CAMDENCOUNTY
new energy. new vision.

PLANNING BOARD

April 19, 2017

7:00 PM

Regular Meeting

Historic Courtroom

Courthouse Complex

Agenda

Camden County Planning Board
Regular Meeting
April 19, 2017, 7:00 PM
Historic Courtroom, Courthouse Complex

ITEM I. **Call to Order & Welcome**

Also Present List

ITEM II. **Consideration of Agenda**

Motion to Approve Agenda: As Presented | As Amended

ITEM III. **Consideration of Minutes - February 15, 2017**

Motion to Approve Minutes: As Written | As Corrected

ITEM IV. **Public Comments**

ITEM V. **Old Business**

ITEM VI. **New Business**

Item A. ***Amendment to County Code of Ordinances - Solar Farms***

1. Amendment to County Code of Ordinances - Solar Farms

ITEM VII. **Information from Board and Staff**

ITEM VIII. **Consider Date of Next Meeting - May 17, 2017**

ITEM IX. **Adjourn**

Motion to Adjourn

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Camden County Planning Board
AGENDA ITEM SUMMARY SHEET

New Business

Item Number: 6.A.1

Meeting Date: April 19, 2017

Submitted By: Dave Parks, Permit Officer
Planning & Zoning
Prepared by: Amy Barnett

Item Title Ordinance 2017-05-01 – Proposed Amendments to UDO Article 151.347 (V) Ordinance to Consider Placement of a Specific Standards – Solar Farms

Attachments: Solar Report (PDF)
Courthouse1MileBuffer (PDF)
Shiloh1MileBuffer (PDF)
SouthMills1MileBuffer (PDF)
Ordinance No 2017-05-01 (PDF)

SUMMARY:

On March 20, 2017 the Camden County Board of Commissioners adopted an ordinance placing a 60 day moratorium on Solar Farms and directed Planning Staff to do a comprehensive study on their effects and bring back any proposed amendments. Attached is the study with proposed changes to Article 151.347(V) design standards for solar farms.

RECOMMENDATION:

Discussion with staff for possible consideration.

Solar Farms Report

The Camden county Board of Commissioners requested that the Planning Department prepare a report regarding the impact of developing solar farms in the county along with recommendations for any amendments to the current regulations of solar farms. The following report addresses issues that have been specifically mentioned by the public in meetings held by the Utility Commission related to 2 solar farms in the Shiloh area of the county, as well as general concerns.

The Camden County Unified Development Ordinance does have regulations about solar farms. This report will review the impacts and issues of solar farm development and evaluate the existing laws to determine if revisions are needed.

The debate about solar farms falls into 2 general categories: big industrywide issues, and local regulatory issues. The industrywide issues are of little concern locally and include: hazardous materials, carbon foot print, comparative production efficiency, reasonableness of federal and state subsidies for alternative energy, leasing and contract issues, and loss of forest, habitat, and farms.

The majority of land use impacts cited relate to the clearing and grading of large acreages and results in soil compaction, potential alteration of drainage channels, and increased runoff and erosion. These concerns are not present locally since solar farms are typically built as a conversion of land already cleared for farm use. Engineering methods and local land development regulations are already used to mitigate these impacts. Loss of farm land is only a minor concern locally as Camden has over 60,000 acres in crop production and most is beyond the economical reach of connections to transmission and/or distribution lines.

The use of hazardous materials in solar panels and the possibility of environmental contamination is an oft noted concern. Research shows that the primary environmental concerns about solar panels relate to the actual construction of the panels, and the mining of materials used in the construction. Even these concerns are being minimized as new materials and construction techniques are being used. One study noted that *"one of the carcinogenic' s used was cadmium (CdTe). More than 63% of the CdTe found in our bodies are attributed to the fertilizers used for plants."*

Another scientific study showed that

> *"the only pathways by which people might be exposed to PV compound from a finished module are by accidentally ingesting flakes or dust particles, or inhaling dust and fumes.*

> *….the potential of Cd leaching out by rain from broken or degraded CdTe modules at the… concluded the releases are unlikely to occur during accidental breakage. The only scenario of potential exposure is if a fire consumes the PV module and releases cadmium from the material into the air."*

The same study concluded that the temperature at which CdTe would be released are so extreme that the glass surrounding the material would melt and encapsulate any hazardous material.

The need for an environmental impact study was addressed in the following statement:

> *"The failure to undertake basic environmental due diligence could lead to project delays or unexpected surprises later in the project development process. ……, it is possible that a party to a lease for a solar project could become responsible at the end of the lease term for environmental conditions on the site even if the lessee did not cause or contribute to the environmental issue.* (*Practice Note, Environmental Law: Overview: Environmental Liability in Transactions and Environmental Diligence (http://us.practicallaw. com/2-500-4092)."*

The reality of solar farms development is that debates will continue as to whether or not solar energy is an efficient use energy production method worthy of state and federal subsidies; whether or not alternative energy development is profitable without subsidies; and how and where rare minerals should be mined and disposed.

More importantly, developers are interested in building solar farms in Camden County and this type of development can and will affect our future development and quality of life. The important local issues are: economic development (jobs and taxes); compatibility with Comprehensive Plans, compatibility with surrounding land uses (location, visibility, and construction); and decommissioning.

Economic Development

Solar farm development produces a moderate number of temporary jobs during the construction period and only a few long term jobs. The projects will generate several temporary construction jobs, however long term jobs might be filled locally but are limited to 2 or 3 for maintenance activities.

The primary local economic benefit is an increase in taxes. Typically a solar farm site is farm land. Construction of a solar plant usually results in the land changing from a farm use value to a commercial value. This can amount to significant increase in land value (and resulting

property taxes) , and the change in use also triggers the recapture of the commercial values for the three prior years. The Camden Schedule of values uses a range of $740 to $1200 per acre for farm use value, and $6,000 to $8,000 per acre for commercial solar properties.

The solar panels and other equipment is taxed as personal property equipment with an 18 year depreciation schedule. However North Carolina discounts the market value by 80%.

5 Megawatt Solar Farm			
Acres	Farm value class 2	Commercial	Increased value
50	$ 990	$ 6,000	
	$ 49,500	$ 300,000	$ 250,500
Equipment	$ 8,000,000		
1st year	94%	$ 7,520,000	
Discount	80%		$ 1,504,000
			$ 1,754,500
Tax revenue			**$ 10,527**

Compatibility with Comprehensive Plan

The Camden County 2035 Comprehensive Plan is focused around the concept of supporting housing and commercial development in and around the core village areas, and maintaining the rural character of outlying working lands. The Objectives and Action Strategies of the Plan support the following goals:

Goal: Camden County's land use pattern will be primarily rural in character with high quality and economically productive development in targeted locations in the core village areas and along main road corridors, which are served by public utilities.

Goal: Camden County will enhance its pastoral character by ensuring that new development within targeted development areas is designed to fit the context of core village areas in the manner of an American rural village. Development in areas outside of targeted development locations will continue to be developed at a rural scale and provide opportunities for low and very low density residential development, small-scale rural crossroads commercial development, and working lands operations.

Goal: Camden County will preserve and protect natural resources and working lands to maintain the function of natural systems, to continue to provide viable opportunities for agricultural and forestry operations, to provide opportunities for residents and visitors to commune with nature, and provide new economic development opportunities related to eco-tourism, outdoor recreation, and renewable energy sources.

The County is currently updating and revising the Unified Development Ordinance to create new zoning districts in and around the core areas to support mixed use and moderately higher density housing in these core areas. Also two of the three core areas have existing and/or proposed sewer service to support the above development types.

As previously mentioned solar farms use a considerable amount of land. For example a 5 megawatt plant requires approximately 50 acres. Locating solar farms within or adjacent to the core village areas significantly reduces the amount of land for development and is not the highest and best use of the land and the County's investment in infrastructure.

The County's current regulations allow solar farms to be developed anywhere in the county with the issuance of a Special Use Permit.

Compatibility With Surrounding Land Uses

Ideally, the need for large land area results in solar farms choosing locations such as farm land that is away from developed areas. Surrounding uses are typically agriculture, forest, and minimum density areas.

Camden, however, does not have an agriculture zoning district and residential subdivisions can and do occur in predominantly agricultural lands. Additionally, Camden has many minor residential subdivisions along both arterial and connector roadways. It is therefore important to create buffer areas between the residential or commercial areas and solar farm development.

This report will recommend additional clarification of setbacks and buffers.

Another compatibility issue also arises from proximity to residential areas. Once developers receive approvals they proceed rapidly to build the project. They are not limited by the market forces of demand to phase development. The result is the potential for a 24/7 construction schedule.

The requirement for a Special Use Permit allows the county the opportunity to include conditions related to days and times allowed for construction activities tailored to the surrounding land uses.

Developer Location Consideration

Two key considerations when siting a solar farm facility are: 1) the demand for the power (load) to be generated and capacity of the utility's distribution/transmission grid; and 2) the ease and cost of connecting to the power being produced to the grid. Both of these elements are complicated and subject to existing conditions of the electric utility system. The load and

capacity element is subject to an analysis of the system required by the system and the regulators. The solar plant cannot produce more electricity than the system needs – without contracting with a specific end user that increases the demand on the system; nor can they connect where the systems physical facilities are inadequate. Smaller solar plants can connect to grid via the system's 3 phase distribution lines located along major roadways, while larger output operations need to connect to the system's transmission/transformer substations which must be large enough to handle the output. If either of these criteria are inadequate, the developer must either find another location or pay the cost of increasing the system's capabilities. Decision making in Camden is further affected by the existence of two different electric utilities, each with different size distribution lines and each with different grid interconnections.

Solar farms look for locations where the cost of connecting to the grid is low. Since the utility companies' systems are located primarily along existing roads and near developed areas, the result is a potential conflict where the County's plans for the future also include taking advantage and maximizing use of existing infrastructure. One might think locating power producing plants would benefit the areas around them, but this is only the case if the power being generated is directly connected to the surrounding development. Solar farms are typically supplying the power grid that transmits power anywhere in the system and depending on the system's interconnections, to far away users. Little, if any, rate reduction benefits are accomplished locally.

Decommissioning

One point where the industrywide issues converge with local issues is related to abandonment of the solar farm. If and when the state and federal tax subsidies are eliminated, the projects may not remain profitable and become abandoned, leaving a scar on the county landscape. Abandonment is addressed by requiring a decommissioning plan and insuring that a viable person or entity is responsible and has adequate resources to remove the equipment and reclaim the land to the previous and usable condition.

Comparisons

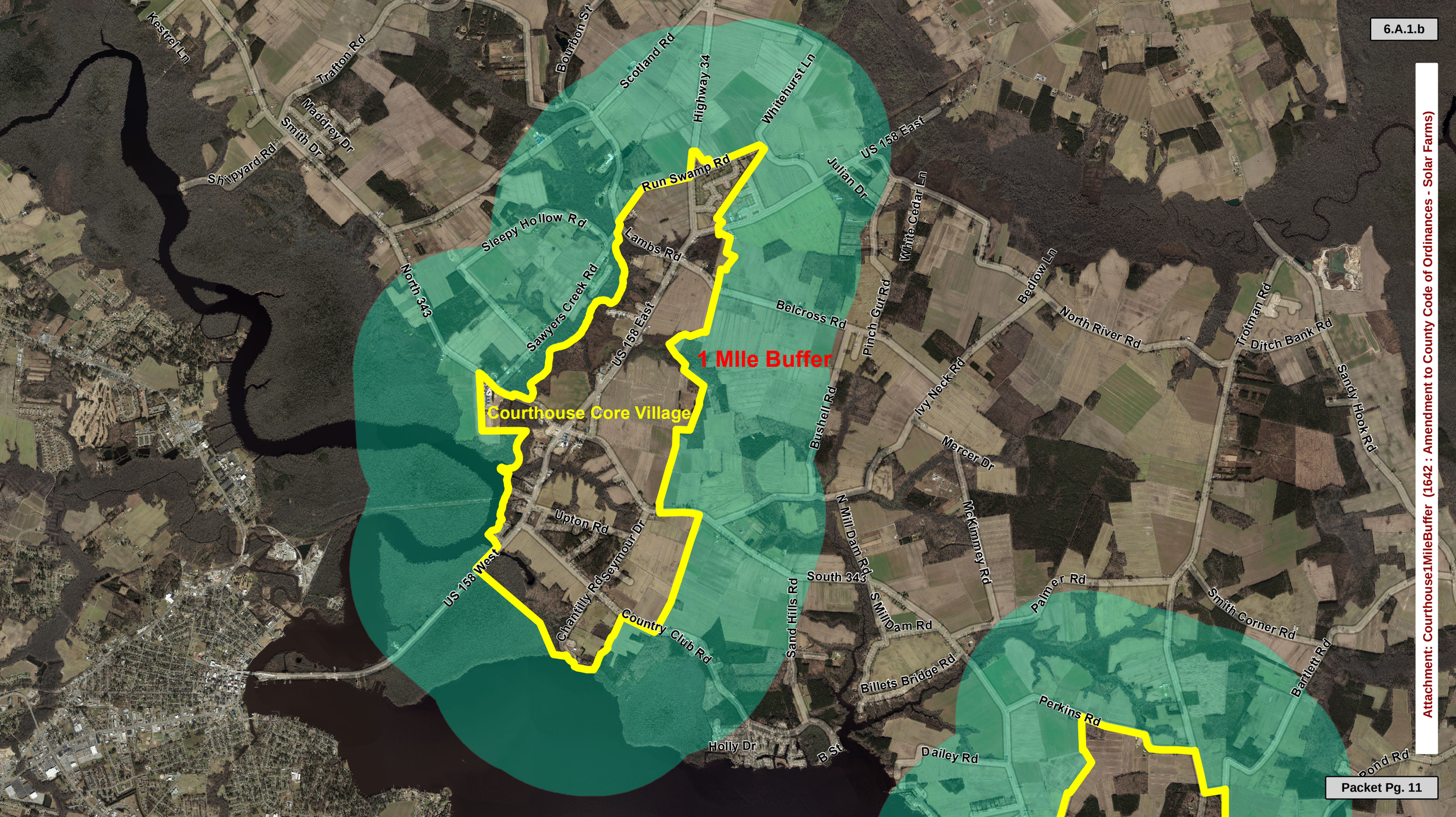
The table below show a comparison of regulations in Camden's neighboring counties and the current status of their experience and possible revisions.

County	Z District	Setback	Setback	Buffer	Height	Landscaping	Bond
Currituck *Recently Banned*	Ag only	300 ft all property lines	100 ft ROW		15	c	115% decom cost - cash
Pasquotank *Under Study*	Comm/Ind/Ag	150 Roads & Res	30 if buffered	Trees & shrubs 10 ft center 15 ft min at maturity	25	Trees & shrubs 10 ft center 15 ft min at maturity	Decom minus salvage – Bond Min $50K
Gates Min 19 acres Over 15 KW	Ind/Ag	100 ft all property lines to fence	100 ft inside fence 150 f/wetlands	Natural forest or			125% Decom or $50K - Cash
Perquimans *120 day Moratorium*	Ag/Ind	Zoning or 20 ft whichever greater					none
Camden *60 day moratoium*	All districts	50 ft all boundaries					
NC Model	All districts	R 50' all round, AG/Comm – 30 F, 15 S, 25 R	100' from any dwelling	By zoning districts	20'	Opacity .2 to .4 R .6 to .8 C	No bond; Remediate through CEA possible tax lein

Recommendations

Staff recommendations are included in the attached proposed amendments to the Unified Development Ordinance, The schedule for review and public hearing on the proposed amendments are:

- Planning Board April 19
- Board of Commissioners Public Hearing May 15



Attachment: Shiloh1MileBuffer (1642 : Amendment to County Code of Ordinances - Solar Farms)

Attachment: SouthMills1MileBuffer (1642 : Amendment to County Code of Ordinances - Solar Farms)

Ordinance No. 2017-05-01

An Ordinance
Amending the Camden County
Code of Ordinances

Camden County, North Carolina

BE IT ORDAINED BY THE CAMDEN COUNTY BOARD OF COMMISSIONERS as follows:

Article I: Purpose

The purpose of this Ordinance is to amend Chapter 151 of the Camden County Code of Ordinances of Camden County, North Carolina, which was originally adopted by the County Commissioners on December 15, 1997, and subsequently amended and as otherwise incorporated into the Camden County Code.

Article II. Construction

For purposes of this Ordinance, underlined words (underline) shall be considered as additions to existing Ordinance language and strikethrough words (~~strikethrough~~) shall be considered deletions to existing language. New language of proposed ordinance shall be shown in italics (*italics*) and underlined.

Article III. Amend Chapter 151 as amended of the Camden County Code which shall read as follows:

CHAPTER 151: UNIFIED DEVELOPMENT

§ 151.334 TABLE OF PERMISSABLE USES.

	Description	R-1	R-2	R-3	CCD	NC	HC	MC	GUD	I-1	I-2
17.400	Solar farms (3 or more) - Refer to § 151.347(V)	S	S	S	S	S	S	S	S	S	S

§ 151.347 SPECIFIC STANDARDS.

(V) The following standards shall apply to all solar farms located in Camden County:

(1) The minimum lot size for all solar farms shall be five acres.

(2) All structures shall meet ~~the minimum setback for the zoning in which located.~~ *a 100 foot setback as measured from all property lines.*

(3) There shall be 50 foot buffer *prior to the perimeter fence that shields solar farm* from routine view from public rights of way or adjacent residentially zoned property.

(4) *The buffer shall consist of 2 canopy trees, 4 understory trees, and 25 shrubs for every 100 feet.*

(5) *There shall be no solar farms located within the core villages of South Mills, Courthouse or Shiloh or within a one mile buffer of each core village as indicated on county's GIS maps.*

(6) Solar power electric generation structures shall not exceed a height of ~~25~~ *20* feet.

(7) The solar farm shall conform to the NAICS 22119 description of a ground mounted solar powered energy system.

(8) *A proposed decommissioning plan to be signed by party responsible for decommissioning and the landowner (if different) addressing the following shall be submitted at permit application.*

a. *The solar farm shall have 12 months to complete decommissioning of the solar facility if no electricity is generated for a continuous period of 12 months. For purposes of this section, this 12-month period shall not include delay resulting from force majeure.*
b. *Decommissioning shall include removal of solar panels, buildings, cabling, electrical components, roads, and any other associated facilities down to 36 inches below grade.*
c. *Disturbed earth shall be graded and re-seeded, unless the landowner requests in writing that the access roads or other land surface areas not be restored.*
d. *Description of any agreement (e.g. lease) with landowner regarding decommissioning.*
e. *The identification of the party currently responsible for decommissioning.*
f. *Plans for updating this decommissioning plan.*

(9) *Prior to issuance of the Building Permit, approved decommissioning plan shall be recorded in the Camden County Registry of Deeds.*

(10) The county shall periodically request proof of the continuous operation of the solar farm from the applicant/owner. The nature of required evidence shall be determined as a condition of the special use permit.

(11) Applicant shall provide prior to approval of building permits a~~n~~ *self-renewing* irrevocable letter of credit in favor of the county in an amount equal to the estimated removal cost of the solar facility, ~~less the salvage value of the equipment,~~ which shall be issued by a Federally chartered bank with a branch office in northeastern North Carolina at which the letter of credit may be drawn and paid in full in immediately available funds in the event the solar facility owner fails to decommission the solar facility pursuant to the requirements of this section. The estimated cost of removal shall be updated every five years from date of approval for solar farm.

(12) Solar farms located within FEMA's 100 year flood shall elevate all electrical connections one foot above the base flood elevation (BFE).

(13) All collectors shall be surrounded by a lockable minimum height six foot fence.

Adopted by the Board of Commissioners for the County of Camden this day of May, 2017.

County of Camden

_____
Clayton Riggs, Chairman
Board of Commissioners

ATTEST:

_____
Amy Barnett
Assistant Clerk to the Board