

MEMORANDUM

October 21, 2021

TO: Planning, Housing, and Economic Development (PHED) Committee

FROM: Pamela Dunn, Senior Legislative Analyst
Linda McMillan, Senior Legislative Analyst
Glenn Orlin, Senior Analyst
Gene Smith, Legislative Analyst
Keith Levchenko, Senior Legislative Analyst

SUBJECT: Thrive Montgomery 2050

PURPOSE: Worksession to review the Planning Board Draft Thrive Montgomery 2050 Plan

Councilmembers may wish to bring their copy of the Plan to the meeting.

This is the Planning, Housing, and Economic Development (PHED) Committee's ninth, and likely last, worksession on the Planning Board's Thrive Montgomery 2050 Draft Plan. The previous worksession covered the chapter on Parks and Recreation. This worksession will cover the Conclusion, the Introduction, and several additional items, some of which follow up on requests made during earlier worksessions.

Background

The Committee's review of the introductory section of the Plan established that this Plan is not a whole scale rewrite of the wedges and corridor plan, but a refinement of the ideas introduced by the wedges and corridor concept - to concentrate growth in downtowns, town centers, and rural villages, and to promote growth along major transportation corridors to maximize the efficient use of land. As noted in the introduction, the policies and practices put forth in this general plan are centered on three overarching objectives: economic health, racial equity and social justice, and environmental resilience. The Planning Board Draft weaves these objectives through each chapter.

In addition to understanding the format of the Plan, it is also important to keep in mind the vision for growth that Thrive 2050 is designed to encourage and support. In their briefing to the Committee on July 21, the Planning Department summarized its vision of Montgomery County in 2050 as one that will:

- Maintain a constrained growth area;
- Reintroduce East County growth corridors as key to racial equity and economic competitiveness;
- Place an emphasis on East/West growth corridors with transit;
- Protect the Agricultural Reserve and make it more accessible and relevant to the whole County; and
- Look for new ways of thinking about growth such as Parking Lots to Places, Complete Communities, and 15-Minute Living.

The material for today's worksession will start with additional items received after the last Committee meeting and then cover follow up items, the revised Introduction, the Conclusion, and any issues related to implementation.

Additional Items

1. Carbon Footprint Analysis

Since 2010, the Planning Board has included a carbon footprint analysis and recommendations to reduce vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions in each of the County's master plans to satisfy the requirement of Montgomery County Code Chapter 33A, Section 33A-14. The General Plan is treated like any other master plan in this regard, thus requiring the same type of analysis. On October 13, 2021, the Planning Department transmitted the required evaluation for the Thrive Montgomery 2050 Plan (attached on © 1-19).

A typical carbon footprint analysis measures only the direct emissions generated by fossil fuel consumption for transportation, manufacturing, and building energy use. In conducting a carbon footprint analysis, Planning staff has generally relied on a spreadsheet model that uses existing and projected square feet of non-residential development, numbers of existing and projected single family and multi-family residential units, current and future VMT, pavement, and population changes to estimate the change in both total and per capita emissions that may occur as a result of master plan recommendations. Some functional master plans, such as the Bicycle Master Plan and Countywide Transit Corridors Functional Master Plan, have used a modified approach focused exclusively on changes in VMT, since those plans did not include specific zoning changes that would generate data on projected square feet of non-residential development or numbers of residential units.

Like these functional plans, the Thrive analysis is mainly a qualitative assessment of possible reductions in GHG emissions that can be attributed to Thrive's policy recommendations. Major recommendations of Thrive include compact, corridor-focused growth; Complete Communities; and an emphasis on walking, biking, and public transit. The GHG reduction benefits of these recommendations will be a combined result of reductions in VMT, building energy savings from reduced residential and commercial development footprints, and the reduction in forest and tree canopy loss in the areas outside of the targeted growth areas.

The results of the analysis for Thrive Montgomery 2050 indicate that the recommendations in the Plan will help reduce our GHG emissions and the County's overall carbon footprint due to reductions in VMT; reductions in the use of energy in buildings and infrastructure; and sequestration of carbon in the atmosphere through reduction in tree loss, increases in tree cover, and protection of forested areas. The numeric results of the carbon footprint analysis can be found on © 19.

2. Letter from the County Executive to the Maryland Department of Planning

On October 6, 2021, the County Executive (CE) sent a letter to the Maryland Department of Planning (MDP) (see © 20-21) requesting a supplementary review of the Planning Board Draft of Thrive Montgomery 2050. The CE cited the extent of revisions and critical changes to the Working Draft (which became the Public Hearing Draft) that MDP reviewed in November 2020.

MDP replied to the Executive's request on October 15, 2021 (see © 22-27). MDP expressed appreciation for inclusion in the planning process and clarified its role as one focused on ensuring that the minimum state requirements for charter county comprehensive plans are met.

Maryland's Land Use Article Sections 406(a) and (b) require certain elements be included in a general plan, but do not mandate a specific format. MDP notes that "as such, local governments have addressed these required elements in a manner that fits the needs of their community and the resources available to respond to the issues explored during the planning process." In response to the requested review, MDP submitted recommendations on two elements—the housing element and the water resources element.

For the housing element, MDP suggests adding definitions for low-income and workforce housing, in line with HB-1045 which passed in 2019. HB-1045 (2019) defines low-income households based on 60% of the United States Department of Housing and Urban Development Area Median Income (HUD AMI) and 60%-120% HUD AMI for workforce households.

Council staff is reviewing MDP's comments about definitions regarding housing affordability in the Planning Board Draft. Council staff is concerned about MDP's recommendation to define "low-income" at 60% of area median income (AMI) and 60%-120% of AMI as workforce housing as they are inconsistent with definitions used by the County for current programs.

In addition to the above, MDP recommends that the Housing Needs Assessment, July 2020 be adopted by reference or included as an appendix in the Plan.

Council staff recommends the Committee support this recommendation.

With respect to the water resources element, MDP recommends that the Water Resources Plan, which examines Montgomery County's land use, growth, and stormwater management in the context of adequate drinking water supplies, wastewater treatment capacity, water quality regulatory requirements, and inter-jurisdictional commitments, be adopted by reference in the body of the Draft Plan, or at a minimum be included by reference in Appendix A of the Planning Board Draft.

However, a reference to the Water Resources Functional Plan is included in Appendix A on page 143 under the heading “Economic Growth, Resource Protection and Planning Act of 1992, as amended”. This section of Appendix A references both the sensitive areas element as well as the water resources element. Planning staff have suggested editing this section to identify the reference to each element more clearly (see © 28).

Council staff recommends that the Committee support this recommendation.

Follow Up Items

1. Edits to the text

During each worksession, in addition to approving edits outlined in the staff report and included in each jointly-revised chapter, the Committee proposed additional edits to each chapter (see © 29-34). These revisions primarily added or revised text to provide clarity or more information. Many were the result of comments received from the public or other County agencies.

2. Further explanation

In addition to proposed text changes, Councilmember Friedson requested an explanation of the difference in the Growth and Infrastructure Map vs. the Thrive Growth Map, as well as an explanation of how the Thrive Growth Map corresponds to the County’s Sewer Service Area Map.

Planning staff provided a full explanation with maps, attached on © 35-37. In short, the proposed Thrive Growth Map depicts a broad, long-term vision of where future growth should be located in the County. On the other hand, the Transportation Policy Area Map, used in the Growth and Infrastructure Policy, and the Sewer Service Area Map are regulatory tools periodically updated to implement the recommendations of adopted master plans and functional plans. In addition to providing the Growth and Infrastructure Map and the Sewer Service Area Map, Planning staff also included a current zoning map overlaid with the proposed growth boundaries (or tiers). The Committee has seen this before, but it is worth highlighting again as the zoning overlay map clearly shows how the proposed growth boundaries follow current zoning patterns.

3. Outreach

During the worksessions in July, the Committee expressed interest in additional outreach to the community. On September 29, the Council held a Town Hall to solicit additional input. The Council received 70 questions associated with Thrive; a majority of those were related to housing and zoning. Other topics for questions touched on the environment, outreach, and Thrive in general. In addition to the Council’s Town Hall, Councilmember Jawando held an African American Leader’s roundtable on Thrive, in which he indicated interest during the summer worksessions.

Introduction

The last Committee worksession in July focused on the Introduction of Thrive. To get direction on potential edits, Council staff posed several questions to the Committee. During the discussion that followed, the Committee recommended the following:

- a. No changes should be made to the Planning Board's format; separate chapters on the economy, equity, and the environment are not necessary as these are the three overarching objectives addressed throughout the Plan. To that end, better indications of how the policies and practices recommended in the Plan address these objectives should be illustrated.
- b. All graphics and photos should be reviewed for relevance and readability. Every image should be identified and referenced.
- c. The volume of photos and graphics should be reduced.
- d. The Plan should emphasize that it is a land use document.
- e. A section summarizing the Planning Department's outreach to the community should be added to the Introduction.

As with the other chapters of the Plan, the Planning Board Chair, Planning staff, and Council staff have agreed to support a revised version of the Introduction, attached on © 38-47. Also like the other chapters, many of the changes are simply a reordering of text, or the addition of text for clarity or detail.

Most of the correspondence received by the Council in response to Thrive was directed at the concurrent review of Thrive and the Attainable Housing Study. The remaining correspondence touched on a variety of topics, including racial equity and social justice, environmental sustainability, and economic development.

In August, the Council received a letter from the Office of Racial Equity and Social Justice (see © 48-50). Many of the comments on the text were related to language in the Introduction. Below are edits proposed by staff to address these comments:

Racial equity and social inclusion

Opportunities and challenges

Diversity and inclusion are essential to our economic success as well as to our ability to produce more equitable outcomes for all our residents, who [need] deserve high quality housing, education, jobs, transportation, and recreational opportunities.

But past patterns of discrimination – some intentional, some unintentional – have left many communities geographically, economically, and socially isolated. After the Civil War and the end of slavery, African Americans suffered from pervasive discrimination and exploitation in the provision of economic and educational opportunities, housing, health care, and basic public services.

Planning decisions and real estate development practices aggravated these injustices for most of the 20th century. Redlining and restrictive racial covenants created geographic and economic divisions that have left a legacy of injustice that not only separated people by neighborhood or community, but also barred Black Americans from building wealth (the type of wealth used to invest in higher education, start businesses, and pass to heirs).

Today, communities with high concentrations of racial and ethnic minorities also show lagging median household incomes, not because they are racial and ethnic minorities but because financial precarity due to low wage jobs, high rates of being uninsured, declining business starts and lack of housing is experienced to a greater degree as a result of past and institutionalized practices. [The] Not surprising is the resulting gaps in quality-of-life indicators [can be] seen among Black, Hispanic, and Asian residents.

Council staff recommends that the Committee support these changes.

The Council also received correspondence requesting that the ageing population in the County be better recognized, especially with respect to health policies. Below are two edits requested for inclusion in the Introduction:

As we seek a future that is more equitable and inclusive, improved access to infrastructure and amenities in racially, socially, and economically isolated areas will not be enough. We also must facilitate the integration of neighborhoods by race and income across all ages.

Improving public health and encouraging active lifestyles

The length and quality of human life are strongly influenced by both the natural and built environment. In 2018, more than three-fifths of adults in Montgomery County were overweight or obese. Five of the seven zip codes in the County with household incomes in the lowest quartile are also among the zip codes with the lowest average life spans. And even though low-income residents and people of color are more likely to suffer from negative health outcomes for several reasons, all residents can benefit from a more active lifestyle supported by an emphasis on transit, walking, and biking, and easy access to parks and recreational opportunities. The importance of healthy living for seniors will also remain a significant area of focus as our ageing population continues to grow. Active lifestyles supported by improved housing choices in compact, complete communities can serve to improve public health for all, while simultaneously reducing the ecological footprint of human activity.

Last, the Council received correspondence requesting that the Plan include the equitable distribution of green infrastructure¹ as a priority, as well as the language to support clean energy generation. In addition to including such language elsewhere in the Plan, the following text is suggested for the Introduction:

How Thrive Montgomery 2050 addresses environmental resilience

Of course, not even the most sustainable transportation planning and growth strategies will be able to resolve every environmental challenge facing the County. Thrive Montgomery 2050 builds on the tradition of robust conservation and protection of the natural environment. It prioritizes the equitable distribution of green infrastructure throughout the County. It supports alternative clean energy generation, distributed energy, grid modernization, improved composting and food waste recovery, and advances in other circular economy initiatives. And it proposes a series of strategies to mitigate the effects of

¹ The Planning Board approved a Green Infrastructure Network Map in 2016.

climate change and minimize pollution. The Plan also anticipates the need for public and private infrastructure to be made more resilient to withstand more severe weather and protect us from the effects of environmental degradation from sources that are beyond our ability to control.

Council staff recommends that the Committee support these changes.

Conclusion

Thrive's Conclusion (© 51-55) starts with a synopsis of the Plan, outlining the strengths of our County as well as the challenges ahead. The section ends by noting that while economic, social, and environmental changes will not be easy to navigate, Montgomery County is well-positioned to make the decisions and investments necessary for success. And "with Thrive Montgomery 2050 as a guide, we can plan carefully and act decisively to make the changes needed to help Montgomery County thrive well into the future."

The rest of the Conclusion focuses on guidance for implementation. There is a section on the cooperation and role of the public and private sectors. In it, the Plan notes that implementation of Thrive will occur over several decades and will require changes in master plans, zoning and building codes, subdivision regulations, the Adequate Public Facilities Ordinance and many other County rules and processes, as these changes are not made in the adoption of the Plan.

And while the Planning and Parks Departments will lead much of the work, full implementation of Thrive's recommendations will require collaboration or approval of other government bodies, including the County Council, who will be asked to review and approve many of these efforts in both land use and budget decisions.

The last section is about measuring progress. It suggests a number of indicators, in addition to the more detailed metrics listed in previous chapters. The indicators are intended to be used for periodic assessments of progress and to inform priorities and decisions, as well to guide shorter-term goals. The Plan groups the indicators according to the three overarching objectives, noting that they are broader than the metrics included in each chapter. The Plan also notes that the list of indicators should not be considered exhaustive and may be modified or expanded to suit future needs. Below are the indicators included in the Plan:

- Economic performance and competitiveness
 - Wage and job growth
 - New business formation
 - Economic output per capita
- Physical activity and public health measures
 - Daily and weekly exercise and physical activity
 - Participation in organized and informal sports and fitness activities
 - Adverse health outcomes associated with physical inactivity
- Racial equity and social inclusion
 - Racial and economic diversity of neighborhoods and schools
 - Measures of social capital, civic engagement, and community trust
 - Equitable life outcomes across race, income, age, gender, etc.

- Environmental sustainability and resilience
 - Greenhouse gas emissions
 - Vehicle miles traveled
 - Water and air quality

The indicators, along with the metrics provided in the preceding chapters, are likely to be further refined. The document of actions that will be developed and reviewed after the adoption of Thrive would be a good place to include a section on indicators and metrics, providing detailed information that defines each metric and indicator, explains how the metric or indicator will be measured, the agency responsible for collecting the associated data, and how frequently the metric or indicator will be publicly reviewed and reported.

| <u>Attachments</u> | <u>© Pages</u> |
|---|----------------|
| Carbon Footprint Analysis | 1-19 |
| County Executive (CE) Letter to Maryland Department of Planning (MDP) | 20-21 |
| Letter from MDP in response to letter from the CE | 22-27 |
| Edits in response to MDP | 28 |
| Planning, Housing, and Economic Development Committee Edits | 29-34 |
| Comparison of GIP Map, Thrive Map, and Sewer Map | 35-37 |
| Revised Introduction | 38-47 |
| Letter from Office of Racial Equity and Social Justice | 48-50 |
| Revised Conclusion | 51-55 |

APPENDIX C

Carbon Footprint Analysis

Introduction

Since 2010, the Planning Board has included a carbon footprint analysis and recommendations to reduce vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions in each of the county's master plans to satisfy the requirement of Montgomery County Code Chapter 33A, Section 33A-14. Specifically, the law requires that the Planning Board must:

- (a) Assess the Plan's potential impact on greenhouse gas emissions in the County, including a Carbon Footprint Analysis;
- (b) Consider ways to reduce vehicle miles traveled in the County;
- (c) Consider options that would minimize greenhouse gas emissions; and
- (d) Consider the impact of the plan on racial equity and social justice in the County (as defined in Section 2-64A).

What is carbon footprint

Carbon footprint is the amount of carbon dioxide including "direct emissions, such as those that result from fossil-fuel combustion in manufacturing, heating, and transportation, as well as emissions required to produce the electricity associated with goods and services consumed. In addition, the carbon footprint concept also often includes the emissions of other greenhouse gases, such as methane, nitrous oxide, or chlorofluorocarbons (CFCs). [A] carbon footprint is usually expressed as a measure of weight, as in tons of CO₂ or CO₂ equivalent per year."¹

Carbon Footprint Analysis

A typical carbon footprint analysis measures only the direct emissions generated by fossil fuel consumption for transportation, manufacturing and building energy use. In conducting a carbon footprint analysis, the Planning staff has generally relied on a spreadsheet model that uses existing and projected square feet of non-residential development, numbers of existing and projected single family and multi-family residential units, current and future VMT, pavement, and population changes to estimate the change in both total and per capita emissions that may occur as a result of the Master Plan recommendations. Some functional Master Plans, such as the Bicycle Master Plan and Countywide Transit Corridors Functional Master Plan, have used a modified approach focused exclusively on changes in VMT in the carbon footprint analysis, since those plans did not include specific land use recommendations (such as zoning) that would generate data on projected square feet of non-residential development or numbers of residential units.

Unlike the county's typical master or countywide functional plans, Thrive Montgomery 2050 is a high-level policy document with a 30-year horizon that focuses on long-range planning and policies to guide the physical development of the county, including where and how land will be preserved or developed for housing, office buildings, parks, agriculture, recreation, and transportation infrastructure. These decisions have a major influence on GHG emissions, carbon sequestration, and adaptation to climate change. But the Plan does not propose specific zoning changes or other recommendations that can be

used to generate specific data on projected square feet of commercial development, residential units, and specific infrastructure improvements. Therefore, this analysis is mainly a qualitative assessment of possible reductions in GHG emissions that can be attributed to Thrive’s policy recommendations. But it also includes a quantitative section that estimates potential reduction in VMT based on a transportation analysis conducted to test the impacts of Thrive’s land use and transportation recommendations on three different growth scenarios.

Major recommendations of Thrive Montgomery 2050 (or Thrive) include compact, corridor-focused growth, Complete Communities and an emphasis on walking, biking and public transit. The GHG reduction benefits of these recommendations will be a combined result of reductions in VMT, building energy savings from reduced residential and commercial development footprints, and the reduction in forest and tree canopy loss in the areas outside of the targeted growth areas. All three of these sources of reduced GHG emissions are influenced by how we plan and build our communities. And, until we consume all energy generated by renewable sources, we must employ all strategies to reduce the amount of energy used in our buildings and transportation system and take emissions out of the atmosphere through sequestration.

This analysis therefore estimates the impacts of the Plan’s policy recommendations on GHG emissions for the following three areas:

- Reductions in new GHG emissions by reducing vehicle miles travelled
- Reduction in new GHG emissions through more compact and energy efficient buildings
- Sequestration through increased forest and tree canopy

While some estimates can be made for the contributions to GHG reductions from reduced VMT and increased protection and expansion of forests and tree canopy, the variability of specific development footprints, building materials, etc. makes Montgomery county-specific estimates of building energy savings from compact growth difficult and impractical.

Findings

The results of this analysis indicate that Thrive Montgomery 2050 will help reduce our GHG emissions and the county’s overall carbon footprint due to reductions in VMT; reductions in the use of energy in buildings and infrastructure; and sequestration of carbon in the atmosphere through reduction in tree loss, increases in tree cover, and protection of forested areas.

Reductions in Daily VMT and Annual GHG Reductions

To get a true picture of the Thrive Montgomery 2050’s contribution in reducing VMT and GHG emissions it is important to compare the impacts of Thrive to a no-Thrive situation. As part of developing the policy recommendations for Thrive, Planning staff conducted a transportation analysisⁱⁱ that estimated daily VMT in the year 2050 based on current trends, and how much that figure could change due to the recommendations in Thrive Montgomery 2050. The analysis compared the results of the three scenarios with the existing conditions in the year 2015 as the base year: “Business as Usual,” “On the Road,” and “Home Alone Together.”

A Business-as-Usual scenario assumed continuation of our current planning framework without any significant disruption in by external factors outside of our control (e.g., a fully autonomous travel network, a different economic structure, etc.) in the way we live, work, and travel, and related changes in how we plan our land use, infrastructure and public and private services and amenities. An On-the-Road scenario assumed mass adoption of autonomous vehicles and where employment growth was focused on specific industries concentrated in a few locations leading to substantially higher numbers of vehicle trips, vehicle miles traveled (VMT) and travel times by automobile, compared to 2015 baseline levels. Conversely, a Home-Along-Together scenario assumed the mass adoption of teleworking and e-commerce and where employment growth was focused broadly on a wide variety of jobs and locations resulting in fewer vehicle trips, reductions in VMT and fewer trips by automobile, compared to the 2015 baseline levels.

The transportation analysis showed that, although per capita VMT will be reduced in each case, the overall amount of VMT will be higher in two of the three scenarios compared to the 2015 baseline levels. However, the application of relevant Thrive policies yielded reductions in VMT in all three scenarios.

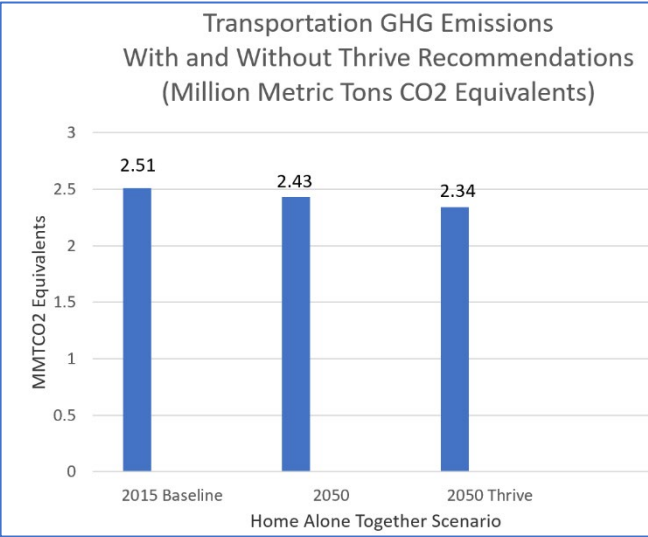
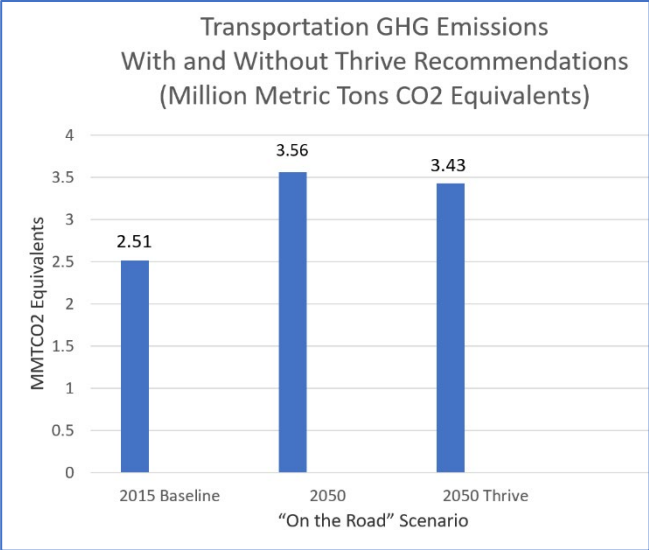
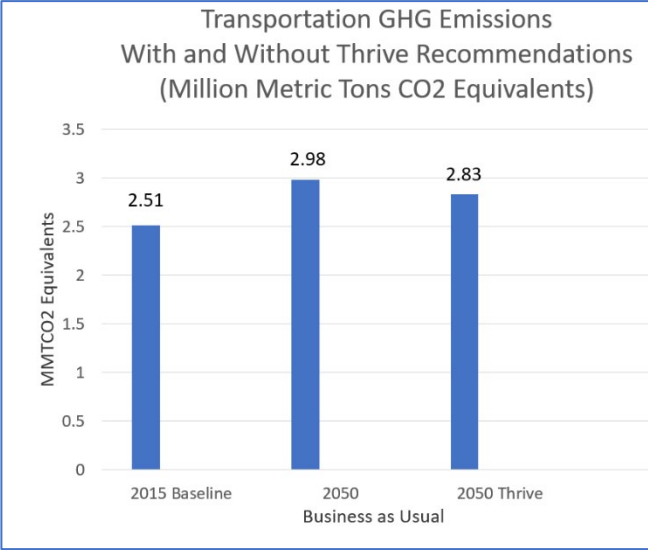
Planning staff used the results of the transportation analysis to calculate the changes in GHG emissions for the same three scenarios. Staff used the same modeling approach used for the Bicycle Master Plan and the Countywide Transit Corridors Functional Master Plan to convert projected VMT into estimated metric tons of CO2 equivalents and compared emissions for 2050 against 2015 as baseline levels. Under the “Business-as-usual” scenario, our VMT, and therefore, GHG emissions in 2050 are forecast to increase over 2015 baseline levels, but they are reduced by 5.0 percent when Thrive policies are applied to this scenario. In the “On the Road” scenario, overall VMT are projected to be higher than the 2015 baseline levels, but they are reduced by 3.6 percent when Thrive policies are applied to this scenario. “Home Alone Together” is the only scenario that projects a reduction in VMT over the 2015 base levels, which are further reduced by 3.7 percent when the Thrive Montgomery 2050 policies are added.

The following table summarizes the VMT projections based on the transportation modeling analysis and then translates those VMTs into GHG emissions. It compares the 2015 baseline levels against the three scenarios with and without the impacts of Thrive in 2050:

Table 1: Estimates of VMT and GHG emission in 2015 and 2050

| Daily Vehicle Miles Traveled (VMT) for Trips Beginning or Ending in Montgomery County (millions) | | | |
|---|--------------------------------|----------------------------------|--------------------------------|
| | Business-As Usual | On the Road | Home Alone Together |
| 2015 Baseline levels | 20.2 | 20.2 | 20.2 |
| 2050 no-Thrive | 24.0 | 28.6 | 19.6 |
| 2050 with Thrive | 22.8 | 27.6 | 18.8 |
| Reduction in VMT attributed to Thrive | 1.2 (~ 5% reduction) | 1.0 (~ 3.5% reduction) | 0.8 (~ 4% reduction) |
| Annual Emissions--Metric Tons of CO2 Equivalent (millions except as noted) | | | |
| 2015 | 2.51 | 2.51 | 2.51 |
| 2050 no-Thrive | 2.98 | 3.56 | 2.43 |
| 2050 with Thrive | 2.83 | 3.43 | 2.34 |

| | | | |
|---|------------------------------------|------------------------------------|-----------------------------------|
| Reduction in GHG emissions attributed to Thrive | 0.15 (~150,000 metric tons) | 0.13 (~128,000 metric tons) | 0.09 (~93,800 metric tons) |
| Percent reduction over 2050 No-Thrive scenario | 5.0% | 3.6% | 3.7% |
| Note: The numbers have been rounded off for simplicity. See Appendix C for full numbers | | | |



GHG Reduction Through More Energy Efficient Buildings

Reducing building energy emissions is an important goal of Thrive Montgomery 2050, the county’s Climate Action Plan, and of other county programs and initiatives, such as the International Green Construction Code. Thrive contributes to the implementation of this goal through recommendations in various chapters of the Plan. Notable recommendations that will help reduce building energy emissions are included in the Design, Arts and Culture chapter, especially under the goal to “Promote design

strategies and retrofits to make new and existing buildings more sustainable and resilient to disruption and change.” This section includes recommendations to:

- encourage net-zero building design, biophilic design and on-site energy generation for new public buildings and large private developments on sites across the county;
- promote cost-effective infill and adaptive reuse design strategies to retrofit single-use commercial sites such as retail strips, malls, and office parks into mixed use developments;
- incentivize the reuse of historic buildings and existing structures to accommodate the evolution of communities, maintain building diversity, preserve naturally occurring affordable space, and retain embodied energy of structures; and
- implement policies to ensure that new buildings and parking structures are adaptable to changing technologies and market preferences and are able to mitigate effects of climate change over time. While it is difficult to quantify the emissions reductions from these actions, their implementation is important to reducing the County’s carbon footprint.

Sequestration Through Increased Forest and Tree Canopy

In addition to reducing emissions, increases in the effects of Climate Change can be mitigated by drawing down excess carbon in the atmosphere. While technological solutions, such as engineered systems for carbon capture and storage, are being explored, they have not yet been developed to the point where they can be practically implemented on a large scale. Natural climate solutions are available now and are cost-effective and practical to implement. These solutions primarily focus on protecting existing forest and tree canopy and expanding the coverage of these resources. Protection and planting of forests and tree canopy also have numerous co-benefits for human health, recreational opportunities, energy conservation, water quality improvement and runoff reduction, and provision of critical habitat.

In July 2020, the Montgomery County Department of Environmental Protection (MCDEP) released a report titled *“Examining the Role of Forests and Trees in Montgomery County’s Greenhouse Gas Inventory.”* The report, which was coordinated for Montgomery County by MCDEP, was authored by investigators from the World Resources Institute, the Climate and Land Use Alliance, and the Woods Hole Research Center (now called the Woodwell Climate Research Center). Staff from the Montgomery County Planning Department provided input on the study and development of the approach to quantifying the contribution of forests and trees in mitigating Montgomery County’s GHG emissions.

Among the key findings of the report are the following points (page 2 of the report):

- Roughly one third of Montgomery County’s land base is forest. Many areas outside of forests are also covered by trees, including an average of nearly 50 percent tree canopy in developed areas.
- In the period 2011-2016, average annual emissions were less than in the period 2001-2011 due to a reduction in the loss of forests and trees.
- The County’s tree canopy also increased during the 2011-2016 period, which resulted in higher annual removals of CO₂ compared to 2001-2011.
- Between 2005 and 2015, overall (i.e. all sectors) emissions in Montgomery County dropped 14%. When including the impact of forests and trees, this emission reduction increases to 16%.

- Montgomery County’s net GHG emissions could be lower if additional forests and trees were added to its land base, or if losses of these resources were reduced further.

The reduction in emissions from forest loss between 2001 and 2016 corresponds with a move away from greenfield development toward infill and redevelopment as the availability of greenfield development areas in Montgomery County diminished and the large forest losses associated with those developments declined. This underscores the importance of the Compact Growth recommendations in Thrive Montgomery 2050 for protecting and expanding forests and tree canopy.

It is also important to note from this report that forest and tree removals constitute a net increase in emission of GHGs. This is because most of the forest and trees removed for development are not converted into wood products that continue to store carbon, but instead decompose and release the stored carbon back into the atmosphere. The study estimates that approximately 41 million metric tons of CO2 were stored in the standing stock of Montgomery County’s forests and trees in 2016. About 30 million metric tons of CO2 were bound up in Montgomery County’s forests, and the remaining 11 million metric tons of CO2 were stored in trees outside of forests. The trend at that time was that both figures were increasing.

Spreadsheets accompanying the report include carbon removal rates for forests and trees outside of forests in the County. The county’s deciduous forests, for example, remove approximately 6.7 metric tons of CO2 equivalents per hectare per year from the atmosphere. The actions in the Appendix B to this carbon footprint analysis include Thrive recommendations to develop forest cover and tree canopy goals for different land uses and locations in the County. These sequestration factors can be used to estimate the sequestration of potential increases in forest cover and tree canopy to help understand the effects of different forest and canopy cover recommendations.

Planning staff updated the information in the MDEP report using the county’s Geographic Information System. The updated information was used to generate some estimates of the amount of carbon dioxide stored and the amount of greenhouse gases sequestered annually, expressed in carbon dioxide equivalent measures, by the county’s forests and trees outside of forests. These figures are presented in the table below.

Table 2: Forest and Trees Outside of Forest Carbon Storage and Sequestration

| | Carbon Stored--Metric Tons of CO2 (Millions) | Annual Sequestration--Metric Tons of CO2 Equivalents |
|-------------------------|---|---|
| Forest | 30 | 296,174 |
| Trees Outside of Forest | 11 | 285,064 |
| Total | 41 | 581,238 |

Implementing Thrive’s recommendations and action items should increase the carbon capture and storage from these natural systems and reduce the county’s carbon footprint.

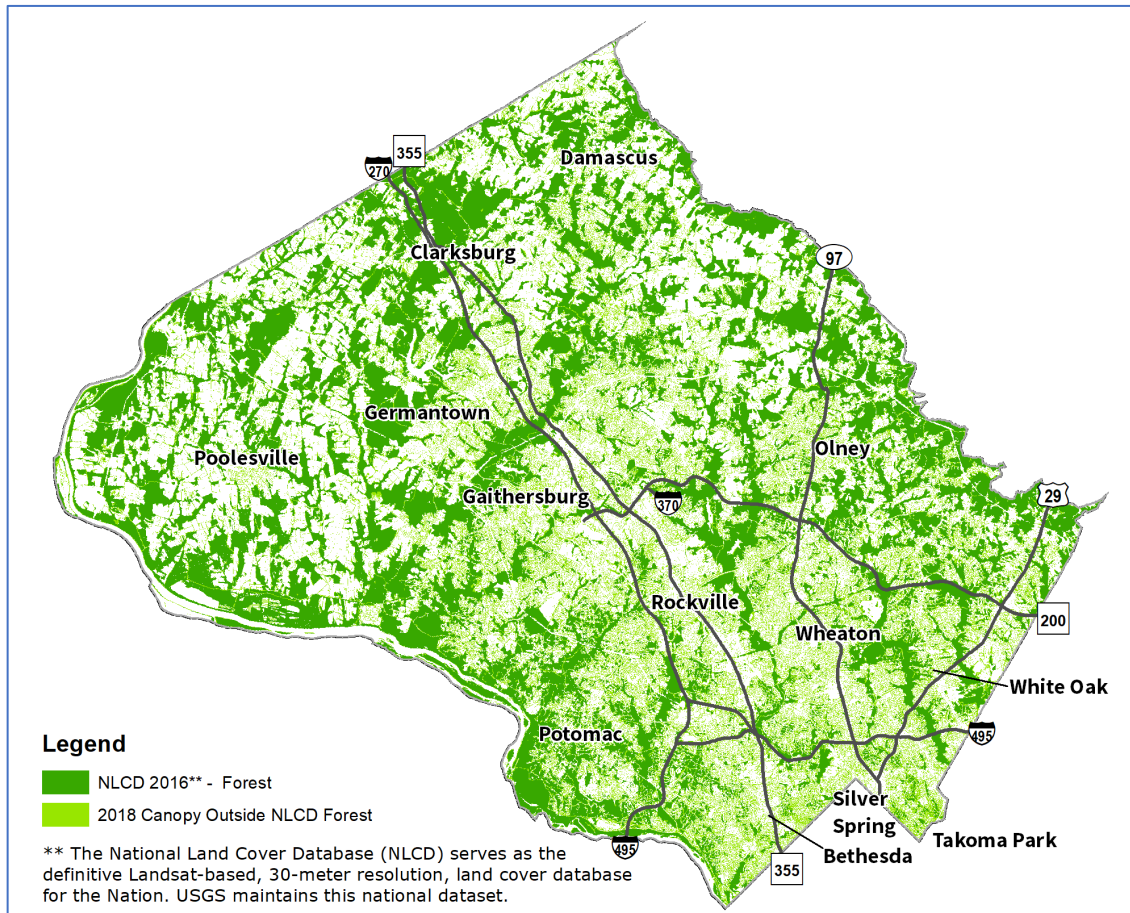


Figure 1: Forest and Tree Canopy Cover in Montgomery County

Thrive Montgomery 2050’s Role in Combatting Climate Change

Thrive Montgomery 2050 builds upon the framework established by the 1964 Wedges and Corridors Plan and subsequent master plans and functional countywide plans that have focused growth into more compact areas around major transit hubs and transportation corridors, and preserved areas of lower density development, open spaces and agricultural lands that protect natural resources critical to climate mitigation, sequestration, and resilience.

Thrive Montgomery 2050 includes recommendations that focus on the critical land use component of our efforts to reduce and draw down excess carbon in the atmosphere, and ultimately help achieve the county’s goal of eliminating all GHG emissions by 2035. It recommends that future development in the county be compact, bikeable and walkable, and served by public transit. It also recommends transforming our existing neighborhoods into complete communities across the county. Compact growth focused around transit stations and along major corridors in Complete Communities is the Plan’s most important strategy in reducing VMT, reducing imperviousness and saving our environmental

resources that dovetail with the increasing preference across age groups to live in mixed-use and diverse walkable places.

Compact Growth

This emphasis on compact growth is based on the idea that the efficient use of land through compact corridor-focused growth complemented by a rural pattern outside of the growth corridors is the best land use strategy to make development more environmentally sustainable and to reduce GHG emissions. Staff has found that overwhelming body of research provides evidence that compact growth reduces VMT over conventional sprawl, which causes more vehicle miles traveled simply because destinations are farther apart and generally accessible only by motor vehicles. A 2008 study, *Growing Cooler*ⁱⁱⁱ, published by the Urban Land Institute and partially funded by EPA, concluded that compact development alone can reduce vehicle miles traveled by 20 to 40 percent compared to conventional development. Based on the amount of new development and the percentage of that development that could reasonably be expected to be compact infill, the study estimated that compact development could reduce carbon dioxide (CO₂) emissions by 7 to 10 percent in 2050. A subsequent study by ULI in 2009, *Moving Cooler*^{iv}, found that a combination of more compact development and investments in transit and other transportation options could reduce greenhouse gas emissions from transportation by 9 to 15 percent by 2050.

Compact growth also leads to smaller homes which produce energy savings. A December 2019 BBC report^v on climate change stated that, “Though the differences are not huge, on average, homes in large towns emit slightly less CO₂ per person than their more rural counterparts. They tend to be smaller, denser and easier to heat. One of the biggest differences in carbon emissions comes from transport, with CO₂ emissions per head 66% higher away from cities. This is probably because more people drive private cars and make longer journeys for work and leisure.”

Complete Communities and 15-minute Living

Thrive Montgomery 2050 further reinforces the concept of compact growth by adding Complete Communities and 15-minute living as organizing principles for making our neighborhoods more walkable and sustainable. Complete Communities include a mix of uses, infrastructure, diverse housing types suitable for different household types and income levels, and services and amenities within walking or biking distance.

Many of our existing amenity-rich neighborhoods near transit are not affordable to low-income households forcing them to live farther away from job centers in places that are not well-served by Transit. This in turn causes them to drive longer distances resulting in higher VMTs. Thrive Montgomery proposes reimagining these neighborhoods as Complete Communities to provide more diverse housing through infill and redevelopment to make them affordable to low-income families who are more likely to use transit resulting in reductions in VMT.

The related concept of 15-minute living is another way of reimagining existing communities to maximize their attractiveness and efficiency by mixing housing, offices, and retail uses in each neighborhood or district as much as feasible so services, infrastructure, facilities, and amenities to serve the daily needs of people who live or work there or are within walking distance. The ideas of compact growth, 15-

minute living and Complete Communities are not just for urban areas. Although more people living near mid- to high-density centers in downcounty and midcounty areas will be able to walk to their daily needs, but even in the low-density suburban and rural locations people will be able drive to a well-connected, compact town center, park their vehicles once and walk to stores and other destinations instead of driving from store to store.

Many of Thrive recommendations will help reduce our carbon footprint, but the following recommendations play a more direct role in reducing our VMT and GHG emissions:

- Concentrate new growth in a limited number of places that already have the infrastructure and service to support additional new growth.
- Allow appropriate densities needed to support the efficient provision of transit service along growth corridors.
- Improve the environmental sustainability of growth by encouraging infill and redevelopment to curb sprawl and improve storm water management and sustainability in older neighborhoods built long before current environmental standards.
- Create complete communities to provide more options for people to reach their daily needs by walking, biking or rolling in as many places as possible in all parts of the county.
- Apply flexible approaches to accommodate infill and redevelopment that improve access to amenities, active transportation, parks, and open spaces, and a broader range of housing types at the neighborhood scale
- Make existing and new public facilities more reachable to the surrounding neighborhoods through active transportation improvements that prioritize walking, biking, rolling, and transit use.
- Create mixed-use employment clusters with retail, amenities, and transit, and integrate them into the surrounding communities.
- Develop a convenient and attractive transit system to reduce our reliance on automobiles.
- Ensure safe and comfortable access to transit stations via walking, rolling, and bicycling.
- Stop planning or constructing new highways or major road widenings for cars.
- Provide safe, comfortable, and attractive sidewalks, bikeways, roadway crossings, and other improvements to support walking, bicycling, and transit.
- Encourage the proliferation of non-polluting vehicles by upgrading government fleets and requiring appropriate infrastructure.
- Incentivize residential infill, redevelopment, and repositioning of office parks, shopping malls, and other underutilized properties.
- Facilitate the development of a variety of housing types in every part of the county but especially in areas near transit, employment, and educational opportunities.
- Integrate park trails and paths into transportation planning and better use them to connect residents to jobs and centers of activity.
- Acquire additional land to protect sensitive natural resources and increase tree cover, along with other environmental goals.
- Create a resiliency plan to improve the ability of park and recreation facilities and natural resources to withstand the effects of climate change.

Additional Contributions from Thrive Montgomery 2050

The Compact Growth chapter also contains recommendations to “Preserve and enhance the Agricultural Reserve and manage it to maintain a rural pattern of development for the benefit of the entire county,” including a recommendation to “Maximize the benefits of the Agricultural Reserve through policies designed to ensure the continued viability of farming as an economically productive and sustainable activity, discourage sprawl, facilitate a broad range of outdoor recreation and tourism activities, conserve land and natural resources, and promote practices that advance environmental quality.” The existence of the Agricultural Reserve and the original “Wedges and Corridors” approach to land use has helped focus Montgomery County’s growth into more compact forms along transportation corridors. The continued preservation and use of the Agricultural Reserve to discourage sprawl and maintain large areas of forest and pastureland through the recommendations of Thrive Montgomery 2050 presents the county with a resource that enables the continued storage and sequestration of large amounts of carbon and contributes to the county’s resilience. Actions related to the implementation of this recommendation can improve the productivity of agricultural soils while also enhancing their ability to store carbon.

The Parks and Recreation chapter contains recommendations for the continued stewardship of natural resources in our award-winning Park system, including recommendations to “selectively acquire additional land where needed to protect sensitive natural resources, improve water quality, increase tree cover, enhance wildlife corridors, curb invasive species, and achieve other environmental goals,” and to “create a resiliency plan to improve the ability of park and recreation facilities and natural resources to withstand the effects of climate change.” As discussed previously in the section on sequestration, these actions will increase the ability of our Park system to capture and store carbon while providing many additional benefits.

Relationship Between Thrive Montgomery 2050 and the Climate

Action Plan

In December 2017, Montgomery County adopted Resolution 18-974 committing to reduce the county’s GHG emissions of 80 percent by 2027 and reaching 100 percent elimination by 2035. In June 2021, the county released a Climate Action Plan (CAP) that details the effects of climate change on Montgomery County and includes strategies to achieve the goals of Resolution 18-974.

Thrive Montgomery 2050 was drafted in coordination with the CAP, which outlines ways to reduce the county’s net greenhouse gas emissions to zero by 2035. The CAP also recommends approaches to deal with the hazards of climate change predicted for Montgomery County: extreme heat, extreme precipitation, high winds, and drought. The Planning Department staff worked with executive branch representatives to ensure that the goals, policies, and actions recommended by Thrive Montgomery 2050 and the CAP are complementary rather than duplicative.

Thrive Montgomery 2050 is a high-level document that focuses on long-range planning and policies to guide the physical development of the county, including where and how land will be preserved or developed for housing, office buildings, parks, agriculture, recreation, and transportation infrastructure. These kinds of decisions have a major influence on greenhouse gas emissions, carbon sequestration, and

adaptation to climate change. The CAP, on the other hand, recommends specific actions to be taken in the near-term to achieve the goal of eliminating greenhouse gas emissions by 2035 and to mitigate or adapt to the effects of climate change. Thrive Montgomery 2050 incorporates a wide range of recommendations related to climate change and its connection to land use, transportation, and parks, and the Planning and Parks Departments will implement recommendations in the CAP that are within the scope of the M-NCPPC's responsibilities. Together these plans will create a comprehensive approach to climate change at the local level.

Building Capacity to Improve GHG Modeling, Help Track Progress

Planning staff recognizes that estimating the effects of Thrive Montgomery 2050's recommendations and tracking the progress of implementation will require new tools and additional efforts in the coming years. In addition to our existing tools there are newer, better tools and approaches being developed that will help us to better address and track progress in climate change mitigation, sequestration and resilience moving forward. One of the actions that maybe considered for Thrive's implementation is to create or choose tools to evaluate the effect of land use options on greenhouse gas reduction goals. Like other agencies, the Montgomery County Planning Department will be considering ways to build our capacity to address the many issues and challenges we will encounter as we seek to reduce our carbon footprint and find ways to adapt and become more resilient in the face of climate change.

Section C-1: Thrive Montgomery 2050—Recommendations Related the VMT and GHG Emissions Reduction

(Note: these recommendations are from the Planning Board Draft and may be modified during the PHED Committee or the full Council review).

Compact Growth chapter

Concentrate growth in centers of activity and along corridors through compact, infill development and redevelopment to maximize efficient use of land.

- Focus future land use and public infrastructure planning on growth corridors so as to direct development in ways that facilitate the emergence of Complete Communities. Evaluate appropriate land uses, transportation facilities, and community design that will encourage and enable full use of centers of activity and creation of Complete Communities. (Ec, Env, EQ)
- Amend land use, design, and zoning regulations, including the Zoning Ordinance and Subdivision Regulations, to support corridor-focused compact development. Appropriate densities will vary but should be sufficient to support, at a minimum, the efficient provision of transit service along these corridors. (Ec, Env, Eq)
- Improve the environmental sustainability of growth by encouraging infill and redevelopment to curb sprawl and bring areas built out in an era with little or no environmental regulations up to robust standards for stormwater management and other state-of-the-practice environmental standards. (Env)

Promote and prioritize public investment in infrastructure along growth corridors and leverage it to attract future private investment in a compact form.

- Establish high-quality transit infrastructure along growth corridors through capital investment and ensure reliable, frequent service through operational investment. (Ec, Env, Eq)
- Leverage federal, state and local incentive programs, publicly owned land and land investment opportunities for corridor infill development and redevelopment. (Ec, Env, Eq)

Limit growth beyond corridors to compact, infill development and redevelopment in Complete Communities to prevent sprawl. Apply principles of urbanism at an appropriate scale along a rural-to-urban transect as outlined in the Complete Communities chapter. (Env, Eq)

- Sustainably manage land outside growth corridors and Complete Communities to increase biodiversity, improve the health of natural habitats, preserve privately owned forests, protect watersheds and aquifers, and improve water quality while providing expanded opportunities for outdoor recreation, including vigorous physical activity. (Env, Eq)

Preserve and enhance the Agricultural Reserve and manage it to maintain a rural pattern of development for the benefit of the entire county.

- Maximize the benefits of the Agricultural Reserve through policies designed to ensure the continued viability of farming as an economically productive and sustainable activity, discourage sprawl, facilitate a broad range of outdoor recreation and tourism activities, conserve land and natural resources, and promote practices that advance environmental quality. (Ec, Env)

Complete Communities chapter

Identify and integrate elements needed to complete centers of housing, retail, and office development and plan to make 15-minute living a reality for as many people as possible.

- Promote zoning allocations and standards to encourage the integration of varied uses, building types and lot sizes. (Ec, Env, EQ)
- Apply flexible approaches to accommodate infill and redevelopment that improve access to amenities, active transportation, parks, and open spaces, and a broader range of housing types at the neighborhood scale. (Ec, Env, EQ)
- Prioritize neighborhood-level land use planning as a tool to enhance overall quality of community life and avoid reinforcing outdated land use patterns. (EQ)
- Allow sufficient densities to make a wide range of uses economically viable in Complete Communities. Encourage densities sufficient to support convenience retail and other local-serving amenities at the neighborhood level. Provide guidance for accommodating additional density in a context-sensitive manner. (Ec, Env, EQ)
- Ensure that Complete Communities are integrated into their surroundings and supported by a public realm that encourages walking, biking and rolling, as well as social interaction through the configuration of sidewalks, paths, landmarks, and gathering spaces. (Ec, Env, EQ)

Encourage co-location and adjacency of all essential and public services, especially along growth corridors and in Complete Communities.

- Maximize the utility of public facilities by locating them in places that promote integration with other public and private uses and infrastructure. (Env, EQ)
- Promote active transportation improvements that prioritize walking, biking, rolling, and transit use to enhance public access to these co-located facilities. (Env, EQ)
- Develop standards for colocation of public facilities that promote mixing of uses or services and compact development strategies. Encourage public-private partnerships and ensure they promote social interaction and physical activity. (Ec, Env, EQ)

Retrofit centers of activity and large-scale older facilities such as shopping centers, abandoned federal campuses, office parks, and other single-use developments to include a mixture of uses and diversity of housing types and to provide a critical mass of housing, jobs, services, and amenities for vibrant, dynamic Complete Communities.

- Ensure employment uses in economic clusters develop in a mixed-use format along with housing, retail, amenities, and transit, and ensure they are integrated into the surrounding communities. (Ec, Env, EQ)
- Allow creation of co-located housing, discussed further in the Affordable and Attainable Housing Chapter, including for industries that employ large numbers of employees (permanent or seasonal). (Ec, Env, EQ)
- Encourage higher density economic and housing cooperatives (live/work areas such as home occupations, artist villages, farmers' market/villages, tech/life-science startup incubators). (Ec, Env, EQ)

Design, Arts and Culture chapter

Use design-based tools to create attractive places with lasting value that encourage social interaction and reinforce a sense of place and inclusion.

- Design buildings, streets, and parking to prioritize the pedestrian scale and encourage walking and bicycling through smaller blocks, narrower streets, buffered bike lanes and sidewalks. Slow vehicle speeds and minimize surface parking while adequately accommodating automobiles. (Eq, Env)
- Adopt rules for alternative housing types such as tiny houses, cottages, courtyard clusters, duplexes, multiplexes, small apartment buildings; shared housing, co-housing and accessory dwelling units (ADUs). (Eq, Env)

Promote design strategies and retrofits to make new and existing buildings more sustainable and resilient to disruption and change.

- Encourage state-of-the-practice sustainability features such as net-zero/carbon-positive buildings, biophilic design and on-site energy generation for new public buildings and large private developments on sites across the county. (Env)
- Promote cost-effective infill and adaptive reuse design strategies to retrofit single-use commercial sites such as retail strips, malls, and office parks into mixed use developments. (Ec, Env)
- Incentivize the reuse of historic buildings and existing structures to accommodate the evolution of communities, maintain building diversity, preserve naturally occurring affordable space, and retain embodied energy of structures. (Eq, Env)
- Implement policies to ensure that new buildings and parking structures are adaptable to changing technologies and market preferences and are able to mitigate effects of climate change over time. (Env)

Transportation and Communications Network chapter

Develop a safe, comfortable and desirable network for walking, biking, and rolling.

- Expand the street grid in downtowns, town centers, transit corridors, and suburban centers of activity to create shorter blocks. (Ec, Env)
- Stop proposing new four+ lane roads in master plans. (Env)
- Do not give priority to construction of new four+ lane roads or major road widenings for cars. (Env)
- Convert existing traffic lanes and on-street parking to create space for walkways, bikeways, and street buffers with landscaping and street trees. (Env)
- Prioritize the provision of safe, comfortable, and attractive sidewalks, bikeways, roadway crossings, and other improvements to support walking, bicycling, and transit usage in capital budgets, development approvals and mandatory referrals. (Env)

Build a world-class transit system.

- Build a network of rail, bus rapid transit, and local bus infrastructure and services that make transit the fastest, most convenient and most reliable way to travel to centers of economic, social and educational activity and opportunity. (Ec, Eq, Env)
- Convert existing general purpose traffic lanes to dedicated transit lanes, as consistent with other county policies. (Ec, Eq, Env)

- Ensure safe and comfortable access to transit stations via walking, rolling, and bicycling. (Eq, Env)

Adapt policies to reflect the economic and environmental costs of driving alone. (Eq, Env)

- Employ pricing mechanisms, such as congestion pricing or the collection and allocation of tolls to support walking, rolling, bicycling, and transit. (Env)
- Manage parking efficiently by charging market rates and reducing the supply of public and private parking. (Ec, Env)
- Encourage the proliferation of non-polluting vehicles by upgrading government fleets and requiring appropriate infrastructure. (Env)

Develop and extend advanced communications networks

- Support teleworking by accelerating deployment of information and communications technology and making working from home easier by facilitating Complete Communities. (Ec, Env)

Attainable and Affordable Housing chapter

Encourage the production of more housing to better match supply with demand

- Expand opportunities to increase residential density, especially along major corridors and in locations where additional housing can assist in the development of Complete Communities. (Ec, Eq, Env)
- Increase regulatory flexibility to incentivize residential infill, redevelopment, and repositioning of office parks, shopping malls, and other underutilized properties. (Ec, Eq, Env)
- Provide financial incentives such as Payment in Lieu of Taxes to boost housing production for market rate and affordable housing, especially near transit and in Complete Communities. (Ec, Eq, Env)

Plan for a wide range of housing types and sizes to meet diverse needs

- Facilitate the development of a variety of housing types in every part of the county but especially in areas near transit, employment, and educational opportunities. (Ec, Eq, Env)
- Support creative housing options including personal living quarters and/or micro units; “missing middle” housing types such as tiny houses, cottages, duplexes, multiplexes, and small apartment buildings; shared housing, co-housing, accessory dwelling units (ADUs), social housing and cooperative housing to help meet housing needs and diversify housing options. (Ec, Eq, Env)
- Encourage provision of multi-bedroom units suitable for households with children in multifamily housing. (Eq, Env)

Parks and Recreation chapter

Focus on creating high quality urban parks

- Prioritize acquisition of land for parks in urban centers and other intensively developed places along growth corridors and in Complete Communities using the Legacy Urban Space CIP commitment and the Energized Public Spaces Functional Master Plan (EPS Plan) as a starting point. (Ec, Eq, Env)

Maintain high standards of environmental stewardship in park management and operations

- Selectively acquire additional land where needed to protect sensitive natural resources, improve water quality, increase tree cover, enhance wildlife corridors, curb invasive species, and achieve other environmental goals. (Env)
- Create a resiliency plan to improve the ability of park and recreation facilities and natural resources to withstand the effects of climate change. (Env)

Integrate parks/rec/public spaces into economic development strategies and land use planning to attract employers and workers, build social connections, encourage healthy lifestyles, and create vibrant places, especially as part of Complete Communities. (Ec, Eq, Env)

Section C-2: Thrive Montgomery 2050-- Proposed Actions Related to GHG Emissions Reduction

Compact Growth: Corridor-Focused Development

- G-4. Implement recommendations in the county's [Climate Action Plan \(CAP\)](#) within the authority of the M-NCPPC in order to achieve the climate change goals and related objectives of both the CAP and Thrive Montgomery 2050.
- G-8. Create or choose tools to evaluate the effect of land use options on greenhouse gas reduction goals.
- G-9. Evaluate opportunities for siting alternative energy production and storage systems.
- G-11. Research and create guidance for innovative development, retrofit and construction designs, and techniques that minimize imperviousness.
- G-17. Identify for protection forests and other natural areas with high value for climate mitigation, resilience, and biological diversity.
- G-18. Establish appropriate forest and non-forest canopy goals and strategies to protect plant and wildlife diversity and human health while accommodating and complementing land use policies such as redevelopment and infill in areas identified as appropriate for growth.
- G-21. Develop a long-range forest quality management plan to address fragmentation, deer pressure, invasive threats, and the forest's capacity to withstand and mitigate climate impacts.
- G-22. Develop recommendations to improve the vitality and survivability of planted forests and trees.

Design, Arts and Culture chapter

- D-7. Update the Historic Preservation Ordinance, the zoning code, and Historic Resources Preservation Tax Credit program to incentivize and facilitate adaptive reuse and/or repurposing of existing buildings.
- D-8. Develop a sprawl repair manual to promote cost-effective design strategies and establish regulatory approaches to accommodate retrofitting of single-use commercial sites such as retail strips, malls and office parks into mixed-use developments that are more energy efficient.
- D-9. Develop guidelines and standards for climate-sensitive design principles and materials for new public and private development projects. Ensure these standards include strategies to maximize greenhouse gas reductions in the built environment, including generating clean renewable energy and reducing heat island effect.

Transportation and Communications Network chapter

- T-2. Remove master-planned but unbuilt highways and road widenings that are not consistent with this plan, add dedicated transit lanes, upgrade transitways to median running, and repurpose general-purpose lanes and on-street parking for sidewalks, bikeways, transit lanes, street buffers, street trees, and stormwater management.
- T-8. Create guidelines for prioritizing transportation projects to improve walking, bicycling, and transit in [Equity Focus Areas](#).

- T-17. Develop short-term and long-term bus transit plans to extend local and regional bus service to underserved communities in Montgomery County, improve reliability, frequency, and span of service and restructure local and regional bus service to integrate with existing and planned rail and [Bus Rapid Transit \(BRT\)](#).
- T-19. Expand commuter rail capacity on the MARC Brunswick Line to provide additional station locations in Montgomery County and provide frequent bidirectional all-day service, seven days a week.
- T-21. Eliminate motor vehicle parking minimums for new development projects in downtowns, town centers, rail and BRT corridors and adjacent communities to encourage travel by walking, bicycling, and transit.
- T-24. Develop an implementation plan for transitioning to zero emission fueling in residential and commercial development and public facilities and spaces.
- T-25. Update all county fleets and contracted fleet providers to zero emission vehicles.
- T-26. Develop county incentives to accelerate conversion of privately-owned fleets to sustainable, zero emission vehicles.

Section C-3: VMT and GHG Emissions Projections

| Daily Vehicle Miles Traveled (VMT) For Trips Beginning or Ending in Montgomery County | | | |
|--|-------------------|------------------|---------------------|
| | Business-As Usual | On the Road | Home Alone Together |
| 2015 | 20,228,973 | 20,228,973 | 20,228,973 |
| 2050 no-Thrive | 24,012,055 | 28,639,289 | 19,583,130 |
| 2050 with Thrive | 22,808,430 | 27,604,428 | 18,827,231 |
| Reduction in VMT attributed to Thrive | 1,203,625 | 1,034,861 | 777, 899 |

| Annual Emissions (Metric Tons of CO2 Equivalent) | | | |
|---|----------------|----------------|---------------|
| 2015 | 2,511,431 | 2,511,431 | 2,511,431 |
| 2050 no-Thrive | 2,981,101 | 3,555,573 | 2,431,249 |
| 2050 with Thrive | 2,831,671 | 3,427,001 | 2,337,404 |
| Reduction in emissions attributed to Thrive | 149,430 | 128,572 | 93,845 |
| % reduction over 2050 no-Thrive scenario | 5.01% | 3.61% | 3.86% |

Endnotes

ⁱ <https://www.britannica.com/science/carbon-footprint>

ⁱⁱ <https://montgomeryplanning.org/wp-content/uploads/2021/10/FINAL-Thrive-Montgomery-Transportation-Analysis-Report.pdf>

ⁱⁱⁱ https://www.nrdc.org/sites/default/files/cit_07092401a.pdf

^{iv} <https://www.issuelab.org/resources/10329/10329.pdf>

^v <https://www.bbc.com/news/science-environment-49639003>



OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

October 6, 2021

Chuck Boyd, AICP
Director, Planning Coordination
Maryland Department of Planning
301 W. Preston Street, Suite 1101
Baltimore, MD 21201

Dear Mr. Boyd:

I am writing to request that the Maryland Department of Planning (MDP) conduct a supplementary review of the current Planning Board Draft of the County's proposed new General Plan, known as Thrive Montgomery 2050. The comments that MDP sent to the Planning Board on November 6, 2020, were based on MDP's review of the Working Draft Plan, which became the Public Hearing Draft presented to the public for comment on November 19, 2020.

Shortly after that public hearing, the Planning Board began a chapter-by-chapter rewrite, one at a time, deleting some chapters entirely, adding new chapters, and generally removing key recommendations over the course of several months. The process was extremely confusing to the public, and even to the relevant executive agencies. The result was little public and agency participation during the rewrite. No additional public hearing was held on the changed Planning Board Draft; it was transmitted to the Montgomery County Council on April 13, 2021, and it is now being reviewed by the Montgomery County Council.

Here is a link to the Thrive 2050 Public Hearing Draft: <https://montgomeryplanning.org/wp-content/uploads/2020/10/Public-Hearing-Draft-Plan-Thrive-Montgomery-2050-final-10-5.pdf> and here is a link to the Planning Board Draft https://montgomeryplanning.org/wp-content/uploads/2021/02/THRIVE-Planning-Board-Draft-2021-Pages_web.pdf. A comparison of the Table of Contents of each document shows the extent of the revisions. Among the changes:

- The chapters on Economic Development (Public Hearing Draft Chapter 3, Resilient

Economy) and the Environment (Public Hearing Draft Chapter 6, Healthy and Sustainable Environment) have been removed from the Planning Board Draft; the Planning Board Draft added a new chapter called “Parks and Recreation for an Increasingly Urban and Diverse Community: Active and Social.” Comments on the environment and the economy have been scattered throughout the Planning Board Draft.

- Most of the policy and action items presented in the chapters of the Public Hearing Draft, many of which MDP cited in its comments, have either been removed or watered down. Instead, the Planning Board includes many of these recommendations in a separate document that is not part of the General Plan; they will not be considered in the Council’s review process. The Director of the Montgomery County Department of Environmental Protection has written to the County Council committee reviewing Thrive 2050 to ask councilmembers to restore the chapter on the environment, as well as the substantive policy statements and action items.

MDP’s comments of November 6, 2020, note that there are minimum state law requirements for certain elements within a charter county’s general plan, as well as for implementation of the 12 State Visions. Because these are all essential parts of a General Plan expected to guide our land use policies for the next few decades, I request that MDP comment on whether the Planning Board Draft adequately addresses the key elements and the 12 State Visions.

Finally, I want to confirm to you my understanding that the Maryland Department of Planning coordinates and provides only limited review of the proposed revisions to Montgomery County’s General Plan upon request and, further, that you have no authority over the adoption of the plan and typically defer to the local process on land use matters. I am making this request for a supplementary review because of the unusual and considerable changes made between the time MDP sent its comments on the Working Draft in November 2020 and the Planning Board transmitted the new Planning Board Draft to the County Council in April 2021-- and because of the importance of the General Plan to Montgomery County. As the Planning Board states in the introduction to the Planning Board Draft (p.4), “[e]very jurisdiction must adopt some form of general or ‘comprehensive’ plan as a legal predicate for the exercise of the government’s land use and zoning powers...”

The Council committee reviewing the plan has scheduled work sessions through October 18th; after that, the full Council will begin its review. I would appreciate having your input prior to Council’s review.

Sincerely,



Marc Elrich
County Executive



Maryland

DEPARTMENT OF PLANNING

October 15, 2021

The Honorable Marc Elrich
Montgomery County Executive
Executive Office Building (EOB)
101 Monroe Street, 2nd Floor
Rockville, MD 20850

Re: Maryland Department of Planning Supplemental Review of *Thrive Montgomery 2050*

Dear County Executive Elrich:

Thank you for requesting the Maryland Department of Planning (Planning) provide supplemental comments on the *Thrive Montgomery 2050* Planning Board Draft Plan (PB Draft Plan). We appreciate Montgomery County including the department in the planning process. Our staff have actively worked with the county's Technical Advisory Committee and have reviewed and provided comments on the earlier Working Draft, dated November 6, 2020. As noted in your letter, the "Working Draft" subsequently became the Public Hearing Draft, which was presented for public comment on November 19, 2020. While Planning did not review the Public Hearing Draft, in response to your request, we have completed our review of the PB Draft Plan and provide the attached comments. Based on recent conversations with county planning staff and confirmed in your letter of October 6, 2021, the PB Draft Plan is being discussed and possibly amended as part of the Montgomery County Council plan review process.

Planning understands and respects the uniqueness of each community, its vision and local planning practices, which are reflected in individual comprehensive plans. It is important to note that while state law establishes required plan elements, how a jurisdiction prepares a plan and what is included is a local decision. Therefore, our review focuses on the minimum state requirements for charter county comprehensive plans, as outlined in Land Use Article Division 1, Title 1, Subtitle 4, Part II (as referenced in Division II, Title 21, Section 21-104). The Land Use Article, and by extension the review of state agencies, outlines a jurisdiction's responsibility to meet minimum comprehensive plan standards.

One of Planning's fundamental responsibilities when reviewing plans is to ensure compliance with the comprehensive plan requirements in the Land Use Article. Beyond that core duty, and prior to the start of the public hearing process, Planning also provides local planning commissions and boards advisory comments. These can include information on best practices and possible resources to consider as part of the planning process, or later during plan implementation. Consequently, Planning provides support to local jurisdictions and does not seek to direct or influence local planning goals and objectives and land use decisions.

Beyond providing supplemental comments related to mandated Land Use Article items, our review summarizes some of the primary changes between the Working Draft and the PB Draft Plan and reiterates comments from our November 6, 2020, review letter that still apply. Consistent with our department policy, as a draft plan is being reviewed and potentially modified by appointed and elected bodies our department does not provide additional guidance, beyond analyzing consistency with minimum state standards.

Montgomery County has a long and rich history of forward-thinking planning, as well as a complex array of master, sector, and functional plans. Integrated vertically and horizontally, these plans establish policies, strategies, and actions impacting the county, its distinct communities, and specific planning topics. Because of this, Planning stresses that *Thrive Montgomery 2050*, which serves as a high-level policy document, is not the end of Montgomery County's update to its long-range planning effort. Planning encourages the county to continue to consider effective ways to communicate to local officials and the public how the *Thrive Montgomery 2050* may impact existing master and functional plans, and how future planning efforts can be designed to expand upon and strengthen the planning framework established during the general plan development and adoption process.

Planning thanks Montgomery County for working so closely with the state on the development of *Thrive Montgomery 2050* and is available to assist with future planning efforts. If you have any questions or need further assistance, please contact me at chuck.boyd@maryland.gov or 410-767-1401.

Sincerely,



Charles W, Boyd, AICP
Director, Planning Coordination

- cc: Robert S. McCord, Esq, Secretary, Maryland Department of Planning
Ken Hartman, Director of Strategic Partnerships, Office of the County Executive, Montgomery County
Gwen Wright, Planning Director, Montgomery County
Tanya Stern, Deputy Planning Director, Montgomery County
Khalid Afzal, Special Projects Manager-General Plan Update, Montgomery County
Sandra Schrader, Deputy Secretary, Maryland Department of Planning
Valdis Lazdins, Assistant Secretary for Planning Services, Maryland Department of Planning
Joseph Griffiths, Manager, Local Planning Assistance & Training, Maryland Department of Planning
Susan Llareus, Planning Supervisor for Maryland Capital Region, Maryland Department of Planning

**Maryland Department of Planning
Supplemental Review Comments
October 15, 2021
Thrive Montgomery County 2050 – Planning Board Draft Plan**

Pursuant to a request of County Executive Marc Elrich, dated October 6, 2021, the Maryland Department of Planning (Planning) conducted a supplemental review of the *Thrive Montgomery 2050* Planning Board Draft Plan, dated April 2021. Planning previously provided comments on the *Thrive Montgomery 2050* Working Draft Plan, dated September 2020, as requested by the county’s Technical Advisory Committee. Included with the earlier Working Draft Plan was an Implementation Guide. The final page of the Planning Board Draft Plan (assumed to be page 162, but unnumbered) includes a summary of the three drafts that have been published thus far in the evolution of the general plan. https://montgomeryplanning.org/wp-content/uploads/2021/02/THRIVE-Planning-Board-Draft-2021-Pages_web.pdf

Summary of the Planning Board Draft Plan

The Planning Board Draft Plan is a full rewrite of The General Plan (*On Wedges and Corridors*) (1969) and the Refinement of The General Plan (1993) and all associated amendments, including master and functional plans and plan elements, as referenced on the first page of the introduction. The Planning Board Draft Plan continues the concept of setting forth policies to achieve the county’s “Three Overarching Outcomes” of Equity, Economic Health, and Environmental Resiliency. The Planning Board Draft Plan is a policy driven document, and implementation of the policies, goals, and strategies will occur through the development of future master plans, functional plans, sector plans, county capital improvement processes, and other public and private initiatives that influence land use and planning in the county. The Planning Board Draft Plan states, “Relevant area plans and functional plans will remain valid until modified pursuant to the guidance provided by this plan.” (page 4). Additionally, page 133 of the Conclusion references the need to update functional, master, and sector plans based on the adopted *Thrive Montgomery 2050*.

Minimum State Law Requirements for Charter Counties

- Division II of the Land Use Article, Title 21, Regional District Plan, Subtitle 1, Section 21-104(a)(3) states the requirement for certain elements within a general plan and applies to Montgomery County. (See discussion below)
- A planning commission must implement the Maryland State Visions through the general plan. The Planning Board Draft Plan has addressed the 12 State Visions, as explained in Appendix A on pages 141-142 and required under §1-406 of the LUA.
- Finally, the plan must incorporate comprehensive plan growth tiers, in accordance with Section 1-502 of the Land Use Article, which has been fulfilled by the reference in Appendix A on page 143.

Maryland State Elements

Maryland’s Land Use Article Sections 406(a) and (b) of this article require including certain elements within the general plan, but do not mandate a specific format. As such, local governments have addressed these required elements in a manner that fits the needs of their community and the resources available to respond to the issues explored during the planning process. The following checklist indicates if each required plan element is included in the Planning Board Draft Plan.

**Checklist of Maryland Code (Land Use Article)-Charter County
Division II, Section 21-104(a) Required elements.
(3) the elements required under Title 1, Subtitle 4 of this article.**

| State Comprehensive Plan Requirements | MD Code Reference and Additional MD Code Reference | Reference in the Planning Board Draft |
|--|--|---|
| (1) The planning commission for a charter county shall include in the comprehensive or general plan the visions under § 1-201 of this title and the following elements: | L.U. § 1-406 (a) | |
| (i) a development regulations element | L.U. § 1-406 (a) (1) (i) L.U. § 1-407 -- Development Regulations Element | This element is expressed in terms relating to the zoning ordinance, subdivision ordinance, etc...as the plan sets forth the policies that will amend those regulations to meet the goals of the plan, through the appropriate legislative process (page 32). |
| (ii) a housing element | L.U. § 1-406 (a) (1) (ii) L.U. § 1-407.1 -- Housing Element | Chapter: Affordable and Sustainable Housing: More of Everything (pages 87-110) |
| (iii) a sensitive areas element | L.U. § 1-406 (a) (1) (iii) L.U. § 1-408 -- Sensitive Areas Element | This element is expressed in terms such as environmental resilience, sustainability and climate change through-out the document. |
| (iv) a transportation element | L.U. § 1-406 (a) (1) (iv) L.U. § 1-409 -- Transportation Element | Chapter: Transportation and Communication Network: Connecting People, Places and Ideas |
| (v) a water resources element | L.U. § 1-406 (a) (1) (v) L.U. § 1-410 -- Water Resources Element | Not addressed. See discussion below. |
| (2) a mineral resources element, IF current geological information is available | L.U. § 1-406 (a) (2) L.U. § 1-411 -- Mineral Resources Element | Appendix A (page 144) |
| (b) A comprehensive plan for a charter county MAY include a priority preservation area (PPA) element | L.U. § 1-406 (b) For PPA Requirements, see § 2-518 of the Agriculture Article | Appendix A (page 143) Functional Master Plan for the Preservation of Agriculture and Rural Open Space reference. |
| (4) Visions -- A county SHALL through the comprehensive plan implement the 12 planning visions established in L.U. § 1-201 | L.U. § 1-414 L.U. § 1-201 -- Visions | Appendix A (pages 141-142) |
| (5) Growth Tiers -- If a county has adopted growth tiers in accordance with L.U. § 1-502, the growth tiers must be incorporated into the county's comprehensive plan | L.U. § 1-509 | Appendix A (page 143) |

Conformance to Section 1-406 (a) and (b) of the Land Use Article

In accordance with Division II, Title 21, Section 104(a) Required elements.

(1) The planning commission for a charter county shall include in the comprehensive or general plan the visions under § 1-201 of this title and the following elements:

(i) a development regulations element;

The plan does not include new “development regulations” because it is policy driven, with policies, goals, and strategies. Once these elements are endorsed through the plan review and adoption process, changes to development regulations may coincide with new area master plans or functional plans. Such regulatory changes are part of the legislative process, so participation will again be afforded to the public. This concept is recognized in many parts of the Planning Board Draft plan, and a good example can be found in the chapter titled *Design, Arts, & Culture*, under the heading “Use design-based tools to create attractive places with lasting value that encourage social interaction and reinforce a sense of place” (page 64).

(ii) a housing element;

The Planning Board Draft includes a housing element in the Chapter titled *Affordable and Sustainable Housing: More of Everything* (pages 87-110). As previously noted by Planning, the passage of HB-1045 in 2019 requires all comprehensive plans adopted after June 1, 2020, to have a housing element. The new law requires comprehensive plans to address the need for low-income and workforce housing, using the definitions contained in §3-114 of the Land Use Article and §4-1801 of the Housing and Community Development Article. Planning recommends that the county evaluate the housing element chapter for conformance to the requirements of HB-1045. HB-1045 (2019) defines low-income households based on 60% of the United States Department of Housing and Urban Development Area Median Income (HUD AMI) and 60% - 120% HUD AMI for workforce households. Planning recommends that these definitions be included in the Planning Board Draft. Planning further notes that the Draft Plan includes an analysis related to future housing supply and demand challenges. The Montgomery County Housing Needs Assessment, July 2020 does not appear to be referenced, but should be adopted by reference, or included as an Appendix.

(iii) a sensitive areas element;

When Planning previously reviewed the Working Draft plan, it commented that, “The goals, policies, and actions in the Healthy and Sustainable chapter of the Draft Plan align with the sensitive area element of the LUA. Policies in the Healthy and Sustainable chapter promoting compact development, healthy food access, green infrastructure, forest conservation, and the protection of water resources align with the LUA Sensitive Areas requirements by promoting fresh, affordable fruit and vegetables through increasing opportunities for community gardens and urban farms, preserving and restoring green areas to support human life and a diversity of animal and plant life, increasing and enhancing tree canopy wetlands, and meadows through land acquisition, easements, habitat restoration, and ecosystem management, and protecting watersheds and aquifers and improved water quality and stream conditions through enhancements and retrofits such as green streets, increased tree canopy, and green stormwater management.” Planning also previously found that the Working Draft Plan included the Diverse and Adaptable Growth chapter, which connects to the land use policies, programs and regulations that allow for flexibility to address unanticipated issues surrounding sensitive environmental features, including climate change.

The Healthy and Sustainable chapter and the Diverse and Adaptable Growth chapters have been deleted in the Planning Board Draft, but it appears that concepts of environmental resilience,

sustainability and climate change have all been included in the Planning Board Draft Plan. Whether the specific goals and actions previously noted by Planning are reiterated in the Planning Board Draft is difficult to assess at this time.

It should be noted that the Planning Board Draft does address the Sensitive Areas requirement by stating, "In Montgomery County, the sensitive areas element was satisfied by the Planning Board's approval of the Guidelines for Environmental Management of Development in Montgomery County (the Guidelines). The Guidelines are a compilation of policies and guidelines that affect the protection of sensitive resources during the development review process" (page 143 of Appendix A).

(iv) a transportation element;

The *Transportation and Communication Network: Connecting People, Places and Ideas* chapter addresses the transportation element as required in the LUA.

(v) a water resources element.

The County Council approved the *Water Resources Plan* in July of 2010, which was adopted by the full Commission in September 2010, and states the following:

"The Plan provides information on County water and sewer service capacity in light of planned growth to 2030, summarizes an estimate of nutrient loadings on watersheds for existing and future conditions, and identifies the policies and recommendations to amend the General Plan that are needed to maintain adequate drinking water supply and wastewater treatment capacity to 2030, and meet water quality regulatory requirements as the County continues to grow. It is meant to satisfy the requirements of House Bill 1141." (Abstract of the Approved and Adopted Water Resources Functional Plan)

The [Water Resources Plan](#) (WRP) functional plan, which examines Montgomery County's land use, growth, and stormwater management in the context of adequate drinking water supplies, wastewater treatment capacity, water quality regulatory requirements, and inter-jurisdictional commitments, should be adopted by reference in the body of the Planning Board Draft Plan, or at a minimum be included by reference in Appendix A of the Planning Board Draft Plan.

(2) If current geological information is available, the plan shall include a mineral resources element.

The requirement of the mineral resource element has been fulfilled in Appendix A on page 144.

(b) Priority Preservation Area

In Montgomery County, the requirements of Priority Preservation Area Act are met through the county's existing Functional Master Plan for the Preservation of Agriculture and Rural Open Space, as referenced in Appendix A on page 143.

Growth Tier Map

As previously stated, Planning understands that specific areas designated for growth and conservation will be identified through future updates to master plans and county-wide functional plans. Montgomery County implemented Maryland Sustainable Growth and Agricultural Preservation Act of 2012 by adopting a Tiers Map and a legislative amendment to the county's Subdivision Regulations (Ordinance 17-20 on September 19, 2012) and has been incorporated by reference as noted in Appendix A (page 143).

Economic Growth, Resource Protection, and Planning Act of 1992, as amended

[(House Bill 1141 Land Use Planning – Local Government Planning, 2006 (HB 1141)]

Sensitive Area Element

The 1992 Economic Growth, Resource Protection, and Planning Act required local jurisdictions to adopt a “sensitive areas” element designed to protect sensitive areas from the adverse effects of development. Sensitive areas include streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, steep slopes, wetlands and other areas in need of special protection.

In Montgomery County, the sensitive areas element was satisfied by the Planning Board’s approval of the Guidelines for Environmental Management of Development in Montgomery County (the guidelines). The Guidelines are a compilation of policies and guidelines that affect the protection of sensitive resources during the development review process.

House Bill 1141 Land Use Planning – Local Government Planning, 2006 (HB 1141)

Water Resources Element

Local jurisdictions are also required to include a water resources planning element in their comprehensive plans. This element ensures that drinking water and other water resources will be adequate and suitable receiving waters and land areas will be available to meet stormwater management and wastewater treatment and disposal needs of existing and future development. Montgomery County met this requirement through its Water Resources Functional Plan, which was approved by the County Council in July of 2010 and adopted by the full Commission in September 2010.

Chapter 1 Compact Growth:

The Corridor-Focused Growth area (lightest blue) should have the largest share of new growth. It encompasses the most developed part of the county with highest-density population and employment centers, and the infrastructure to support existing and new development. The Limited Growth area (medium blue) contains the mainly suburban residential communities where limited, organic growth is envisioned to meet localized needs for services, provide a diverse range of housing choices, and increase racial and socioeconomic integration to achieve Complete Communities. Rural Areas and the Agricultural Reserve* (in dark blue) will continue to be dedicated primarily to agriculture, rural open space, and environmental preservation. It can absorb some growth as agriculture evolves and existing residential communities' needs change over time.

The Growth Map identifies several existing and potential centers of activity at a variety of scales, including Large, Medium, and Small as well as Villages and Neighborhood Centers. The centers identified are not exhaustive of all existing or potential centers, but rather are included to demonstrate that centers of activity, where existing and future compact growth should be concentrated, occur within the county's urban, suburban, and rural areas. While future growth should occur in these centers, the amount growth and intensity of development should be commensurate with the center's location and context.

The Growth Map reflects current land use and is representative of the location and types of growth expected through 2050. The corridors and centers shown on the map or currently fitting the descriptions provided below may evolve over time through future approved and adopted master plans and functional master plans.

Large Centers are envisioned as the highest intensity areas generally characterized by significant residential and/or commercial density either existing or planned and are typically close to high quality transit. They include the county's Central Business Districts, existing and future employment centers, the municipalities of Gaithersburg and Rockville, and most of the Metrorail stations which provide an opportunity for significant redevelopment.

Medium Centers would be less intense and cover a smaller geography than Large Centers. The Medium Centers could include significant clusters of existing or planned residential density, as well as clusters of commercial density, including large shopping centers and office campuses. Medium Centers are likely to be close to transit.

Smaller Centers are generally characterized by low- to medium-density residential neighborhoods, with clusters of commercial activity, including shopping centers and neighborhood-serving retail.

Villages and Neighborhood Centers are the lowest intensity centers containing a small number of neighborhood-serving uses and located in rural areas and low-density residential neighborhoods.

* The Rural Areas and Agricultural Reserve are areas of the county substantially zoned for rural or agricultural land use under the Rural, Rural Cluster, Rural Neighborhood Cluster, or Agricultural Reserve zone.

How will we evaluate progress?

In assessing future plans, projects, and proposals related to the efficient use of land and measuring the success or failure of the approaches recommended in this plan, relevant measures may include:

- Amount of infill development/redevelopment along major corridors.
- Proportion of new population, employment and housing within a mile (or half-mile) of priority corridors.
- Non-auto driver mode share (walking, biking, transit use) and corresponding reduction in VMT.
- Amount of public and private investment in infrastructure, services, and amenities along corridors, overall and by area of county.
- Acres of farmland, natural habitats, forests and environmentally sensitive areas protected.
- Economic productivity of farming.
- Amount of space for outdoor recreation and variety of activities supported.
- Percentage increase in environmental performance of buildings and sites, overall and by area of county.
- Number of visitors from outside the Agricultural Reserve for recreation, commerce, and tourism.
- Maintenance and improvement in measures of stream water quality.
- Reduction in impervious cover and increase in area of impervious cover treated.
- Increase in alternative clean energy generation and composting/food waste recovery.

Chapter 2 – Complete Communities

Different Ingredients for Different Communities

The combination of strategies that can help create a more Complete Community in any particular place depends heavily on context. The scale (village vs. town center vs. downtown), location (inside vs. outside the growth footprint, within one of the State's four growth tiers) and type of district or neighborhood (office park vs. central business district vs. residential neighborhood vs. suburban shopping center) all influence which elements should be incorporated and how they should be tailored. Despite the varying needs and conditions of different parts of the county, however, the concept of encouraging more diversity of use and form is relevant in almost every location. For example:

Chapter 3 – Design, Arts, and Culture

Greenfield Regulatory Tools in a Post-Greenfield County

In addition, a future focus on form-based rules will allow for a more equitable process and outcome. The process is more equitable in that all stakeholders – the property owner, the community, the reviewers – understand the parameters governing the review of a development application and can address community concerns about growth. The outcome is more equitable because it may facilitate the

implementation of diverse housing types and neighborhood-serving retail, which will lead to more mixed income neighborhoods with essential services within walking distance.

Policies:

1. Use design-based tools to create attractive places with lasting value that encourage social interaction and reinforce a sense of place and inclusion.

- Support the development of housing by replacing vague and subjective concepts such as “compatibility” with clear standards for form, site layout, setbacks, architecture, and the location of parking.
 - [Adopt rules for] Examine options for allowing a wider variety of housing types such as tiny houses, cottages, courtyard clusters, duplexes, multiplexes, small apartment buildings; shared housing, co-housing and accessory dwelling units (ADUs). (Eq, Env)
 - [Amend] Determine what changes may be needed to land-use, design, and zoning regulations, including the Zoning Ordinance and Subdivision Regulations, to remove regulatory barriers and facilitate development of range of housing types. (Eq, Env)

Chapter 4 – Transportation and Communication Networks

Excessive dependence on cars threatens safety, erodes quality of life and reduces resilience

In addition to the existing Metrorail and MARC services to the District of Columbia, master plans call for new transitway connections to Prince George’s County (the Purple Line and University Boulevard BRT) and the District of Columbia (the New Hampshire Avenue BRT). However, there is a growing need to provide transitway connections to Howard and Frederick Counties, and to Northern Virginia as well.

Policies

1. Develop a safe, comfortable and appealing network for walking, biking, and rolling.

- Expand the street grid in downtowns, town centers, transit corridors, and suburban centers of activity to create shorter blocks. (Ec, Env)
- Stop proposing new 4+ lane roads in master plans. (Env)
- Give a lower priority to construction of new 4+ lane roads, grade-separated interchanges, or major road widenings. (Env)
- Convert existing traffic lanes and on-street parking to create space for walkways, bikeways, and street buffers with landscaping and street trees, in a manner consistent with other County policies. (Env)

2. Build a world-class transit system.

- Build a network of rail, bus rapid transit, and local bus infrastructure and services that make transit the fastest, most convenient and most reliable way to travel to centers of economic, social and educational activity and opportunity, both within and beyond Montgomery County. (Ec, Eq, Env)
- Convert existing general purpose traffic lanes to dedicated transit lanes, in a manner consistent with other County policies. (Ec, Eq, Env)

At the end of the section on Policies:

These proposed policies should be evaluated to ensure equitable impacts from policies impacting certain types of vehicles users – like congestion pricing on minorities with high auto ownership.

At the end of the section listing Metrics:

Note that many of these metrics have an equity component and should be evaluated through an equity lens.

Chapter 5 – Attainable and Affordable Housing

What policies will solve the problem?

Montgomery County needs housing at a wide range of prices because the current crisis of housing affordability affects households at all income levels (except the most affluent), not just low-income households. The term affordable housing, generally used for subsidized housing, does not encompass the housing needs of middle-income households that constitute the largest segment of the county’s population who are hurt by the rising housing costs and limited supply. In addition, all non-subsidized market rate housing needs attention if Montgomery County is ever going to change the current trajectory of housing affordability. Montgomery County must view access to safe, affordable, and accessible housing as a basic human right. Every resident of Montgomery County should have a place to call home and no resident should be homeless.

Policies

1. Encourage the production of more housing to better match supply with demand

- Prioritize use of public land for co-location of housing and other uses, particularly where government agencies design new facilities or dispose of real property. Consideration of increased opportunities for housing low and very low-income households should be included in the analysis of how best to leverage county assets. (Eq, Env)
- Increase regulatory flexibility to incentivize residential infill, redevelopment, and repositioning of office parks, shopping malls, and other underutilized properties. (Ec, Eq, Env)
- Provide financial and other incentives to boost housing production for market rate and affordable housing, especially near transit and in Complete Communities. (Ec, Eq, Env)

2. Plan for a wide range of housing types and sizes to meet diverse needs

- Facilitate the development of a variety of housing types in every part of the county but especially in areas near transit, employment, and educational opportunities. (Ec, Eq, Env)
- Support creative housing options including personal living quarters and/or micro units; “missing middle” housing types such as tiny houses, cottages, duplexes, multiplexes, and small apartment buildings; shared housing, cooperative housing, co- housing, and accessory dwelling units (ADUs) [, social housing and cooperative housing] to help meet housing needs and diversify housing options. (Ec, Eq, Env)
- Consider features of other housing models such as social housing that, in addition to providing long term affordability for low and moderate incomes, emphasizes architectural quality, environmental performance, and social sustainability. (Eq, Env)

- Encourage provision of multi-bedroom units suitable for households with children in multifamily housing. (Eq, Env)
- Integrate people with disabilities, people transitioning from homelessness, and older adults into housing with appropriate affordability, amenities and services sized and designed to accommodate their households. (Eq,)

Chapter 6 – Parks and Recreation

1. Focus on creating high quality urban parks

- Prioritize acquisition of land for parks in urban centers and other intensively developed places along growth corridors and in Complete Communities using the Legacy Urban Space CIP commitment, the Energized Public Spaces Functional Master Plan (EPS Plan) and the Parks, Recreation and Open Space (PROS) Plan as starting points. (Ec, Eq, Env)
- Offer programs in urban parks to encourage visitation, increase the amount of time spent in parks and make these spaces centers of activity. (Eq)
- Implement the EPS Plan to ensure that densely populated parts of the county enjoy walkable access to a full range of park experiences. (Ec, Eq)
- Integrate privately owned public spaces (POPS) with the park/recreation system to supplement publicly owned and managed gathering spaces and athletic facilities, using a range of ownership and management approaches to public space. (Eq)
- Coordinate land use and park planning to ensure Complete Communities have access to a range of park types, including athletic facilities, through a combination of public and privately owned [facilities] resources.

2. Use park and recreation facilities/programs to promote active lifestyles

- Include active recreation as an integral element in park planning and design.
- Encourage active recreation as a key component of POPS in all parts of the county.
- Deliver park and recreation facilities and programs designed to encourage residents of all ages, cultural backgrounds, and abilities to engage in vigorous physical activity. (Eq)
- Support the continued renovation and maintenance of high-quality athletic fields.
- Integrate park trails and paths into transportation planning and better use them to connect residents to jobs, centers of activity, and other parks and trails. (Ec, Eq)
- Ensure that residents in urban, suburban, and rural areas all have access to a wide variety of parks and programs.

How will we evaluate progress?

In assessing proposals related to parks and recreation and measuring the success or failure of the approaches recommended in this plan, relevant measures may include:

- Number of urban parks
- Miles of streams restored, and stormwater runoff treated
- Childhood obesity
- Stream water quality
- Urban tree canopy

- Additional miles of trails built
- Participation in vigorous physical activity
- Park and recreation patronage/participation by race/ethnicity, language spoken and age
- Awards and other recognition of excellence in urban parks and trails
- Patronage at community gatherings
- Proportion of population within 15-minute walk of three park experiences
- Proportion of park and recreational facilities serving equity focus areas
- Access to park and recreational facilities, including athletic fields via walking, biking, and transit
- Number of high-quality athletic fields, noting those with lights, on MCPS, County, and MNCPPC property
- Number of play spaces on MCPS, County, and MNCPPC property

Three Maps – Three Different Purposes

The proposed Thrive Growth Map depicts a broad, long-term vision of where future growth should be located in the county. The Transportation Policy Area Map, used in the Growth and Infrastructure Policy, and the Sewer Service Area Map, on the other hand, are regulatory tools periodically updated to implement the recommendations of the adopted master plans and functional plans as described below.

The Proposed Thrive Growth Map

This map reflects an update of the Wedges and Corridors map as it has evolved over the last 50 + years. It shows that Montgomery County, as a mature jurisdiction, has not just one growth corridor, but rather multiple growth corridors with great connectivity between important centers – including in the eastern part of the county. The Growth Map is meant to guide the county’s future master plans, functional plans and other initiatives that will shape and directly impact all land use and development in the county. The Growth Map is a conceptual framework that defines three growth tiers from most intense to the least intense level of development: 1) Corridor-Focused Growth area; 2) Limited Growth area; and 3) Rural Areas and Agricultural Reserve areas. It does not provide specific criteria or implementation standards to be applied during the regulatory review of development projects or other implementation mechanisms.

Transportation Policy Areas Map

The Transportation Policy Areas map (attached) included in the county’s Growth and Infrastructure Policy is an implementation tool for the Adequate Public Facilities Ordinance.

For the purposes of transportation analysis, the county has been divided into areas called **traffic zones**, which are grouped into **transportation policy areas** based on their transportation characteristics. In the Growth and Infrastructure Policy, these are called the Red, Orange, Yellow and Green areas. These policy areas identify parts of the county with greater or lesser transit accessibility and usage – this is the only criteria for separating policy areas. Greater vehicular traffic congestion is permitted in policy areas with greater transit access. For subdivisions that generate 50 or more peak-hour weekday person trips, the project’s impact on local transportation facilities must be mitigated per the applicable policy area standards.

The Red, Orange, Yellow and Green areas on the Transportation Policy Areas map are not intended to show where growth may happen (they are not aligned with zoning classifications), but rather how growth in these areas should be evaluated and mitigated. The Transportation Policy Areas Map can and will change every four years through Council review and update of the Growth and Infrastructure Policy as different policy areas develop over time and their transportation infrastructure needs change.

Sewer Service Area Map

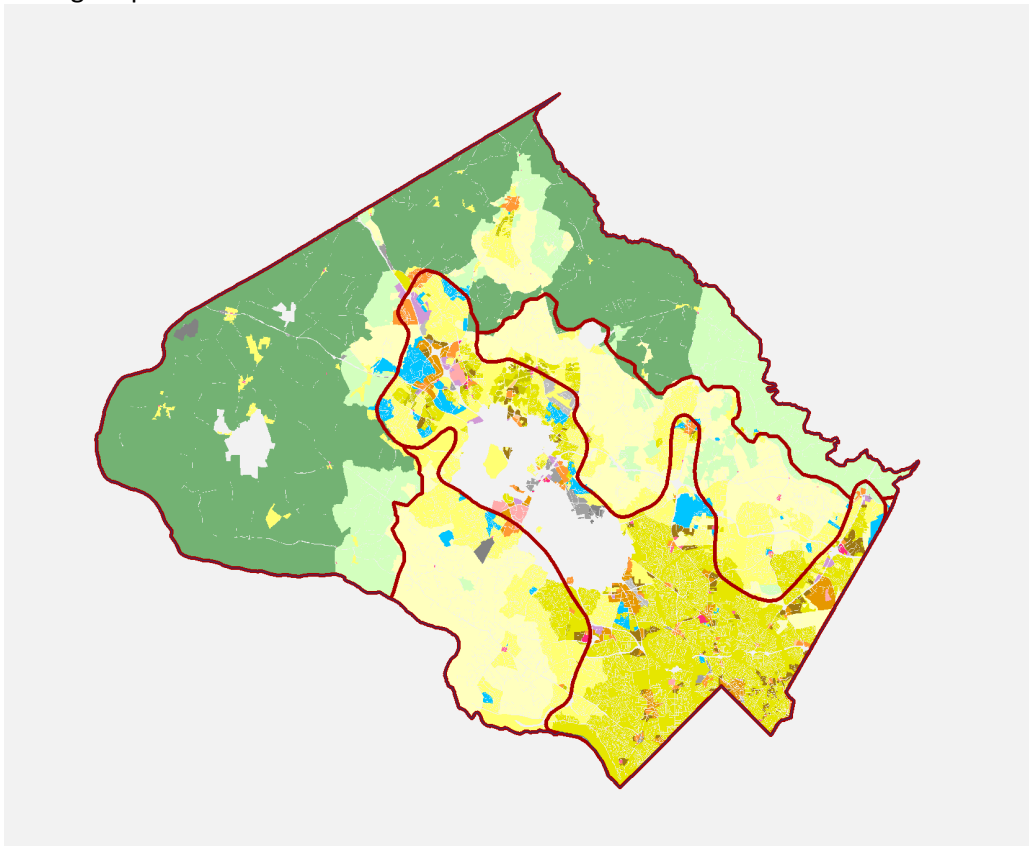
Similar to the Transportation Policy Areas Map, the county’s Sewer Service Area Category Map (Sewer Service Area Map), which is a part of the county’s Ten-Year Comprehensive Water Supply and Sewerage Systems Plan ([Water and Sewer Plan](#)), is a highly technical map that addresses one specific infrastructure issue and is an implementation tool for the Adequate Public Facilities Ordinance. It defines which areas of the county have, or can be considered to have, public sewer service. It does not align with zoning classifications or determine land use.

The map implements the recommendations of the Water and Sewer Plan, which in turn is based on the recommendations of local area master plans and the countywide functional plans. In accordance with the Adequate Public Facilities Ordinance, development applications must be considered adequately served

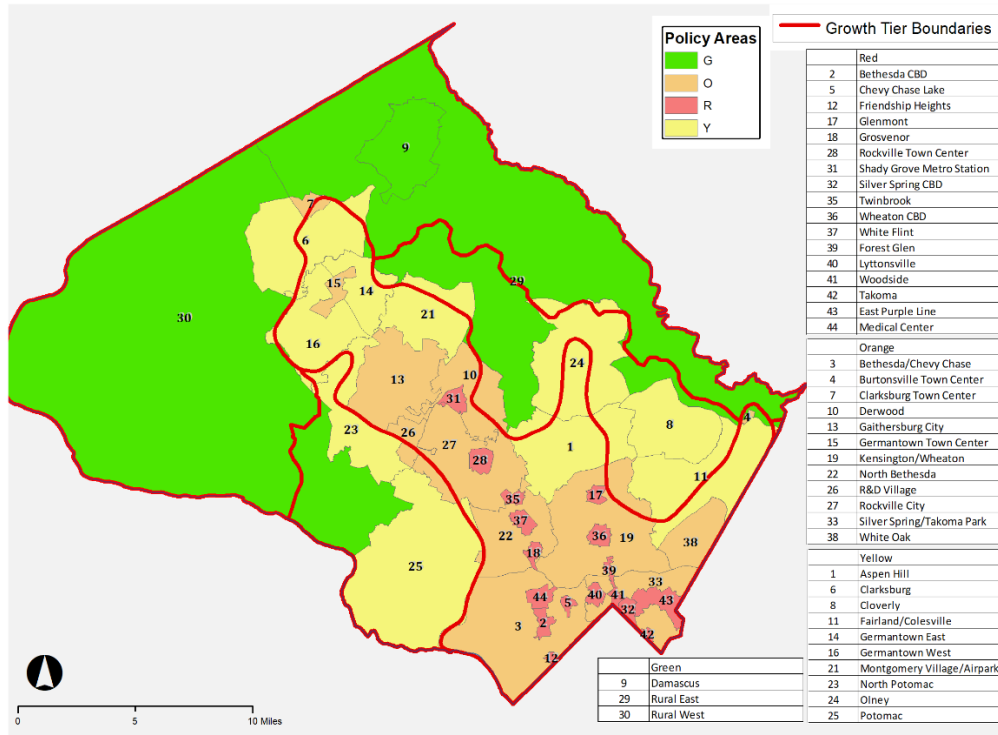
by water and sewerage if the subdivision is located in an area in which water and sewer service is presently available, is under construction, is designated by the County Council for extension of service within the first two years of a current Water and Sewer Plan (i.e., categories 1-3), or if the applicant either provides a community water and/or sewerage system or meets Department of Permitting Services requirements for septic and/or well systems, as outlined in the Adequate Public Facilities Ordinance.

The county's Department of Environmental Protection maintains the official Sewer Service Area Map. Under state law, the County Council is responsible for approving the county's Water and Sewer Plan and its amendments. The Maryland Department of the Environment requires the County to prepare a comprehensive update of the Water and Sewer Plan every three years. The Water and Sewer Plan, and the related Sewer Service Area Map, is also often amended in response to requests for community sewer service if these requests are considered to be supported by the areas master plans. The Planning Board is required by State law to make a Master Plan consistency determination on each Water and Sewer Category Change Request.

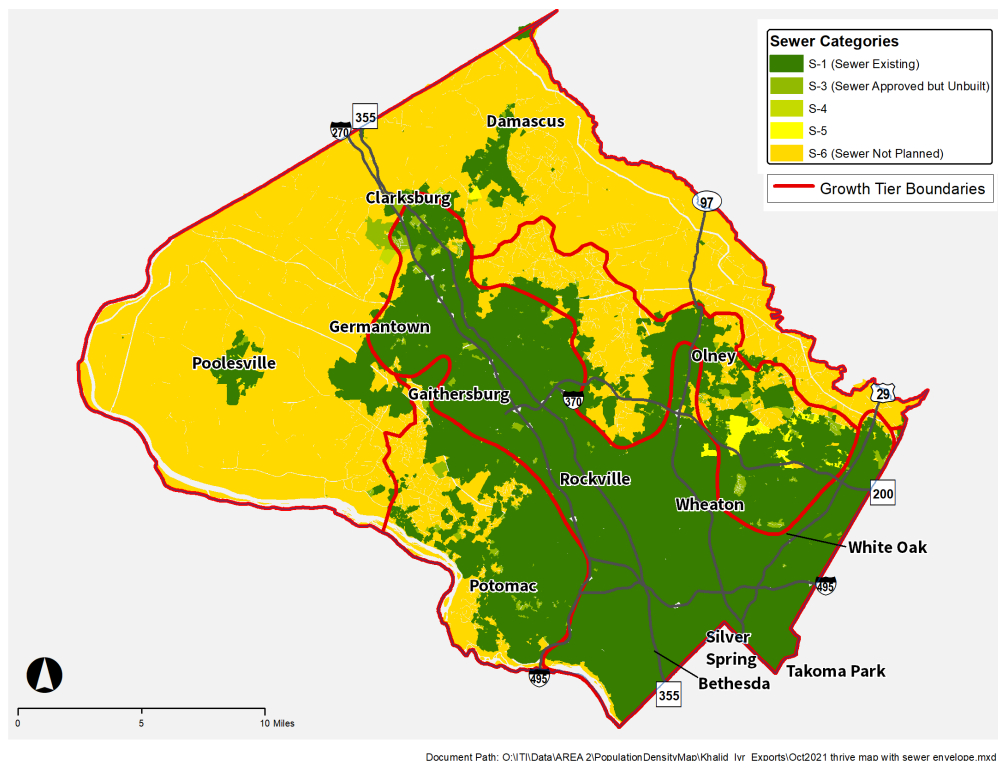
Zoning Map with Thrive Growth Area Boundaries



Growth and Infrastructure Map with Thrive Growth Map Boundaries (tiers)



Sewer Service Area Map with Thrive Growth Map Boundaries (tiers)



INTRODUCTION

When Montgomery County adopted its first general plan, known as the “Wedges and Corridors Plan”, in 1964, much of our land was undeveloped. The 1964 plan – as modified by “refinements” adopted in 1969 and 1993 - embraced many of the principles and ideas that are still of value today, such as an emphasis on the preservation of the Agricultural Reserve, development of physically concentrated centers of all sizes, and encouragement of land use patterns that could be effectively served by a multi-modal transportation system. These plans helped to make the County one of the most desirable places to live and work in the United States. Our success has been built on an award-winning park system, high-quality schools, preserving our agricultural and natural resources, fostering the emergence of urban centers and mass transit, and shaping the design of attractive suburban subdivisions. The Wedges and Corridors Plan was visionary and its refinements were largely effective in adapting its principles and ideas to the needs of a growing population; however, today we find ourselves facing new challenges and changing circumstances. We have evolved from a bedroom community to a complex jurisdiction with major employment centers and mature residential neighborhoods. As a group, our residents are older, more diverse, and less likely to live in traditional family arrangements. We have a highly educated workforce, proximity to the nation’s capital, and a culture of openness to newcomers, but we also are struggling to attract businesses and house our residents, grappling with a legacy of racial and economic inequality, and facing the effects of climate change.

In addition, we now see that not all of the changes in our approach to planning were beneficial. For example, the 1993 refinement established the residential wedge, identified as an area for “maintaining a low-density residential character” and directed most growth to the “urban ring” and I-270 corridor. The removal of the eastern portion of the County as a location suitable for corridor-focused development discouraged public and private investment in this area. The establishment of the residential wedge consigned more than one-third of the County to zoning exclusively for single family homes, leaving many of our neighborhoods reliant on automobiles and disconnected from many amenities and services. These decisions, in conjunction with discriminatory land use and planning-related practices such as redlining and restrictive covenants, established inequitable patterns of development that must be recognized and addressed.

Today the combination of rapid social, environmental, technological, demographic, and economic shifts at the national and global levels along with our new context requires us to take a clear-eyed look at our strengths and weaknesses. We have tremendous assets, but if we hope to continue to thrive, we must be prepared to make difficult decisions and take bold steps to prepare for the future. Thrive Montgomery 2050 is the vehicle for assessing the implications of these shifts for land use, transportation and public infrastructure and adapting our approach to planning and growth for the next 30 years.

WHAT IS A GENERAL PLAN?

A general plan is a long-range guide for the development of a community. Every jurisdiction must adopt some form of general or “comprehensive” plan as a legal predicate for the exercise of the government’s land use and zoning powers. The purpose of a 30-year plan is not to predict and respond to a single future, but to provide broad guidance for land use decisions as we face multiple, unpredictable future opportunities and challenges that influence growth and development such as disruptions brought about

by climate change, pandemics, or terrorist attacks as well as the consequences of innovations such as autonomous vehicles and micro transit.

Thrive Montgomery 2050 is the county's update to our general plan. It is a framework for future plans and development that defines the basic land use policies and context for all public and private development in the county. It provides direction for decisions about land use, transportation, and related issues under local government influence, but it does not change zoning or other detailed land use regulations. Its recommendations also touch on the objectives and actions of other public and private entities that are responsible for implementing and providing land use related services and amenities.

Thrive Montgomery 2050 does not abandon or reject the Wedges and Corridors concept but instead modernizes it to remain relevant. Area master plans, sector plans, and countywide functional plans will remain valid until modified pursuant to the guidance provided by this plan. Like the previous general plan its broad policy recommendations pave the way for future actions, such as amendments to other plans, policies, and development rules.

Thrive Montgomery 2050 has a 30-year time horizon, but it is designed to be flexible and adaptable to changing circumstances. It is designed to provide long-term guiding principles and objectives that can deal with a constantly changing economic, social, and environmental landscape.

A BLUEPRINT FOR THE FUTURE

Thrive Montgomery 2050 is about addressing historic inequities, embracing new realities, and shifting the way we think about how the county should grow. Montgomery County has many assets and advantages. Our strengths will enable us to continue to thrive, but we must also take a hard look at where we have been, where we are going, and how we want to get there.

Montgomery County is growing more slowly than in past decades, but our population is still projected by the Metropolitan Washington Council of Governments to increase by about 200,000 people over the next 30 years. We have little undeveloped land left to accommodate this growth, even if new construction is compact. With 85 percent of our land already developed or otherwise constrained, accommodating even the modest growth expected over the life of this plan is an ambitious undertaking. The way we think about growth needs to change. We need to reconsider sites previously considered unsuitable for development, such as parking lots or the air rights over existing buildings, and find ways to use land more efficiently.

Thrive Montgomery 2050 offers a blueprint for new approaches that are needed immediately and will extend over a period of decades. These strategies will accommodate growth in ways that make room for new residents and also improve the quality of life for the people who already live here. The plan anticipates a county that will become more urban, more diverse, and more interconnected. It guides us to leverage growth and redevelopment to create places that are more economically competitive, foster a stronger sense of trust and inclusiveness among people from different backgrounds, and improve environmental quality and public health in the process.

Plan Framework and Overarching Objectives

Thrive Montgomery 2050 aims to create communities that offer equitable access to jobs, attainable housing, transportation, parks, and public spaces. Just as importantly, it can help guide the design of the built environment to strengthen the social and physical health of our residents, supporting active lifestyles

and encouraging interaction and engagement. This framework embraces and builds on the Wedges and Corridors plan, with a greater emphasis on the development of compact, complete communities and the role of major corridors as places to grow. The plan is designed to integrate arts and culture into the fabric of our community and open opportunities for creative expression.

The ideas and recommendations in this plan are organized to achieve three overarching objectives: economic competitiveness, racial and social equity, and environmental sustainability.

Economic performance and competitiveness

Opportunities and Challenges

The county has significant concentrations in two private industry sectors: hospitality and life sciences, in addition to a strong Federal presence of offices and laboratories. These elements form a strong foundation to produce higher wage jobs and spur economic growth. Montgomery County is home to companies representing half of the market capitalization of the entire hospitality sector, and the Washington area is consistently ranked as one of the nation's top life science clusters, with I-270 as its epicenter. Local institutions such as the University of Maryland are leading ground-breaking research in emerging fields such as quantum computing.

We are also part of a dynamic regional economy with a rich mix of public institutions and private companies. Many residents of the Washington region travel to, from or through Montgomery County to reach jobs or homes in other jurisdictions within the region. The effects of decisions about housing, environmental stewardship, economic development, and other issues in any DC-area jurisdiction are felt by its neighbors. We enjoy many benefits from cooperation with our neighbors but also compete against them for opportunities, and consensus on how to address regional problems is often elusive. We need to think about Montgomery County as a part of the larger region and find ways to work more effectively with other area governments on policies and projects that will help make us all stronger.

As we work to fortify the county's economic performance, we must simultaneously bolster our dominance in existing sectors, diversify our job base, improve connections to centers of employment and innovation throughout the region, and provide the kinds of infrastructure, services, and amenities that will strengthen our ability to compete effectively in the future. Our quality of life depends on the ability to attract and retain employers and the employees they need.

We continue to benefit from our proximity to the nation's capital, which draws highly skilled, educated, and motivated people from all over the world, but we must also recognize that some key measures of Montgomery County's economic performance have been stagnant since the Great Recession of 2008. The total number of jobs in the county grew by five percent from 2004 to 2019, while 20 similarly sized counties across the country grew by an average of 21 percent. In addition, household income growth in the county has lagged the national average (-2 percent vs. 10 percent) and was the slowest in the region during this period. Montgomery County added jobs, albeit slowly, but growth came largely in lower-wage sectors of the economy.

How Thrive Montgomery 2050 addresses economic health

Thrive Montgomery 2050 plays an important role in strengthening our economic competitiveness by creating the kind of places where people with diverse choices want to live and work. Its recommendations

for land use, transportation, parks, and other public and private infrastructure lay the groundwork for economic development initiatives undertaken by other entities. For example, the county's Capital Improvement Program (CIP) should be aligned with Thrive Montgomery 2050's recommendations to make our neighborhoods more attractive for private development by providing high quality transit, sidewalks and a walkable grid of streets, great urban parks, and high-performing and racially integrated schools. The combination of these kinds of investments is a reliable long-term strategy for attracting workers to well-designed and planned complete communities, which in turn will entice businesses and employers to locate here.

Thrive Montgomery emphasizes that the county should support a diverse array of work environments. Re-energizing the county's commercial centers is a major goal of the plan, but so is the recognition that small offices or storefronts in Complete Communities and even home offices will be common workplaces in the 21st century. Different skill and education levels and linguistic, racial, ethnic, and cultural backgrounds infuse the local economy with the varied pool of skills, experiences, and perspectives necessary to solve problems and innovate. The Plan's compact land use pattern and walkable communities supported by an efficient transit network will connect the county's diverse population to economic opportunities.

Racial equity and social inclusion

Opportunities and challenges

Diversity and inclusion are essential to our economic success as well as to our ability to produce more equitable outcomes for all our residents, who need high quality housing, education, jobs, transportation, and recreational opportunities. The county's population has grown more diverse as a result of a steady influx of foreign-born immigrants. Montgomery County is home to some of the most culturally diverse places in the United States, including Silver Spring, Rockville, Gaithersburg, and Germantown.

But past patterns of discrimination – some intentional, some unintentional – have left many communities geographically, economically, and socially isolated. After the Civil War and the end of slavery, African Americans suffered from pervasive discrimination in the provision of economic and educational opportunities, housing, health care, and basic public services. The resulting alienation led to the creation of self-reliant kinship communities in many parts of Montgomery County in the late 19th century. Over time, these communities suffered from lack of public investment in infrastructure such as new roads, sewer and water, schools, health clinics, and other public amenities and services. Some communities were hurt by the urban renewal policies of the 1960s. Others faced pressure to sell their houses or farms to developers for new subdivisions.

Planning decisions and real estate development practices aggravated these injustices for most of the 20th century. Redlining and restrictive racial covenants created geographic divisions that have left a legacy of injustice, and the effects of these efforts to separate people by race and class continue to be felt today. More recently, disinvestment from and abandonment of neighborhoods previously considered highly desirable, combined with the suburbanization of poverty, have created new geographic divisions and barriers to equity and inclusion. The Wedges and Corridor plan's focus on the I-270 corridor and related planning decisions exacerbated this problem by discouraging growth in the East County, focusing public and private investment to the west.

Impacts of past practices

Today communities with high concentrations of racial and ethnic minorities also show lagging median household incomes. The resulting gaps in quality-of-life indicators can be seen among Black, Hispanic, and Asian residents. Moreover, even as the county becomes more racially and ethnically diverse, our neighborhoods are still largely separated along income and racial lines.

This separation of neighborhoods along lines defined by race and income has important consequences for access to educational opportunities and the life prospects of our county's children. In 2019, three-quarters of Black, Hispanic, and English-learning students in Montgomery County Public Schools – along with more than 80 percent of all low-income students in the system – were enrolled in high-poverty-focus schools. By comparison, more than two-thirds of all white, Asian, and multi-racial students were enrolled in low-poverty schools.

As we seek a future that is more equitable and inclusive, improved access to infrastructure and amenities in racially, socially, and economically isolated areas will not be enough. We also must facilitate the integration of neighborhoods by race and income. Increasing the share of racially and economically mixed neighborhoods and schools across all parts of the county is critical to ensure that the inequities of the past will not be perpetuated in the future.

In parallel with steps to reduce inequity in the geographic distribution of resources and opportunities, Montgomery County must work to build a shared sense of purpose that can help strengthen efforts to promote respect for diversity, demonstrate the value of inclusion, and build a foundation for greater trust. This concept, often described by academics under the umbrella term “social capital,” can pay dividends not only in sustaining support for racial and social justice but in bolstering civic capacity more broadly.

How Thrive Montgomery 2050 addresses racial equity and inclusion

In this regard, decisions about land use, transportation, and public infrastructure can play an important role in building a sense of community. Different measures of social capital, including trust in public and private institutions, political participation, whether neighbors know each other, and other indicia of connection and cohesion are influenced by qualities of the built environment. The design of our communities can greatly influence levels of community cohesion and social interaction. Creating social capital requires the built environment to encourage and make it easier for people to meet others and engage in activities. For this reason, Thrive Montgomery 2050 emphasizes the roles streets, parks, and public spaces play in creating a physical environment where a sense of community can flourish.

Advancing racial equity through just planning policies and public investments in underserved communities, promoting the racial and economic integration of neighborhoods, and focusing on the potential for the design of communities to help build social trust and inclusion while encouraging civic participation are among the most significant elements of Thrive Montgomery 2050. Thrive Montgomery 2050 strives to create racially integrated and just communities. Like economic competitiveness and environmental sustainability, policies designed to advance racial and social equity are integrated into every part of this Plan.

Environmental resilience

Opportunities and challenges

The Wedges and Corridors Plan laid the groundwork for the adoption of forward-thinking policies that emphasized land preservation for resource conservation and agriculture, protection of our streams, forests, and trees and reduction of greenhouse gas emissions. One-third of the county's land is now protected within the Agricultural Reserve and another 13.8 percent is under the stewardship of the Parks Department. Along with aggressive stormwater and forest conservation regulations, these efforts have established a strong framework for the protection of natural resources.

Despite these policies, the county cannot avoid the impact of global climate change. Precipitation in northeastern United States increased by 55 percent between 1958 and 2016. This trend has meant more frequent violent weather events like the flash flooding that occurred in July 2019, when the D.C. region received a month's worth of rain in a single day, causing streams to rise 10 feet in less than an hour, inundating vehicles, businesses, roads and closing the Metrorail system. The past decade has also been the hottest 10-year period in the region's recorded history, with rising hospitalizations due to extreme heat impacts. Public health issues are exacerbated by climate change and intertwined with the quality of the built and natural environment. The adverse effects of a changing climate will be felt most acutely by low-income residents and people of color, who are likely to suffer a disproportionate share of the damage to real property and personal health due to past and current patterns of discrimination.

Montgomery County has made progress in reducing its greenhouse gas emissions, a key contributor to climate change, but has much farther to go to meet its goal of eliminating these emissions by 2035. Together, buildings and transportation are responsible for more than 90 percent of our county's greenhouse gas emissions, making reduced reliance on driving and more energy-efficient buildings and compact development patterns essential to meeting our climate objectives.

How Thrive Montgomery 2050 addresses environmental resilience

Thrive Montgomery's focus on a compact form of development with a mix of uses supported by transportation systems that make alternatives to driving practical and attractive are essential pieces of any comprehensive strategy to fight climate change. A stronger focus on walking, biking, and transit infrastructure will be crucial, but the significance of mixed uses and compact development in reducing driving is equally important. The environmental benefits of dense, walkable neighborhoods dovetail with the increasing preference across age groups to live in walkable places served by a mix of uses and amenities.

Of course, not even the most sustainable transportation planning and growth strategies will be able to resolve every environmental challenge facing the county. Thrive Montgomery 2050 builds on the tradition of robust protection of the natural environment. It proposes a series of strategies to mitigate the effects of climate change and minimize pollution. The plan also anticipates the need for public and private infrastructure to be made more resilient to withstand more severe weather and protect us from the effects of environmental degradation from sources that are beyond our ability to control.

Thrive Montgomery 2050 was drafted in coordination with the county's Climate Action Plan (CAP). While Thrive Montgomery 2050 is a high-level land use document that focuses on long-range planning and policies to guide the physical development of the county, the CAP recommends specific actions to be

taken in the near-term to achieve the goal of eliminating greenhouse gas emissions by 2035 and to mitigate or adapt to the effects of increased heat and flooding, high winds, and drought. Thrive Montgomery 2050 incorporates a wide range of recommendations related to climate change and its connection to land use, transportation, and parks. The Planning and Parks Departments also will implement recommendations in the CAP that are within the scope of the M-NCPPC's responsibilities. Together these plans will create a comprehensive approach to climate change at the local level.

Other important objectives

The plan also addresses other important goals that complement the three overarching objectives discussed above.

Improving public health and encouraging active lifestyles

The length and quality of human life are strongly influenced by both the natural and built environment. In 2018, more than three-fifths of adults in Montgomery County were overweight or obese. Five of the seven zip codes in the county with household incomes in the lowest quartile are also among the zip codes with the lowest average life spans. And even though low-income residents and people of color are more likely to suffer from negative health outcomes for several reasons, all residents can benefit from a more active lifestyle supported by an emphasis on transit, walking, and biking, and easy access to parks and recreational opportunities. Active lifestyles supported by improved housing choices in compact, complete communities can serve to improve public health while simultaneously reducing the ecological footprint of human activity.

Elevating quality of design and highlighting role of arts and culture

The Wedges and Corridors Plan envisioned a variety of living environments and encouraged “imaginative urban design” to avoid sterile suburban sprawl. Nonetheless, that plan was a product of its time. It relied on design approaches that were typical of the 1960s, emphasizing the convenience of driving and rigid separation of land uses.

Good design is not a luxury but a critical economic development tool. Businesses and workers now prefer walkable, accessible, amenity rich, mixed-use places that facilitate the interaction and exchange of ideas that feed innovation. A greater share of residents, across all ages, prefer walkable, transit-rich neighborhoods too. Combined with the lack of undeveloped land far from transit, these forces dictate a shift toward redevelopment and infill that converts “parking lots to places” near existing or planned transit lines and incorporating walkable form.

Our arts and culture sector, taken as a whole, would be the county's sixth-largest employer. The sector taps into creative, social, and economic networks, and its practitioners have developed tools to share stories, encourage empathy, and empower creative exchange. Supporting a healthy arts and culture ecosystem will not only enrich the lives of our residents and bring us closer together but also will help attract talent and spur innovation.

URBANISM AS ORGANIZING PRINCIPLE

Thrive Montgomery 2050 applies the principles of urbanism – a term this plan uses as shorthand for a set of ideas about what makes human settlements successful – to guide their future growth. Urbanism draws on the lessons of thousands of years of experimentation and evolution in the design and development of

villages, towns, and cities to apply the ideas that have proven to endure as the foundation for adaptable and resilient communities everywhere. An urbanism-focused approach to the development of land and related infrastructure (such as roadways, transit systems, and parks) emphasizes the value of: (1) a compact form of development; (2) diverse uses and building types; and (3) transportation networks that take advantage of and complement these two land use strategies, at all densities and scales.

This approach calls for focusing growth in a limited number of locations rather than dispersing it, avoiding “sprawl.” It means encouraging the agglomeration of different uses such as retail, housing, and office space as well as diversity within each type of use. For example, a variety of housing sizes and types near employment and retail helps to ensure that people of diverse income levels can live and work in proximity to each other. This over time produces more racially and socioeconomically integrated neighborhoods and schools, providing more equitable access to economic opportunities, public services, and amenities. It also emphasizes the importance of walking, biking and transit and reduces reliance on cars.

Of course, other factors – particularly quality and thoughtfulness in the design of buildings, streets, neighborhoods, and public spaces – are also essential. Combined with the fundamentals of urbanism, design excellence can help create a sense of place, facilitate social interaction, and encourage active lifestyles. Compact development also provides other advantages including efficient use of scarce land, more natural areas for recreation and preservation, and reduced expense for building and maintaining infrastructure.

These principles of urbanism are equally relevant to rural, suburban, and urban areas. In fact, the preservation of land for agriculture in a place like Montgomery County depends on concentrating development in urban centers instead of permitting sprawl, and even suburban and rural areas benefit from a mix of uses and housing types – at appropriately calibrated intensity and scale – to serve their needs.

With attention to both the functional and aesthetic aspects of design, urbanism is not only consistent with a commitment to maintaining the best of what has made Montgomery County attractive in the past but is necessary to preserve and build on these qualities while correcting the challenges of auto-centric planning and its effects on the environment, racial equity, and social cohesion.

HOW THRIVE MONTGOMEY 2050 WAS DEVELOPED

Organization of the Plan

Related to the three primary objectives of economic competitiveness, racial and social equity, and environmental sustainability, the plan is organized into six chapters:

- Compact Growth: corridor-focused development
- Complete Communities: mix of uses and form
- Design, Arts, and Culture: investing and building community
- Transportation and Communication Networks: connecting people, places, and ideas
- Affordable and Attainable Housing: more of everything
- Parks and Recreation for an Increasingly Urban and Diverse Community: active and social

The ideas in each chapter are intended to complement each other and outline approaches calibrated for varying scales of planning. The first three chapters move from the countywide scale (Compact Growth) to

the district and neighborhood scale (Complete Communities) and finally to the details of individual blocks and buildings (Design, Arts, and Culture). The chapter on Compact Growth describes a countywide approach that aims to concentrate development along corridors to maximize the efficiency of infrastructure, preserve land, and focus investment. The Complete Communities chapter covers strategies for individual neighborhoods and districts that build on the foundation of a compact footprint for growth by incorporating a mix of uses, building types, and lot sizes to create livable places that are accessible and inviting to people with a variety of income levels, household sizes, and lifestyles. The Design, Arts and Culture chapter discusses the finer-grained analysis of design concepts applicable to blocks and individual development sites, the architecture of public and private buildings, the landscape of plazas and public spaces, and elements of street design.

These concepts are reinforced and supported by the remaining three chapters, which address specific topics related to development and public infrastructure. The Affordable and Attainable Housing chapter recommendations are intended to diversify our housing stock across incomes, building types and geography. The Transportation and Communication Networks chapter outlines the multi-modal and digital infrastructure required to support compact growth and the creation of walkable, well-designed complete communities as well as the communication networks in the county. The Parks and Recreation chapter describes the role of public and privately-owned parks and gathering spaces in encouraging social interaction, promoting a healthy lifestyle through physical activity, and mitigating the effects of climate change through environmental stewardship. Each chapter explains how its recommendations serve the broader objectives of Thrive Montgomery 2050 and provides metrics to measure progress in implementing the chapter's ideas. No plan that is designed to provide guidance over a period of decades can anticipate every difficult problem, attractive opportunity, or useful idea that may emerge, so these metrics should be used to assess new proposals as well as to measure the success or failure of the plan's recommendations over time.

A plan based on community input

This Plan is the result of community feedback and collaboration over more than two years of extensive outreach by Montgomery Planning. Planners reached out to a wide spectrum of stakeholders including students; homeowners and civic associations; non-profit advocacy groups and community-based organizations; and representatives of large and small businesses. The outreach effort was designed to emphasize engagement with residents who will live longest with the recommendations made in this plan – Millennials and Gen Xers and high school and college students— as well as members of racial and ethnic groups who historically have been left out of land use and planning processes.

Thrive Montgomery 2050's community engagement activities were implemented through four phases beginning in summer 2019. Each of these phases—Excite, Educate, Engage, and Endorse—included specific objectives and communication and engagement strategies.

Equitable Communications and Community Outreach

For historically underrepresented audiences – such as Latinos, African Americans, foreign born residents, renters, and small business owners-- outreach focused on connecting with community influencers who have established trust within their communities. This included co-hosting listening sessions and events, providing content for events and communications, and engaging their organizations with educational tools.

From June 2019 through April 2021, Montgomery Planning organized multiple in-person and virtual engagement activities to imagine what life in Montgomery County will be like in 2050 and what will be needed to ensure that we thrive in the decades to come. Planners participated in more than 180 meetings with community members and organizations; created and distributed a “Meeting-in-a-Box” for residents and organizations to host their own discussions about Thrive Montgomery 2050 and the county’s future; created an online quiz soliciting feedback on values and priorities for the plan; built a dedicated website, thrivemontgomery2050.com (and MontgomeryProspera.com in Spanish), with a wealth of materials in multiple languages and distributed tens of thousands of postcards and e-newsletters to reach community members across the county. Montgomery Planning estimates that these efforts resulted in interactions with approximately 12,000 people.

Thrive Montgomery 2050 looked at the largest minority languages where limited English proficiency was greater than 10% and created materials and advertising in multiple languages.

Thrive Montgomery 2050 Engagement by the Numbers

- Over 180 meetings with community
- 1,635 people completed online Thrive Montgomery 2050 Quiz
- 1,300 Meeting-in-a-Box postcards sent to HOAs + Community Associations
- 91,000 postcards to equity emphasis areas
- ThriveMontgomery.com – 102,641 web views
- E-letter signup – 1,384, with open rate of 40% (double industry average)
- Estimated participation – approximately **12,000**

Top five topics that received the most comments:

1. Public transit
2. Affordable housing
3. Parks
4. Walkability
5. Education/Schools

To: Hans Riemer, Chair
PHED Committee

From: Tiffany Ward, Chief Equity Officer
Office of Racial Equity and Social Justice

Re: ORESJ Comments on Thrive Montgomery 2050, Public Hearing Draft

Date: August 16, 2021

SUMMARY: The County has set the goal of reducing and ultimately eliminating racial and other disparities experienced by residents of color across Montgomery County. ORESJ is focused on advancing racial equity and dismantling structural racism within County Government.

Thrive Montgomery 2050 is the first general plan to propose racial equity policies to address the structural racism in County land use policies and practices.

ORESJ strongly supports the inclusion of Racial Equity as a goal in Thrive Montgomery 2050 and recommends critical improvements to fully address Racial Equity in Land Use in the General Plan:

First, there should be more community outreach to residents of color, done in a way that reaches them where they are, and then, and only then, there should be more County Council public hearing dates in the fall. The community input process for the drafting of the Racial Equity legislation is an example of an excellent outreach process. As a result, the MORE coalition, and many local non-profits participated with substantive amendments that became part of the new law. That has not happened here.

Second, and of equal importance, the Planning Board Draft of Thrive Montgomery 2050 must be reframed to address the institutional failings of government and the private sector to create policies and provide services to communities of color that are the right of all residents.

Finally, Thrive Montgomery should contain a separate chapter on Racial Equity that neither the Public Hearing Draft nor the Planning Board Draft has. This new chapter should include more historical detail about patterns of discrimination, and put back the greater historical detail that was in the Public Hearing Draft. A complete chapter can then be followed by detailed recommendations that can be found in one place, and not scattered throughout the draft.

Here are comments on specific sections of the Planning Board Draft and the Public Hearing Draft:

1. Planning Board Draft: Racial Equity and Social Inclusion

- p. 13, line one: *“who need”* should be changed to *“who are equally entitled to”/“who deserve”*. It is important to make clear that access to opportunity is not *“needed”* because of deficits among diverse populations, rather access to opportunity is required as a guarantee of full citizenship/recognition of equal rights as community members.

- p. 13, line three: *“But past patterns of discrimination – some intentional, some unintentional – have left many communities geographically, economically, and socially isolated.”* More historical detail about patterns of discrimination is needed. A vision statement such as this, is a prime opportunity for helping the community/County build a shared understanding of discriminatory policies and practices and the disparate negative outcomes they helped to create. A historical picture is needed for redressing inequities and imagining a more just and equitable future.

The section should be as explicit about what the discriminatory policies and practices were/are and how they have affected housing and school segregation in the county in the past and now.

- p. 13, line 5: *“After the Civil War...”*: It wasn’t just discrimination or exclusion from educational opportunities, health care and basic public services, it was predation and exploitation as well— wage gaps, high-cost lending, unequal quality and access to health care and education.
- p.13, line 8, emphasis added: *“Redlining and restrictive covenants created geographic divisions that have left a **legacy of injustice.**”* Redlining and restrictive covenants not only created “geographic divisions” (segregation), redlining and restrictive covenants also barred Black Americans from building wealth (the type of wealth used to invest in higher education, start businesses, and pass to heirs). Additionally, while these efforts did separate people by class, the racial dimensions of their segregation cannot be understated. Class can change, while race is fixed—it’s important to view these divisions within that context.
<https://www.bloomberg.com/news/articles/2021-05-27/-the-black-butterfly-maps-a-path-to-racial-equity>
- p. 14, line 1, emphasis added: *“Today communities with high concentrations of racial and ethnic minorities also show **lagging median household incomes.**”* This sentence needs context to explain why this is the case. As written it incorrectly/unintentionally implies that the reason for lagging household incomes is because they are racial and ethnic minorities. This is not true. Financial precarity is the function of many factors including racism and xenophobia. In Montgomery County, the factors include low wage job growth, concentration of people of color in those jobs, high rates of being uninsured, declining business starts, and lack of housing and displacement.
- P. 18: Environmental Resilience Section: *“The adverse effects of a changing climate will be felt most acutely by the poor and people of color, who are likely to suffer a disproportionate share of the damage to real property and personal health.”* This is true, AND it is also important to explain why, particularly as it relates to land use and zoning—patterns of disinvestment extended to infrastructure maintenance and management, limited/exclusionary housing options in locations facing greater risk of damages caused by climate change.

2. Public Hearing Draft: Racial Equity in Thrive 2050

- P. 29: “Policies that specifically support racial equity and social justice include:
 - creating more affordable housing in amenity-rich areas;
 - ensuring existing and new communities of color receive an equitable share of services and investments;
 - promoting the equitable distribution of prosperity throughout the county;
 - addressing health disparities and narrowing the gap in health outcomes; and
 - implementing a shared-power approach to ensure previously marginalized residents have a voice and influence in planning and decision-making processes.”

These are not policies, rather they are aspirations. Policies can help to realize these aspirations, but without statements about “how”, including emphasis on collecting and disaggregating data and engaging directly with the community, these so-called “policies” are unlikely to hold water and/or create the kinds of changes articulated in the Plan’s vision.

- P. 30: *“While equity is the desired outcome the way to get there is to prioritize marginalized populations.”* How does Thrive Montgomery 2050 do this? The Public Hearing Draft of Thrive Montgomery was 100+ pages long and littered with terms and assumptions that are not familiar to the lay person. The Public Hearing Draft is shorter, but no less difficult to understand. There are few, if any, definitions, for terms and concepts that are foreign to those who are not familiar with urban planning. This makes Thrive Montgomery inaccessible to the average resident. There should be a concerted effort to make this long-range 30-year plan accessible to the whole community.

What efforts have been made to engage communities of color on Thrive Montgomery 2050? How is Thrive 2050 accessible to all residents, is the document accessible to screen readers? Are there plans to create a plain language version of this document, coupled with outreach, that prioritizes clarity and understanding?

- The various discussions on Racial Equity are scattered throughout the Public Hearing Draft. Unlike the Planning Board Draft, the Public Hearing Draft has many more substantive, detailed recommendations in the form of goals, policies and actions. These recommendations, however, are lost in a sea of other recommendations. Because this is the first time that a general plan has directly addressed Racial Equity, and because it is one of the three overriding outcomes, ORESJ believes that Racial Equity should be cohesively addressed in a separate chapter. This chapter should be more explicit about the policies and practices that led to the County's current state of housing segregation, and conversely, this section should also provide more detailed land use recommendations that will help remedy segregation, and address real concerns about displacement.

Conclusion

Our community has experienced major social, economic and environmental changes over the life of the Wedges and Corridors plan, and even more dramatic shifts are on the horizon.

Thrive Montgomery 2050 establishes a framework for responding to economic, demographic, social, and environmental change in ways that are rooted in enduring lessons about what has made places successful in the past, while remaining adaptable to unforeseen circumstances. That is why the plan emphasizes the basic concepts of compact form; diversity of building types and design; and complementary transportation infrastructure instead of attempting to predict the pace and direction of technological innovation or the consequences of catastrophic events, whether natural or man-made, whose long-term effects are impossible to forecast with certainty.

This document is a guidebook, not an exhaustive list of prescriptions. It does not address every topic relevant to our future, but it provides strong direction for decisions about land use, transportation, and related issues within the ability of local government to influence.

Montgomery County has a lot going for it yet there's room for improvement

In addition to the advantages Montgomery County has enjoyed by virtue of our location in the national capital region, the County has benefitted from a tradition of thoughtful planning that has allowed us to develop and grow while preserving land and other resources in ways that have supported a high quality of life. The Wedges and Corridors Plan was exceptionally progressive for its time, and it helped us to build high quality park and school systems, preserved natural resources and farmland, and laid the groundwork for transit-oriented smart growth. Thrive Montgomery 2050 has attempted to provide an unflinching assessment of the Wedges and Corridors Plan and provide policies and practices that will build on its ideas but also address its shortcomings that have adversely impacted parts of the County.

The federal government's presence has given us a foundation of good jobs and a concentration of public investment in life sciences and information technology that provide enviable opportunities. The stability and reliability of the base of employment tied to government should not make us complacent. Policies and investments need to capitalize on those opportunities and ensure that Montgomery County is a strong competitor with a diverse economy that brings our residents good paying jobs. Because land is scarce, there is less room for error and discipline is needed in how land is used, and design excellence is fostered to respond to market forces and attract both businesses and residents to call Montgomery County home.

We must also address the reality that Montgomery County's prosperity has not benefited all our residents equitably. The urgency of demands for racial justice and the need to rebuild bonds of trust and community are clear. As the demographics of our community change rapidly along dimensions of age, race and ethnicity, income and wealth, culture, and language, the need to confront inequitable practices has grown increasingly urgent.

As for environmental sustainability, Montgomery County’s past record of support for water quality protection, forest conservation, and land preservation are helpful but ultimately will not be sufficient to shield us from the effects of climate change. More creative strategies to build resilience and improve sustainability of both the built and natural environments are critical.

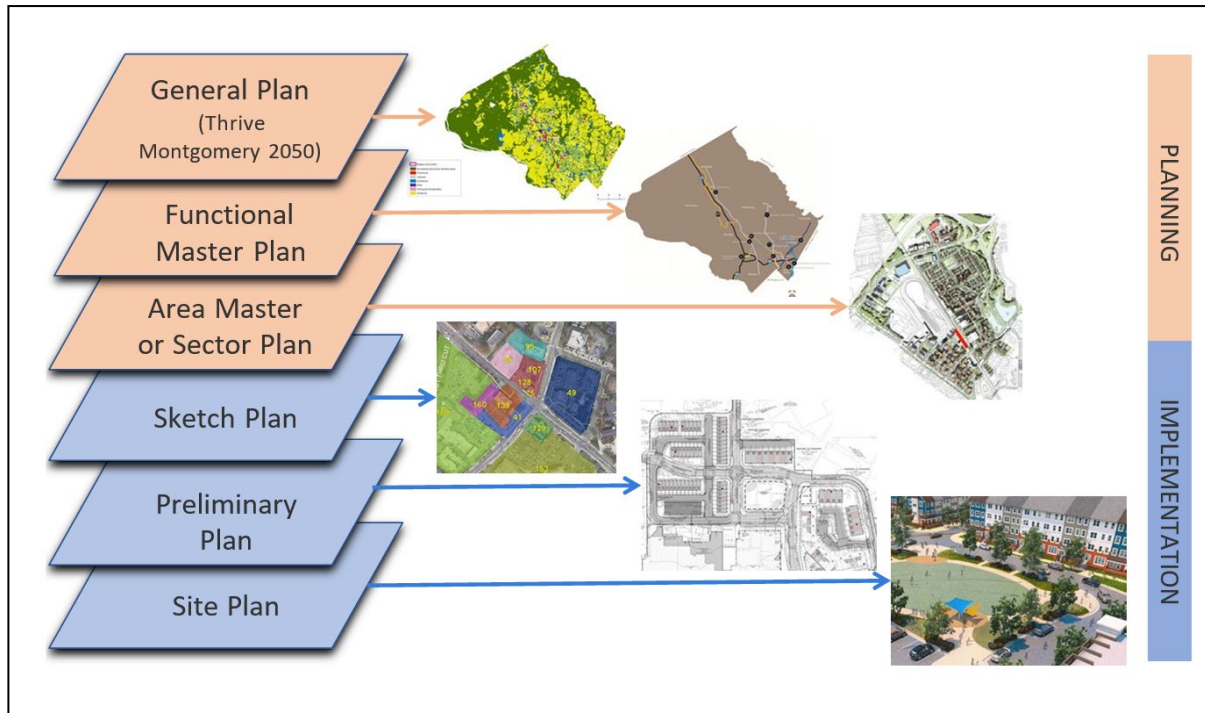
While these economic, social, and environmental changes will not be easy to navigate, Montgomery County is well-positioned to make the decisions and investments necessary for success. Our community is in the 99th percentile of all counties in the country in terms of household income and educational attainment, with annual economic output of almost \$100 billion and an amazingly diverse population. We can draw on tremendous human and physical resources; our assets would be the envy of almost any local jurisdiction anywhere. With Thrive Montgomery 2050 as a guide, we can plan carefully and act decisively to make the changes needed to help Montgomery County thrive well into the future.

How Thrive Montgomery 2050 will be Implemented

Cooperation among public and private sectors in implementation

Implementation of Thrive Montgomery 2050 will occur over several decades and will require changes in master plans, zoning and building codes, subdivision regulations, the adequate public facilities ordinance and many other county rules and processes – they are not made in the adoption of this General Plan.

The Planning and Parks Departments will lead much of the work, but full implementation of Thrive 2050’s recommendations will require collaboration or approval of other government bodies. For example, updating the zoning code will require coordination with Department of Permitting Services, while changes to street design standards require coordination with the Department of Transportation and the State Highway Administration. Agencies such as the Arts and Humanities Council will lead the creation of a new cultural plan, and the Department of Recreation, working with the Parks Department, will help expand opportunities for physical activity. The County Council will be asked to review and approve many of these efforts in both land use and budget decisions.



The Role of the Public and Private Sectors

Market-driven development will play an important role in implementing Thrive Montgomery 2050. Montgomery County is embarking on an ambitious effort in an age of intense competition and disruption in the private sector and shrinking fiscal capacity of government entities at all levels. To successfully implement these bold ideas, the county will need to align public and private investments to maximize their long-term benefits. Future growth will be focused in a compact footprint through private sector-led real estate projects. Infill and redevelopment along major corridors will create a finer-grained network of streets and add gathering spaces that complement publicly-owned parks. Property owners will retrofit outdated buildings for new uses and enhance environmental performance by redeveloping surface parking lots and incorporating stormwater management. Private investment in diverse housing types and neighborhood serving retail will fill in missing amenities and lead to more Complete Communities.

Of course, growth requires improvements and additions to public infrastructure and services. Public infrastructure is provided mainly through the county's Capital Improvements Program (CIP), but the private sector makes important contributions pursuant to the county's Adequate Public Facilities Ordinance and impact tax law, which require property developers to build, dedicate, or provide money for parks, roads, schools, and affordable housing. These rules are the mechanism by which new development generates revenue for the public sector to fund infrastructure improvements. New sources of funding and more effective use of county assets, such as public land and right-of-way, also may be needed. The combination of such public and private investments is the most reliable long-term strategy for attracting new residents, businesses, and a skilled workforce to high-quality Complete Communities.

The outcome will be an economically competitive and sustainable county with a strong tax base and broadly shared opportunity.

Modifications to other plans, policies, and rules

Thrive Montgomery 2050 is a broad policy document and does not, in and of itself, change land uses, zoning or transportation. Key to implementing Thrive Montgomery 2050, Montgomery County will need to undertake a variety of future actions. These actions are not specified in detail in this document but will be fleshed out in future work programs for the Planning Department and other agencies.

Some future actions may include, but are not limited to:

- Reviews of existing policies, regulations, and programs;
- Studies and new master, functional, or facility plans to delve more deeply into the topics addressed in the policies, collect and analyze data, and identify detailed strategies for decision making and implementation;
- Development of tools and templates to support master planning, regulatory review and other planning processes; and
- Changes to agency governance and practices that shape how decisions are made.

Relationship between Thrive Montgomery 2050 and the Climate Action Plan

Thrive Montgomery 2050 was developed in coordination with the county's Climate Action Plan (CAP). Thrive Montgomery 2050 addresses where and how land will be conserved or developed for housing, office buildings, parks, agriculture, recreation, transportation, and other types of public and private infrastructure - decisions that have a major influence on greenhouse gas emissions, carbon sequestration, and adaptation to climate change. The CAP, on the other hand, focuses on specific near-term actions to eliminate greenhouse gas emissions by 2035 and mitigate or adapt to the effects of increased heat and flooding, high winds, and drought. Thrive Montgomery 2050's climate change-related recommendations will be implemented in concert with the CAP.

Measuring Progress - Indicators

The County undoubtedly will encounter issues not anticipated by this plan. The indicators listed below are intended, along with the more detailed metrics listed in previous chapters, to guide how these types of issues and potential responses should be evaluated and allow for periodic assessments of progress to inform priorities and set shorter-term goals. These indicators address the three overarching objectives of the plan and are broader than the more specific measures included in each chapter. The following list should not be considered exhaustive and may be modified or expanded to suit future needs:

- Economic performance and competitiveness
 - Wage and job growth
 - New business formation
 - Economic output per capita
- Physical activity and public health measures

- Daily and weekly exercise and physical activity
- Participation in organized and informal sports and fitness activities
- Adverse health outcomes associated with physical inactivity
- Racial equity and social inclusion
 - Racial and economic diversity of neighborhoods and schools
 - Measures of social capital, civic engagement, and community trust
 - Equitable life outcomes across race, income, age, gender, etc.
- Environmental sustainability and resilience
 - Greenhouse gas emissions
 - Vehicle miles traveled
 - Water and air quality

The indicators, along with the metrics provided in the preceding chapters, will be further refined. The list of actions that will be developed and reviewed after Thrive is adopted should include a section on indicators and metrics, providing detailed information on how the metric or indicator will be measured, the agency responsible for collecting the associated data, and how frequently the metric or indicator will be publicly reviewed and reported.