



PRINCE EDWARD COUNTY
PLANNING COMMISSION
January 21, 2020

AGENDA

7:00 p.m.	1.	The Chairman will call the January 21 2020 meeting to order	
	2.	Election of Chairman	1
	3.	Election of Vice-Chairman	1
	4.	Set Day, Time and Place of Regular Meeting	1
	5.	Adoption of Commission By-laws	1
	6.	Approve Minutes	5
	7.	Public Hearing: Amendment to County Zoning Ordinance – Allow Construction Camps in A-1 Zone by Special Use Permit	10
	8.	Public Hearing: Rezoning Tax Map Parcels 23-A-23, 23-A-40 & 23-A-40A	12
	9.	Public Hearing: Special Use Permit – Piedmont Regional Jail - Sign	19
	10.	Public Hearing: Special Use Permit – Ellington – Construction Camp	26
	11.	Amendment to County Zoning Ordinance – Alternative Energy	37
	12.	Special Use Permit Holocene Clean Energy	68
	13.	Review of Supervisors Actions	
	14.	Old Business	
	15.	New Business	

Next Meeting Feb 18, 2020 at 7:00 p.m.



**County of Prince Edward
Planning Commission
Agenda Summary**

Meeting Date: January 21, 2020
Item No.: 2-5
Department: Planning and Community Development
Staff Contact: Wade Bartlett
Issue: Planning Commission Organization

Summary:

The first meeting in January of each year is the organizational meeting of the Planning Commission. The Commission will wish to act on the following agenda items:

2. Elect a Chair – One-year term
3. Elect a Vice-Chair – One-year Term
4. Set Day, Time and Place of Regular Commission Meetings – *(Historically they are the third Tuesday of each month at 7:00 p.m. in the Board of Supervisors Room, Prince Edward County Courthouse)*
5. Adopt Commission By-Laws – Attached are the Commission By-Laws

Attachments:

1. By-Laws of the Planning Commission

Recommendations:

The Planning Commission will wish to take the action outlined above

Motion _____
Second _____
Prengaman _____

Paige _____
Sandlin _____
Jenkins _____

Hunt _____
Gilliam _____
Leatherwood _____

Jones _____
Watson _____
Peery _____

**Bylaws Of
Prince Edward County Planning Commission**

- 1) Meetings shall be held on a monthly basis, normally on the third Tuesday of the month at 7:00 P.M. in the Board of Supervisor's room. The schedule may be altered at any regularly scheduled meeting. Meetings may be cancelled due to lack of business; but the Commission shall meet at least every two months.
- 2) Additional meetings may be held at any time upon the call of the chairman, or by a majority of the members of the commission, or upon request of the Board of Supervisors following at least twenty-four hours' notice to each member of the commission.
- 3) The commission at its regular meeting in January of each year shall elect a chairman and vice-chairman. The recording secretary shall be the Director of Planning and Community Development or a designated alternate, who shall make an audiotape of the proceedings of each meeting and prepare minutes for the permanent records of the commission.
- 4) The duties and powers of the officers of the planning commission shall be as follows:
 - A. Chairman
 - Preside at all meetings of the commission.
 - Call special meetings of the commission in accordance with the bylaws.
 - Sign documents of the commission.
 - See that all actions of the commission are properly taken.
 - B. Vice-Chairman

During the absence, disability, or disqualification of the chairman, the vice-chairman shall exercise or perform all duties and be subject to all the responsibilities of the chairman.
 - C. Recording Secretary
 - Prepare an audiotape of the proceedings of each meeting of the commission.
 - Prepare minutes from the audiotape of each meeting in detail sufficient to include the tenor of public comments and the commission's reasoning underlying each decision or recommendation.
 - Circulate a copy of the minutes to each member of the commission before the next meeting.
 - Prepare the agenda for all commission meetings.
 - Be custodian of commission records.
 - Inform the commission of correspondence relating to business of the commission and attend to such correspondence.
 - Handle funds allocated to the commission in accordance with its directives, state law, and county ordinances.
 - Sign official documents of the commission.
- 5) All maps, plats, site plans, and other materials submitted to the commission shall be filed in the office of the Director of Planning and Community Development and maintained for public access until the project to which they relate has been completed or vacated. Minutes of the commission's meetings shall be permanently filed in the office of the planner and maintained for public access.

- 6) Matters referred to the commission by the Board of Supervisors shall be placed on the calendar for consideration and possible action at the first meeting of the commission after the referral and appropriate public notification.
- 7) A majority of the members of the commission shall constitute a quorum for the transaction of business, but no quorum shall be required for informational meetings at which no action is to be taken.
- 8) Reconsideration of any decision of the commission may be taken when the interested party for such reconsideration makes a showing satisfactory to the chairman that, without fault or deliberate omission on his own part, essential facts were not presented to the chairman.
- 9) Roberts Rules of Order for Committees shall govern the commission's proceedings in all cases not specifically ordered by these bylaws.
- 10) Order of consideration of agenda items in a public hearing:
 - Director of Planning and Community Development or other staff member presents report including summary of all comments (written, electronic and verbal) received from interested parties and makes a recommendation.
 - Commission members may question the staff member on the presentation.
 - Proponent(s) of the agenda item make presentations as appropriate.
 - Opponent(s) of the agenda item make presentations as appropriate.
 - Applicant make rebuttal of objections not previously covered.
 - Commission members may question applicant, proponents, or opponents or may offer comments on the agenda item.
 - Commission may opt to gather additional information about the matter and take action at a future meeting, or vote on recommendation, whether approving or denying request, to Board of Supervisors.
- 11) Any member of the commission who has any personal or financial interest in any matter before the commission shall declare the nature of that interest and shall if the interest constitutes a legal conflict of interest by Virginia law recuse him/herself from the deliberations on that matter, including lobbying other members, participating in the discussions, or voting on the matter. In cases where the interests do not raise to the level of legal conflict of interest by Virginia law, a member may voluntarily recuse him/herself in the interest of avoiding the appearance of conflict. All commission members shall be sensitive to the importance of impartiality and shall endeavor to always avoid any actual or appearance of conflict of interest.
- 12) Each member of the commission who has knowledge that he/she will be unable to attend a scheduled meeting of the commission shall notify the County Administrator's office at the earliest opportunity. The Director of Planning and Community Development shall notify the chairman if projected absences will produce a lack of quorum. Members who are absent from three consecutive meetings, or who are absent from more than half of the commission's meetings during a calendar year, will be referred to the Prince Edward County Board of Supervisors for possible replacement.
- 13) The vice-chairman shall succeed the chairman if he vacates his office before his term is completed. A new vice-chairman shall be elected at the next regular meeting.
- 14) These bylaws may be recommended for amendment at any meeting having a quorum present by a majority vote, provided that notice of such proposed amendment has been given to each member in writing at least two weeks prior to its consideration. If

recommended for approval, proposed amendments must then be adopted by the Board of Supervisors before becoming effective.

- 15) Planning Commission members are strongly encouraged to attend a Virginia Certified Planning Commissioner's Training Program within two years of their appointment to the Planning Commission. This certification course will provide a basic foundation of planning law, history, and technical expertise needed by planning commissioners to maximize their competency and ability to render legally defensible decisions and recommendations. Costs associated with the program will normally be paid by Prince Edward County.

Revision adopted during April 14, 2015 Board of Supervisors meeting.



County of Prince Edward
Planning Commission
Agenda Summary

Meeting Date: January 21, 2020
Item No.: 6
Department: Planning and Community Development
Staff Contact: Wade Bartlett
Issue: Approval of Minutes

Summary:

Attached are draft minutes for the Commission's review and approval

Attachments:

November 19, 2019 Draft Meeting Minutes

Recommendations:

Approval

Motion _____
Second _____
Prengaman _____

Paige _____
Sandlin _____
Jenkins _____

Hunt _____
Gilliam _____
Leatherwood _____

Jones _____
Watson _____
Peery _____

had to approve exempt status, it is now up to localities to approve exempt status. Mr. Bartlett said there is a process to remove the tax exemption if one had been granted; some are statewide such as fraternal organizations, and in Prince Edward County, SCOPE, STEPS, and Hampden-Sydney are exempt.

Mr. Bartlett reported the courthouse renovation is progressing; he said the Circuit Courtroom A is complete. He said work on the first floor will be complete by the end of November. Juvenile courts will move from Combined Courts and be their own stand-alone department. He said the Clerk of Circuit Court office will move to the first floor, along with Magistrate and the Juvenile Probation Office into where Social Services had been. The Sheriff's Department will move into where the Magistrate and Juvenile Probation had been; work will be done in Dispatch. He said the entranceway is expected to be complete by late January or February, and work began on the new stairwells last week. Mr. Bartlett said the entrance to the building will then be the Atrium; the front of the building will no longer be an entrance, as ordered by the Judge, because of security reasons. He said all construction is expected to be complete by May [2020]. Mr. Bartlett said the Commonwealth Attorney's office will move into where the Circuit Court Clerk is currently, the Registrar will swap office space with the Victim Witness office; he reviewed several other minor changes to be made and office space that will be left vacant for expansion.

Chairman Prengaman asked for an update on filling the Planning Director position. Mr. Bartlett stated there have been six or seven applicants; four have extensive experience, at least one is a Certified Planner. He said the Personnel Committee will meet, and suggested the Planning Commission to form a committee to assist in the process.

In Re: Amendment to the County's Zoning Ordinance

Mr. Bartlett stated that at the October 15, 2019 meeting of the Planning Commission, the Commission was presented a draft zoning ordinance amendment establishing a section to provide for and regulate the siting, installation, operation and decommissioning of alternative energy sources in Prince Edward County.

Mr. Bartlett said Mr. Davis Plunkett of Holocene Clean Energy has reviewed the draft ordinance and stated, "We had the chance to review the draft you provided, it seems like a great framework and one I feel sure we can work within."

Mr. Bartlett said that at a "breakout session" at the annual VACo conference, utility scale solar projects were the subject of considerable debate in regards to the state mandated tax exemption for these projects. There was also discussion concerning the impact on local land-use and decommissioning. He said it appears there may be proposed legislation that will amend the existing tax exemption status of these facilities; the solar industry is pushing hard to maintain the existing exemptions and are trying to become exempt from local land-use regulations.

Mr. Bartlett presented the existing state-mandated exemption for Machinery & Tool Tax:

100% exemption for:

- 20 MW or less (interconnection request filed on or before December 31, 2018)
- 20 MW or less that serve public or private colleges; and
- 5 MW or less (interconnection request filed on or after January 1, 2019)

80% exemption for:

- Projects greater than 20 MW (interconnection request filed before July 1, 2018)
- Greater than 20 MW and less than 150 MW (interconnection request filed after July 1, 2018)

Local option for 150 MW and above

Exemption for 20-150 MW sunsets January 1, 2024

Projects greater than 25 MW are taxed at the Real Estate rate which is much less than Machinery & Tools

Mr. Bartlett then said that while the focus was on tax exemption, he said land use is just as important. He said the General Assembly will be reviewing this issue; VACo doesn't have a policy on it but wants to see a more equitable use of tax authority and not let these items have 100% exemption. Further discussion followed.

Chairman Prengaman asked the difference between small scale and large scale. Mr. Bartlett said the draft ordinance sets forth a Small Scale Energy Facility as an energy facility that has a project area of one acre or less, has a rated capacity of 200 kw or less, is mounted on or over a building, parking lot or other previously disturbed area, and is normally used to reduce onsite consumption of energy for small scale operations such as small agricultural or commercial operations. He said a Large Scale Energy Facility is defined as an alternative energy facility that has a maximum power of not more than 999 kW. Large energy systems are generally used to reduce onsite consumption of utility power for commercial and industrial applications. Mr. Bartlett said the Utility Scale Energy Facility is an energy facility which has a rated capacity of one megawatt (1 MW) or greater. Utility Scale Energy Systems are generally used to provide electricity to a utility provider.

Chairman Prengaman suggested Section 53-157m, regarding Exemptions, which states it is based on four acres and less than two megawatts, be removed because of confusion with the definitions. Mr. Bartlett said he reviewed other localities' ordinances and the Commissioners may wish to remove or change what is presented.

Commissioner Peery recommended removing a portion of Section 53-157a, Project Narrative, which includes "towers for wind powered generation equipment." He then suggested limiting the size of the lots available for solar farms; discussion followed on the practices in other areas in Virginia. Mr. Bartlett suggested a 300-500-acre limit.

Mr. Bartlett said he mentioned several articles regarding safety and the hazardous materials that go into the panels and batteries used. He said he requested state look into these issues. He said several studies show that there are hazardous materials used, such as glues, adhesives, film that is over the silicone wafers and other materials, and several articles report that these will not be recycled because of the materials used and they will not be permitted in a local landfill. He said he is concerned what would happen to the panels during a tornado or hurricane, and there are too many unknowns.

Laura Merten, Holocene Energy, stated the ordinance is amicable and agreeable to a developer, it is clear and lays a path forward to work closely with the County to make something work. She said all buffer and vegetation requirements are in line with other counties and is standard across the state. She said that by and large, there is nothing that is out of the ordinary, and the question on the definition of size is not standard; she said one megawatt is at the bottom of the threshold, and there is no set standard.

Mr. Bartlett asked for clarification on the three megawatts that Holocene plans to generate and that being used on their own grid. Ms. Merten said it will be distribution interconnected, not transmission.

Chairman Prengaman said there are rumors that there is tariff coming from Dominion Energy to protect themselves from solar developers; that will possibly be voted on right after the first of next year. Ms. Merten said they have been very involved in the legislation expected in the General Assembly regarding taxes. She added there are a lot of unknowns with the changes coming.

Chairman Prengaman said there is a lot of confusion about solar for personal use versus sending the power back to the grid; and solar to reduce the costs and some say solar can increase costs, and now there is a possibility of a tariff.

Ms. Merten stated they are working with the cooperative, that is the rate-setting mechanism and Holocene will not be setting rates.

Mr. Bartlett stated Holocene will just use the energy with Southside; he said he will have to research differentiation between inter-connection or distribution versus transmission.

Chairman Prengaman stated they will need to define a limit to the size and how they will be approved.

Commissioner Hunt asked who inspects and signs off on these before use. Mr. Bartlett said the County Building Inspector would inspect the placement of poles, footings, and low-voltage electricity; the factory would provide an inspection for the panels and those items.

Commissioner Peery asked if the panels could be reused after decommission. Mr. Bartlett said the panels lose only about one-half to one percent of their efficiency per year, which means they could be used for 40-50 years. He said if panel efficiency would increase exponentially, it may pay the company to replace those panels. Discussion followed.

Mr. Bartlett reviewed the concerns:

- size limit
- interconnection versus distribution
- clarity on the definition of small, large, and utility sizes, with regard to lot size and megawatts
- restrictions in certain geographical areas

Commissioner Leatherwood stated this county has mainly large farms, and questioned procedures in a subdivision with roof panels. Mr. Bartlett said there are a lot of solar panels being installed on individual homes; he said he would consider those an accessory structure if placed on the ground and it would have to follow all the regulations. He added that it could be placed five feet from the property line. Mr. Bartlett added there would have to be regulations or conditions such as buffers, vegetation, fencing, or any regulations for panels placed on the roof; he said he will continue to research what other localities are doing.

Mr. Bartlett announced Social Services will hold an Open House Wednesday, November 20, 2019; STEPS hasn't yet moved into their space. He then stated Yak Attack has hired six employees, and they are adding more stock to include jon boats and bass boats, expanding from just kayaks.

In Re: Old Business

(None)

New Business

(None)

Chairman Prengaman declared the meeting adjourned at 7:54 p.m.

Next Meeting: TBD



County of Prince Edward
Planning Commission
Agenda Summary

Meeting Date: January 21, 2020
Item No.: 7
Department: Planning and Community Development
Staff Contact: Wade Bartlett
Issue: Public Hearing – Amendment to Zoning Ordinance

Summary:

The Planning Commission will conduct a Public Hearing on January 21, 2020 at 7:00 p.m. to consider the proposed amendment to the County Zoning Ordinance:

Adding a Special Use Permit process for “Construction Camps” in the A-1, Agricultural Conservation District, to allow temporary housing (i.e. recreational vehicles) for employees/labor drawn to the area by large construction projects.

This would add “Construction Camps” to Section 2-100.3. B.5 of the Zoning Ordinance.

Construction Camps are meant to minimize the strain on local resources, limit social impacts on the community and allow control and order to be imposed on the occupants.

Attachments:

- 1. Public Hearing Notice

Recommendations:

The Planning Commission will wish to hold the public hearing and render a decision concerning the special use application.

Motion _____
Second _____
Prengaman _____

Paige _____
Sandlin _____
Jenkins _____

Hunt _____
Gilliam _____
Leatherwood _____

Jones _____
Watson _____
Peery _____



NOTICE OF PUBLIC HEARINGS

The Prince Edward County Planning Commission will hold four public hearings on Tuesday, January 21, 2020 at 7:00 p.m. in the Board of Supervisors Room located on the 3rd floor of the Prince Edward County Courthouse, 111 South Street, Farmville, Virginia, to receive citizen input prior to the Planning Commission making recommendations to the Board of Supervisors on the following:

1. Request by the Piedmont Regional Jail for a special use permit erect a lighted sign on tax map parcel 12-A-2A. This is an A-2, Agricultural Residential District.
2. Request by Blackstone Building Group, LLC to rezone tax map parcels 23-A-40, 23-A-40A and 23-A-23 from R-2, General Residential to R-3, Medium Density Residential.
3. Amend the Zoning Ordinance to allow Construction Camps in the A1, Agricultural Conservation District by Special Use Permit.
4. Request by Mr. and Mrs. Ellington for a Special Use Permit to operate a Construction Camp on property identified as Tax Map 40-A-23 located adjacent to Highway 460. This is an A-1 Agricultural Conservation District.

A complete copy of the Special Use Permit and Rezoning applications and Zoning Ordinance are available for public review in the office of the Prince Edward County Administrator, 111 South Street, 3rd Floor, Farmville, VA, or on the county website at www.co.prince-edward.va.us. It is the County's intent to comply with the Americans with Disabilities Act. Should you need special accommodations, please contact W. W. Bartlett, County Administrator at 434-392-8837.

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Attachment (A)



County of Prince Edward
 Planning Commission
 Agenda Summary

Meeting Date: January 21, 2020
Item No.: 8
Department: Planning and Community Development
Staff Contact: Wade Bartlett
Issue: Request for rezoning – Blackstone Building Group

Summary:

The County has received a request from Blackstone Building Group to rezone Tax Map Parcels 23-A-23, 23-A-40 and 23-A-40A from R-2 General Residential to R-3, Medium Density Residential, Attachment (1). The total area requested to be rezoned is approximately 126.53 acres, and lies South of Third Street, Attachment (2).

The public hearing notice was advertised in the January 8 & 15, 2020 editions of the Farmville Herald, Attachment (3). The list of adjoining property owners sent a letter notifying them of the rezoning request can be found in Attachment (4). The sample letter sent to the adjoining property owners can be found in Attachment (5).

The reason for the rezoning is because the Blackstone Building Group would like to develop the land in question as a mixed-use development that would include single family lots, Townhomes, duplexes, and multi-family units. Multi-family units are not allowed in an R-2 zone but are allowed in an R-3 zone. A Preliminary Development Layout displays the proposed development, Attachment (6).

But it must be emphasized that the development has not been approved and is still in the development stage. No detailed site plan has been submitted or approved.

Attachments:

1. Request for Rezoning
2. Display of the tax maps and surrounding properties
3. Public Hearing Notice
4. List of Adjoining property owners notified of the Special Use Application
5. Sample letter sent to adjoining property owners
6. Preliminary Development Layout

Recommendations:

The Planning Commission will wish to hold the public hearing and render a decision concerning the rezoning. County staff has no concerns regarding the request and believes it will have little to no negative impact on the surrounding properties.

Motion _____	Paige _____	Hunt _____	Jones _____
Second _____	Sandlin _____	Gilliam _____	Watson _____
Prengaman _____	Jenkins _____	Leatherwood _____	Peery _____

ALLEN BYEN

FOR OFFICE USE ONLY

Comments _____

FOR OFFICE USE ONLY

PERMIT APPLICATION # _____

Date Submitted _____

Magisterial District _____

County of Prince Edward

PLEASE PRINT OR TYPE

PRINCE EDWARD COUNTY
APPLICATION
REQUEST FOR REZONING
REQUEST FOR AMENDMENT

I, WE BLACKSTONE BUILDING GROUP LLC
DO HEREBY PETITION THE BOARD OF SUPERVISORS OF THE COUNTY OF PRINCE EDWARD TO AMEND THE COUNTY ZONING ORDINANCE BY:

_____ Modifying section(s) _____ of the ordinance as noted below. (See Schedule A)
 Modifying the Zoning District Classification of the following described property from the R-2 District(s), to the R-3 District.

Location / Legal Description of Property: Deed Book / Page No. _____ or Instrument No. _____
 Tax Map # _____ Subdivision, if applicable _____

If acreage, attach plat of property and a metes and bounds description.
 Briefly describe the current use of the property. PROPERTY VALANT / SEE SURVEY PLOT

Provide on schedule A below a description of the proposed use and how such proposed amendment to the zoning ordinance relates to the County's Comprehensive Plan.

Provide on schedule B below a list of all property owners and their mailing addresses as shown on the County land records who are contiguous to and directly across the street from the parcel(s) proposed to be changed.

Owner(s) of Property CONTRACT OWNER
 Name: BLACKSTONE BUILDING GROUP LLC ALLEN BYEN ALLEN BYEN Signature
4860 COX ROAD SUITE 200 12/19/19 Date
GLEN ALLEN, VA 23060 Phone: 757-510-2457 E-mail: RICK@LONGEVITYSOLUTIONSVA.COM

Owner(s) of Property
 Name: JOHN EGGERTON / MARSHALL BLACKSTON J M Eggerton Signature
STATEWIDE REALTY 12/19/19 Date
 Phone: 434-315-3533 E-mail: _____

Schedule A

Describe the requested amendment to the Zoning Ordinance, (OR), Describe the relationship of the proposed re-zoning to the County's Comprehensive Plan.

REZONE REQUEST FOR PLANNED DEVELOPMENT FROM LOW-MEDIUM DENSITY TO HIGH DENSITY INCLUDING MULTI-FAMILY, TOWNHOME DUPLEX AND SMALLER LOT SINGLE FAMILY
REZONE APPROX 115 ACRES Schedule B PROPERTY IN OPPORTUNITY ZONE

Contiguous property owner(s) to be affected by this proposed change.

Name	Address
<u>MERKS PLACE</u>	<u>2106 W THIRD ST. FARMVILLE VA 23901</u>
<u>BARBARA LINTI ET AL</u>	<u>2011 THIRD STREET, FARMVILLE VA 23901</u>
<u>WOODLAND RETIREMENT</u>	<u>2003 LOBB ST. FARMVILLE VA 23901</u>
<u>GRANT'S CLUBS</u>	<u>2102 W THIRD ST. FARMVILLE VA 23901</u>

NOTE: The above information must be supplied by the applicant. Failure to do so will void the application. Attach additional sheets, if necessary.

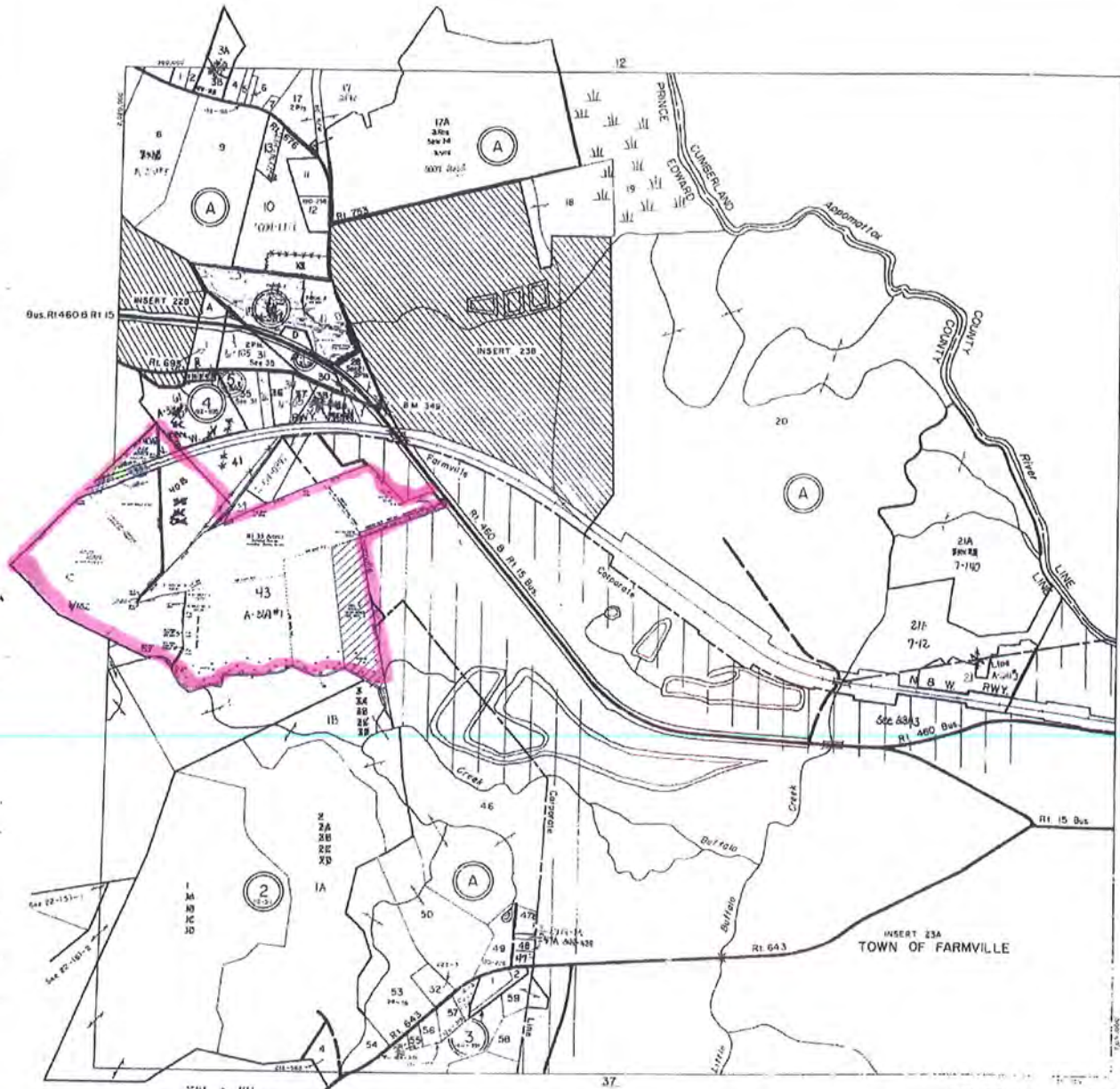
Application Fee Re-zoning Permit \$300 Application Fee Received By WJB Date 12/19/19
 Application Fee Zoning Amendment \$300 Cash Check # 1074

The above permit application charges are nonrefundable, regardless of whether the permit application is approved or denied once submitted.

All checks for payment should be made payable to: Treasurer, Prince Edward County, Virginia.

Mail to: Department of Building & Zoning
 P. O. Box 382
 Farmville, VA 23901
 (434) 392-8837

PRINCE EDWARD COUNTY



REVISED: DEC. 31, 1985 DEC. 31, 1986

FARMVILLE DISTRICT

SECTION 23
INSERT

14

Attachment (2)



NOTICE OF PUBLIC HEARINGS

The Prince Edward County Planning Commission will hold four public hearings on Tuesday, January 21, 2020 at 7:00 p.m. in the Board of Supervisors Room located on the 3rd floor of the Prince Edward County Courthouse, 111 South Street, Farmville, Virginia, to receive citizen input prior to the Planning Commission making recommendations to the Board of Supervisors on the following:

1. Request by the Piedmont Regional Jail for a special use permit erect a lighted sign on tax map parcel 12-A-2A. This is an A-2, Agricultural Residential District.
2. Request by Blackstone Building Group, LLC to rezone tax map parcels 23-A-40, 23-A-40A and 23-A-23 from R-2, General Residential to R-3, Medium Density Residential.
3. Amend the Zoning Ordinance to allow Construction Camps in the A1, Agricultural Conservation District by Special Use Permit.
4. Request by Mr. and Mrs. Ellington for a Special Use Permit to operate a Construction Camp on property identified as Tax Map 40-A-23 located adjacent to Highway 460. This is an A-1 Agricultural Conservation District.

A complete copy of the Special Use Permit and Rezoning applications and Zoning Ordinance are available for public review in the office of the Prince Edward County Administrator, 111 South Street, 3rd Floor, Farmville, VA, or on the county website at www.co.prince-edward.va.us. It is the County's intent to comply with the Americans with Disabilities Act. Should you need special accommodations, please contact W. W. Bartlett, County Administrator at 434-392-8837.

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Attachment (3)

Prince Edward County

Rezoning Request

Applicant: Blackstone Building Group Tax Map 23-A-23 & 23-A-40 & 23-A_40A

Schedule B

List of adjoining Property owners and mailing addresses for the property proposed to be rezoned from R-2 to R-3

Parcel ID	Owner	Address	Note
23-A-37 & 23-A-37A	Michael T. Papandrea	1925 Hill Cross Road Charlotte Court House, VA 23923	
23-A-34	Odessa Branch	302 Harper Street Farmville, VA 23901	
23-A-35	John & Mary Jones	2228 Quincy St NE Washington, DC 20018	
23-A-36	Elizabeth Watkins, Et AL	c/o Oscar & William Reid 503 Griffin Blvd Farmville, VA 23901	
23A1-A-1	Celia Brown & Joe Howard	c/o Oscar & William Reid 503 Griffin Blvd Farmville, VA 23901	
23-A-40 & 23-A-40A	Joyce P. Eggleston	320 Edgewood Lane Farmville, VA 23901	
23-A-40B	Johnson Pleas	C/O Francine Thompson 1643 Hopewell Ave Baltimore, MD 21221	
23-A-61	Layne Street Land Holdings, LLC	PO Box 6443 Falmouth, VA 22403	
22-A-120	Malcolm L. Bailey	606 Bailey Road Keysville, VA 23947	
22-A-122	Guy B. Dixon Trust	Separate Share C Trust 30 Willis Mountain Plant Lane Dillywyn, VA 23936	
22-A-123	Christy A. Callas	824 Buffalo Heights Road Farmville, VA 23901	
23A1-A-2	Mary West	4 Fessler Place Montclair, NJ 07042	
	23A1-2C - 4,5,6,7,8,9,10	Barbara Lini Et AL PO Box 852 Oakhurst, NJ 07755	
23A2 - 8 - A,B,C,D,E	The Woodlands Inc	The Woodsland Inc. 2003 Cobb St. Farmville, VA 23901	
23-A-43	Marshall A. Thackston	6 Morris Creek Road Charlotte Court House, VA 23923	

16

Attachment (4)

BOARD OF SUPERVISORS

Jerry R. Townsend
Chairman
J. David Emert
Vice Chairman
Beverly Booth
Pattie Cooper-Jones
Llew W. Gilliam, Jr
Robert M. Jones
Odessa H. Pride, Ed.D.
James R. Wilk



COUNTY OF PRINCE EDWARD, VIRGINIA

COUNTY ADMINISTRATOR

W.W. Bartlett

Post Office Box 382
111 N. South Street, 3rd Floor
Farmville, VA 23901

Office: (434) 392-8837
Fax: (434) 392-6683

wbartlett@co.prince-edward.va.us
www.co.prince-edward.va.us

January 7, 2020

RE: Rezoning request for Tax Map Parcels 23-A-40, 23-A-40A and 23-A-43

To: Whom It May Concern:

The Prince Edward County Planning Commission has scheduled a public hearing on Tuesday, January 21, 2020 at 7:00 p.m. to consider a rezoning request by Blackstone Building Group. The Planning Commission meeting will be held in the Board Room on the Third Floor of the Prince Edward County Courthouse. A public hearing gives the Planning Commission the opportunity to gather citizen input prior to considering rezoning the property.

The Blackstone Building Group has requested permission to develop the property for residential uses, this includes single family homes, duplexes, Townhomes and Multi-family units. The total area to be rezoned is 126.53 acres and adjoins the Town of Farmville with an entrance to the property on Third Street. The property is currently zoned R-2, General Residential District and the request is to rezone the three parcels to R-3, Medium District Residential District.

You are receiving this notice because you own land adjacent to this parcel. The Rezoning request is available for review in the Prince Edward County Department of Planning and Community Development and on the County web page at www.co.prince-edward.va.us. If you have any questions about this meeting or the permit application, I encourage you to contact me by calling 434-392-8837 or electronically at wbartlett@co.prince-edward.va.us.

Sincerely,

W.W. Bartlett
County Administrator

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Attachment (5)

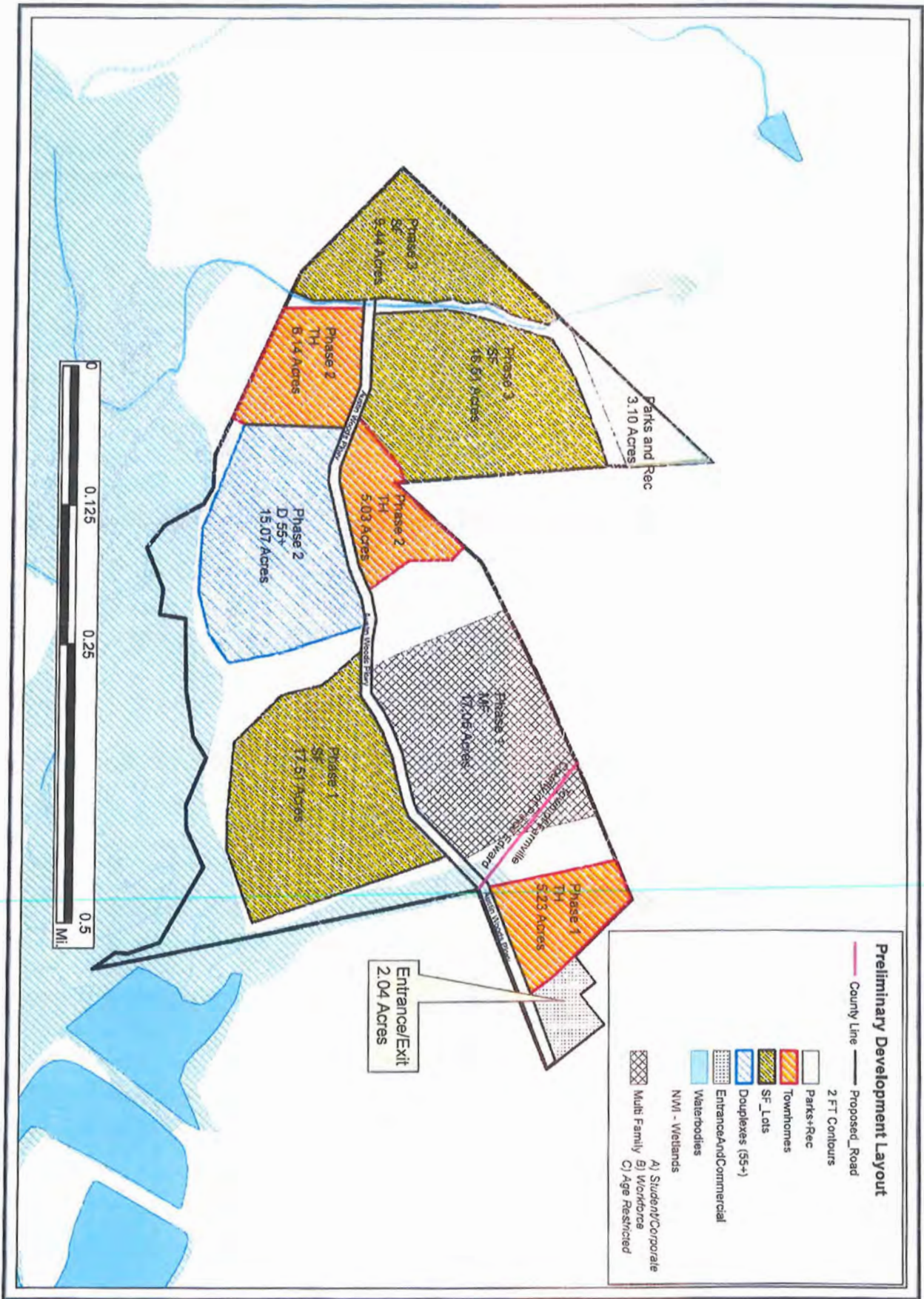


Figure 2
Tenative Development Plan
Austin Woods
Farmville



Watershed Consulting, PLLC.

P.O.Box 7216
Richmond, VA 23221
(804) 304-4659

www.watershedva.com

Date: 1/6/2020

18

Attachment (a)



County of Prince Edward
 Planning Commission
 Agenda Summary

Meeting Date: January 21, 2020
 Item No.: 9
 Department: Planning and Community Development
 Staff Contact: Wade Bartlett
 Issue: Special Use Permit – Illuminated sign

Summary:

The County has received a special use permit application from the Piedmont Regional Jail for the installation and operation of an illuminated sign on Tax Map Parcel 12-A-2A owned by the Piedmont Regional Jail Authority, Attachment (1). This property is located in an A-2, Agricultural Residential District. The property is surrounded on three sides by either land owned by the Jail, the Juvenile Detention Center of the County of Prince Edward. The state probation office is located diagonally across from the property and a residential property is located across the street, Industrial Park Road, from the sign, Attachment (2). The public hearing notice was advertised in the January 8th and 15th editions of the Farmville Herald, Attachment (3). The proposed light is ground mounted and will shine upward onto the sign and is facing away from any structure and will be shining into a wooded area owned by Prince Edward County. The sign is 8 feet wide and the masonry columns are 6 feet in height. The placement of the lighting fixture will cause any light to shine away from any existing structure, Attachment (4).

The List of adjoining property owners can be found in Attachment (5) and the sample letter sent to the adjoining property can be found in Attachment (6).

Attachments:

1. Special Use Permit Application
2. Display of the parcel and surrounding properties
3. Public Hearing Notice
4. Picture of the existing sign
5. List of Adjoining property owners notified of the Special Use Application
6. Sample letter sent to adjoining property owners

Recommendations:

The Planning Commission will wish to hold the public hearing and render a decision concerning the special use application. County staff has no concerns regarding the request and believes it will have little to no negative impact on the surrounding properties.

Motion _____	Paige _____	Hunt _____	Jones _____
Second _____	Sandlin _____	Gilliam _____	Watson _____
Prengaman _____	Jenkins _____	Leatherwood _____	Peery _____

COMMENTS: _____

PERMIT/APPLICATION NO _____
ZONING DISTRICT _____
MAGISTERIAL DISTRICT _____
DATE SUBMITTED _____

County of Prince Edward

PLEASE PRINT OR TYPE

PRINCE EDWARD COUNTY APPLICATION FOR SPECIAL USE PERMIT

TO: PRINCE EDWARD COUNTY PLANNING COMMISSION SPECIAL EXCEPTION REQUESTED:
VIA: ZONING ADMINISTRATOR

The undersigned owner of the following described property hereby applies for a Special Use permit as provided in Section 5-124 of Article V, Site Plan requirements are found in Section 4-100 of Article IV Development Standards of the Zoning Ordinance of Prince Edward County, Virginia.

Applicant's Name: PIEDMONT REGIONAL JAIL AUTHORITY
Applicant's Address: 801 INDUSTRIAL PARK ROAD
Applicant's Telephone Number: (434) 392-1601

Present Land Use: 6 COUNTY REGIONAL JAIL

Legal Description of Property with Deed Book and Page No. or Instrument No. Tax Map 12-A-1A
BOOK 237 PAGE 766
12 ACRES DONATED TO PIEDMONT REGIONAL BY PRINCE EDWARD
COUNTY SUPERVISORS - DECEMBER 22, 1986

Tax Map # PLAT BOOK 5 PAGE 40 Acreage: 12 ACRES

Narrative statement evaluating effects on adjoining properties (noise, odor, dust, fumes, etc.): (Attach additional sheet if necessary.) THERE WILL BE NO EFFECTS OF NOISE, ODOR, DUST, FUMES
THE INSTALLATION OF SIGN LIGHTING WILL HAVE MINIMAL EFFECT TO
ADJOINING PROPERTIES - 2-100 WATT LIGHTS & LOCALIZED SPOTLIGHT ON SIGN

Statement of general compatibility with adjacent and other properties in the zoning district. (Attach additional sheet if necessary.) PROXIMITY & PAROLE BUILDING & 1 HOUSE SURROUNDED BY
TREES

Height of Principal Building (s): Feet 6 FOOT GLED STRUCTURE Stores

APPLICANT'S STATEMENT: (if not owner(s) of property):

I hereby certify that I have the authority to make the foregoing application, that the information given is complete and correct to the best of my knowledge, and that development and/or construction will conform with the regulations as set forth in the Prince Edward County Zoning Ordinance as written and also with the description contained in this permit application.

James H. Davis - Superintendent January 9, 2020
Signature of Applicant (if not property owner) Date

PROPERTY OWNER(S) STATEMENT:

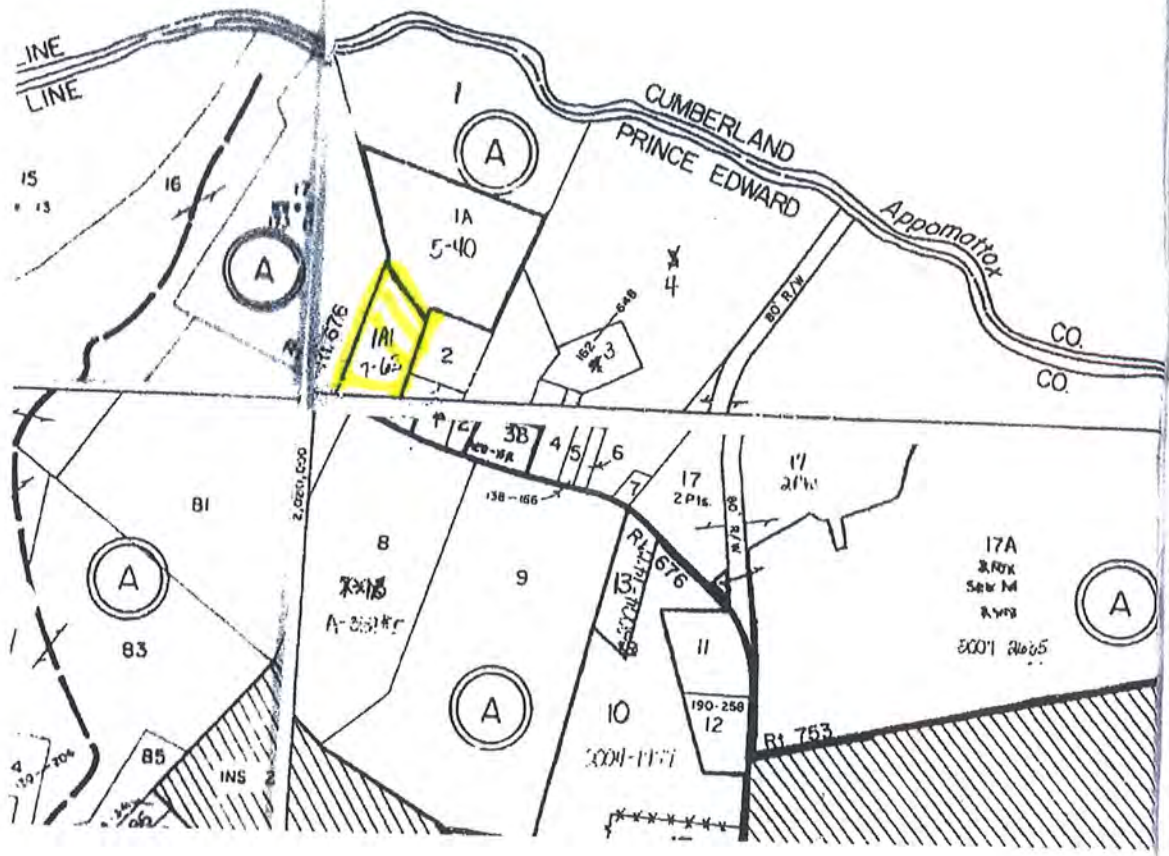
I hereby certify that I/We own the above described property, that the information given is complete and correct to the best of my knowledge, and the above person(s), group, corporation, or agent has the full and complete permission of the undersigned owner(s) to make application for a Conditional Use permit as set forth in the Prince Edward County Zoning Ordinance as written.

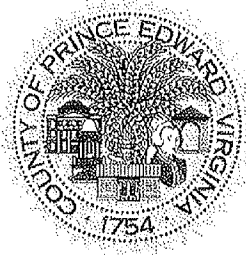
Signature of Property Owner(s) Date

Signature of Property Owner(s) Date

20

Attachment (1)





NOTICE OF PUBLIC HEARINGS

The Prince Edward County Planning Commission will hold four public hearings on Tuesday, January 21, 2020 at 7:00 p.m. in the Board of Supervisors Room located on the 3rd floor of the Prince Edward County Courthouse, 111 South Street, Farmville, Virginia, to receive citizen input prior to the Planning Commission making recommendations to the Board of Supervisors on the following:

1. Request by the Piedmont Regional Jail for a special use permit erect a lighted sign on tax map parcel 12-A-2A. This is an A-2, Agricultural Residential District.
2. Request by Blackstone Building Group, LLC to rezone tax map parcels 23-A-40, 23-A-40A and 23-A-23 from R-2, General Residential to R-3, Medium Density Residential.
3. Amend the Zoning Ordinance to allow Construction Camps in the A1, Agricultural Conservation District by Special Use Permit.
4. Request by Mr. and Mrs. Ellington for a Special Use Permit to operate a Construction Camp on property identified as Tax Map 40-A-23 located adjacent to Highway 460. This is an A-1 Agricultural Conservation District.

A complete copy of the Special Use Permit and Rezoning applications and Zoning Ordinance are available for public review in the office of the Prince Edward County Administrator, 111 South Street, 3rd Floor, Farmville, VA, or on the county website at www.co.prince-edward.va.us. It is the County's intent to comply with the Americans with Disabilities Act. Should you need special accommodations, please contact W. W. Bartlett, County Administrator at 434-392-8837.

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Attachment (3)



Prince Edward County

Special Use Permit

Applicant: Piedmont Regional Jail Authority

Schedule B

List of adjoining Property owners and mailing addresses for the property proposed for a Special Use Permit

Parcel ID	Owner	Address	Note
11-A-17	Prince Edward County	PO Box 382 Farmville, VA 23901	
12-A-1A1	Piedmont Regional Juvenile Detention Center	PO Box 344 Farmville, VA 23901	
23-A-1	Daphne Maceachran	590 Industrial Park Road Farmville, VA 23901	
23-A-2	Colton Lee West	809 Pine Acres Drive Florence, SC 29501	
11-A-8	Town of Farmville	Farmville Town Manager 116 North Main St. Farmville, VA 23901	

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Attachment (5)

BOARD OF SUPERVISORS

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Chairman
J. David Emert
Vice Chairman
Beverly Booth
Pattie Cooper-Jones
Llew W. Gilliam, Jr
Robert M. Jones
Odessa H. Pride, Ed.D.
James R. Wilck



COUNTY OF PRINCE EDWARD, VIRGINIA

COUNTY ADMINISTRATOR

W.W. Bartlett
Post Office Box 382
111 N. South Street, 3rd Floor
Farmville, VA 23901
Office: (434) 392-8837
Fax: (434) 392-6683
wbartlett@co.prince-edward.va.us
www.co.prince-edward.va.us

January 7, 2020

RE: Special Use Permit Application for Tax Map Parcel 12-A-1A

To: Whom It May Concern:

The Prince Edward County Planning Commission has scheduled a public hearing on Tuesday, *January 21, 2020 at 7:00 p.m.* to consider a Special Use Application by the Board of the Piedmont Regional Jail Authority to erect an illuminated sign on Tax Map Parcel 12-A-14. The Planning Commission meeting will be held in the Board Room on the Third Floor of the Prince Edward County Courthouse. A public hearing gives the Planning Commission the opportunity to gather citizen input prior to considering the special use permit.

The Jail Authority has requested permission to construct an illuminated sign to be located adjacent to the newly constructed parking lot across from the Commonwealth of Virginia Probation Office and immediately to the South of the Piedmont Juvenile Detention Center.

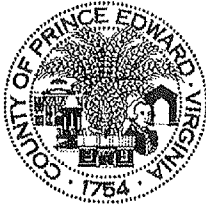
You are receiving this notice because you own land adjacent to this parcel. The Special Use Permit application is available for review in the Prince Edward County Department of Planning and Community Development and on the County web page at www.co.prince-edward.va.us. If you have any questions about this meeting or the permit application, I encourage you to contact me by calling 434-392-8837 or electronically at wbartlett@co.prince-edward.va.us.

Sincerely,

W.W. Bartlett
County Administrator

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Attachment (6)



County of Prince Edward
Planning Commission
Agenda Summary

Meeting Date: January 21, 2020
Item No.: 10
Department: Planning and Community Development
Staff Contact: Wade Bartlett
Issue: Special Use Permit - Construction Camp - Ellington

Summary:

The County has received a Special Use Permit Application from Mr. & Mrs. Ellington to construct and operate a Construction Camp on Tax Map Parcel 40-A-23, Attachment (1). This Parcel is located Southwest of the intersection of Highway 460 and Pisgah Church Road (SR735), Attachment (2). The public hearing notice was advertised in the Farmville Herald on January 8 & 15, 2020, Attachment (3). This is an A-1 Agricultural Conservation District. In addition to requesting the use of the property as a Construction Camp for the duration of the building of the Atlantic Coast Pipeline (ACP), the Ellington's are requesting to be allowed to continue to use the site as a campground following the completion of the ACP. Campgrounds are an allowed use in the A-1 zone by Special Use Permit. Construction Camps would be allowed by Special Use Permit in the A-1 zone if the Board of Supervisors approve an amendment to the Zoning Ordinance allowing Construction Camps as an allowed use by Special Use Permit in the Agricultural Conservation District, A-1.

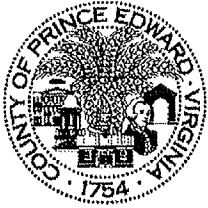
The request includes a site plan detailing the construction of up to 25 camp sites on the property, an office/bathhouse and a Dumpster Pad to hold waste, Attachment (4). The entrance would be off of Pisgah Church Road. The sites will be graveled and a storm water plan must be submitted and approved prior to final site plan approval. Water would be provided from wells and sewage would be handled by an on-site sewage system which must be approved by the Virginia Department of Health. The entrance permit must be approved by the Virginia Department of Transportation.

The site currently contains a natural buffer along its borders, Attachments (5) & (6). The latest traffic data shows an annual average daily traffic volume of 100 vehicles on Pisgah Church Road at the intersection with US 460. From 2013 – 2019 VDOT data shows there was one accident at the intersection of Pisgah Church Road and US 460. There were an additional three accidents in the near vicinity. All three of those were single vehicle accidents, two occurred when a vehicle struck a deer and the other was a single vehicle having a head-on collision with an object other than another vehicle, Attachment (7). Attachments (8) and (9) list the adjoining property owners notified of the request and the letter mailed to each.

If the Planning Commission approved the Special Use Permit, staff would recommend the following conditions be imposed:

- 1. Site Plan and Erosion & Sediment Control and Stormwater approvals be obtained prior to construction
- 2. VDOT Approval for the Site entrance

Motion _____ Paige _____ Hunt _____ Jones _____
Second _____ Sandlin _____ Gilliam _____ Watson _____
Prengaman _____ Jenkins _____ Leatherwood _____ Peery _____



**County of Prince Edward
Planning Commission
Agenda Summary**

3. Approval from the Department of Health for both water and septic systems
4. Existing Natural buffer along the property lines not be disturbed or removed.
5. Lighting be glared shielded to prevent light from extending beyond the property.
6. Facilities be provided for trash.
7. Quiet hours are maintained from 10:00 p.m. until 6:00 a.m.
8. Site be free of litter and debris at all times

Attachments:

1. Special Use Permit Application
2. Display of the tax parcel and surrounding properties
3. Public Hearing Notice
4. Proposed Site Plan
5. Pictures of Rear and Western edge of Property
6. Picture of Eastern edge of Property
7. Display of location of crashes in the vicinity
8. List of Adjoining property owners notified of the Special Use Application
- 9.. Sample letter sent to adjoining property owners

Recommendations:

The Planning Commission will wish to hold the public hearing and render a decision concerning the special use application.

Motion _____
Second _____
Prengaman _____

Paige _____
Sandlin _____
Jenkins _____

Hunt _____
Gilliam _____
Leatherwood _____

Jones _____
Watson _____
Peery _____

COMMENTS: _____

PERMIT/APPLICATION NO _____
ZONING DISTRICT _____
MAGISTERIAL DISTRICT _____
DATE SUBMITTED _____

County of Prince Edward

PLEASE PRINT OR TYPE

PRINCE EDWARD COUNTY APPLICATION
FOR SPECIAL USE PERMIT

TO: PRINCE EDWARD COUNTY PLANNING COMMISSION SPECIAL EXCEPTION REQUESTED:
VIA: ZONING ADMINISTRATOR

The undersigned owner of the following described property hereby applies for a Special Use permit as provided in Section 5-124 of Article V, Site Plan requirements are found in Section 4-100 of Article IV Development Standards of the Zoning Ordinance of Prince Edward County, Virginia.

Applicant's Name: Anthony & Tracey Ellington
Applicant's Address: 3454 Gully Tavern Rd Rice, VA
Applicant's Telephone Number: 434 603-1206

Present Land Use: Field

Legal Description of Property with Deed Book and Page No. or Instrument No. DB/Pg 2010/279
MMP 040 A 23 6.82 acres

Tax Map # 040 A 23 Acreage: 6.82 acres

Narrative statement evaluating effects on adjoining properties (noise, odor, dust, fumes, etc.): (Attach additional sheet if necessary.) CONSTRUCTION OF INDUSTRIAL CAMP GROUNDS TO BE USED FOR HOUSING OF CONTRACTORS DURING PIPELINE CONSTRUCTION

Statement of general compatibility with adjacent and other properties in the zoning district. (Attach additional sheet if necessary.) ONCE PIPELINE CONSTRUCTION IS COMPLETED, INTENTIONS WILL BE TO TURN AREA INTO PUBLIC CAMP GROUNDS. PROPERTY ADJACENT TO TRAILS

Height of Principal Building (s): Feet _____ Stories _____

APPLICANT'S STATEMENT: (if not owner(s) of property):

I hereby certify that I have the authority to make the foregoing application, that the information given is complete and correct to the best of my knowledge, and that development and/or construction will conform with the regulations as set forth in the Prince Edward County Zoning Ordinance as written and also with the description contained in this permit application.

[Signature]
Signature of Applicant (if not property owner)

12/30/19
Date

PROPERTY OWNER(S) STATEMENT:

I hereby certify that I/We own the above described property, that the information given is complete and correct to the best of my knowledge, and the above person(s), group, corporation, or agent has the full and complete permission of the undersigned owner(s) to make application for a Conditional Use permit as set forth in the Prince Edward County Zoning Ordinance as written.

[Signature]
Signature of Property Owner(s)

12/30/19
Date

[Signature]
Signature of Property Owner(s)

12/30/19
Date

Signature of Property Owner(s)

Date

NOTE: THIS PERMIT APPLICATION IS NOT VALID UNLESS ALL PROPERTY OWNER(S) SIGNATURES ARE AFFIXED AND DATED. ATTACH ADDITIONAL SHEETS IF NECESSARY.

Application Fee \$300.00

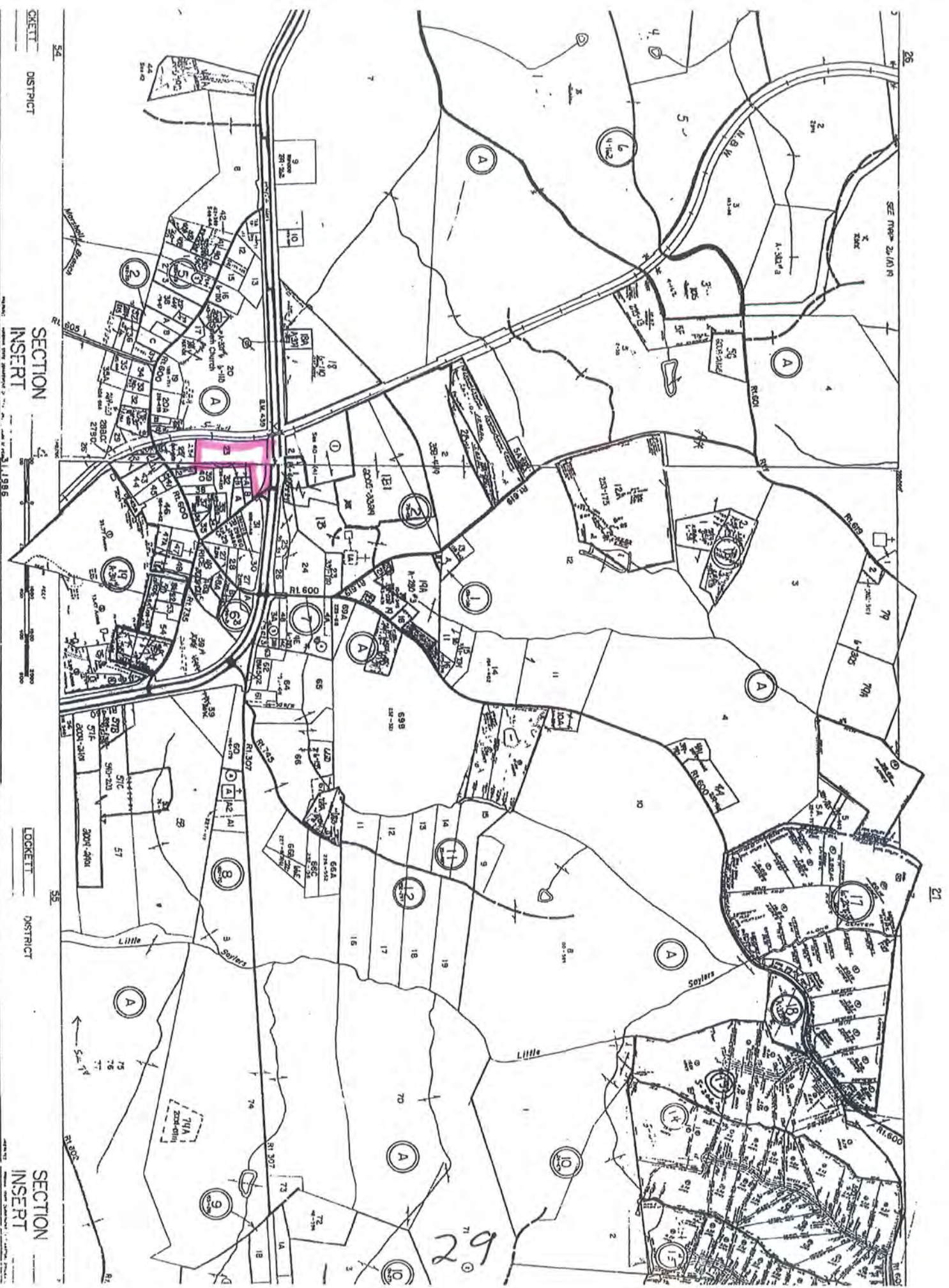
Fee Received by WNB

Date 1/3/2020

The above mentioned application charges are nonrefundable, regardless of whether the permit application is approved or denied once submitted.

All checks for payment should be made payable to: Treasurer, Prince Edward County, Virginia.

Mail to: Department of Planning &
Community Development
P. O. Box 382
Farmville, VA 23901
(434) 392-8837



LOCKETT DISTRICT

SECTION INSERT

LOCKETT DISTRICT

SECTION INSERT

DATE: 3.1985



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NOTICE OF PUBLIC HEARINGS

The Prince Edward County Planning Commission will hold four public hearings on Tuesday, January 21, 2020 at 7:00 p.m. in the Board of Supervisors Room located on the 3rd floor of the Prince Edward County Courthouse, 111 South Street, Farmville, Virginia, to receive citizen input prior to the Planning Commission making recommendations to the Board of Supervisors on the following:

1. Request by the Piedmont Regional Jail for a special use permit erect a lighted sign on tax map parcel 12-A-2A. This is an A-2, Agricultural Residential District.
2. Request by Blackstone Building Group, LLC to rezone tax map parcels 23-A-40, 23-A-40A and 23-A-23 from R-2, General Residential to R-3, Medium Density Residential.
3. Amend the Zoning Ordinance to allow Construction Camps in the A1, Agricultural Conservation District by Special Use Permit.
4. Request by Mr. and Mrs. Ellington for a Special Use Permit to operate a Construction Camp on property identified as Tax Map 40-A-23 located adjacent to Highway 460. This is an A-1 Agricultural Conservation District.

A complete copy of the Special Use Permit and Rezoning applications and Zoning Ordinance are available for public review in the office of the Prince Edward County Administrator, 111 South Street, 3rd Floor, Farmville, VA, or on the county website at www.co.prince-edward.va.us. It is the County's intent to comply with the Americans with Disabilities Act. Should you need special accommodations, please contact W. W. Bartlett, County Administrator at 434-392-8837.

30

Attachment (3)





2013 - August, 2019 virginia Crashes

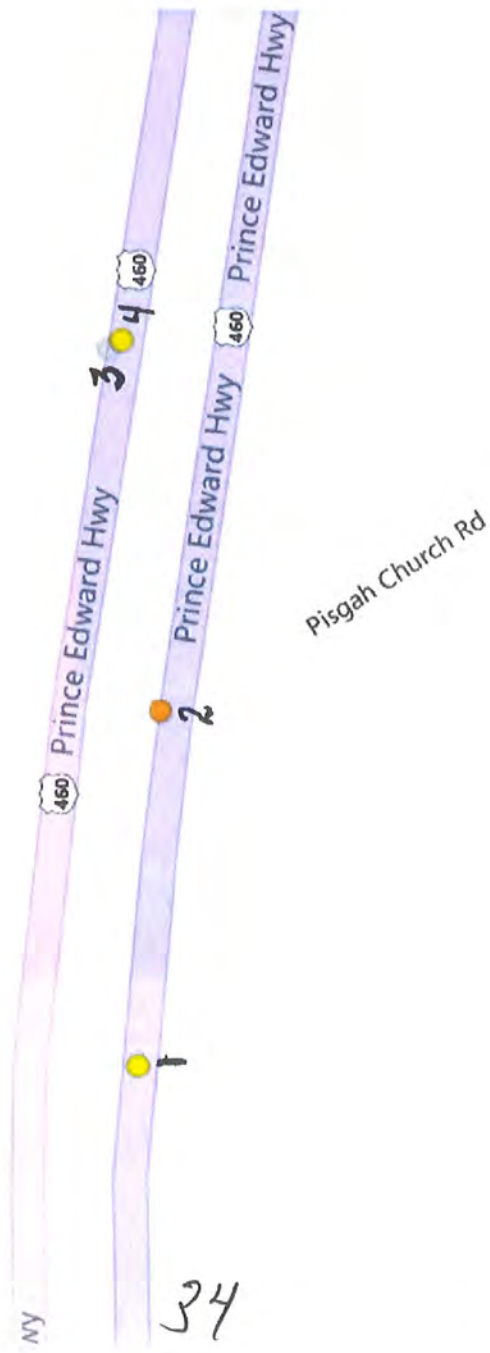
U.S. 460/Pisgah Church Rc X

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Legend

Virginia Crashes (Full Details)

- K.Fatal Injury
- B.Visible Injury
- C.Nonvisible Injury
- A.Severe Injury
- PDO.Property Damage Only



Attachment (7)



Prince Edward County

Special Use Permit

Applicant: Anthony & Tracey Ellington Tax Map 40-A-23

Schedule B

List of adjoining Property owners and mailing addresses for the property proposed for a Special Use Permit

Parcel ID	Owner	Address	Note
40-A-20	Douglas S. & Shelly Farley	563 Rices Depot Road Rice VA 23966	
40-A-25	Commonwealth of VA, DCR	203 Governor St Richmond, VA 23219	
40-3-1	Bobby J. Bush	1911 Lockett Road Rice, VA 23966	
40-A-23A	Lorraine S. Nelson	C/O Lorraine S. Pohl 637 Rices Depot Road Rice, VA 23966	
41-A-31	Starr & Jeanette Jones	89 Pisgah Church Road Rice, VA 23966	
41-A-32	Larry & Lynn Clements	108 Pisgah Church Road Rice, VA 23966	
41-A-33	Steven Wallace	138 Pisgah Church Road Rice, VA 23966	
41-A-34			
41-A-38	Brian & Kirstyn Lokker	765 Rices Depot Road Rice, VA 23966	
41-A-39	Steven & Annette Samaras	741 Rices Depot Road Rice, VA 23966	
41-A-40 41-5-1	Kayton Properties LLC	Kayton Properties, LLC 233 N. Main Street Farmville, VA 23901	
41-A-43 41-A-44	James & Beth Bell	672 Rices Depot Road Rice, VA 23966	
41-3-A 41-3-B 41- 4-A	Larry Clements	66 Pisgah Church Road Rice, VA 23966	
40-4-1	Timothy J. Tharpe, LLC	1815 Price Drive Farmville, VA 23901	

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Attachment (8)

BOARD OF SUPERVISORS

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Vice Chairman
Pattie Cooper-Jones
J. David Emert
Llew W. Gilliam, Jr.
Robert M. Jones
Odessa H. Pride, Ed.D.
Gene A. Southall



COUNTY OF PRINCE EDWARD, VIRGINIA

COUNTY ADMINISTRATOR

W.W. Bartlett
Post Office Box 382
111 N. South Street, 3rd Floor
Farmville, VA 23901
Office: (434) 392-8837
Fax: (434) 392-6683
wbartlett@co.prince-edward.va.us
www.co.prince-edward.va.us

January 11, 2020

RE: Special Use Permit Application for 40-A-23

To Whom it May Concern:

The Prince Edward County Planning Commission has scheduled a Public Hearing on Tuesday, January 21, 2020, at 7:00 p.m. to consider a Special Use Permit Application on Tax Map Parcel 40-A-23 owned by Mr. & Mrs. Ellington. This parcel is located immediately west of the intersection of U.S. 460 and Pisgah Church Rd (SR735). The Planning Commission meeting will be held in the Board Room on the Third Floor of the Prince Edward County Courthouse. A public hearing gives the Planning Commission the opportunity to gather citizen input prior to considering the special use request.

The Ellington's have requested permission to operate a Construction Camp to house workers anticipated to arrive for the construction of the Atlantic Coast Pipeline. The Ellington's have also requested once the construction of the pipeline is completed and there is no longer a demand for a Construction Camp that they be allowed to operate the facility as a Campground for use by the public visiting the County. The proposed facility will contain 25 camp sites which will be served by a septic system and commercial well. Eventually a 48'X48' office/bathhouse will be constructed on site. The entrance to the camp sites will be off of Pisgah Church Rd (SR735). A dumpster will be located on-site for the disposal of waste and will be screened in accordance with the County's Zoning Ordinance. The existing natural buffer is to remain and be augmented if needed to screen the facility from adjoining property.

This is an A-1, Agricultural Conservation District and Campgrounds are allowed by Special Use Permit. Immediately prior to this public hearing a public hearing will be held to amend the County's Zoning Ordinance to allow Construction Camps in A-1 Zoning Districts.

You are receiving this notice because you own land adjacent to this parcel. The Special Use Permit Application is available for review in the Prince Edward County Department of Planning and Community Development and on the County's web page at www.co.prince-edward.va.us. If you have any questions about this meeting or the permit application, I encourage you to contact me at 434-392-8837 or electronically at wbartlett@co.prince-edward.va.us.

Sincerely

W.W. Bartlett
W.W. Bartlett

County Administrator

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Attachment (2)



County of Prince Edward
Planning Commission
Agenda Summary

Meeting Date: January 21, 2020
Item No.: 11
Department: Planning and Community Development
Staff Contact: Wade Bartlett
Issue: Amendment to the County's Zoning Ordinance

Summary:

At the October 15, 2019 meeting of the Planning Commission, the Commission was presented a draft zoning ordinance amendment establishing a section to provide for and regulate the siting, installation, operation and decommissioning of alternative energy sources in Prince Edward County. That draft Ordinance is attached.

Mr. Davis Plunkett of Holocene Clean Energy has reviewed the draft ordinance and stated – *“We had the chance to review the draft you provided, it seems like a great framework and one I feel sure we can work within.”*

The existing state-mandated exemption for Machinery & Tool Tax are:

100% exemption for:

- 20 MW or less (interconnection request filed on or before December 31, 2018)
- 20 MW or less that serve public or private colleges. And
- 5 MW or less (interconnection request filed on or after January 1, 2019)

80% exemption for:

- Projects greater than 20 MW (interconnection request filed before July 1, 2018)
- Greater than 20 MW and less than 150 MW (interconnection request filed after July 1, 2018)

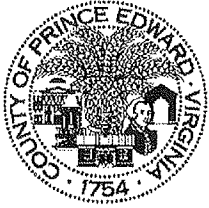
Local Option for 150 MW and above

Exemption for 20 – 150 MW sunsets January 1, 2024

Projects greater than 25MW are taxed at the Real Estate rate which is much less than M&T

Utility Scale solar projects have been the subject of considerable debate in regards to the state mandated tax exemption for these projects. There was also discussion concerning the impact on local land-use and decommissioning. A Bill has been submitted by Senator Lynwood Lewis who represents primarily Accomack and Northampton Counties. This bill (SB800) would change the sunset date of the state-mandated 80% tax exemption from Machinery and Tool Tax (M&T) for utility-scale solar projects greater than 20 megawatts (MW) from 2024 to 2021. This proposed change would allow counties to decide by

Motion _____	Paige _____	Hunt _____	Jones _____
Second _____	Sandlin _____	Gilliam _____	Watson _____
Prengaman _____	Jenkins _____	Leatherwood _____	Peery _____



**County of Prince Edward
Planning Commission
Agenda Summary**

local ordinance to determine at their discretion lower M&T rate for projects greater than 20 MW in generating capacity. But the Bill doesn't change the existing 100% exemption for projects of less than 5 MW but the solar industry is pushing hard to maintain the existing exemptions and are trying to become exempt from local land-use regulations. We will just have to wait and see what if any bills impacting solar facilities are actually passed.

After additional research I am providing the Commission a study of the Health and Safety impacts of Utility-Scale solar photovoltaic systems or solar farms, attachment (1). While this study by the Clean Energy Technology Center of North Carolina State University focuses on Utility-Scale systems the same solar panels are used in smaller solar farms and the conclusions can be inferred to smaller solar farms. The summary of the report is that the negative health and safety impact of solar generation facilities were negligible.

Attachments:

1. Health & Safety Impacts of Solar Photovoltaics May 2017 by N.C. Clean Energy Center at North Carolina State University.
2. Draft amendment to Zoning Ordinance - Alternative Energy Generation Facility

Recommendations:

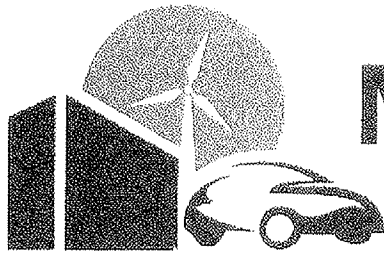
Review the draft amendment and be prepared to discuss at the November 19, 2019 meeting of the Planning Commission

Motion _____
Second _____
Prengaman _____

Paige _____
Sandlin _____
Jenkins _____

Hunt _____
Gilliam _____
Leatherwood _____

Jones _____
Watson _____
Peery _____



NC CLEAN ENERGY TECHNOLOGY CENTER

Health and Safety Impacts of Solar Photovoltaics MAY 2017



NC STATE UNIVERSITY

Health and Safety Impacts of Solar Photovoltaics

The increasing presence of utility-scale solar photovoltaic (PV) systems (sometimes referred to as solar farms) is a rather new development in North Carolina's landscape. Due to the new and unknown nature of this technology, it is natural for communities near such developments to be concerned about health and safety impacts. Unfortunately, the quick emergence of utility-scale solar has cultivated fertile grounds for myths and half-truths about the health impacts of this technology, which can lead to unnecessary fear and conflict.

Photovoltaic (PV) technologies and solar inverters are not known to pose any significant health dangers to their neighbors. The most important dangers posed are increased highway traffic during the relative short construction period and dangers posed to trespassers of contact with high voltage equipment. This latter risk is mitigated by signage and the security measures that industry uses to deter trespassing. As will be discussed in more detail below, risks of site contamination are much less than for most other industrial uses because PV technologies employ few toxic chemicals and those used are used in very small quantities. Due to the reduction in the pollution from fossil-fuel-fired electric generators, the overall impact of solar development on human health is overwhelmingly positive. This pollution reduction results from a partial replacement of fossil-fuel fired generation by emission-free PV-generated electricity, which reduces harmful sulfur dioxide (SO₂), nitrogen oxides (NO_x), and fine particulate matter (PM_{2.5}). Analysis from the National Renewable Energy Laboratory and the Lawrence Berkeley National Laboratory, both affiliates of the U.S. Department of Energy, estimates the health-related air quality benefits to the southeast region from solar PV generators to be worth 8.0 ¢ per kilowatt-hour of solar generation.¹ This is in addition to the value of the electricity and suggests that the air quality benefits of solar are worth more than the electricity itself.

Even though we have only recently seen large-scale installation of PV technologies, the technology and its potential impacts have been studied since the 1950s. A combination of this solar-specific research and general scientific research has led to the scientific community having a good understanding of the science behind potential health and safety impacts of solar energy. This paper utilizes the latest scientific literature and knowledge of solar practices in N.C. to address the health and safety risks associated with solar PV technology. These risks are extremely small, far less than those associated with common activities such as driving a car, and vastly outweighed by health benefits of the generation of clean electricity.

This paper addresses the potential health and safety impacts of solar PV development in North Carolina, organized into the following four categories:

- (1) Hazardous Materials
- (2) Electromagnetic Fields (EMF)
- (3) Electric Shock and Arc Flash
- (4) Fire Safety

1. Hazardous Materials

One of the more common concerns towards solar is that the panels (referred to as “modules” in the solar industry) consist of toxic materials that endanger public health. However, as shown in this section, solar energy systems may contain small amounts of toxic materials, but these materials do not endanger public health. To understand potential toxic hazards coming from a solar project, one must understand system installation, materials used, the panel end-of-life protocols, and system operation. This section will examine these aspects of a solar farm and the potential for toxicity impacts in the following subsections:

- (1.2) Project Installation/Construction
- (1.2) System Components
 - 1.2.1 Solar Panels: Construction and Durability
 - 1.2.2 Photovoltaic technologies
 - (a) Crystalline Silicon
 - (b) Cadmium Telluride (CdTe)
 - (c) CIS/CIGS
 - 1.2.3 Panel End of Life Management
 - 1.2.4 Non-panel System Components
- (1.3) Operations and Maintenance

1.1 Project Installation/Construction

The system installation, or construction, process does not require toxic chemicals or processes. The site is mechanically cleared of large vegetation, fences are constructed, and the land is surveyed to layout exact installation locations. Trenches for underground wiring are dug and support posts are driven into the ground. The solar panels are bolted to steel and aluminum support structures and wired together. Inverter pads are installed, and an inverter and transformer are installed on each pad. Once everything is connected, the system is tested, and only then turned on.



Figure 1: Utility-scale solar facility (5 MW_{AC}) located in Catawba County. Source: Strata Solar

1.2 System Components

1.2.1 Solar Panels: Construction and Durability

Solar PV panels typically consist of glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of their useful life.² Today there are two PV technologies used in PV panels at utility-scale solar facilities, silicon, and thin film. As of 2016, all thin film used in North Carolina solar facilities are cadmium telluride (CdTe) panels from the US manufacturer First Solar, but there are other thin film PV panels available on the market, such as Solar Frontier's CIGS panels. Crystalline silicon technology consists of silicon wafers which are made into cells and assembled into panels, thin film technologies consist of thin layers of semiconductor material deposited onto glass, polymer or metal substrates. While there are differences in the components and manufacturing processes of these two types of solar technologies, many aspects of their PV panel construction are very similar. Specifics about each type of PV chemistry as it relates to toxicity are covered in subsections a, b, and c in section 1.2.2; on crystalline silicon, cadmium telluride, and CIS/CIGS respectively. The rest of this section applies equally to both silicon and thin film panels.

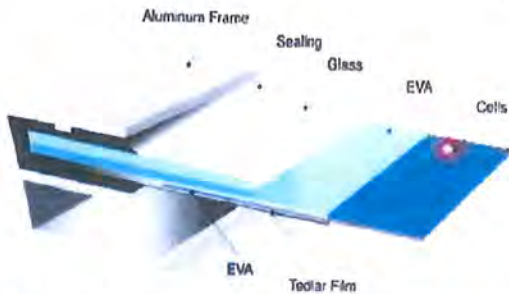


Figure 2: Components of crystalline silicon panels. The vast majority of silicon panels consist of a glass sheet on the topside with an aluminum frame providing structural support. Image Source: www.riteksolar.com.tw

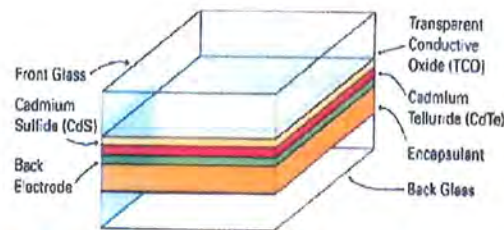


Figure 3: Layers of a common frameless thin-film panel (CdTe). Many thin film panels are frameless, including the most common thin-film panels, First Solar's CdTe. Frameless panels have protective glass on both the front and back of the panel. Layer thicknesses not to scale. Image Source: www.homepower.com

To provide decades of corrosion-free operation, PV cells in PV panels are encapsulated from air and moisture between two layers of plastic. The encapsulation layers are protected on the top with a layer of tempered glass and on the backside with a polymer sheet. Frameless modules include a protective layer of glass on the rear of the panel, which may also be tempered. The plastic ethylene-vinyl acetate (EVA) commonly provides the cell encapsulation. For decades, this same material has been used between layers of tempered glass to give car windshields and hurricane windows their great strength. In the same way that a car windshield cracks but stays intact, the EVA layers in PV panels keep broken panels intact (see Figure 4). Thus, a damaged module does not generally create small pieces of debris; instead, it largely remains together as one piece.



Figure 4: The mangled PV panels in this picture illustrate the nature of broken solar panels; the glass cracks but the panel is still in one piece. Image Source: http://img.alibaba.com/photo/115259576/broken_solar_panel.jpg

PV panels constructed with the same basic components as modern panels have been installed across the globe for well over thirty years.³ The long-term durability and performance demonstrated over these decades, as well as the results of accelerated lifetime testing, helped lead to an industry-standard 25-year power production warranty for PV panels. These power warranties warrant a PV panel to produce at least 80% of their original nameplate production after 25 years of use. A recent SolarCity and DNV GL study reported that today's quality PV panels should be expected to reliably and efficiently produce power for thirty-five years.⁴

Local building codes require all structures, including ground mounted solar arrays, to be engineered to withstand anticipated wind speeds, as defined by the local wind speed requirements. Many racking products are available in versions engineered for wind speeds of up to 150 miles per hour, which is significantly higher than the wind speed requirement anywhere in North Carolina. The strength of PV mounting structures were demonstrated during Hurricane Sandy in 2012 and again during Hurricane Matthew in 2016. During Hurricane Sandy, the many large-scale solar facilities in New Jersey and New York at that time suffered only minor damage.⁵ In the fall of 2016, the US and Caribbean experienced destructive winds and torrential rains from Hurricane Matthew, yet one leading solar tracker manufacturer reported that their numerous systems in the impacted area received zero damage from wind or flooding.⁶

In the event of a catastrophic event capable of damaging solar equipment, such as a tornado, the system will almost certainly have property insurance that will cover the cost to cleanup and repair the project. It is in the best interest of the system owner to protect their investment against such risks. It is also in their interest to get the project repaired and producing full power as soon as possible. Therefore, the investment in adequate insurance is a wise business practice for the system owner. For the same

reasons, adequate insurance coverage is also generally a requirement of the bank or firm providing financing for the project.

1.2.2 Photovoltaic (PV) Technologies

a. Crystalline Silicon

This subsection explores the toxicity of silicon-based PV panels and concludes that they do not pose a material risk of toxicity to public health and safety. Modern crystalline silicon PV panels, which account for over 90% of solar PV panels installed today, are, more or less, a commodity product. The overwhelming majority of panels installed in North Carolina are crystalline silicon panels that are informally classified as Tier I panels. Tier I panels are from well-respected manufacturers that have a good chance of being able to honor warranty claims. Tier I panels are understood to be of high quality, with predictable performance, durability, and content. Well over 80% (by weight) of the content of a PV panel is the tempered glass front and the aluminum frame, both of which are common building materials. Most of the remaining portion are common plastics, including polyethylene terephthalate in the backsheet, EVA encapsulation of the PV cells, polyphenyl ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components makeup less than 5% of the weight of most panels. The PV cell itself is nearly 100% silicon, and silicon is the second most common element in the Earth's crust. The silicon for PV cells is obtained by high-temperature processing of quartz sand (SiO_2) that removes its oxygen molecules. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

The other minor components of the PV cell are also generally benign; however, some contain lead, which is a human toxicant that is particularly harmful to young children. The minor components include an extremely thin antireflective coating (silicon nitride or titanium dioxide), a thin layer of aluminum on the rear, and thin strips of silver alloy that are screen-printed on the front and rear of cell.⁷ In order for the front and rear electrodes to make effective electrical contact with the proper layer of the PV cell, other materials (called glass frit) are mixed with the silver alloy and then heated to etch the metals into the cell. This glass frit historically contains a small amount of lead (Pb) in the form of lead oxide. The 60 or 72 PV cells in a PV panel are connected by soldering thin solder-covered copper tabs from the back of one cell to the front of the next cell. Traditionally a tin-based solder containing some lead (Pb) is used, but some manufacturers have switched to lead-free solder. The glass frit and/or the solder may contain trace amounts of other metals, potentially including some with human toxicity such as cadmium. However, testing to simulate the potential for leaching from broken panels, which is discussed in more detail below, did not find a potential toxicity threat from these trace elements. Therefore, the tiny amount of lead in the glass frit and the solder is the only part of silicon PV panels with a potential to create a negative health impact. However, as described below, the very limited amount of lead involved and its strong physical and chemical attachment to other components of the PV panel means that even in worst-case scenarios the health hazard it poses is insignificant.

As with many electronic industries, the solder in silicon PV panels has historically been a lead-based solder, often 36% lead, due to the superior properties of such solder. However, recent advances in lead-free solders have spurred a trend among PV panel manufacturers to reduce or remove the lead in their panels. According to the 2015 Solar Scorecard from the Silicon Valley Toxics Coalition, a group that tracks environmental responsibility of photovoltaic panel manufacturers, fourteen companies (increased from twelve companies in 2014) manufacture PV panels certified to meet the European Restriction of

Hazardous Substances (RoHS) standard. This means that the amount of cadmium and lead in the panels they manufacture fall below the RoHS thresholds, which are set by the European Union and serve as the world's de facto standard for hazardous substances in manufactured goods.⁸ The Restriction of Hazardous Substances (RoHS) standard requires that the maximum concentration found in any homogenous material in a produce is less than 0.01% cadmium and less than 0.10% lead, therefore, any solder can be no more than 0.10% lead.⁹

While some manufacturers are producing PV panels that meet the RoHS standard, there is no requirement that they do so because the RoHS Directive explicitly states that the directive does not apply to photovoltaic panels.¹⁰ The justification for this is provided in item 17 of the current RoHS Directive: "The development of renewable forms of energy is one of the Union's key objectives, and the contribution made by renewable energy sources to environmental and climate objectives is crucial. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources (4) recalls that there should be coherence between those objectives and other Union environmental legislation. Consequently, this Directive should not prevent the development of renewable energy technologies that have no negative impact on health and the environment and that are sustainable and economically viable."

The use of lead is common in our modern economy. However, only about 0.5% of the annual lead consumption in the U.S. is for electronic solder for all uses; PV solder makes up only a tiny portion of this 0.5%. Close to 90% of lead consumption in the US is in batteries, which do not encapsulate the pounds of lead contained in each typical automotive battery. This puts the lead in batteries at great risk of leaching into the environment. Estimates for the lead in a single PV panel with lead-based solder range from 1.6 to 24 grams of lead, with 13g (less than half of an ounce) per panel seen most often in the literature.¹¹ At 13 g/panel¹², each panel contains one-half of the lead in a typical 12-gauge shotgun shell. This amount equates to roughly 1/750th of the lead in a single car battery. In a panel, it is all durably encapsulated from air or water for the full life of the panel.¹⁴

As indicated by their 20 to 30-year power warranty, PV modules are designed for a long service life, generally over 25 years. For a panel to comply with its 25-year power warranty, its internal components, including lead, must be sealed from any moisture. Otherwise, they would corrode and the panel's output would fall below power warranty levels. Thus, the lead in operating PV modules is not at risk of release to the environment during their service lifetime. In extreme experiments, researchers have shown that lead can leach from crushed or pulverized panels.^{15, 16} However, more real-world tests designed to represent typical trash compaction that are used to classify waste as hazardous or non-hazardous show no danger from leaching.^{17, 18} For more information about PV panel end-of-life, see the Panel Disposal section.

As illustrated throughout this section, silicon-based PV panels do not pose a material threat to public health and safety. The only aspect of the panels with potential toxicity concerns is the very small amount of lead in some panels. However, any lead in a panel is well sealed from environmental exposure for the operating lifetime of the solar panel and thus not at risk of release into the environment.

b. Cadmium Telluride (CdTe) PV Panels

This subsection examines the components of a cadmium telluride (CdTe) PV panel. Research demonstrates that they pose negligible toxicity risk to public health and safety while significantly reducing the public's exposure to cadmium by reducing coal emissions. As of mid-2016, a few hundred MWs of

cadmium telluride (CdTe) panels, all manufactured by the U.S. company First Solar, have been installed in North Carolina.

Questions about the potential health and environmental impacts from the use of this PV technology are related to the concern that these panels contain cadmium, a toxic heavy metal. However, scientific studies have shown that cadmium telluride differs from cadmium due to its high chemical and thermal stability.¹⁹ Research has shown that the tiny amount of cadmium in these panels does not pose a health or safety risk.²⁰ Further, there are very compelling reasons to welcome its adoption due to reductions in unhealthy pollution associated with burning coal. Every GWh of electricity generated by burning coal produces about 4 grams of cadmium air emissions.²¹ Even though North Carolina produces a significant fraction of our electricity from coal, electricity from solar offsets much more natural gas than coal due to natural gas plants being able to adjust their rate of production more easily and quickly. If solar electricity offsets 90% natural gas and 10% coal, each 5-megawatt (5 MW_{AC}, which is generally 7 MW_{DC}) CdTe solar facility in North Carolina keeps about 157 grams, or about a third of a pound, of cadmium *out of our environment*.^{22, 23}

Cadmium is toxic, but all the approximately 7 grams of cadmium in one CdTe panel is in the form of a chemical compound cadmium telluride,²⁴ which has 1/100th the toxicity of free cadmium.²⁵ Cadmium telluride is a very stable compound that is non-volatile and non-soluble in water. Even in the case of a fire, research shows that less than 0.1% of the cadmium is released when a CdTe panel is exposed to fire. The fire melts the glass and encapsulates over 99.9% of the cadmium in the molten glass.²⁷

It is important to understand the source of the cadmium used to manufacture CdTe PV panels. The cadmium is a byproduct of zinc and lead refining. The element is collected from emissions and waste streams during the production of these metals and combined with tellurium to create the CdTe used in PV panels. If the cadmium were not collected for use in the PV panels or other products, it would otherwise either be stockpiled for future use, cemented and buried, or disposed of.²⁸ Nearly all the cadmium in old or broken panels can be recycled which can eventually serve as the primary source of cadmium for new PV panels.²⁹

Similar to silicon-based PV panels, CdTe panels are constructed of a tempered glass front, one instead of two clear plastic encapsulation layers, and a rear heat strengthened glass backing (together >98% by weight). The final product is built to withstand exposure to the elements without significant damage for over 25 years. While not representative of damage that may occur in the field or even at a landfill, laboratory evidence has illustrated that when panels are ground into a fine powder, very acidic water is able to leach portions of the cadmium and tellurium,³⁰ similar to the process used to recycle CdTe panels. Like many silicon-based panels, CdTe panels are reported (as far back as 1998³¹) to pass the EPA's Toxic Characteristic Leaching Procedure (TCLP) test, which tests the potential for crushed panels in a landfill to leach hazardous substances into groundwater.³² Passing this test means that they are classified as non-hazardous waste and can be deposited in landfills.^{33, 34} For more information about PV panel end-of-life, see the Panel Disposal section.

There is also concern of environmental impact resulting from potential catastrophic events involving CdTe PV panels. An analysis of worst-case scenarios for environmental impact from CdTe PV panels, including earthquakes, fires, and floods, was conducted by the University of Tokyo in 2013. After reviewing the extensive international body of research on CdTe PV technology, their report concluded, "Even in the worst-case scenarios, it is unlikely that the Cd concentrations in air and sea water will exceed the environmental regulation values."³⁵ In a worst-case scenario of damaged panels abandoned on the ground, insignificant amounts of cadmium will leach from the panels. This is because this scenario is

much less conducive (larger module pieces, less acidity) to leaching than the conditions of the EPA's TCLP test used to simulate landfill conditions, which CdTe panels pass.³⁶

First Solar, a U.S. company, and the only significant supplier of CdTe panels, has a robust panel take-back and recycling program that has been operating commercially since 2005.³⁷ The company states that it is "committed to providing a commercially attractive recycling solution for photovoltaic (PV) power plant and module owners to help them meet their module (end of life) EOL obligation simply, cost-effectively and responsibly." First Solar global recycling services to their customers to collect and recycle panels once they reach the end of productive life whether due to age or damage. These recycling service agreements are structured to be financially attractive to both First Solar and the solar panel owner. For First Solar, the contract provides the company with an affordable source of raw materials needed for new panels and presumably a diminished risk of undesired release of Cd. The contract also benefits the solar panel owner by allowing them to avoid tipping fees at a waste disposal site. The legal contract helps provide peace of mind by ensuring compliance by both parties when considering the continuing trend of rising disposal costs and increasing regulatory requirements.

c. CIS/CIGS and other PV technologies

Copper indium gallium selenide PV technology, often referred to as CIGS, is the second most common type of thin-film PV panel but a distant second behind CdTe. CIGS cells are composed of a thin layer of copper, indium, gallium, and selenium on a glass or plastic backing. None of these elements are very toxic, although selenium is a regulated metal under the Federal Resource Conservation and Recovery Act (RCRA).³⁸ The cells often also have an extremely thin layer of cadmium sulfide that contains a tiny amount of cadmium, which is toxic. The promise of high efficiency CIGS panels drove heavy investment in this technology in the past. However, researchers have struggled to transfer high efficiency success in the lab to low-cost full-scale panels in the field.³⁹ Recently, a CIGS manufacturer based in Japan, Solar Frontier, has achieved some market success with a rigid, glass-faced CIGS module that competes with silicon panels. Solar Frontier produces the majority of CIS panels on the market today.⁴⁰ Notably, these panels are RoHS compliant,⁴¹ thus meeting the rigorous toxicity standard adopted by the European Union even though this directive exempts PV panels. The authors are unaware of any completed or proposed utility-scale system in North Carolina using CIS/CIGS panels.

1.2.3 Panel End-of-Life Management

Concerns about the volume, disposal, toxicity, and recycling of PV panels are addressed in this subsection. To put the volume of PV waste into perspective, consider that by 2050, when PV systems installed in 2020 will reach the end of their lives, it is estimated that the global annual PV panel waste tonnage will be 10% of the 2014 global e-waste tonnage.⁴² In the U.S., end-of-life disposal of solar products is governed by the Federal Resource Conservation and Recovery Act (RCRA), as well as state policies in some situations. RCRA separates waste into hazardous (not accepted at ordinary landfill) and solid waste (generally accepted at ordinary landfill) based on a series of rules. According to RCRA, the way to determine if a PV panel is classified as hazardous waste is the Toxic Characteristic Leaching Procedure (TCLP) test. This EPA test is designed to simulate landfill disposal and determine the risk of hazardous substances leaching out of the landfill.^{43,44,45} Multiple sources report that most modern PV panels (both crystalline silicon and cadmium telluride) pass the TCLP test.^{46,47} Some studies found that some older (1990s) crystalline silicon panels, and perhaps some newer crystalline silicon panels (specifics are not given about vintage of panels tested), do not pass the lead (Pb) leachate limits in the TCLP test.^{48,}

⁴⁹

The test begins with the crushing of a panel into centimeter-sized pieces. The pieces are then mixed in an acid bath. After tumbling for eighteen hours, the fluid is tested for forty hazardous substances that all must be below specific threshold levels to pass the test. Research comparing TCLP conditions to conditions of damaged panels in the field found that simulated landfill conditions provide overly conservative estimates of leaching for field-damaged panels.⁵⁰ Additionally, research in Japan has found no detectable Cd leaching from cracked CdTe panels when exposed to simulated acid rain.⁵¹

Although modern panels can generally be landfilled, they can also be recycled. Even though recent waste volume has not been adequate to support significant PV-specific recycling infrastructure, the existing recycling industry in North Carolina reports that it recycles much of the current small volume of broken PV panels. In an informal survey conducted by the NC Clean Energy Technology Center survey in early 2016, seven of the eight large active North Carolina utility-scale solar developers surveyed reported that they send damaged panels back to the manufacturer and/or to a local recycler. Only one developer reported sending damaged panels to the landfill.

The developers reported at that time that they are usually paid a small amount per panel by local recycling firms. In early 2017, a PV developer reported that a local recycler was charging a small fee per panel to recycle damaged PV panels. The local recycling firm known to authors to accept PV panels described their current PV panel recycling practice as of early 2016 as removing the aluminum frame for local recycling and removing the wire leads for local copper recycling. The remainder of the panel is sent to a facility for processing the non-metallic portions of crushed vehicles, referred to as "fluff" in the recycling industry.⁵² This processing within existing general recycling plants allows for significant material recovery of major components, including glass which is 80% of the module weight, but at lower yields than PV-specific recycling plants. Notably almost half of the material value in a PV panel is in the few grams of silver contained in almost every PV panel produced today. In the long-term, dedicated PV panel recycling plants can increase treatment capacities and maximize revenues resulting in better output quality and the ability to recover a greater fraction of the useful materials.⁵³ PV-specific panel recycling technologies have been researched and implemented to some extent for the past decade, and have been shown to be able to recover over 95% of PV material (semiconductor) and over 90% of the glass in a PV panel.⁵⁴

A look at global PV recycling trends hints at the future possibilities of the practice in our country. Europe installed MW-scale volumes of PV years before the U.S. In 2007, a public-private partnership between the European Union and the solar industry set up a voluntary collection and recycling system called PV CYCLE. This arrangement was later made mandatory under the EU's WEEE directive, a program for waste electrical and electronic equipment.⁵⁵ Its member companies (PV panel producers) fully finance the association. This makes it possible for end-users to return the member companies' defective panels for recycling at any of the over 300 collection points around Europe without added costs. Additionally, PV CYCLE will pick up batches of 40 or more used panels at no cost to the user. This arrangement has been very successful, collecting and recycling over 13,000 tons by the end of 2015.⁵⁶

In 2012, the WEEE Directive added the end-of-life collection and recycling of PV panels to its scope.⁵⁷ This directive is based on the principle of extended-producer-responsibility. It has a global impact because producers that want to sell into the EU market are legally responsible for end-of-life management. Starting in 2018, this directive targets that 85% of PV products "put in the market" in Europe are recovered and 80% is prepared for reuse and recycling.

The success of the PV panel collection and recycling practices in Europe provides promise for the future of recycling in the U.S. In mid-2016, the US Solar Energy Industry Association (SEIA) announced that they are starting a national solar panel recycling program with the guidance and support of many

leading PV panel producers.⁵⁸ The program will aggregate the services offered by recycling vendors and PV manufacturers, which will make it easier for consumers to select a cost-effective and environmentally responsible end-of-life management solution for their PV products. According to SEIA, they are planning the program in an effort to make the entire industry landfill-free. In addition to the national recycling network program, the program will provide a portal for system owners and consumers with information on how to responsibly recycle their PV systems.

While a cautious approach toward the potential for negative environmental and/or health impacts from retired PV panels is fully warranted, this section has shown that the positive health impacts of reduced emissions from fossil fuel combustion from PV systems more than outweighs any potential risk. Testing shows that silicon and CdTe panels are both safe to dispose of in landfills, and are also safe in worst case conditions of abandonment or damage in a disaster. Additionally, analysis by local engineers has found that the current salvage value of the equipment in a utility scale PV facility generally exceeds general contractor estimates for the cost to remove the entire PV system.^{59, 60, 61}

1.2.4 Non-Panel System Components (racking, wiring, inverter, transformer)

While previous toxicity subsections discussed PV panels, this subsection describes the non-panel components of utility-scale PV systems and investigates any potential public health and safety concerns. The most significant non-panel component of a ground-mounted PV system is the mounting structure of the rows of panels, commonly referred to as “racking”. The vertical post portion of the racking is galvanized steel and the remaining above-ground racking components are either galvanized steel or aluminum, which are both extremely common and benign building materials. The inverters that make the solar generated electricity ready to send to the grid have weather-proof steel enclosures that protect the working components from the elements. The only fluids that they might contain are associated with their cooling systems, which are not unlike the cooling system in a computer. Many inverters today are RoHS compliant.

The electrical transformers (to boost the inverter output voltage to the voltage of the utility connection point) do contain a liquid cooling oil. However, the fluid used for that function is either a non-toxic mineral oil or a biodegradable non-toxic vegetable oil, such as BIOTEMP from ABB. These vegetable transformer oils have the additional advantage of being much less flammable than traditional mineral oils. Significant health hazards are associated with old transformers containing cooling oil with toxic PCBs. Transformers with PCB-containing oil were common before PCBs were outlawed in the U.S. in 1979. PCBs still exist in older transformers in the field across the country.

Other than a few utility research sites, there are no batteries on- or off-site associated with utility-scale solar energy facilities in North Carolina, avoiding any potential health or safety concerns related to battery technologies. However, as battery technologies continue to improve and prices continue to decline we are likely to start seeing some batteries at solar facilities. Lithium ion batteries currently dominate the world utility-scale battery market, which are not very toxic. No non-panel system components were found to pose any health or environmental dangers.

1.4 Operations and Maintenance – Panel Washing and Vegetation Control

Throughout the eastern U.S., the climate provides frequent and heavy enough rain to keep panels adequately clean. This dependable weather pattern eliminates the need to wash the panels on a regular basis. Some system owners may choose to wash panels as often as once a year to increase production, but most in N.C. do not regularly wash any PV panels. Dirt build up over time may justify panel washing a few times over the panels' lifetime; however, nothing more than soap and water are required for this activity.

The maintenance of ground-mounted PV facilities requires that vegetation be kept low, both for aesthetics and to avoid shading of the PV panels. Several approaches are used to maintain vegetation at NC solar facilities, including planting of limited-height species, mowing, weed-eating, herbicides, and grazing livestock (sheep). The following descriptions of vegetation maintenance practices are based on interviews with several solar developers as well as with three maintenance firms that together are contracted to maintain well over 100 of the solar facilities in N.C. The majority of solar facilities in North Carolina maintain vegetation primarily by mowing. Each row of panels has a single row of supports, allowing sickle mowers to mow under the panels. The sites usually require mowing about once a month during the growing season. Some sites employ sheep to graze the site, which greatly reduces the human effort required to maintain the vegetation and produces high quality lamb meat.⁶²

In addition to mowing and weed eating, solar facilities often use some herbicides. Solar facilities generally do not spray herbicides over the entire acreage; rather they apply them only in strategic locations such as at the base of the perimeter fence, around exterior vegetative buffer, on interior dirt roads, and near the panel support posts. Also unlike many row crop operations, solar facilities generally use only general use herbicides, which are available over the counter, as opposed to restricted use herbicides commonly used in commercial agriculture that require a special restricted use license. The herbicides used at solar facilities are primarily 2-4-D and glyphosate (Round-up®), which are two of the most common herbicides used in lawns, parks, and agriculture across the country. One maintenance firm that was interviewed sprays the grass with a class of herbicide known as a growth regulator in order to slow the growth of grass so that mowing is only required twice a year. Growth regulators are commonly used on highway roadsides and golf courses for the same purpose. A commercial pesticide applicator license is required for anyone other than the landowner to apply herbicides, which helps ensure that all applicators are adequately educated about proper herbicide use and application. The license must be renewed annually and requires passing of a certification exam appropriate to the area in which the applicator wishes to work. Based on the limited data available, it appears that solar facilities in N.C. generally use significantly less herbicides per acre than most commercial agriculture or lawn maintenance services.

2. Electromagnetic Fields (EMF)

PV systems do not emit any material during their operation; however, they do generate electromagnetic fields (EMF), sometimes referred to as radiation. EMF produced by electricity is non-ionizing radiation, meaning the radiation has enough energy to move atoms in a molecule around (experienced as heat), but not enough energy to remove electrons from an atom or molecule (ionize) or to damage DNA. As shown below, modern humans are all exposed to EMF throughout our daily lives without negative health impact. Someone outside of the fenced perimeter of a solar facility is not exposed to significant EMF from the solar facility. Therefore, there is no negative health impact from the EMF

produced in a solar farm. The following paragraphs provide some additional background and detail to support this conclusion.

Since the 1970s, some have expressed concern over potential health consequences of EMF from electricity, but no studies have ever shown this EMF to cause health problems.⁶³ These concerns are based on some epidemiological studies that found a slight increase in childhood leukemia associated with average exposure to residential power-frequency magnetic fields above 0.3 to 0.4 μ T (microteslas) (equal to 3.0 to 4.0 mG (milligauss)). μ T and mG are both units used to measure magnetic field strength. For comparison, the average exposure for people in the U.S. is one mG or 0.1 μ T, with about 1% of the population with an average exposure in excess of 0.4 μ T (or 4 mG).⁶⁴ These epidemiological studies, which found an association but not a causal relationship, led the World Health Organization's International Agency for Research on Cancer (IARC) to classify ELF magnetic fields as "possibly carcinogenic to humans". Coffee also has this classification. This classification means there is limited evidence but not enough evidence to designate as either a "probable carcinogen" or "human carcinogen". Overall, there is very little concern that ELF EMF damages public health. The only concern that does exist is for long-term exposure above 0.4 μ T (4 mG) that may have some connection to increased cases of childhood leukemia. In 1997, the National Academies of Science were directed by Congress to examine this concern and concluded:

"Based on a comprehensive evaluation of published studies relating to the effects of power-frequency electric and magnetic fields on cells, tissues, and organisms (including humans), the conclusion of the committee is that the current body of evidence does not show that exposure to these fields presents a human-health hazard. Specifically, no conclusive and consistent evidence shows that exposures to residential electric and magnetic fields produce cancer, adverse neurobehavioral effects, or reproductive and developmental effects."⁶⁵

There are two aspects to electromagnetic fields, an electric field and a magnetic field. The electric field is generated by voltage and the magnetic field is generated by electric current, i.e., moving electrons. A task group of scientific experts convened by the World Health Organization (WHO) in 2005 concluded that there were no substantive health issues related to *electric* fields (0 to 100,000 Hz) at levels generally encountered by members of the public.⁶⁶ The relatively low voltages in a solar facility and the fact that electric fields are easily shielded (i.e., blocked) by common materials, such as plastic, metal, or soil means that there is no concern of negative health impacts from the electric fields generated by a solar facility. Thus, the remainder of this section addresses magnetic fields. Magnetic fields are not shielded by most common materials and thus can easily pass through them. Both types of fields are strongest close to the source of electric generation and weaken quickly with distance from the source.

The direct current (DC) electricity produced by PV panels produce stationary (0 Hz) electric and magnetic fields. Because of minimal concern about potential risks of stationary fields, little scientific research has examined stationary fields' impact on human health.⁶⁷ In even the largest PV facilities, the DC voltages and currents are not very high. One can illustrate the weakness of the EMF generated by a PV panel by placing a compass on an operating solar panel and observing that the needle still points north.

While the electricity throughout the majority of a solar site is DC electricity, the inverters convert this DC electricity to alternating current (AC) electricity matching the 60 Hz frequency of the grid. Therefore, the inverters and the wires delivering this power to the grid are producing non-stationary EMF, known as extremely low frequency (ELF) EMF, normally oscillating with a frequency of 60 Hz. This frequency is at the low-energy end of the electromagnetic spectrum. Therefore, it has less energy than

other commonly encountered types of non-ionizing radiation like radio waves, infrared radiation, and visible light.

The wide use of electricity results in background levels of ELF EMFs in nearly all locations where people spend time — homes, workplaces, schools, cars, the supermarket, etc. A person's average exposure depends upon the sources they encounter, how close they are to them, and the amount of time they spend there.⁶⁸ As stated above, the average exposure to magnetic fields in the U.S. is estimated to be around one mG or 0.1 μ T, but can vary considerably depending on a person's exposure to EMF from electrical devices and wiring.⁶⁹ At times we are often exposed to much higher ELF magnetic fields, for example when standing three feet from a refrigerator the ELF magnetic field is 6 mG and when standing three feet from a microwave oven the field is about 50 mG.⁷⁰ The strength of these fields diminish quickly with distance from the source, but when surrounded by electricity in our homes and other buildings moving away from one source moves you closer to another. However, unless you are inside of the fence at a utility-scale solar facility or electrical substation it is impossible to get very close to the EMF sources. Because of this, EMF levels at the fence of electrical substations containing high voltages and currents are considered "generally negligible".^{71, 72}

The strength of ELF-EMF present at the perimeter of a solar facility or near a PV system in a commercial or residential building is significantly lower than the typical American's average EMF exposure.^{73, 74} Researchers in Massachusetts measured magnetic fields at PV projects and found the magnetic fields dropped to very low levels of 0.5 mG or less, and in many cases to less than background levels (0.2 mG), at distances of no more than nine feet from the residential inverters and 150 feet from the utility-scale inverters.⁷⁵ Even when measured within a few feet of the utility-scale inverter, the ELF magnetic fields were well below the International Commission on Non-Ionizing Radiation Protection's recommended magnetic field level exposure limit for the general public of 2,000 mG.⁷⁶ It is typical that utility scale designs locate large inverters central to the PV panels that feed them because this minimizes the length of wire required and shields neighbors from the sound of the inverter's cooling fans. Thus, it is rare for a large PV inverter to be within 150 feet of the project's security fence.

Anyone relying on a medical device such as pacemaker or other implanted device to maintain proper heart rhythm may have concern about the potential for a solar project to interfere with the operation of his or her device. However, there is no reason for concern because the EMF outside of the solar facility's fence is less than 1/1000 of the level at which manufacturers test for ELF EMF interference, which is 1,000 mG.⁷⁷ Manufacturers of potentially affected implanted devices often provide advice on electromagnetic interference that includes avoiding letting the implanted device get too close to certain sources of fields such as some household appliances, some walkie-talkies, and similar transmitting devices. Some manufacturers' literature does not mention high-voltage power lines, some say that exposure in public areas should not give interference, and some advise not spending extended periods of time close to power lines.⁷⁸

3. Electric Shock and Arc Flash Hazards

There is a real danger of electric shock to anyone entering any of the electrical cabinets such as combiner boxes, disconnect switches, inverters, or transformers; or otherwise coming in contact with voltages over 50 Volts.⁷⁹ Another electrical hazard is an arc flash, which is an explosion of energy that can occur in a short circuit situation. This explosive release of energy causes a flash of heat and a shockwave, both of which can cause serious injury or death. Properly trained and equipped technicians and electricians know how to safely install, test, and repair PV systems, but there is always some risk of

injury when hazardous voltages and/or currents are present. Untrained individuals should not attempt to inspect, test, or repair any aspect of a PV system due to the potential for injury or death due to electric shock and arc flash, The National Electric Code (NEC) requires appropriate levels of warning signs on all electrical components based on the level of danger determined by the voltages and current potentials. The national electric code also requires the site to be secured from unauthorized visitors with either a six-foot chain link fence with three strands of barbed wire or an eight-foot fence, both with adequate hazard warning signs.

4. Fire Safety

The possibility of fires resulting from or intensified by PV systems may trigger concern among the general public as well as among firefighters. However, concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire. Flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer backsheets (framed panels only), plastic junction boxes on rear of panel, and insulation on wiring. The rest of the panel is composed of non-flammable components, notably including one or two layers of protective glass that make up over three quarters of the panel's weight.

Heat from a small flame is not adequate to ignite a PV panel, but heat from a more intense fire or energy from an electrical fault can ignite a PV panel.⁸⁰ One real-world example of this occurred during July 2015 in an arid area of California. Three acres of grass under a thin film PV facility burned without igniting the panels mounted on fixed-tilt racks just above the grass.⁸¹ While it is possible for electrical faults in PV systems on homes or commercial buildings to start a fire, this is extremely rare.⁸² Improving understanding of the PV-specific risks, safer system designs, and updated fire-related codes and standards will continue to reduce the risk of fire caused by PV systems.

PV systems on buildings can affect firefighters in two primary ways, 1) impact their methods of fighting the fire, and 2) pose safety hazard to the firefighters. One of the most important techniques that firefighters use to suppress fire is ventilation of a building's roof. This technique allows superheated toxic gases to quickly exit the building. By doing so, the firefighters gain easier and safer access to the building. Ventilation of the roof also makes the challenge of putting out the fire easier. However, the placement of rooftop PV panels may interfere with ventilating the roof by limiting access to desired venting locations.

New solar-specific building code requirements are working to minimize these concerns. Also, the latest National Electric Code has added requirements that make it easier for first responders to safely and effectively turn off a PV system. Concern for firefighting a building with PV can be reduced with proper fire fighter training, system design, and installation. Numerous organizations have studied fire fighter safety related to PV. Many organizations have published valuable guides and training programs. Some notable examples are listed below.

- The International Association of Fire Fighters (IAFF) and International Renewable Energy Council (IREC) partnered to create an online training course that is far beyond the PowerPoint click-and-view model. The self-paced online course, "Solar PV Safety for Fire Fighters," features rich video content and simulated environments so fire fighters can practice the knowledge they've learned. www.iaff.org/pvsafetytraining
- [Photovoltaic Systems and the Fire Code](#): Office of NC Fire Marshal
- [Fire Service Training](#), Underwriter's Laboratory

- Firefighter Safety and Response for Solar Power Systems, National Fire Protection Research Foundation
- Bridging the Gap: Fire Safety & Green Buildings, National Association of State Fire Marshalls
- Guidelines for Fire Safety Elements of Solar Photovoltaic Systems, Orange County Fire Chiefs Association
- Solar Photovoltaic Installation Guidelines, California Department of Forestry & Fire Protection, Office of the State Fire Marshall
- PV Safety & Firefighting, Matthew Paiss, Homepower Magazine
- PV Safety and Code Development: Matthew Paiss, Cooperative Research Network

Summary

The purpose of this paper is to address and alleviate concerns of public health and safety for utility-scale solar PV projects. Concerns of public health and safety were divided and discussed in the four following sections: (1) Toxicity, (2) Electromagnetic Fields, (3) Electric Shock and Arc Flash, and (4) Fire. In each of these sections, the negative health and safety impacts of utility-scale PV development were shown to be negligible, while the public health and safety benefits of installing these facilities are significant and far outweigh any negative impacts.

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ARTICLE V. II. ALTERNATIVE ENERGY FACILITIES

Sec. 53-153 – Purpose and intent.

The Intent of this ordinance is to provide for and regulate the siting, installation, operation and decommissioning of alternative energy, or “green energy,” sources in Prince Edward County in a manner that promotes safe, effective and efficient use of such facilities while protecting the safety and welfare of the community. The intent is to encourage alternative energy sources while limiting negative impacts on natural resources, including pollinator and wildlife habitats, and existing agricultural, forestal, residential, commercial, industrial, historical and recreational uses of property or the future development of property in the County. This ordinance is to provide guidance on how “green energy” may be implemented/utilized in this community. This article does not supersede or nullify any provision of local, state, or federal law that applies to alternative energy generation facilities.

Sec. 53-154 – Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Applicant. The person or entity who submits an application to the county for a zoning permit or special use permit, as the case may be, to site, develop, construct, install, and operate an alternative generation facility under this article.

Facility owner. The person or entity that owns all or a portion of the alternative energy facility, whether or not it owns the site on which the facility is located.

Integrated PV. Photovoltaics incorporated into building materials, such as shingles.

Large scale energy facility. An alternative energy facility that has a rated capacity greater than 200 kw but not more than 999 kW. Large energy systems are generally used to reduce onsite consumption of utility power for commercial and industrial applications.

Operator. The person or entity responsible for the overall operation and management of the solar energy facility, if different than the facility owner.

Photovoltaic or PV. Materials and devices that absorb sunlight and convert it directly into electricity.

Previously disturbed. Any area of a site that has undergone mechanical land-forming, construction, or demolition activities within the past 50 years.

Project area. The area within a site used for the construction and operation of the energy facility.

Rated capacity. The maximum capacity of a solar energy facility based on the sum total of each photovoltaic system’s nameplate capacity or wind generation turbine.

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Attachment (2)

Residential scale energy facility. A facility that (1) utilizes generation equipment that is mounted on or over a building, grassy area or other previously disturbed area, and (2) has a rated capacity of 10kw or less.

Site. The property containing an energy facility.

Site owner. The person or entity that owns all or a portion of the site, if different than the facility owner.

Small scale energy facility. An energy facility that: (1) has a project area of one acre or less; (2) has a rated capacity of 200 kw or less; (3) is mounted on or over a building, parking lot, or other previously disturbed area; (4) is normally used to reduce onsite consumption of energy for small scale operations such as small agricultural or commercial operations.

Utility scale energy facility. An energy facility which has a rated capacity of one megawatt (1 MW) or greater. Utility Scale Energy Systems are generally used to provide electricity to a utility provider.

Sec. 53-155 – Applicability; permitting.

The requirements set forth in this article shall govern the siting, development, construction, installation, operation, and decommissioning of alternative energy facilities in the county. A special use permit is required for each such facility proposed to be constructed, installed, or operated in the county except for residential scaled facility. A zoning permit is required for each residential scale energy facility proposed to be constructed, installed, or operated in the county. Use regulations for specific zoning classifications will state if alternative energy facilities are permitted in a particular zoning district as a matter of right or require a special use permit.

Sec. 53-156 – Applications, procedures and requirements for residential and small-scale energy facilities.

For proposed residential and small-scale energy facilities, the applicant shall submit a project narrative and site plan that comply with subsections (a) and (b) in Section 53-157. The signage, noise, and lighting requirements in Section 53-156 shall apply to all residential and small-scale energy facilities. The fencing requirement and the height restriction in Section 53-156 shall apply to all ground-mounted residential and small-scale energy facilities. The setback, vegetative buffering, and pollinator habitats requirements in Section 53-158 shall apply to all residential and small-scale energy facilities in the A-1 district. Small scale energy facilities are required to have a decommissioning plan and security that comply with Subsection (d) of Section 53-157. The zoning administrator may require additional information from the applicant to determine whether the facility meets these requirements and qualifies as a matter of right as a small-scale energy facility.

Sec. 53-157 – Applications and procedures for large and utility scale energy facilities.

In addition to materials required for a special use permit application, applications for large and utility scale energy facilities shall, unless otherwise provided herein, include the following information:

- a) *Project narrative.* A narrative identifying the applicant, facility owner, site owner, and operator, if known at the time of the application, and describing the proposed energy facility, including an overview of the project and its location; the size of the site and the project area; the current use of the site; the estimated time for construction and proposed date for commencement of operations; the planned maximum-rated capacity of the facility; the approximate number, representative types and expected footprint of the equipment to be constructed, including without limitation photovoltaic panels; ~~towers for wind-powered generation equipment;~~ any ancillary facilities, if applicable; and how and where the electricity generated at the facility will be transmitted, including the location of the proposed electric grid interconnection.
- b) *Site plan.* The site plan shall include the following information:
- 1) Property lines, minimum required setback lines under this article, and any proposed setback lines that exceed the minimum requirements in which the project is proposed.
 - 2) Existing and proposed buildings and structures, including preliminary location(s) of the proposed equipment.
 - 3) Existing and proposed access roads, permanent entrances, temporary construction entrances, drives, turnout locations, and parking, including written confirmation from the Virginia Department of Transportation ("VDOT") that all entrances satisfy applicable VDOT requirements; provided, however, these requirements shall not exceed VDOT requirements for other types of projects in the underlying zoning district.
 - 4) Proposed locations and maximum heights of substations, electrical cabling from the generation systems to the substations, panels, ancillary equipment and facilities, buildings, and structures (including those within any applicable setbacks).
 - 5) Fencing as required under this article and other methods of ensuring public safety.
 - 6) Solar panels shall have a UL listing and shall be designed with an anti-reflective coating. Individual arrays/panels shall be designed and installed in order to prevent glare toward buildings on adjacent properties and vehicular traffic.
 - 67) Areas where the vegetative buffering required in this article will be installed and maintained and areas where pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers required in this article will be installed and maintained.
 - 78) Existing wetlands, woodlands and areas containing substantial woods or vegetation.
 - 89) Identification of recently cultivated lands and predominant soil types (based on publicly available data) of those lands.
 - 910) Additional information may be required, as determined by the zoning administrator, such as a scaled elevation view and other supporting drawings, photographs of the proposed site, photo or other realistic simulations or modeling of the proposed energy project from potentially sensitive locations as deemed necessary by the zoning administrator to assess the visual impact of the project, aerial image or map of the site, and additional information that may be necessary for a technical review of the proposal. The planning commission or board of supervisors may require other relevant information deemed to be necessary to evaluate the application.
- c) *Documentation of right to use property for the proposed facility.* Documentation shall include proof of control over the proposed site or possession of the right to use the proposed site in the manner requested. The applicant may redact sensitive financial or confidential information.

- d) *Decommissioning plan; security.*
- 1) The applicant shall provide a detailed decommissioning plan that provides procedures and requirements for removal of all parts of the energy generation facility and its various structures at the end of the useful life of the facility or if it is deemed abandoned pursuant to Section 53-160. The plan shall include the anticipated life of the facility, the estimated overall cost of decommissioning the facility in current dollars, the methodology for determining such estimate, and the manner in which the project will be decommissioned. The decommissioning plan and the estimated decommissioning cost will be updated upon the request of the zoning administrator, provided the update shall be no more frequently than once every five years and no less frequently than once every ten years.
 - 2) Prior to operation, the applicant must provide security in the amount of the estimated cost of the decommissioning. Options for security include a cash escrow, a performance surety bond, a certified check, an irrevocable letter of credit, or other security acceptable to the county in an amount equal to the estimated decommissioning cost developed and updated in accordance with the decommissioning plan acceptable to the county. The security must remain valid until the decommissioning obligations have been met. The security may be adjusted up or down by the county if the estimated cost of decommissioning the facility changes. The security must be renewed or replaced if ~~necessary~~necessary, to account for any changes in the total estimated overall decommissioning cost in accordance with the periodic updated estimates required by the decommissioning plan. At a minimum the decommissioning cost estimate shall be recalculated every five (5) years and the surety increased when the recalculated estimate exceeds the guarantee by 10%. Obtaining and maintaining the requisite security will be a mandatory condition of the special use permit. The security shall be in favor of the county and shall be obtained and delivered to the county before any construction commences.
 - 3) The decommissioning plan, cost estimates, and all updates of those plans and estimates shall be sealed by a professional engineer.
- e) *Liability insurance.* The applicant shall propose a reasonable amount of liability insurance that the applicant deems adequate to cover operations at the large and utility scale energy facility prior to the issuance of a building permit. Obtaining and maintaining the requisite liability insurance will be a mandatory condition of the special use permit.
- f) *Landscaping and screening plan.* The applicant must submit a landscaping and screening plan that addresses the vegetative buffering required in this article, including the use of existing and newly installed vegetation to screen the facility. The plan also must address the use of pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs and wildflowers in the project area and in the setbacks and vegetative buffering as required in this article.
- g) *Erosion and sediment control plan.* An erosion and sediment control plan must be approved prior to any land disturbing activity.
- h) *Stormwater management plan.* A stormwater management plan must be approved by prior to any land disturbing activity exceeding one acre.

- i) *Virginia Cultural Resource Information System report.* A report by the Virginia Department of Historic Resources Virginia Cultural Resource Information System must be submitted to identify historical, architectural, archeological, or other cultural resources on or near the proposed facility.
- j) *Additional information.* If deemed relevant to the consideration of a special use permit application or the conditions to be included in any special use permit, the zoning administrator, planning commission or board of supervisors may require the applicant to submit any of the following information, either as part of the special use permit application or as a condition of any special use permit:
 - 1) As a condition of the special use permit, the applicant will be required to submit a construction plan, including a proposed construction schedule and hours of operation, before obtaining a building permit.
 - 2) The identification and location of any existing large or utility scale energy facilities and any known proposed large or utility scale energy facilities within a five-mile radius of the proposed site.
 - 3) A report of impact on adjacent property values prepared by a qualified third-party, such as a licensed real estate appraiser.
 - 4) An economic impact analysis prepared by a qualified third-party that reports any expected change in the value of the subject property, expected employment during the construction of the facility, any expected impact on the county's tax revenues, the estimated costs to the county associated with the facility in the form of additional services, and the information on any our economic benefits or burdens from the facility that may be requested by the zoning administrator.
 - 5) A copy of the cultural resources review conducted in conjunction with the state department of historic resources for the permit by rule process shall be submitted by the applicant prior to the issuance of a building permit. This report shall be in addition to the report required in subsection (j)(1) and shall further identify historical, architectural, archeological, or other cultural resources on or near the proposed facility.
 - 6) A report on the potential impacts on wildlife and wildlife habitats at the site and within a two-mile radius of the proposed facility using information provided by the state department of game and inland fisheries or a report prepared by a qualified third-party.
 - 7) A report on potential impacts on pollinators and pollinator habitats at the site, including but not necessarily limited to the submission of a completed site pollinator habitat assessment form as required by the zoning administrator.
 - 8) A glint and glare study that demonstrates either that the panels will be sited, designed, and installed to eliminate glint and glare effects on roadway users, nearby residences, commercial areas, and other sensitive viewing locations, or that the applicant will use all reasonably available mitigation techniques to reduce glint and glare to the lowest achievable levels. The study will assess and quantify potential glint and glare effects and address the potential health, safety, and visual impacts associated with glint and glare. Any such assessment must be conducted by qualified individuals using appropriate and commonly accepted software and procedures.
- k) *Review fees.* The county may retain qualified third-parties to review portions of a permit application that are outside the county's areas of expertise and do not have adequate state and federal review. Any out-of-pocket costs incurred by the county for such review by qualified third-parties shall be paid by applicant. The third-party reviewers and their estimated costs will be

submitted to applicant for approval before the costs incurred. The county may, in the alternative, accept such review by qualified third-parties selected, retained and paid by the applicant.

- l) *Community meeting.* A public meeting shall be held prior to the public hearing with the planning commission to give the community an opportunity to hear from the applicant and ask questions regarding the proposed facility. The meeting shall adhere to the following:
 - 1) The applicant shall inform the zoning administrator and adjacent property owners in writing of the date, time and location of the meeting, at least seven but no more than 14 days, in advance of the meeting date;
 - 2) The date, time and location of the meeting shall be advertised in a newspaper of record in the county by the applicant, at least seven but no more than 14 days, in advance of the meeting date;
 - 3) The meeting shall be held within the county, at a location open to the general public with adequate parking and seating facilities that will accommodate persons with disabilities;
 - 4) The meeting shall give members of the public the opportunity to review application materials, ask questions of the applicant and provide feedback; and
 - 5) The applicant shall provide to the zoning administrator with a summary of any input received from members of the public at the meeting.

- m) *Exemptions.* The zoning administrator may exempt applications for facilities smaller than four acres with a rated capacity equal to or less than two megawatt (MW) from some of the requirements of this section; provided, however, the zoning administrator may not exempt applications from any of the requirements concerning buffering and density.

- n) *Post-application documentation and approvals.* All documentation required to be submitted to and approvals required from the county after the issuance of the permit shall, unless otherwise stated in the conditions attached to the special use permit, be submitted or obtained no later than the date of any application for a building permit for the facility. The failure or refusal to submit required documentation or obtain required approvals following the issuance of a special use permit shall result in the suspension of the special use permit and the denial of the building permit.

Sec. 53-158 – Location, appearance, and operational requirements.

The following requirements apply to large and utility scale energy facilities:

- a) *Visual impacts.* The applicant shall demonstrate through project siting and proposed mitigation, if necessary, that the project minimizes impacts on viewsheds, including from residential areas and areas of scenic, historical, cultural, archaeological, and recreational significance. The facility shall utilize only panels that employ anti-glare technology, anti-reflective coatings, and other available mitigation techniques, all that meet or exceed industry standards, to reduce glint and glare. The applicant shall provide written certification from a qualified expert acceptable to the county that the facility's panels incorporate and utilize anti-glare technology and anti-reflective coatings and reduce glint and glare to levels that meet or exceed industry standards.

- b) *Signage.* All signage on the site shall comply with the county sign ordinance, as adopted and from time to time amended. Appropriate warning signage and a 911 address sign shall be posted in a clearly visible manner. Warning signage must identify the owner and include a 24-hour emergency contact phone number.
- c) *Noise.* Noise levels from the facility at the property line shall not exceed 50 dB.
- d) *Setbacks.* The project area shall be set back a distance of at least 75 feet from all public rights-of-way and main buildings on adjoining parcels, and a distance of at least 50 feet from adjacent property lines. Exceptions may be made for adjoining parcels that are owned by the applicant. Increased setbacks up to 100 feet and additional buffering may be included in the conditions for a particular permit. Energy facilities also shall meet all setback requirements for primary structures for the zoning district in which the facility is located in addition to the requirements set forth above. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setback areas provided that such are generally perpendicular to the property line.
- e) *Fencing.* The project area shall be enclosed by security fencing not less than six feet in height and equipped with an appropriate anti-climbing device such as strands of barbed wire on top of the fence. The height and/or location of the fence may be altered in the conditions for a particular permit. Fencing must be installed on the interior of the vegetative buffer required in this section so that it is screened from the ground level view of adjacent property owners. The fencing shall be maintained at all time while the facility is in operation.
- f) *Vegetative buffer.* A vegetative buffer sufficient to mitigate the visual impact of the facility is required. The buffer shall consist of a landscaped strip at least 15 feet wide, shall be located within the setbacks required under subsection (d), and shall run around the entire perimeter of the property. The buffer shall consist of existing vegetation and, if deemed necessary for the issuance of a special use permit, an installed landscaped strip consisting of multiple rows of staggered trees and other vegetation. This buffer should be made up of plant materials at least three feet tall at the time of planting and that are reasonably expected to grow to a minimum height of eight feet within three years. The planning commission or board of supervisors may require increased setbacks and additional or taller vegetative buffering in situations where the height of structures or the topography affects the visual impact of the facility. Noninvasive plant species and pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs and wildflowers must be used in the vegetative buffer. Fencing must be installed on the interior of the buffer. A recommendation that the screening and/or buffer creation requirement be waived or altered may be made by the planning commission when the applicant proposes to use existing wetlands or woodlands, as long as the wetlands or woodlands are permanently protected for use as a buffer. Existing trees and vegetation may be maintained within such buffer areas except where dead, diseased or as necessary for development or to promote healthy growth, and such trees and vegetation may supplement or satisfy landscaping requirements as applicable. If existing trees and vegetation are disturbed, new plantings shall be provided for the buffer. The buffer shall be maintained for the life of the facility.
- g) *Pollinator habitats.* The project area will be seeded with appropriate pollinator-friendly native plants, shrubs, trees, grasses, forbs and wildflowers. The project area will be seeded promptly following completion of construction in such a manner as to reduce invasive weed growth and

sediment in the project area. The owners and operator also are required to install pollinator-friendly native plants, shrubs, trees, grasses, forbs and wildflowers in the setbacks and vegetative buffering.

- h) *Height.* Ground-mounted solar energy generation facilities shall not exceed a height of 20 feet, which shall be measured from the highest natural grade below each solar panel. This limit shall not apply to utility poles and the interconnection to the overhead electric utility grid. Roof mounted systems shall not exceed the maximum height requirements for the applicable zoning district by more than four feet.
- i) *Lighting.* Lighting shall be limited to the minimum reasonably necessary for security purposes and shall be designed to minimize off-site effects. Lighting on the site shall comply with any dark skies ordinance the board of supervisors may adopt or, from time to time, amend.
- j) *Density, Location, Size.* Large and utility scale energy facilities shall not be located within one mile of an airport unless the applicant submits, as part of its application, written certification from the Federal Aviation Administration that the location of the facility poses no hazard for, and will not interfere with, airport operations. No large or utility scale generation facility shall be located within one mile of the villages of Rice, Green Bay, Prospect or the Towns of Farmville and Pamplin. In addition, no more than two and one-half percent of the land in a five-mile radius of the project area of any existing large or utility scale energy facility shall be approved for use as the project area for a new large or utility scale energy facility. In no case shall any energy facility exceed one thousand 1,000 acres. Projects consisting of multiple parcels shall be contiguous in order to be part of the same project.
- k) *Utility Connection.* No large or utility scale generation system shall be installed until evidence has been provided to the County that the owner has been approved by the appropriate electrical provider to interconnect.
- l) *Repair of facility.* Solar panels and windmill equipment shall be repaired or replaced when in visible disrepair. Such repairs include the restoration of non-reflective finish per manufacturer specifications.
- m) *Entry and inspection.* The owners and/or operator will allow designated county officials access to the facility for inspection purposes, provided such inspectors will be subject to the owners' and/or operator's safety requirements and protocols while within the facility.

Sec. 53-159 – Additional considerations for conditions.

To preserve and protect county view sheds and resources, to protect the health, safety and welfare of the community, and to otherwise advance the purpose and intent of this article, the following non-exhaustive list of additional criteria may be considered by the planning commission and the board of supervisors in addressing whether to recommend or grant a permit, and what conditions to impose on any permit for an energy generation facility:

- a) The topography of the site and the surrounding area.
- b) The proximity of the site to, observability from, and impact on urban and residential areas.

- c) The proximity of the site to other energy facilities and utility transmission lines.
- d) The proximity of the site, observability from and impact on areas of scenic significance and of historical, cultural and archaeological significance.
- e) The proximity of the site, observability from and impact on public rights of way to include all roads, recreational and state facilities.
- f) The preservation and protection of wildlife and pollinator habitats and corridors.
- g) The size of the site.
- h) The proposed use of available technology, coatings and other measures for mitigating adverse impacts of the facility.
- i) The preservation and protections of prime farmland and forestal land in the county, provided that:
 1. "Prime farmland" shall have the meaning assigned to it by the Natural Resource Conservation Service of the United States Department of Agriculture.
 2. If no more than ten percent of the site is prime ~~farmland~~, farmland; this consideration will be waived.

The enumeration of these criteria shall not prohibit the planning commission or the board of supervisors from considering other factors deemed relevant to a specific special use permit applicant based on the details of the application. Nothing herein shall limit in any manner the nature and scope of reasonable conditions that may be recommended by the planning commission or imposed by the board of supervisors.

Sec. 53-160 – Unsafe or abandoned projects; decommissioning.

- a) If an energy facility has been determined to be unsafe by the County building official, the facility shall be required to be repaired by the facility owner, site owner, or operator to meet federal, state, and local safety standards, or to be removed by the owners or operator. The owners or operator must complete the repair or removal of the facility, as directed by the building official, within the time period allowed by the building official. If directed to do so by the building official, the owners or operator will remove the energy facility in compliance with the decommissioning plan established for the facility.
- b) If any energy generation facility is not operated for a continuous period of 12 months, the county may notify the facility owner by registered mail and provide 45 days for a response. In its response, the facility owner shall set forth reasons for the operational difficulty and provide a reasonable timetable for corrective action. If the county deems the timetable for corrective action unreasonable, it may notify the facility owner, and the facility owner shall ensure removal of the facility in compliance with the decommissioning plan established for the facility.
- c) At such time as an energy facility is scheduled to be abandoned or cease operation, the facility owner shall ensure the zoning administrator is notified in writing.
- d) Within 365 days of the date of abandonment or non-operation, whether as declared by the county under subsection (b) or as scheduled by the owners or operator under subsection (c), the facility owner shall ensure the physical removal of the energy facility in compliance with the decommissioning plan established for such facility. This period may be extended at the request of the owners upon approval of the board of supervisors.
- e) When the facility owner, site owner, operator or other responsible parties decommission an energy facility, he shall handle and dispose of the equipment and other facility components in

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conformance with federal, state and local requirements. All equipment both above and below ground must be removed as part of the decommissioning plan. This shall include but not be limited to above and below ground tanks, cables, fencing, debris, structures or equipment to include foundations and pads and the restoration of the land and related disturbed areas to a natural condition or other approved state.

- f) "Natural condition" shall mean the stabilization of soil to a depth of 3 feet and restoration of site vegetation and topography to pre-existing condition, provided that the exact method and final site restoration plan shall be subject to site plan review and approval giving, among other items, consideration to impact upon future site use, environmental and adjacent property impacts. The zoning administrator may approve a request by the landowner to allow internal paths, roads, travel ways, landscaping, pads or other items which will serve a future permitted site use to remain. Where applicable, if the zoning administrator determines the restoration plan significantly deviates from the description and conditions approved by the Board such plan shall require amendment of conditions through the zoning process.
- g) If the facility owner, site owner, or operator fails to remove or repair any unsafe abandoned or non-operating energy facility after written notice, the county may pursue legal action to have the facility removed at the expense of the facility owner, site owner or operator, each of whom shall be jointly and severally liable for the expense of removing or repairing the facility. The county may call upon the decommissioning security to remove the facility.



County of Prince Edward
Planning Commission
Agenda Summary

JANUARY 21, 2019

Meeting Date: August 20, 2019
Item No.: 12
Department: Planning and Community Development
Staff Contact: Wade Bartlett
Issue: Special Use Permit-Holocene Clean Energy

Summary:

The County has received a special use permit application to permit the construction and operation of a solar generation facility, on tax map parcels 69-4-B and 69-A-14 owned by Ana Sawyer located in the vicinity of 1827 Piney Grove Road (SR606), attachment (1).

The Planning Commission held a public hearing on August 20, 2019. During the Public Hearing several citizens from the area were in attendance with concerns but only two spoke, asking questions but not voicing adamant opposition to the project. The Planning Commission tabled taking action until an amendment was made to the Zoning Ordinance placing controls and restrictions on solar generation facilities.

Assuming the amendment proposed to the Zoning Ordinance is approved Holocene Clean Energy has not provided the information required such as :

1. Construction Schedule
2. Complete site plan containing information outlined in section 53-157 of the proposed amendment.
3. Decommissioning or Landscaping Plans
4. Glint and glare study
5. Community meeting

The above list is not meant to be complete.

Attachments:

Recommendations:

Continue to table the project until an amendment to the zoning ordinance regarding solar generation facilities is approved

Motion _____
Second _____
Prengaman _____

Paige _____
Sandlin _____
Jenkins _____

Hunt _____
Gilliam _____
Leatherwood _____

Jones _____
Watson _____
Peery _____

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