

MEMORANDUM

January 11, 2021

TO: Planning, Housing, and Economic Development Committee
Transportation and Environment Committee

FROM: Jeff Zyontz, Senior Legislative Analyst

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

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

Potential Participants:

Casey Anderson, Chair, Montgomery County Planning Board
Robert Kronenberg, Deputy Director, Planning Department
Ben Berbert, Zoning Coordinator, 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
Doug Lechliden, Stakeholder Co-Chair
Leslie Elder, Stakeholder Co-Chair
Jeremy Criss, Director, Office of Agriculture
Mike Scheffel, Director of Planning and Promotions, Office of Agriculture

Background

On October 13, 2020, the Council conducted a worksession on ZTA 20-01.¹ Without taking any formal action, the Council postponed action on the ZTA until it could consider the future recommendations from stakeholders appointed by then-Council President Katz and Councilmember Riemer, and the joint Committee's consideration of those recommendations.

Councilmember Riemer and then-Council President Katz each appointed 4 people to be on the stakeholder group.² The stakeholders conducted five Zoom meetings. These meetings were observable by anyone

¹ The Council had previously postponed worksessions scheduled for September 29 and October 6, 2020.

² Doug Lechliden, Co-Chair; Leslie Elder, Co-Chair; Randy Stabler; Caroline Taylor; Lauren Greenberger; Al Bartlett; Douglas Boucher; and Frances Yuhas.

interested in the subject matter. Those interested parties were also free to comment to the appointed stakeholders during the process. The starting point for the stakeholders' conversation was ZTA 20-01 with the amendments recommended by the joint Committee.

In spite of the shortcomings of Zoom meetings and the interruption by a pandemic, Thanksgiving, Christmas, New Years, two Senate races in Georgia, and an insurrection at the Capitol Building, the stakeholders produced three documents. Staff stands in awe of the group's dedication. Despite all the internal pressures, external pressures, and strongly held opinions, the stakeholders upheld the County's tradition of civil discourse. The stakeholders produced "joint" recommendations (© 62-64; the recommendations are repeated word for word in the memorandum) and two minority reports. There are separate reports by the Environmental and Solar Farm stakeholders (©67-80) and the Agricultural Reserve stakeholders (©81-85).³ The joint recommendations are completely repeated in this memorandum. The recommendations of the two minority reports are noted in other sections.

This memorandum has four sections: I) Recommendations made by a majority of stakeholders; II) Issues raised by stakeholders with no majority opinion; III) Issues addressed in stakeholder reports that were previously considered by the joint Committee; and IV) Other changes suggested by Councilmember Reimer (with stakeholder recommendations noted).

I. Recommendations made by a majority of stakeholders (©65-66)

- 1) Add COMAR 20.62 to line 12 in the ZTA.

Staff Note: No problem.

- 2) Ensure the PSC language is removed.

Staff Note: Currently, the zoning code indicates that solar facilities larger than 2 MG are to be treated as a public utility use. ZTA 20-01 as introduced would have conceded that the Public Utility Commission has authority over such facilities. Deleting lines 97 to 100, which reference the Public Utility Commission's authority, was previously recommended by the joint Committee. No change is needed from the joint Committee-recommended amended ZTA.

- 3) Add language that Montgomery County will not allow facilities larger than 2 MW in the Agricultural Reserve.

Staff Note: The Court of Appeals has determined that local zoning is preempted by the State law concerning facilities that require a certificate of public convenience and necessity by the Public Service Commission. Board of County Commissioners of Washington County v. Perennial Solar, LLC (Md. July 15, 2019).

The Public Service Commission must give "due consideration" to local zoning restrictions, but local zoning need not be respected. Washington County prohibited a large solar installation; the Court of Appeals allowed it to proceed.

³ The Environmental and Solar Farm stakeholders workgroup is composed of Al Bartlett, Doug Boucher, Leslie Elder and Franny Yuhas. The Agricultural Reserve stakeholders workgroup is composed of Doug Lechlides, Randy Stabler, Lauren Greenberger, and Caroline Taylor. Staff uses the "names" that the groups used themselves in the titles of their reports.

Unless a land use is allowed in the Zoning Ordinance, it is prohibited under Section 3. 1.2.E.1. With that proposition, it is bad form to list some prohibited uses and exclude other prohibited uses. The Council could amend the zoning provisions defining a Public Utility Structure to exclude large solar facilities located in the AR zone, but Staff does not recommend such an amendment.

E. Public Utility Structure

1. Defined

Public Utility Structure means a utility structure other than transmission lines or pipelines. Public Utility Structure includes structures for the occupancy, use, support, or housing of switching equipment, regulators, stationary transformers, and other such devices for supplying electric service or other public utilities. A Public Utility structure does not include a Solar Collection System larger than 2MW in the Agricultural Reserve Zone.

- 4) Require Solar Developers to report all acres to be used for the solar facility, including any acres to adhere to the provisions required in the ZTA for setbacks, etc. in the site development plan required for permitting projects. This shall not include only the acres under the photovoltaic panels but shall also include all acres within the fenced or shrubbed area.

Staff Note: As recommended by the joint Committee, the Planning Director would be responsible to report the total acreage of site plans for solar collection systems in the AR zone approved by the Planning Board in the Agricultural Reserve. (See lines 152 to 155.) The stakeholder recommendation adds detail to what would be counted.

The stakeholder's recommendation could be achieved by amending lines 152 to 155 to read:

On April 1, 2021 and annually thereafter, the Planning Director must report to the County Council the total acreage of Solar Collection System site plans (including any required setbacks and all acreage within the fenced or shrubbed area of the solar facility) approved by the Planning Board in the Agricultural Reserve since the {effective date of ZTA 20-01}.

- 5) Require that the Office of Agriculture be involved in reviewing and making recommendations on the approval of solar projects in the AR zone.⁴

Staff Note: The Zoning Ordinance does not regulate the Office of Agriculture's work program. The Zoning Ordinance may require Planning staff to ask the Office of Agriculture for its comments and recommendations but cannot require the Office's involvement. Section 7.3.4.D can be amended to read as follows:

D. Review and Recommendation

1. State and County Agencies

⁴ If non-accessory use facilities in the AR zone require conditional use approval, then Farmer and Conservationist stakeholders want the Office of Agriculture to review and provide recommendations to the Hearing Examiner for each project application within the same timeframe provided to the Planning Board to prepare and remit their recommendations.

- a. Reviewing State and County agencies and utilities must submit initial comments before the Development Review Committee meeting established under the Planning Department's Development Review Manual. For any solar facility site plan application in the AR zone, the Office of Agriculture must be treated as a reviewing County agency.

There is a separate recommendation in the Agricultural Reserve stakeholders' minority report to require that the Office of Agriculture review and provide recommendations on applications with slopes greater than 8%, to ensure soil erosion is minimized.

Staff Note: As drafted, the Office of Agriculture could make recommendations on any site plan application for a solar facility in the AR Zone. A review of only projects with a slope greater than 8% is unnecessary.

6) Non-zoning issues

- A. Tax resources from Community Solar and Aggregate Net Metered solar projects developed under the ZTA should be earmarked to support farming-related services in the County; examples are:
 - Rent relief
 - Land preservation
 - Support for young farmers
 - Promotion of table crops
 - Other agriculture-related support
 - Preference will be given to Black and Hispanic farmers in allocating these tax resources.
- B. The Council will identify best farm-related uses of these resources through consultation with the farming community and the Office of Agriculture.
- C. As needed, a portion of tax resources from Community Solar and Aggregate Net Metered solar projects should be earmarked for the Office of Agriculture, the Montgomery County Farm Bureau, and/or other entities designated by the Montgomery County Council for program implementation.

Staff Note: Please leave this issue for worksessions on a Bill to accomplish the stakeholders' goals. Councilmember Friedson intends to introduce a Bill on January 19, 2021 concerning the dedication of business personal property tax revenue from solar facilities in the AR zone to the purchase of Agricultural Preservation easements. A copy of that Bill is attached at ©61-64.

The Environmental and Solar Farm stakeholders' minority report included a recommendation for a payment in lieu of tax program for solar farms.

II. Issues raised by stakeholders with no majority opinion

- 7) *Should all facilities larger than one sized to produce 200% of on-site electrical use be approved as a conditional use?*

This was supported by the Agricultural Reserve stakeholders (©81-85) and opposed by half of the stakeholders (©67-79).

Some land use classifications require conditional use approval. These uses require a subjective finding that the use would be compatible with its surroundings. All conditional uses require a detailed application⁵, a quasi-judicial hearing, and approval of the Hearing Examiner based on the findings required by the Council.⁶ The decision of the Hearing Examiner can be appealed to the Board of Appeals and the Circuit Court. As introduced, ZTA 20-01 would not require conditional use approval.

⁵ Section 59.7.3.1.B

The applicant must submit the following for review:

- a. application form and fees as approved by the District Council;
- b. proof of ownership or authorization;
- c. statement of how the proposed development satisfies the criteria to grant the application;
- d. certified copy of official zoning vicinity map showing the area within at least 1,000 feet surrounding the subject property;
- e. list of abutting and confronting property owners in the County tax records;
- f. list of any civic, homeowners, and renters associations that are registered with the Planning Department and located within 1/2 mile of the site;
- g. Traffic Statement or Study, accepted for review by the Planning Director;
- h. map showing existing buildings, structures, circulation routes, significant natural features, historic resources, zoning, and legal descriptions on the proposed development site and within 500 feet of the perimeter boundary;
- i. existing and proposed dry and wet utility plan if changes to these facilities are proposed;
- j. written description of operational features of the proposed use;
- k. if exterior changes are proposed, plans of the proposed development showing:
 - i. footprints, ground-floor layout, and heights of all buildings and structures;
 - ii. required open spaces and recreational amenities;
 - iii. layout of all sidewalks, trails, paths, roadways, parking, loading, and bicycle storage areas;
 - iv. rough grading;
 - v. landscaping and lighting;
 - vi. approved Natural Resources Inventory/Forest Stand Delineation, if required under Chapter 22A;
 - vii. Forest Conservation Plan application, if required under Chapter 22A, or an approved preliminary forest conservation plan; telecommunication tower applications must include an approved Forest Conservation Plan or a letter from the Planning Department confirming that a Forest Conservation Plan is not required under Chapter 22A;
 - viii. Stormwater Management Concept or Water Quality Plan application, if required under Chapter 19 ; and
 - ix. supplementary documentation showing or describing how the application satisfies previous approvals and applicable requirements.
- l. development program and inspection schedule detailing any construction phasing for the project; and
- m. for a telecommunication tower application, photographic simulations of the tower and site seen from areas with a direct view of the tower, including a minimum of at least 3 directions.

⁶ Section 59.7.3.1.E

1. To approve a conditional use application, the Hearing Examiner must find that the proposed development:
 - a. satisfies any applicable previous approval on the subject site or, if not, that the previous approval must be amended;
 - b. satisfies the requirements of the zone, use standards under Article 59-3, and to the extent the Hearing Examiner finds necessary to ensure compatibility, meets applicable general requirements under Article 59-6;
 - c. substantially conforms with the recommendations of the applicable master plan;
 - d. is harmonious with and will not alter the character of the surrounding neighborhood in a manner inconsistent with the plan;
 - e. will not, when evaluated in conjunction with existing and approved conditional uses in any neighboring Residential Detached zone, increase the number, intensity, or scope of conditional uses sufficiently to affect the area adversely or

It is not necessary to make solar facilities in the AR zone a conditional use for the purpose of requiring a finding of conformance with the Functional Plan for the Preservation of Agriculture and Rural Open Space. Site plan approval requires a Planning Board finding that the plan “substantially conforms with the recommendations of the applicable master plan and any guidelines approved by the Planning Board that implement the applicable plan”.⁷

There are no hard and fast rules for when a conditional use is required. The same land use may require conditional use approval, depending upon certain circumstances.⁸ It does give jurisdiction to the Hearing Examiner to make the initial determination of approval. Site plan approval by the Planning Board would still be required if the conditional use is approved.

The Office of Agriculture found that Howard and Baltimore Counties required conditional use approval for solar facilities in agricultural areas. Prince George’s and Frederick Counties did not require conditional use approval.

In the past 2 years, the typical (median) conditional use approval has taken 6.2 months from the time of application to the Hearing Examiner’s written decision.⁹ An appeal to the Board of Appeals with a granted request for oral argument would add approximately 3 months to the process.

-
- alter the predominantly residential nature of the area; a conditional use application that substantially conforms with the recommendations of a master plan does not alter the nature of an area;
- f. will be served by adequate public services and facilities including schools, police and fire protection, water, sanitary sewer, public roads, storm drainage, and other public facilities. If an approved adequate public facilities test is currently valid and the impact of the conditional use is equal to or less than what was approved, a new adequate public facilities test is not required. If an adequate public facilities test is required and:
 - i. if a preliminary subdivision plan is not filed concurrently or required subsequently, the Hearing Examiner must find that the proposed development will be served by adequate public services and facilities, including schools, police and fire protection, water, sanitary sewer, public roads, and storm drainage; or
 - ii. if a preliminary subdivision plan is filed concurrently or required subsequently, the Planning Board must find that the proposed development will be served by adequate public services and facilities, including schools, police and fire protection, water, sanitary sewer, public roads, and storm drainage; and
 - g. will not cause undue harm to the neighborhood as a result of a non-inherent adverse effect alone or the combination of an inherent and a non-inherent adverse effect in any of the following categories:
 - i. the use, peaceful enjoyment, economic value or development potential of abutting and confronting properties or the general neighborhood;
 - ii. traffic, noise, odors, dust, illumination, or a lack of parking; or
 - iii. the health, safety, or welfare of neighboring residents, visitors, or employees.
2. Any structure to be constructed, reconstructed, or altered under a conditional use in a Residential Detached zone must be compatible with the character of the residential neighborhood.
 3. The fact that a proposed use satisfies all specific requirements to approve a conditional use does not create a presumption that the use is compatible with nearby properties and, in itself, is not sufficient to require conditional use approval.
 4. In evaluating the compatibility of an agricultural conditional use with surrounding Agricultural or Rural Residential zoned land, the Hearing Examiner must consider that the impact does not necessarily need to be controlled as stringently as if it were abutting a Residential zone.

⁷ Section 59.7.3.E.2.g.

⁸ Those circumstances may be the zone, the neighboring zone, the size of the use or the land use on the neighboring site.

⁹ The shortest time to approval was 3.7 months; the longest time was 15 months.

8) Staging

- a. *Should the 1,800 acre limit be split into 2 categories: 900 acres limited to a maximum rate of use of 50MW of solar facilities per year and 900 acres in a pilot project to demonstrate agrivoltaics?*

This recommendation was made by the Environmental and Solar Farm stakeholders (©76-77). The pilot program is complicated and includes property tax recommendations. It recommends that real property taxes remain at “agriculture” and not “commercial” and that personal property taxes be reduced by 75%.

Staff Note: The classification of land as agricultural (farm accessed) and a reduction in personal property taxes are State issues. Even if they were not State issues, tax issues are not zoning issues.

- b. *Should there be a required evaluation after five years or the installation of 25 community solar projects (whichever comes first) by the Office of Agriculture with recommendations to be presented to the County Council for continuation or modification?*

This recommendation was made by the Agricultural Reserve stakeholders (©81-85). As introduced, an uncodified provision of ZTA 20-01 requires an annual report to the Council of the land area with an approved site plan for solar use in the AR zone. As drafted, it does not require an evaluation by the Office of Agriculture.

Staff Note: The recommendation is a sunset provision to have the ZTA expire unless reenacted before the 1,800 acre limit is reached.

9) *Should solar facilities in the AR zone only be allowed if the subscribers are County residents?*

The Maryland Community Solar Program requires the subscribers of a solar facility to be in the same area served by the public utility where the facility is located. Montgomery County is served by PEPCO, Potomac Edison, and Baltimore Gas and Electric. The service areas of those utilities extend beyond Montgomery County’s boundaries. Restricting the Community Solar Program to County resident consumers was supported by the Agricultural Reserve stakeholders (©81-85) and opposed by the Environmental and Solar Farm stakeholders (©75).

Staff Note: The zoning authority of the County does not include the authority to identify the consumers of a product. The Community Solar Program is a State program administered by the Public Service Commission. A County law restricting the State’s Community Solar Program may be subject to challenge based on State preemption.

10) *Should a decommissioning and restoration plan (updated every 5 years) over the life of the project be required?*

A bond or escrow account could be established to cover the cost of removal of the solar installations at the end of the project.

Staff Note: This is an issue for a Bill. It is not a zoning issue.

III. Issues addressed in stakeholder reports that were previously considered by the joint Committee

11) *Should solar facilities unrelated to on-site uses be allowed at all?*

The two minority reports each have general arguments *for* the adoption of ZTA 20-01 (by the Environmental and Solar Farm stakeholders) and *against* the adoption of ZTA 20-01 (by the Agriculture Reserve stakeholders). That material is not addressed in this memorandum. The issue of recommending approval of ZTA 20-01 in any form was previously reviewed by the joint Committee.

12) *Should solar facilities be prohibited on Class II soils as well as on class I soils?*

This was supported by the Agricultural Reserve stakeholders (©81-85) and opposed (described as a poison pill) by the Environmental and Solar Farm stakeholders (©75). The Committee previously recommended prohibiting solar facilities only on Class I soils. The October 13, 2020 memorandum to the Council (©42-43) addressed this issue.¹⁰

13) *Should the siting of solar projects minimize the effect on cultural and natural resources, or significant scenic viewsheds?*

This was previously considered and rejected by the joint Committee. 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.

One of the findings the Planning Board must make before approving a site plan is compatibility with “existing and approved or pending adjacent development.” The joint Committee was satisfied with relying on this requirement for compatibility.

14) *Should the removal of trees in excess of one acre to install solar installations be prohibited without exception?*

The joint Committee addressed concerns about keeping solar facilities off of environmentally-sensitive features but did NOT specifically address the maximum area of tree removal. 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 joint Committee-recommended ZTA includes the following necessary findings for site plan approval:

¹⁰ The Office of Agriculture found that Baltimore and Howard Counties have no prohibitions based on soils classifications. Prince George’s County had a “preference” for facilities to be located on Class IV soils or higher. Frederick County prohibited solar facilities on “prime” soil.

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 recommendation by the Agricultural Reserve stakeholders would be more restrictive than the joint Committee's prior recommendation.

IV. Other changes suggested by Councilmember Reimer (with stakeholder recommendations noted)

15) Agricultural Uses – 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 2017.¹¹ 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.

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. A list of agrivoltaic applications in Maryland can be found at ©25-26. Information of successful sheep grazing under solar panels can be found on ©46-60, thanks to Councilmember Reimer's research.

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.

¹¹ http://mgaleg.maryland.gov/2017RS/chapters_noln/Ch_372_sb1158E.pdf.

Councilmember Riemer proposed an amendment to more clearly assure that agricultural activity so that Section 7.3.4.E.5.d (starting on line 118 of the joint Committee-recommended draft) ultimate reads as follows (clear text):

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 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];

ii. planted, managed, maintained, and used for grazing farm animals;
or

iii. planted, managed, maintained, and used for any other agrivoltaic plant material;

Agricultural Reserve stakeholders have the following comments, without reference to Councilmember Riemer's proposed amendment:

As long as Class I and II soils are excluded, planting of crops, livestock grazing or the installation of pollinator habitats are acceptable. These would be subject to review and recommendation by the Office of Agriculture, giving preference to projects with actual agricultural production.

A suggested amendment from the Environmental and Solar Farm stakeholders would have limited pesticide use in pollinator-friendly vegetation to herbicides only, and for only two purposes:

- a) controlling State-defined noxious weeds, such as Johnson grass and thistles, which landowners are required to eliminate by State law; and
- b) controlling plants that are both non-native and invasive. Insecticides and fungicides would not be allowed. Note that herbicide use to control non-native invasive species would not be required, but simply permitted.

Staff Note: This is not required in the State's program. This is not regulated in the County for any other agricultural use. In any event, it is not a zoning issue.

A suggested amendment from the Agricultural Reserve stakeholders would require an applicant to provide approved USDA-NRCS Soil Conservation and Nutrient management plans and a written viable agriculture plan approved by the County Office of Agriculture and USDA-NRCS.

Staff Note: The Office of Agriculture would be free to make any recommendation it wants to make in the development review process.

16) Density of solar facilities

The State net metering program limits land holdings at a single location 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.

<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 recommendation September 25	22 – 23
List of pollinator-friendly plants	24
List of agrivoltaic farms	25 – 26
Solar Site Pollinator Habitat Scorecard	27
Memorandum for Council October 13	28 – 45
Material on grazing under solar panels	
Agricultural Good Practice Guidance for Solar Farm - BRE (2014)	46 – 53
How to have your Solar Farm and Keep Your Regular Farm - Dan Charles	54 – 57
Sheep (and Soil Scientists) Juice Up the Solar Farm – Robynne Boyd	58 – 60
Councilmember Friedson's Bill concerning dedicated personal property taxes	61 – 64
Solar stakeholder work group joint recommendations	65 – 66
Separate (Minority) Reports	
– Environmental and Solar Farm stakeholders (with attachment)	67 – 80
– Agricultural Reserve stakeholders	81 – 85

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

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

- [b][a]i. Solar panels may encroach into a setback as allowed under Section 4.1.7.B.5.c and may exceed the maximum height as allowed under Section 4.1.7.C.3.b.
- ii. Written authorization from the local utility company must be provided for a Solar Collection System that will be connected to the utility grid.
- [c][b]iii. 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 Collection System is prohibited.

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

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

b. Systems producing more than 200% of on-site energy use
Except for the screening and fence requirements in Subsection 59.3.7.2.B.2.b.iv.C and 59.3.7.2.B.2.b.v.C, a Solar Collection System must satisfy the requirements of Subsection 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;

- [ii] B. located at least 50 feet from any property line; and
- [iii] C. surrounded by a minimum 6-foot-tall fence.
- [e] v. If a structure for a Solar Collection System is located in an area visible to an abutting residential use or a road:
- [i] A. only solar thermal or photovoltaic panels or shingles may be used;
- [ii] B. the panels or shingles must use textured glass or an anti-reflective coating; and
- [iii] C. 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.
- [f] vi. 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. The Solar Collection System will be presumed to be discontinued or abandoned if no electricity is generated by the system for a period of 12 continuous months.
- [[[g] vii. If licensed by the Public Service Commission, [A] a system designed to produce more than 2 megawatts (AC) [may be allowed as a public utility use under Section 3.6.7.E] is not restricted by Chapter 59.]]

* * *

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

Division 7.3. Regulatory Approvals

* * *

Section 7.3.4. Site Plan

* * *

E. Necessary Findings

* * *

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

a. the Solar Collection System is not located:

i. on soils classified by the United States Department of

Agriculture as Soil Classification Category 1;

ii. in a stream buffer;

iii. on wetlands; or

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

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

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

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

satisfy 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 in a manner suitable

for grazing farm animals[[.]]; or

iii. planted, managed, and maintained for any other

agrivoltaic plant material;

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);
- f. the requirements of Chapter 19, Erosion, Sediment Control and Stormwater Management must be satisfied;
- g. except for pad areas for transformers and electrical equipment, the use of concrete must be prohibited;
- h. screening that satisfies Section 59.6.5.3.C.8 (Option A) on the sides of the facility within 200 feet of any neighboring house is required; however, a fence may not be required or prohibited;
- i. written authorization from the local utility company that allows the Solar Collection System to be connected to the utility grid must be submitted; and
- j. the land area approved, in addition to all other site plan approvals, will not exceed 1,800 acres of land.

* * *

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

Sec. 4. Effective date. This ordinance becomes effective 20 days after the 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

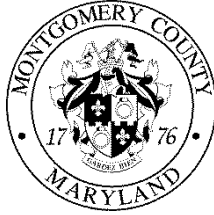
energy in the county; their recommendations are now available for public review and comment on the County's climate webpage (montgomerycountymd.gov/climate)

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	

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:

<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	<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	<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
<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	<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	<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

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:

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

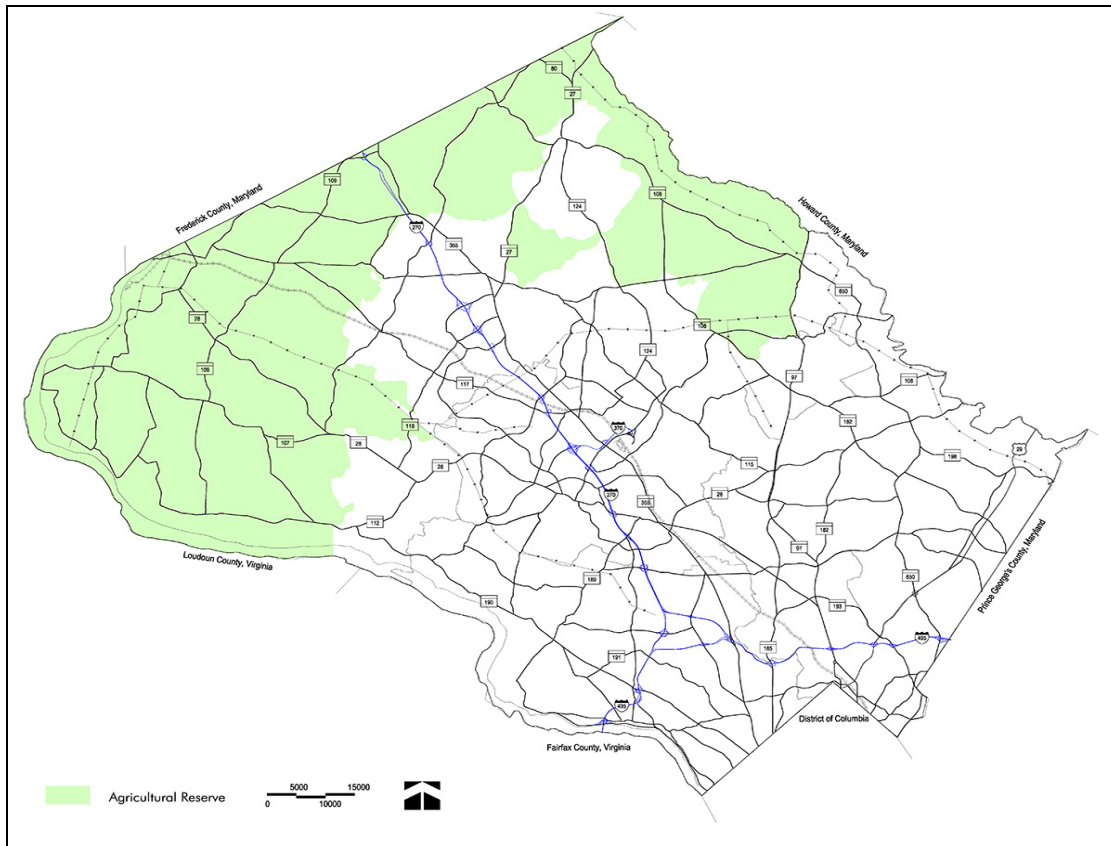
ZTA 20-01, lead sponsors Councilmember Riemer and Council Vice President Hucker and co-sponsor Councilmember Rice, was introduced on January 21, 2020. ZTA 20-01 would revise the Solar Collection System use standards to allow larger facilities in the Agricultural Reserve (AR) zone. The total amount of 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.

⁶ 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

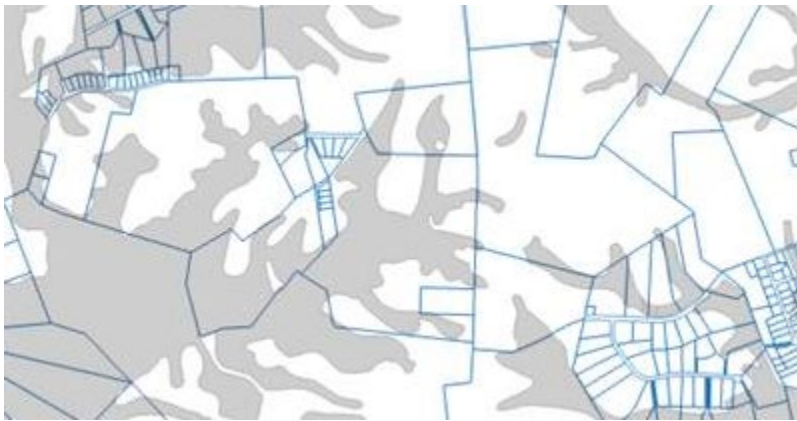
The joint committee recommended prohibiting solar on the best agricultural soils (Soil Classification Category I soils). In the view of the majority, exclusions on additional soil types, in addition to the other restrictions recommended by the Committee, would so limit the possible placement of solar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

Agricultural Good Practice Guidance for Solar Farms



Principal Author and Editor Dr Jonathan Scurlock, National Farmers Union

This document should be cited as: BRE (2014) Agricultural Good Practice Guidance for Solar Farms. Ed J Scurlock

BRE National Solar Centre would like to sincerely thank colleagues from the following organisations who have made significant contributions to the development of this guidance:



With thanks to:

Marcus Dixon and Neil Macdonald of British Solar Renewables; Liza Gray of Lightsource; Julie Rankin and Amy Thorley of Lark Energy; Kate Covill of Orta Solar; Ben Cosh of TGC Renewables; Ben Thompson of Foresight Group; Simon Stonehouse of Natural England; Leonie Greene of the Solar Trade Association; and Tom Fullick, Gary Ford and Richard Wordsworth of the NFU.

With thanks to NSC Founding Partners:



Context

This document describes experience and principles of good practice to date for the management of small livestock in solar farms established on agricultural land, derelict/marginal land and previously-developed land.

Proposed for publication as an appendix to existing best practice guidelines by the BRE National Solar Centre¹, it should be read in conjunction with BRE (2014) Biodiversity Guidance for Solar Developments (eds. G.E. Parker and L. Greene).

The guidance presented here has been developed with, and endorsed by, a number of leading UK solar farm developers and organisations concerned with agriculture and land management.

Introduction

Field-scale arrays of ground-mounted PV modules, or “solar farms”, are a relatively recent development, seen in Britain only since 2011, although they have been deployed in Germany and other European countries since around 2005. In accordance with the “10 Commitments” of good practice established by the Solar Trade Association², the majority of solar farm developers actively encourage multi-purpose land use, through continued agricultural activity or agri-environmental measures that support biodiversity, yielding both economic and ecological benefits.

It is commonly proposed in planning applications for solar farms that the land between and underneath the rows of PV modules should be available for grazing of small livestock. Larger farm animals such as horses and cattle are considered unsuitable since they have the weight and strength to dislodge standard mounting systems, while pigs or goats may cause damage to cabling, but sheep and free-ranging poultry have already been successfully employed to manage grassland in solar farms while demonstrating dual-purpose land use.

Opportunities for cutting hay or silage, or strip cropping of high-value vegetables or non-food crops such as lavender, are thought to be fairly limited and would need careful layout with regard to the proposed size of machinery and its required turning space. However, other productive options such as bee-keeping have already been demonstrated. In some cases, solar farms may actually enhance the agricultural value of land, where marginal or previously-developed land (e.g. an old airfield site) has been brought back into more productive grazing management. It is desirable that the terms of a solar farm agreement should include a grazing plan that ensures the continuation of access to the land by the farmer, ideally in a form that enables the claiming of Basic Payment Scheme agricultural support (see page 2).



¹ BRE (2013) Planning guidance for the development of large scale ground mounted solar PV systems. www.bre.co.uk/nsc

² STA “Solar Farms: 10 Commitments” <http://www.solar-trade.org.uk/solarFarms.cfm>

Conservation grazing for biodiversity

As suggested in the Biodiversity Guidance described above, low intensity grazing can provide a cost-effective way of managing grassland in solar farms while increasing its conservation value, as long as some structural diversity is maintained. A qualified ecologist could assist with the development of a conservation grazing regime that is suited to the site's characteristics and management objectives, for incorporation into the biodiversity management plan.

Avoiding grazing in either the spring or summer will favour early or late flowering species, respectively, allowing the development of nectar and seeds while benefiting invertebrates, ground nesting birds and small mammals. Hardy livestock breeds are better suited to such autumn and winter grazing, when the forage is less nutritious and the principal aim is to prevent vegetation from overshadowing the leading (lower) edges of the PV modules (typically about 800-900mm high). Other habitat enhancements may be confined to non-grazed field margins (if provision is made for electric or temporary fencing) as well as hedgerows and selected field corners.

Agricultural grazing for maximum production

The developer, landowner and/or agricultural tenant/licensee may choose to graze livestock at higher stocking densities throughout the year over much of the solar farm, especially where the previous land use suggested higher yields or pasture quality. Between 4 and 8 sheep/hectare may be achievable (or 2-3 sheep/ha on newly-established pasture), similar to stocking rates on conventional grassland, i.e. between about March and November in the southwest and May to October in North-East England.

The most common practice is likely to be the use of solar farms as part of a grazing plan for fattening/finishing of young hill-bred 'store' lambs for sale to market. Store lambs are those newly-weaned animals that have not yet put on enough weight for slaughter, often sold by hill farmers in the Autumn for finishing in the lowlands. Some hardier breeds of sheep may be able to produce and rear lambs successfully under the shelter of solar farms, but there is little experience of this yet. Pasture management interventions such as 'topping' (mowing) may be required occasionally or in certain areas, in order to avoid grass getting into unsuitable condition for the sheep (e.g. too long, or starting to set seed).

Smaller solar parks can provide a light/shade environment for free-ranging poultry (this is now recognised by the RSPCA Freedom Foods certification scheme) – experience to date suggests there is little risk of roosting birds fouling the modules. Broiler (meat) chickens, laying hens and geese will all keep the grass down, and flocks may need to be rotated to allow recovery of vegetation. Stocking density of up to 2000 birds per hectare is allowed, so a 5 megawatt solar farm on 12 hectares would provide ranging for 24,000 birds.

Solar farm design and layout

In most solar farms, the PV modules are mounted on metal frames anchored by driven or screw piles, causing minimal ground disturbance and occupying less than 1% of the land area. The rest of the infrastructure typically disturbs less than 5% of the ground, and some 25-40% of the ground surface is over-shaded by the modules or panel. Therefore 95% of a field utilised for solar farm development is still accessible for vegetation growth, and can support agricultural activity as well as wildlife, for a lifespan of typically 25 years.

As described above, the layout of rows of modules and the width of field margins should anticipate future maintenance costs, taking into account the size, reach and turning circle of machinery and equipment that might be used for 'topping' (mowing), collecting forage grass, spot-weeding (e.g. of 'injurious' weeds like ragwort and dock) and re-seeding. Again, in anticipation of reverting the field to its original use after 25 years, many agri-environmental measures may be better located around field margins and/or where specifically recommended by local ecologists. All European farmers are obliged to maintain land in "good agricultural and environmental condition" under the Common Agricultural Policy rules of 'cross compliance', so it is important to demonstrate sound stewardship of the land for the lifetime of a solar farm project, from initial design to eventual remediation.

The depth of buried cables, armouring of rising cables, and securing of loose wires on the backs of modules all need to be taken into consideration where agricultural machinery and livestock will be present. Cables need to be buried according to national regulations and local DNO requirements, deep enough to avoid the risk of being disturbed by farming practice – for example, disc harrowing and re-seeding may till the soil to a depth of typically 100-150 mm, or a maximum of 200 mm. British Standard BS 7671 ("Wiring Regulations") describes the principles of appropriate depth for buried cables, cable conduits and cable trench marking. Note also that stony land may present a risk of stone-throw where inappropriate grass management machinery is used (e.g. unguarded cylinder mowers).

Eligibility for CAP support and greening measures

From 2015, under the Common Agricultural Policy, farmers will be applying for the new Basic Payment Scheme (BPS) of area-based farm support funding. It has been proposed that the presence of sheep grazing could be accepted as proof that the land is available for agriculture, and therefore eligible to receive BPS, but final details are still awaited from Defra at the time of writing. Farmers must have the land "at their disposal" in order to claim BPS, and solar farm agreements should be carefully drafted in order to demonstrate this (BPS cannot be claimed if the land is actually rented out). Ineligible land taken up by mountings and hard standing should be deducted from BPS claims, and in the year of construction larger areas may be temporarily ineligible if they are not available for agriculture.

Defra has not yet provided full details on BPS 'greening' measures, but some types of Ecological Focus Areas may be possibly located within solar farms, probably around the margins, including grazed buffer strips and ungrazed fallow land, both sown with wildflowers. Note that where the agreed biodiversity management plan excludes all forms of grazing, the land will become ineligible for BPS, and this may have further implications for the landowner, such as for inheritance tax.

Long-term management, permanent grassland and SSSI designation

Since solar farms are likely to be in place typically for 25 years, the land could pass on to a succeeding generation of farmers or new owners, and the vegetation and habitat within the fenced area is expected to gradually change with time. According to Natural England, there is little additional risk that the flora and fauna would assume such quality and interest that the solar farm might be designated a SSSI (Site of Special Scientific Interest) compared with a similarly-managed open field. However, there could be a possible conflict with planning conditions to return the land to its original use at the end of the project, e.g. if this is specified as 'cropland' rather than more generically as 'for agricultural purposes'. If the pasture within a solar farm were considered to have become a permanent grassland, it may be subject to regulations requiring an Environmental Impact Assessment to restore the original land use, although restoration clauses in the original planning consent may take precedence here. It is proposed that temporary (arable) grassland should be established on the majority of the land area that lies between the rows of modules. This would be managed in 'improved' condition by periodic harrowing and re-seeding (e.g. every 5 years), typically using a combination disc harrow and seed drill.

Other measures to maintain the productivity of grassland, without the need for mechanised cultivations or total reseedling, could include: maintaining optimum soil fertility and pH to encourage productive grass species; seasonally variable stocking rates to prevent over/under-grazing with the aim of preventing grass from seeding and becoming unpalatable. Non-tillage techniques to optimise grass sward content might include the use of a sward/grass harrow and air-seeder to revive tired pastures. When applying soil conditioners (e.g. lime), fertilisers or other products, consideration should be taken to prevent damage to or soiling of the solar modules.

Good practice in construction and neighbourliness

Consideration should also be given to best practice during construction and installation, and ensuring that the future agricultural management of the land (such as a change from arable cropping to lamb production) fits into the local rural economy. Site access should follow strictly the proposed traffic management plan, and careful attention to flood and mud management in accordance with the Flood Risk Assessment (e.g. controlling run-off by disrupting drainage along wheelings), will also ensure that the landowner remains on good terms with his/her neighbours.

Time of year should be taken into account for agricultural and biodiversity operations such as prior seeding of pasture grasses and wildflowers. Contractors should consider avoiding soil compaction and damage to land drains, e.g. by using low ground pressure tyres or tracked vehicles. Likewise, when excavating cable trenches, storing and replacing topsoil and subsoil separately and in the right order is important to avoid long-term unsightly impacts on soil and vegetation structure. Good practice at this stage will yield longer-term benefits in terms of productivity and optimal grazing conditions.

Evidence base and suggested research needs

A number of preliminary studies on the quantity and quality of forage available in solar farms have suggested that overall production is very little different from open grassland under similar conditions. A more comprehensive and independent evidence base could be established through a programme of directed research, e.g. by consultants (such as ADAS) or interested university groups (e.g. Exeter University departments of geography and biosciences), perhaps in association with seed suppliers and other stakeholders. Productivity of grasses could be compared between partial shade beneath the solar modules and unshaded areas between the rows. Alternatively daily live weight gain could be compared between two groups of fattening lambs (both under the same husbandry regime) on similar blocks of land, with and without solar modules present.



Case Steiger Quadtrac used to deliver inverters and other heavy equipment to site under soft ground conditions (photo courtesy of British Solar Renewables)



Cable trenching, showing topsoil stripped and set to one side, with subsoil placed on the other side ready for reinstatement (photo courtesy of British Solar Renewables)

Agricultural case studies

Benbole Farm, Wadebridge, Cornwall

One of the first solar farms developed in Britain in 2011, this 1.74 megawatt installation on a four-hectare site is well screened by high hedges and grazed by a flock of more than 20 geese. A community scheme implemented by the solar farm developers enabled local residents to benefit from free domestic solar panels and other green energy projects.



Eastacombe Farm, Holsworthy, Devon

This farm has been in the Petherick family for four generations, but they were struggling to survive with a small dairy herd. In 2011/12, a solar developer helped them convert eight hectares of the lower-grade part of their land into a 3.6 megawatt solar farm with sheep grazing, which has diversified the business, guaranteeing its future for the next generation of farmers.



Higher Hill, Butleigh, Somerset

Angus Macdonald, a third-generation farmer, installed a five megawatt solar farm on his own land. Located near Glastonbury, the site has been grazed by sheep since its inception in 2011.



Newlands Farm, Axminster, Devon

Devon sheep farmer Gilbert Churchill chose to supplement his agricultural enterprise by leasing 13 hectares of grazing land for a 4.2 megawatt solar PV development, which was completed in early 2013. According to Mr Churchill, the additional income stream is "a lifeline" that "will safeguard the farm's survival for the future".



Trevemper Farm, Newquay, Cornwall

In 2011, the Trewithen Estate worked with a solar developer to build a 1.7 megawatt solar farm on 6 hectares of this south-facing block of land, which had good proximity to a grid connection. During the 25-year lease, the resident tenant farmer is still able to graze the land with sheep at his normal stocking density, and is also paid an annual fee to manage the pasture.



Yeowood Solar Farm, North Somerset

Completed in 2012, this 1.3 megawatt installation on 4 hectares of land surrounds a poultry farm of 24,000 laying hens, which are free to roam the land between and underneath the rows of solar modules, as well as other fields. The Ford family, farm owners, also grow the energy crop miscanthus to heat their eco-friendly public swimming pool and office units.



Wyld Meadow Farm, Bridport, Dorset

Farmers Clive and Jo Sage continue to graze their own-brand Poll Dorset sheep on this 4.8 megawatt solar farm, established on 11 hectares in 2012. The solar farm was designed to have very low visual impact locally, with an agreement to ensure livestock grazing throughout the project's lifetime.



Wymeswold Solar Farm, Leicestershire

The author pictured in July 2014 at Britain's largest connected solar farm. At 33 megawatts, this development provides enough energy to power 8,500 homes. Built on a disused airfield in 2013, this extensive installation over 61 hectares (150 acres) received no objections during planning and is grazed by the landowner's sheep – just visible in the background.



BRE National Solar Centre
Foundation Building, Eden Project,
Bodelva, St Blazey
PL24 2SG

T +44 (0)1726 871830
E nsc@bre.co.uk
www.bre.co.uk/nsc
Twitter [@natsolarcentre](https://twitter.com/natsolarcentre)

BRE Trust

The BRE Trust uses profits made by BRE Group to fund new research and education programmes, that will help it meet its goal of 'building a better world together'.

The BRE Trust is a registered charity in England & Wales:
No. 1092193, and Scotland: No. SC039320.

How To Have Your Solar Farm And Keep Your Regular Farm, Too

https://www.wbur.org/npr/919225272/how-to-have-your-solar-farm-and-keep-your-regular-farm-too?fbclid=IwAR3n9EssY2K_mIn96GBBhdmbMvqWO7tDY-k3gZBfE7sJ58ONy_O-AjnAYIU

October 09, 2020

- [Dan Charles](#)

Clean, abundant, solar power comes with a price. It requires lots of land, and in some places that's provoking opposition from people who want to preserve farmland.

In southern New Jersey, for instance, a company called [Dakota Power Partners](#) wants to build an 800-acre solar power station, and the Pilesgrove Township planning board is hearing from local citizens who don't like it one bit.

"The carpetbaggers have come south to take our property, our land, our farms!" protested Jim Davis at a meeting in August. Davis lives next to the proposed solar array. "I'm going to look out of my house, my living room windows, I'm going to see sixteen feet of solar panels."

Many opponents are upset at the idea of solar panels replacing fertile, productive, farm fields.

"We're a farming community," said Cheryl Reardon at the same meeting. She's a former member of the planning board. "You were the first town to adopt a right to farm ordinance! Don't forget your vision for this township, and what it should remain to be!"

Zaid Ashai, CEO of [Nexamp](#), a solar company based in Boston, says this is a pretty common reaction. "I think the biggest community opposition is purely [based on] how the land looks," he says. "When people see projects that

change the way the landscape has looked for potentially a hundred years or more, there's a reflexive reaction. That's human."

But Ashai believes that farming and solar can be friends. For small farms that are struggling, leasing land to solar companies can be a financial lifeline, helping them survive. Farmers can earn a thousand or more dollars per acre per year from these deals.

Ashai and others are also exploring ways to capture the sun and still farm the land--though perhaps with a different kind of farming.

Julie Bishop is one of the pioneers in this movement. She got involved more or less by accident a few years ago. She had begun raising sheep on a small farm in Newfield, New Jersey, but didn't have a lot of pasture land for them. One day, as she was driving to visit her mother nearby, she passed a 15-acre solar installation.

"I thought, that would be a good place for my sheep," she says. "It's all fenced in, and I'm sure they're paying somebody to mow the grass." She figured sheep could do that job more easily. "They're just born to weed-whack," she says. "Let sheep do what they're good at, let people do something that's, you know, not so back-breaking."

She got in touch with the solar company, made a deal, and now she's getting paid to graze her sheep there.

"It really does work," Bishop says. There's plenty of grass and clover for the sheep. (The sheep prefer the clover.) From there perspective of the sheep, wandering around underneath the panels, it's just a nicely shaded pasture. "All kinds of critters live in here. Mice and moles and voles," Bishop says. "It's food for butterflies and other pollinators."



- Several solar companies have allowed sheep to graze. Others are inviting farmers to grow vegetables under their solar panels.

Bishop renamed her farming operation [Solar Sheep](#). She now has flocks of the animals at three solar sites around New Jersey, and her herd might soon double in size to handle the proposed solar plant in Pilesgrove township. Dakota Power Partners is designing the project with sheep in mind, and will include a barn for Bishop to use. The company is highlighting this in its efforts to get approval for their project.

Others have had the same idea. They've banded together to form the [American Solar Grazing Association](#). Nexamp's Zaid Ashai says that Nexamp has sheep at a few of its sites, but it's also investigating other ways to combine solar energy and farming. "We still have not even scratched the surface on how to integrate agriculture and solar power plants more closely," he says. He says beekeeping is an obvious option.

Boston-based [BlueWave Solar](#), meanwhile, is about to start construction on dozens of projects in Massachusetts that will combine solar with vegetable farming. The state government is offering financial incentives for such projects.

"It's an exciting time," says Lucy Bullock-Sieger, the company's director of civic engagement. In order to qualify for the state subsidies, the solar panels in such projects have to be built at least eight feet off the ground, allowing easy access for farmers and their equipment. Bullock-Sieger says the company is working with farmers who plan to grow pumpkins, strawberries, butternut squash, and cranberries.

At the University of Arizona, researchers [found](#) that certain varieties of tomatoes and peppers actually grew better when partially shaded by solar panels.

They have a name for this combination: Agrivoltaics.

- [Copyright NPR 2021.](#)

Sheep (and Soil Scientists) Juice Up the Solar Farm

Solar farmers get a hand from regenerative agriculture experts to feed the soil under their arrays—another powerful tool to help fight climate change.

February 20, 2020 Robynne Boyd

<https://www.nrdc.org/stories/sheep-and-soil-scientists-juice-solar-farm>

This is a tale of two farms: White Oak Pastures and Bancroft Station Solar Farm. Both are located in rural southwestern Georgia, a region synonymous with agriculture (read: peanuts, corn, cotton, and cattle). Both harvest the bounty of nature. Yet [White Oak Pastures](#) is as old as Bancroft Station is new. The sixth-generation homestead operates as the economic and social hub for the town of Bluffton (population 100) and as a paragon of regenerative agriculture through its pasture-raised livestock and devotion to maintaining healthy soils and a balanced ecosystem. Bancroft Station, a state-of-the-art solar power facility, went online two months ago to power a huge Facebook data center and help meet the company's 100 percent renewable energy goal.

On the face of it, the businesses couldn't be farther apart. After all, the emphasis in the term "solar farm" falls prominently on the first word; the developments are just as often called "solar power stations" or "photovoltaic power plants." But many are, in fact, built on former croplands. Indeed, cotton and peanuts previously grew on the 700 acres where Bancroft Station now sits, and cattle grazed there.

Some cotton plants still linger around the arrays, too—proof that a transition is taking place. And that's a good thing, says William Harris III, herdsman and mastermind behind White Oak Pastures. He believes that solar developers should take a page from traditional, holistic farmers in caring for their land. So when he learned that thousands of acres of solar would rise in his community, he invited Reagan Farr, the CEO of solar farm developer [Silicon Ranch](#), for a visit. He was wary at first, concerned that Farr would overmow his newly acquired turf and spray it with pesticides. "I didn't expect to like him," says Harris. "And we just hit a real accord."

In a world where old and new school rarely see eye to eye, these two farms are joining forces to build a more sustainable future from the ground up. Come springtime, Harris will release 1,000 sheep among Bancroft Station's more than 350,000 solar arrays to graze, nap in the panels' shade, and naturally fertilize the soil. The low-tech lawn care arrangement (i.e., sheep rental) will yield a cascade of benefits for the land, from erosion prevention and flood control to improved carbon sequestration. In turn, the sheep will fatten up on the vegetation, making the business partnership doubly good for the rancher's bottom line.

The farms' alliance offers lessons to other developers of solar power, which is [booming in the Southeast](#). The Southern Alliance for Clean Energy (SACE) [projects](#) that solar capacity will more than double across the region in the next couple of years. Many of the new projects are being driven by clean energy demands from tech giants and other [Fortune 500 companies](#). In 2018, Facebook drove solar commitments in Georgia (totalling 203 megawatts), Alabama (227 MW), and Tennessee (150 MW). Google announced projects of 150 MW each for Tennessee and Alabama.

The sheep address a central upkeep challenge faced by solar developers like Silicon Ranch, which operates nine utility-scale projects in Georgia, Mississippi, and Tennessee. Left uncut, the vegetation growing beneath solar panels limits functionality and accessibility. However, conventional mowing, weed whacking, and using herbicides and pesticides “break the hell out of the natural cycles,” says Harris, leading to soil degradation, erosion, and chemical runoff that pollutes waterways.

[Regenerative agriculture](#) experts say sheep are the perfect animals for the job. They don't climb (like goats), aren't too big (like cows), and are not known for damaging solar equipment. And they take care of the pricey business of lawn care naturally and cost effectively. To be clear, replacing lawn mowers with sheep on solar farms is not new. Sheep have grazed solar farms [across the United Kingdom](#) since 2011, and California pioneered the practice in the United States, says Harris. Other states, [including North Carolina](#), have followed suit. However, thanks to Harris's experience and vision, Silicon Ranch is expanding the model to achieve goals well beyond grass trimming on the cheap.

“What makes us a little different is that this is not just solar plus sheep,” says Michael Baute, an expert on soil and crop sciences whom Farr hired as Silicon Ranch's director of regenerative energy and land management after Harris introduced them at the initial meeting between the farms. “This is about regeneration and holistic management for the land.”

Silicon Ranch calls the combination of renewable electricity generation, ecosystem restoration, and food production “regenerative energy.” Ten of the company's solar farms in Mississippi, Tennessee, Alabama, and Arkansas are already testing the model. Partnering with the right ranchers is key. Trent Hendricks, owner of the holistically managed [Cabriejo Ranch](#) and another friend of Harris, has been a good match for the company, transporting what he calls his “regenerative road show” of sheep from site to site.

“We're really passionate about it and feel it's one of the most important opportunities in food agriculture,” says Hendricks. “The animals improve, plants improve, and soils

improve, and we just have this ecosystem that continues to flourish,” he adds, noting that the solar farm now attracts ground-nesting birds, rabbits, hawks, and eagles.

[Claire O’Connor](#), director of NRDC’s water and agriculture program, sees this sort of holistic thinking around land stewardship as a critical development for the burgeoning solar industry. Healthy soil is [the secret weapon in the fight against climate change](#), she says, and regenerative farming practices play [a significant role in the sequestering of atmospheric carbon](#). Our planet’s three largest carbon sinks are its oceans, plants, and soils. And if we don’t take care of them properly, they turn from carbon sponges into carbon emitters.

“Over the last several decades we’ve run up a big soil carbon debt,” O’Connor says. “We can start to repay that debt by feeding the soil.” Among the tools we have to help protect the planet, she notes, “the soil carbon is a piece we haven’t paid as much attention to and offers a huge opportunity to help us stay below the most dangerous climate thresholds.”

White Oak Pastures proves the point, says Harris. According to [a life cycle assessment study](#), the [soil organic matter](#) rose from 1 to 5 percent on the farm’s regeneratively managed fields over 20 years. Researchers also found the farm offsets as much as 85 percent of its total carbon emissions. “It is not a zero-sum game on this planet,” says Harris. “If all cycles and systems are working as planned, every year the earth grows richer.”

Both White Oak Pastures and Silicon Ranch hope to stimulate healing and reap the benefits. This is how the tale of two farms merge and strengthen.

“It’s a great symbiotic relationship,” says Harris. “Twenty years from now, Silicon Ranch’s land will have 5 percent organic matter and real economic value.” With its new method of vegetation control, “we’re all going to benefit because of the carbon sequestration,” he notes. And “the community wins because I’ll need to hire more people.”

Bill No. 41-20
Concerning Agricultural Land
Preservation – Solar Collection System –
Dedication of Business Personal Property
Tax Revenue
Revised: 08/26/2020 Draft No. 1
Introduced: September 29, 2020
Expires: March 29, 2022
Enacted: _____
Executive: _____
Effective: _____
Sunset Date: None
Ch. _____, Laws of Mont. Co. _____

COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND

Lead Sponsor: Councilmember Friedson

AN ACT to:

- (1) dedicate business personal property tax revenue received for certain solar collection systems for the Agricultural Land Preservation Fund;
- (2) increase the land in the County preserved for agricultural uses; and
- (3) generally amend the law governing the preservation of land for agricultural uses.

By amending

Montgomery County Code
Chapter 2B, Agricultural Land Preservation
Sections 2B-1 and 2B-9

Boldface	<i>Heading or defined term.</i>
<u>Underlining</u>	<i>Added to existing law by original bill.</i>
[Single boldface brackets]	<i>Deleted from existing law by original bill.</i>
<u>Double underlining</u>	<i>Added by amendment.</i>
[[Double boldface brackets]]	<i>Deleted from existing law or the bill by amendment.</i>
* * *	<i>Existing law unaffected by bill.</i>

The County Council for Montgomery County, Maryland approves the following Act:

Sec. 1. Sections 2B-1 and 2B-9 are amended as follows:

2B-1. Definitions.

In this Chapter, the following words and phrases have the meanings indicated:

* * *

Significant Agricultural Resource or Significant Agricultural Capability means land which, if properly agronomically managed and under normal growing conditions, the Office, after consulting local agricultural support agencies, finds can sustain a profitable farm enterprise.

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.

State Agricultural Easement means an easement established under Subtitle 5 of Title 2 of the Agriculture Article.

* * *

2B-9. Purchase and value of agricultural easements.

(a) The Fund is a special, non-lapsing revolving fund for agricultural land preservation purposes. It consists of:

- (1) the County's share of the State agricultural transfer tax;
- (2) payments received by the County for the repurchase, release, reimbursement, and termination of an agricultural easement; [and]
- (3) the County's share of the business personal property tax collected for a solar collection system located in the Agricultural Reserve Zone; and
- (4) any other funds available to buy agricultural easements under this Article.

- (b) The County must use funds from the County's share of the State agricultural transfer tax, business personal property tax collected for a solar collection system located in the Agricultural Reserve Zone, and any other revolving funds for the purposes of this Article before using any other County funds for these purposes.
- (c) The County may buy an agricultural easement to preserve agricultural land in the County. To buy an easement, the County may use:
- (1) negotiations;
 - (2) competitive bidding; or
 - (3) any other method that is fair and equitable to the landowner and the County.
- (d) The purchase price may be based on an appraisal or any other evidence of value under criteria in applicable regulations.
- (e) Priority for buying easements must be given to any applicant who meets all [of] the following criteria:
- (1) the proposed purchase price for the agricultural easement does not exceed either the appraised fair market value of the easement or a commercially reasonable value for the easement;
 - (2) the land is designated in the applicable master plan as agricultural;
 - (3) the land borders a municipality or other developing area and is likely to be developed in the foreseeable future; and
 - (4) any other factor the Executive finds necessary to preserve agricultural land.
- (f) The County Executive or the Executive's designee may agree in writing to buy an agricultural easement if the landowner:
- (1) files a good-faith application to the Foundation for the purchase of an agricultural easement by the State; and

54 (2) accepts a Foundation offer if the price offered by the Foundation
55 is equal to or higher than the price the County offered. If the
56 Foundation does not agree to buy an easement subject to a
57 conditional agreement under this subsection, the County must buy
58 the easement at the price the County offered under the conditional
59 agreement.

60 (g) In addition to its authority to buy agricultural easements under this
61 Article, the County may accept the donation of an agricultural easement
62 or another interest in property for agricultural land preservation purposes.

63 **Sec. 2. Transition.**

64 The amendments in Section 1 must apply to business personal property tax
65 collected after the date this Act takes effect.

66 *Approved:*

67

Sidney Katz, President, County Council	Date
--	------

68 *Approved:*

69

Marc Elrich, County Executive	Date
-------------------------------	------

70 *This is a correct copy of Council action.*

71

Selena Mendy Singleton, Esq., Clerk of the Council	Date
--	------

Montgomery County ZTA 20-01 Farm Solar Stakeholder Workgroup Joint Recommendations

Introduction:

In response to the Montgomery County Council's recommendation for additional stakeholder input, a Farm Solar Workgroup was formed. Councilmembers Katz and Reimer appointed to the workgroup two representatives from each of four stakeholder groups: the agricultural industry, preservation and conservation groups, environmental groups, and solar industry organizations involved in the state's Community Solar Pilot Program.

The workgroup was asked to complete the following task:

"Discuss any amendments to ZTA 20-01 and identify whether there are amendments that are agreeable to all participants."

Purpose: Joint Stakeholders Report

The Farm Solar Stakeholder Group unanimously passed 5 amendments and one additional amendment.

Members:

- Agricultural Industry
 - Doug Lechliden, co-Chair
*Owner & President, Laytonsville Landscaping Inc. Turf Farm
Chairman, Montgomery County Agricultural Advisory Committee*
 - Randy Stabler
*Managing Partner, Pleasant Valley Farm
Board member, Montgomery Agricultural Producers*
- Preservation/ Conservation
 - Caroline Taylor
Executive Director, Montgomery Countryside Alliance
 - Lauren Greenberger
President, Sugarloaf Citizens' Association
- Environmentalists
 - Al Bartlett
*Sierra Club, Maryland Chapter
Board Member, Chesapeake Physicians for Social Responsibility
Member, Public Services Commission Net Metering Working Group*
 - Douglas Boucher
*Board Member, Poolesville Green, retired Director of Climate Research and
Analysis, Union of Concerned Scientists*
- Solar Industry
 - Frances Yuhas
*Managing Director for Development, Turning Point Energy
Board Member, Maryland-DC-Virginia Solar Energy Industries Association
Member, Public Services Commission Net Metering Working Group*
 - Leslie Elder, co-Chair
Mid-Atlantic Regional Director, Coalition for Community Solar Access

Recommendations:

- UNANIMOUSLY PASSED Add [COMAR 20.62](#) to line 12 in the ZTA
 - UNANIMOUSLY PASSED Make a strong recommendation to ensure the PSC language is removed.
 - UNANIMOUSLY PASSED Strongly recommend to add language that Montgomery County will not allow facilities larger than 2 MW in the Agricultural Reserve.
 - UNANIMOUSLY PASSED Solar Developers will be required to report all acres to be used for the solar facility including any acres to adhere to the provisions required in the ZTA for setbacks, etc in the site development plan required for permitting projects. This shall not include only the acres under the photovoltaic panels but shall also include all acres within the fenced or shrubbed area.
 - UNANIMOUSLY PASSED Recommend to the Council that the Office of Agriculture be involved in reviewing and making recommendations on the approval of solar projects in the AR. This holds whether the ZTA is designated as Conditional or Limited use.
 - PASSED 5 to 3 (*We understand that the following 3-part recommendation will require Council legislation separate from zoning.*)
- A. Tax resources/revenue from Community Solar and Aggregate Net Metered solar projects developed under the ZTA should be earmarked to support farming-related services in the county; examples are:
- Rent relief
 - Land preservation
 - Support for young farmers
 - Promotion of table crops
 - Other agriculture related support
 - Preference will be given to Black and Hispanic farmers in allocating these tax resources.
- B. The Council will identify best farm-related use of these resources through consultation with the farming community and the Office of Agriculture.
- C. As needed, a portion of tax resources/revenue from Community Solar and Aggregate Net Metered solar projects should be earmarked for the Office of Agriculture, the Montgomery County Farm Bureau, and/or other entities designated by the Montgomery County Council for program implementation.

Subgroup Report of the Environmental and Solar Farm Solar Workgroup Members

Preamble

We submit this report with heavy hearts, but also with appreciation. Its finalization was delayed while some of us watched the news as an unfettered mob incited by some of our country's highest leaders violate our nation's Capitol, vandalizing, causing injury and a death, threatening the safety of those who work to govern our country and those who work to protect them, and disgracing our country before the world. We therefore appreciate the fact that while the members of this Workgroup came to this task with strong beliefs and different perspectives, the group carried out its work over five meetings with civil discussion, reasoned debate, mutual respect, and openness to transparency and public input. The products were several areas of agreement, communicated in our Joint Recommendations report, even while we continue to disagree on other issues as reflected in the two separate reports. So, we appreciate that the County Council gave us the opportunity to participate in this exercise in democratic process, which reaffirms our belief in that process. We look forward to continued participation as this and other issues are deliberated in our county and our country.

Introduction

This section of the Workgroup report was written by the Environmental and Solar members of the Workgroup: Al Bartlett (Sierra Club), Doug Boucher (Poolesville Green), Leslie Elder (Coalition for Community Solar Access) and Franny Yuhas (TurningPoint Energy). We were pleased to serve on the Workgroup over the past two months and are especially gratified that it was able to agree on six joint recommendations to the County Council; additional context is included in Appendix B to provide our understanding of the rationale and intention of the particular amendment or recommendation, to assist the Council in considering them.

While we believe that the draft ZTA is worthy of passage in its current form, the Workgroup's recommendations - some of which would modify the ZTA text, while others would require the passage of separate legislation - respond to issues raised by various stakeholders or the public. These recommendations will clarify and define the process by which community solar is implemented in the Agricultural Reserve of Montgomery County.

Although the Workgroup came together with very different opinions on how to best achieve Solar Siting in the AR zone, the Workgroup passed six amendments, five of them unanimously. Details on each passed amendment are included on the joint report provided separately to the Council. The environmental/solar stakeholder group gained traction on several other issues, and some of these, included in this report, are recommended for the Council to consider.

Staff support, which we very much appreciated, was provided by Laurie Edberg of Councilmember Katz's office, Tom Heyboer of Councilmember Riemer's office, and Jeffrey Zyontz, Council legal staff.

Between November 17 and December 29, 2020, the Workgroup conducted a total of five recorded and publicly viewed work sessions on Zoom regarding ZTA 20-01. Workgroup members provided relevant background documents, which were compiled in a publicly accessible online site.

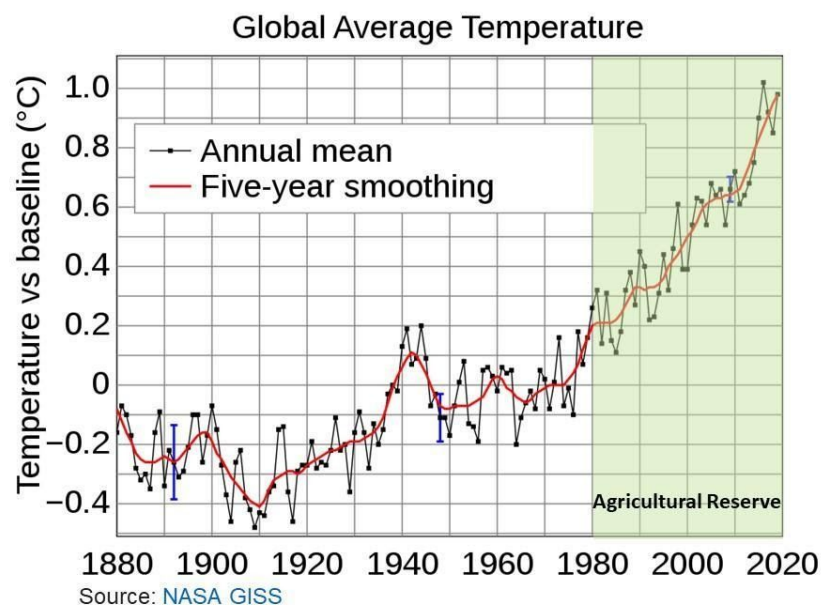
Recommendations for potential amendments were provided by Workgroup members themselves, elements of county government including the Office of Agriculture, and the public. After each open Workgroup session, the public dialogue (“Chat”) was examined for additional potential amendment recommendations.

In general, proposals and recommendations focused on responding to concerns of one or more constituencies and the public, clarifying the intent of the ZTA, strengthening protections for agricultural and environmental resources, or maximizing the balance of limited solar development and the agricultural character of the Agricultural Reserve.

Of note, while the Workgroup was specifically asked to consider potential amendments, the group agreed that in some cases, achieving these intentions would require complementary legislation in areas - such as use of revenue - that could not be implemented through zoning legislation alone.

Climate Change is the driving issue: The context of the ZTA, and of the Council’s efforts and the establishment of the Workgroup, is the recognition of the urgency of the global climate crisis. This crisis, unforeseen when the Reserve was established in 1980, has grown in urgency over the past four decades and presents a clear threat to our County – including its agriculture – as well as to our planet as a whole. The NASA graph below, showing the increase in global temperatures over the past century and a half, makes it clear that most global warming has taken place since the Agricultural Reserve was created.

Global temperatures have risen almost 1° Celsius since the Ag Reserve was established 40 years ago



The founders of the Reserve did not, and could not, have anticipated this crisis when they established it. Forty years later, we have no such excuse. The effects of climate change are already being felt by all county residents, including our farmers – growing seasons have measurably changed, average temperatures are warmer, rainfall patterns have changed and are more intense. We now face an urgent need to act, responding to these realities and the county’s own greenhouse gas reduction goals and recognized need to transition to clean renewable energy.

Additional proposed amendments/recommendations

The following proposals received the support of all four of the environment and solar industry representatives. While they did not get support from the other four Workgroup members, resulting in tie votes, we still believe them to be worthy of consideration by the Council, as additional concrete strategies to further strengthen the positive impact of the ZTA, especially in terms of building beneficial interactions between solar and agriculture. The full text of one of these amendments is given in Appendix A at the end of this report.

Require that solar projects not just be capable of positive agricultural activities, but actually implement these:

This amendment to the “Necessary Findings” required in the Site Plan Review was actually proposed by a resident of the Agricultural Reserve, and is also being proposed by Councilmember Riemer, the ZTA’s sponsor. Specifically, section 7.3.4.5.d. of the amended text (beginning on line 118 of the present Committee draft) will read:

E. Necessary Findings

5. For property zoned AR proposed 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;
- ii.* planted managed, maintained, and used for grazing farm animals; or,
- iii.* planted, managed, maintained, and used for any other agrivoltaic plant material.

There was general alignment over this amendment, which requires not just “suitability” but active management for agrivoltaic crops and solar grazing. However, it failed due to not being seconded. This was not because of the actual substance of the amendment, but rather because it became linked to the heated debate about Limited vs. Conditional Use (see discussion below). Additionally, one stakeholder felt that it gave too much encouragement for pollinator-friendly vegetation, described by them as “you just plant a few flowers.”

We feel that these criticisms are incorrect, but more importantly, they are irrelevant to the actual content of the amendment. It is the recommendation of this group to include this amendment,

which we believe would benefit the intent of the ZTA and address some of the issues raised during the Farm Solar Workgroup. (discussed 12/2 1.36.55, 1.47.07, 12/10 15.57, 12/10 1.01.19, 12/10 1.01.50, 12/10 1.45.47)

ZTA phased acreage and agrivoltaic pilot program:

We believe that the best way to ensure that solar will remain accessory to farming in the AR is through the 1,800-acre cap . However, in response to concerns of other stakeholders, this group worked with other members of the Workgroup to create a phased acreage and agrivoltaic pilot program. This amendment and associated recommendations were designed to ensure that solar did not supplant agriculture and rather worked to find an innovative solution grounded in local control. This would allow Montgomery County to manage the implementation of solar projects at a measured pace within the County while supporting the statewide community solar pilot program and aggregated net metering program through learning how to combine additional forms of productive agriculture with solar arrays. We regret that it was not adopted. (The full content of this recommendation is included as Annex A.) (discussed 12/2 1.21.40, 12/2 1.32.32, 1.35.35, 12/10 21.54, 12/10 59.51)

Payment in lieu of Taxes (PILOT):

This proposal was originally suggested by the Office of Agriculture, based on the system implemented in Queen Anne's County.

A standard element of lease contracts with landowners for installing solar arrays, is that the developer will pay all the increase in property taxes resulting from the increased assessment of the land's value. Payment in lieu of taxes simply has the developer pay the county directly, rather than compensating the landowner for the difference in tax obligation and then the landowner paying the County each year.

Such a system would simplify administration, potentially benefit the County by receiving revenue earlier, and increase the certainty of the revenue generated for the County. The revenue could then be used (perhaps combined with other County revenue) to support planned projects or other County initiatives. We recommend that the County Council explore implementing Payment in Lieu of Taxes for solar projects in Montgomery County. (discussed 12/29 2.22.04)

Pesticides in pollinator-friendly vegetation:

This amendment would have limited pesticide use in pollinator-friendly vegetation to herbicides only, and for only two purposes:

- a) controlling state-defined noxious weeds, such as Johnson grass and thistles, which landowners are required to eliminate by state law, and
- b) controlling plants that are both non-native and invasive. Insecticides and fungicides would not be allowed. Note that herbicide use to control non-native invasive species would not be required, but simply permitted.

This amendment was suggested by the county Audubon Society chapter and Clean Water Action, and we regret that it was not adopted. (discussed 12/2 1.40.32, 12/10 1.01.10)

Increase accessory solar capacity to 200% of on-site energy use:

This is an increase from the current 120% limitation in the current ZTA. This would give the agricultural industry the possibility of greater capacity to directly provide solar-generated electricity for their own operations as electrification expands. (discussed 12/10 9.38)

Areas of Opposition (and why)

Conditional Use vs. Limited Use: For the following reasons, we strongly oppose the proposal to require development of solar projects of 2MW (AC) and less in the Agricultural Reserve to be a Conditional Use, rather than a Limited Use under the ZTA as written. Reasons:

- The ZTA as amended already establishes the specific conditions required for solar projects in the Ag Reserve – Previous amendments made by the PHED Committee itself, and the further recommendations agreed upon by the Farm Solar Workgroup (see “Joint Recommendations”) have established a substantial set of environmental and agricultural protections, some of which exceed those applied to other projects in the county. They also establish an intentional positive and interactive relationship between these limited size solar projects and farming. These conditions apply to all proposed projects; Conditional Use review is only appropriate where every proposed action is unique and requires individual assessment, making each project what was formerly designated as a “Special Exception.” We do not believe this to be the intention of the Council, and we do not recommend this.
- The Conditional Use process subjugates the role of the County’s Planning Department – Under the present “Limited Use” approach of the ZTA, the planning Board is required to apply all the conditionality included in the ZTA Site Plan review criteria, as well as all other mandatory criteria (state and county environmental protections, engineering and safety assessments, etc.), and make an objective determination of compliance with those conditions. The Planning Board is also tasked with assessing consistency of all proposals with relevant aspects of the county’s Master Plans.

Under Conditional Use, the Planning Department is still required to carry out its review of project applications. However, rather than ruling on proposed projects based on the Site Plan review, the Planning Board’s role is instead to pass on the project application to the Office of Zoning and Administrative Hearings, requiring the additional time, plan and drawing submissions, and process described below. The approval decision resides with the Hearing Examiner, not the Planning Dept. This approval decision may go beyond the conditions specified in zoning, to subjective factors as perceived by the Hearing Examiner. Approval of a project is open to appeal by any potentially interested party, resulting in further delay and uncertainty. The Planning Dept. does not play a role in these further steps in the process.

- The Master Plan does NOT require projects to be subject to Conditional Use – Despite the assertions of the proponents of Conditional Use that the Master Plan for Preservation of Agriculture and Rural Open Space is law, that zoning must be subjugate to that law, and therefore any use other than agriculture in the AR must be made Conditional, this is not true. The Master Plan is not law (ref.: Maryland Dept. of Planning, “Comprehensive Plans,” <https://planning.maryland.gov/Pages/OurWork/complans/requirements.aspx>). However,

under county code, Site Plan approval by the Planning Dept. requires that a proposed project *"substantially conforms with the recommendations of the applicable Master Plan and any guidelines approved by the Planning Board that implement the applicable plan."*

In fact, in their official assessments of February, 2020, both Planning Board staff and ultimately the Planning Board itself, both found 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."* The Planning Board also supported conditions to *"reduce the impacts of solar collection as a principal use in the AR zone,"* including *"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."* Notably, all these requirements are now incorporated in ZTA 20.01 as amended.

Notably also, the Planning staff assessment memo specifically refers to ZTA 20.01 as providing *"**limited use** standards for solar as a principal use in the Agricultural Reserve zone."*

(The proponents of Conditional Use zoning under ZTA 20.01 have publicly stated that they are unhappy that the Planning Board took these positions supporting the ZTA. We therefore note that the proposal to go from Limited Use to Conditional Use is effectively a mechanism to take authority away from the Planning Board, whose opinion those proponents don't support.)

- Conditional Use review adds substantial time, administrative and technical burden, cost, and uncertainty to the project review process - This added burden, and the associated uncertainty (since uncertainty is the bane of successful commerce), have derailed many projects including agriculture related projects. The actual steps in the complex and intensive review and approval process that Community Solar projects already have to go through, and the added burden of the Conditional Use process, are detailed here:

The Site Development Plan (SDP) process, which is required for development of a solar project as Limited Use, is already a 24-30 month permitting process. The SDP process is quite rigorous and stringent requirements are placed on the applicant's project as dictated by the applicable and relevant County codes and guidelines of the various departments that have authority to review. Steps in the Community Solar and SDP development process include:

- MD Public Service Commission (PSC)
 - Submit filing to PSC for project to be placed on the "PSC Approved Project List"
 - The PSC Approved Project List is sent to the Electric Distribution Company (EDC)
 - Interconnection Application
 - Once confirmation is received that the project has been approved (deemed eligible to participate in the Community Solar program), we can submit an interconnection application request to EDC

- Await receipt of PSC Conditional Approval to interconnect and explanation of required facility upgrades
- Community Solar Energy Generating System (CSEGS) Project Program Application
 - Submit application to receive program capacity allocation to utility
 - Receive confirmation (or waitlist or denial) of program capacity allocation
- Site due diligence tasks/site investigation
 - If receive program capacity, begin studies (Phase I Environmental Assessment, wetlands review, geotechnical characteristics, etc.).
- Discretionary Permitting Process (DPS)
 - MNCPPC – timeframe for [Site Development Plan](#) review and approval is dependent upon site complexity, County and State staff review schedule
 - Mandatory Community Meeting
 - Submit Site Development Plan for review and approval including:
 - NRI/FSD Forest Conservation Plan
 - Landscape Plan
 - Others as applicable to specific site
 - [Design Review Committee](#) (must take place w/in 3 weeks of SDP application being accepted)
 - Planning Board Hearing scheduled/held (this Hearing must take place within 120 days of intake acceptance)
 - If SDP approved
 - Resolution is mailed
 - 30-day appeal period
 - Begin Certified Site Plan review & approval process (4-5 month process)
 - Once CSP is signed can apply for construction permits
 - Dept. of Permitting Services requirements
 - Stormwater/Erosion & Sediment Control
 - Roadway entrance/Public Right of Way
 - Others as applicable to specific site
 - Approvals dependent of receiving signed CSP
- Construction permit process will follow Certified Site Plan approval and approval of the above DPS plan reviews (allow 2-3 months)
 - Submit application and post related bonds to ensure performance of work is in compliance w/ CSP

Generally, with these steps it will be at least two years before a project is actually built. Although according to Community Solar program rules projects have to achieve commercial operation within 24 months, many community solar projects have already had to request a year extension (which costs \$100,000) due to delays in permitting.

The same steps, and more, would be required under Conditional Use, except that under Limited Use the applicant has fairly high confidence that before starting the process the project will likely be approved if the application and project design are compliant with all applicable requirements, guidelines as defined by zoning and other requirements.

That is not the case for Conditional Use, where the project will be reviewed on a case-by-case basis only after a significant amount of additional application preparation work has been completed. The [Conditional Use](#) process requires a hearing prior to actually submitting the SDP for review but requires that the [components listed](#) under SDP and DPS be submitted, reviewed and approved to accompany the Conditional Use application. Conditional Use applications may take anywhere from 4-6 months from the time of intake acceptance - after completion of the SDP and DPS components - to be approved or denied. The applicant is assigned a hearing date which requires significant investment for applicant to prepare a compelling case as to why (in this case) solar should be allowed on a particular site. So, the Conditional Use process adds several months to project approval (which the state cannot afford more delays in getting projects approved to comply w/ CSEGS PSC program rules) and requires a significant amount of money in preparation with NO certainty or even a high confidence level that the project will be approved. And if approved, the decision can be appealed for any reason, which can add another 6-24 months and mounting legal fees.

It has been brought to our attention by a Montgomery County resident who was listening in to each of the Workgroup meetings, that one sector of the agricultural economy was actually “run out of the county” due to Conditional Use (formerly Special Exception) costs: a local meat processor was used as an example, with the result that since Gladhill Meats closed, there have been no processors for “local meat.” Montgomery County farmers now send live animals to Frederick or other counties in Maryland and Pennsylvania because of the overly restrictive rules. Instead of encouraging all agriculture related business, the Conditional Use process discourages it.

- Our M-NCPPC partner county does not require conditional use or Special Exceptions for solar on agricultural land – Prince George’s County has a substantially similar balance between urban, suburban, and agricultural zones and has a similar amount of farmland (about 60,000 acres). All of the ground-mounted Community Solar projects in the Maryland Pepco service area are located in Prince George’s County, although many subscribers to these projects live in Montgomery County. As confirmed by Derick Berlage, Chief of Countywide Planning in Prince George’s County, the M-NCPPC Mandatory Referral review is the only planning approval process required for solar facilities in that county. (The county also reports that solar development on agricultural land there has had no effect on sale or rental cost of farmland.)

Soil class restriction:

This “poison pill” amendment would render the entire ZTA useless, because it would reduce the number of projects that could be built in the Reserve to single digits. This is demonstrated, in much detail, in the analysis presented to the Council by the MDV-SEIA/CCSA, and by the county’s own analysis, and further explained (in relation to the one-project-per-parcel limitation imposed by state law) in the analysis by Doug Boucher. All of these analyses were posted in the Google Drive for the Stakeholder Workgroup and also sent separately to the County Council, and no argument was even presented that these analyses were incorrect.

Furthermore, the arguments in favor of excluding capability class 2 and 3 soils were based on the mistaken impression that they make up the best farmland in the county. In fact, the USDA

definition of these classes is that class 2 soils have moderate limitations for crop production, and class 3 soils have severe limitations. Only category 1 soils – which are already excluded from use by the ZTA’s current text – can be reasonably described as the “best” soils for agriculture.

Class 2 and 3 soils actually make up 45% and 34% of the county’s land, respectively. The exclusion of class 2 soils from limited solar projects to “protect” them from development, or to prevent a feared increase in farmland rental rates, totally ignores the fact that there is an 1800-acre cap on solar projects. This is far less than the 131,000 acres of class 2 soils in the county, and only 2% of the Agricultural Reserve. The experience of other Maryland counties that have allowed solar on class 2 soils (e.g. Prince George’s) is that they have seen no significant impact of solar on rental rates.

Thus, the soil exclusion amendment is based on false premises and would have had the effect of rendering the ZTA totally unworkable. We strongly recommend that it continue to be rejected.

Preferential subscriptions for Montgomery County Residents, and/or exclusion of non-county residents, from Community Solar (discussed on 12/2- 45.20, 12/10 26.38, 12/10 1.31):

It is the recommendation of this group to oppose this proposal, for several reasons.

- It is not clear that the county has the legislative authority to impose such a restriction: the state’s CSEGS program is structured and implemented by utility service region, and the management and billing process is established by individual utilities. So it is not actually feasible, nor in accordance with COMAR 20.62, to try to mandate separating one part of a utility’s service area from another.
- After careful consideration, it is clear that meeting this programmatic requirement would violate the core principle of this Workgroup, and of the CSEGS program itself, of providing affordable renewable energy to Montgomery County residents. Even voluntary restriction of subscriber recruitment to Montgomery County residents by CSEGS Subscriber Organizations would result in substantial reduction of the potential subscriber pool in the Pepco area, where most county residents live. Based on modeling from community solar industry leaders who do customer acquisition, this would add approximately \$50,000 per MW to each project, or a total of \$4.5 million dollars in costs to the ZTA for 1,800 acres. This will result in increased cost of electricity produced by each project. We strongly feel that this violates the core principle of providing cost savings to consumers – especially low- and moderate-income consumers - through Community Solar.
- Also, the present reality is that all the ground-mounted Community Solar projects in the Pepco service area are in Prince George’s County, but many subscribers are in Montgomery County. It seems confrontational to say that our residents can take up solar from projects in Prince George’s, but Prince George’s residents can’t subscribe to projects in Montgomery County. However, there IS more than enough potential Montgomery County subscriber uptake capacity in both the Pepco and Potomac Edison service areas to use all the solar energy generated under the ZTA, and the county could promote subscription through public communication.

Conclusion

We were pleased to work with our colleagues in the Workgroup, and happy with our ability to disagree amiably on some issues and nevertheless reach consensus on others. We believe

that the final result of our process was quite positive and are pleased to support the Joint Recommendations report to the Council.

We hope that the Council will also consider the amendments discussed in the “Additional proposed amendments/recommendations” section, above. We would note that in several cases their failure to pass was not due to their actual content, but rather to their being linked to other controversial issues (e.g. Conditional Use). They include amendments suggested by other groups (e.g. Office of Agriculture, Audubon Society, Clean Water Action, Dan Savino of Poolesville Green) and are well worthy of being considered on their own merits.

Appendix A – Detailed text of Phased Acreage/Agrivoltaic Pilot Program amendment (recommended for consideration)

Acreage Phased and Agrivoltaic Pilot Programs - DEFEATED BY 4-4 TIE VOTE

The 1,800 acres will be divided into two separate but parallel programs:

- Acreage Phased Program Projects built on class III soils will receive personal property reduction of 75% and real property taxes will remain at “agriculture” and not “commercial” to both incentivize development on non-prime soils and help ease development challenges with interconnection.
- The first program will be an acreage phased program of 900 total acres to be used for community solar or AgNEM projects and will be subjected to the provisions currently proposed in the ZTA 20-01, with the addition of the Savino amendment The county should be limited to permitting no more than 50MW of community solar or AgNEM facilities per year.
- The second will be 900 total acres reserved for solar facilities for an agrivoltaic pilot program. Community solar and AgNEM projects will both qualify for this pilot program. The county shall not permit more than 75MW of agrivoltaic projects per year until the 900 acres are achieved. Any solar facility larger than 2MW(ac) will be prohibited from participation and shall not be granted access to the county level pilot or the acreage phased programs.
- Agrivoltaic Pilot Program:
 - Agrivoltaics shall be defined by using the NREL definitions and agrivoltaic systems can qualify for one of the following definitions to be admitted into the pilot program:
 1. ***Vegetation-centric*** approaches to solar energy developments and vegetation are characterized by actions that serve to maximize biomass production activities and minimize changes to existing vegetation management activities, while also incorporating solar energy production activities;
 2. ***Energy-centric*** approaches to solar energy developments and vegetation are characterized by actions that serve to maximize solar energy output, minimize changes to solar development standard practices, while also promoting vegetation growth under and around the solar installation; or
 3. ***Integrated Vegetation-Energy-Centric (or “Hybrid”)*** approaches that seek to integrate both energy output and vegetation production goals. These types of approaches are characterized by incorporating both vegetation and energy priorities into system designs and could potentially result in lower vegetation productivity or energy output than could be achieved without co-location, but

provide additional benefits, including diversity of revenue streams, that make co-location activities desirable.

- Limited to the same rules and regulations under COMAR, AgNEM, and all other requirements of the ZTA 20-01;
 - Solar developers must work with a farmer from Montgomery County, Maryland agreed upon by the landowner unless otherwise stipulated by the agreed upon contract;
 - The Montgomery County, MD Farmer and Solar Developers will submit a basic farm plan, supported by the County Office of Agriculture or the County Farm Bureau, with the developer's required permits (in accordance to the provisions of the ZTA 20-01 and all regulations required by the state for both AgNEM and the Community Solar Pilot Program to qualify for the Montgomery County tax incentives for this agrivoltaic pilot program;
 - The agrivoltaic system will not interfere with the continued use of the land beneath the canopy for agricultural purposes;
 - The agrivoltaic system is a raised structure allowing for continuous growth of crops underneath the solar photovoltaic modules, with height enough for labor and/or machinery as it relates to tilling, cultivating, soil amendments, harvesting, and grazing animals, etc.;
 - The County's Office of Agriculture, County's Farm Bureau and other stakeholders will develop and maintains a list of pre-approved crops for agrivoltaics based on scientifically researched PAR values, or average shading for project selection;
 - If the project qualifies under the agrivoltaic pilot program, the project will qualify for the following:
 1. Real property taxes will remain at "agriculture" and not "commercial";
 2. Personal property taxes will be reduced by 75%;
 3. Qualify for the Community Solar grant funding administered by MEA;
 4. Eligible for agricultural research grants from the University of Maryland;
 5. Qualify for federal clean energy incentive grant programs; and
 6. Qualify for MD RPS.
 - Management and oversight of qualification of agrivoltaic applications by the Montgomery County Office of Agriculture; and
 - Farmers will be allowed to participate in the agrivoltaic community solar program as subscribers and the AgNEM program as offtakers.
- Program Evaluation:
 - Acreage Phased Program: No later than five years after the implementation of the ZTA 20-01, Montgomery County is directed to do a comprehensive economic analysis of the ZTA- evaluating any economic benefits or consequences solar installations have on the agricultural community, county residents, and any earmarked expenditures, and tax incentives passed in relation to the ZTA 20-01. This report should be provided to the MD PSC to help evaluate the effectiveness of the COMAR pilot program and used to inform the development of the Community Solar permanent program and AgNEM deployment.
 - Agrivoltaic Pilot Program: No later than six years after the implementation of the ZTA 20-01, Montgomery County is directed to start the evaluation of the agrivoltaic pilot program and share the results with the MD PSC and MEA to help inform the AgNEM

and Community Solar Pilot Programs. This study should evaluate successful execution of farmer and solar developer plans, economic analysis of incentives designed to make these programs financially feasible, any economic benefits or consequences solar installations have on the agricultural community, county residents, earmarked expenditures passed in relation to the pilot, and others. After the completion of the study, the county and interested stakeholders can evaluate the effectiveness of the program and choose to keep the agrivoltaic pilot program or release the remaining acres to the other acreage bucket.

- Tax resources from acreage phased program Community Solar and AgNEM developments should be earmarked to support farming related services to include but not limited to rent relief, ag reserve funds, or any other agriculture related resource determined by the farming community and the Office of Agriculture.
- Tax resources from agrivoltaic Community Solar and AgNem developments should be earmarked for the Office of Agriculture, the Montgomery County Farm Bureau, and Montgomery County Council for program implementation.

Appendix B – Explanatory information for jointly passed amendments/recommendations

- **UNANIMOUSLY PASSED:** Add COMAR 20.62 to line 12 in the ZTA.
(The intention of this recommendation is to respond to public and stakeholder concern that the term “Community Solar” as used in the ZTA is not by itself limited to the parameters of the state’s pilot program; the references already provided in ZTA lines 11-12 [Maryland Code §7-306 and COMAR 20.50.10] relate to the state’s Net Metering policy and the definition of Aggregate Net Metering projects, but do not include reference to the Maryland Code defining the “Community Solar Energy Generating Systems” pilot program. The recommended additional citation specifies that Code.)
- **UNANIMOUSLY PASSED** Make a strong recommendation to ensure the PSC language is removed.
- **UNANIMOUSLY PASSED:** Add language with strong recommendations from Montgomery County to only allow for solar projects to be sited in the Agricultural Reserve.
(These two recommendations reflect agreement with the PHED Committee’s decision to remove from the ZTA the language in lines 97-100 that refers to the Public Services Commission’s authority to approve solar projects larger than 2 MW that might be proposed for our county. The language itself is not relevant to the accessory, Community Solar, or Aggregate Net Metered projects that are the subject of the ZTA. The recommendations reflect concern that there had been discussion of restoring this language. More importantly, they reflect recognition that the PSC is legislatively required to consider local jurisdictions’ zoning and land use policies and preferences in making decisions about siting of larger projects. Based on this recognition, the group strongly felt it is inappropriate for the county to simply give blanket acknowledgement of PSC preemptive authority. Instead, we should clearly state our position on such larger projects, that they should be responsive to local and municipal zoning requirements, in order to protect the state’s agricultural asset and ensure the County will exercise their

right, as an interested party, in any proceedings for projects larger than 2MW. This is in accordance with the [Governor's Task Force on Renewable Energy Development and Siting Report of August 2020](#) and SB741.)

- UNANIMOUSLY PASSED: Solar developers will be required to report all acres to be used for the solar facility, including any acres to adhere to the provisions required in the ZTA for setbacks, etc., in the site development plan required for permitting projects. This report shall include not only the acres under the panel, but shall include all acres included in the fenced or shrubbed area.

(This amendment would clarify how the acreage of any solar project would be counted against total acreage allowed by the ZTA.)

- UNANIMOUSLY PASSED: Direct the Office of Agriculture to work with the Planning Board in the application approval process for any solar facilities proposed under the ZTA.
(The intention of this amendment is to establish a formal role for the Office of Agriculture in the application review process for solar projects in the Agricultural Reserve.)

- PASSED 5 to 3: (The explanatory information below refers to the part of this recommendation that pertains to giving preference to specific groups)

Preference will be given to Black and Hispanic farmers in allocating these tax resources.

(Justification:

- Black and Latinx residents are severely underrepresented in the agricultural community of the County. Data from the Census Bureau's 2013-2018 ACS Survey and the USDA's Census of Agriculture 2017 show that:
 - Black residents make up 18% of the county's population, but only 12% of the population of the Agricultural Reserve. They are only 4% of the county's farmers and have only 1% of the farmland.
 - Latinx residents make up 20% of the county's population, but only 10% of the population of the Agricultural Reserve. They are only 5% of the county's farmers and have only 2% of the farmland.
 - Farms owned by White farmers in the county average 124 acres. Those owned by Latinx farmers average only 42 acres, and those owned by Black farmers average just 18 ½ acres.)

Attachment 1 - Subgroup Report of the Environmental and Solar Farm Solar Workgroup

From: [Berlage, Derick](#)

Sent: Tuesday, January 5, 2021 3:16 PM

To: [Alfred Bartlett](#)

Subject: Re: A quick question on solar and the MNCPPC process

Special exception/conditional use not required. In Prince George's, mandatory referral is the only planning approval required for these facilities.

From: Alfred Bartlett <AlfredBartlett@msn.com>

Sent: Tuesday, January 5, 2021 14:48

To: Berlage, Derick <Derick.Berlage@ppd.mncppc.org>

Subject: A quick question on solar and the MNCPPC process

[EXTERNAL EMAIL] Exercise caution when opening attachments, clicking links, or responding.

Derick – First of course, best wishes to you and yours for a happy, and especially, health 2021. Got to be better, right? Also, thanks for putting me in touch with Steve Darcey – his input and experience was extremely helpful, and he even consulted with counterparts in other counties to check on their experience. (Bottom line was that the limited growth of solar in agricultural areas has had no perceptible effect on ag land sale or rental costs, which is consistent with experience in other states.)

I have a question about the approval process in Prince George's County for solar projects under the MNCPPC Mandatory Referral process. Does that review process by MNCPPC Planning and your department (now including application of the solar project review guidelines that you developed) also require a "Special Exception" or "Conditional Use" process if the project is proposed to be on agriculture-zoned land?

Thanks for this information – I've been a 4-plus year participant in the PSC's Net Metering Working Group that's developed the regulations for the state's Community Solar Pilot Program and is monitoring the process in real time. But still, the complexity of the state and then county-by-county solar review and approval process makes it hard to know what's happening as experienced by projects themselves.

Anyway, thanks as always for your information.

Al

ZTA 20-01 Work Group

Report from Agricultural Reserve Stakeholders

January 6, 2021

Introduction: This report is submitted on behalf of Doug Lechliden, Randy Stabler, Lauren Greenberger, and Caroline Taylor, representing the stakeholders of the Agricultural Reserve. We have attended all 5 work sessions, supplementing with separate work meetings, interviews, and research. Research included but was not limited to [Montgomery County Zoning Code](#), the [Master Plan for Preservation of Agriculture and Open Space \(AROS\)](#), [Maryland's Smart and Sustainable Growth Act of 2009](#), correspondence in the hearing record, documents in the work group [Google drive](#), [white papers on solar siting](#) and zoning provisions for solar collection facilities in neighboring jurisdictions.

This report will make the case for conditional use being the only legal path for siting solar in the Ag Reserve. As such, all items of agreement in the associated Joint Report of the whole work group were, for our stakeholder group, predicated on solar siting in the Agricultural Reserve as [a conditional use](#).

Background

The key to the Reserve's success was originally attributed to the environment in which many farmers sold development rights and granted easements in perpetuity to restrict the land for agricultural uses. In return, the County gave its promise to protect the land for agriculture. That promise has been tested through the years as it is now with this proposed zoning change. Today, we are a national model for farmland preservation and our farming and forestry practices protect watersheds, sequester carbon, and help clean the air. In addition to the Reserve's importance as a source of local food and fiber, its economic value, and its contribution to environmental quality, tourism, magnificent vistas, historic farmsteads and villages are an unmatched cultural and recreational resource.

Unfortunately, so much land so close is hard for folks with little understanding of farming to resist tinkering with it. The watchwords have been: adhere to the master plan, do no harm, and think before acting. Over 40 years, we have had to address notions from offices distant from the combine that would make our job more challenging.

Today's threat, like the others before it, is made with the good intention of finding a better use for farms than farming. But like sprawling development, the Outer Beltway, and huge private institutional facilities, it is not consistent with the AROS Master Plan and the purpose clause of the Agricultural Reserve Zone. Both designate agriculture as the primary land use in the Reserve.

The Potential Harm of the ZTA as Written

First - Contrary to the defined purpose of the Ag Reserve, this text amendment would make the solar installations it contemplates the primary land use. This ZTA would be a de facto

zoning change. It would be made without going through the Master Plan amendment or rezoning process. It would be an abuse of process that would make a major land use change without full public scrutiny. We believe it is inconsistent with the Master Plan's policies, the purpose of the AR Zone, the basic concept of the Reserve, and the promise of the County to protect it for agriculture.

Second - The solar installations contemplated by this ZTA are industrial in character. They are not accessory uses. 150 or more of them encompassing 1800 acres, randomly scattered across the Reserve will negatively impact agriculture. Be sure of that.

Third - If commercial solar facilities are to be allowed in the Agricultural Reserve, they must be conditional uses, like other utilities and installations that are not accessory to individual farms, such as cellular towers; broadcast towers; above-ground pipelines; and, notably, public utility structures. That would provide appropriate scrutiny before the independent hearing examiner to ensure master plan consistency and compatibility with the nearby uses. It is relevant to note that, although none of our neighboring counties have master plan-protected agricultural zones; most have chosen to require the conditional use process, or something similarly rigorous, when reviewing applications for commercial solar installations.

Using the conditional use review process provides the only mechanism to legally evaluate and approve commercial solar projects within the framework of the [1980 AROS Master Plan and the legislative intent of the AR Zone](#). This is the viable path forward.

Fourth - the ZTA has been promoted as providing for community solar systems because community systems have local subscribers and, thus, the power they generate would be credited to helping meet Montgomery County's affordable green energy goals. If adopted, it must require that any installations be community systems with county residents as subscribers. Otherwise, the ZTA is a bait and switch, serving no local purpose other than barely affecting the mix of power sources of the regional grid.

Fifth - there is no scientific or sound policy basis for permitting 1800 undesignated acres of the Reserve for 2MW solar systems. If they are to be allowed, an evaluation should occur after the first 5 years of implementation.

Sixth - It is vital to protect the Reserve's forests, slopes, and its better soils for farming and to protect water and air quality. We have specific suggestions to that end.

Finally - we support solar energy as an *accessory use on farms*. We favor increasing the allowable energy production of accessory solar from 120 to 200 percent of on-site use. That could supplement farm income as opposed to presenting further challenges to farm businesses and will encourage all farms to become energy self-sufficient.

Recommendations:

1. Any non-accessory solar collection system producing more than 200% of on-site use must be a conditional use.

- a. By definition, it is neither the primary use of the land, namely, agricultural production, nor accessory to a farm or home, or even designed primarily to serve residents of the Reserve.
- b. The amount of land required to generate 2MW (approximately 12-14 ac.) requires specific attention to the impact of the specific project on neighboring properties, rather than general regulations appropriate for limited uses.

2. Large-scale solar collection systems in the Reserve must specifically be for Community Systems only with subscribers that live in the County.

- a. The only rationale for using land in the Reserve is to help meet the County's clean energy goals.
- b. The proposal was put forward as an opportunity to provide affordable clean energy to Montgomery County residents who would otherwise not have access to it (such as families living in multi-family housing) through the mechanism of community solar projects. Commercial solar installations that simply feed the grid and serve populations outside of the County would be entirely contrary to the intent of this bill.

3. Exclude siting solar facilities on Class I and II soils. Although the vast majority of agricultural production occurs on Class II and III soils in the AR, we offer here a compromise: allow solar installations on Class III and above soils, thus making available a significant swath of acreage in the AR to site community solar projects.

4. Existing tree stands must be protected. The removal of trees in excess of one acre to install solar installations should be prohibited without exception. The applicant shall submit a Forest Conservation Plan that is consistent with all ordinance requirements. Whenever possible, the Forest Conservation Plan, should be designed to contribute to the maximum extent practical to improving the water quality of the impacted watershed. Setback and Height Restrictions of the project should comply with all setback and height requirements of the Agriculture Reserve zone.

5. All solar projects must be co-located with some form of agricultural production. As long as Class I and II soils are excluded, planting of crops, livestock grazing or the installation of pollinator habitats are acceptable. These would be subject to review and recommendation by the Office of Agriculture giving preference to projects with actual agricultural production.

6. The siting of solar projects should minimize the effect on cultural and natural resources, or significant scenic view sheds.

7. The Office of Agriculture, with appropriate resources, will:

- a. help to establish conditions for the review and approval of the proposed projects, and
- b. review and provide recommendations to the Hearing Examiner for each project application within the same timeframe provided to the Planning Board to prepare and remit their recommendations.

8. Office of Agriculture will review and provide recommendations on applications with slopes greater than 8% to ensure soil erosion is minimized.

9. Once an application is approved, the legal legislative intent of the AR zoning plan must be respected: (a) Applicant must provide approved USDA-NRCS Soil Conservation and Nutrient management plans. (b) A written viable agriculture plan approved by the County Office of Agriculture and USDA-NRCS must be submitted and approved in order to move forward.

10. Each project will require a decommissioning and restoration plan which will be updated every five (5) years, over the life of the project. A bond will be established to cover the cost of removal of the solar installations at the end of the project.

11. Energy technology is rapidly evolving. There is no scientific justification for preempting 1800 acres of the Reserve for solar installations, which could result in as many as 150 projects. In light of these conditions, after five years or the installation of 25 community solar projects, whichever comes first, the program should be evaluated by the Office of Agriculture with recommendations to be presented to the County Council for continuation or modification.

Example of neighboring jurisdiction requirements for solar siting:
Use Standards below are from Prince George's County.

Where a Solar Collection System- SCS is allowed as a conditional use, it must satisfy the following standards:

1. In the Agricultural Reserve zone:

a) Siting Preferences

Site selection and placement on the site are important for SCS projects. Project locations should be selected in locations that do not result in loss of Class I, II, and III soils, affect cultural and natural resources, or impact significant scenic view sheds. The remainder of these guidelines set forth the specific standards that the Hearing Examiner will utilize to meet these goals.

b) Location Restrictions

- a. The Hearing Examiner's siting preference hierarchy is as follows, listed from most suitable to least suitable in descending order:
 - i. Locations on disturbed land such as brownfields, reclaimed surface mines, abandoned rubble fills, and closed landfills.
 - ii. Locations in industrial and commercial zoning districts.
 - iii. Locations in residential zoning districts other than AR.
 - iv. Proposals in the AR zone are subject to the following additional guidelines:

1. The least productive agricultural soils classified as class IV through VIII (as determined by USDA-NRCS Soil Survey) should be considered first if buildable.

The Legal Legislative intent of the zone build concept must be followed:

- (a) Applicant must provide approved USDA-NRCS Soil Conservation and Nutrient management plan. A written viable agriculture plan approved by The County Office of Agriculture and USDA-NRCS must be submitted. The Hearing Examiner strongly discourages installing SCS on soils with classification of I, II, and III as determined by USDA-NRCS Soil Survey, as these are the most productive soils. If proposed, such projects will provide mitigation for the loss of productive soils, to County Land Preservation, as administered by the County Office of Agriculture.
2. Woodland Conservation: The Hearing Examiner discourages the clearing of woodlands for the installation of SCS. The applicant shall submit a Forest Conservation Plan that is consistent with all ordinance requirements. Whenever possible, the Forest Conservation Plan, should be designed to contribute to the maximum extent practical to improving the water quality of the impacted watershed. Setback and Height Restrictions of SCS should comply with all setback and height requirements of the Agriculture Reserve zone.

- c) **Decommissioning and Restoration:** The Hearing Examiner supports the PSC's practice of requiring a decommissioning and restoration plan which will be updated every five (5) years, over the life of the project.

Respectfully Submitted,

- Doug Lechliden, co-Chair - Laytonsville
Owner & President, Laytonsville Landscaping Inc. Turf Farm
Chairman, Montgomery County Agricultural Advisory Committee
- Randy Stabler - Brookeville
Managing Partner, Pleasant Valley Farm
Board member, Montgomery Agricultural Producers
- Lauren Greenberger - Barnesville
President, Sugarloaf Citizens' Association
- Caroline Taylor - Poolesville
Executive Director, Montgomery Countryside Alliance