



Committee: PHED
Staff: Jeff Zyontz, Senior Legislative Analyst
Purpose: Receive briefing and have discussion – no vote expected
Keywords: #solar collection, #solar panels, #AR zone

AGENDA ITEM #10
October 13, 2020
Worksession

SUBJECT

ZTA 20-01, Solar Collection System – AR Zone Standards

EXPECTED ATTENDEES

Casey Anderson, Chair, Montgomery County Planning Board
Robert Kronenberg, Deputy Director, Planning Department
Greg Russ, Planner Coordinator, Planning Department
Christopher McGovern, GIS Manager, Planning Department
Adriana Hochberg, Climate Change Coordinator, Office of the County Executive
Stan Edwards, Chief, Division of Environmental Policy and Compliance, Department of Environmental Protection
Jeremy Criss, Director, Office of Agriculture
Mike Scheffel, Director of Planning and Promotions, Office of Agriculture
Al Bartlett, Sierra Club, Maryland Chapter

COUNCIL DECISION POINTS & COMMITTEE RECOMMENDATION

Joint meetings of the Planning, Housing, and Economic Development Committee and Transportation and Environment Committee resulted in a recommendation to approve ZTA 20-01 with amendments. The amendments are generally aimed at environmental protection and allowing for a different type of agriculture under solar panels.

DESCRIPTION/ISSUE

ZTA 20-01 would revise the Solar Collection System use standards to allow larger facilities in the Agricultural Reserve (AR) zone. The total amount of collection systems on all parcels would be limited to 1,800 acres. Any collection system constructed under the proposed text amendment must be designated pollinator-friendly under the Maryland Pollinator-Friendly Designation Program or be planted with crops suitable for grazing. Larger facilities require site plan approval.

SUMMARY OF KEY DISCUSSION POINTS

Solar panels are only allowed in the AR zone as an accessory use; the Zoning Ordinance defines that as a facility that produces no more than 120% of on-site electrical needs. ZTA 20-01 would expand the opportunities for solar power in the Agricultural Reserve zone. The Committee recommended prohibiting solar facilities on environmentally-sensitive areas and Soil Classification I soils.

This report contains:

	<u>Pages</u>
Staff memorandum	1-18
ZTA 20-01 as recommended by the joint committee	©1-9
Planning Board recommendation	©10-11
Planning staff recommendation	©12-17
Executive recommendation at public hearing	©18-19
Executive Recommendation July 14	©20-21
Executive Recommendation September 25	©22-23
Agricultural Uses under Solar Panels	©24-27

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Worksession

M E M O R A N D U M

October 8, 2020

TO: County Council

FROM: Jeffrey L. Zyontz, Senior Legislative Analyst

SUBJECT: Zoning Text Amendment 20-01, Solar Collection System – AR Zone Standards

PURPOSE: Worksession to discuss the joint committee recommendations concerning ZTA 20-01

Potential Participants:

Casey Anderson, Chair, Montgomery County Planning Board
Robert Kronenberg, Deputy Director, Planning Department
Greg Russ, Planner Coordinator, Planning Department
Christopher McGovern, GIS Manager, Planning Department
Adriana Hochberg, Climate Change Coordinator, Office of the County Executive
Stan Edwards, Chief, Division of Environmental Policy and Compliance, Department of Environmental Protection
Jeremy Criss, Director, Office of Agriculture
Mike Scheffel, Director of Planning and Promotions, Office of Agriculture
Al Bartlett, Sierra Club, Maryland Chapter

Committee Recommendation: On July 22, 2020, the Planning, Housing, and Economic Development Committee and the Transportation and Environment Committee (4-1, Councilmember Friedson opposed) recommended approval of ZTA 20-01 with the following amendments:

- 1) Restrict the limited use solar facilities to Maryland's net metering program.
- 2) Expand the definition of AR zoned accessory solar facilities from 120% of on-site use to 200%.
- 3) Retain the code's current provision of facilities larger than 2MW.
- 4) Expand the required plants under solar panels to include all agrivoltaic plants.
- 5) Prohibit concrete, except for transformer or electrical equipment pads.
- 6) Delete the requirement for fencing.
- 7) Prohibit solar facilities in stream buffers and wetlands.
- 8) Prohibit solar facilities on slopes steeper than 15%.

- 9) Specifically prohibit stripping topsoil from the site.
- 10) Expand the required plants under solar panels to include all agrivoltaic plants.
- 11) Specify necessary findings concerning forest conservation and tree protection.
- 12) State the site plan requirement for stormwater management.
- 13) Add a requirement to minimize tree loss, consistent with forest conservation.
- 14) Limit the use of concrete to electrical and transformer pads.
- 15) Require screening within 200 feet of a neighboring house, with an opportunity for the Planning Board to waive the planting requirement.
- 16) Prohibit limited use solar facilities on Soil Classification I soils.
- 17) Amend the total acreage monitoring responsibility from DPS to Planning staff.

The joint committee discussed, but did not recommend amendments for:

- any special consideration of scenic easements;
- limiting the coverage of a solar facility to a percentage of a parcel's land area;
- changing any text regarding the classification of a limited use solar facility as either a principal or accessory use; and
- prohibiting solar facilities on soil classifications other than Category I soils.

The Council scheduled a worksession on ZTA 20-01 on October 6, 2020 after postponing the item from September 29, 2020. The Council took longer to discuss other items on its October 6 agenda and postponed the worksession again. This memorandum is identical to the staff material provided for September 29 except for the addition of the Executive's concerns dated September 25, 2020.

Background

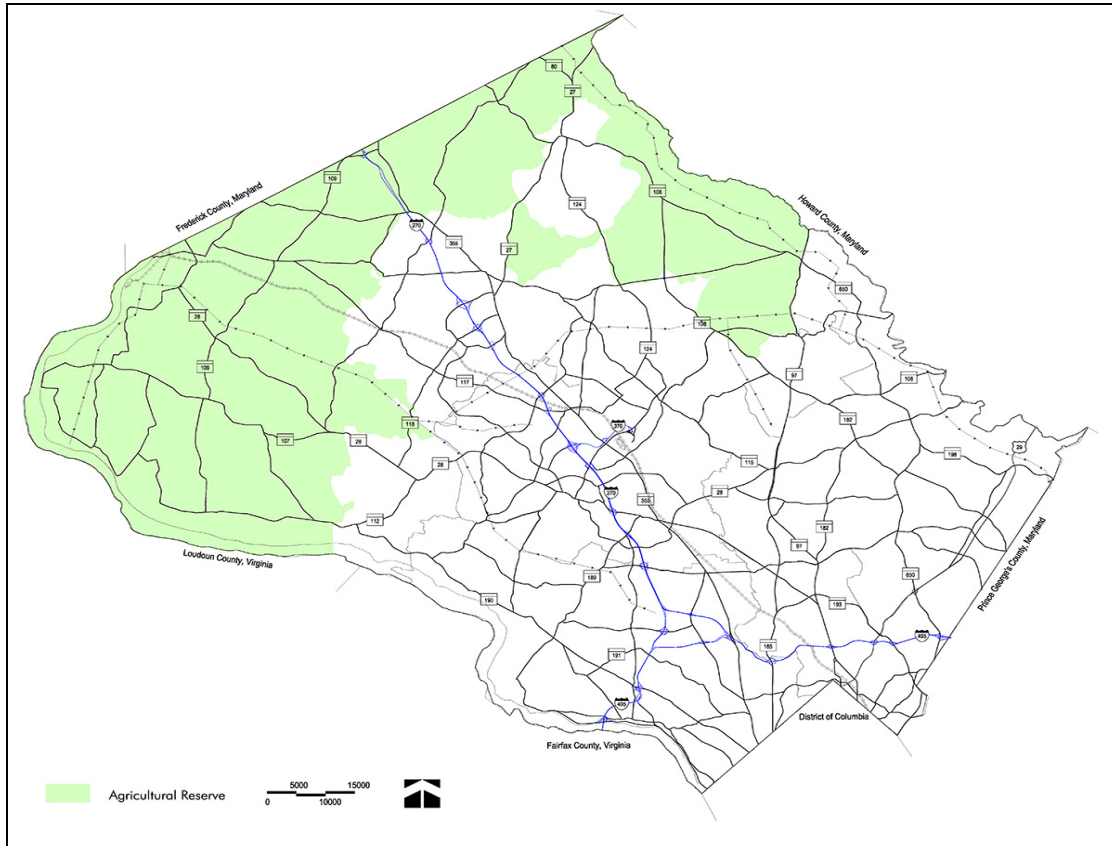
ZTA 20-01, lead sponsors Councilmember Riemer and Council Vice President Hucker and co-sponsor Councilmember Rice, was introduced on January 21, 2020. ZTA 20-01 would revise the Solar Collection System use standards to allow larger facilities in the Agricultural Reserve (AR) zone. The total amount of collection systems on all parcels would be limited to 1,800 acres. Appropriate vegetation is permitted and encouraged under and around the solar panels, with a focus on adhering to the Maryland Pollinator-Friendly Designation Certificate criteria or on including grazing of livestock, apiculture, and similar uses.

Solar panels are currently allowed in the AR zone as an accessory use. The Zoning Ordinance defines accessory use as a facility producing no more than 120% of on-site electrical needs. ZTA 20-01 would expand the opportunities for solar power. It would allow solar facilities as a principal use with a Planning Board-approved site plan.

Facilities in the AR zone that exceed accessory use standards must obtain site plan approval. The site plan approval for solar facilities in the AR zone would allow for the designation of Maryland's Pollinator-Friendly Designation Certificate criteria or on usage to include grazing of livestock, apiculture, and similar uses to continue the maintenance and care of the land. Whether the facilities would be used in conjunction with crop production, grazing herds, regenerative farming or a similar use, site plan approval would require grading and soil removal to be minimized.

An uncodified provision of the ZTA would require the Department of Permitting Services to annually report on the number of total acres used for Solar Collection Systems. The purpose of this reporting would

be to alert the Council on the difference between the acreage used for solar in the AR zone and the 1,800-acre limit.



ZTA 20-01 applies to solar facilities that produce less than 2 megawatts.¹ It responds to solar facilities allowable under the Maryland net metering program. As of 2016, net metering is available statewide until the aggregate capacity of net-metered systems reaches 1,500 MW (megawatts), which is roughly about equal to 10% of Maryland’s peak demand for electricity in 2014.

Public Hearing

The Council conducted a public hearing on March 3, 2020.² The testimony did not reflect any grand consensus. One constituency said it was premature to allow industrial uses in the AR zone, at least until

¹ The Maryland Court of Appeals ruled that, under State law, the County’s zoning and subdivision regulations are preempted by the Maryland Public Service Commission (PSC) for large solar facilities. The Court’s decision in Board of County Commissioners of Washington County v. Perennial Solar means that the PSC has the final say on the location of solar projects that require a Certificate of Public Convenience and Necessity from the PSC. This certificate requirement applies to projects of at least 2 megawatts (roughly 10 acres) in size. In the absence of a change in State law, the County is powerless to regulate large solar facilities. The PSC must consider local zoning but, as in the situation that provoked the Court’s decision, the PSC may overrule zoning.

² The Committee met face-to-face in an open meeting. It seems like a lifetime ago.

other options have been researched.³ Other testimony supported an immediate reduction in carbon emissions to minimize climate change. A number of amendments to ZTA 20-01 were recommended.

Executive Testimony

The Executive initially found ZTA 20-01 to be premature. In the Executive’s opinion, the Council should have the benefit of the Climate Action Committee’s final work product. Of the 94,000 acres in Agricultural Reserve zoned land, the Executive’s solar mapping team found only 900 acres of AR zoned land available for solar use if prime soils, 150 stream buffers, tree cover, land, agricultural easements, and land remote from electric substations were taken into account. ZTA 20-01 as introduced lacks consideration of all those factors. The 1,800 acres allowed by ZTA 20-01 is in excess of the land most appropriate for solar facilities. More urban sites in the County offer 30,885 acres (maximum) of potential solar site areas. In the near future, the urban area may support more of the County’s energy needs because of changes in solar technology (solar sidewalks, roads, window skin, and fabric).

This recommendation was revised during the Committee’s worksessions. In a July 14, 2020 memorandum to the Council, the Executive recommended Council approval of ZTA 20-01 with amendments:

- Prohibit solar facilities on soils classified in categories I, II, and III in the 1995 Montgomery County Soils Survey (as recommended by the Maryland Agricultural Land Foundation).
- Categorize solar as an accessory use to agriculture and support up to 200% of on-site use as an accessory use.
- Limit solar facilities to “Community Solar Collection Systems”.
- Increase required tree protection.

On September 25, 2020, the Executive submitted comments on the joint committee’s recommendation. He noted the concerns of farmers and their desire to protect more than Soil Classification I soils. He did not believe that forested lands were sufficiently protected in the joint committee’s recommended draft. The Executive noted that the increase of the size of allowed accessory solar facilities to 200% of on-site energy use had support from the farmers and solar advocates. He offers the following observation:

One of the reasons this ZTA may have generated such widespread concern is that it focuses on allowing larger solar collection systems in the Ag Reserve without a broader understanding of where and how we can deploy solar throughout the entire county to meet our renewable energy goals.

Planning Board and Staff Testimony

Planning staff noted that there are 8 classifications of soils.⁴ Clearly, the top classification is the best for agriculture (soils with only slight limitations that restrict their use.) Other classifications have limitations

³ Soil Conservation Service, Agricultural Preservation Advisory Board, Agricultural Advisory Committee, Montgomery Countryside Alliance, Montgomery Agricultural Producers, Sugarloaf Citizens Association, Montgomery County Farm Bureau, Conservation Montgomery, Bethesda-Chevy Chase Chapter Izaak Walton League, Montgomery County Chapter – Climate Mobilization, Rustic Roads Advisory Committee.

⁴ Natural Resources Conservation Service - Soils Classification

Class I (1) soils have slight limitations that restrict their use.

Class II (2) soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.

Class III (3) soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

on agriculture, but the Executive used some of those other classifications in their exclusion of land available for solar use. If only the highest category of prime soil is barred from solar use, much more land is available.

The Planning Board would recommend the following (differences from the Planning staff recommendations are noted):

- Discourage (Planning staff would prohibit) solar on prime agricultural soils.
- Prohibit solar on 15% slopes (Planning staff would say 8%) or on highly-erodible soils.
- Add crop production to the list of plants that can be grown under solar facilities.
- Prohibit solar on soils that are seasonally flooded.
- Delete fencing requirement.
- Protect scenic views (Planning staff would prohibit disturbance) through site plan review.

Summarized Public Testimony

ZTA 20-01 is premature (at best): Allowing solar facilities in the AR zone may or may not be an issue after the Climate Action Plan or the General Plan Update. Any changes to the AR zone should be consistent with current approved plans and come after changes to those plans now in process. There should be more effort to: use solar opportunities outside the Agricultural Reserve; reduce energy consumption; and use non-fossil fuel energy production, no matter where it is produced. The opportunity for solar development would decrease the land available for farming, make the County more food insecure, fail to protect prime soils, and increase the rental price of farmland as landowners seek the highest value use of their land. In the opinion of some, the initial 1,800-acre limit opens the door to a future increase of the maximum acres allowed. The ZTA does not sufficiently support regenerative farming or focus on soil biology to enhance soils and support greater carbon sequestration. The ZTA does not address local electric needs as required by the community solar program. There is no more land being made; industrial uses unrelated to farming should be prohibited in the AR zone.

The Council should postpone any consideration of controversial items, at least until it can conduct business face-to-face with interested parties.

ZTA 20-01 is urgently needed: Climate change is real and there is evidence that it is here. The demand for electric power is increasing (think electric cars) and inaction is costly for avoiding climate effects. The Climate Action Plan will not be completed for a year or more. ZTA 20-01 is a necessary choice to avoid inaction. Not all of the agricultural crops currently being grown in the AR zone are beneficial in terms of carbon sequestration. Farms are growing plants like soybeans and grass turf. Soybeans produce carbon dioxide and turf fails to fix carbon in the soil. No other land use reduces carbon more than replacing fossil

Class IV (4) soils have very severe limitations that restrict the choice of plants or require very careful management, or both.

Class V (5) soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VI (6) soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VII (7) soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.

Class VIII (8) soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for aesthetic purposes.

fuel energy production with solar. More carbon will be saved by switching to solar than planting trees on the same land.

Rooftop solar can meet less than half of the County’s needs. Not all residents have access to rooftops. Solar on rooftop is good but not as economical as large-scale facilities. The roof will last 20 years, but the investment in solar has a longer life.

The solar facilities give the landowners a steady rent that can help overcome farming’s income volatility.

Other Recommendations for amendments

In addition to the amendments to ZTA 20-01 recommended by the Planning Board, there were several other amendments recommended in testimony. Some of those amendments would expand the opportunities for solar facilities. Some would limit the opportunities for those facilities. A third category of recommendations would add or remove conditions for those facilities.

1. Reduce opportunities for solar facilities:
 - Prohibit on prime agricultural soils.
 - Prohibit on environmentally-sensitive areas.
 - Require additional consideration of scenic views and rustic roads.
 - Require facilities be part of Maryland’s Community Solar program.
 - Delete the changes proposed for facilities larger than 2 MW.

2. Expand opportunities for solar facilities:
 - Double the allowable acreage.
 - Increase accessory solar facilities to allow 200% of on-site use.

3. Additional conditions:
 - Give preference to land being farmed by the owner.
 - Better define “pollinator-friendly”.
 - Expand the plants allowed under a solar facility.
 - Allow Planning Board waiver of screening requirements.

Issues

1. Should the consideration of ZTA 20-01 be postponed?

Testimony suggested that ZTA 20-01 be postponed to wait for the:

- a. Council to resume face-to-face meetings;
- b. Climate Action Report;
- c. General Plan Update (Thrive Montgomery 2050); and
- d. feasibility of alternatives outside of the Agricultural Reserve.

Face-to-Face Public Participation

There is a state of emergency in Maryland. The Council Office Building is not open to the public. Council sessions and Council Committee meetings are held online. Some people recommended that the Council

postpone consideration of controversial matters until the public is afforded the ability to fully participate in the legislative process face-to-face.

Regarding ZTA 20-01, the Council conducted a face-to-face public hearing on March 3. In addition to the public hearing, public participation includes Councilmembers' individual conversations with interested parties and observing the Committee and Council in public sessions. Public sessions are online, are shown on cable television, and if wireless or cable connections are not available, can be heard by dialing a telephone number. Residents have been free to submit any additional comments to the public record. All of those aspects of public participation are available without physical proximity.

A majority of the joint committee recommends bringing ZTA 20-01 to the Council for disposition with amendments.

Climate Action Report

In July 2019, Montgomery County launched a planning process to develop prioritized actions and strategies to meet the County's greenhouse gas emissions reduction goals. The County intends to finalize a Climate Action and Resilience Plan by early 2021 that will provide a roadmap to achieve zero emissions and provide recommendations for adapting to a changing climate.

The Executive convened 5 technical workgroups to help in the climate-planning effort. The workgroups reviewed past climate reports and plans developed by the County and best practices from other jurisdictions. The workgroups recommended 850 strategies that have high potential to meet the County's goals in an equitable manner. The strategies most relevant to ZTA 20-01 drafted by the Clean Energy Workgroup supported use of the Agricultural Reserve for solar facilities, with qualifications from the Carbon Sequestration Workgroup.⁵

General Plan Update (Thrive Montgomery 2050)

Planning staff described its work program, Thrive Montgomery 2050, which will not include detailed land use, zoning and other action items.⁶ The Plan will only "guide future planning efforts." Waiting for the guidance of the Plan will only mean waiting for the approval of future plans.

⁵ The Carbon Sequestration Workgroup report to date included the following strategies and actions:

Strategy 1.4 - Strengthen protection of the Agricultural Reserve and rural low-density buffer areas which provide multiple benefits that are critical to the County's emissions, sequestration and resilience goals.

Action 1.4.1 – Reinforce existing policies, zoning laws and other measures to avoid additional conversion of agricultural land to residential or commercial development in the Reserve and maintain agriculture as the preferred land use.

Action 1.4.2 – Prevent sprawl of both roads and sewer infrastructure that enable higher density development in rural low-density areas outside the Reserve.

The Clean Energy Working Group report to date included the following strategies and actions:

Strategy 2.2 – Assess feasible public and private locations for solar and wind installations of various scales in Montgomery County and adjacent jurisdictions....

Strategy 2.5 – Support expansion of community solar.

Action 2.5.1 – Evaluate environmental and ecological impact of using land in the agricultural reserve for solar.

Action 2.5.2 – Establish demonstration projects to co-locate PV solar with agricultural production (such as grazing) and pollinator meadows. (This action item was repeated as Strategy 2.9):

<https://www.montgomerycountymd.gov/green/climate/climate-action-planning.html>.

⁶ Thrive Montgomery 2050 will produce a comprehensive update of Montgomery County's General Plan, which will guide the County's growth and shape of its physical environment for the next 30 years. It will consider a variety of trends and issues that will impact the County's future and develop a broad set of policies addressing multiple topic areas to help the County be

Feasibility of alternatives outside the Agricultural Reserve

Zoning has its origins in nuisance prevention. Laundries, liverys, and blacksmiths were prohibited in some areas of some towns even before zoning. Zoning is a negative exercise of police power. It prohibits some land uses and allows others. It does not mandate action on the part of a landowner, apart from actions triggered by new construction or changes in land uses.⁷ Other laws may require immediate action (those that impact immediate public safety), but not zoning.

The Executive found that urban sites (areas outside of the AR zone) in the County offer 30,885 acres (maximum) of potential solar areas for solar facilities:

- 12,100 acres of open land;
- 6,580 acres of parking lots and garages;
- 1,644 acres of commercial building roofs (excluding government roofs);
- 9,146 acres of residential building roofs;
- 1,415 acres under transmission lines.

Zoning currently allows solar facilities on these areas. By the approval of ZTA 18-01 (effective June 4, 2018), the Council expanded the ability to construct larger solar facilities in Rural Residential, Residential, Commercial/Residential, Employment, and Industrial zones. The Executive reports the issuance of 16 County solar project permits, 66 commercial solar permits, and 9,295 residential permits. The total amount of energy produced by these installations is approximately 110 MW.⁸ Each megawatt requires 5 to 8 acres of solar panel area. On the low end, owners of 550 acres of non-AR zoned land have taken advantage of the current allowance to use solar panels.

Even if solar facilities were constructed on a significant percentage of these non-AR zoned lands, it would not be sufficient to meet the County's energy needs. According to Executive staff, the minimum need is for 23,000 acres of solar panels. It would be unrealistic to believe that 75% of all urbanized opportunities would build solar panels. The upper range of the calculated minimum need is more than twice the acreage available in the urbanized portion of the County.

The joint committee recommends taking action on ZTA 20-01.

2. What is the urgency of ZTA 20-01?

Global warming is proceeding. Changes of approximately 1 degree Celsius have triggered cataclysmic changes to the Earth. Testimony related to climate change made it clear that the environmental situation

proactive in creating a successful future, even in the face of unanticipated challenges. Thrive Montgomery 2050 will look at the development that has taken place over the past 50 years and assess how our planning framework has evolved to respond to those challenges. It will explore possible alternatives to position the County to be able to adapt to changing economic, social, environmental and technological conditions, and be able to harness these changes to help the County and its residents to thrive. Rather than detailed, specific land use, zoning or other action items, the updated General Plan will guide future planning efforts through subsequent local area and Countywide functional master plans, facility planning, and other public and public/private partnership initiatives. These more targeted planning initiatives will provide immediate, in-depth analysis and testing of ideas and recommendations for specific issues. <https://montgomeryplanning.org/wp-content/uploads/2019/05/General-Plan-Update-Scope-of-Work-staff-report-for-5-30-19-FINAL.pdf>.

⁷ The Executive has not proposed requiring new buildings or parking facilities to have solar panels and has not required new roofs to be wired for future solar installations on rooftops.

⁸ July 5, 2019: <https://www.paradis solarenergy.com/blog/top-10-counties-in-maryland-for-solar>.

is time-sensitive. Climate change effects include an accelerating collapse of the West Antarctic Ice Sheet, the thawing of the Arctic permafrost, an increase in mega-droughts, heat waves, super-storms, flash flooding, the migration of mosquito-borne diseases, the melting of glaciers, polar ice-sheet collapse, coral bleaching, the mass extinction of species, ocean oxygen loss, and sea level rise.

On December 5, 2017, the Montgomery County Council adopted an Emergency Climate Mobilization resolution that declared a climate emergency.⁹ Montgomery County has been a national leader in responding to the challenge of climate change, including establishing a goal of reducing greenhouse gas emissions in the County by 80% by 2050 as compared to 2005 levels. Given the pace of change, the County now needs to do much more, much faster. The longer Montgomery County waits for new information before making the switch to solar, the more the County will contribute to detrimental environmental impacts.

At present, rooftop solar and other urban sites in Montgomery County are not close to fulfilling the needs of current electric consumption. ZTA 20-01 would allow farmers who are able to make the switch to solar on their land in the AR zone to do so now. The AR zone, which makes up roughly 1/3 of Montgomery County, can be used to support the County's increasing electricity consumption while also benefiting landowner-farmers.¹⁰

The joint committee sees ZTA 20-01 as addressing an urgent climate change problem.

3. Is ZTA 20-01 contrary to adopted master plans?

Master plans are guides for actions; they are not self-implementing. Zoning is law. Interpreting conformance to master plans, at times, is sometimes like being a Talmudic scholar. Experts can disagree by emphasizing one phrase over another...and every answer leads to more questions. The Council generally relies on the Planning Board to make findings of master plan conformance. With respect to ZTA 20-01, the Planning Board recommended approval with amendments. It did not raise any concerns about the ZTA being contrary to any master plan. The master plans and general plans do not recommend limiting all activities in the wedge to just planting and raising livestock.

The 1964 General Plan had 4 general purposes for the wedge area of the County, one of which was to "provide a rural environment in which farming, mineral extraction, and other natural resource activities can be carried out".¹¹

⁹ Resolution No.: 18-974, https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/res/2017/20171205_18-974.pdf.

¹⁰ Several farms in Maryland are already incorporating solar energy into their land as an accessory use. A list of these farms can be found in the Appendix.

¹¹ General Plan 1964

The General Plan's rural pattern recommendations have four broad purposes:

To help make the urban pattern efficient and pleasant;

To provide and protect large open spaces for recreational opportunities;

To provide a rural environment in which farming, mineral extraction, and other natural resource activities can be carried out; and

To conserve natural resources and protect the public water supply and recreational waters.
<https://montgomeryplanning.org/wp-content/uploads/2017/10/GeneralPlanWedgesandCorridors1964colorocr.pdf> (page 43).

The 1969 General Plan Update encouraged “compatible, low-intensity non-agricultural uses” and recommended promoting “the development of profitable agricultural endeavors.”¹²

The 1980 Functional Master Plan for the Preservation of Agriculture and Rural Open Space in Montgomery County says the following that may ultimately be applicable to ZTA 20-01:

*It is vital to the economic well-being of the agricultural community to develop appropriate programs and land-uses that encourage the continuance of farming. Such uses must be permitted and encouraged in agricultural areas, since they are compatible with and essential to it.*¹³

The 1993 General Plan Refinement recommended limiting public and private non-agricultural uses.¹⁴ It does not recommend prohibiting such uses. “Necessary non-agricultural uses...will continue to be located in the Agricultural Wedge when deemed appropriate.”

The joint committee did not find ZTA 20-01 to be contrary to approved master plans.

¹² General Plan Update 1969

Objective M. Avoid the intrusion of a mixture of conflicting land uses into agricultural areas, while permitting a wide selection of compatible activities.

Guidelines

1. Preserve where possible the use of the best soils for agricultural purposes.
2. Limit assistance to agricultural uses to areas outside areas of urbanization as indicated on the general plan and to areas having good agricultural lands.
3. Maintain a rural atmosphere in open space areas by limiting development to very low intensity.
4. Encourage compatible, low-intensity non-agricultural uses.

Objective N. Ensure that agriculture in the region becomes or continues as a viable land use.

Guidelines

1. Protect agricultural lands to preserve their value as farmland as long as the pressures of urbanization permit.
2. Promote the development of profitable agricultural endeavors.

<https://montgomeryplanning.org/wp-content/uploads/2017/10/1969UpdatedGeneralPlanocr.pdf> (page 17).

¹³ Functional Master Plan for the Preservation of Agriculture and Rural Open Space in Montgomery County 1980

“The critical land use issue in this Plan is the loss of productive farmland; the focus is the identification and application of land use regulations and incentives to help retain agricultural land in farming and complementary rural open space areas.”
“Agriculture is the preferred use in the Rural Density Transfer Zone. All agricultural operations shall be permitted at any time, including the operation of farm machinery and no agricultural use shall be subject to restriction because it interferes with other uses permitted in the Zone.”

“It is vital to the economic well-being of the agricultural community to develop appropriate programs and land-uses that encourage the continuance of farming. Such uses must be permitted and encouraged in agricultural areas, since they are compatible with and essential to it.” <https://montgomeryplanning.org/wp-content/uploads/2016/09/PreservationAgricultureRuralOpenSpaceFunctionalMasterPlan1980ocr300.pdf>.

¹⁴ General Plan Refinement 1993

The Agricultural Wedge Tomorrow

The future of the Agricultural Wedge contains both new and continuing challenges. Some of the most important of these include:

- maintaining agriculture as the preferred land use;
- limiting public and private non-agricultural uses;
- enhancing park and recreation linkages;
- directing development away from the Wedge; and
- protecting environmentally sensitive areas....

Agriculture will continue as the primary land use in the Agricultural Wedge. Non-agricultural uses must be limited. Necessary non-agricultural uses, however, will continue to be located in the Agricultural Wedge when deemed appropriate. <https://montgomeryplanning.org/wp-content/uploads/2017/10/GeneralPlanRefinement1993ocr.pdf> (pages 32-33).

In the joint committee's view, the incorporation of solar energy into the AR zone does not take away from its original use of agriculture but rather provides additional benefits to farmers and residents of Montgomery County.

Based on research done in Arizona, Minnesota, Maryland, and Massachusetts, solar panels are able to be integrated into agriculture and can create additional benefits to the land when done properly. Listed in the Appendix are examples of agrivoltaic projects related to crop production, grazing herds, regenerative farming, apiaries, and wineries, along with a list of pollinator-friendly species (Table 1), and a draft version of the Maryland Pollinator-Friendly Certification Application. Farms around the United States, as well as several countries in Europe, are integrating solar power into agriculture.

The longer Montgomery County waits for new information before making the switch to solar, the more detrimental the environmental impacts will be for the County. Moving forward, ZTA 20-01 can allow farmers to utilize their land for both agriculture and solar power, creating a mutually beneficial partnership between the soil and the sun, crops and panels.

In Massachusetts, a farmer was concerned about keeping the land alive with limited disruption to the soil. Researchers were able to create a solar installation spaced far enough apart to allow sunlight to pass through to the field below and can be shifted horizontally to adjust the gap. The panels are supported by vertical poles embedded 10 feet into the ground.”¹⁵ Concrete could be prohibited, so the damage to the soil is limited and can be completely reversible.

As with all emerging technology, modifications can be made as the technology develops. With solar energy, “land can be reverted back to agricultural uses at the end of the operational life for solar installations. A life of a solar installation is roughly 20-25 years and can provide a recovery period, increasing the value of that land for agriculture in the future. Giving soil rest can also maintain soil quality and contribute to the biodiversity of agricultural land.”¹⁶

4. Recommended amendments

A. Restrict facilities to solar facilities within Maryland's net metering program

The Maryland Residential Community Solar program allows Maryland residents to purchase subscriptions for energy from community solar arrays, gaining the same economic advantages as having solar modules directly on their residences. In support of this program, the Maryland Energy Administration developed the Residential Community Solar Grant program. The program provides a monetary incentive for Maryland residents who wish to purchase (own) the energy benefits of the array. Low-to-moderate income (LMI) residents who subscribe to a community solar array under an ownership model are incentivized at a higher rate than other subscribers. Subscriptions must be to a community solar array within the subscriber's electric utility service area.¹⁷

The Community Solar program directs locally-produced power to local residents. Local users are matched to the power company receiving the power. The County is served by 2 power companies: Potomac Electric Power Company (PEPCO) and Potomac Edison. Most of the AR zone is served by Potomac Edison. The urbanized area of the County is served by PEPCO.

¹⁵ <https://civileats.com/2019/01/22/agrivoltaics-solar-panels-on-farms-could-be-a-win-win/>.

¹⁶ <https://www.energy.gov/eere/solar/farmers-guide-going-solar>.

¹⁷ <https://energy.maryland.gov/residential/Pages/Community-Solar.aspx>.

The Aggregate Net Energy Metering (ANEM) program is also part of the program. This program allows the interconnection of a solar facility on a piece of property to specific customers. The only entities that qualify for ANEM are:

- non-profit;
- agriculture; or
- local or State government.

Both the Community Solar program and Aggregate program benefit the customers of the local electric power companies. (Facilities that produce no more than 200% of on-site energy use are also part of the net metering program.)

The joint committee recommends defining solar facilities as those that comply with the requirements of the State's net metering program under Maryland Code §7-306 and COMAR 20.50.10, including Community Solar Energy Regeneration Systems, Aggregate Net Metering, and projects limited to a percentage of on-site energy use.¹⁸

The state net metering program limits land holdings at a single location to be limited to a maximum rating of 2 megawatts (AC). A landowner who also owns an abutting or confronting property must include the facilities on all of the owner's property when determining if the site complies with the maximum size. Councilmember Riemer will offer an amendment to impose this restriction.

The following would be added to the necessary findings for site plan approval:

k. a parcel and all abutting or confronting parcels under common ownership is limited to solar facilities that in total are rated at a maximum of 2 megawatts (AC); for the purpose of this limit, any parcel transferred or created by deed after May 12, 2015 is to be treated as a parcel under common ownership with the parcel that existed on May 12, 2015.

B. Expand the definition of accessory solar facilities from 120% of on-site use to 200%

Solar panels as an accessory use is currently limited to 120% of on-site energy consumption (baseline annual customer energy use). There are limits on structure heights. ZTA 20-01 as introduced would not change that limitation. Maryland net metering policy allows a maximum of 200% of on-site energy consumption to take advantage of net metering.¹⁹

Solar panels as an accessory use does not require site plan approval. There is no maximum height for accessory solar panels.

The joint committee recommended allowing solar facility that produces up to 200% of on-site energy used as an accessory use.

¹⁸ <https://codes.findlaw.com/md/public-utilities/md-code-public-util-sect-7-306-2.html>;
<http://mdrules.elaws.us/comar/20.50.10>.

¹⁹ Net metering is an electricity billing mechanism that allows consumers who generate some or all of their own electricity to use that electricity anytime, instead of when it is generated. When solar panels produce more electricity than needed, that energy is sent to the grid in exchange for credits.

C. Facilities larger than 2 MW

The Maryland Court of Appeals ruled that, under State law, the County's zoning and subdivision regulations are preempted by the Maryland Public Service Commission (PSC) for large solar facilities. The Court's decision in *Board of County Commissioners of Washington County v. Perennial Solar* means that the PSC has the final say on the location of solar projects that require a Certificate of Public Convenience and Necessity from the PSC. This certificate requirement applies to projects of at least 2 MW (roughly 10 acres) in size. In the absence of a change in State law, the County is powerless to regulate large solar facilities. The PSC must consider local zoning but, as in the situation that provoked the Court's decision, the PSC may overrule zoning.

Currently, the zoning code indicates that larger facilities are to be approved under the same standards as a public utility. Testimony suggested retaining this requirement as guidance to the PSC on what it must consider. ZTA 20-01, as introduced, would amend this provision (lines 74 to 77) to acknowledge that these larger facilities are exempt from zoning. This was done to put readers on notice of the State law.

From the standpoint of giving the PSC notice of what standards would apply, retaining the current code makes some sense.

The joint committee recommended retaining the current code provision concerning facilities larger than 2 MW.

D. Planting under solar panels

As drafted, ZTA 20-01 would allow plants and crops conducive to agrivoltaic systems, pollinator-friendly plants, or plants suitable for grazing. Some testimony noted that Maryland's pollinator-friendly certification is still in a draft stage. The Pollinator-Friendly Designation Program Bill (SB 1158) was signed by Governor Hogan in May 2017.²⁰ SB 1158 established a pollinator-friendly designation program for commercial ground-mounted solar facilities. That program is now in effect and a State employee with the Department of Natural Resources is working closely with individuals interested in pursuing the pollinator-friendly designation.

Other testimony communicated that, whatever the State's program requires, the County should require that at least 75% of the plants be native to Maryland.²¹ Some speakers wanted more latitude in using other plants that increase agricultural output. Based on research in multiple states, both crops and pollinator-friendly plants are able to co-exist with solar facilities. Crops that have successfully been grown directly under solar panels include, but are not limited to, tomatoes, peppers, beans, carrots, chard, kale, and herbs. Appendix II includes a list of agrivoltaic applications in Maryland.

The joint committee recommends expanding the list of allowable plantings to include any other agrivoltaic plant material and prohibiting the use of concrete, except for pads for electrical equipment and transformers. The prohibition on concrete is to maximize the area for plant material and, in the event that the solar facility is no longer used, to minimize the cost of converting the area back to traditional agriculture.

²⁰ http://mgaleg.maryland.gov/2017RS/chapters_noln/Ch_372_sb1158E.pdf.

²¹ A list of native trees, shrubs, and flowers, as well as non-native plants, can be found in Table 1 of Appendix II.

ZTA 20-01 refers to planting requirements. Staff was informed that Councilmember Riemer will propose an amendment to more clearly assure that agricultural activity. With the new text highlighted (note that *E. Necessary Findings is italicized and separate from the outline format used in this memorandum*), the following amendment will be proposed for Section 7.3.4.E.5.d (starting on line 118 of the Committee recommended draft):

E. Necessary Findings

5. For property zoned AR proposed for use as a Solar Collection system:

* * *

d. *must provide evidence that the area under the solar facility will ~~[[satisfy]]~~ be actively used for farming or agricultural purposes by satisfying one of the following requirements:*

- i. *designated pollinator-friendly under the Maryland Pollinator-Friendly Designation Program ~~[[, or any land on which the solar generation facility is located that is not designated as pollinator friendly must be]]~~:*
- ii. *planted, managed, ~~[[and]]~~ maintained, and used ~~[[in a manner suitable]]~~ for grazing farm animals~~[[.]]~~; or*
- iii. *planted, managed, ~~[[and]]~~ maintained, and used for any other agrivoltaic plant material;*

E. Consideration of prohibiting solar facilities based on trees, steep slopes, and wetlands

The joint committee addressed concerns about keeping solar facilities off of environmentally-sensitive features. ZTA 20-01's requirement that larger facilities require site plan approval triggers a requirement for compliance with forest conservation and stormwater management approvals. In addition, the Planning Board's Environmental Guidelines must be respected. *The joint committee recommended specifying necessary findings concerning forest conservation and stormwater management, required by site plan approval and adding an additional requirement to minimize tree loss.* The attached draft includes the following necessary finding for site plan approval:

E. Necessary Findings

* * *

5. For property zoned AR proposed for use as a Solar Collection system:

* * *

e. *removing of trees or landscaping otherwise required or attached as a condition of approval of any plan, application, or permit for the installation or operation of a Solar Collection System is prohibited:*

- i. *the forest conservation requirements of Chapter 22A must be satisfied;*
- ii. *any tree in or on a floodplain, stream buffer, steep slope, critical habitat, contiguous forest, or historic site, and any champion tree or other exceptionally large tree must be left undisturbed unless a disturbance is allowed under Section 22A-12(b)(1);*

The Executive suggested that this text did not afford forests sufficient protection. Section 22A-12(b)(1) allows the Planning Director some discretion:

The primary objective of the forest conservation plan should be to retain existing forest and trees and avoid reforestation in accordance with this Chapter. The forest conservation plan must retain certain vegetation and specific areas in an undisturbed condition unless the Planning Director finds that:

- (A) the development would make maximum use of any available planning and zoning options that would result in the greatest possible forest retention;
- (B) reasonable efforts have been made to protect the specific areas and vegetation listed in the plan; and
- (C) the development proposal cannot be reasonably altered.

If the Council has a problem with this level of Planning Director discretion, the last phrase “unless a disturbance is allowed under Section 22A-12(b)(1)” could be deleted.

The Planning Board recommended prohibiting solar facilities on slopes greater than 15%. Planning staff recommended a restriction on slopes greater than 8%.

The joint committee recommended an amendment prohibiting solar facilities on slopes greater than 15%.

F. Screening, including fencing

The current code requires site plan approval for solar installations, except when the use is an accessory use. ZTA 20-01 extends that requirement to the AR zone. When visible from a residential use or a road, screening that satisfies Section 59.6.5.3.C.8 (Option A) is required. Option A requires a 30-foot planting area and a 6-foot fence. The Rustic Roads Advisory Committee requested the option for a screening waiver by the Planning Board. The Planning Board also made that recommendation.

A 6-foot fence around solar facilities is currently a requirement for limited use approval in non-AR zones and is a proposed requirement in ZTA 20-01. The Planning Board recommended deleting the fence requirement. Industry representatives reported in testimony that a fence is required by insurance companies.

The joint committee recommends deleting the fence requirement without authorizing the Planning Board to prohibit a fence.

The joint committee recommended that screening only be required within 200 feet of a neighboring house.

G. Consideration of prohibiting solar facilities based on soil classification

Testimony was concerned about the use of agriculturally-productive soils in the AR zone for solar facilities. The Executive recommends prohibiting solar facilities on all Soil Classification I, II, and III. The Planning Board recommended discouraging the use of solar facilities on “prime soils”.²²

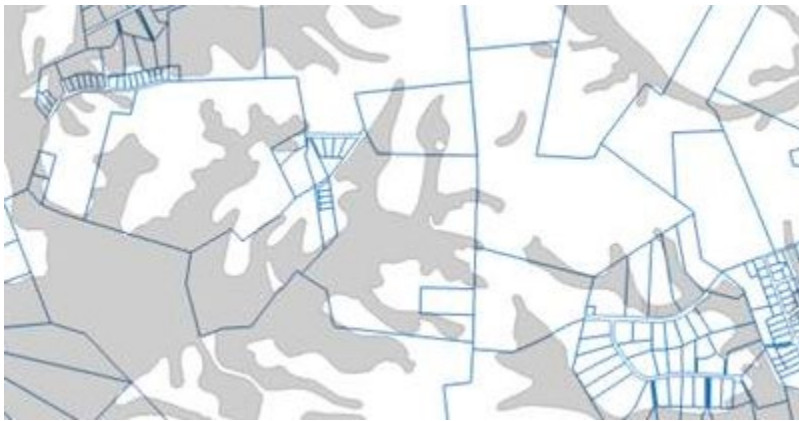
The joint committee recommended prohibiting solar on the best agricultural soils (Soil Classification Category I soils). In the view of the majority, exclusions on additional soil types, in addition to the other restrictions recommended by the Committee, would so limit the possible placement of solar facilities as

²² The Committee spent some time reviewing the differences between Soil Classifications I, II, and III and prime soils. After excluding parkland, steep slope areas, and land covered by easements, there are 14,000 more acres classified in categories I, II, and III than in prime soils.

to make the placement of 1,800 acres of solar facilities impossible. The non-soil restrictions (tree/forest conservation, steep slopes, stream valley buffers, and wetlands) limits solar in the AR to a maximum of 45,145 acres.

Staff was informed that Councilmember Friedson will offer an amendment to prohibit solar facilities on Classification II soils in addition to the joint committee’s recommended prohibition on Classification I soils. That recommendation would allow solar facilities on approximately 20,300 acres of the 101,500 acres of AR zoned land.

The outline shapes of soil categories resemble an amoeba.



A solar facility rate at 2 megawatts would require about 15 acres. (The area required will vary with the topography, the separation between rows of solar panels, and the efficiency of the panels.) When parcel outlines are overlaid on that shape, the number of parcels with a contiguous 15-acre area on non-protected soils is significantly diminished. The joint committee’s recommendation would retain the opportunity for 15-acre solar facilities on 377 parcels. Using Soil Classifications I and II, 110 parcels in the AR zone would have at least 15 acres of contiguous area. Of those possible properties, many are too far from electrical lines to make a solar facility feasible.

Councilmembers Friedson and Jawando pursued amendments to prohibit large solar facilities on more than Classification I soils but did not succeed in persuading a majority of the joint committee.

H. Administration of 1,800-acre limit

The joint committee recommends having the Planning Director monitor the acreage of land used for site plan approved solar projects. The Planning Department administers site plan approval, and all of the projects to be counted against the 1,800-acre limit require site plan approval.

I. Issues raised but not recommended for change

i. Avoid scenic easements – in general or near rustic roads

Most of the roads in the northwestern portion of the County are rustic roads. The area visible from all roads in the AR zone is not mapped. There is no evaluation of the quality of views from a road. Electric

feeder lines tend to be along roads. A pre-existing feeder line with the capacity to carry more current is an attribute that makes solar facilities more economically feasible.

The Rustic Roads Advisory Committee requested consideration of all land within 0.25 miles of a rustic road as possibly scenic. Their recommendation is to require comments from the committee before the Planning Board may approve a site plan.

One of the findings the Planning Board must make before approving a site plan is compatibility with “existing and approved or pending adjacent development.” Staff recommended relying on this requirement for compatibility and not add another step in the approval process.

The joint committee did not recommend any specific restrictions based on scenic easements.

- ii. Limit to farmer-owned land - give owner-farmer preference or do not allow on rented land

One of the criticisms of ZTA 20-01 is the possibility it will increase the price of renting farmland. This fear exists, even though the ZTA would only allow solar facilities on a small percentage of AR-zoned land. There is no doubt that solar facilities can and do pay more to the landowner than farmers can afford to pay to grow crops. To the landowner, renting to a solar power company is a better economic option than renting to a farmer. To the extent that the landowner is the farmer, solar provides a form of subsidy to aid in the continuation of farming.

In addition to limiting the total amount of land that can be used for community-sized solar facilities, ZTA 20-01 limits the size of any individual facility by restricting the facility’s ability to generate power to under 2 MW. It has been estimated that the maximum size facility would be about 10-15 acres. Whether there would be any appreciable effect on the price charged for renting farmland is open to question, but if there was a farmer renting that land, there is no doubt that the site’s renting farmer would have less land for traditional farming once the solar facility is established.

The opportunity to construct a solar facility cannot be limited to landowners who farm. Zoning, not ownership, controls use. A way to ensure solar facilities do not foreclose the opportunity to farm would be to limit the percentage of any parcel that can be used for solar. The zoning code can limit a use to a percentage of an owner’s land. If a maximum of a parcel (or abutting parcel under a single ownership) is 20%, then only a parcel 50 acres or greater could have the maximum size solar facility.

The joint committee did not recommended any changes to ZTA 20-01 based on this issue or explicitly requiring solar facilities to be an accessory use. In the joint committee’s view, as amended, ZTA 20-01 would promote non-traditional agriculture.

- iii. Consideration of prohibiting solar facilities based on agricultural easements

There are 4 types of agricultural easements that, by the terms of the easement, prohibit solar installations: the Maryland Agricultural Land Preservation Foundation (MALPF); Agricultural Easement Program (AEP); publicly purchased Building Lot Termination (BLT); and Rural Legacy Program (RLP) easements. As these restrictions are in land records or the property controlled by those easements, no amendments to ZTA 20-01 are necessary to prohibit solar facilities on those sites.

<u>This packet contains</u>	<u>© number</u>
ZTA 20-01 as recommended by the joint committee	1 – 9
Planning Board recommendation	10 – 11
Planning staff recommendation	12 – 17
Executive recommendation at public hearing	18 – 19
Executive recommendation July 14	20 – 21
Executive recommendations September 25	22 – 23
Agricultural Uses under Solar Panels	24 – 27

F:\Land Use\ZTAS\JZYONTZ\2020 ZTAs\20-01 Solar Collection System - AR Zone Standards\Memo for Council 10-13 Meeting.docx

Zoning Text Amendment No.: 20-01
Concerning: Solar Collection System –
AR Zone Standards
Draft No. & Date: 7 – 7/30/2020
Introduced: January 21, 2020
Public Hearing: March 3, 2020
Adopted:
Effective:

**COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND
SITTING AS THE DISTRICT COUNCIL FOR THAT PORTION OF
THE MARYLAND-WASHINGTON REGIONAL DISTRICT WITHIN
MONTGOMERY COUNTY, MARYLAND**

Lead Sponsors: Councilmember Riemer and Council Vice President Hucker
Co-Sponsor: Councilmember Rice

AN AMENDMENT to the Montgomery County Zoning Ordinance to:

- revise the Solar Collection System use standards to allow larger facilities in the AR zone;
- amend the provisions for Solar Collection Systems in other zones; and
- amend the provisions for site plan approval in the AR zone.

By amending the following sections of the Montgomery County Zoning Ordinance, Chapter 59 of the Montgomery County Code:

Division 3.7.	“Miscellaneous Uses”
Section 3.7.2.	“Solar Collection System”
Division 7.3.	“Regulatory Approvals”
Section 7.3.4.	“Site Plan”

EXPLANATION: ***Boldface** indicates a Heading or a defined term.*
Underlining indicates text that is added to existing law by the original text amendment.
[Single boldface brackets] indicate text that is deleted from existing law by original text amendment.
Double underlining indicates text that is added to the text amendment by amendment.
[[Double boldface brackets]] indicate text that is deleted from the text amendment by amendment.
** * * indicates existing law unaffected by the text amendment.*

ORDINANCE

The County Council for Montgomery County, Maryland, sitting as the District Council for that portion of the Maryland-Washington Regional District in Montgomery County, Maryland, approves the following ordinance:

1 **Sec. 1. DIVISION 59-3.7 is amended as follows:**

2 **Division 3.7. Miscellaneous Uses**

3 * * *

4 **Section 3.7.2. Solar Collection System**

5 **A. Defined**

6 Solar Collection System means an arrangement of panels or other solar
7 energy devices that provide for the collection, inversion, storage, and
8 distribution of solar energy for electricity generation, space heating, space
9 cooling, or water heating. A Solar Collection System includes freestanding
10 or mounted devices. Solar Collection Systems are facilities that comply with
11 the requirements of the State’s net metering program under Maryland Code
12 §7-306 and COMAR 20.50.10, including Community Solar Energy
13 Generating Systems, Aggregate Net Energy Metering Systems, and projects
14 limited to a percentage of on-site energy use. A Solar Collection System use
15 does not include a facility rated at more than 2 megawatts (AC) of
16 electricity; such facilities may be allowed as a public utility use under
17 Section 3.6.7.E.

18 **B. Use Standards**

19 Where a Solar Collection System is allowed as a limited use, it must satisfy
20 the following standards:

- 21 1. In the Agricultural Reserve zone, [[all of the standards in Subsection
22 3.7.2.B.2.b. and]] the following standards in either Subsection
23 59.3.7.2.B.1.a or 59.3.7.2.B.1.b apply:

- 24 [a. A Solar Collection System must be an accessory use as defined
25 in Section 3.1.3.]

- 26 a. Systems producing 200% or less of on-site energy use

27 A Solar Collection System is allowed as an accessory use
28 where the system produces up to 200% of annual baseline
29 energy use on-site and must satisfy the following requirements:

30 [b][a]i. Solar panels may encroach into a setback as
31 allowed under Section 4.1.7.B.5.c and may exceed the
32 maximum height as allowed under Section 4.1.7.C.3.b.

33 ii. Written authorization from the local utility company
34 must be provided for a Solar Collection System that will
35 be connected to the utility grid.

36 [c][b]iii. Removal of trees or landscaping otherwise
37 required or attached as a condition of approval of any
38 plan, application, or permit for the installation or
39 operation of a Solar Collection System is prohibited.

40 [d. Solar panels may encroach into a setback as allowed under
41 Section 4.1.7.B.5.c and may exceed the maximum height as
42 allowed under Section 4.1.7.C.3.b.]

43 [e. A freestanding Solar Collection System is allowed only as an
44 accessory use where the system produces a maximum of 120%
45 of on-site energy consumption and must satisfy the same
46 development standards as an accessory structure.]

47 **b. Systems producing more than 200% of on-site energy use**
48 **Except for the screening and fence requirements in Subsection**
49 **59.3.7.2.B.2.b.iv.C and 59.3.7.2.B.2.b.v.C, a Solar Collection**
50 **System must satisfy the requirements of Subsection**
51 **59.3.7.2.B.2 and 59.7.3.4.E.5.**

- 52 [[c. Except as allowed under Subsection 59.7.3.4.E.5.b, the site
53 must be designated pollinator-friendly under the Maryland
54 Pollinator-Friendly Designation Program.]]
- 55 [[d. Cumulatively, on all AR zoned land, a maximum of 1,800 acres
56 of land may be covered by solar panels.]]
- 57 2. In Rural Residential, Residential, Commercial/Residential,
58 Employment, and Industrial zones, where a Solar Collection System is
59 allowed as a limited use, [it must either satisfy Subsection
60 59.3.7.2.B.1.a through Subsection 59.3.7.2.B.1.e or] it must satisfy the
61 following standards in either [[subsection a or b]] Subsection
62 59.3.7.2.B.2.a or 59.3.7.2.B.2.b:
- 63 **a. Systems producing 120% or less of on-site energy use**
64 The Solar Collection System [[must]] may be an accessory use
65 [[as follows]] under the following standards:
- 66 i. the system produces [[a maximum of]] up to 120% of
67 annual baseline on-site energy [[consumption]] use;
- 68 ii. encroachment allowed under Section 4.1.7.B.5.C; and
- 69 iii. a maximum height allowed under 4.1.7.C.3.b.
- 70 **b. Systems Producing more than 120% of on-site energy use**
71 The Solar Collection System must satisfy the following
72 standards:
- 73 [a] i. Site plan approval is required under Section 7.3.4.
- 74 [b] ii. The site must be a minimum of 3 acres in size.
- 75 [c] iii. The system may produce a maximum of 2 megawatts
76 (AC).
- 77 [d] iv. All structures must be:
- 78 [i] A. 20 feet in height or less;

- 79 [ii] B. located at least 50 feet from any property line; and
- 80 [iii] C. surrounded by a minimum 6-foot-tall fence.
- 81 [e] v. If a structure for a Solar Collection System is located in
- 82 an area visible to an abutting residential use or a road:
- 83 [i] A. only solar thermal or photovoltaic panels or
- 84 shingles may be used;
- 85 [ii] B. the panels or shingles must use textured glass or an
- 86 anti-reflective coating; and
- 87 [iii] C. screening that satisfies Section 59.6.5.3.C.8
- 88 (Option A) on the sides of the facility visible from
- 89 the residential use or road is required.
- 90 [f] vi. The Solar Collection System must be removed within 12
- 91 months of the date when the use is discontinued or
- 92 abandoned by the system owner or operator, or upon
- 93 termination of the useful life of the system. The Solar
- 94 Collection System will be presumed to be discontinued
- 95 or abandoned if no electricity is generated by the system
- 96 for a period of 12 continuous months.
- 97 [[[g] vii. If licensed by the Public Service Commission, [A] a
- 98 system designed to produce more than 2 megawatts (AC)
- 99 [may be allowed as a public utility use under Section
- 100 3.6.7.E] is not restricted by Chapter 59.]]

101 * * *

102 **Sec. 2. DIVISION 59-7.3 is amended as follows:**

103 **Division 7.3. Regulatory Approvals**

104 * * *

105 **Section 7.3.4. Site Plan**

106 * * *

107 **E. Necessary Findings**

108 * * *

109 5. For property zoned AR proposed for use as a Solar Collection system:

110 a. the Solar Collection System is not located:

111 i. on soils classified by the United States Department of

112 Agriculture as Soil Classification Category 1;

113 ii. in a stream buffer;

114 iii. on wetlands; or

115 iv. on slopes equal to or greater than 15%;

116 b. topsoil has not and will not be scraped from the site;

117 [[a]]c. grading and any soil removal will be minimized; [[and]]

118 [[b]]d. the [[site must be]] area under the solar facility must

119 satisfy one of the following requirements:

120 i. designated pollinator-friendly under the Maryland

121 Pollinator-Friendly Designation Program[[, or any land

122 on which the solar generation facility is located that is

123 not designated as pollinator friendly must be]];

124 ii. planted, managed, and maintained in a manner suitable

125 for grazing farm animals[[.]]; or

126 iii. planted, managed, and maintained for any other

127 agrivoltaic plant material;

128 e. removing of trees or landscaping otherwise required or attached

129 as a condition of approval of any plan, application, or permit for

130 the installation or operation of a Solar Collection System is

131 prohibited:

- 132 i. the forest conservation requirements of Chapter 22A
133 must be satisfied;
134 ii. any tree in or on a floodplain, stream buffer, steep slope,
135 critical habitat, contiguous forest, or historic site, and any
136 champion tree or other exceptionally large tree must be
137 left undisturbed unless a disturbance is allowed under
138 Section 22A-12(b)(1);
139 f. the requirements of Chapter 19, Erosion, Sediment Control and
140 Stormwater Management must be satisfied;
141 g. except for pad areas for transformers and electrical equipment,
142 the use of concrete must be prohibited;
143 h. screening that satisfies Section 59.6.5.3.C.8 (Option A) on the
144 sides of the facility within 200 feet of any neighboring house is
145 required; however, a fence may not be required or prohibited;
146 i. written authorization from the local utility company that allows
147 the Solar Collection System to be connected to the utility grid
148 must be submitted; and
149 j. the land area approved, in addition to all other site plan
150 approvals, will not exceed 1,800 acres of land.

151 * * *

152 **Sec. 3. Reporting.** On April 1, 2021 and annually thereafter, the
153 [[Department of Permitting Services]] Planning Director must report to the County
154 Council the total acreage of Solar Collection System [[permits]] site plans
155 approved by the Planning Board in the Agricultural Reserve [[approved by the
156 Department]] since the effective date of ZTA 20-01.

157 **Sec. 4. Effective date.** This ordinance becomes effective 20 days after the
158 date of Council adoption.

159

160 This is a correct copy of Council action.

161

162

163 Selena Mendy Singleton, Esq.

164 Clerk of the Council



MONTGOMERY COUNTY PLANNING BOARD
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

OFFICE OF THE CHAIR

February 24, 2020

TO: The County Council for Montgomery County, Maryland, sitting as the District Council for the Maryland-Washington Regional District in Montgomery County, Maryland

FROM: Montgomery County Planning Board

SUBJECT: Zoning Text Amendment No. 20-01

BOARD RECOMMENDATION

The Montgomery County Planning Board of The Maryland–National Capital Park and Planning Commission reviewed Zoning Text Amendment No. 20-01 (ZTA 20-01) at its regular meeting on February 20, 2020. By a vote of 4:0, (Commissioner Cichy absent from the hearing) the Planning Board recommends approval of the ZTA with modifications and additional comments (as discussed below), to revise the Solar Collection System use standards to allow larger facilities in the Agricultural Reserve (AR) zone, amend the provisions for Solar Collection Systems in other zones, and amend the provision for site plan approval in the AR zone. Currently, a Solar Collection System in the Agricultural Reserve is limited to an accessory use.

The Board believes that ZTA 20-01 – if modified as recommended in the separate attached ZTA – can strike a balance in addressing the desire to provide more solar production opportunities in the County, including the ability to provide “Community Solar” benefits to those who cannot, or prefer not to, install solar panels on their homes, with the protection measures for properties that are near these facilities. In the case of solar facilities that are not accessory to a principle use, the legislation continues to require site plan approval and provides limitations on the size of the overall system and the height of any freestanding structure.

For a Solar Collection System located in the AR zone, in addition to the aforementioned standards, inclusion of requirements that the ground underneath the panels have pollinator-friendly plants or is suitable for grazing or crop production, that soil and tree removal is minimized, and that a limitation be placed on the amount of agricultural land that can be developed as a Solar Collection System, further assists in reducing the impacts of solar collection as a principle use in the AR zone. However, the Planning Board is also recommending additional requirements that will further strengthen the goal of having Solar Collection Systems in the AR zone be compatible with other public policy goals including agricultural production, environmental sustainability, and Agritourism. These standards pertain to:

- discouraging development on prime agricultural soils,
- prohibiting development on slopes greater than 15% or on an area that has highly erodible soil; and
- prohibiting development on soils that have been delineated as seasonally flooding or saturated.

In addition, the Board identified important issues to be further discussed during site plan review as follows:

- the protection of scenic views identified in the Rustic Roads Functional Master Plan through site plan review,
- removing the fence requirement in the AR zone, recognizing that screening options can be further examined during site plan review.

The Board also believes that the limited area recommended for inclusion for potential development of Solar Collection Systems in the AR zone (1,800 acres or approximately two percent of the total 93,000 acres of the Agricultural Reserve) represents a small enough area of the Agricultural Reserve to not significantly compromise the Master Plan for Preservation of Agricultural and Rural Open Space's designation of farm land and agriculture as the preferred land use in the Agricultural Reserve. Again, please note that the Planning Board's modified text in the separate attachment to this transmittal, includes several clarifications and additional requirements to further strengthen the protections provided by the ZTA as introduced.

Finally, given the numerous requests by community members to delay action on this ZTA until the Climate Action Plan Technical Workgroups have proposed their comprehensive recommendations on reducing carbon emissions, the Planning Board requests that the County Council consider transmitting ZTA 20-01 to the applicable workgroups for their comments, in lieu of indefinitely tabling the legislation.

CERTIFICATION

This is to certify that the attached report is a true and correct copy of the technical staff report and the foregoing is the recommendation adopted by the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission, at its regular meeting held in Silver Spring, Maryland, on Thursday, February 20, 2020.



Casey Anderson
Chair

CA:GR:aj

Zoning Text Amendment (ZTA) No. 20-01, Solar Collection System - Standards

 Gregory Russ, Planner Coordinator, FP&P, gregory.russ@montgomeryplanning.org, 301-495-2174

 Jason Sartori, Chief, FP&P, jason.sartori@montgomeryplanning.org, 301-495-2172

Completed: 02/13/20

Description

As defined under Section 59.3.7.2.A, Solar Collection System means an arrangement of panels or other solar energy devices that provide for the collection, inversion, storage, and distribution of solar energy for electricity generation, space heating, space cooling, or water heating. A Solar Collection System includes freestanding or mounted devices.

Zoning Text Amendment (ZTA) 20-01 would revise the Solar Collection System use standards to allow larger facilities in the Agricultural Reserve (AR) zone, amend the provisions for Solar Collection Systems in other zones, and amend the provision for site plan approval in the AR zone. Currently, a Solar Collection System in the Agricultural Reserve is limited to an accessory use.

Summary

Staff recommends approval of ZTA No. 20-01, with modifications, to revise the Solar Collection System use standards to allow larger facilities in the Agricultural Reserve (AR) zone, amend the provisions for Solar Collection Systems in other zones, and amend the provision for site plan approval in the AR zone. Staff believes that ZTA 20-01 – if modified as recommended in this report - can strike a balance in addressing the desire to provide more solar production opportunities in the County, including the ability to provide “Community Solar” benefits to those who cannot, or prefer not to, install solar panels on their homes, with the protection measures for properties that are near these facilities. In the case of solar facilities that are not accessory to a principle use, the legislation continues to require site plan approval and provides limitations on the size of the overall system and the height of any freestanding structure.

For a Solar Collection System located in the AR zone, in addition to the aforementioned standards, inclusion of requirements that the ground underneath the panels have pollinator-friendly plants or is suitable for grazing or crop production, that soil and tree removal is minimized, and that a limitation be placed on the amount of agricultural land that can be developed as a Solar Collection System, further assists in reducing the impacts of solar collection as a principle use in the AR zone. However, staff is recommending additional requirements that will further strengthen the goal of having Solar Collection Systems in the AR zone be compatible with other public policy goals including agricultural production, environmental sustainability, and Agritourism. Staff also believes that the limited area recommended for inclusion for potential development of Solar Collection Systems in the AR zone

(1,800 acres or approximately two percent of the total 93,000 acres of the Agricultural Reserve) represents a small enough area of the Agricultural Reserve to not significantly compromise the Master Plan for Preservation of Agricultural and Rural Open Space's designation of farm land and agriculture as the preferred land use in the Agricultural Reserve. Again, please note that within the staff report, staff has recommended several clarifications and recommended additional requirements to further strengthen the protections provided by the ZTA as introduced.

Background/Analysis

On May 15, 2018 the County Council adopted ZTA 18-01 to revise the Solar Collection System use standards to allow larger facilities in Rural Residential, Residential, Commercial/Residential, Employment, and Industrial zones. The sponsors of ZTA 18-01 believed that the public interest would be served by expanding the opportunities for solar production in areas where development is anticipated. The ZTA retained the accessory use limitation on solar collection systems in the Agricultural Reserve (AR) zone. The ZTA included standards to prevent glare and to buffer the facility from surrounding land uses. The ZTA provided more opportunities for community oriented solar facilities. Community oriented solar facilities offer the benefit of solar to those who can't, or prefer not to, install solar panels on their homes. These projects enable individuals, businesses, or organizations to purchase or lease a "share" in a community solar project. Shared solar means photovoltaic (PV) systems can be somewhere else in the community (in a field, on a building, over a parking lot, and elsewhere) but provide the benefits of solar electricity to participating subscribers.

ZTA 20-01, Solar Collection Systems – AR Zone Standards, would allow a targeted deployment of community solar projects on farms in the County's Agricultural Reserve.

Rationale for ZTA Introduction (Excerpt from Fact Sheet prepared by the Sponsors of ZTA 20-01)

ZTA 20-01 would limit the applicability of the legislation to 1,800 acres (or about two percent) of the County's 93,000-acre Agricultural Reserve for community solar as a limited use. Currently, the zoning code prohibits community solar in the Agricultural Reserve.

"As a national environmental leader, Montgomery County has declared a climate emergency and committed to "100 percent elimination" of carbon emissions by 2035 (and 80 percent by 2027). Eliminating carbon emissions will require tackling their sources -- the emissions that come from fossil fuels used to power buildings and transportation, particularly. According to the Metropolitan Washington Council of Governments, 51 percent of County emissions come from the energy used to power our buildings. Achieving a quicker reduction of buildings' emissions requires transforming the sources of energy that our buildings use. That means increasing solar energy production.

Maryland's community solar law allows solar providers to sell solar energy to larger groups of consumers -- groups of houses or apartment communities -- who cannot or have not yet installed solar panels. Community solar farms are smaller than "utility scale" arrays; they only require 10 to 12 acres of land. They may produce up to two megawatts of electricity (or about 4,464,000 kWh's) annually, which replaces energy derived from fossil fuels in the electrical grid.

More specifically, each two-megawatt community solar project avoids the creation of 3,156 metric tons of carbon emissions. That is equivalent to the emissions created by 364 homes in one year. Extrapolating to the full buildout of 1,800 acres in the County's Agricultural Reserve, the solar energy produced would provide enough clean energy for 54,631 homes. Zooming out a bit further, a full buildout under this ZTA would reduce approximately 473,434 metric tons of carbon emissions, or 4.4 percent of the County's total emissions. That would be a sizable step toward meeting the County's climate goals. By contrast, rooftop solar mandates for new construction would take decades to achieve the same level of energy substitution and emissions reduction."

ZTA 20-01 includes a number of provisions to support agriculture, including requirements that the ground under the panels have pollinator-friendly plants or is suitable for grazing and that soil and tree removal is minimized. It also has site size, setback, height and fencing requirements. The goal of this ZTA is to get solar deployed quickly while limiting its impact on the overall Agricultural Reserve. To achieve that balance, community solar is limited to two percent of the Agricultural Reserve (1,800 acres).

Specifically, ZTA 20-01 modifies the Solar Collection System provisions as discussed below:

- **Eliminates the limited use provision requiring that a Solar Collection System located in the Agricultural Reserve zone only be an accessory use.** The ZTA retains language allowing a Solar Collection System as an accessory use in the Agricultural Reserve, Rural Residential, Residential, Commercial/Residential, Employment, and Industrial zones but does not require such. In addition to the current standards for a Solar Collection System in the non-Agricultural Reserve zones (see bullet below), the limited use standards for solar as a principle use in the Agricultural Reserve zone include several of the applicable existing accessory use standards (written authorization from the local utility company when proposed to be connected to the grid, and prohibition of the removal of trees or landscaping otherwise required or attached as a condition of approval of any plan, application, or permit), and two additional standards requiring that: the site be designated pollinator-friendly under the Maryland Pollinator-Friendly Designation Program¹ (except as allowed under Subsection 59.7.3.4.E.5.b., site plan review, necessary findings); and cumulatively, on all AR zoned land, a maximum of 1,800 acres of land may be covered by solar panels. Under the Necessary Finding for site plan review, property zoned AR proposed for use as a Solar Collection system must: minimize grading and any soil removal; and be designated pollinator-friendly under the Maryland Pollinator-Friendly Designation Program, or any land on which the solar generation facility is located that is not designated as pollinator friendly must be planted, managed, and maintained in a manner suitable for grazing farm animals. *(Lines 12-36, 48-77 and 84-92)*
- **In Rural Residential, Residential, Commercial/Residential, Employment and Industrial zones, where a Solar Collection System is allowed as a limited use, the ZTA continues to allow the use as an accessory use or as a principle use.** As an accessory use, the standards as proposed under

¹ The Pollinator-Friendly Designation Program bill (SB 1158) was signed by Governor Larry Hogan in May 2017. SB 1158 established a pollinator-friendly designation program for commercial ground-mounted solar facilities. The bill has a scorecard attached which will serve as the initial basis for pollinator-friendly designation of a site.

Subsection 3.7.2.B.2.a. apply (all of which were originally included under the accessory use provisions under the Agricultural Reserve zone). These include:

- the system produces a maximum of 120% of on-site energy consumption;
- encroachment allowed under Section 4.1.7.B.5.C (*may project a maximum of 3 feet into any side setback, or any side street setback of less than 25 feet and may project a maximum of 9 feet into any front setback, rear setback, or any side street setback where the side street setback is a minimum of 25 feet*); and
- a maximum height allowed under 4.1.7.C.3.b. (*maximum height does not apply to solar panels, except in the CRT, CR, Employment, and Industrial zones, solar panels may exceed the established height limit by up to 8 feet, except when located within an airport approach area*)

As a principle use, the following limited use standards apply (*Lines 48-77*):

- Site plan approval is required
- The site must be a minimum of 3 acres in size
- All structures must be: 20 feet in height or less; at least 50 feet from any property line; and surrounded by a minimum 6-foot-tall fence. **Staff believes that fencing should not be allowed to surround a Solar Collection System in the AR zone, as this standard would be unsuitable for establishing grazing for animals. Staff has modified the ZTA to reflect this recommendation.**
- If located in an area visible to an abutting residential use or a road: only solar thermal or photovoltaic panels or shingles may be used; the panels or shingles must use textured glass or an anti-reflective coating; and screening that satisfies Section 59.6.5.3.C.8 (Option A) on the sides of the facility visible from the residential use or road is required (minimum depth of screening must be between 30 and 50 feet and must include a 6 foot in height fence or wall).
- The Solar Collection System must be removed within 12 months of the date when the use is discontinued or abandoned by the system owner or operator, or upon termination of the useful life of the system.
- A system designed to produce more than 2 megawatts (AC) may be allowed as a public utility use.

Community Correspondence

Concerns have been expressed about ZTA 20-01 in that it: would take fertile farmland out of production; would price farmers out of the Ag Reserve; would possibly damage habitats and forests; is not in line with the master plan; takes green space and sites panels far from power infrastructure.

The comments further recommend that this ZTA be tabled until the Climate Action Plan Technical Workgroups² have proposed their comprehensive recommendations for how the County can reduce its carbon emissions. They believe that this County-funded, collaborative and public effort should guide next steps.

Staff Comments

As written, the ZTA requires all Solar Collection Systems (SCS) located in the AR Zone to be Pollinator-Friendly or suitable for grazing. The text makes no distinction as to whether this applies to an accessory SCS and a SCS as a principle use or to only the SCS as a principle use. Staff assumes that this standard would apply only to a SCS as a principle use given that the Pollinator-Friendly Program is intended for commercial ground-mounted solar facilities. *Staff recommends clarifying the ZTA language to reflect that only in the case of a SCS as a principle use is the ground beneath the panels required to include pollinator-friendly plants or be suitable for grazing of animals. In addition, staff not only believes that land could be made suitable for grazing of animals, but also could be made suitable for crop production. Staff has modified the ZTA language to reflect this recommendation.*

The ZTA also carries forward existing restrictions on accessory SCSs in the AR zone (written authorization from the local utility company when connected to the grid, and a prohibition of the removal of trees or landscaping otherwise required or attached as a condition of approval of any plan, application, or permit) for any SCS in the AR zone. *Staff believes that these two restrictions should be applied to SCSs in all zones.*

Staff further recommends the following additional standards for the placement of a Solar Collection System as a principle use in the AR Zone:

- 1) The use must not be located within a scenic view identified in the Rustic Roads Functional Master Plan
- 2) The use must not be located on Prime Agricultural Soils as identified by USDA or Montgomery County Soil Conservation Service
- 3) The use must not be located on naturally occurring slopes in excess of 8%
- 4) The use must not be located on soils that are seasonally flooded or saturated as identified by USDA or Montgomery County Soil Conservation Service

Conclusion

Staff believes that ZTA 20-01 – with the recommended modifications – can strike a balance in addressing the desire to provide more solar production opportunities in the County, including the ability to provide

² In July 2019, Montgomery County launched a planning process to develop prioritized actions and strategies to meet the County's greenhouse gas emissions reduction goals. The County intends to finalize a Climate Action Plan by December of 2020 that will provide a roadmap to achieve carbon neutrality and will also include recommendations for adapting to a changing climate. (For more information, visit <https://www.montgomerycountymd.gov/green/climate/climate-action-planning.html>.)

“Community Solar” benefits to those who can't, or prefer not to, install solar panels on their homes, with the protection measures for properties that are near these facilities. In the case of solar facilities that are not accessory to a principle use, the legislation continues to require site plan approval and provides limitations on the size of the overall system and the height of any freestanding structure.

For a Solar Collection System located in the AR zone, in addition to the aforementioned standards, inclusion of a requirement that the ground underneath the panels have pollinator-friendly plants or is suitable for grazing or crop production, that soil and tree removal is minimized, and that a limitation be placed on the amount of agricultural land that can be developed as a Solar Collection System, further assists in reducing the impacts of solar collection as a principle use in the AR zone. Staff believes that the limited area recommended for inclusion for potential development of Solar Collection Systems in the AR zone (1,800 acres or approximately two percent of the total 93,000 acres of the Agricultural Reserve) represents a small enough area of the Agricultural Reserve to not significantly compromise the Master Plan for Preservation of Agricultural and Rural Open Space’s designation of farm land and agriculture as the preferred land use in the Agricultural Reserve.

Staff has included, as a modification to the ZTA (Attachment 1), *clarifying language to reflect that only in the case of a Solar Collection System as a principle use is the ground beneath the panels required to include pollinator-friendly plants or is made suitable for grazing of animals or crop production. Staff also believes that the language currently proposed only for the AR zone that requires written authorization from the local utility company when a Solar Collection System is proposed to be connected to the grid, and the language prohibiting the removal of trees or landscaping otherwise required or attached as a condition of approval of any plan, application, or permit, should be included for all zones.*

Staff has also included in the modified ZTA language, several additional standards that further protect the integrity of the Agricultural Reserve. These standards pertain to protection of scenic views, discouraging development on prime agricultural soils, prohibiting development on slopes greater than 8% and prohibiting development on soils that have been delineated as seasonally flooding or saturated.

Attachments

1. ZTA No. 20-01 as modified by staff.

Good evening. Adriana Hochberg testifying on behalf of County Executive Elrich.

Combatting the climate emergency calls for transitioning to renewable sources of energy, including locally-generated solar energy. At the request of the County Executive, an interdepartmental “solar mapping” team began meeting in November 2019 to discuss to what extent solar power can meet our county’s future energy needs. We looked at how much solar has already been installed, how much electricity the county would need to meet three different scenarios of fossil-fuel replacement, and how each scenario would translate to acreage needed for solar installations. (The solar mapping analysis slides are attached here; they will also be posted to the County’s climate planning webpage by the end of the week).

We applied filters to the county’s total land area of 320,000 acres to determine the theoretical area available for ground-mounted solar installations. In the subset of 94,000 acres in the Agricultural Reserve, we used filters based on soil quality, tree cover, 150’ buffers from hydrologic features, proximity to utility substations, and agricultural easements – filters that would protect the environment and retain the primary purpose of the Agricultural Reserve, which is to promote agriculture as the primary land use. The results of this mapping exercise indicate that, at best, approximately 900 acres of open land in the Ag Reserve might be able to accommodate ground-mounted solar installations. These results don’t support ZTA 20-01’s designation of up to 1,800 cumulative acres in the Ag Reserve to be covered with solar panels.

We found that if we want to use solar power to replace all current electricity consumption and electrify transportation and natural gas appliances, we would need somewhere between 43,000 and 170,000 acres of open land – a wide divergence of estimates resulting from differing calculations used to determine the amount of sunshine (and, therefore, solar power) we can expect in an average year. That said, even the smaller number is a vast amount of acreage, so we looked beyond the Ag Reserve to open land in other rural and urban areas, parking lots, garages, roof areas, and under transmission lines. The data provides a reality check – all in, these areas get us to about 30,000 acres under the most optimistic calculations.

The County Executive believes this demonstrates the complexities as well as the urgency of responding to climate change, requiring us to rethink the way we meet our energy needs and to find ways to use energy more efficiently. Our solar mapping team has recommended looking at several initiatives, including ways to remove potential barriers to solar implementation; what the state and other local jurisdictions are doing to incentivize solar; reviewing up-and-coming solar technologies such as solar roads and sidewalks, solar windows, solar walls, and solar fabrics; net metering laws; local zoning and land use laws; upfront costs; access to unbiased information; and opportunities for off-shore wind. In addition, the climate workgroups developed recommendations for greening the energy supply and expanding the use of distributed renewable

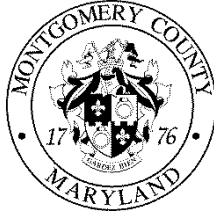
energy in the county; their recommendations are now available for public review and comment on the County's climate webpage (montgomerycountymd.gov/climate)

Based on the work done by the solar mapping team and by the climate workgroups over the last several months, the County Executive believes it is premature to adopt legislation that sets potential acreage for solar arrays in the Ag Reserve at twice the number of acres identified as possibly suitable through our mapping process. The primary function of the Agricultural Reserve is – and should remain - agricultural production. It is extremely important to preserve its integrity. Local food production and regenerative farming are important tools to help the county become more resilient to a changing climate and to sequester carbon—pulling it out of the atmosphere and into the soil.

In conclusion, while it is reasonable to expect that all parts of the County should contribute to local solar generation, we should avoid placing solar panels on productive agricultural soils. To the extent that solar is sited within the Agricultural Reserve, it should be limited to unused land that isn't productive and falls outside of the other filters identified by the solar mapping team. The county will be well served if our approach to solar generation is countywide in scope and includes major efforts to reduce energy usage.

The County Executive asks that you factor in this additional information when considering the changes being proposed in ZTA 20-01. Members of our solar mapping team are available to the PHED Committee and councilmembers during the review process. The County Executive will be providing technical comments on the ZTA later in the process.

Thank you.




OFFICE OF THE COUNTY EXECUTIVE
Rockville, Maryland 20850

Marc Elrich
County Executive

MEMORANDUM

July 14, 2020

TO: Montgomery County Council

FROM: Marc Elrich, County Executive 

SUBJECT: ZTA 20-01, Solar Collection Systems – AR Zone Standards

Because the Executive branch will be responsible for implementing this zoning text amendment if adopted, I would like to request some clarifications and make some additional comments based on last week's discussions at the joint PHED/T&E Committee meeting and Councilmember Friedson's proposed amendments to ZTA 20-01. These are from members of my inter-departmental working group as well as from me.

We would like the joint committees to discuss the discrepancy regarding the determination of soil classifications, as well as its significance. While the Planning Department relied on a 1984 USDA Soil Survey to determine the number of acres of class I, II, and III soils in the Ag Reserve, my inter-departmental working group relied on the 1995 Montgomery County Soil Survey. I understand that the Planning Department has deferred to the working group's assessment, which is based on land classifications required by the Maryland Agricultural Land Preservation Foundation. We have provided our mapping under separate cover and continue to support the prohibition of solar collection systems in soil classes I, II, and III.

ZTA 20-01 should include language that makes it clear that the legislative intent is to retain the stated primary purpose of the Agricultural Reserve while allowing community solar systems (up to 2MW). Absent a strong statement of intent, the ZTA would lay the groundwork for those who want to make the case for utility-scale systems in the Agricultural Reserve. While every part of the county should be part of the move toward renewable energy resources, we should take every possible step to ensure that the primary, preferred land use in the 40-year-old landmark Agricultural Reserve remains agriculture. This can be accomplished by using the term "Community Solar Collections Systems" based on the state's definition of the term. Limitations on the size of solar uses can also be accomplished by revising the definition of an accessory use or limiting community solar systems to no more than 2MW or 49% of a property, whichever is less. Councilmember Friedson's proposed amendment to allow accessory solar facilities to produce 200% on site in the AR zones (rather than the current 120%) is another way to achieve your goal of increasing the production of solar energy without unduly compromising the Ag Reserve. The Office of Agricultural Services will be available on Thursday talk about the practical effects of this proposed amendment.

We believe stronger language is needed to protect trees and landscaping in the Ag Reserve (see Section 3.7.2.B.1.b in the ZTA as introduced). The ZTA allows the Planning Board to make decisions regarding their removal as part of its site plan review process. Given the importance of forests and tree canopies for carbon sequestration, we must provide full protection in the legislation itself instead of ceding responsibility to site plan review. We also support the protection of scenic views in the Ag Reserve and disagree with the assertion made in last week's committee session that solar panels are scenic. Most people would disagree with that assertion, an important point to consider as we seek to increase agritourism.

Finally, I would like to thank committee members for giving the Office of Agricultural Services the opportunity to participate last week. They and other members of the working group have done extensive work to accommodate the dual goals of finding sources for renewable energy while recognizing the importance of the Ag Reserve as a source of local food, clean water, and carbon sequestration. I urge you to call on the team members for background information and essential data during this week's very important discussion.

ME/ci/ah

c: Jeffrey L. Zyontz, Senior Legal Analyst




OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

MEMORANDUM
September 25, 2020

TO: Montgomery County Council

FROM: Marc Elrich, County Executive 

SUBJECT: ZTA 20-01, Solar Collection Systems – AR Zone Standards: Comments on the ZTA as amended by the Joint T&E/PHED Committee

Montgomery County farmers and advocates for the Ag Reserve continue to raise serious concerns about the amended ZTA approved by a majority of the Joint Committee members after their meetings in July. I share their concerns and hope the full council will discuss them as you consider whether to adopt this ZTA – it is important that their voices be heard as we seek the right balance between the need for renewable energy and the equally important need to protect the Ag Reserve’s vital contributions to local food production, clean water, and carbon sequestration.

Chief among their concerns is the protection of the farmland best suited for growing crops in Montgomery County. As approved by the joint committee, the ZTA would not allow the location of a Solar Collection System on soils classified by the United States Department of Agriculture as Soil Classification Category I. Exempting only Class I soils is an empty gesture; there are only 2,464 acres of Class I soil in the Ag Reserve, generally found along the Potomac River in floodplains that cannot be legally built upon. The chart below shows that the majority of the *prime and productive soils* in the Ag Reserve are designated Soil Class II; if solar collection systems are allowed on these soils, farmers could lose some of the most productive farmland, something of particular concern to the 60% of farmers who rely on the ability to lease farmland.

Soil Class	Total Acres	Prime Acres	% Prime
I	2,464	2,464	100%
II	48,391	30,479	63%
III	33,154	-	0%
IV+	19,669	-	0%
Water	2,861	-	0%
Totals	106,539	32,943	

September 25, 2020

Page 2

I am also concerned about the potential loss of forested land. As currently written, the ZTA says only that the removal of trees or landscaping “otherwise required or attached as a condition of approval of any plan, application, or permit for the installation or operation of a Solar Collections System is prohibited.” There is no language that specifically prohibits the removal of forests.

Some owners in the Ag Reserve have already installed solar arrays as an accessory use. These solar collection systems are now limited to producing 120% or less of on-site energy use. The ZTA proposes to increase that limit to 200%, something that seems to have support from both farmers and advocates who point out that these systems provide a renewable energy source while preserving the primary purpose of the Ag Reserve, which is agriculture.

Councilmember Riemer has frequently mentioned the great potential for the coexistence of solar arrays and agriculture, specifically citing the successful cultivation of agrivoltaic crops under solar panels in other parts of the country as well as in other countries. While these cases are intriguing, it is essential that we understand whether, to what extent and how such farming could be successful in Montgomery County, particularly since this is cited as a reason to allow larger solar collection systems in the Ag Reserve. The Executive Branch is currently exploring the possibility of establishing an agrivoltaic pilot program, as well as looking into regional research and analysis on what conditions are necessary for successful agrivoltaic farming.

One of the reasons this ZTA may have generated such widespread concern is that it focuses on allowing larger solar collection systems in the Ag Reserve without a broader understanding of where and how we can deploy solar throughout the entire county to meet our renewable energy goals. Given that agricultural land is a finite resource I hope these concerns will continue to be part of the full council’s discussion as this ZTA moves through the review process.

c: Jeffrey L. Zyontz, Senior Legal Analyst

APPENDIX II:

Table 1: List of Pollinator-Friendly Designated Plants:

<p><u>Native Perennial Flowers (Early Season: April - June):</u> Field Pussytoes Wild Columbine False Blue Indigo Yellow Wild Indigo Lanceleaf Coreopsis Threadleaf Coreopsis Dutchman’s Breeches Wild Geranium Golden Ragwort Foxglove Beardtongue Eastern Smooth Beardtongue Creeping Phlox Wild Blue Phlox Moss Phlox Bloodroot Foamflower Violets Golden Alexander</p>	<p><u>Native Perennial Flowers (Mid-Season Bloom: July/August):</u> Swamp Milkweed Common Milkweed Butterfly Weed Pink Tickseed Purple Coneflower Joe Pye Boneset Common Sneezewood Perennial Sunflowers Oxeye Sunflower Blazing Star Cardinal Flower Great Blue Lobelia Scarlet Bee Balm Wild Bergamot Spotted Bee Balm (Horsemint) Obedient Plant Mountain Mint Orange Coneflower Black-eyed Susan Cutleaf Coneflower Spiderwort Culver’s Root</p>	<p><u>Native Perennial Flowers (Late Fall Bloom (September/October):</u> Blue Mistflower Thoroughwort White Wood Aster Brown-eyed Susan Canadian Goldenrod Gray Goldenrod Wrinkleleaf Goldenrod Smooth Aster New England Aster New York Ironweed</p>
<p><u>Non-Native Pollinator-Friendly Plants:</u> Yarrow Anise Hyssop Chives Dill Borage Fennel Blanket Flower Lavender Basil Oregano Parsley Sedum Lemon Thyme Common Thyme</p>	<p><u>Native Trees:</u> Red Buckeye Serviceberry Birch Redbud Hackberry White Fringetree Flowering Dogwood American Holly Tulip Popular American Hophornbeam Sourwood Chokecherry Pin Oak, White Oak, Red Oak Black Locust Black Willow, Pussy Willow Sassafrass Basswood</p>	<p><u>Native Shrubs:</u> New Jersey Tea Buttonbush Summersweet Pagoda Dogwood Silky Dogwood Red Twig Dogwood Smooth Hydrangea Ilex glabra, Inkberry Holly Winterberry Holly Virginia Sweetspire Mountain Laurel Spicebush Sumac Carolina Rose Swamp Rose Virginia Rose Allegheny Blackberry Blueberry Viburnum</p>

List of Agrivoltaic Farms in Maryland:

- A. Fritz Family Farms (New Windsor, Maryland)
- B. Sunnyside Farms Inc. (Westminster, Maryland)
- C. Perdue Farms (Salisbury, Maryland)
- D. District Farms (Frederick County, Maryland) (Approved in June 2020)
- E. Metzger Farm (Fair Hill, Maryland)
- F. Liberty Delight Farms (Reisterstown, Maryland)
- G. Rusty Rooster Farm (Worton, Maryland)

Examples of Agrivoltaic Projects:

- **Pollinator-Friendly Solar Projects**
 - **Perdue Farms**¹ (Salisbury, Maryland) - poultry farm integrated solar panels in a space that was previously just gravel, roughly the same cost to maintain but with more benefit, able to grow soybeans which feed their poultry, along with other pollinator species. In total, more than 250,000 native and pollinator-friendly plants are growing on the solar array adjacent to Perdue Farms' headquarters.
- **Grazers and Solar Panels**
 - **Silicon Ranch** (Tennessee): combination of grazing animal, native plants and solar energy. "Adaptively-managed grazing animals, diverse native plants, pollinator habitat and wildlife work together to revitalize soil, enhance biodiversity and resilient ecosystems, sequester carbon in the soil, and strengthen rural economies."²
 - Sheep Farming- "Sheep are excellent at vegetation maintenance because they eat almost anything that grows and they're short enough to fit under panels and take advantage of their shade and shelter from the elements."³ Collaborative projects between solar farms and sheep farmers in New York, Florida, Tennessee.
- **Regenerative Farming with Solar Energy**
 - **Regenerative Agriculture Meets Solar Farm in New Partnership**⁴
 - "Silicon Ranch has begun implementing regenerative agriculture practices on operating projects in Colorado, Tennessee, Arkansas and Mississippi"⁵ It is possible to combine regenerative farming practices with solar energy.
 - "Using native plants as ground cover can help recharge groundwater, reduce erosion, and improve soil carbon sequestration."⁶
- **Solar Farm Apiaries**
 - **Bees Find Solar Sanctuary**⁷
 - **Flowering Solar Farms**⁸
 - **The New Fallow Land: Bees and Solar Farms**⁹
- **Wineries and Solar Power**

¹ <https://www.solarpowerworldonline.com/2020/06/perdue-farms-pollinator-friendly-solar-project/>

² <https://www.solarpowerworldonline.com/2019/06/silicon-ranch-sets-up-program-to-bring-more-grazing-animals-and-native-plants-to-its-solar-projects/>

³ <https://www.solarpowerworldonline.com/2020/01/solar-sheep-are-eating-away-at-the-om-competition/>

⁴ <https://blog.whiteoakpastures.com/blog/regenerative-energy-solar-farm-silicon-ranch>

⁵ <https://www.solarpowerworldonline.com/2019/06/silicon-ranch-sets-up-program-to-bring-more-grazing-animals-and-native-plants-to-its-solar-projects/>

⁶ <https://www.triplepundit.com/story/2020/pollinator-solar-panels/120691>

⁷ https://2lwej44565m2mmjlk31pmwq-wpengine.netdna-ssl.com/wp-content/uploads/2019/03/ABF_Quarterly_Q3_final.pdf

⁸ <https://2lwej44565m2mmjlk31pmwq-wpengine.netdna-ssl.com/wp-content/uploads/2019/03/Jacobs-Flowering-Solar-Farms.pdf>

⁹ <https://2lwej44565m2mmjlk31pmwq-wpengine.netdna-ssl.com/wp-content/uploads/2019/03/Bee-Craft-Jun-2018-bees-and-solar-farms-002.pdf>

- [Windridge Vineyards](#) (Montgomery County, MD)
- [Sunset Hills Vineyard](#) (Purcellville, VA)
- [Honig Vineyard & Winery](#) (Rutherford, CA)
- [Jordan Vineyard & Winery](#) (Healdsburg, CA)
- [Chateau Montelena Winery](#) (Calistoga, CA)
- **Crop Production and Solar Panels:**
 - **List of Common Crops grown under solar panels:** Tomatoes, peppers, beans, carrots, chard, kale, and herbs
 - **Benefits of crop production and solar panels:** Solar panels can benefit crops by keeping them cool during the day due to shading and warmer at night, with the impacts of climate change, protecting crops and increasing yields is more important than ever. Research has shown that solar panels integrated into agriculture can have the potential for reduced water combustion for crops and the water release from the crops to keep the panels cooler, allowing them to be more efficient.



**Maryland's INITIAL Solar Site Pollinator Habitat
Planning and Assessment Scorecard**
Circle each applicable point and then sum/minus.

1. Percent of facility to be planted, seeded or maintained with native plant species:

- 16-30 percent 5 points
- 31-50 percent 10 points
- 51-75 percent 20 points
- 76 percent or greater 30 points

2. Percent of facility to be planted, seeded or maintained with a mix of native flowering plants including trees and shrubs:

- 16-30 percent 5 points
- 31-50 percent 10 points
- 51-75 percent 20 points
- 75 percent or greater 30 points

3. Flowering plant seed mix to be used includes ten or more plant species appropriate for the region or local habitat identified in the USDA-NRCS Maryland Native Grass and Wildflower Mixes for dry, mesic or wet sites (Mixes 15, 16 or 17): 5 points

4. Seed mix and/or plants used are pesticide-free, local ecotypes to the extent that it is possible to do so:

- Yes 10 points
- No 0 points

5. Amount of seed to be planted (lbs/acre) is determined according to seed provider's recommended application rate and/or planting density for planted species in the target area: 5 points

6. Pollinator seed mix includes species that bloom across spring, summer and fall:

- Yes 15 points
- No 0 points

7. The facility follows established best management practices for site preparation prior to seeding and planting (add all that apply):

- Initial herbicide treatment (chemical burn) or scraping of weeds and annual grasses 5 points
- Disking or tilling soil to promote weed seed germination with follow-up herbicide treatment 5 points
- Follow up maintenance as needed to control weeds 5 points

8. Planned existing best management practices follow established USDA-NRCS Job Sheet Recommendation (Conservation Cover – 327, Herbaceous Plantings for Pollinator Habitat) and Implementation Requirements including (add all that apply):

- Pre-establishment mowing of weeds and annual grasses as needed during initial planting period 5 points
- Spot herbicide or mechanical invasive species control 5 points
- Spot herbicide or mechanical woody species control 5 points
- Overseeding or interseeding native wildflowers 5 points
- Post-establishment mowing in dormant season only 10 points
- Establishment of a detailed habitat maintenance plan 10 points

9. Additional facility practices to support pollinators include (add all that apply):

- Water source 5 points
- Ground nesting sites (small areas of bare ground) 5 points
- Cavity nesting sites (fallen logs, shrubs, snags) 5 points
- Woody stems for nesting left >2 years 5 points
- Bee Boxes or Bat Boxes 5 points

10. Minimum panel height supports native flowering plants and grasses:

- 12-18 inches 0 points
- 24-30 inches 10 points
- 36 inches or higher 20 points

11. Vegetation buffer outside solar array (add all that apply):

- At least 50% planted with native flowering plants 10 points
- At least 50% planted with native plants 10 points

12. Education and Signage (add all that apply):

- One or more "Pollinator Habitat" signs 5 points
- Facility is used for pollinator research 5 points
- Education Event regarding pollinator-friendly status 5 points

13. Pesticide Risk:

- Routine on-site facility insecticide use -40 points

Point Summary:

Meets Pollinator-Friendly Standards: 160
Exceeds Pollinator-Friendly Standards: 200
Maximum Points Available: 245

Developer:

Facility Location:

Facility Size:

Target Seeding Date:

Send Email or Completed Forms to:

MD Dept. of Agriculture, MD Dept. of Natural Resources, Power Plant Research Program, 580 Taylor Avenue, B-3, Annapolis, MD 21401

PPRP@maryland.gov

Comments: