' radius of site boundaries, and
- Ensure LOS D for crosswalk pedestrian space at LATR study intersections within 500' of site boundaries or within a Road Code Urban Area/Bicycle Pedestrian Priority Area (RCUA/BPPA)

Regardless of the development size and location, if an intersection operational analysis (Tier 2 or 3) is triggered for any intersection within a RCUA/BPPA, mitigation must not increase average pedestrian crossing time at the intersection.

Bicycle system adequacy is defined as providing a low Level of Traffic Stress. For any development generating at least 100 peak hour pedestrian volumes and within a quarter mile of an educational institution or existing/planned bikeshare station, the applicant must identify improvements needed to provide LTS=2 (or "Low") conditions to all destinations within 1,500 feet of site boundaries.

Transit system adequacy for LATR is defined as providing a peak load of LOS D for bus routes (< 1.25 transit riders per seat) on routes during the peak period. For any development generating at least 50 peak hour transit riders the applicant must inventory bus routes at stations/stops within 1,000 feet of the site and identify the peak load at that station for each route. The applicant must coordinate with the transit service provider to identify improvements that would be needed to address conditions worse than LOS D due to additional patrons generated by the development.

Mitigation

Recommendation: For LATR mitigation, adjust the prioritization of mitigation approaches by mode and allow for mitigation payment in lieu of construction in the Road Code Urban Areas and Bicycle Pedestrian Priority Areas

The current SSP states that for the Planning Board to accept an intersection improvement as a mitigation measure the applicant must demonstrate that alternative non-auto mitigation approaches are not feasible or desirable. Prior to 2012, the LATR Guidelines provided additional detail on modal mitigation approach priorities, and this SSP would refine those priorities as follows:

- Transportation Demand Management (TDM) approaches to reduce vehicular demand
- Pedestrian or bicycle improvements
- Transit facility or service improvements
- Intersection operational improvements
- Roadway capacity improvements

A mitigation approach may be elevated in the priority list if it is explicitly identified in an area master plan or sector plan.

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 (RCUAs), 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. The County has also designated Bicycle Pedestrian Priority Areas (BPPAs) that are locations where the enhancement of bicycle and pedestrian traffic is a priority.

These RCUA and BPPA designations describe places within the County 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 RCUAs and BPPAs 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 RCUAs and BPPAs where an applicant needs to mitigate an LATR impact, a mitigation payment in lieu of construction will be allowed in cases where construction of needed mitigation requires coordination among multiple projects or acquisition of offsite right-of-way, or results in a disproportionate cost burden for the applicant, rather than held out as only a measure of last resort.

Table 5: Summary of Changes to Local Area Test Features and Relation to Transportation Impact Tax

Local Area Test	Red (Metro Station Policy Areas)	Other Policy Areas
Scoping:		
When is a traffic impact study needed:	None required. Public sector monitoring replaces private sector studies.	For projects resulting in 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 (including transit trips)
Testing:		
When is a Tier 2 operational analysis, including travel delay, performed:	None required. Public sector monitoring replaces private sector studies.	When the total future CLV is greater than the Policy Area standard
When is a Tier 3 network analysis, looking at multiple intersections, 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: (a) the intersection is on a congested roadway ⁹ 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:	None required. Public sector monitoring replaces private sector studies.	Applicant must mitigate transportation impacts. In RCUAs/BPPAs, the applicant can submit a mitigation payment in lieu of construction if coordination with other transportation projects or offsite right-of-way acquisition would be required.
Impact Tax:		
	Required, retain for funding transit accessibility improvement within the Policy Area	Required

⁹ Per Metropolitan Washington Council of Governments Congestion Management Process report.

Coordination with Municipalities and Implementing Agencies

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

- Independent cities such as Rockville, Gaithersburg, and Takoma Park
- Maryland State Highway Administration (MDSHA)
- Montgomery County Department of Transportation (MCDOT)
- Washington Metropolitan Area Transit Authority (WMATA)

The establishment of transportation impact taxes also needs to be designed to work effectively both within the independent cities and the unincorporated portions of the County.

An open dialogue with these entities regarding proposed changes to the County's LATR process is desired 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 recommendations under consideration in support of the 2016 SSP and changes to the impact tax. Examples of this coordination include:

- The Cities of Rockville and Gaithersburg have provided commentary that have informed the Planning Board Draft SSP.
- Staff representing the MDSHA, MCDOT, and WMATA serve as members of the Transportation Impact Study Technical Working Group (TISTWG). This group is comprised of public, private and community stakeholders in the LATR process and provides oversight focusing on proposed revisions pertaining to the LATR process being considered in the context of 2016 SSP. This group has convened for meetings fifteen (15) times since fall 2014. The activities of this group are documented on the TISTWG webpage found here ...

http://www.montgomeryplanning.org/transportation/latr_guidelines/workinggroup.shtm

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 Red Policy Areas.

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

Recommendation: Remove the Provisional Adequate Public Facilities (PAPF) provision 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).¹⁰

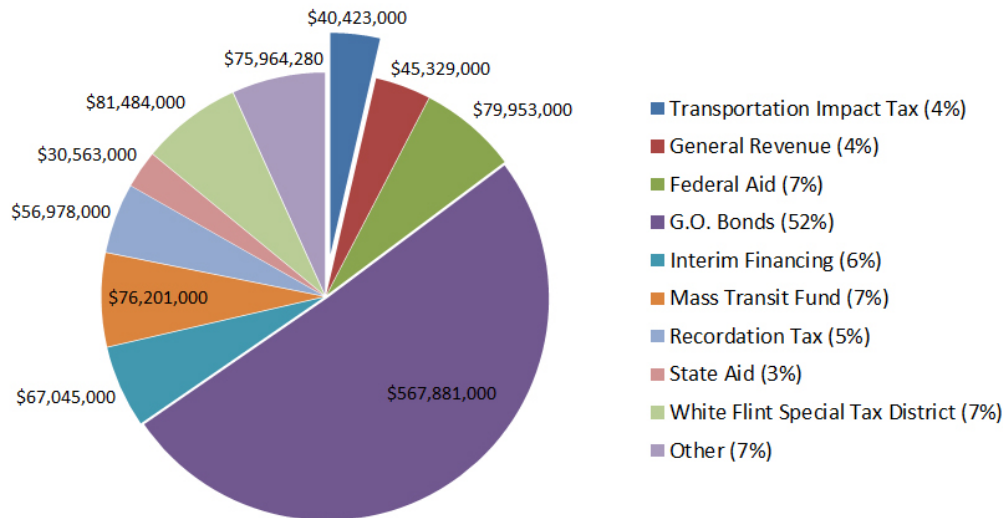
The Transportation Impact Tax is collected by the Department of Permitting Services within 6 months of filing for a building permit or when filing for a Use & Occupancy permit, whichever comes first. The tax varies by District and the type of land use. The current rates by District are shown below in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

Table 6: 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

¹⁰ This important question is explored in more detail in Appendix X (Transportation Impact Tax).

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



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.

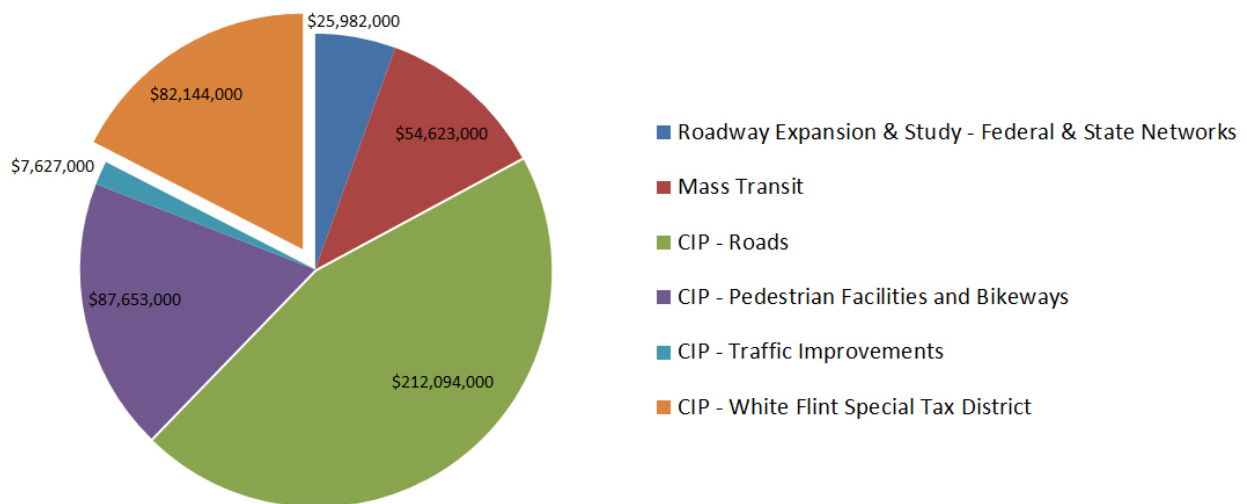
Since the tax is intended to support projects that increase network capacity, it is useful to review assumptions related to that aspect of the funding profile. The specific types of improvements the tax is to be used for are noted in Section 52-58 of the Code:

- 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.¹¹

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



¹¹ 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.

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 review. 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 7.

Table 7: Comparison of Pre-2007 Rates and 2007 Rates

Land Use	General District		Metro Station Areas		Clarksburg District	
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)	Pre-2007 Rates	2007 Rates	Pre-2007 Rates	2007 Rates	Pre-2007 Rates	2007 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 in 2007. Since that time, the only changes to the transportation impact tax rates have been based on adjustments for inflation. The methodology used in the analysis at that time took the following variables and steps into account:

- the capital funding requirements (local funds) contained in the current CIP and regional Constrained Long Range Plan (CLRP) for projects adding network capacity and assuming that a similar level of funding (on an average annual basis) will be needed over the next 25 years.
- 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

- an estimate of the new daily trips generated by the new growth
- the cost attributable to the specific land use based upon the proportion of trips
- calculated tax rate – the calculated rate by land use based on the allocated costs divided by the number of units (for residential land use) or square feet (for commercial land use) as applicable ¹²

Planning Department staff updated these estimates using the same approach looking forward from 2016 rather than from 2007. A summary of the variables and newly calculated unit rates (for broad land use categories) with the 2016 baseline is shown in Table 8.

Table 8: Updated Calculated 2016 Rates Using the 2007 Methodology

Variable	SF Residential	MF Residential	Office	Retail	Industrial	Other Commercial
Forecast Growth 2015-2040 ¹³	11,218 DU	71,419 DU	128,822 Jobs	30,697 Jobs	12,180 Jobs	11,418 Jobs
SF of Commercial ¹⁴			32,205,500	12,278,800	5,481,000	5,709,000
Vehicle Trip Gen Rate ¹⁵	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 ¹⁶	\$129M	\$574M	\$517M	\$318M	\$41M	\$38M
Calculated 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 for 2016 compare with (1) the rates calculated in 2007 using the same methodology and (2) the current rate is shown in Table 9 below.

¹² Additional detail on the methodology used in arriving at an update of the Transportation Impact Tax is provided in Appendix X.

¹³ Round 8.3 Regional Cooperative Land Use Forecast – Montgomery County Growth Only

¹⁴ 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).

¹⁵ ITE Trip Generation Manual, 9th Edition

¹⁶ \$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 2016 and 2007 Rates with Current Rates

Variable	SF Residential	MF Residential	Office	Retail	Industrial	Other Commercial
2016 Calculated Unit Impact Tax Rates – 2015-2040 Data Set	\$11,499 per DU	\$8,032 per DU	\$16.04 per GSF	\$25.93 per GSF	\$7.43 per GSF	\$6.69 per GSF
2007 Calculated Unit Impact Tax Rates 2005-2030 ¹⁷ Data Set	\$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 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

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 the 2015-2040 data set) compare with the difference in the actual rate increase 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 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.

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

¹⁷ 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.

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 to update the impact tax rates using current transportation facility costs, land use forecasts and ITE trip generation rates in the same manner as the 2007 SSP review ¹⁸.

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.

Given that the historical relationship between the calculated and actual rates don’t appear to vary significantly, a recommended set of Base (General District) Rates for 2016 was arrived at by applying the percentage change between the 2007 calculated and adopted rates to the 2016 calculated rates. Table 10 below reflects how the recommended set of Base Rates for 2016 is arrived using that approach.

Table 10: Recommended Base (General District) Rates Using Difference Between 2007 Calculated and 2007 Adopted Rates

Land Use	2007 Calculated Rates	2007 Adopted Rates	% Difference From Applicable 2007 Calculated	2016 Calculated Rates	2016 Rates When Applying 2007 Percentage Adjustment to 2016 Calculated Rates	2015 (Current) Rates - General District
Residential						
SF Detached	\$8,380	\$10,649	127.08%	\$11,499	\$14,613	\$13,966
MF Residential	\$5,884			\$8,032		
SF Attached	\$6,856	\$8,713	127.09%	\$9,359	\$10,208	\$11,427
Garden Apartments	\$5,884	\$6,776	115.16%	\$8,032	\$9,250	\$8,886
High - Rise Apartments	\$4,204	\$4,840	115.13%	\$5,739	\$6,607	\$6,347
Multi-Family Senior	\$1,682	\$1,936	115.10%	\$2,296	\$2,643	\$2,539
Commercial						
Office	\$11.56	\$9.69	83.82%	\$16.04	\$13.45	\$12.75
Industrial	\$5.39	\$4.85	89.98%	\$7.43	\$6.69	\$6.35
Bioscience		\$0.00		\$0.00	\$0.00	\$0.00
Retail	\$18.80	\$8.67	46.12%	\$25.93	\$11.96	\$11.40
Place of Worship		\$0.51	10.52%		\$0.70	\$0.65
Private School		\$0.77	15.88%		\$1.06	\$1.05
Hospital		\$0.00			\$0.00	\$0.00
Social Service Agencies		\$0.00			\$0.00	\$0.00
Other Non Residential	\$4.85	\$4.85	100.00%	\$6.69	\$6.69	\$6.35

¹⁸ It should be noted that the calculated 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).

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 11: Current Locational Adjustment Factors to Transportation Impact Tax Base (General District) Rates

Variable	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 and/or if the variance should remain the same or change to better align with County goals

The Planning Department retained a consultant in March 2016 to conduct a brief Peer Review of the SSP process. The Peer Review Report recommended a transition to a regulatory protocol that places an emphasis on Vehicle Miles of Travel (VMT) as one important way to better align the process with County goals and further noted that the “transportation basis of impact fees should focus

on VMT so the length of vehicle trips is factored in.”¹⁹ In response staff recommended consideration of current estimated Vehicle Miles of Travel (VMT) for trips to work as a readily available – and relevant – measurement to use in establishing Policy Area specific rates for residential development.²⁰ A similar and complementary metric for commercial development is the non-auto driver mode share (NADMS) for trips to work.

A potential stratification of the adjustment factor for new residential and commercial development is depicted in the table below. The stratification is based on the extent the Policy Area groups vary from the County average for these two metrics (Per Capita VMT and NADMS).

Table 12: Recommended Locational Adjustment Factors to Transportation Impact Tax Base Rates

Policy Area Type	Residential HBW VMT	Ratio of impact to County Average	Proposed as Policy	Commercial HBW NADMS	Ratio of impact to County Average	Proposed as Policy
County Average	11.45			32.6		
Red	4.27	37%	0.25	45.2	81%	0.75
Orange	9.01	79%	0.75	28.3	106%	1.00
Yellow	15.39	134%	1.25	16.6	124%	1.25
Green	25.84	226%	2.00	10.2	133%	1.25

¹⁹ See Appendix X – Introduction to Nelson Nygaard Subdivision Staging Policy Peer Review.

²⁰ 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.

**Comparing Existing Rates with New Recommended Rates
Derived by Applying Recommended Locational Adjustment
Factors Related to Per Capita VMT and NADMS**

A comparison of the current General District rates and the recommended rates as they would vary by Policy Area group is provided in Table 13 below.

Table 13: Comparison of Recommended Rates by Policy Area Groups with Base Rates

General District Rate Comparison		2016 Rates After Locational Factors Applied to the 2016 Adjusted Rates			
Land Use	2016 Base Rates	Core	Corridor	Residential	Rural
Residential Locational Adjustment Factors		0.25	0.75	1.25	2.00
Residential Uses					
SF Detached	\$14,613	\$3,653	\$10,959	\$18,266	\$29,225
MF Residential					
SF Attached	\$10,208	\$2,552	\$7,656	\$12,759	\$20,415
Garden Apartments	\$9,250	\$2,312	\$6,937	\$11,562	\$18,499
High - Rise Apartments	\$6,607	\$1,652	\$4,955	\$8,259	\$13,214
Multi-Family Senior	\$2,643	\$661	\$1,982	\$3,303	\$5,286
Commercial Locational Adjustment Factors		0.75	1.00	1.25	1.25
Commercial Uses					
Office	\$13.45	\$10.08	\$13.45	\$16.81	\$16.81
Industrial	\$6.69	\$5.01	\$6.69	\$8.36	\$8.36
Bioscience	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Retail	\$11.96	\$8.97	\$11.96	\$14.95	\$14.95
Place of Worship	\$0.70	\$0.53	\$0.70	\$0.88	\$0.88
Private School	\$1.06	\$0.80	\$1.06	\$1.33	\$1.33
Hospital	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Social Service Agencies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Other Non-Residential	\$6.69	\$5.02	\$6.69	\$8.36	\$8.36

Table 14: Comparison of Current and Proposed Transportation Impact Tax Rates

SUMMARY OF IMPACT TAX AMOUNTS										
Without Proposed Parking Reduction Factor										
Prior to Application of MSPA Commercial Policy Adjustment (MCPB June 30 Worksession)										
			Difference (Proposed as Percentage of Current) per Unit							
Policy Area			Single Family Detached	Single Family Attached	Garden Apartments	High Rise Apartment	Multi Family Senior	Office	Industrial	Retail
Num	Type									
2	1	Bethesda CBD	52%	45%	52%	52%	52%	159%	157%	157%
35	1	Friendship Heights	52%	45%	52%	52%	52%	159%	157%	157%
32	1	Glenmont	52%	45%	52%	52%	52%	159%	157%	157%
24	1	Grosvenor	52%	45%	52%	52%	52%	159%	157%	157%
36	1	Rockville Town Center	52%	45%	52%	52%	52%	159%	157%	157%
34	1	Shady Grove Metro Station	52%	45%	52%	52%	52%	159%	157%	157%
20	1	Silver Spring CBD	52%	45%	52%	52%	52%	159%	157%	157%
25	1	Twinbrook	52%	45%	52%	52%	52%	159%	157%	157%
22	1	Wheaton CBD	52%	45%	52%	52%	52%	159%	157%	157%
26	1	White Flint	52%	45%	52%	52%	52%	159%	157%	157%
3	2	Bethesda/Chevy Chase	78%	67%	78%	78%	78%	105%	105%	105%
33	2	Clarksburg	52%	45%	52%	52%	52%	88%	88%	87%
6	2	Derwood	78%	67%	78%	78%	78%	105%	105%	105%
8	2	Gaithersburg City	78%	67%	78%	78%	78%	105%	105%	105%
11	2	Germantown Town Center	78%	67%	78%	78%	78%	105%	105%	105%
12	2	Kensington/Wheaton	78%	67%	78%	78%	78%	105%	105%	105%
14	2	North Bethesda	78%	67%	78%	78%	78%	105%	105%	105%
18	2	R&D Village	78%	67%	78%	78%	78%	105%	105%	105%
19	2	Rockville City	78%	67%	78%	78%	78%	105%	105%	105%
21	2	Silver Spring/Takoma Park	78%	67%	78%	78%	78%	105%	105%	105%
40	2	White Oak	78%	67%	78%	78%	78%	105%	105%	105%
1	3	Aspen Hill	131%	112%	130%	130%	130%	132%	132%	131%
4	3	Cloverly	131%	112%	130%	130%	130%	132%	132%	131%
41	3	Fairland/Colesville	131%	112%	130%	130%	130%	132%	132%	131%
9	3	Germantown East	131%	112%	130%	130%	130%	132%	132%	131%
10	3	Germantown West	131%	112%	130%	130%	130%	132%	132%	131%
13	3	Montgomery Village/Airpark	131%	112%	130%	130%	130%	132%	132%	131%
15	3	North Potomac	131%	112%	130%	130%	130%	132%	132%	131%
16	3	Olney	131%	112%	130%	130%	130%	132%	132%	131%
17	3	Potomac	131%	112%	130%	130%	130%	132%	132%	131%
5	4	Damascus	209%	179%	208%	208%	208%	132%	132%	131%
38	4	Rural East	209%	179%	208%	208%	208%	132%	132%	131%
37	4	Rural West	209%	179%	208%	208%	208%	132%	132%	131%

Comparing Current Rates and Recommended Rates Across Policy Areas and Land Uses

A final review of the Transportation Impact Tax recommendations involves consideration of how the recommended new rates compare with the existing rates across each land use and Policy Area. This comparison is provided in Table 14 above.

The Planning Board reviewed the comparison during work session and recommended a reduction in the rates for commercial land uses in the Core areas by one-third. The resulting comparison of the current rates with the recommended rates is shown below in Table 15.

Table 15: Comparison of Current and Proposed Transportation Impact Tax Rates

SUMMARY OF IMPACT TAX AMOUNTS										
Without Proposed Parking Reduction Factor										
Including Application of MSPA Commercial Policy Adjustment (MCPB June 30 Worksession)										
			Difference (Proposed as Percentage of Current) per Unit							
Policy Area			Single Family Detached	Single Family Attached	Garden Apartments	High Rise Apartment	Multi Family Senior	Office	Industrial	Retail
Num	Type									
2	1	Bethesda CBD	52%	45%	52%	52%	52%	106%	104%	105%
35	1	Friendship Heights	52%	45%	52%	52%	52%	106%	104%	105%
32	1	Glenmont	52%	45%	52%	52%	52%	106%	104%	105%
24	1	Grosvenor	52%	45%	52%	52%	52%	106%	104%	105%
36	1	Rockville Town Center	52%	45%	52%	52%	52%	106%	104%	105%
34	1	Shady Grove Metro Station	52%	45%	52%	52%	52%	106%	104%	105%
20	1	Silver Spring CBD	52%	45%	52%	52%	52%	106%	104%	105%
25	1	Twinbrook	52%	45%	52%	52%	52%	106%	104%	105%
22	1	Wheaton CBD	52%	45%	52%	52%	52%	106%	104%	105%
26	1	White Flint	52%	45%	52%	52%	52%	106%	104%	105%
3	2	Bethesda/Chevy Chase	78%	67%	78%	78%	78%	105%	105%	105%
33	2	Clarksburg	52%	45%	52%	52%	52%	88%	88%	87%
6	2	Derwood	78%	67%	78%	78%	78%	105%	105%	105%
8	2	Gaithersburg City	78%	67%	78%	78%	78%	105%	105%	105%
11	2	Germantown Town Center	78%	67%	78%	78%	78%	105%	105%	105%
12	2	Kensington/Wheaton	78%	67%	78%	78%	78%	105%	105%	105%
14	2	North Bethesda	78%	67%	78%	78%	78%	105%	105%	105%
18	2	R&D Village	78%	67%	78%	78%	78%	105%	105%	105%
19	2	Rockville City	78%	67%	78%	78%	78%	105%	105%	105%
21	2	Silver Spring/Takoma Park	78%	67%	78%	78%	78%	105%	105%	105%
40	2	White Oak	78%	67%	78%	78%	78%	105%	105%	105%
1	3	Aspen Hill	131%	112%	130%	130%	130%	132%	132%	131%
4	3	Cloverly	131%	112%	130%	130%	130%	132%	132%	131%
41	3	Fairland/Colesville	131%	112%	130%	130%	130%	132%	132%	131%
9	3	Germantown East	131%	112%	130%	130%	130%	132%	132%	131%
10	3	Germantown West	131%	112%	130%	130%	130%	132%	132%	131%
13	3	Montgomery Village/Airpark	131%	112%	130%	130%	130%	132%	132%	131%
15	3	North Potomac	131%	112%	130%	130%	130%	132%	132%	131%
16	3	Olney	131%	112%	130%	130%	130%	132%	132%	131%
17	3	Potomac	131%	112%	130%	130%	130%	132%	132%	131%
5	4	Damascus	209%	179%	208%	208%	208%	132%	132%	131%
38	4	Rural East	209%	179%	208%	208%	208%	132%	132%	131%
37	4	Rural West	209%	179%	208%	208%	208%	132%	132%	131%

Recommendation: Adopt the following transportation impact tax rates based on updated transportation infrastructure cost estimates and trip generation rates, applying new adjustment factors related to per capita VMT and NADMS by policy area category, and applying a one-third reduction to the non-residential tax rates in the "Red" category. See Table 16 below.

Table 16: Recommended Rates with Commercial Policy Adjustment in MSPAs

General District Rate Comparison		2016 Rates After Locational Factors Applied to the 2016 Adjusted Rates and One-Third Reduction Applied to Commercial Rates in the Red Category			
Land Use	2016 Base Rates	Red (MSPAs)	Orange	Yellow	Green
Residential Locational Adjustment Factors		0.25	0.75	1.25	2.00
Residential Uses					
SF Detached	\$14,613	\$3,653	\$10,959	\$18,266	\$29,225
MF Residential					
SF Attached	\$10,208	\$2,552	\$7,656	\$12,759	\$20,415
Garden Apartments	\$9,250	\$2,312	\$6,937	\$11,562	\$18,499
High - Rise Apartments	\$6,607	\$1,652	\$4,955	\$8,259	\$13,214
Multi-Family Senior	\$2,643	\$661	\$1,982	\$3,303	\$5,286
Commercial Locational Adjustment Factors		0.75	1.00	1.25	1.25
Commercial Uses					
Office	\$13.45	\$7.06	\$13.45	\$16.81	\$16.81
Industrial	\$6.69	\$3.51	\$6.69	\$8.36	\$8.36
Bioscience	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Retail	\$11.96	\$6.28	\$11.96	\$14.95	\$14.95
Place of Worship	\$0.70	\$0.37	\$0.70	\$0.88	\$0.88
Private School	\$1.06	\$0.56	\$1.06	\$1.33	\$1.33
Hospital	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Social Service Agencies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Other Non-Residential	\$6.69	\$3.51	\$6.69	\$8.36	\$8.36

Adjustment to Transportation Impact Tax to Incentivize Reduced Parking

A final recommendation related to the Transportation Impact Tax is the introduction of an incentive that would provide for a Transportation Impact Tax credit based on the percentage of parking supply provided below the County’s applicable baseline minimum for the project in question. 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 in “reduced parking areas” as defined in the zoning code is shown below.



Table 17: 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											
	Red Policy Area				Orange Policy Area				Yellow 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.

Recommendation: Allow for transportation impact tax credits based on the percentage of parking supply below the applicable baseline minimum where parking below the minimum is allowed under Section 6.2.3.1 of Chapter 59 of the County Code.

Clarksburg Placetype Considerations

The Planning Board Draft Subdivision Staging Policy recognizes that most policy areas in Montgomery County can fairly readily be placed along a continuum from rural to urban that reflects land development patterns, transportation facilities and services, and resulting travel behavior. The Planning Board found that the Clarksburg Policy Area is an outlier from this perspective, resulting

from both its planning history and its regional context. The Planning Board therefore made a policy decision in the SSP to recommend classifying the Clarksburg Policy Area as an “Orange” area and to eliminate the transportation impact tax surcharge that has been in place since 2003. These recommendations reflect the Board’s desire to encourage the types of development envisioned in the master plan – development that is compact, transit-supportive, and walkable. These recommendations reflect the Board’s specific desire to affect policy decisions in Clarksburg that may not be fully aligned with its current land use and transportation planning context. The Board therefore recommends that these changes should be accompanied by a special study of the land use and transportation conditions that make Clarksburg unique.

Land Use Context

As the northernmost of the I-270 corridor cities identified in the 1969 General Plan, Clarksburg is the furthest from the regional core and the most directly influenced by its

relationship to the Agricultural Reserve on three sides (as opposed to only east and west for the corridor cities of Germantown and Gaithersburg). This position makes Clarksburg less connected to downcounty centers along the Metrorail Red Line than even adjacent Germantown. Clarksburg is more reliant on its relationship to Germantown for commerce than other corridor cities due to both:

- Intensity: by 2040, Clarksburg is expected to have 39,400 residents and 14,100 jobs as contrasted to 105,400 residents and 44,600 jobs in Germantown
- Proximity: the nearest Corridor City to the north, Urbana, is not an immediately adjacent community but rather is one that is eight miles away.

Planning History

The planning history of Clarksburg reflects the evolutionary nature of land use, environmental, and transportation planning and implementation. Most notably, the conditions that have made Clarksburg unique include the status of:

- Transit-oriented development: Both Montgomery and Frederick Counties have master plans establishing a fixed-guideway transitway between the Shady Grove Metrorail and the City of Frederick (described as the Corridor Cities Transitway in Montgomery County and the I-270 Transitway in Frederick County). This transitway was established in both County's master plans after a 1991 bi-county study of alignments and modes. However, the implementation of the transitway is not expected to reach the Clarksburg town center during the next 25 years. In the interim, improved transit connectivity to and from the south via the MD 355 North BRT, I-270 express bus services, and/or MARC Brunswick Line services to Boyds should be strategically considered as suggested in the 2014 Ten Mile Creek Area Limited Amendment to the Clarksburg Master Plan.
- Regional roadway network connectivity: The status of the master planned Midcounty Highway Extended (M-83) continues to generate significant interest and concern among constituents. The County's planning efforts on this roadway have been synchronized with the state's study of MD 355 North BRT to facilitate multimodal consideration of regional connections between Clarksburg and the other corridor cities.
- Local roadway network implementation: The relationship between policy area review and transportation impact taxes in Clarksburg is long-standing. In 2003, the establishment of a special Clarksburg District with higher transportation impact taxes was linked, from a policy perspective, to the elimination of Policy Area Review. In 2007, policy area review was re-established but the higher impact tax rates for Clarksburg were retained.

These relationships create a tension between land use and transportation that has been evident in several planning efforts over the past decade; the 1994 Clarksburg Master Plan calls for transit-oriented development but suffers from a lack of the critical mass to attract the transit investment, and in turn, a transit-supportive development market. A multi-agency transportation study, more comprehensive than a local area analysis yet more detailed than a master plan assessment of transportation/land use balance, is needed to examine both the land use and transportation system conditions unique to Clarksburg. Such a study could set reasonable expectations and a strategic approach for multimodal infrastructure and transit service investments over the next twelve to twenty years.

Recommendation: Conduct a comprehensive transportation study of the Clarksburg Policy Area to define the next steps in transportation infrastructure development.



School Recommendations



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 all residential structures built any year.*

Calculating School Facility Payments and School Impact Taxes using generation rates based on residential structures built any year ensures that the Subdivision Staging Policy is focused on the average impact of new development over the full life of that development. Table 18 identifies the new student generation rates to be used in the calculation of School Facility Payments and School Impact Taxes.

Table 18: Student Generation Rates, 2016

	County-wide Student Yield Rates (students generated per unit)			
Unit Type	Elementary	Middle	High	Total (K-12)
Single-Family Detached	0.205	0.109	0.148	0.463
Single-Family Attached	0.234	0.107	0.143	0.484
Multi-Family Low to Mid Rise	0.203	0.079	0.103	0.385
Multi-Family High Rise	0.071	0.029	0.038	0.139

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.³ 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 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.⁴

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, 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.

³ Certain exemptions apply, and these are discussed further in the section on School Facility Payments.

⁴ 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.

- 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 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.
- 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: Implement 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 demonstrated in Table 19.

Table 19: Summary of School Test Thresholds

Test	Thresholds			Action	Change from Current Policy
	Elementary	Middle	High		
Cluster	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	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 projected in the sixth year of the CIP	150-seat capacity deficit projected in the sixth year of the CIP	N/A ⁵	School Facility Payment applies to the applicable school service area, unless a capacity project is planned elsewhere, specifically identified in the CIP to relieve over-enrollment at the school failing this adequacy test	New Element
Individual School Capacity Deficit Test	120% utilization and 110-seat capacity deficit projected in the sixth year of the CIP	120% utilization and 180-seat capacity deficit projected in the sixth year of the CIP	N/A	Moratorium applies to the applicable school service area, unless a capacity project is planned elsewhere, specifically identified in the CIP to relieve over-enrollment at the school failing this adequacy test ⁶	New Element

⁵ An individual test at the high school level is not necessary as there is only one high school per school cluster.

⁶ 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 currently 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 using school construction costs from 2012. As shown in Table 20, 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 20: 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. Table 21 summarizes the School Facility Payments that have been collected, by cluster, since FY2011.

Table 21: School Facility Payments Collected

	Cluster									
Fiscal Year	Bethesda-Chevy Chase	Clarksburg	Gaithersburg	Northwest	Northwood	Rockville	Wootton	Walter Johnson	Whitman	Total
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		\$64,544	\$12,354	\$138,300	\$815,284		\$4,161,573

Recommendation: Update the calculation of the School Facility Payments on a biennial basis (concurrent with the annual school test or with the update to the Subdivision Staging Policy) using the latest student generation rates and school construction cost data, limiting any change (increase or decrease) to no more than five percent.

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.

Recommendation: Modify the calculation of the School Facility Payments to apply a 0.5 multiplier instead of the current 0.6 multiplier.

In conjunction with the latter recommendation to remove the 0.9 multiplier currently used to calculate the School Impact Tax, adjusting the multiplier used to calculate the School Facility Payments from 0.6 to 0.5 will ensure that new units in school services areas with inadequate facilities will pay no more than the current 150 percent of the unit's calculated school construction cost impact (100 percent + 50 percent as opposed to the current 90 percent + 60 percent).

Table 22 provides the recommended School Facility Payments, calculated using updated construction costs, the latest student generation rates, and a revised multiplier of 0.5.

Table 22: Comparison of School Facility Payment Rates, 2012 to 2016

	Current (2012) School Facility Payments			Proposed (2016) School Facility Payments		
Type of Unit	ES	MS	HS	ES	MS	HS
Single-family detached	\$ 6,940	\$ 3,251	\$ 4,631	\$3,812	\$2,158	\$3,469
Single-family attached	\$ 4,160	\$ 1,743	\$ 2,754	\$4,351	\$2,119	\$3,352
Multi-family low to mid rise	\$ 2,838	\$ 1,169	\$ 1,877	\$3,775	\$1,564	\$2,414
Multi-family high rise	\$ 1,166	\$ 531	\$ 804	\$1,320	\$574	\$891

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 12 placeholders added to the CIP, all since FY2011:

- One (Northwood, ES, FY2012) resulted in a capital project that was built a year earlier than the placeholder would have suggested.
- One (Richard Montgomery, ES, FY2011) 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 is currently scheduled for three years later than the original placeholder would have suggested.
- One (Wheaton, MS, FY2016) was removed the year after it was approved and not replaced with any capital project (nor did the cluster qualify for a moratorium).
- Four were removed the year after being approved by the Council and were replaced by capital projects in the CIP. Of these:
 - o Two (Northwood, MS, FY2016; Gaithersburg, ES, FY2016) have timelines consistent with the original placeholders.

- o One (Bethesda-Chevy Chase, MS, FY2012) has a completion date one year later than the original placeholder.
- o One (Northwest, ES, FY2012) had a project with a completion date two years later than the original placeholder, but that has since been replaced by a new placeholder (Northwest, ES, FY2017).
- Four have remained as placeholders for a second consecutive year. Of these:
 - o One (Bethesda-Chevy Chase, HS, FY2013) was replaced by a capital project with a completion date one year later than the original placeholder.
 - o Three (Northwood, HS, FY2016; Einstein, HS, FY2016; Walter Johnson, HS, FY2016) continue as placeholders in the FY2017 school test.



Table 23: Placeholder Projects

Cluster	Level	School Year / Fiscal Year						
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
		FY11	FY12	FY13	FY14	FY15	FY16	FY17
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	PL 2020
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	CP 2020
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, only one placeholder had not 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 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. Table 24 summarizes the School Impact Tax collections since FY2004.

Table 24: 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 on a biennial basis (concurrent with the annual school test or with the update to the Subdivision Staging Policy) using the latest student generation rates and school construction cost data, limiting any change (increase or decrease) to no more than five percent.*

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 has caused the impact taxes to increase faster than actual per student school construction costs have increased.

***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.

Table 25 identifies the proposed new impact tax amounts by unit type. These figures reflect the use of the latest construction costs and generation rates, as well as the removal of the 0.9 multiplier in the School Impact Tax calculation.

Table 25: 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	\$18,878
Single Family Attached	\$20,198	\$19,643
Multi-Family Low- to Mid-Rise	\$12,765	\$15,507
Multi-Family High-Rise	\$5,412	\$5,570

***Recommendation:** Require a portion of the School Impact Tax equivalent to 10 percent of the cost of a student seat be dedicated to land acquisition for new schools.*

This portion of the School Impact Tax (essentially, the additional tax resulting from removal of the 0.9 multiplier) would be placed in the MCPS Advance Land Acquisition Revolving Fund (ALARF), to be used strictly for the purchase of property for new MCPS schools. The purchase of land for new schools is rarely considered due to the lack of funding for land acquisition. This recommendation would provide MCPS with additional options for funding potential purchases. Over the last five fiscal years, this requirement would have resulted in more than \$15.2 million dedicated to school land acquisition.

***Recommendation:** Allow a credit against the School Impact Tax for land dedicated for a school site, as long as the density calculated for the dedication area is excluded from the density calculation for the site, and MCPS agrees to the site dedication.*

Current policy provides a credit against the School Impact Tax for construction of school facilities. This recommendation recognizes that when land dedication is feasible, it can be as useful and valuable to MCPS as the construction of school facilities or the collected impact taxes.

Enterprise Zone Exemptions

The Maryland Enterprise Zone 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 Enterprise Zone 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)

The Silver Spring Central Business District (CBD) is the only former Enterprise Zone in Montgomery County, with 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 former Enterprise Zones. Now that 10 years have passed since the expiration of the 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.

The former Enterprise Zone exemption will be phased out over a period of four years, as described in Table 26.

The time periods for phasing out the exemptions for former Enterprise Zones are based on the date of a project’s preliminary plan approval relative to the expiration date of the Enterprise Zone, except in the case of the Silver Spring CBD, whose phasing would be relative to the effective date of this Subdivision Staging Policy. All other rules pertaining to the amount of a School Impact Tax and School Facility Payment remain in effect (i.e., a School Impact Tax is paid at the time a building permit is issued based on the amount in effect at the time of the payment). The exemption, or appropriate discount, will only remain in effect for the duration of the development project’s validity period.

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.

There is a tenuous relationship between the purpose of Enterprise Zones, which is to stimulate job creation and economic growth, and the exemption of School Impact Taxes and School Facility Payments for new dwelling units within the Enterprise Zones. This recommendation is to identify criteria that more directly relates to residential development (and schools), by which the County Council can designate areas of the County eligible for impact tax and facility payment exemptions.

Table 26: Former Enterprise Zone Exemption Phase-out

For Preliminary Plans Approved...	School Impact Tax and School Facility Payments
Within one year of the designation expiration	Full exemption remains
Within two years of the designation expiration	25 percent of the applicable tax and payment
Within three years of the designation expiration	50 percent of the applicable tax and payment
Within four years of the designation expiration	75 percent of the applicable tax and payment
After four years of the designation expiration	100 percent of the applicable tax and payment

School Recommendations Summary

STUDENT GENERATION RATES

- Calculate School Facility Payments and the School Impact Tax using student generation rates associated with all residential structures built any year.

ANNUAL SCHOOL TEST

- Implement a hybrid annual school test that combines cluster utilization tests with individual school capacity deficit tests.

SCHOOL FACILITY PAYMENTS

- Update the calculation of the School Facility Payments on a biennial basis (concurrent with the annual school test or with the update to the Subdivision Staging Policy) using the latest generation rates and school construction cost data, limiting any change (increase or decrease) to no more than five percent.
- Modify the calculation of the School Facility Payments to apply a 0.5 multiplier instead of the current 0.6 multiplier.

PLACEHOLDER PROJECTS

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

SCHOOL IMPACT TAX

- Update the School Impact Tax amounts on a biennial basis (concurrent with the annual school test or with the update to the Subdivision Staging Policy) using the latest student generation rates and school construction cost data, limiting any change (increase or decrease) to no more than five percent.
- 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.
- Require a portion of the School Impact Tax equivalent to 10 percent of the cost of a student seat be dedicated to land acquisition for new schools.
- Allow a credit against the School Impact Tax for land dedicated for a school site, as long as the density calculated for the dedication area is excluded from the density calculation for the site, and MCPS agrees to the site dedication.

ENTERPRISE ZONE EXEMPTIONS

- Reintroduce the School Impact Tax and School Facility Payments in former Enterprise Zones through a phased approach.
- 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.

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.
 - o 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.

- o 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.

Subdivision Staging Policy

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