Montgomery Planning

CLIMATE ASSESSMENT FOR ZTA 26-07, SOLAR COLLECTION SYSTEM – USE STANDARDS

PURPOSE OF CLIMATE ASSESSMENTS

The purpose of the Climate Assessments is to evaluate the anticipated impact of master plans and zoning text amendments (ZTAs) on the county's contribution to addressing climate change. These assessments will provide the County Council with a better understanding of the potential climate impacts and implications of proposed master plans and ZTAs at the county level. The scope of the Climate Assessments is limited to addressing climate change, specifically the effect of land use recommendations in master plans and ZTAs on greenhouse gas (GHG) emissions, sequestration, community resilience and adaptive capacity, and the county's Climate Action Plan (CAP) actions.

While co-benefits such as health and cost savings may be discussed, the focus is on how proposed master plans and ZTAs may impact the climate-related considerations mentioned above.

SUMMARY

The Montgomery County Planning Board anticipates that ZTA 26-07 will have moderate positive impacts on the county's goals of addressing greenhouse gas emissions, carbon sequestration, and ensuring resilience and adaptive capacity of our communities.

BACKGROUND AND PURPOSE OF ZTA 26-07

ZTA 26-07 will change the use standards for a Solar Collection System, separating rooftop-mounted from ground-mounted solar collection systems. This change will remove the regulatory burdens for rooftop-mounted solar, which will not have the same standards as ground-mounted solar with this ZTA. Ground-mounted systems making more than 120% of on-site energy use will have standards including a minimum tract area, enhanced setbacks and landscaping, and a site plan. Rooftop-mounted systems do not have the same environmental or visual impact as ground-mounted systems, and as technology improves, rooftop mounted systems may often produce more than 120% of onsite energy generation. Rooftops of homes, businesses, facilities, and other buildings across Montgomery County will have use standards that are fitting and supportive of solar collection facilities.

ZTA 26-07 will also amend the Zoning Ordinance to be in compliance with State Law, specifically with the provisions included in House Bill 1036/Senate Bill 0931 passed in April 2025, which will reduce confusion for applicants and the public.

VARIABLES THAT COULD AFFECT THE ASSESSMENT

The following climate-related variables were considered in the assessment. Climate-related variables include the various GHG reduction, sequestration, resilience, and adaptive capacity activities in the climate assessment checklists (Tables 1 and 8) contained in the *Climate Assessment Recommendations for Master Plans and Zoning Text Amendments in Montgomery County.*

Climate-Related Variables

Greenhouse Gas Emissions and Sequestration

- Building Embodied Emissions - Building Certifications
- Energy Emissions - Electricity Usage, Electricity Efficiency
- Land Cover Change & Management Sequestration - Area of Forest, Area of Non-Forest Tree Canopy, Area of Green Cover

Community Resilience and Adaptive Capacity

- Sensitivity-Related Factors – Change to Forest Cover, Change to Non-Forest Tree Canopy, Change to Quality or Quantity of Other Green Areas, Change to Impacts of Heat

ANTICIPATED IMPACTS

Moderate positive impacts on greenhouse gas emissions, sequestration, community resilience, and adaptive capacity are anticipated with ZTA 26-07, as described in more detail below. An increase in rooftop-mounted solar collection facilities may lead to positive impacts on the listed climate-related variables, but it is unknown how much this increase in installations may be with ZTA 26-07.

Greenhouse Gas Emissions, Carbon Sequestration, and Drawdown

ZTA 26-07 is anticipated to have moderate positive impacts on greenhouse gas emissions and carbon sequestration and has positive impacts on several of the county's CAP GHG reduction goals.

Building embodied emissions should be impacted slightly positively, as new buildings may be more likely to include solar collection and other features that promote sustainability, in pursuit of building certifications (such as LEED). Building developers and owners will likely be less deterred from installing rooftop-mounted solar facilities at the risk of having additional requirements, with over 120% of on-site energy generation. Rooftop-mounted solar can be incorporated into building design more frequently and can increase the likelihood of buildings receiving green certifications as they incorporate solar collection. It is uncertain how many more building certifications may be sought out, but there will be less of a burden for including solar collection as one of the features needed for certifications.

Energy emissions should be impacted positively, as electricity usage in buildings with rooftop-mounted solar collection will utilize a renewable energy source. As rooftop solar collection will be encouraged more and likely installed more frequently, this will result in less reliance on the energy grid, as energy can be produced on-site. Efficiency will improve as energy losses are reduced when electricity travels a shorter distance from rooftop solar panels into a building. It is uncertain the extent to which rooftop-mounted solar will be able to power a given building, as different buildings have different energy needs. As technology improves, though, the capacity for rooftop-mounted solar to sustain a building without reliance on the energy grid will increase, and the efficiency of solar energy should increase.

Land cover change and management sequestration are expected to be impacted positively as rooftop-mounted solar collection systems will have fewer requirements than ground-mounted solar collection systems. This may result in less land being used for ground-mounted solar installations, which could cause a reduction in the disturbance of forests, individual trees, and vegetation. Because rooftop solar will be installed with fewer regulatory constraints, this may help preserve existing forests, tree canopy, and green cover. These vegetation types can continue to sequester greenhouse gases if not cleared. However, ground-mounted solar collection facilities will likely still be developed within Montgomery County, so the extent to which this amendment will reduce their frequency remains uncertain.

Community Resilience and Adaptive Capacity

The ZTA 26-07 is anticipated to have moderate positive impacts on community resilience and adaptive capacity.

Sensitivity-related factors, specifically regarding the change to forest cover, changes to non-forest tree canopy, changes to the quality or quantity of other green areas, and changes to the impacts of heat, will all be impacted positively as rooftop-mounted solar collection facilities will be more within reach. Rooftop-mounted solar collection facilities will not cause the same reduction in vegetation that ground-mounted solar collection facilities cause. Ground-mounted solar collection facilities cause the clearing of forests, tree canopy, and change the quality and quantity of green areas. In contrast, rooftop-mounted solar collection facilities can be sited in conjunction with an existing building, in an already developed area. While a new building may cause a decrease in vegetation, having rooftop mounted solar collection does not decrease vegetation any more than a given building does. This potential decrease in changes to forest cover, tree canopy, and green cover in Montgomery County will also have a positive impact on heat, as vegetation is able to cool the environment through sequestration, shading, and transpiration. Further, the increased energy efficiency of buildings with rooftop-mounted solar collection systems will reduce the heat generated by a less energy efficient building.

RELATIONSHIP TO GREENHOUSE GAS REDUCTION, SEQUESTRATION, AND OTHER RELEVANT ACTIONS CONTAINED IN THE MONTGOMERY COUNTY CLIMATE ACTION PLAN (CAP)

The Montgomery County Climate Action Plan (CAP) details the effects of a changing climate on Montgomery County and includes interagency strategies to reduce GHG emissions and climate-related risks to the county's residents, businesses, and the built and natural environment.

ZTA 26-07 will have major positive impacts on implementing several CAP actions. Increased building certification attainability relates to the CAP action of having Net Zero Energy Building Code for New Construction. This goal for new constructions in the county to be net zero energy is assessed to have a high GHG reduction potential. Further, improved electricity usage with this amendment relates to several goals within the CAP, including Private Building Solar Photovoltaic Code Requirements, Promoting Private Solar Photovoltaic Systems, and Public Facility Solar Photovoltaic Installations. All three of these CAP actions will be more attainable with this amendment. The area of forest and area of non-forest tree canopy also relate to the CAP actions of Retain and Increase Forests and Retain and Increase Tree Canopy, both of which will ideally be supported through this amendment as the feasibility of rooftop solar increases.

RECOMMENDED AMENDMENTS

The Climate Assessment Act requires the Planning Board to offer appropriate recommendations such as amendments to the proposed ZTA 26-07, or other mitigating measures that could help counter any identified negative impacts through this Climate Assessment. There are no identified negative impacts with this climate assessment, and therefore, the Board has no recommendations to mitigate the impacts of the ZTA on climate.

SOURCES OF INFORMATION, ASSUMPTIONS, AND METHODOLOGIES USED

The climate assessment for ZTA 26-07 was prepared using the methodology for ZTAs contained within the *Climate Assessment Recommendations for Master Plans and Zoning Text Amendments in Montgomery County, December 1, 2022*.