Montgomery Planning

DRAFT CLIMATE ASSESSMENT FOR ZTA 25-12, OVERLAY ZONES – UNIVERSITY BOULEVARD OVERLAY ZONE

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 and sequestration, and how actions proposed by master plans and ZTAs could improve the county's adaptive capacity to climate change and increase community resilience.

While co-benefits such as health and cost savings may be discussed, the focus is on how the proposed ZTA may impact GHG emissions and community resilience.

SUMMARY

The University Boulevard (UB) Overlay Zone has been written to implement the recommendations in the University Boulevard Corridor (UBC) Plan and the Montgomery County Planning Board anticipates that the impacts of the UB Overlay Zone will mirror the impacts of the UBC Plan. The UBC Plan is anticipated to have moderate negative impacts and slight to moderate positive impacts on the County's goals of addressing greenhouse gas emissions, and slight to moderate negative impacts on carbon sequestration as reported in the Climate Assessment for the UBC Plan.

While both the UBC Plan and the UB Overlay Zone will have both positive and negative impacts on resilience and adaptive capacity, on balance, Planning Staff believes that there will be an overall positive impact on ensuring the resilience and adaptive capacity of the University Boulevard Corridor Plan community.

BACKGROUND AND PURPOSE OF ZTA 25-12

ZTA 25-12 creates an overlay zone to implement the land use recommendations in the University Boulevard Corridor (UBC) Plan. The purpose of the overlay zone is to increase the diversity and supply of housing in a compact, transit-oriented form of growth that supports Bus Rapid Transit on University

Boulevard and Colesville Road, creates complete communities, addresses climate change, and improves safety for all travelers.

VARIABLES THAT COULD AFFECT THE ASSESSMENT

The following section describes the climate-related variables that were considered in this assessment as impacted by the ZTA. Climate related variables include various greenhouse gas reductions, 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

Transportation- Vehicle miles traveled, Number of trips, Non-vehicle modes of transportation, Public transportation use.

Building Embodied Emissions – Building certifications, Building square footage, Building life span, Pavement infrastructure, Material waste produced, Use of green building materials.

Energy – Electricity usage, Electricity efficiency.

Land Cover and Management – Area of forest, Area of non-forest tree canopy, Area of green cover, Implementation of nature-based solutions.

RESILIENCE-RELATED VARIABLES

Exposure-Related Factors – Activity in flood-risk areas, Activity in urban heat island, Exposure to other hazards (e.g. storms, wind).

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, Change in perviousness, Change in stormwater management system treatments, Change to water quality or quantity, Change to air quality, Infrastructure design decisions.

ADAPTIVE CAPACITY-RELATED VARIABLES

Change to accessibility or prevalence of community and public spaces, Change to emergency response and recovery capabilities, Change in access to transportation, Change to accessibility of local food sources and other goods, Change to community connectivity, Change in distribution of resources and support.

ANTICIPATED IMPACTS

Based on guidance in *Climate Assessment Recommendations for Master Plans and Zoning Text Amendments in Montgomery County*, slight to moderate impacts on greenhouse gas emissions, sequestration, community resilience, and adaptive capacity are anticipated as described in more detail below.

GREENHOUSE GAS EMISSIONS, CARBON SEQUESTRATION, AND DRAWDOWN

Greenhouse Gas Emissions Quantitative Assessment Summary

Because the UB Overlay Zone is intended to implement the land use recommendations of the University Boulevard Corridor Plan, the overlay zone is not anticipated to significantly change the greenhouse gas emissions identified in the Quantitative Assessment for the UBC Plan, namely that the overlay zone will have moderate negative impacts and slight to moderate positive impacts on greenhouse gas emissions. The Quantitative Assessment for the UBC Plan estimates that total greenhouse gas emissions in the University Boulevard Corridor Plan area will be approximately 35% higher at buildout than the emissions from buildout under the existing zoning and previous master plan recommendations. This is because the University Boulevard Corridor Plan proposes to rezone corridor-fronting residential blocks to the Commercial Residential Neighborhood (CRN) zone and rezone institutional properties, such as properties used for religious assembly and single-use commercial shopping centers, to the Commercial Residential Town (CRT) zone to promote sustainable development patterns, provide housing options, and support transportation safety enhancements in the Plan area. While this is a much more efficient use of land, the increase in residential units will require additional energy for heating, cooling, and lighting, and for transportation to, from, and within the UBC Plan area. Because emissions are directly associated with energy use, more emissions will result. Larger numbers of people living within the Plan area will also generate larger amounts of material waste, and there are emissions associated with the creation, transport, and disposal of those materials.

The climate impacts specific to ZTA 25-12 result from the ability to achieve higher development densities on some sites in close proximity to University Boulevard. As long as the energy needed to supply the additional growth enabled by the Plan is generated by burning fossil fuels, the result of the additional density will be increased GHG emissions, but there is insufficient data to quantitatively assess the amount of the increase due to uncertainty regarding which sites might or might not seek to redevelop. In addition to not knowing the extent to which landowners might choose to replace existing buildings with slightly higher density buildings, quantifying the transportation emissions would require that these increases be modeled to determine the resulting VMT changes.

Greenhouse Gas Emissions, Carbon Sequestration, and Drawdown Qualitative Discussion

The recommendations of the UB Overlay Zone affect greenhouse gas emissions within the University Boulevard Corridor by creating opportunities for additional housing units and mixed-use development, as described in the previous section of this Assessment, and by creating better facilities for travel by bus, bicycle, rolling, and walking. Increases in the number of people who live, work, shop, and go to school in the UBC Plan area will lead to increases in emissions, primarily from building emissions. Increasing transportation options that allow more people to walk, bike, roll, or ride transit throughout the corridor, coupled with increased access to nearby goods and services, will help reduce greenhouse gas emissions from transportation sources.

Carbon sequestration and storage are primarily achieved through the retention and planting of forest areas, trees outside of forests, and other vegetation. Healthy soils that are part of forests, meadows, and other vegetated areas can also store significant amounts of carbon. Properties that are redeveloped under new zoning in the UBC Plan and UB Overlay Zone to increase density may end up removing tree cover to accommodate new uses. How much tree cover is removed depends on how many property owners opt to redevelop their lots and how much tree cover exists on the lots being redeveloped. A survey of the neighborhoods where new zoning is proposed shows that the tree cover on properties within the UBC Plan area varies considerably from lot to lot, with some properties completely lacking tree cover while others may contain multiple trees.

The University Boulevard (UB) Overlay Zone allows for 35% lot coverage on a net site less than 15,000 square feet, which aligns with the standards of existing single-family zoning. This provision is intended to ensure that if new development occurs on small sites, it aligns with existing neighborhood typologies but also prevents any loss of green cover or vegetation comparable to the current rate of change seen in single-family areas, where homes are either replaced or expanded.

The UB Overlay Zone introduces the opportunity for lot consolidation. This approach may enhance the potential for green spaces, as consolidated lots often involve consolidated driveways, thereby reducing impervious surfaces. In accordance with the Plan's recommendations, new development is required to incorporate public green spaces, such as planting strips along the corridor. This measure further supports the objective of increasing overall green cover.

UBC Plan recommendations designed to increase trees and shade along University Boulevard in the Plan area should increase tree cover along the sides of the road and in medians where sufficient soil exists to grow healthy trees. The Plan also includes recommendations to increase tree canopy on parks and school properties.

Adaptive Capacity Factors and Community Resilience

Adaptive Capacity Factors and Community Resilience outcomes for the UB Overlay Zone are the same as those noted in the University Boulevard Corridor Plan, as outlined below.

Adaptive Capacity Factors facilitate community connectedness and cohesiveness and improve the accessibility of critical resources, including food and monetary resources, making it easier for both the community and individuals to withstand and adapt to climate-related impacts. These overlap with factors that enhance community resilience, which is the sustained ability of a network of people to use available resources to withstand, recover from, and adapt to future climate hazards.

Changes to accessibility or prevalence of community and public spaces are anticipated to have a positive impact on adaptive capacity. The University Boulevard Plan includes several parks and schools where people can gather, interact, and form connections that will foster community cohesiveness. Plan recommendations should improve the ability of residents to access these facilities. In addition, this Plan recommends new privately owned public spaces on key properties, such as WTOP and Safeway, which may be redeveloped in the future. This would expand the number of community and public spaces serving the community.

Changes to emergency response and recovery capabilities should improve somewhat as minor improvements in street grid connectivity and additional pedestrian and bicycle connections will improve emergency access within the Plan area. Emergency vehicles have access to the dedicated bus lanes and, in the event of interference between buses, bikes, and emergency vehicles, "buses and bikes have equal rights to use the lane and will need to yield to emergency vehicles."

As noted above, changes in access to transportation should improve through the improvement of transit corridor connections, increased bicycle and pedestrian facilities, and a finer street grid will increase both transportation options and access.

Positive change in accessibility or prevalence of local food sources and other goods is supported by Plan recommendations to support new local farming opportunities, including community gardens and creating a new farmers' market for the Plan area. The Plan also supports efforts by the Department of Health and Human Services and other County agencies to implement neighborhood-level strategies to address food insecurity and other local sources for food production.

The Transportation System Performance Metrics anticipate that access to jobs by automobile will increase by 1% and access to jobs by transit will increase by 11% under the recommendations of the University Boulevard Corridor Plan. This should improve the availability and distribution of economic and financial resources as opportunities for employment for residents in the Plan area.

Staff anticipates that the UBC Plan will enhance and facilitate community connectivity through the provision of attractive new public spaces and programming that will bring people together, promoting civic engagement and the formation of support networks within the community.

This Plan recommends additional child daycare and senior services as new development occurs in the area. This should improve the distribution of resources and support in the community. Additionally, improvements in the transportation infrastructure, including improved non-auto and transit options, should improve access to community facilities both within and near the Plan area.

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

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

The CAP includes 86 climate actions as a pathway to meet the county's ambitious climate goals while building a healthy, equitable, and resilient community. Each county department has responsibilities for specific climate actions that are relevant to the work of that department. The following section provides a list of the CAP action items relevant to Montgomery Planning and addressed within the University Boulevard Plan. While it is not possible to know the rate of implementation, development, funding, or other implications, each action item was rated high, medium, or low for its potential to reduce GHG gases or sequester carbon.

Clean Energy Actions

- E-3: Promote Private Solar Photovoltaic Systems. Medium. The Plan promotes the use of on-site alternative energy systems for all development, private and public.
- E-4: Public Facility Solar Photovoltaic Installations and Groundwork. Medium. The Plan promotes the use of on-site alternative energy systems for all development, private and public.

Building Actions

- B-7: Net Zero Energy Building Code for New Construction. Medium. The Plan supports achieving Net Zero energy emissions.

Transportation Actions

- T-1: Expand Public Transit. High. There are recommendations for increasing access, stations, stops, and frequency of public transit.
- T-2: Expand Active Transportation and Micro-mobility Network. High. There are recommendations to construct bicycle lanes, improve sidewalks, and increase access, stations, and frequency of public transit.

- T-8: Transportation Demand Management. High. There are many recommendations intended to influence people's transportation choices and reduce use of single occupancy vehicles.

Carbon Sequestration Actions

- S-1: Retain and Increase Forests. High (for forest retention), Low (for increase in forest). Retention and expansion of forest and is recommended.
- S-2: Retain and Increase Tree Canopy. Medium. Recommendations include increasing tree canopy cover on open space, within the right-of-way, and on new development.

Climate Adaptation Actions.

- A-18: Expanded Community Gardens. High. Recommendations support community garden expansion.
- A-7: Green Public Spaces. High. All development, public space, and the right-of-way should include native tree and vegetative plantings.
- A-10: Green Infrastructure. High. Green infrastructure is essentially the same as Nature-Based Design Solutions and the terms are used interchangeably. It is recommended for new development and road retrofits.
- A-15: Water Supply Protection. High. The Plan makes recommendations to protect watersheds that contribute to the County's water supply.

RECOMMENDED AMENDMENTS

The Climate Assessment Act requires the Planning Board to offer appropriate recommendations, such as amendments to the proposed UB Overlay Zone or other mitigating measures, that could help counter any identified negative impacts through this Climate Assessment. Potential amendments will be identified during the Planning Board discussion of the UB Overlay Zone.

SOURCES OF INFORMATION, ASSUMPTIONS, AND METHODOLOGIES

The climate assessment for the University Boulevard Overlay Zone was prepared using the methodology for master plans contained within the *Climate Assessment Recommendations for Master Plans and Zoning Text Amendments in Montgomery County, December 1, 2022*.