



Zoning Text Amendment (ZTA) No. 18-01, Solar Collection System - Standards

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Completed: 03/8/18

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Description

Zoning Text Amendment (ZTA) 18-01 would revise the Solar Collection System use standards to allow larger facilities in Rural Residential, Residential, Commercial/Residential, Employment, and Industrial zones. Currently, a Solar Collection System is limited to an accessory use in the Agricultural Reserve, Rural Residential, Residential, Commercial/Residential, and Employment zones.

Summary

**Staff recommends approval of ZTA No. 18-01, with modifications, to revise the Solar Collection System use standards to allow larger facilities in Rural Residential, Residential, Commercial/Residential, Employment, and Industrial zones. Staff has included, as Attachment 2, a restructuring of the ZTA that we believe further clarifies the sponsors' overall intent while also maintaining consistency with the Zoning Ordinance format of the limited use provisions for a Solar Collection System.**

Background/Analysis

Zoning Text Amendment (ZTA) 18-01 would 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 believe it is in the public interest to expand the opportunities for solar production in areas where development is anticipated; while it would retain the current limits on Solar Collection Systems in the Agricultural Reserve zone (only allowing it as an accessory use in this zone). The ZTA includes standards to prevent glare and to buffer the facility from surrounding land uses. The ZTA would provide more opportunities for community oriented solar facilities. Community oriented solar facilities offers 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. The Maryland Public Service Commission has adopted regulations for a community solar pilot program in Maryland, with an emphasis on providing renewable energy benefits for low and moderate income customers. The Maryland Public Service Commission has the authority to issue a Certificate of Public Convenience and Necessity (CPCN), which provides authority for

a person to construct or modify a new generating station or high-voltage transmission lines; however, power generation of 2 megawatts or less does not require a CPCN. Power generation of greater than 2 megawatts falls into the category of a Public Utility, which requires conditional use approval. ZTA 18-01 only allows Solar Collection Systems of 2 megawatts or less. Such a facility could require 8 to 12 acres of land.

As proposed, ZTA 18-01 modifies the Solar Collection System provisions as discussed below:

- **Continues the existing limited use provision requiring that a Solar Collection System located in the Agricultural Reserve zone be an accessory use but does not require a Solar Collection System proposed in other zones to be an accessory use.** The ZTA retains language allowing a Solar Collection System as an accessory use in the Rural Residential, Residential, Commercial/Residential, Employment, and Industrial zones but does not require such. The limited use standards for solar as an accessory use in the Agricultural Reserve zone are very similar to the existing provisions. As proposed, the ZTA would eliminate the more flexible side yard setback requirement in the Rural Residential or Residential Detached zone for a freestanding Solar Collection System as an accessory use (*the system may be located in the side yard of a property in a Rural Residential or Residential Detached zone if the main building is set back a minimum of 70 feet from the side lot line and the Solar Collection System is setback a minimum of 50 feet from a side lot line and the height of the Solar Collection System is a maximum of 20 feet.*) If this is the intent of the sponsor, then the resulting legislation would require that any freestanding accessory structure be located behind the rear building line of the principal building. (*Lines 50-70*)
- **In Rural Residential, Residential, Commercial/Residential, Employment and Industrial zones, where a Solar Collection System is allowed as a limited use, the ZTA allows the use as an accessory use or as a principle use.** As an accessory use, the applicable standards as proposed under the Agricultural Reserve zone apply. As a principle use, the following limited use standards apply (*Lines 67-95*):
  - 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.
  - 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. (Same language as the current requirement for a freestanding Solar Collection System.)

- A system designed to produce more than 2 megawatts (AC) may be allowed as a public utility use. *(It should be noted that a public utility structure requires approval through the conditional use process.)*

### Limited Use Requirements for a Solar Collection System—Montgomery County

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.

A Solar Collection System is allowed as a limited use in all zones, and must satisfy a number of standards including: In the Agricultural, Rural Residential, Residential, Commercial/Residential, and Employment zones, only being allowed as an accessory use; requiring written authorization from the local utility company if proposed to be connected to the utility grid; prohibition on 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 the solar collection system; allowing solar panels to encroach into a setback as 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 to exceed the maximum height as allowed under Section 4.1.7.C.3.b (maximum height does not apply to solar panels).

There are also specific standards that apply to a freestanding Solar Collection System that include:

- In the Agricultural, Rural Residential, Residential, Commercial/ Residential, and Employment zones, it 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; however it may be located in the side yard of a property in a Rural Residential or Residential Detached zone if the main building is set back a minimum of 70 feet from the side lot line and the Solar Collection System is setback a minimum of 50 feet from a side lot line and the height of the Solar Collection System is a maximum of 20 feet.
- In the Residential Multi-Unit, Commercial/Residential, Employment, and Industrial zones, a Solar Collection System installed above a parking lot or other paved surface does not count towards the maximum coverage.
- Only a flush-mounted sign identifying the manufacturer of the system is allowed.
- Removal of the Solar Collection System is required 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.

### Community Comments

Staff received comments at the time of publication of the staff report requesting the inclusion of the Agricultural Reserve zone as a zone that should include Solar Collection Systems as a principle use. Currently and as proposed in ZTA 18-01, a Solar Collection System in the AR zone would only be allowed as an accessory use. The rationale for this request is provide in the attached policy paper (Attachment 3).

### Conclusion

Staff believes that ZTA 18-01 strikes 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 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 requires site plan approval and provides limitations on the size of the overall system and the height of any freestanding structure. Staff has included, as Attachment 2, a restructuring of the ZTA that we believe further clarifies the sponsors’ overall intent while also maintaining consistency with the Zoning Ordinance format of the limited use provisions for a Solar Collection System.

### **Attachments**

1. ZTA No. 18-01 as introduced
2. ZTA No. 18-01 as reorganized by staff
3. Policy Paper: The Viability of Solar Energy in an Agricultural Setting-Chris Cahoon, Linc Construction Services

# ATTACHMENT 1

Zoning Text Amendment No.: 18-01  
Concerning: Solar Collection System -  
Standards  
Draft No. & Date: 2 – 2/13/18  
Introduced: February 13, 2018  
Public Hearing:  
Adopted:  
Effective:  
Ordinance No.:

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

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Lead Sponsors: Councilmembers Huckler and Leventhal  
Co-sponsors: Councilmembers Elrich, Berliner, Katz, and Navarro

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**AN AMENDMENT** to the Montgomery County Zoning Ordinance to:

- revise the Solar Collection System use standards to allow larger facilities in certain zones; and
- generally amend the provisions for Solar Collection Systems.

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”

**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:*

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

**Division 3.7. Miscellaneous Uses**

\* \* \*

**Section 3.7.2. Solar Collection System**

**A. Defined**

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.

**B. Use Standards**

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

- [1. In the Agricultural, Rural Residential, Residential, Commercial/Residential, and Employment zones a Solar Collection System must be an accessory use as defined in Section 3.1.3.
2. Written authorization from the local utility company must be provided for a Solar Collection System that will be connected to the utility grid.
3. 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.
4. 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.
5. The following standards apply to a freestanding Solar Collection System:

- 27 a. In the Agricultural, Rural Residential, Residential, Commercial/  
28 Residential, and Employment zones, it is allowed only as an  
29 accessory use where the system produces a maximum of 120%  
30 of on-site energy consumption and must satisfy the same  
31 development standards as an accessory structure; however it  
32 may be located in the side yard of a property in a Rural  
33 Residential or Residential Detached zone if the main building is  
34 set back a minimum of 70 feet from the side lot line and the  
35 Solar Collection System is setback a minimum of 50 feet from a  
36 side lot line and the height of the Solar Collection System is a  
37 maximum of 20 feet.
- 38 b. In the Residential Multi-Unit, Commercial/Residential,  
39 Employment, and Industrial zones, a Solar Collection System  
40 installed above a parking lot or other paved surface does not  
41 count towards the maximum coverage.
- 42 c. Signs are prohibited, except for a flush-mounted sign  
43 identifying the manufacturer of the system.
- 44 d. The Solar Collection System must be removed within 12  
45 months of the date when the use is discontinued or abandoned  
46 by the system owner or operator, or upon termination of the  
47 useful life of the system. The Solar Collection System will be  
48 presumed to be discontinued or abandoned if no electricity is  
49 generated by the system for a period of 12 continuous months.]
- 50 1. In the Agricultural Reserve zone:
- 51 a. A Solar Collection System must be an accessory use as defined  
52 in Section 3.1.3.

- 53            b. Written authorization from the local utility company must be  
54            provided for a Solar Collection System that will be connected  
55            to the utility grid.
- 56            c. Removal of trees or landscaping otherwise required or attached  
57            as a condition of approval of any plan, application, or permit for  
58            the installation or operation of a Solar Collection System is  
59            prohibited.
- 60            d. Solar panels may encroach into a setback as allowed under  
61            Section 4.1.7.B.5.c and may exceed the maximum height as  
62            allowed under Section 4.1.7.C.3.b.
- 63            e. A freestanding Solar Collection System is allowed only as an  
64            accessory use where the system produces a maximum of 120%  
65            of on-site energy consumption and must satisfy the same  
66            development standards as an accessory structure.
- 67            2. In Rural Residential, Residential, Commercial/Residential,  
68            Employment and Industrial zones, where a Solar Collection System is  
69            allowed as a limited use, it must either satisfy Subsection  
70            59.3.7.2.B.1.a through Subsection 59.3.7.2.B.1.e or it must satisfy the  
71            following standards:
- 72            a. Site plan approval is required under Section 7.3.4.  
73            b. The site must be a minimum of 3 acres in size.  
74            c. The system may produce a maximum of 2 megawatts (AC).  
75            d. All structures must be:
- 76            i. 20 feet in height or less;  
77            ii. located at least 50 feet from any property line; and  
78            iii. surrounded by a minimum 6-foot-tall fence.

- 79 e. If a structure for a Solar Collection System is located in an area
- 80 visible to an abutting residential use or a road:
- 81 i. only solar thermal or photovoltaic panels or shingles may
- 82 be used;
- 83 ii. the panels or shingles must use textured glass or an anti-
- 84 reflective coating; and
- 85 iii. screening that satisfies Section 59.6.5.3.C.8 (Option A)
- 86 on the sides of the facility visible from the residential use
- 87 or road is required.
- 88 f. The Solar Collection System must be removed within 12
- 89 months of the date when the use is discontinued or abandoned
- 90 by the system owner or operator, or upon termination of the
- 91 useful life of the system. The Solar Collection System will be
- 92 presumed to be discontinued or abandoned if no electricity is
- 93 generated by the system for a period of 12 continuous months.
- 94 g. A system designed to produce more than 2 megawatts (AC)
- 95 may be allowed as a public utility use under Section 3.6.7.E.

96 \* \* \*

97 **Sec. 2. Effective date.** This ordinance becomes effective 20 days after the  
98 date of Council adoption.

99

100 This is a correct copy of Council action.

101

102 \_\_\_\_\_

103 Megan Davey Limarzi, Esq.  
104 Clerk of the Council

**PLANNING STAFF VERSION USING ORIGINAL Z.O. LANGUAGE-ATTACHMENT 2**

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*ORDINANCE*

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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.

11   **B.    Use Standards**

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

- 14          1.     In the Agricultural Reserve zone[[, Rural Residential, Residential,  
15                 Commercial/Residential, and Employment zones]] a Solar Collection  
16                 System must be an accessory use as defined in Section 3.1.3.
- 17          2.     Written authorization from the local utility company must be provided  
18                 for a Solar Collection System that will be connected to the utility grid.
- 19          3.     Removal of trees or landscaping otherwise required or attached as a  
20                 condition of approval of any plan, application, or permit for the  
21                 installation or operation of a Solar Collection System is prohibited.
- 22          4.     Solar panels may encroach into a setback as allowed under Section  
23                 4.1.7.B.5.c and may exceed the maximum height as allowed under  
24                 Section 4.1.7.C.3.b.
- 25          5.     The following standards apply to a freestanding Solar Collection  
26                 System:

- 27 a. In the Agricultural, Rural Residential, Residential, Commercial/  
28 Residential, [[and]] Employment and Industrial zones, where it  
29 is [[allowed only as an]] accessory to another use, [[where]] the  
30 system may produce~~[[s]]~~ a maximum of 120% of on-site energy  
31 consumption and must satisfy the same development standards  
32 as an accessory structure~~[[; however~~ it may be located in the  
33 side yard of a property in a Rural Residential or Residential  
34 Detached zone if the main building is set back a minimum of 70  
35 feet from the side lot line and the Solar Collection System is  
36 setback a minimum of 50 feet from a side lot line and the height  
37 of the Solar Collection System is a maximum of 20 feet]].
- 38 b. In the Rural Residential, Residential, Commercial/Residential,  
39 Employment and Industrial zones, where a Solar Collection  
40 System is not accessory to another use:
- 41 i. Site plan approval is required under Section 7.3.4.  
42 ii. The site must be a minimum of 3 acres in size.  
43 iii. The system may produce a maximum of 2 megawatts  
44 (AC).  
45 iv. All structures must be:  
46 1. 20 feet in height or less;  
47 2. located at least 50 feet from any property line; and  
48 3. surrounded by a minimum 6-foot-tall fence.  
49 v. If a structure for a Solar Collection System is located in  
50 an area visible to an abutting residential use or a road:  
51 1. only solar thermal or photovoltaic panels or  
52 shingles may be used;



80 Clerk of the Council

### Policy Paper: The Viability of Solar Energy in an Agricultural Setting

Chris Cahoon, Linc Construction Services

February 20, 2018

I grew up in rural South Carolina and upon leaving the Marines in 2001, I moved to Maryland to join Local Union # 486 in Baltimore and spent 12 years in the mechanical construction industry. During my tenure, I managed the installations of large scale mechanical and plumbing systems in various LEED gold and platinum buildings including hospitals, office buildings and labs. I have always had a passion for building, engineering, clean energy and being self-sufficient in terms of food production. So, in tandem with my career, I pursued and obtained a Bachelor of Science degree in Mechanical Engineering from University of Maryland College Park, graduating in 2015. My focus was on sustainability, renewable energy, as well as business and economics. I then started my own construction and real estate company in August of 2015 to focus on sustainable construction and development practices on a residential scale. Our business goal at Linc Construction Services is to develop sustainable communities following the “agri-hood” model, which incorporates sustainable energy infrastructure (community solar utility) with local food production (community supported agriculture). Along with these efforts we want to engage and educate our community about the limitless possibilities of growing green together.

There are two issues facing our civilization that I believe are intrinsically linked and interdependent: Energy and Agriculture. We are faced with providing enough quality food and renewable energy to sustain ourselves and generations to come in a healthy way. I must emphasize “quality” food and “renewable” energy. Montgomery County has the leadership, political support, land and human resources, and community support to launch a full-scale effort to produce food and energy to support its 1.1 million residents and become a model for surrounding areas and beyond.

Our business is focused on building net zero homes, building performance and HVAC systems, efficient rain and waste water usage, solar design and installation, and small micro homesteads that place value in producing both food and energy within the footprint of individual lots and larger developments. For people who do not have land, communities have increasing access to the burgeoning industries of community solar and community supported agriculture (CSAs). These initiatives at a grassroots level are proving to be feasible alternatives to large scale food and energy production. Locally grown and produced food and energy are the clear answer to many of the problems that face us every day. The positive impacts of these practices, if scaled, would be monumental in terms of our carbon footprint and societal dietary issues.

I was pleased to see that a ZTA was introduced on February 13 to allow community solar projects, but dismayed to find that the County’s agricultural reserve is excluded from this forward-thinking legislation. I submit that community solar and agriculture should not be viewed as mutually exclusive. The agricultural reserve has over 90,000 acres of land that is mostly used for only a single purpose, e.g. livestock or crop farming. Whether it be cattle grazing, grains, horses or hay production, the land has immense untapped potential in the “farming” of solar energy in tandem with other agricultural processes. Solar farming combined with cattle grazing and even crop production is proving across the country and globe to be both a sustainable and good economic practice. The data is available and the movement to dual use farming legislation is being proposed by policy makers across the U.S. In a County with Montgomery County’s commitment to supporting both agriculture and environmental

sustainability, the proposed ZTA to promote solar energy projects in neighborhoods should not exclude the Ag Reserve, where there is the most land available for solar production. This exclusion does not support the needs of many who live within the Ag Reserve.

The 2012 Census of Agriculture highlights the dual use of agricultural land in its report regarding farms producing energy. In 2012, according to the report, more than 57,000 farms were producing renewable energy for farm use or sale to others. This is more than double the level in 2007. The most widely used system was solar and it was used on 36,331 farms. Farm compatible solar is far from a new idea and it makes good sense. There are many websites and publications that discuss the dual uses of solar infrastructure and agriculture combined in the same footprint (a few are cited below). There are ample case studies to support the viability and economic benefits of this type of practice. The “Guide to Farming Friendly Solar” published by the University of Vermont provides a concise introduction with case studies. Many farmers who struggle with cash flow can introduce solar farming, selling energy to offset and subsidize farm costs, in turn allowing for more investment and infrastructure to produce local, high-quality foods. The consequence is that the local community gets to benefit from grid-tied solar and low, stable energy costs, as well as healthy local agriculture.

What’s more, the solar industry, according to an SEIA (Solar Energy Industries Association) report titled “Solar Market Insight Report 2016 Year in Review” is experiencing record exponential growth. This may change with the recent tariff placed on imported solar panels, but the finality and outcome of that tariff are as yet unknown. Potential economic benefits abound for Montgomery County. Some quick figures extracted from the 2016 report are below:

- In a record-breaking year for solar, the U.S. market installed 14,762 megawatts direct current (MWdc) of solar photovoltaic (PV) in 2016 – nearly doubling the capacity installed in 2015. Growth was primarily driven by the utility PV segment, which installed more in 2016 than the entire market in 2015.
- For the first time ever, solar ranked as the No. 1 source of new electric generating capacity additions brought on-line on an annual basis, at 39%.
- In 2016, a record 22 states each added more than 100 MW of solar PV.
- The once-nascent community solar market quadrupled in 2016, playing a key role in supporting the largest year ever for the non-residential PV market.
- GTM Research forecasts that 13.2 gigawatts direct current (GWdc) of new PV installations will come on-line in 2017, down 10% from a record-breaking 2016. Utility PV is expected to account for 66% of that new capacity.
- Total installed U.S. solar PV capacity is expected to nearly triple over the next 5 years. By 2022, more than 18 GW of solar PV capacity will be installed annually.

Works Cited

2012 Census of Agriculture

[https://www.agcensus.usda.gov/Publications/2012/Online\\_Resources/Highlights/Farms\\_and\\_Farmland/Highlights\\_Farms\\_and\\_Farmland.pdf](https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farms_and_Farmland/Highlights_Farms_and_Farmland.pdf)

Guide to Farming Friendly Solar

[www.uvm.edu/~susagctr/resources/solar\\_on\\_farms\\_report\\_2017.pdf](http://www.uvm.edu/~susagctr/resources/solar_on_farms_report_2017.pdf)

Solar Market Insight Report 2016 Year in Review

<https://www.seia.org/research-resources/solar-market-insight-report-2016-year-review>

