AGENDA

Jefferson County Planning Commission

Tuesday, February 23, 2021 at 7:00 PM

This meeting will NOT be a live broadcast on our website.
Instead, it will be accessible through a live ZOOM Meeting.

Please use the following information to join the ZOOM Meeting

Join Zoom Meeting: https://us02web.zoom.us/j/81517152861

Meeting ID: 815 1715 2861

Dial by your location: (301) 715-8592

Find your local number: https://us02web.zoom.us/u/keiyFa5cho

1. Citizen Communication: If you wish to comment, please sign-in to speak for issues that are no on the agenda or items that are not open for public comment. Items not open for public comment are noted below.
   If you wish to participate in Citizen's Communication or public comment for one of the agenda items, please type your name, address, and agenda item # in the chat function at the start of the meeting.

   There is no public comment for the following items.

2. **Discussion and Possible Action:** Proposed text amendment to the Jefferson County Zoning and Land Development Ordinance, File #ZTA19-03, to allow Solar Energy Facilities to process as a Principal Permitted Use in the following Zoning Districts: General Commercial, Highway Commercial, Light Industrial, Major Industrial, Rural, Residential Growth, Residential-Light Industrial-Commercial, and Industrial Commercial. The text amendment proposes revisions to Article 2 Definitions; Article 8 Supplemental Use Regulations (creation of Section 8.20 Solar Energy Facilities); and Appendix C Principal Permitted and Conditional Uses Table.

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MEMO

TO: Planning Commission

FROM: Alexandra Beaulieu, Zoning Administrator

DATE: February 16, 2021

RE: ZTA19-03, Solar Energy Facilities – February 23, 2021 Meeting

- 06-23-20: Planning Commission (PC) revised draft text amendment based on public input and voted to send the revised text amendment to the County Commission (CC), with a recommendation that the proposed text amendment was consistent with the Comprehensive Plan.
- 10-01-20: after a series of workshops and a Public Hearing, CC voted to approve the PC's recommended draft text amendment ZTA19-03 pertaining to Solar Energy Facilities, with one revision to increase the required setback for solar panels from 100' to 200'.
- 12-10-20: CC voted to vacate their 10-01-20 approval of zoning text amendment file #ZTA19-03. The motion included direction to return the text amendment to the PC for further review and consideration.
- 01-12-21: PC scheduled Public Hearing on ZTA19-03 for 02-09-21.
- 02-09-21: PC held Public Hearing to receive public input in ZTA19-03. The PC closed the hearing and called a special meeting for 02-23-21 to allow additional time to review the written comments submitted.
- 02-23-21: PC Special Meeting – review/discussion/possible action pertaining to the draft text amendment ZTA19-03.
    - The draft text amendment for consideration is the original version the PC recommended to the CC on 06-23-20. The amendment includes revisions to Article 2, Section 2.2 – Terms Defined; Article 8 – Supplemental Use Regulations [creation of new Section 8.20 Solar Energy Facilities]; and Appendix C – Principal Permitted and Conditional Uses Table.

Attachments:

- County Commission Meeting Minutes from December 10, 2020 Meeting
- Excerpts from Envision Jefferson 2035 Comprehensive Plan RE: Alternative / Renewable Energy
- ZTA19-03, Solar Energy Facilities DRAFT reflecting revisions made by PC on 06-23-20
- Information addressing toxicity of PV panels in response to concerns for lead contamination
    - *NC Clean Energy Technology Center – Health and Safety Impacts of Solar Photovoltaics*
- Written Public Comments received through 02-09-2021

SPECIAL SESSION

State of West Virginia, County of Jefferson, to-wit:

At a Special Session of the County Commission of said County and State continued and held via GoTo Webinar on Thursday, December 10, 2020.

PRESENT: Jane Tabb, President
Ralph Lorenzetti, Vice President
Josh Compton, Commissioner
Caleb Hudson, Commissioner
Patricia Noland, Commissioner
Stephanie Grove, County Administrator
Nathan Cochran, Assistant Prosecuting Attorney
William Rohrbaugh, Special Counsel
Jessica Carroll, Administrative Assistant

In Re: Discussion of all aspects of case, issues, and potential for resolution regarding Jefferson County Circuit Court Civil Action #20-C-125 and #20-C-132-137.

President Tabb opened the meeting at 9:37 am and Commissioner Hudson led the Pledge of Allegiance.

Motion by Commissioner Noland to enter into Executive Session to receive legal advice regarding Jefferson County Circuit Court Civil Action #20-C-125 and #20-C-132-137. Motion seconded and unanimously approved.

Motion by Commissioner Noland to come out of Executive Session. Motion seconded and unanimously approved.

Motion by Commissioner Noland to vacate the October 1, 2020 Commission approval of Zoning Text Amendment 19-03 (Solar Energy Facilities Amendment) and return the text amendment to the Jefferson County Planning Commission for further review and consideration, including additional public hearings as required by law and authorize William Rohrbaugh, Esq., to sign the Order and any additional associated documents on behalf of the Commission. Motion seconded and passes on a vote of 3-2 with Commissioner Compton and Hudson opposing.

The special session was adjourned at 10:25 am on a motion by Commissioner Compton. Motion was seconded and unanimously approved.

_____

Jane M. Tabb, President

Respectively Submitted:

Jessica Carroll

Executive Administrative Assistant

Urban Level Development Recommendations (Goal 1)	
1.	Recognize the existing vested rights, development entitlements, and permitted density levels on properties in Jefferson County.
	a. No property's zoning status will be changed as part of this Plan.
2.	Recognize that the County Commission has the authority to make land use decisions including Zoning Map Amendments based upon the finding of consistency with the Future Land Use Guide and the recommendations of this Plan; the County Commission may determine that petitions or decisions for zoning map amendments are consistent with the Comprehensive Plan if any of the following conditions are met after the entire Plan is taken into consideration:
	a. Economic Well-Being of the County; or
	b. Error or Under Scrutinized Property on the Future Land Use Guide; or
	c. Change in Neighborhood; or
	d. Any Other Circumstance that the Governing Body determines should have been considered when drafting the Future Land Use Guide; and/or
	e. Environmental impacts are considered.
3.	Identify opportunities for small area plans and involve key stakeholders.
4.	In coordination with the Jefferson County Development Authority, utility providers, and other agencies, extend natural gas services and alternative energy sources into Jefferson County and encourage the extension of these services into new subdivisions to provide access to alternatives for heating and cooking uses.
5.	Create urban level land uses within the municipalities, UGBs, PGAs, or Villages through rezoning that is consistent with the Plan recommendations.
	a. Direct new urban level residential developments to locate in preferred areas within the municipalities, UGBs, PGAs, or Villages where water and sewer services are available.
	b. Reduce application fees for urban level development located within the areas desired for urban future growth.
	c. Establish a greater variety of zoning district options (in commercial, residential, and mixed-use zoning categories) that adhere to predictability of land use options and outcomes based on the Plan recommendations.
	d. Consider the utilization of alternatives to use-separated (Euclidean) zoning within the UGB and PGA, such as the SmartCode adopted by the City of Ranson or performance based zoning to achieve the desired land used goals.
	e. Update the County's zoning regulations in a way that balances flexibility of use for property owners and developers while preserving the quality of life for residents.

development efforts have benefited from a number of public and quasi-public projects and efforts, including, but not limited to:

- Infrastructure improvements that have taken place in recent years (particularly the construction of WV 9 as a four-lane roadway through Jefferson County);
- An increased federal presence within Jefferson County;
- The continued expansion of Shepherd University in Shepherdstown and the relocation of the American Public University System's headquarters in the Charles Town/Ranson area;
- The increased utilization of telecommuting as a viable employee option by national and regional businesses and federal government offices; and
- The expansion of a business park that has the necessary infrastructure in place for each lot which results in ready-to-build parcels.

Despite those gains, the lack of high paying jobs for Jefferson County's skilled workforce requires approximately 36% of all employed individuals to commute to employment centers with higher wages located closer to Washington, D.C. or Baltimore, MD.

At the same time and paralleling a national trend, Jefferson County has lost some manufacturing and warehousing facilities. The loss of these employers has resulted in several vacant or underutilized structures, as well as unemployed workers. A number of these vacant facilities are within the Charles Town/Ranson urbanized area, and provide opportunities for redevelopment. Some of these facilities have been reused for other purposes, particularly by American Public University System (APUS) and the City of Ranson. APUS's efforts have enhanced the economic revitalization process by purchasing and renovating 12 structures in Charles Town and Ranson as well as constructing a multi-story administrative building and related parking with a large array of solar panels. As part of this renovation and redevelopment activity, APUS has utilized several brownfield sites on the Charles Town/Ranson border.

With Jefferson County's proximity to Washington, D.C. and Baltimore, MD and with the existing economic cluster of federal agencies, the County has the opportunity to attract additional federal facilities.

To support the success of future economic growth, there are a number of proposed improvements to the County's public infrastructure that are expected to take place in the coming years. These include:

Major Public Infrastructure Projects that are Proposed
The widening and realignment of US 340 from Charles Town to the Virginia line near Berryville
The potential for improving natural gas and alternative energy facilities in the Eastern Panhandle and extending natural gas services into Jefferson County
Improvements to the County's telecommunications network, particularly wireless technology and any advanced technologies

2.D. Infrastructure

Having adequate and quality infrastructure in Jefferson County is beneficial to residents, businesses, and the County's economy. Planning for the types of infrastructure needed and its location requires coordination with different entities that provide these services. The planning and coordination of where services are to be located maximizes efficiencies of these systems.

This Plan encourages infrastructure to be located in municipalities, Urban Growth Boundaries, Preferred Growth Areas, and Villages in a cost effective manner. In many places in rural areas, on-site private well and septic systems will be used.

Major Elements within Section 2.D. Infrastructure
Water and sewer
Stormwater
Alternative energy
Natural gas services
High-speed internet and advanced technology communications services

Water and Sewer Systems

Urban level development, which requires the provision of water and sewer systems, is defined as where more intense levels of residential, commercial, and industrial development activity occur. In West Virginia, by law, water and sewer providers are required to provide water and/or sewer service anywhere in a community so long as a developer pays to provide the initial infrastructure that would support the service(s). As a result, land use planning in West Virginia has to take a pro-active role in defining where urban level amenities and development will occur.

In order to take a pro-active role, it is the recommendation of this Plan to encourage the provision of infrastructure that allows for a higher level of development inside of the following areas: municipalities, Urban Growth Boundaries, Preferred Growth Areas, and Villages. In the rural area, it is anticipated that on-site private well and septic systems are to be utilized. In order for Jefferson County to retain its rural character and agricultural base, the expansion of water and sewer service into rural areas not designated as growth areas should not occur.

In the County's village areas, development and revitalization is limited by a lack of existing water and sewer infrastructure that would support village-level development. In these areas, minimum lot size requirements tied to well and septic spacing have played a factor in limiting redevelopment or reuse of existing buildings within village centers. If Jefferson County is to reinvigorate its villages, infrastructure improvements would need to be in place to serve the village areas. A specific component of this would be the provision of village scaled water and sewer facilities that would alleviate the need for individual property owners to locate a well and septic tank on small village

may not meet current standards, to be upgraded or maintained. Recently, the County adopted a new stand-alone Stormwater Management Ordinance that includes additional standards related to water quality and includes provisions for low impact design stormwater provisions such as rain gardens, bio-swales, permeable pavers, and permeable asphalt. These new standards help to minimize the impact of sediment and certain identified nutrients as required by the Chesapeake Bay Program.

In addition to land development activities, the following point and non-point source activities impact the water quality in waterways due to stormwater run-off:

Point and non-point source pollution
Over-fertilization and the use of chemicals to maintain lawns by homeowners
Use of salt and chemicals on roads in winter weather by the State Division of Highways
The fertilizers used to grow crops
Industrial emissions
Waste products (rubber, gasoline, and various other fluids) associated with auto use
Animal husbandry activities

The effect of stormwater run-off on the local waterways, particularly the Shenandoah and Potomac Rivers, has a significant impact on our local and regional recreational and heritage tourism, as well as drinking water quality. There are a number of watershed protection groups in the County that are actively seeking to improve the quality of the surface and groundwater within particular watersheds. These groups have made efforts to clean-up the waters and restore aquatic life to Jefferson County waterways. Such efforts have included, river clean ups, water monitoring, septic tank pumping and repair reimbursement programs, fencings of livestock to keep them out of streams, tree plantings, and outreach to residents and businesses to educate them about how to combat pollution. These efforts will ensure that high quality of water in Jefferson County continues.

Alternative Energy

It is widely recognized that many of the resources that we rely on to heat, cool, and light homes, power electronics, provide transportation fuel, and other daily needs are finite. Consequently, there has been an increasing need to assess the viability of alternative and renewable energy sources that may assist in maintaining the quality of life of Jefferson County's residents and businesses. In 2009, West Virginia adopted an Alternative and Renewable Energy Portfolio Standard that requires investor-owned electric utilities (such as Potomac Edison) with more than 30,000 residential customers to supply 25% of retail sales from eligible alternative and renewable energy resources by 2025.

Alternative and renewable energy sources are available, ranging from hydro (water), solar, and wind power to the use of various biofuels (algae, biomass, wood pulp, and other waste products), and plant crops (corn and switchgrass) that might be used to

complement or replace existing power sources. Another alternative energy source that may be applicable for the heating and cooling of buildings is the use of geothermal systems (drawing up groundwater and circulating it through pipes embedded in a building's walls).

There are efforts underway at the local and state level to encourage the conservation of energy and the utilization of alternative energy sources. The most notable of these are the projects that have been incorporated into the expansion of the American Public University System (APUS) in Charles Town and Ranson. These projects include the use of solar collectors that also serve as cover for parked cars, the installation of several electric car charging stations, and the utilization of building improvements and materials that limit the use of energy needed for heating, cooling, and lighting. The improvements undertaken by APUS can serve as a role model to new development in Jefferson County and to the redevelopment of existing structures and sites.

Several large-scale alternative and renewable energy projects have taken place in the County. Concern has been expressed that legislation prohibiting Cooperatives or Communities to create a solar panel system that would feed multiple houses is impacting the expansion and viability of implementing other solar projects in the County. As the cost of improvements decreases and the efficiency of various renewable energy materials improves, the reliance on current energy sources will be reduced as more families and businesses adopt these improvements.

Natural Gas Services

Jefferson County regional economic development officials and businesses identified the need for natural gas services to homes and businesses. At present the only area of the County served by natural gas lines is the former Kodak/3M plant in Middleway; however, the potential exists for the expansion of service capacity in the Eastern Panhandle and the extension of natural gas lines from the Berkeley/Jefferson County line along WV Route 9 to various parts of the County. The extension of natural gas into Jefferson County would aid County economic development efforts while providing an alternative to electricity for residential and commercial purposes.

One of the reasons this improvement is needed is because an increasing number of businesses are using natural gas in their manufacturing process, due to the lower costs and the cleaner emissions that result from its use. Natural gas, in a compressed or liquefied form, can also be used to fuel cars and buses. While natural gas has been primarily used as a fuel source for local and regional bus services in the US, it can also serve as a fuel source for both privately owned and County owned vehicles.

High-Speed Internet and Advanced Technology Communication Services

Over the last two decades, people have increasingly taken for granted the ability to be connected to the world via the internet. Internet uses include a variety of communication and media modes, conducting business, shopping for goods, staying abreast of local, national and world events, and have a plethora of entertainment

	c. Collaborate with local public utility providers to identify and provide incentives that would encourage property owners to transition from well and septic to a centralized system where and when needed to address public health issues.
	d. Find funding mechanisms to defray the costs of providing public utilities in areas where the provision of these utilities is necessary based on declining public health or environmental concerns.
6.	Coordinate with Region 9 and the County's public service providers to identify and seek additional funding sources that would aid in the construction of needed capital facilities and for the upgrading of existing facilities to meet newer federal standards.
	a. Continue to monitor and participate in planning efforts related to the implementation of the Chesapeake Bay Watershed Improvement Plan.
	b. Assess and evaluate the County's stormwater planning documents as best management practices in the field evolve.
7.	Identify ways that utility services can be regularly upgraded to meet the highest level of service and technology through coordination with local water, sewer, electric, gas, and telecommunications utility and service providers.
	a. Require all local electric, cable, and other utility providers to bury existing and new lines (serving new development) as a part of the regular maintenance and upgrading of their facilities.
8.	Encourage public entities to utilize alternative and renewable energy sources for a variety of energy needs.
	a. Enable the construction of renewable energy generation facilities by residents and businesses.
	b. Encourage County businesses and service stations to provide electric vehicle recharging stations within Jefferson County as soon as possible and use distinctive signage to guide residents and visitors to the charging stations.
	c. Develop regulations to enable cooperatives or communities to create a solar panel system that would feed multiple houses in the County.
9.	Collaborate with local economic development agencies and Information Technology (IT) providers to ensure that the current and future needs of small businesses within Jefferson County are met.
	a. Ensure that all areas of Jefferson County are served by high speed wireline and/or wireless services and other advanced technologies.
	b. Encourage private sector investment to improve wireless internet service availability in Jefferson County and the Eastern Panhandle.
	c. Ensure that, as next-generation wireless and cellular services are implemented, Jefferson County collaborates with providers, including any necessary regulatory changes, to ensure that providers are able to provide these services at the same time as other communities in the Washington, D.C. and Baltimore, MD Metropolitan Areas.

13.	Explore options to develop and implement a tax credit for those improving and investing in designated historic structures while maintaining the historic character of the structures.
14.	Consider implementation of alternative energy systems as they become more efficient and cost effective in facilities owned and maintained by the County or other public entities.
15.	Create and provide a series of tax credits based on state and federal government programs for homeowners and businesses that implement sustainable improvements for their homes and/or businesses that would result in long-term energy and cost savings.

Goal #10: Maintain and Enhance Community Services and Infrastructure Capacity for Water, Sanitary Sewer, Storm Sewer, and Other Utilities; and Enable the Provision of Orderly and Efficient Services and Advanced Technologies.

Objective #1: In coordination with public and private service providers serving Jefferson County, create a public service plan for the County that identifies specific standards (based on state and nationally accepted standards for communities), the applicability of enhancements to existing facilities, and potential locations of future infrastructure improvements.

Objective #2: Continue to coordinate between county and regional/state agencies in relation to information and activities related to meeting Chesapeake Bay Watershed Implementation Plan (WIP) goals.

Objective #3: Create and implement a means to require shared infrastructure between existing and proposed development.

Objective #4: Require that new utility facilities and/or extensions are located within Urban Growth Boundaries (UGBs), Preferred Growth Areas (PGAs), or Villages.

Objective #5: Identify and implement ways to provide utility services within and immediately adjoining Village areas.

Objective #6: Provide mechanisms to ensure that existing utility systems are upgraded to meet the needs of the residents and businesses throughout the County.

Objective #7: Private water and wastewater plants shall meet material and design standards set by local publicly owned service providers.

Objective #8: Work with appropriate local agencies and regional providers to extend natural gas services into Jefferson County.

Objective #9: Encourage the creation of and use of a variety of energy sources (including renewable energy) within Jefferson County in ways that respect the character of the County.

Objective #10: Adhere to the regulations included as part of the Jefferson County Stormwater Ordinance.

Objective #11: For water and sewer utilities to serve new developments and in areas currently not served by water and sewer where services have been deemed necessary by local or state health officials, allocate costs equitably so that new development or the development being served is responsible for the infrastructure cost, rather than existing ratepayers.

	pressing, and tailoring; massage therapy provided by licensed massage practitioner; photographic studios; psychic readers; real estate; self-service laundromat; shoe repair; spas; tanning salons; travel agencies; video rental stores and other similar establishments.
Photovoltaic Technology	Materials and devices that absorb sunlight and convert it directly into electricity.
Plat[23]	A scaled, graphic drawing of a land subdivision project prepared according to the provisions of the Subdivision and Land Development Regulations and this Ordinance. A plat depicts the design and layout of a project as well as the location of existing and proposed property boundaries and easements. A plat also includes all terms, conditions and performance requirements established prior to the approval of a subdivision.
Preliminary Plat[23]	A professionally prepared drawing of a proposed subdivision which is not a record plat but which contains detailed information concerning the proposed development, and is prepared according to the provisions of the Subdivision and Land Development Regulations and this Ordinance.
Preschool[23]	Use of a site for the provision of pre-elementary educational services on a scheduled basis to children through kindergarten. If the West Virginia Department of Education establishes requirements for a preschool, the land use shall meet these requirements.
Preservation of a Historic Site[35]	The act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction.
Primary Public Safety Provider[22]	An FCC licensed governmental user that uses wireless telecommunication facilities to provide primary communications for law enforcement, fire, ambulance or related emergency services. Primary Public Service Provider does not include Commercial Wireless Service Providers, or Competitive Local Exchange Carriers (CLEC), who provide telecommunication services on a commercial basis to Primary Public Service Providers, or who deliver emergency calls or messages from its customers to a Public Safety Answering Point (PSAP).
Principal Permitted Use[23, 31, 32]	Any use included on the Principal Permitted and Conditional Uses Table (Appendix C) which is or may be lawfully established in a particular district, approved by the Office of Planning and Zoning without requirement of approval by a board or commission, provided the use conforms with all applicable requirements of this Ordinance. Such use does not include Conditional Uses as defined in this Ordinance.
Principal Use[23]	The primary or predominant use of any site.
Printing and Publishing[27]	A printing operation of an industrial scale, involving a process that is considered printing, imprinting, reproducing, or duplicating images and using printing methods including but not limited to offset printing,

Soil Value	A relative numeric value assigned to soil groups based on the group's potential for agricultural production.
Solar Decommissioning Plan	A plan certified by a West Virginia Licensed Professional Engineer that outlines the removal and proper disposal of the components of the Solar Energy Facilities and property restoration; including, the timeline for the removal at the end of the lease and/or when production of electricity ceases, the estimated cost of the removal, the estimated salvage value of the material, equipment, devices, etc., and the reasonable restoration of the real property upon which such Solar Energy Facilities are located, including soil stabilization an re-vegetation of the ground cover of the property which may be disturbed due to the location, installation, or removal of such facilities. The Plan may also include a list of specific items that are requested to remain on site for the benefit of the property owner.
Solar Energy Facility	A facility that generates electricity from sunlight by utilization of photovoltaic (PV) technology and distributes the generated electrical power. On-site components of the facility may include solar panels and other accessory components including, without limitation, Essential Utility Equipment, transformers, inverters, cabling, electrical lines, substations, and other improvements necessary to support generation, collection, storage, and transmission of electrical power.
Special Event[39]	A gathering of individuals for the common purpose of attending a celebration, ceremony, reception, or similar activity for the benefit of someone other than the property owner. Private parties, gatherings, and similar activities that are not subject to a use agreement between a private individual or group and the property owner are not defined as a special event.
Special Event Facility[39]	A facility where special events are permitted to occur. Special event facilities are subject to a use agreement between a private group or individual and the facility owner. The facility owner may or may not charge a rental fee for the use of the facility. Facilities may operate entirely within a structure, entirely outside of a structure, or both inside and outside a structure.
Special Event Facility, Agricultural[39]	A Special Event Facility located on a parcel which the Assessor's Office has classified as "farm use".
Species, Rare or Endangered	Any species listed with the West Virginia Department of Natural Resources Heritage Program Species List or by the U.S. Department of the Interior, Department of Fish and Wildlife Management.

B. Setback Standards to operate a Nature Center and Preserve:

Enclosed structures over 250 square feet that are solely for the purpose of housing animals shall be setback 50 feet.

All structures and motorized trails shall meet commercial setbacks of 25 feet with the exception that accessory structures under 250 square feet that are associated with the maintenance of the land use shall be setback ten feet.

All non-motorized trails and non-amplified outdoor activity areas shall meet a minimum ten foot setback. Motorized vehicles associated with the maintenance of the land use are permitted within the non-motorized trails.

C. Landscaping Standards to operate a Nature Center and Preserve:

In lieu of this Ordinance's landscaping standards, a ten foot woodland preservation buffer shall be required along the perimeter of the land use. This ten foot buffer is not required along the interior property lines of the land use. There shall be no clearing or cutting within the buffer with the exception of removing dead, dying, and/or diseased trees. The woodland preservation buffer may be used for passive recreation such as pedestrian, bike, or equestrian trails provided that:

1. No trees, shrubs, hedges, or walls are removed.
2. Not more that 20% of the width of the buffer is impervious surface.
3. The total width of the buffer area is maintained.

D. Noise Standards to operate a Nature Center and Preserve:

This land use is restricted to the noise standards of Section 8.9A.1 of this Ordinance. The Residential Growth District measurement shall apply when the use is adjacent to a lot that contains a residence, or is zoned Rural or Residential Growth.

Section 8.19 Crematorium[37]

A. Crematorium, Livestock

A Livestock Crematorium shall process as a Conditional Use Permit in all zoning districts other than Rural, unless such use is determined by the Zoning Administrator to be accessory to an active agricultural use.

B. Crematorium, Pet

A Pet Crematorium shall process as a Principal Permitted or Conditional Use in zones as designated in Appendix C. In the Rural Zoning District, a Pet Crematorium may process utilizing the Site Plan Exemption for the Rural District.

Section 8.20 Solar Energy Facilities

Solar Energy Facilities are permitted as indicated in Appendix C.

A. Application

1. A Pre-Proposal Conference is recommended, pursuant to the Jefferson County Subdivision and Land Development Regulations.

2. A Concept Plan, pursuant to the Minor Site Development Concept Plan standards established in the Jefferson County Subdivision and Land Development Regulations is required; except that after the Planning Commission direction is given, the next steps are Application for a Zoning Certificate and Building Permits, including submission of final Decommissioning Plan. In addition to the Concept Plan requirements outlined in the Subdivision Regulations, the Concept Plan shall also include the following standards:

   (a) Property or Properties Location

   (b) Access Points;

   (c) Anticipated location of all proposed components of the Solar Energy Facility; and

   (d) Landscaping, Buffering, Ground Cover Plan, and Fencing.

Each proposed solar panel is not required to be located on the Plan, if compliance with setbacks can be established by what is depicted on the Plan.

If the project is to be completed in phases, the Concept Plan shall reflect phasing of the project.

3. A Zoning Certificate based on an approved Concept Plan is required prior to initiating any use regarding Solar Energy Facilities.

   (a) In addition to the standards found in Section 8.20, any Zoning Certificate regarding Solar Energy Facilities shall be issued conditioned on all other State Regulations and approvals being granted, including, but not limited to, the WV Public Service Commission, WVDEP applicable NPDES Permits, Fire Marshal Approval, Building Permits through the Department of Engineering, Planning, and Zoning, and approval of the Stormwater Management Report pursuant to the Jefferson County Stormwater Management Ordinance.

B. Standards

1. Multiple adjacent properties under the same ownership or lease by the same company shall be considered one property for the purpose of these regulations. Internal boundary lines on adjacent properties under the same ownership or lease by the same company are not subject to the setbacks or buffer requirements provided below.

2. Setbacks

   a. Solar Panels

      i. Front, Side, and Rear Setbacks shall be 100 feet from all external/perimeter property lines and from the edge of the State ROW or Easement of any State Road.

      ii. Solar panels and accessory components may be located on a common side or rear lot line of contiguous property owned by the same entity.

   b. Accessory components, excluding solar panels.

      i. Front, side, and rear setbacks shall be 25’ from all external/perimeter property lines and from the edge of the State ROW or Easement of any State Road.

3. Buffering, Landscaping, Security, and Access

   a. Solar Panels that are located within 200 feet of any residence, Category 1 Historic Resource, Institution for Human Care, Church, or similar use or structure as determined by the Zoning Administrator, shall provide a 20 foot wide buffer along common property lines. The buffer shall be provided anywhere within the 200 foot radius from

the structures/uses herein and is not required to be provided along the entire length of the common property line.

b. The buffer screen may be either vegetative or opaque fencing and may be placed anywhere within the buffer area. No structures, materials, or vehicular parking shall be permitted within the side and rear yard buffers. Existing, natural vegetation may be used in lieu of a planted buffer if documentation is submitted to the Zoning Administrator verifying how the existing natural vegetation complies with the required buffer standard.

c. Accessory Components (excluding solar panels) that are located within 200 feet of any residence, Category 1 Historic Resource, Institution for Human Care, Church, or similar use as determined by the Zoning Administrator, shall comply with the commercial provisions of Section 4.11, with the exception that the Zoning Administrator can allow the use of existing, natural vegetation as appropriate to achieve the intent of the required buffering.

d. A security fence with secured gates shall be erected around the operating areas of the Solar Energy Facility with a minimum height of 6 feet and a maximum height of 10 feet.

i. Arrangements shall be made with the appropriate Fire Department for Access. A letter documenting approval of access from the Fire Department shall be provided with the Zoning Certificate application. The Fire Department shall respond within 15 days of the date of the letter. If no response is provided, the Fire Department shall be deemed by this Ordinance to have approved the access.

ii. Upon three business days notice by the Department of Engineering, Planning, and Zoning, access shall be provided to Staff.

4. Stormwater Management

Stormwater Management shall be required in accordance with the Jefferson County Stormwater Management Ordinance. Solar Energy Facilities may be exempt from providing stormwater management if the conditions for granting exemption under Article I.D.2.h of the Stormwater Management Ordinance are satisfied.

5. Decommissioning Plan

a. W.Va. Code §7-1-3kk provides that the County Commission may enact ordinances, issue orders, and take other appropriate and necessary actions for the elimination of hazards to public health and safety and to abate or cause to be abated anything which the commission determines to be a public nuisance.

i. The County Commission hereby finds and declares that a solar facility that has ceased producing electricity for a period of 12 months is a public nuisance and/or hazard pursuant to West Virginia Code §7-1-3kk and other applicable authority.

ii. The County Commission therefore finds that an unused solar facility must be decommissioned and removed from the property on which it is located. This means that all of the solar facility's structures and other associated property must be removed from the premises and the land must be restored to a condition reasonably similar to its original condition prior to the installation of the solar facility.

iii. A general outline of the decommissioning of the Solar Energy Facility shall be included with the Concept Plan. This outline shall include a general discussion on

the timeline of the lease or operating plan and a general plan for removal of the Solar Energy Facility. A full Solar Decommissioning Plan is not required until submission of the Zoning Certificate application for the Facility.

b. The County Commission finds that, as a condition of approval, a Solar Energy Facility must:

i. Develop a decommissioning plan acceptable to the County Engineering Staff in accord with County Solar Decommissioning Guidelines that will provide that all parts of the solar facility be removed from the premises and the land must be restored to a condition reasonably similar to its original condition prior to the installation of the solar facility; and

ii. Post surety in an amount that would enable the decommissioning and removal of the solar facility in accord with the County Solar Decommissioning Guidelines in the event that the solar facility has ceased to produce electricity as defined.

c. The approved Solar Decommissioning Plan shall be submitted as part of the Zoning Certificate Application. Either the Zoning Administrator or the Applicant may request that the Planning Commission approve or disapprove any component of the Solar Decommissioning Plan.

d. Staff shall be notified by certified mail at least 60 days in advance of the intended decommissioning of the Solar Energy Facility. Staff will place the notice on the next regularly scheduled Planning Commission meeting under "non-actionable correspondence".

e. Failure of the Lessee or Property Owner to meet and/or comply with the Solar Decommissioning Plan may result in the County pursuing legal action pursuant to Section 3 of this Ordinance, including legal action to have the Solar Energy Facility, or portions thereof as applicable, removed at the Property Owner's expense. The County may seek to recover its costs, legal fees, and legal expenses incurred to have the facility decommissioned in compliance with the Solar Decommissioning Plan.

C. General Requirements

1. Design, construction, and installation of the Solar Energy Facility shall conform to applicable industry standards, including those of the American National Standards Institute (ANNSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM) or other similar certifying organizations and shall comply with the West Virginia Fire and Building Codes, including compliance with the Jefferson County Building Code.
2. Prior to commencing the transmission of electricity, the Solar Energy Facility shall provide documentation evidencing an interconnection agreement or similar agreement with the applicable public utility or approved entity in accordance with applicable law.
3. Generation of electrical power shall be limited to photovoltaic panels, provided that any on-site buildings may utilize integrated photovoltaic building materials.
4. Solvents necessary for the cleaning of the Solar Panels shall be biodegradable.
5. Internal wiring, excluding that which is on or between the Solar Arrays, connected to substations or between Solar Panels, shall be located underground, accept where necessary to mitigate impact to environmental and/or terrain features.
6. Onsight lighting shall be minimum necessary for security and onsite management and maintenance and shall comply with the standards outlined in the Subdivision Regulations.

7. Photovoltaic Panels shall use antireflective glass that is designed to absorb rather than reflect light.
8. Ground Cover comprised of natural vegetation is required. Ground cover that uses native or naturalized perennial vegetation and that provides foraging habitat that is beneficial for songbirds, gamebirds and pollinators is encouraged but not required.
9. Collocation of other agricultural activities such as small market hand-picked crops, grazing and apiary activities are permitted and encouraged.
10. No signage or advertising is permitted on the Solar Energy Facilities other than an identifying sign at the entrance of the Facility that shall be approved by the Zoning Administrator in accordance with Article 10. All other signage must be approved by Special Exception by the Board of Zoning Appeals.
11. Solar Energy Facilities shall comply with Article 8, Section 8.9 of this Ordinance.
12. The Solar Energy Facility Use is not considered abandoned until such time it is Decommissioned.
13. Damaged or unusable panels shall be removed within 60 days from discover of damage; provided, however, longer periods may be approved by the County Engineer due to extenuating circumstances.

Land Use	NC	GC	HC	LI	MI	PND[1]	OC	R	RG	RLIC	IC	V	Additional Standards
Commercial Uses continued													**Sec. 8.9**
Restaurant	P	P	P	P	CU	P	P	CU	CU	P	P	CU	
Retail Sales Limited	P	P	P	P	NP	P	P	CU	CU	P	P	CU	
Retail Sales and Services, General	NP	P	P	P	NP	P	NP	CU	CU	P	P	CU	
Retail Store, Large	NP	CU	P	CU	NP	CU	NP	CU	CU	CU	CU	CU	
Shipping and Mailing Services	P	P	P	P	CU	P	P	CU	CU	P	P	CU	
Solar Energy Facility	NP	P	P	P	P	NP	NP	P	P	P	P	NP	Sec. 8.20
Special Event Facility	P	P	P	P	NP	P	P	CU	CU	P	P	CU	Sec. 8.14
Storage, Commercial	NP	P	P	P	CU	P	NP	CU	CU	P	P	CU	
Veterinary Services	P	P	P	P	CU	P	P	P	CU	P	P	CU	
Wireless Telecommunications Facilities	P	P	P	P	P	P	P	P	P	P	P	P	Art. 4B
Agricultural Uses*													
Agricultural Uses, as defined in Article 2	P	P	P	P	P	P	P	P	P	P	P	P	
Agricultural Repair Center	NP	P	P	P	P	P	P	P	CU	P	P	NP	
Agricultural Tourism	P	P	P	P	P	P	P	P	P	P	P	P	
Crematorium, Livestock[37]	CU	CU	CU	CU	CU	CU	CU	P	CU	CU	CU	CU	Sec. 8.19
Farm Brewery	P	P	P	P	P	P	P	P	P	P	P	P	Sec. 8.5
Farm Winery or Distillery	P	P	P	P	P	P	P	P	P	P	P	P	Sec. 8.5
Farm Market	P	P	P	P	P	P	P	P	P	P	P	P	Sec. 8.6
Farm Vacation Enterprise	P	P	P	P	P	P	P	P	P	P	P	P	
Farmer's Market	P	P	P	NP	NP	P	NP	P	CU	P	NP	CU	Sec. 8.6
Feed and/or Farm Supply Center	CU	P	P	P	P	P	P	P	CU	P	P	NP	
Horticultural Nurseries and Commercial Greenhouses	P	P	P	P	P	P	P	P	CU	P	P	NP	
Landscaping Business	P	P	P	P	P	P	P	P	CU	P	P	NP	
Rental of Existing Farm Building for Commercial Storage Structure must have existed for 5 years	NP	P	P	P	P	P	P	P	CU	P	P	NP	
Special Event Facility, Agricultural	P	P	P	P	P	P	P	P	P	P	P	P	Sec. 8.14
Accessory Uses													
Accessory Uses	P	P	P	P	P	P	P	P	P	P	P	P	

NC Neighborhood Commercial
GC General Commercial
HC Highway Commercial
LI Light Industrial
MI Major Industrial
PND Planned Neighborhood Development
OC Office / Commercial Mixed-Use
R Rural
RG Residential Growth District
RLIC Residential-Light Industrial-Commercial District
IC Industrial-Commercial District
V Village District

P Permitted Uses
NP Not Permitted Uses
CU Conditional Uses (subject to requirements of district and/or other requirements of this Ordinance)
** Accessory Use to a planned residential community, if permitted pursuant to Section 5.4 and processed as a CU
[1] The Planning Commission may amend the permitted uses for a development in the PND District per Article 5.
[2] Approval process is per the Salvage Yard Ordinance.

Alexandra Beaulieu

From: Alexandra Beaulieu
Sent: Wednesday, February 10, 2021 8:44 AM
To: 'Sam Gulland'; 'Paul Raco'
Subject: RE: Comment RE Lead

Sam:

Thank you for that information. I will pass along to the Planning Commissioners for their next meeting.

Alex

Alexandra Beaulieu
Zoning Administrator
Jefferson County Office of Planning and Zoning
www.jeffersoncountywv.org
304-728-3228

From: Sam Gulland [mailto:sgulland@torchcleanenergy.com]
Sent: Wednesday, February 10, 2021 8:08 AM
To: Alexandra Beaulieu <abeaulieu@jeffersoncountywv.org>; Paul Raco <pjraco.consulting@gmail.com>
Subject: RE: Comment RE Lead

Alex,

The only use of lead would be for the solder between the solar cells on the panel. It's completely sealed from air and water and would be, at a maximum, half of an ounce in a panel. This is from the NC state paper:

> 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/panel[12], 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]

Thanks,

Sam

From: Alexandra Beaulieu <abeaulieu@jeffersoncountywv.org>
Sent: Wednesday, February 10, 2021 7:32 AM
To: Paul Raco <pjraco.consulting@gmail.com>; Sam Gulland <sgulland@torchcleanenergy.com>
Subject: Comment RE Lead

Good morning Paul & Sam -

During the Public Hearing last night a comment was made regarding lead in the panels (connectors?). I was asked by Mike Shepp to follow up with you both to see if you had any information on that particular topic for the PC to review & consider.

Thank you.

Alex

Alexandra Beaulieu
Zoning Administrator

Alexandra Beaulieu

From: Alexandra Beaulieu
Sent: Thursday, February 11, 2021 10:32 AM
To: 'Paul Raco'
Subject: RE: Comment RE Lead

Thank you. I will include Ms. Dalager's information in the PC packet for 02-23-21.

Thanks again,

Alex

Alexandra Beaulieu
Zoning Administrator
Jefferson County Office of Planning and Zoning
www.jeffersoncountywv.org
304-728-3228

From: Paul Raco [mailto:pjraco.consulting@gmail.com]
Sent: Thursday, February 11, 2021 9:09 AM
To: Alexandra Beaulieu <abeaulieu@jeffersoncountywv.org>
Subject: Fwd: Comment RE Lead

Alex,

Please see the below response from Emily Dalager regarding your question on Pb.

Let me know if you or the PC want more information on this subject. As you know, during the Concept Plan Stage (if that is kept as written), the Plans and Plat will be sent to the DEP as a part of that process. So, the DEP will get early notice of the proposed Solar Facility.

Thanks, Paul

---------- Forwarded message ---------
From: **Emily Dalager**
Date: Thu, Feb 11, 2021 at 8:30 AM
Subject: Re: Comment RE Lead
To: Paul Raco <pjraco.consulting@gmail.com>
Cc: Ron, Chris

Hi Paul,

From EDFR's engineering team:

Crystalline silicon solar modules may have small amounts of lead in the solder and on the metallization of the solar cells. The quantities are in small amounts and all suppliers meet federal and state toxicity requirements (Toxicity Characteristic Leaching Procedure "TCLP"), such that the modules are not deemed to be hazardous.

Emily C. Dalager
651-271-7658

On Feb 10, 2021, at 8:44 AM, Paul Raco <pjraco.consulting@gmail.com> wrote:

Great. Thanks, Emily.

Paul

On Wed, Feb 10, 2021 at 9:11 AM Emily Dalager wrote:

> Thanks Paul. I have the question into our procurement team for specifics of content and should have something to you shortly. Panels are primarily glass and aluminum and are completely sealed. More to come.
>
> Emily C. Dalager
> 651-271-7658
>
> On Feb 10, 2021, at 7:42 AM, PJ <pjraco.consulting@gmail.com> wrote:
>
>
>
> Sam's response.
>
> Paul
>
> Sent from my iPad
>
> Begin forwarded message:
>
> **From:** Sam Gulland
> **Date:** February 10, 2021 at 8:08:31 AM EST
> **To:** Alex, Paul Raco
> **Subject: RE: Comment RE Lead**
>
> Alex,
>
> The only use of lead would be for the solder between the solar cells on the panel. It's completely sealed from air and water and

would be, at a maximum, half of an ounce in a panel. This is from the NC state paper:

<image002.jpg>

Thanks,

Sam

--
Paul J. Raco
P. J. Raco Consulting, LLC
PO Box 548
Charles Town, WV 25414
304/676-8256

--
Paul J. Raco
P. J. Raco Consulting, LLC
PO Box 548
Charles Town, WV 25414
304/676-8256

Alexandra Beaulieu

From: Alexandra Beaulieu
Sent: Tuesday, February 16, 2021 10:21 AM
To: 'Paul Raco'
Subject: RE: Solar Impacts

Thanks, Paul. I will include in the upcoming 02-23-21 PC agenda packet as requested by Commissioner Shepp.

Alex

From: Paul Raco [mailto:pjraco.consulting@gmail.com]
Sent: Monday, February 15, 2021 12:47 PM
To: Alexandra Beaulieu <abeaulieu@jeffersoncountywv.org>
Subject: Fwd: Solar Impacts

Alex,

Per your request, here is additional information (and a link) on Pb that Ron Potesta asked that I share with you and the PC.

Paul

---------- Forwarded message ---------
From: **Ronald R. Potesta**
Date: Fri, Feb 12, 2021 at 4:20 PM
Subject: Solar Impacts
To: Paul

Paul, below is a link to a good article to share with the Planning Commission.

It discusses a variety of topics and technologies but Section 1.2.2a (page 5) contains the most relevant info for their concerns. "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**." It also has a number of citations we could reference or provide if first source material is more influential.

Lead is specifically addressed on page 6. "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.10F 11 At 13 g/panel11F 12, each panel contains one-half of the lead in a typical 12-gauge shotgun shell.12 F 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.13 F"

https://nccleantech.ncsu.edu/wp-content/uploads/2018/05/Health-and-Safety-Impacts-of-Solar-Photovoltaics-2017_white-paper.pdf

Ronald R. Potesta
Potesta & Associates, Inc.
7012 MacCorkle Ave. S.E.
Charleston, WV 25304
Ph. 304-342-1400

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 (SO_2), 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:

1.1 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.

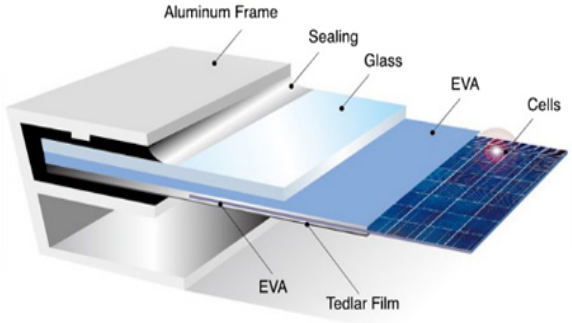

Figure 2: Components of crystalline silicon panels. The vast majority of silicon panels consist of a glass sheet on the topside with an aluminum frame providing structural support. Image Source: www.riteksolar.com.tw

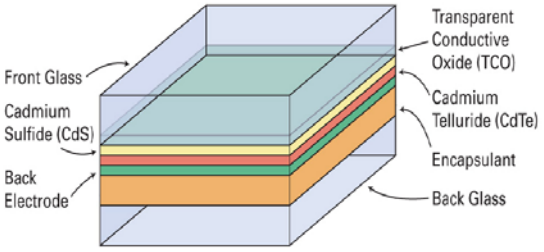

Figure 3: Layers of a common frameless thin-film panel (CdTe). Many thin film panels are frameless, including the most common thin-film panels, First Solar's CdTe. Frameless panels have protective glass on both the front and back of the panel. Layer thicknesses not to scale. Image Source: www.homepower.com

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 grass 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/panel[12], 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 $1/100^{th}$ 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 ask 1998[31]) 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 thought 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. Transfers 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 μT (microteslas) (equal to 3.0 to 4.0 mG (milligauss)). μT 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 μT, with about 1% of the population with an average exposure in excess of 0.4 μT (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 μT (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 μT, 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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NC CLEAN ENERGY TECHNOLOGY CENTER

ZTA19-03 – Solar Energy Facilities

Public Comments Received for February 9, 2021 Public Hearing

1. Tiffany Lawrence – Received 01-21-2021
   - Project Fact Sheet – Wild Hill Solar / EDF Renewables
2. Richard Zigler – Received 01-27-2021
3. Robert Aitcheson – Received 02-02-2021
   - Motion to Dismiss
4. Robert Aitcheson – Received 02-02-2021
   - Agreed Order Resolving Civil Actions, Case No. CC-19-2020-C-125
5. Robert Aitcheson – Received 02-02-2021
   - Opposition to Proposed Utility-Scale Solar Facility Text Amendment (originally submitted 09-10-2020 for County Commission Public Hearing; re-submitted for 02-09-2021 Planning Commission Public Hearing).
6. Doug Rockwell – Received 02-02-2021
7. Doug Rockwell – Received 02-02-2021
8. Tim Ross – Received 02-02-2021
9. Nance Briscoe – Received 02-02-2021
10. Christine Marshall – Received 02-02-2021
11. Thomas Moore Lawson, Esq. – 02-02-2021
12. Sam Gulland, Torch Clean Energy – 02-02-2021
13. Barbara Spicher – 02-08-2021
14. Bernard DeMartini – 02-08-2021
15. William Telfair – 02-08-2021
16. Christina Melocik – 02-08-2021
17. Cindy Feeser – 02-08-2021
18. Danielle Patterson – 02-08-2021

19. Carolyn Jackson – 02-08-2021

20. Doug Rockwell – 02-08-2021

21. Edmond Uzan – 02-08-2021

22. Elizabeth Shockley – 02-08-2021

23. Gavin Perry – 02-08-2021

24. Gregory K. – 02-08-2021

25. Joanne Bario – 02-08-2021

26. Karen Henry – 02-08-2021

27. Laurie Allen – 02-08-2021

28. Mary Vandevander – 02-08-2021

29. Melissa Howell – 02-08-2021

30. Nance Briscoe – 02-08-2021

31. Nicola Bastian – 02-08-2021

32. Robyn Schneiderman – 02-08-2021

33. Roxanne Quade – 02-08-2021

34. Doug Rockwell – 02-09-2021

35. EDF Renewables – 02-09-2021

36. Robin Huyett Thomas – 02-09-2021

37. Robin Moore – 02-09-2021

38. Zac Curry – 02-09-2021

39. Anastasya Tabb – 02-09-2021

Alexandra Beaulieu

From: Tiffany Lawrence <tlawrence@orion-strategies.com>
Sent: Thursday, January 21, 2021 12:02 PM
To: Michael Shepp
Cc: Alexandra Beaulieu
Subject: Re: Meeting with Wild Hill Solar-Friday
Attachments: EDF Wild Hill Fact Sheet PREVIEW.pdf

Thanks so much, Mr. Shepp.

Alex,

Will you kindly disseminate the attached project fact sheet to your commissioners from my client, EDF Renewables, who is proposing the Wild Hill Solar project. Please also let me know if any questions are posed.

Many thanks!

Tiffany Lawrence, DEL, MBA
Senior Account Executive
Orion Strategies
NEW Office: 844.982.6050 (Toll Free) ext. 401
Mobile: 304.676.7316
Email: tlawrence@orion-strategies.com
www.orion-strategies.com

From: Michael Shepp <michaelshepp@me.com>
Date: Thursday, January 21, 2021 at 9:48 AM
To: Tiffany Lawrence <tlawrence@orion-strategies.com>
Cc: Alexandra Beaulieu <abeaulieu@jeffersoncountywv.org>
Subject: Re: Meeting with Wild Hill Solar-Friday

Tiffany,

It was nice chatting with you today. Please send your information directly to Alex Beaulieu the Zoning Administrator. She will forward it to all of the Planning Commission members. I am copying her on this email and that will give you her email address.

Mike Shepp
Sent from my iPad

RECEIVED
January 21, 2021
Jefferson County, WV
Office of Planning and Zoning

EDF renewables

The project is expected to generate

$134 million

in direct, indirect, and induced economic impacts in the Jefferson County area.

Wild Hill Solar

is being developed by EDF Renewables.

EDF Renewables is a market leading independent power producer and service provider with 35 years of experience leading the way to a clean energy future with large-scale projects that put the economy, communities, and the environment first.

EDF Renewables has developed 16 gigawatts of renewable energy capacity in North America.

EDF Renewables puts the economy, communities, and the environment first.

The project will have a positive economic impact on West Virginia and Jefferson County.

The construction and operation of Wild Hill Solar by EDF Renewables will have a positive economic impact on the West Virginia economy, with the bulk of the impacts centered on Jefferson County.

The project represents an investment of $125 million. It will produce 92.5 MW of emission-free energy and is expected to generate $134 million in direct, indirect, and induced economic impacts in the Jefferson County area and provide approximately 167 job-years of employment during its construction period. The facility will also result in approximately $175,000 in local property tax revenues paid to Jefferson County during the first year of operation.

Solar panels are safe.

Crystalline silicon panels that are manufactured using safe and non-toxic materials are proposed for this project. These modules are over 90% recyclable and comprised of silicon, copper and aluminum, sandwiched between glass and a plastic encapsulant with an aluminum frame. These types of solar panels do not contain toxic materials and are the same type that are commonly installed on rooftops and schools.

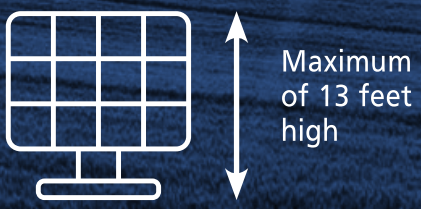
Solar panels do not make noise.

Solar panels do not make noise. Some of the facility components such as inverters and transformers do make a low humming sound, but that equipment is sited with appropriate setbacks from neighboring homes so that the sound observed would be no louder than that of a quiet room.

The Wild Hill project will utilize visual buffering.

EDF Renewables is sensitive to designing a project that is well received by the community and can be well integrated into the neighboring landscape. Features such as visual buffers are typically created by planting vegetation along roadsides and adjacent to residential homes near the project help soften the visual impact of the facility and maintain the rural character of the area.

The panels have an anti-reflective coating and will rotate like a sunflower following the sun throughout the day. The maximum height of the edge of panels on the rack at full rotation will be about 13 feet. The height of most panels is likely to be between 10 to 12 feet from the ground.



The height of most panels is likely to be between 10 to 12 feet from the ground.

Solar facilities result in minimal soil disturbance during construction.

Solar facilities result in minimal soil disturbance relative to other types of development projects. The project has been sited in an agricultural area to reduce the need for land clearing and minimize the need for typical construction processes such as surface grading and soil compaction. Solar panels delivered by trailer trucks will be installed on a low-profile racking system which typically consists of small I-beam posts driven or screwed into the ground, without the need for excavation, concrete, or other foundations.

No new transmission lines will be required to support the facility.

The Wild Hill solar project will interconnect to an existing Potomac-Edison 138kV transmission line that crosses the project area. Cables connecting the arrays, inverters, substation, and switchyard will be trenched.

Construction is anticipated to be completed by third quarter of 2022.

The Project is expected to be operational in third or fourth quarter of 2022 based on completion of permitting in the fourth quarter 2020 into first quarter of 2021. Construction is expected to commence in mid-2021 and conclude in third quarter 2022. The construction phase is estimated to lead to 167 job-years of work and $12.6 million in employee compensation.

Wildlife protection is an important consideration in the development of projects.

The proposed project site consists of approximately 795 acres of agricultural land. Tree clearing will impact less than 17 acres with trees felled being considered isolated or perimeter trees. This will minimize the impact on wildlife and their habitats. In developing the project, EDFR has consulted with the United States Fish and Wildlife Service and the West Virginia Division of Natural Resources related to impact on threatened and endangered species.

While the facility will be fenced (non-electric) for safety and security, wildlife can generally pass-through solar sites and some renewable energy projects incorporate bee pollinator habitats and accommodate the grazing of small livestock such as sheep.

State law prevents Wild Hill Solar from offering power to our neighbors in Jefferson County.

West Virginia has a regulated market for the delivery of electricity to residential and commercial customers. Potomac Edison has the exclusive right to provide power to Jefferson County residents. As a wholesale power generator, state law and PSC (Public Service Commission) regulations prohibit EDFR from supplying our local neighbors. EDFR will sell the generated elecricity directly onto the wholesale market.

The project has an expected life of 30 years.

The expected useful life of the project as initially constructed is 30 years, with panels operating at about 80% of their capacity after 15 to 20 years. This can be extended by regular maintenance and replacement of equipment.

Solar panels are non-toxic and safe, and the land can be used for farming upon decommissioning.

Most solar panels are classified as non-toxic waste. Solar panels undergo a "Toxic Characteristic Leaching Procedure" test mandated by the Federal Resource Conservation and Recovery Act. These tests are used to confirm their lack of toxicity.

Further, there are no anticipated emissions to the ground, air, or water because of the operation of solar panels. As no soil contamination is anticipated, the land can be safely utilized for grazing during operation or farming after site decommissioning.

The decommissioning process at the end of the project's life includes the removal of equipment to a depth below grade, and the restoration and reseeding of any disturbed ground.

The disposal of solar panels must conform to all governmental, environmental, and legal requirements. The Solar Energy Industries Association (SEIA) established a national recycling program connecting US-based recyclers with businesses who have solar panels to recycle. Many components of the crystalline silicon panels can be reused and recycled, namely the metal, glass and wiring components, as well as the silicon cells which can be melted down to reclaim the silicon and various metals by specialty recycling companies.

At the end of the project's life, any disturbed ground will be restored and reseeded.

For more information, contact us at 1-844-943-0723 or Landowner@edf-re.com.

wildhillsolar.com

Members of Planning and Zoning,

My name is Richard Zigler. I reside at 1083 Roper North Fork Road, Charles Town, West Virginia. I would like to address the issue of the proposed solar arrays to be located in the southern portion of the county. There is much discussion, both factual and misleading. Some reports have the wrong landowner participants, the size and locations of the projects, and the damage or non-benefits to the community. I am sure the project managers have already addressed many of those issues. I would like to show support for solar arrays.

First of all, the solar arrays will be relegated to the southern part of the county because it is not economically feasible to locate elsewhere. There are limited points of access to where such arrays can attach to "The Grid". The High Lines, that are to be the connection points, are located south of Charles Town. They will not be in the other seventy-five percent of the county as some people suggest. Yes, they will be on what is considered "Prime Agricultural Land", but, with the agri-economics as they are, most farmers cannot afford to remain in the industry. This past year saw prices drop as much as twenty-five percent in mere days or even hours. If farming was as lucrative as some suggest, the idea of solar arrays would be moot, and there would never be a new housing development in this county. Nothing saves farmland better than farmers, if they can make a reasonable profit.

Without active farmers operating the land, it becomes an expensive park that someone has to maintain. Those that want the land to remain actively farmed should have stepped up and purchased the land, or rent at a price that the landowners to pay all taxes, insurance, and maintenance costs in a manner that the individuals involved can live comfortably, and meet their expectations for retirement.

The solar arrays will be commercial ventures, the same as renting a house, for commercial profit, and can be in a Rural District. The arrays are considered passive commercial entities. The land lease will have panels that, at the end of their relative projected profitable life time, will be decommissioned and removed. Currently there are regulations as to decommissioning at other levels of government and, therefore, there is no need to put excessive and costly regulations in place. Remember, the panels and other structures are TEMPORARY structures. They are to be dismantled and removed and the land returned to a state that can support agriculture again. Agriculture occurs in Rural Zones.

The electricity generated will not be sold directly nor exclusively within the county. There can be no more expectations of that as there would be for my grain being processed and sold exclusively in local grocery stores as a manufactured "Corn Flakes" product by Kellogg's brand. Legally, there are also restrictions that are beyond the ability to demand direct sales within our county.

The arrays are community friendly. They provide tax revenue without demands on the county. There will be no added students to our already crowded and overwhelmed school system. They require no Emergency Services. They require no new water or sewer infrastructure. There will be no added traffic to our congested roadways. There will be no pollution of air, land, or water, while providing "Green Space" and habitat for wildlife. They will provide renewable energy for the region.

With all these considerations in mind, solar arrays should be allowed in the Rural District, and with minimal tedious and unfavorable regulations at the front or back end of the projects.

1/27/21

Re: Disqualification of Steve Stolipher & Shane Roper from ANY discussion, consideration lobbying or voting with respect to ZTA 19-03

From: Robert Aitcheson (bob.aitch46@gmail.com)

To: planningdepartment@jeffersoncountywv.org

Bcc: waitcheson@yahoo.com

Date: Tuesday, February 2, 2021, 12:17 PM EST

On Tue, Feb 2, 2021 at 12:15 PM Robert Aitcheson <bob.aitch46@gmail.com> wrote:

> On Tue, Feb 2, 2021 at 12:13 PM Robert Aitcheson <bob.aitch46@gmail.com> wrote:
> Comes Now, Robert D. Aitcheson and moves that Steve Stolipher and Shane Roper disqualify themselves or be disqualified from ANY discussion, consideration, lobbying for or vote with respect to ZTA 19-03, the proposed solar text amendment to the Jefferson County Zoning Ordinance set for public hearing on February 9th for the following reasons:
>
> Steve Stolipher has conflicts of interest.
>
> 1) The Motion for Stolipher's Removal from the Planning Commission, attached hereto as Exhibit A, sets forth in part the factual basis for his disqualification.
>
> 2) Exhibit B, my email to the County Commission dated September 3, 2020, further elucidates the basis for this motion.
>
> 3) Exhibit C is a set of documents retrieved from the JCDA, believed to be provided to that body by Stolipher, which further show the extent of his involvement in this solar energy scam & therefore his conflict of interest.
>
> 4) Stolipher claims to have received an advisory opinion from the Ethics Commission allowing him to participate in this matter as a public official. This could not be true because ALL advisory opinions are required by law to be published. See W Va Code 6B-2-3. There is NO such published advisory opinion in 2018, 2019 or 2020. Moreover, though he has, on at least 2 occasions, publicly stated he would produce the phantom advisory opinion, he has as yet failed & refused to do so.
>
> Shane Roper
>
> 1) The Bylaws of the Planning Commission, Section 5.2(1), (2) & (3) require that, to avoid even the appearance of impropriety, he disqualify himself or be disqualified from ANY matters relating to ZTA 19-03.
>
> 2) He has a close familial relationship with Eddie & Todd Hough, ie he is a Nephew, whose property is part of the Wind Hill project now pending before the PSC, Case No.: 20-0845-E-SCS-Plc, a massive proposed solar project in Jefferson County. Among other things, whether that project goes forward depends on the Planning Commission vote in ZTA 19-03.
>
> Please include this motion & exhibits, to be delivered today, on the agenda & in the packet for the February 9th hearing.
> Thank you.
>
> Robert D. Aitcheson

MOTION

From: Robert D. Aitcheson

To: County Commission, Jefferson County, WV

Re: Removal Proceedings Against Planning Commission Member Stephen Stolipher

Pursuant to W.Va. Code 6-6-7(b)(1)(A); 8A-2-4(e)&(f) and County Ordinance 2007-1, Section 3 thereof, the County Commission should REVOKE Stephen Stolipher's appointment to the Jefferson County Planning Commission for his wrongful failure to recuse himself from ANY vote, discussion, participation or other activity regarding the proposed solar facility text amendment [ZTA 19-03] because W.Va. Code 8A-2-4(e) & (f) mandates such recusal. Robert D. Aitcheson moves that this Commission INITIATE REMOVAL PROCEEDINGS AND REMOVE MR. STOLIPHER FROM THAT OFFICE, more particularly as follows:

1. W.Va. Code 8A-2-4(e) & (f) require that a Planning Commission member recuse himself or herself from any vote, discussion or other activity "regarding the conflicting issue" if the member is **pecuniarily interested** in the matter. See also, Planning Commission Bylaws, Section 5.2-Recusal.

2. FACTS:

(a) At the time he was acting officially as a Planning Commissioner in ZTA19-03, Mr. Stolipher was a commercial real estate agent with Oakcrest Realty. As such, he is believed to have had contracts pending for the sale or lease of land in Jefferson County, WV with Horus Renewables Corp. of Sacramento, California as prospective purchaser or lessor. At least three of those contracts are believed to have been for Thorn Hill Subdivision (172 acres) at the corner of Route 115 and Kabletown Road, Highland Farm (123 acres) and another separate 100+ acre parcel along Rte. 115 near Charles Town, Jefferson County, WV.

(b) At closing, Mr. Stolipher stood to receive a monetary commission or finder's fee from each such transaction.

(c) The contracts with Horus Renewables Corp. are believed to be for the purpose of establishing solar facilities on said properties and are believed to be dependent upon the actions of the Planning Commission and, subsequently, this Commission on the subject text amendment.

3. Mr. Stolipher was **pecuniarily interested** because he stood to benefit directly and financially in specific, unique transactions dependent upon the actions of the Planning Commission and this County Commission. His wrongful participation in the discussion, vote and any other activity regarding industrial/commercial solar facilities on our rural, agricultural land and his wrongful failure to disqualify and recuse himself has so tainted and poisoned the actions and

Ex A p1 of 2

recommendations of the Planning Commission as to bring into serious question the legitimacy of the recommended text amendment. Said proposed text amendment fails to protect the citizens of Jefferson County to the substantial financial benefit of the solar developers and Mr. Stolipher.

4. The proposed text amendment fails to require a conditional use permit which would allow public input for each project application (rather designating the activity as a principal permitted use in the Rural Zoning District); fails to establish standards for a Board of Zoning Appeals review of each such project application; fails to establish adequate bonding requirements for both maintenance and decommissioning **with sufficient financial security** to protect the taxpaying citizens of this county from contamination of ground water and toxic runoff and the cost of disposal of toxic waste materials when government money and tax credits dry up and projects are abandoned by the shell companies of the out-of-state investors; fails to limit the portion (percentage) of any parcel of rural, agricultural land that may be used for installation of solar panels; fails to restrict such projects to non-tillable land and fails to require proximity to an existing transfer station and transmission lines.

5. Mr. Stolipher has violated his oath of office in that he has failed to discharge his duties as Planning Commission member to act "faithfully...to the best of his skill and judgment" when judged by this objective, Constitutional standard. See West Virginia Constitution, Article IV, Section 5. His aggressive promotion of the foregoing, contrary to the interest of the citizens of this county but to his own substantial monetary benefit, exhibits a stunning and faithless unwillingness to comply with the law which renders him unfit to continue to hold the official position to which this Commission appointed him.

ROBERT D. AITCHESON REQUESTS THAT THIS MOTION BE SET FOR HEARING ON THE AGENDA OF THE NEXT MEETING OF THIS COMMISSION AND THAT MOVANT BE GIVEN SUFFICIENT TIME TO FULLY ADDRESS THE ISSUES ARISING HEREIN.

Respectfully submitted,

Robert D. Aitcheson
Citizen of Jefferson County, WV
Since April, 1979

I have served a true copy of this corrected Motion on Stephen Stolipher by hand delivery to the Planning Commission office, 104 E. Washington St., Charles Town, WV, and to Counsel for said Planning Commission, Nathan Cochran, at his office aat 124 E. Washington St., Charles Town, WV, this 28th day of August, 2020.

Robert D. Aitcheson

Ex A p2 of 2

Supplement to my Motion for the County Commission to Initiate proceedings to Remove Planning Commission Member Stolipher

From: Robert Aitcheson (bob.aitch46@gmail.com)

To: sandy@jeffersoncountywv.org

Bcc: waitcheson@yahoo.com

Date: Thursday, September 3, 2020, 09:45 AM EDT

Sandy,

Thank you for the information yesterday. It was great to talk with you!

Realizing that 3 minutes is not adequate to fully discuss this matter with the Commission, I submit the following supplementation. Please confirm your receipt of this email and that it has been conveyed to the Commissioners.

To the Jefferson County Commission:

1) The W Va Code 8A-2-4(e) & (f) allow persons to serve on the Planning Commission with business regularly before that commission or with regular interaction with commission staff, PROVIDED THAT the member recuses himself or herself from any vote, discussion or other activity regarding "the conflicting issue". While Stanley Dunn is purported to be a lawful petitioner [and this is not in any way conceded] he is also a straw party for the many properties and pending sales Mr Stolipher has lined up once this grossly inadequate industrial/commercial solar text amendment is, he hopes, rammed through this Commission. It's Mr Stolipher's own financial gain that hangs in the balance, not just Mr Dunn's.

2) Facts which form the basis of this Motion are set forth in paragraph 2 thereof. There are several things I should add, however.

a) I have photocopies from Mr Stolipher's website with Oakcrest Realty of his listings of two of the properties that I am reliably informed he, as agent, has under contract to Horus Renewables Corp of Sacramento, CA.

b) In addition, I have spoken with personnel in his Oakcrest office and have reliably confirmed the existence of those contracts.

c) Further, I have just learned from the Jefferson County Development Authority website that Mr Stolipher, apparently trading as Belmont West Properties[according to the Secretary of State's website, the LLC by the same name's charter was last revoked 11//1/16] has listed for sale a large number of contiguous farm properties in Kabletown Magisterial District totaling 1,805 ACRES awaiting the passage of the pending version of the text amendment, undoubtedly with much more substantial monetary rewards to Mr Stolipher. See also the Revised Generation Interconnection System Impact Study Report For PJM Generation Interconnection Request Queue Position AD2-158 "Old Chapel-Millville 138 KJV" 46.5 MW Capacity/ 77.5 MW Energy (February 2020, Revision 2) previously provided to this Commission by Mr Rockwell.

d) As stated in my Motion, Mr Stolipher has aggressively promoted this text amendment, including voting, seconding motions, etc. He has violated his oath of office. This text amendment proposal does nothing to protect the citizens of this County who are taxpayers & those nearby that would become a massive industrial/commercial solar complex on prime agricultural land in this county.

3) I have made two motions to the Planning Commission during the pendency of the matter below, for Mr Stolipher to be recused from participating in matters pertaining to ZTA 19-03. Both Mr Stolipher & the Commission refused these motions.

a) Mr Stolipher says that he secured a letter from the State Ethics Commission that he could participate in ZTA 19-03, yet he's NEVER produced such an alleged letter so the alleged assessment & the purported facts given to the Commission could be determined to be accurate & complete. Moreover, there is no Advisory Opinion on the Commission's website on this subject matter that appears to have been generated by him.

b) More importantly and as confirmed by a staff attorney at the Commission, the Legislature has NEVER given the Ethics Commission jurisdiction for enforcement of W Va Code 8A-2-4(e) & (f). Thus, any alleged letter Mr Stolipher claims to have received from the Ethics Commission bears no relevance to this Motion.

c) Finally, letter or no letter, Mr Stolipher's stunning lack of integrity in failing to disqualify himself voluntarily when he clearly has a substantial financial interest in the subject matter & the outcome, is appalling. His conduct in this matter requires further investigation by this Commission & his removal from the Planning Commission.

Ex B 9 of 2

4) Under County Ordinance 2007-1, there are two methods to initiate removal proceedings against a public official, one by a petition of at least 50 citizens and one by this Commission [see County Ordinance 2007-1, Section 3]. Consistent with this Commission's DUTY to prevent the abuse by a public official of their position for monetary gain, this Commission should IMMEDIATELY initiate an investigation and proceedings for removal of Mr Stolipher.

Respectfully,
Robert D. Aitcheson

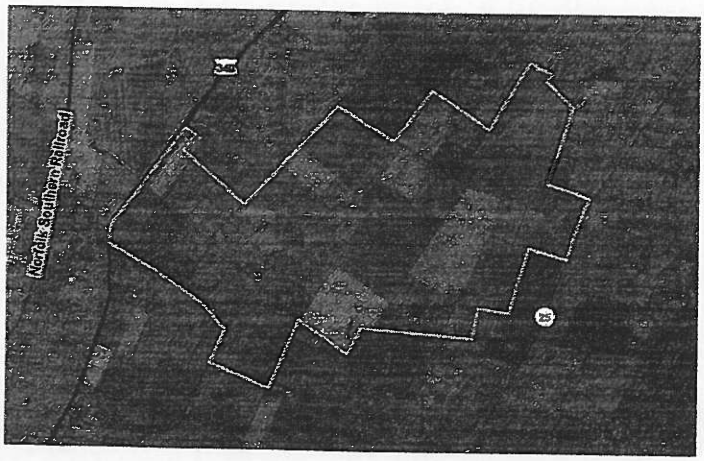
Exhp 2 of 2

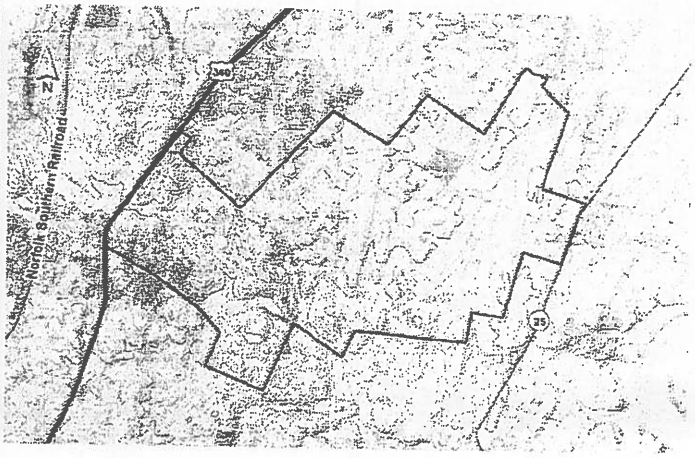
Charles Town Properties Site

Charles Town, West Virginia 25414 - View Charles Town Profile

PDF Print Share Documents

360° Virtual Tour | Map View | Street View | 3D Rotation





Property Details

Street Address: Route 340 and Roper Rd S

City: Charles Town (View City Profile)

County: Jefferson County (View County Profile)

Zip Code: 25414

Type of space: Vacant Land

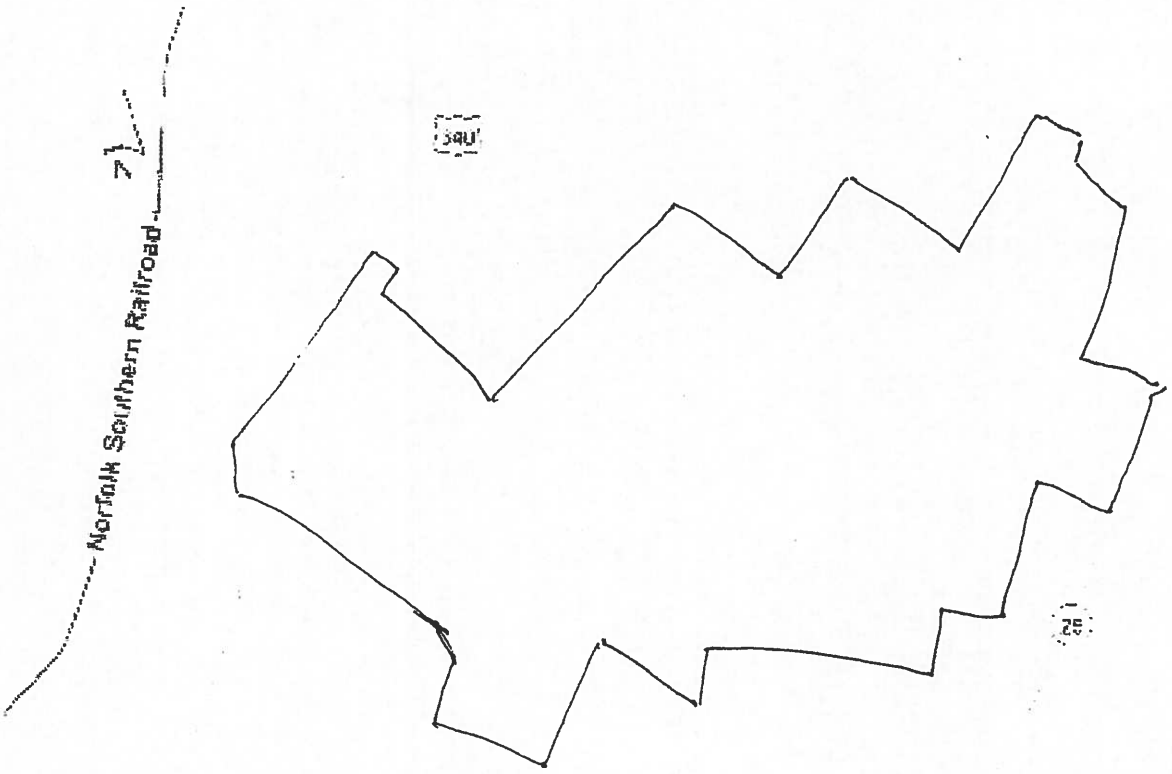
Min Size: 1 acres

Max Size: 1,805 acres

Last Updated: 6/2/2020

Saved | Map | Contact

Exc p1 of 5



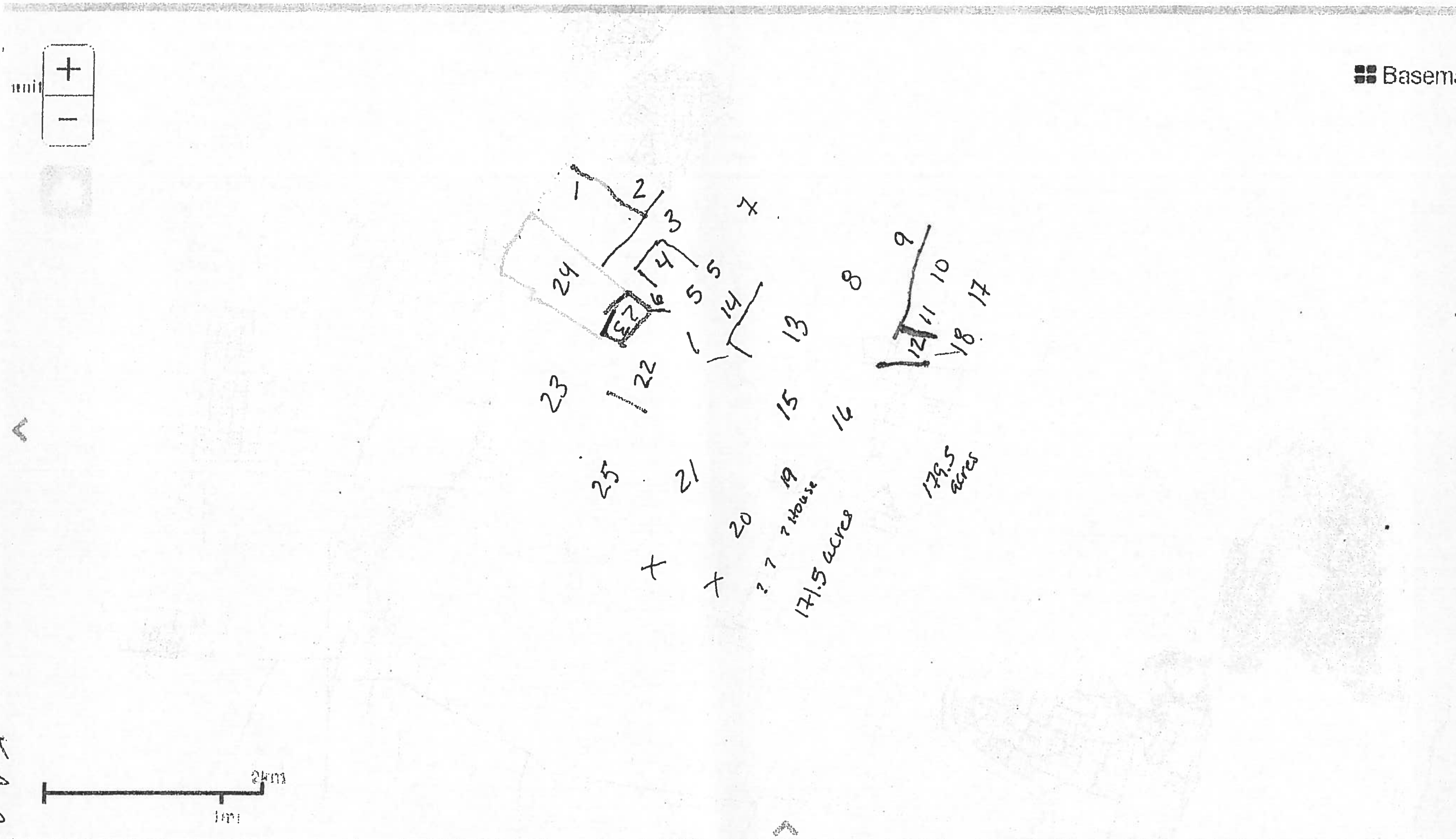
1.	Mickey Reva N & G Warren	06 400030000000	111.15 acres w/house > only 100 acres
2.	" "	06 400030001000	79.2 ares w/houre >
3.	Carl Sarah F Family Partnership	06 110006	115.79 ac
4.	"	06 1100060001	25.14 ac
5.	Zigler Inc	06 110007	57.28 ac w/house
6.	Stolipher Douglas L & Nancy C	06 1100050001	5 ac w/house
7.	Zigler Inc	06 40009	349.90 ac w/house
8.	Hough T Todd & Susan B TR	06 50001	204.58 ac w/house
9.	Rissler Marjories	06 50006	45.12 ac
10.	Rissler William G	0650005	47.52 ac w/house
11.	Nemec Michael A & Wilma J	06500050002	27. ac w/house 2010
12.	Rissler Dorothy D	06500050001	24 ac
13.	Hough Charles E & Marie S-Life	06 110008	118 ac w/house 2014
14.	Hough Clarence & Donna S	06 1100070001	107.16 ac
15.	Bullskin LLC	06 110009	133.3/4 ac w/house
16.	Casey Family Land Trust	06 50002	144.72 ac w/house 2002
17.	Boyer James A	06500070003	32.1/2 ac
18.	Hough T Todd & Susan B	06 500070001	76.2/5 ac
19.	Bullskin LLC	06 10007	11.07 ac
20.	"	06 100006	236. ac w/house
21.	Dunn Stanley W Jr & Katherine B	06100005	366.62 ac w/house 1965
22.	Stolipher Nancy C	06 110005	155 ac

Ex C
pg 2 of 5

Land Owners numbered by map.

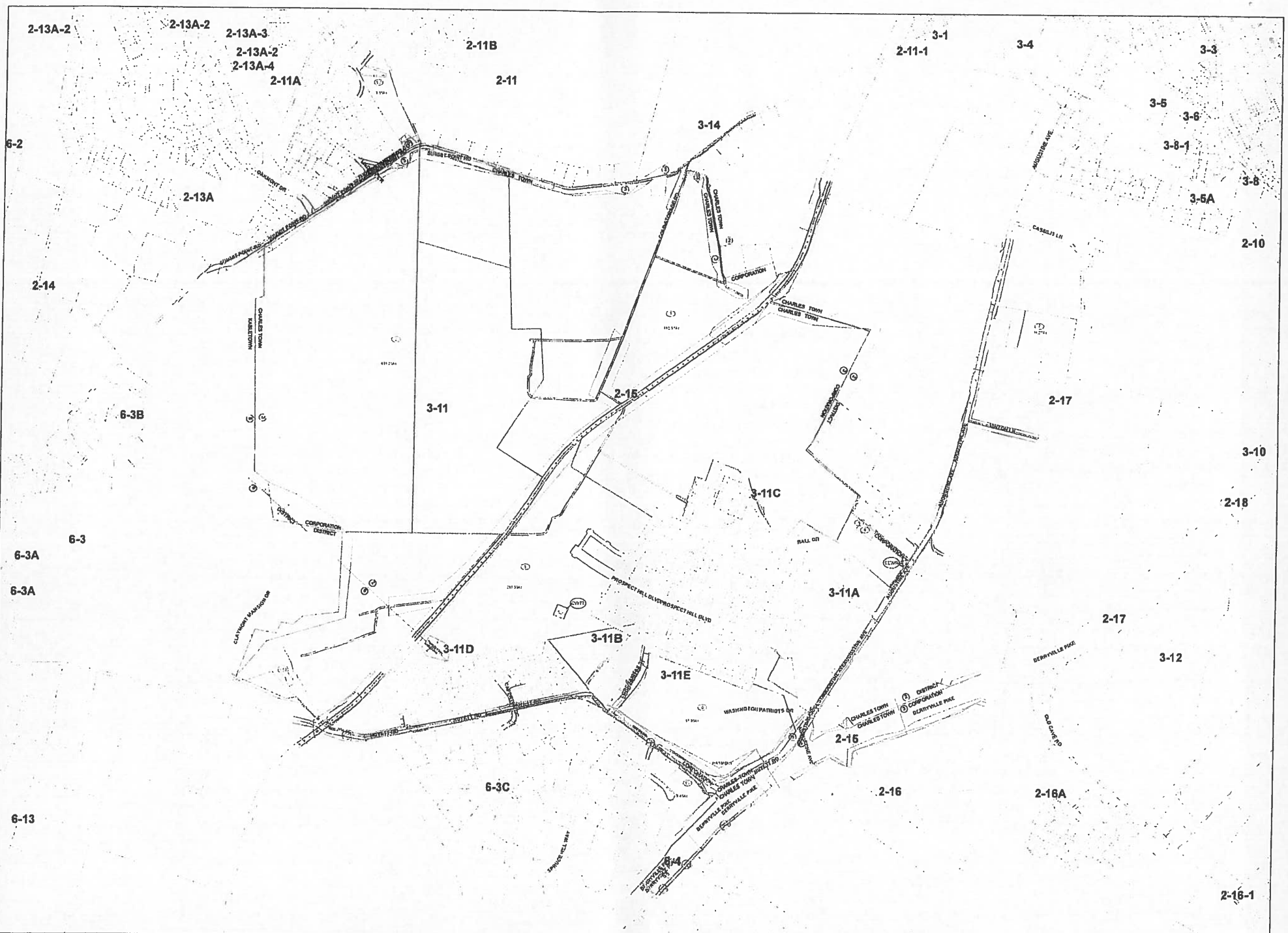
	District	Map #	Parcel#	Acreage
1. Zigler	2	16	12.8	58
2. Crawford (sold)	2	16	12.9	38.2
3. Rissler	2	16	18	235
4. Zigler	6	4	9	349.9
5. Hough	6	5	1	204.57
6. Metz	6	11	6	115.79
7. Zigler	6	11	7	57.3
8. Metz	6	11	6.1	25.14
9. Mickey	6	4	3	100
10. Stolipher	6	11	2.2	160
11. Stolipher	6	11	5.1	5
12A. Hough	6	11	7.1	95
12B. Hough	6	11	7.1	133
13. Stolipher	6	11	5	112
14. Rissler	6	5	6	45
15. ----------				
16. Zigler	6	4	9	1
17. Rissler	6	5	5	30
18. Burns Farm Limited Partnership	6	-	-	36
			total	1,801

Ex G 3 of 5



#2 sold

Exc p4 of 5



EXC #5 of 5

FOR TAX PURPOSES ONLY
PREPARED BY
JEFFERSON COUNTY ASSESSOR'S OFFICE
Note: Maps are updated constantly by the mapper however, maps are only printed at the beginning of the fiscal year.

DIRECTIONAL

LEGEND

REVISIONS
REVISIONS OUTGREW THIS SPACE AND ARE NOW MAINTAINED IN A DATABASE

KEY MAP

COUNTY OF JEFFERSON
OFFICE OF THE ASSESSOR
CHARLES TOWN, WV
ASSESSOR: Angela Banks
MAPPING SPECIALIST: Victoria Myers

CHARLES TOWN CORPORATION
DISTRICT 3
MAP 11

Date Aerial Photography 12/31/1992
Photo No
Date Printed: 8/3/2017
Date Map Created 04/23/1993

West Virginia E-Filing Notice

CC-19-2020-C-125

Judge: Debra McLaughlin

To: Nathan P. Cochran
ncochran@jeffersoncountywv.org

NOTICE OF FILING

IN THE CIRCUIT COURT OF JEFFERSON COUNTY, WEST VIRGINIA
Robert D. and Wanda C. Aitcheson, as Trustees of The Aitcheson Family Trust, Trustee v. County Commission of Jefferson County, WV
CC-19-2020-C-125

The following order - case - final was FILED on 12/10/2020 4:55:13 PM

Notice Date: 12/10/2020 4:55:13 PM

Laura Storm
CLERK OF THE CIRCUIT
Jefferson
119 N George Street
CHARLES TOWN, WV 25414

(304) 728-3231
circuitclerk@jeffersoncountywv.org

Included at the request of Robert Aitcheson RE ZTA19-03

In the Circuit Court of Jefferson County, West Virginia

Robert D. and Wanda C. Aitcheson, as Trustees of The Aitcheson Family Trust, Trustee,	)	
The Fields, LLC,	)	
Zachary D. and Penny Curry,	)	
Christopher & Susan Burke,	)	
Aiman S. Jalil ET AL,	)	
Plaintiffs,	)	
	)	
vs.)	)	Case No. CC-19-2020-C-125
	)	
County Commission of Jefferson County, WV,	)	
Defendant	)	
	)	

AGREED ORDER RESOLVING CIVIL ACTIONS

ON A PRIOR DAY CAME Robert D. Aitcheson and Wanda C. Aitcheson, as Trustees of The Aitcheson Family Trust Under Agreement Dated February 15, 2012; The Fields, LLC, a West Virginia limited liability company; Zachary D. Curry and Penny L. Curry, husband and wife; Christopher David Burke and Susan Leith Burke, husband and wife; Aiman S. Jalil; Gavin A. Perry; and Douglas S. Rockwell, Plaintiffs/Petitioners (hereinafter collectively referred to as "Petitioners"), by counsel, Kathy M. Santa Barbara, Esquire and The Law Office of Kathy M. Santa Barbara, PLLC, and also came the Jefferson County Commission ("JC Commission"), by counsel, William F. Rohrbaugh, Esquire, and advised the Court that all matters in controversy in these civil actions have been fully and finally resolved, and requested the entry by this Court of an Order. The parties hereto agree as follows:

1. At its meeting on October 1, 2020, the JC Commission adopted a proposed text amendment to the Jefferson County Zoning and Land Development Ordinance ("Zoning Ordinance") to incorporate provisions to allow solar energy facilities as a Principle Permitted Use in eight (8) of the twelve (12) Jefferson County zoning districts, including the Rural District

(the "Text Amendment"), which Text Amendment was to have become effective on November 16, 2020.

2. The parties hereto agree that the JC Commission's approval of Text Amendment ZTA19-03 – Solar Energy Facilities shall be vacated, and the JC Commission shall return the Text Amendment to the Jefferson County Planning Commission for further review, consideration and public hearing, if required by law.

3. The parties hereto agree that this civil action shall be dismissed, without prejudice.

4. The JC Commission, at a meeting held on December 10, 2020, did review the within proposed agreed order and thereafter did vote to authorize its counsel, William F. Rohrbaugh, Esquire, to execute the same on its behalf.

In consideration of all of the foregoing, and the parties having agreed to the same, it is accordingly,

ORDERED that the JC Commission's October 1, 2020 approval of Text Amendment ZTA19-03 – Solar Energy Facilities be, and it hereby is, vacated; and it is further,

ORDERED that the JC Commission shall return said Text Amendment to the Jefferson County Planning Commission for further review, consideration and public hearing, if required by law; and it is further,

ORDERED that this civil action shall be, and it hereby is, dismissed, without prejudice.

There being nothing further to be done in the within civil actions, the Clerk shall retire the same from the active docket of the Court and place the same among causes ended.

Submitted by and agreed to:

/s/ Kathy M. Santa Barbara
Kathy M. Santa Barbara, WVSB #5960
THE LAW OFFICE OF KATHY M.
SANTA BARBARA, PLLC
Counsel for Petitioners/Plaintiffs

Seen and agreed to:

/s/ William F. Rohrbaugh
William F. Rohrbaugh, WVSB #5048
Counsel for Respondent/Defendant

/s/ Debra McLaughlin
Circuit Court Judge
23rd Judicial Circuit

Note: The electronic signature on this order can be verified using the reference code that appears in the upper-left corner of the first page. Visit www.courtswv.gov/e-file/ for more details.

Alexandra Beaulieu

From: Sandra McDonald
Sent: Thursday, September 10, 2020 12:31 PM
To: 'Jane Tabb'; 'Josh Compton'; 'Patsy Noland (patsynol@gmail.com)'; 'Caleb Hudson'; Ralph Lorenzetti; Ralph Lorenzetti
Cc: Jessica Carroll; Alexandra Beaulieu
Subject: Opposition to proposed solar facility
Attachments: Scanned Hunter Building Commission.pdf

Commissioners-

Mr. Aitcheson dropped off a notebook with this in it for each of you. I'll place the notebook in your mailbox in the hallway.

Thanks,

Sandy

-----Original Message-----
From: Helpdesk@jeffersoncountywv.org [mailto:Helpdesk@jeffersoncountywv.org]
Sent: Thursday, September 10, 2020 12:31 PM
To: Sandra McDonald <Sandy@jeffersoncountywv.org>
Subject: Scanned Hunter Building Commission

This is scanned and sent to you from Hunter Building Commission Offices

Attachment File Type: pdf, Multi-Page

multifunction device Location: Hunter House - 1st Floor - Front Offices Area
Device Name: XRX9C934E1DB4F9

Contact Commission Offices
Hunter Building

Included at the request of Robert Aitcheson RE: ZTA19-03

Opposition to Proposed Utility-Scale Solar Facility Text Amendment

Robert D. Aitcheson

September 11, 2020

To: **Jefferson County Commission**

From: **Robert D. Aitcheson**

Re: **Proposed Text Amendment - Utility Scale Solar Facilities [ZTA19-03]**

1. Enclosed you will find the following:

Tab 1 - Spotsylvania County Virginia Board of Supervisors Resolution No. 2019-37 with Conditions (23 pages)

Tab 2 - Culpepper County Virginia Utility Scale Solar Facility Development Policy dated October 1, 2019 (16 pages)

Tab 3 Jefferson County Development Authority letter to this Commission dated August 19, 2020, Regarding Large Scale Solar Energy Facilities (3 pages)

2. **Spotsylvania County, Virginia**

After detailed analysis and lengthy public hearings, and contrary to the recommendations of its Planning Commission, the Board of Supervisors approved by a 6-1 vote a 6,350 acre utility- scale solar facility, the largest on the East Coast. Three parcels of land make up the total acreage, 5,200 acres, 905 acres and 245 acres. Only the Resolution for the 245 acre parcel is enclosed here, but **the conditions for each parcel are the same, regardless of the acreage.**

Please note the very detailed conditions upon which this project was approved, including the bonding, setback and buffer requirements. Bonding is not just to cover decommissioning cost, but compliance in **all** phases of the project. Obviously, a great deal of time and energy went into the fashioning of all these exacting conditions.

In talking with Wanda Parrish, the Spotsylvania County Director of Planning, she indicated that she regrets they did not spend more time on the final buffer and setback requirements. She said they started out with a 400 foot setback all the way around and ended up with a "rolling" setback which varies at different locations around the perimeter. She indicated to me that this arrangement is not optimal.

3. Culpeper County, Virginia

The enclosed policy was approved by the Board of Supervisors, pending the drafting of a local ordinance, which I am informed is in process. Once again, please note the detailed requirements for any applicant seeking to construct a utility-scale facility in Culpeper County.

4. Jefferson County Development Authority

Even though the Commission has already received it, this letter is included here for emphasis. Specifically, the Commission should take note that the **"American Planning Association has prepared a model zoning ordinance in its PAS Memo, Sept. 1/Oct 2019, Planning for Utility-Scale Solar Energy Facilities" that includes reasonable conditions based on the experience of several Virginia jurisdictions".** (Emphasis added)
The JCDA did the homework that our Planning Commission should have done, rather than ramming through a proposal wholly inadequate to protect the citizens of this County from the shell companies of out-of-state investors and their local minions.

The American Planning Association has made it easy for this Commission to adopt a legitimate, effective ordinance/text amendment with ample protections for the taxpaying citizens of our County. The drafting work is done for you.

5. Conditional Use Permit (CUP) vs. Principal Permitted Use (PPU)

As you know, designating utility-scale solar facilities as a PPU in the Rural Zoning District or **any** zoning district results in (a) the citizens affected by the project having **no input** and (b) the project being totally **unregulated** at the local level.

Moreover, every nearby jurisdiction that has considered this issue has opted to require a CUP or "Special Use Permit" as some jurisdictions call it. Among those counties are:

Virginia
- **Clarke County**
- **Frederick County**
- **Spotsylvania County**
- **Culpeper County**
- **Loudoun County**

Maryland
- **Howard County**
- **Frederick County**
- **Washington County**

There is simply no way to justify trying to re-invent the wheel in this instance at the expense of the taxpaying citizens who would be potentially negatively impacted by such projects. In addition to requiring a CUP, this Commission needs to adopt strict standards to which the Board of Zoning Appeals must adhere in its consideration of any such projects.

6. Bonding

As you can see from the enclosed, the necessary bonding requirements cover much more than decommissioning. Also included are the construction phase, operations, monitoring and maintenance. It is required that the bonds have sufficient, financially sound sureties, such as an A++ rated bonding company insurer, cash, a letter of credit, etc. Also note that the compliance with the bonds is the responsibility of the property owner and lessee, if the property is leased, the developer, all contractors and all successors and assigns. Finally, the sufficiency of the amount of the bonds are to be reviewed periodically, i.e. every 2 ½ to 3 years. These performance bonds are crucial in protecting the citizens of this County and insuring compliance with all conditions.

7. In addition to the failure of the proposed text amendment to adopt the CUP methodology and the failure to require adequate bonding and financial surety, I oppose the document under consideration because it:

fails to establish strict standards of review for the Board of Zoning Appeals in a CUP process, recognizing that the BZA has the authority to grant variances;

fails to limit the portion or percentage of any parcel in the Rural District, in existence as of July 1, 2020, which may be used for such solar panel facilities;

fails, alternatively, to provide a soils analysis basis (as under the former LEESA system) to determine what rural agricultural land may be used for a solar facility;

fails to require proximity to an existing transfer station and transmission lines;

fails to base our ordinance on the model ordinance of the American Planning Association consistent with the recommendations of our own JCDA.

8. Conclusion

Notwithstanding the vigorous and partisan advocacy of certain of the Planning Commission and staff, it should be readily apparent that inadequate consideration has been given by the Planning Commission to this proposal. It should be obvious to even a casual observer that there is a lot more thought and work to be done before a text amendment can be adopted by this Commission. Rather than taking the chance on sending it back to the Planning Commission and getting another shoddy work product, you should instruct legal counsel to prepare an ordinance similar to the American Planning Association's model zoning ordinance in its PAS Memo, Sept./Oct. 2019, "Planning for Utility-Scale Solar Energy Facilities" for consideration by this Commission in lieu of what has been presented.

Robert D. Aitcheson

County of Spotsylvania
Founded 1721

Board of Supervisors
GREG BENTON
KEVIN W. MARSHALL
TIMOTHY J. McLAUGHLIN
DAVID ROSS
GARY F. SKINNER
PAUL D. TRAMPE
CHRIS YAKABOUSKI

Service, Integrity, Pride

Interim County Administrator
ED PETROVITCH
Deputy County Administrator
MARK L. COLE
P.O BOX 99, SPOTSYLVANIA, VA 22553
Voice: (540) 507-7010
Fax: (540) 507-7019

At a meeting of the Spotsylvania County Board of Supervisors held on April 11, 2019, on a motion by Mr. Benton and passed 6 to 1 with Mr. Ross opposed, the Board adopted the following resolution:

RESOLUTION NO. 2019-37

Special Use Permit SUP18-0002
RiverOak Timberland Investments, LLC ("Owner") (Sustainable Property Holdings, LLC ("Applicant") - sPower Solar Energy Facility Site B):

WHEREAS, the Owner, through the Applicant, requests Special Use Permit approval to develop a 30 MW solar energy facility on an Agricultural 3 (A-3) zoned and unaddressed property constituting a site of approximately 245 acres. The property is located in western Spotsylvania County approximately 650 feet south of the intersection of W. Catharpin Road and Post Oak Road. The property is located outside of the Primary Development Boundary. The property is identified for Rural Residential development on the Future Land Use Map of the Comprehensive Plan. Tax Parcel 28-A-58. Livingston Voting District; and

WHEREAS, staff has reviewed the subject application and recommends approval as stated in the staff report and the executive summary; and

WHEREAS, the Spotsylvania County Planning Commission held a public hearing on December 19, 2018, duly advertised in a local newspaper for a period of two weeks, and interested citizens were given an opportunity to be heard; and

WHEREAS, the Spotsylvania County Planning Commission voted to postpone the subject case to January 2, 2019 to provide an opportunity for the Applicant to supply four plans recommended by staff for incorporation as conditions and to allow the Planning Commissioners additional time to review the application and consider public hearing input, with a vote of 5-2; and

WHEREAS, the Spotsylvania County Planning Commission voted to integrate condition comments and changes from SUP18-0001 into the subject case's conditions, as applicable, with a vote of 5-2; and

WHEREAS, on January 2, 2019, the Spotsylvania County Planning Commission voted to postpone the vote on the subject case to January 16, 2019 to allow staff time to address comments from the Planning Commission, with a vote of 5-2; and

WHEREAS, the Spotsylvania County Planning Commission recommended approval with a vote of 4-3; and

WHEREAS, the Spotsylvania County Board of Supervisors held a public hearing on February 26, 2019, duly advertised in a local newspaper for a period of two weeks, and interested citizens were given an opportunity to be heard; and

WHEREAS, the Spotsylvania County Board of Supervisors considered the Special Use Permit request in accordance with Sec. 23-4.5.7, Standards of Review, and finds that the application with the recommended conditions satisfies the following standards:

1. That the proposed use is in accord with the comprehensive plan and other official plans adopted by the county;

2. That the proposed use or development of the land will be in harmony with the scale, bulk, coverage, density, and character of the area or neighborhood in which it is located;

3. That the proposed use will not hinder or discourage the appropriate development and use of adjacent land and buildings or impair the value thereof;

4. That the proposed use will not adversely affect the health or safety of persons residing or working in the neighborhood of the proposed use;

5. That the proposed use will not be detrimental to the public welfare or injurious to property or improvements within the neighborhood;

6. That the proposed use is appropriately located with respect to transportation facilities, water supply, wastewater treatment, fire and police protection, waste disposal, and similar facilities;

7. That the proposed use will not cause undue traffic congestion or create a traffic hazard; and

8. That the proposed use will have no unduly adverse impact on environmental or natural resources.

WHEREAS, general welfare and good zoning practice are served by approval of the Special Use Permit application;

NOW, THEREFORE, BE IT RESOLVED that the Spotsylvania County Board of Supervisors does hereby approve SUP18-0002 Sustainable Property Holdings, LLC - sPower Solar Energy Facility Site B with the conditions listed below:

A. General:

1. The solar energy facility ("Facility") to be developed on current Tax Parcel 28-A-58 ("Property") pursuant to special use permit SUP18-0002 ("Special Use Permit"), shall be developed in conformance with the Generalized Development Plan titled "Generalized Development Plans Spotsylvania Solar Energy Center B Special Use Permit—SUP 18-0002 Livingston Magisterial District Spotsylvania County, VA", as last revised November 20, 2018 ("GDP") which is attached hereto and incorporated herein by reference. To the extent that the conditions herein are contrary to the GDP, the conditions herein shall supersede the GDP and control. SUP18-0002, along with SUP18-0001 and SUP18-0003, constitute the Spotsylvania Solar Energy Center ("Project"). The verbs "shall" and "must" as used throughout this Special Use Permit denote a mandatory act or requirement.
2. The Facility shall not be designed, constructed, or operated in any configuration or makeup of panels intended to allow the Project to generate greater than five hundred megawatts (500 MW) of power.
3. This Special Use Permit is issued to the owners of the Property and shall run with the land unless and until this Special Use Permit is revoked, lapses, expires, or is voided. The applicant acting on behalf of the owners of the Property in applying for this Special Use Permit is Sustainable Property Holdings, LLC. These conditions shall bind the applicant, any and all owners, occupants, and users of the Property, jointly and severally, which shall also be referred to at times collectively as the "Operator".
4. The Operator shall secure and at all times maintain public liability insurance for personal injuries, death, and property damage, and umbrella insurance coverage, for the duration of the Special Use Permit in the minimum amounts set forth below, and shall include the County as co-insured:
    a. Commercial General Liability covering personal injuries, death and property damage: $2,000,000 per occurrence/ $6,000,000 aggregate;
    b. Automobile Coverage: $1,000,000 per occurrence;
    c. Excess Liability: $5,000,000;
    d. Workers Compensation and Employers Liability Insurance in accordance with applicable statutory amounts.
5. The Operator's Commercial General liability insurance policy and excess liability policy shall specifically include the County and its officers, boards, employees, volunteers, attorneys, agents, and consultants as additional insureds.
6. The Operator's insurance policies shall be issued by an insurance company licensed to do business in the State and with an AM Best's rating of at least A.
7. The Operator shall provide the Zoning Administrator Certificates of Insurance annually, and the amounts of required insurance shall be reviewed every two years for adequacy of coverage by the County's carrier. As determined solely by the County's insurance carrier, insurance premiums or coverage shall be increased when necessary to protect the County.

8. The Operator's insurance policies shall contain an endorsement obligating the insurance company to furnish the County with at least thirty (30) days prior written notice in advance of the cancellation of the insurance.
9. The Operator's insurance renewal or replacement policies or certificates shall be delivered to the Zoning Administrator at least fifteen (15) days before the expiration of the insurance that such policies are to renew or replace.
10. Prior to the issuance of a land-disturbing permit, the holder of the Special Use Permit shall deliver to the Zoning Administrator a copy of each of the policies or certificates representing the insurance in the required amounts.
11. Access to the Property and the Facility for inspections or monitoring by the County, including its employees, agents and representatives, shall be provided to any of these parties within twenty-four (24) hours of the date and time written notice is provided to the Operator.
12. The Operator shall fully comply with all state and federal laws and regulations that apply to the construction or maintenance of the Project or use of the Property.
13. The storage on the Property of power generated by the Facility is prohibited.
14. Any batteries stored or utilized on the Property during the operation of the Facility shall be for the operation of vehicles or maintenance equipment on the Property, for backup support during power outages to ensure the safety, security, and continued monitoring of the Facility and shall not be used to store power for transmission to the power grid. Any batteries stored on the Property shall be stored indoors on an impervious surface and any batteries stored or utilized on the Property shall be removed from the Property and disposed of safely at the first sign of damage, leakage, or corrosion.
15. The use of biosolids on the Property is prohibited.
16. Photovoltaic panels manufactured using the GenX chemical are prohibited on the Property.
17. Photovoltaic panels containing Cadmium Telluride, also referred to as "Cad Tel", shall not be used on the Property in an amount which would cause the total number of panels containing Cadmium Telluride used in the Project to exceed thirty percent (30%) of the total panels used in the Project.
18. Inverters and solar panels, measured from the grade of the ground on which the structures sit to their highest possible point, shall not exceed a height of fifteen (15) feet.
19. After construction is complete and the Facility begins operating, lighting on the Property not included in or expressly exempted from the Spotsylvania County ordinances shall be located, screened or shielded so that adjacent residential lots and adjacent roads are not directly illuminated and shall not exceed 0.5 footcandles at the Property boundary.
20. Soil testing shall be performed in accordance with the "Proposed Soil Testing and Remediation Plan Operations Phase", dated December 13, 2018, incorporated by reference herein and attached hereto as "Exhibit A", and shall:

a. Include sampling designed in accordance with the Environmental Protection Agency's "Guidance on Choosing a Sampling Design for Environmental Data Collection for Use in Developing a Quality Assurance Project Plan" Chapter 7.
b. Include the collection of samples at a frequency of at least 1 sample per 100 acres.
c. Include samples collected over a variety of site conditions. Samples shall:
    1. Be mapped to display the site's location and differentiate panels within proximity based on the panel's manufacturer and model.
    2. Include one sample collected from each side of each onsite stream or river at its most upstream and most downstream locations.
    3. Be analyzed for Cadmium Telluride and all metals identified in the "Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs)" Attachment 1-4, Table 1.1.
    4. Be analyzed for type, acidity, and nutrient levels, including Nitrogen, Phosphorus, Potassium, Magnesium, Sulfur, and Calcium.
d. Include test reports provided to the Zoning Administrator prior to the issuance of a land-disturbing permit and every five (5) years thereafter which are accompanied by an executive summary of the results.
e. Include a test report provided to the Zoning Administrator prior to and immediately following decommissioning.
f. Include, as determined solely by the County, additional studies warranted by abnormal results, as determined solely by the County, to be performed by the Operator, at the Operator's cost, including but not limited to an Environmental Site Assessment, conducted in accordance with the applicable American Society for Testing and Materials, now known as ASTM International, standards and subsequent tests, as deemed necessary by the County or the Virginia Department of Environmental Quality ("VDEQ"). Results of all required testing shall be shared with the County free of charge and without demand therefor.
g. Comply with the conditions, which shall supersede and control, to the extent the "Proposed Soil Testing and Remediation Plan Operations Phase", dated December 13, 2018 is contrary to the conditions herein, as determined solely by the County.

21. A sealed dry-waste container shall be maintained at the Facility for the disposal of any damaged solar panels.
22. When the Facility reaches the end of its operational life, or its use is otherwise discontinued or substantially reduced, the Operator shall decommission it according to the following requirements, as well as those found in the Spotsylvania County Code of Ordinances, Section 23-4.5.7, all of which requirements supersede the decommissioning plan submitted by the Operator, and shall bear all costs of decommissioning. To the extent these conditions are more restrictive or intense than

those in Section 23-4.5.7, as determined solely by the County, these conditions shall control:

a. The decommissioning of the Facility must include the complete removal of the Facility, including, but not limited to, all of the facilities and structures above and below ground on the Property related in any way to the collection, conduction, or storage of solar energy and their appurtenances, installed at any time during the construction or operation of the Facility. This must include, at least, the removal from the Property of all of the following: solar panels, panel trackers, anchors, supports, footers, mounts, inverters, inverter buildings, electrical conductors, electrical cables, substation components, internal fencing, structures, and all other equipment and structures on the Property unless otherwise limited herein.

b. The decommissioning must also include at least the following: the Facility will be disconnected from the utility power grid; solar panels must be disconnected from the on-site electrical system; all work must be undertaken with conventional construction equipment; all materials must be disposed of safely; solar panels must be removed from their support frames and packaged in a manner that ensures that they sustain no damage during their disconnection and removal from the Property; all hazardous materials must be removed and disposed of or recycled in accordance with all applicable laws and regulations; all concrete must be removed and recycled offsite by a recycling facility or used onsite as fill material as part of a stabilization or regrading plan which meets all applicable laws and regulations as determined solely by the Zoning Administrator or Erosion and Sediment Control/Virginia Stormwater Management Program Administrator ("Program Administrator"), as applicable; and grading must be minimized to the maximum extent possible under all applicable laws and regulations as determined solely by the Program Administrator or Zoning Administrator, as applicable. To the extent possible, all solar panels and equipment must be delivered to a designated recycling facility for recycling and material re-use; all electrical interconnection, transmission, and distribution lines and cables must be recycled offsite at a recycling facility; all steel and metal including, but not limited to, support posts and internal fencing must be recycled offsite by a recycling facility; and electrical and electronic devices including, but not limited to, inverters, transformers, panels, support structure, lighting fixtures, and their respective shelters must be recycled offsite by a recycling facility.

c. After removal of the above, the ground must be restored to the original topography prior to the beginning of the decommissioning. In other words, holes, ditches, ruts, and the like created by removing underground conduit, support footers, or any other decommissioning activity must be filled in to restore the topography of the Property and allow for stabilization.

d. At the outset of the decommissioning, the Operator shall produce to the Zoning Administrator an inventory of all the materials on the Property which will be removed or are otherwise subject to the provisions herein. At the completion of the decommissioning, the Operator shall produce to the Zoning Administrator a report detailing compliance with all of the requirements

herein including, but not limited to, details of the removal and disposition of materials required herein, including an explanation of why any material was not recycled. This detailed report must explain how each requirement related to the decommissioning set out herein has been met and must be certified by a third party engineer licensed in Virginia.

e. The decommissioning of the Facility may include, at the discretion of the person depicted in the land records of Spotsylvania County as of the date of completion of decommissioning as the Property owner, the removal of perimeter fencing. All fencing internal to the perimeter fencing must be removed as set out above. The decommissioning must not include the following: removal of stream crossings, de-compacting or removing gravel roads or paths established for the operation of the Facility, or removal of permanent stormwater management features.

f. Further, the Property must be restored to the agricultural condition of the Property as of the date of approval of this Special Use Permit with the additional requirement that the Property must be stabilized so as to adequately control, prevent, and minimize, any and all erosion and sediment runoff. Stabilization must be completed according to all standards established under applicable laws and regulations as determined by the Program Administrator or Zoning Administrator, as applicable. Prior to stabilization, all soils compacted by decommissioning work or by construction or operation of the Facility, except gravel roads and paths established for the operation of the Facility, shall be de-compacted, scarified, and restored six (6) inches in depth.

g. All onsite decommissioning work must be performed only between the hours of 7:00 a.m. and 5:00 p.m. on Monday through Friday.

h. County staff shall be granted access to the Property on twenty-four (24) hour prior notice to monitor all decommissioning work.

i. The Zoning Administrator must be provided a monthly report detailing the decommissioning work performed and progress toward completion.

j. The Operator, throughout its operation until the decommissioning is complete, shall guarantee the decommissioning and stabilization of the Property. The Operator shall provide and maintain for the County's benefit surety for performance of the decommissioning equal to the estimated cost of decommissioning the Facility on the Property as set forth herein. Such surety must be irrevocable and must be maintained in full as set forth herein until the Facility decommissioning has been completed as required herein. The highest total estimated cost must be calculated by the Operator and include, at least, the following delineated by line item:

    i. Total cost related to complying with all the decommissioning work required by this Special Use Permit.

    ii. Costs related to creating, maintaining, and re-stabilizing all construction entrances identified on the Property, with a separate line item for each such construction entrance.

    iii. Costs for mobilization.

    iv. Costs for removal and disposal of all materials set forth above line itemed by category of facility. For example, "cost to remove conduit,"

"cost to remove panels," "cost to remove panel support structure" "cost to remove inverters," etc. Such costs must not be reduced by any estimated credits or setoffs for recycling, reuse, or otherwise.

v. Costs to de-compact, scarify, and restore all soils required herein.

vi. Costs to stabilize land disturbed by the decommissioning work and as otherwise required herein.

vii. Costs to meet the recycling requirements herein excluding any anticipated credits or setoff generated by the recycling.

viii. Costs of trucking, hauling, and equipment use.

ix. Costs for soil testing pursuant to Condition A.20.e set out herein.

x. Costs of all labor and estimated man-hours to perform the decommissioning work required herein.

xi. Costs must assume an increase in labor and equipment costs of two percent (2%) a year every year until the completion of decommissioning and must assume commencement of decommissioning after year thirty (30) of operation.

xii. Costs for contingencies and for weather delay.

xiii. Costs for insurance.

xiv. Costs associated with transportation traffic planning, traffic mitigation, and road restoration on all roads utilized for decommissioning within Spotsylvania County for the duration of the impact of decommissioning on Spotsylvania County roadways.

xv. The certification of a third party engineer licensed in Virginia affirming that the Operator's highest total cost estimate is accurate.

k. The highest total estimated cost may be reduced by any estimated funds generated from resale or recycling of the removed materials, so long as such funds are of a type that the County or any third party would generate in the event the Operator fails or refuses to decommission the Facility. Each reduction shall be listed as a separate line item in the estimated cost. Any reductions shall be certified by a third-party engineer licensed in Virginia that they are accurate.

l. Prior to the issuance of a land-disturbing permit to construct the Facility and in no case later than three (3) months after approval of this Special Use Permit, the Operator shall produce to the County an estimate of the above costs by line item. The amount of the estimated costs on which the surety shall be based shall be no less than the Ten Thousand Nine Hundred Fifty-Seven Dollars ($10,957.00) per disturbed acre of land already estimated in the "Project Decommissioning and Site Restoration Cost Estimate" attached hereto as "Exhibit G" as provided by the applicant, as reduced by any applicable recycling credits allowed for herein. The estimate shall be signed and sealed by a third party engineer licensed in Virginia and shall include a statement by the engineer that "The total estimated cost provides for the complete decommissioning of the Facility and stabilization of the Property as defined and required in SUP18-0002."

m. The Operator must provide surety to guarantee that the decommissioning work can be performed by the County if not performed by the Operator as required herein. Surety must be provided by a cash bond deposited with the County, by an irrevocable letter of credit provided for the County's benefit, or by a surety bond listing the County as the obligee. Cash bond shall be in the form of a cashier's check or certified check deposited with the County which has cleared all issuing institutions. Any interest accruing on such funds shall be added to the total amount and retained by the County for decommissioning. This deposit shall be accompanied by a letter agreement, acceptable to, and issued by, the Zoning Administrator, confirming that the cash deposit is to be held by the County to guarantee the performance of the decommissioning work required herein and should the Facility be abandoned, or should the decommissioning work not be diligently undertaken or performed according to the requirements herein, or should this Special Use Permit be revoked, lapse, expire, or be voided, all as determined solely by the County, the County may expend the deposited funds to undertake the decommissioning work required herein without more after providing written notice to the person identified as owner of the Property in the land records of Spotsylvania County as of the date of the notice. Within six (6) months of the completion of the decommissioning work required herein by a person or entity other than the County or a contractor engaged by the County, as confirmed by the Zoning Administrator, the cash bond and accrued interest, less any amounts expended by the County as allowed for herein, shall be released to the person identified as owner of the Property in the land records of Spotsylvania County as of the date of the completed decommissioning or as otherwise directed by that owner of the Property.

n. An irrevocable letter of credit shall mean an instrument provided by a lending institution guaranteeing payment to the County within seventy-two (72) hours of the County's written notice to the institution that the Facility has been abandoned or the decommissioning work has not been diligently undertaken or performed according to the requirements herein and demand to the institution for the funds, without more. This letter of credit shall have no expiration date or required renewal and shall remain in effect for the benefit of the County and shall under no circumstances be withdrawn before the decommissioning work required herein is completed or the amount guaranteed has been fully drawn by the County. The letter of credit shall require that the County be notified six (6) months prior to any cancellation or alteration of the letter of credit. Should the County receive notice that the letter of credit will be cancelled or otherwise become unavailable or decrease, or should this Special Use Permit be revoked, lapse, expire, or be voided, the County may, without more, and without notice to the Operator, immediately draw down the entirety of the letter of credit and convert the surety to a cash bond to be deposited with the County and subject to the terms herein; this shall be specifically reflected in the language of the irrevocable letter of credit. The County may expend the guaranteed funds without more to undertake the decommissioning work required herein after providing written notice to the

person identified as owner of the Property in the land records of Spotsylvania County as of the date of the notice. Within six (6) months following the completion of the decommissioning work required herein by a person or entity other than the County or a contractor engaged by the County, as confirmed by the Zoning Administrator, the letter of credit shall be released by the County.

o. A surety bond shall mean a bond issued by a company with an AM Best rating of A++, that is Treasury listed, and that is licensed to do business in the Commonwealth of Virginia. The surety bond shall list the County as an obligee and shall remain in effect for the benefit of the County and shall under no circumstances be withdrawn or cancelled before the decommissioning work required herein is completed or the amount guaranteed has been fully paid to the County. The surety bond shall require that the County be notified six (6) months prior to any cancellation or alteration of the bond. Should the County receive notice that the surety bond will be cancelled or otherwise become unavailable or decrease below the limits required herein, or should this Special Use Permit be revoked, lapse, expire, or be voided, the County may, without more, and without notice to the Operator, immediately file a claim, which the Operator shall not contest, for the entirety of the amount of the bond, the guarantor shall pay the amounts guaranteed and the County shall convert the surety to a cash bond to be deposited with the County and subject to the terms herein; this shall be specifically reflected in the language of the surety bond. The County may expend the guaranteed funds without more to undertake the decommissioning work required herein after providing written notice to the person identified as owner of the Property in the land records of Spotsylvania County as of the date of the notice. Within six (6) months following the completion of the decommissioning work required herein by a person or entity other than the County or a contractor engaged by the County, as confirmed by the Zoning Administrator, the surety bond shall be released by the County.

p. The amount of the surety required shall escalate as follows. Beginning on the date on which the first land disturbing permit is issued for the Project (referred to in this subsection as the "Surety Date"), and for the next five (5) years, no surety shall be required. Beginning on the fifth anniversary of the Surety Date, and thereafter for years six (6) through ten (10) after the Surety Date, the Operator shall provide and maintain surety in an amount equal to 20% of the most recently estimated decommissioning costs. Beginning on the tenth anniversary of the Surety Date, and thereafter for years eleven (11) through fifteen (15) after the Surety Date, the Operator shall provide and maintain surety in an amount equal to 40% of the most recently estimated decommissioning costs. Beginning on the fifteenth anniversary of the Surety Date, and thereafter for years sixteen (16) through twenty (20) after the Surety Date, the Operator shall provide and maintain surety in an amount equal to 60% of the most recently estimated decommissioning costs. Beginning on the twentieth anniversary of the Surety Date, and for years twenty-one (21) through twenty-five (25) after the Surety Date, the Operator shall provide and

maintain surety in an amount equal to 80% of the most recently estimated decommissioning costs. Beginning on the twenty-fifth anniversary of the Surety Date, and for every year thereafter, the Operator shall provide surety in an amount equal to 100% of the estimated decommissioning costs. This escalation allowed herein shall not be interpreted to reduce the Operator's liability for decommissioning costs as set forth herein.

q. The estimated costs and surety to meet the above requirements shall be reviewed by the Zoning Administrator who shall determine if the estimates adequately reflect the decommissioning costs and that the surety will guarantee performance. Should the Zoning Administrator determine that estimated costs and surety are insufficient, the Zoning Administrator shall determine adequate surety and communicate the deficiencies to the Operator who shall then provide the adequate surety prior to the issuance of any land-disturbing permit.

r. Should this Special Use Permit be revoked, lapse, expire, or be voided, the County may immediately draw down all of the surety funds and convert them into a cash bond for the purposes of decommissioning as set forth hereunder. In such a case, no contractual agreement shall be required for the cash bond. This shall be reflected in the surety provided.

s. The costs of decommissioning and any amount of required surety for decommissioning shall be reviewed by the Zoning Administrator every thirty (30) months on the anniversary of the date this Special Use Permit is approved and an updated decommissioning plan shall be submitted to the County prior to that date. The decommissioning surety shall be adjusted by the Operator, if necessary, to reflect the then current decommissioning cost as determined by the Zoning Administrator. When determining the amount of the total estimated decommissioning costs for the surety escalation in paragraph A.22.p, the Operator shall use the amount established by the Zoning Administrator's most recent review. The decommissioning requirements set out herein shall not be amended, reduced, or otherwise changed through any decommissioning plan required to be submitted herein, or any approval thereof, without first amending this Special Use Permit. The Zoning Administrator shall not approve any decommissioning plan, but shall only use it to determine the adequacy of the surety.

t. Should the funds guaranteed for the decommissioning work as of the Decommissioning Commencement Date, as defined hereafter in paragraph A.22.x, for any reason not be sufficient for the County to complete the decommissioning work as allowed for herein, the Operator, which includes all owners, occupants, and users of the Property, jointly and severally, remain liable to the County for the difference between the guaranteed funds and the amounts required to decommission the Property and shall pay the difference to the County upon demand. The County shall not be liable to any party in any way for the funds drawn pursuant to the conditions set out herein and expended in relation to decommissioning.

u. Should the Facility be abandoned, or should this Special Use Permit be revoked, lapse, expire, or be voided, or should the decommissioning work not

be diligently undertaken or performed according to the requirements herein as determined solely by the County and should the County draw down funds for the purpose of performing the decommissioning work herein and mobilize its contractors to perform the decommissioning work or otherwise incur liability to its contractors for the performance of the decommissioning work, the Operator shall have no right to perform the decommissioning work required herein unless specifically authorized by the County in a writing that confirms that the County has incurred no liability to any contractors to perform the work or that any such liability is transferrable as deemed acceptable by the County.

v. The Operator shall immediately, upon written demand by the County or any person or entity authorized to act on behalf of the County, without more, grant or release to the County, or any person or entity authorized to act on behalf of the County, under terms deemed acceptable solely by the County, all necessary real property rights, personal property rights, either or both, as determined solely by the County, other than fee simple ownership or a leasehold interest of the real property, so that the County or any person or entity authorized to act on behalf of the County may undertake any decommissioning work required herein that has not otherwise been performed as required herein. This shall include, but not be limited to, releasing any interest in the personal property, facilities, fixtures, and structures which are to be removed and recycled, disposed or otherwise demolished.

w. The amount of surety guaranteed herein shall not be reduced for any reason except as allowed for herein.

x. Decommissioning shall begin immediately after the Facility has, for a period of three (3) months, ceased operating as a solar energy facility collecting and storing energy and then transferring and distributing it to the electrical grid (the "Decommissioning Commencement Date") and shall be diligently pursued, as determined solely by the County, and completed within one (1) year from the Decommissioning Commencement Date, providing a one-year decommissioning period. Prior to its expiration, the County may extend this one year decommissioning period by six (6) months if the County finds, in its sole discretion, that the Operator commenced decommissioning the Facility immediately after the Decommissioning Commencement Date, diligently and continuously worked to decommission the Facility throughout the decommissioning period, and is reasonably expected to complete decommissioning within the additional six-month period. This provision does not in any way limit the County's authority under Section 23-4.5.7.

y. Periods during which the Facility is not operational for maintenance, repair, or due to catastrophic events beyond the Operator's control, during which the Operator works diligently to return the Facility to full operating status, shall not trigger the decommissioning requirement herein. The Operator must provide written notice and evidence of the above to the Zoning Administrator during the period in which the Facility is not fully operational. Such notice shall identify the last day on which the Facility was fully operational. Failure of the Operator to provide such written notice or evidence precludes it from

contesting the County's reasonable determination of the last day on which the Facility was fully operational. Regardless of the efforts of the Operator to return the Facility to full operational status, if the Property does not operate as a solar energy facility collecting and storing energy and then transferring and distributing it to the electrical grid after the catastrophic event, for a period of two (2) years, as determined by the County in its sole discretion, the Special Use Permit shall be void and the Operator shall commence decommissioning no later than the 730th day after the last day the Facility was fully operational.

z. Any change of ownership, lessee, or party responsible for decommissioning of the Facility, or change in any part of the contact information, shall be reported to the Zoning Administrator within sixty (60) days of the change(s).

23. Prior to the issuance of a land-disturbing permit, the Operator shall request an informal review of the Facility by the Department of Defense's Siting Clearinghouse.

B. Construction:

1. The Operator shall comply with the "Spotsylvania Solar Energy Center Traffic Mitigation Plan" dated December 13, 2019, attached hereto as "Exhibit B" and incorporated by reference herein. To the extent that the "Spotsylvania Solar Energy Center Traffic Mitigation Plan" dated December 13, 2019 is contrary to the conditions herein, as determined solely by the County, the conditions herein shall supersede and control.
2. The Operator shall shuttle at least twenty percent (20%) of the workforce to and from the site during construction. Employees ride-sharing with a minimum of three (3) employees per vehicle may contribute to this requirement. Compliance with this requirement shall be demonstrated through the Operator's monthly provision to the Zoning Administrator of a transportation log which provides the following information: License Plate Number, Vehicle type (Oversize Load, heavy delivery, delivery, shuttle, employee vehicle carrying three (3) or more persons, employee vehicle carrying less than three (3) persons, or guest, which is someone not related to the Project or its construction), Entry time, and Exit time. "Oversize Load" shall be defined as any vehicle that requires a Hauling Permit from the Virginia Department Motor Vehicles.
3. No less than seventy percent (70%) of material deliveries shall occur between the hours of 9:00 a.m. and 2:45 p.m. from August 1 through May 31 during construction of the Facility. Compliance with this requirement shall be demonstrated through the Operator's monthly provision to the Zoning Administrator of a transportation log which provides the following information: License Plate Number, Vehicle type (Oversize Load (as defined in paragraph B.2), heavy delivery, delivery, shuttle, employee vehicle carrying three (3) or more persons, employee vehicle carrying less than three (3) persons, or guest, which is someone not related to the Project or its construction), Entry time, and Exit time.

4. The Operator shall fully fund any temporary or permanent signage as requested or required by the County Transportation Planner or the Virginia Department of Transportation ("VDOT").
5. If required by the National Park Service, the Operator shall acquire and provide to the Zoning Administrator an approved permit from the National Park Service for commercial use of the intersection of Brock Road and Orange Plank Road and any other haul routes over affected National Park Service roads.
6. The Operator shall document the condition of all haul routes, including public and private roads, by video recordings which shall at a minimum record the full width of the roadway plus a five-(5) foot buffer. The videos shall be recorded prior to the issuance of a land-disturbing permit on a clear day and be organized by road segment.
7. Construction and operational traffic shall only use the access points to the Property identified on the GDP.
8. All construction activity on the Property shall be limited to the following:
    a. All clearing, grading, and construction of the Property shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 8:00 a.m. and 6:00 p.m. Saturday and Sunday. The act of replacing a broken panel on an already established array, even if located within the 400 acres of then currently disturbed land area, and the repair work required to be undertaken within twenty-four (24) hours as set out in Sections C.1.c, C.2.c, and C.3.c herein, shall be exempt from this provision;
    b. Pile driving within 500 feet of any residential property boundary shall cease no later than 5:00 p.m. Monday through Saturday. Pile driving anywhere on the Property is prohibited on Sundays. These prohibitions shall not apply to the use of an auger; and
    c. Oversize Load deliveries are prohibited on Orange Plank Road, West Catharpin Road, and Post Oak Road during prime school bus traffic between the hours of 6:10 a.m. and 8:40 a.m. and 2:45 p.m. and 4:30 p.m., or any amendment thereof due to inclement weather, during the Spotsylvania County Public Schools instructional year.
9. The Operator shall designate at least one public liaison and publicize a toll-free phone number and email address for communication with the liaison during construction. At a minimum, the information shall be published on the Operator's website and provided to the County's Public Information Officer for publication on the County's website and other social media. The liaison shall act as a point of contact between citizens and construction crews. The liaison shall be available in person and by phone during active construction hours and shall respond to any questions related to the Facility or Property. The liaison role shall commence prior to issuance of a land-disturbing permit and remain a minimum of six (6) months following issuance of the final Certificate of Occupancy for the Facility. The liaison shall prepare a monthly report detailing the complaint, complaint date, resolution, and resolution date. The report shall be provided to the Zoning Administrator on the first business day of each

month throughout the construction period and an additional six (6) months following issuance of the final Certificate of Occupancy for the Facility.

10. Advance notice shall be mailed by first class mail to properties within 1,000 feet of a pile driving location no less than seven (7) days prior to the start of such activities and shall include the estimated start date, estimated end date, and the liaison's contact information. The notice and a list of recipient addresses shall also be mailed to the Zoning Administrator no less than seven (7) days prior to the start of such activities.
11. The following noise-reducing practices shall be followed to reduce construction noise:
    a) Trucks and engine-powered equipment shall include mufflers and engine shrouds no less effective than those originally installed by the manufacturer;
    b) Trucks and engine-powered equipment shall be maintained in proper tune according to manufacturers' specifications; and
    c) The use of noise-producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.
12. Construction staging areas, parking areas, portable sanitation facilities, and solid waste collection areas shall be set back a minimum of 500 feet from any residential property boundary, and the area shall be shielded from view, and shall employ sound dampening shrouds, barriers, fencing, and/or berms to reduce noise impacts.
13. The Operator shall participate in a Joint Construction Traffic Reaction Team, which shall also include County Staff and should include VDOT, the Spotsylvania County Sheriff's Office, and the Virginia State Police to identify and expeditiously resolve or mitigate traffic issues that arise during the construction phase of the Facility. The Operator shall assist in resolving and implementing solutions to traffic issues.
14. Prior to issuance of a land disturbing permit, the Operator shall secure a VDOT Land Use Permit and post surety for the estimated cost of repairs to public roads based on an estimate reviewed and approved by the County's Transportation Planner and VDOT.
15. Any pavement damage to roads, including shoulders and aprons, attributable to construction of the Facility shall be repaired by the Operator within 120 days of issuance of the final Certificate of Occupancy for the Facility at the Operator's expense or within forty-eight (48) hours after receiving notice from the County's Transportation Planner that the damage has made a road unsafe.
16. Wildlife corridors shall be established through the preservation of on-site resource protection areas ("RPA") and the supplementation of raised wildlife-compatible fencing in order to establish a minimum of three (3) passages, each of which each shall cross the entirety of the site to allow small wildlife unimpeded passage through the Facility, including:
    a. Raised wildlife-compatible fencing shall be used to connect the two disconnected segments of Plentiful Creek RPA on GDP page EX 2-1.

C. Erosion and Sediment Control:

Unless specifically defined in this Section C, all terms and abbreviations used herein shall be as defined in Spotsylvania County Code of Ordinances, Chapters 6A, 8, and 19A.

1. Stormwater Conveyance Channels and Sediment Basins
    a. Stormwater conveyance channels ("SCC") and diversion ditches shall be designed for permanent stormwater control and shall utilize check dams or weirs to control sediment transport. Rock check dams shall be installed in SCC immediately following construction and the establishment of final grade. Check dams shall be installed per the Virginia Erosion and Sediment Control Handbook ("VESCH") or per VDOT detail EC-4 standards and details as applicable. Check dams should be evaluated for sediment accumulation after each runoff-producing storm event and remediated as necessary to maintain function.
    b. SCC, vegetated swales, or diversion dikes shall be installed to divert overland sheet flow or shallow concentrated flow to a stabilized outlet or a sediment trapping facility during construction. When used at the top of a slope, the structure shall protect exposed slopes by diverting storm run-off away from the slopes to a stabilized outlet or sediment trapping device. When used at the base of a slope, the SCC shall protect downslope areas by diverting sediment-laden runoff to a sediment-trapping facility or stabilized outlet.
    c. Sediment basins shall be equipped with measuring devices to accurately determine the sediment capacity of the basin. Sediment shall be removed from basins when accumulation reaches twenty-five percent (25%) of the required wet storage volume for each individual basin. In no case shall sediment cleanout levels be higher than one (1) foot below the bottom of the de-watering device. Remediation crews shall remove sediment or be able to correct any Erosion and Sediment Control ("ESC") issues within twenty-four (24) hours. The daily presence of these crews shall be indicated in the monitoring report. When Sediment Basins or traps are cleaned the intended use and location of the removed material shall be indicated in the monitoring report.
    d. ESC measures shall be installed as a first step in any land disturbing activity area and shall be made functional before upslope land disturbance takes place. Unless subject to stricter standards set out herein, all ESC measures shall at a minimum comply with VESCH and VDOT standards and details as applicable. Unless subject to stricter standards set out herein, the overall ESC plan shall comply with VESCH minimum standards.
2. Monitoring and Reporting
    a. The Operator shall have one Responsible Land Disturber ("RLD") and at least one VDEQ Certified Erosion Control Inspector ("ECI") per land-disturbing activity area. These land-disturbing activity areas shall not exceed 400 acres in aggregate within the Project at any one time. Once land is stabilized, it shall not count towards the 400 acres of disturbed-land. Stabilization and whether an area is fully stabilized shall be determined solely by the Program

Administrator. The RLD and ECI shall both be required to be knowledgeable of environmental permit compliance requirements, be experienced in ESC and Stormwater Management Best Management Practice installation, operation, and maintenance requirements. The RLD will also keep a daily log of activity documenting all Facility activities, including, but not limited to, construction, environmental permit compliance and corrective measures implemented, site visitors (i.e. non-Project staff), waterbody and wetland crossings, and ESC installation and maintenance activities.

b. The RLD shall provide e-reporting to a central File Transfer Protocol ("FTP") site to which the Program Administrator shall be granted access. Reports will be submitted no later than next day following any inspections and shall include the inspection report for each disturbed area of development. Site inspections and reports shall be conducted and reported at a minimum as required by the Virginia Stormwater Management Program ("VSMP") permit. Any corrective actions done in the field shall be e-mailed to the Program Administrator within twenty-four (24) hours of completion.

c. Post-rainfall event inspections shall be required for any runoff-producing event (equal to or greater than one quarter (0.25) inches of rain within a twenty-four (24)-hour time period) and shall be maintained on site and logged in an e-report uploaded to a central FTP server to which the Program Administrator shall be granted access. An ECI shall evaluate erosion control measures and sediment basins to determine if maintenance is required. Any remediation that is required shall be performed immediately and reported to the Program Administrator within twenty-four (24) hours.

d. Water quality testing shall occur through the use of a stream gauge, which collects data on rainfall, turbidity and sediment loads, and pollutant loads. These gauges shall be placed at each intake and discharge point on the site, as determined by the Program Administrator. The testing shall be reported in a monthly Water Quality Discharge Report which shall provide a summary of marginal increases or decreases of the measurements.

3. Site Stabilization Conditions

a. Windrows, filter socks, or slope breaks shall be constructed interior to array fields using soil, organic material, or mulch to reduce runoff velocity and sediment. These devices shall be a minimum six (6) inches in height above final grading. These devices shall be installed parallel to slope with a maximum spacing of 200 feet, or as needed based on slope and drainage area. These devices shall be maintained during site stabilization process and may remain during operation.

b. Sediment barriers such as silt fences, mulch berms, or brush barriers shall be used to temporarily intercept and detain small amounts of sediment from disturbed areas of limited extent and to decrease the velocity of sheet flows. Temporary sediment barriers shall be installed at the base of slopes adjacent to road crossings until disturbed vegetation has been reestablished.

c. Sediment barriers shall be inspected daily by the Operator in accordance with Virginia Erosion and Sediment Control Program ("VESCP") and VSMP guidelines to identify any damage incurred during construction and after each runoff-producing rainfall as defined in C.2.c herein. The inspection reports shall be emailed to the Program Administrator within twenty-four (24) hours of a qualifying rainfall event. Sediment barriers that are not functioning properly must be cleaned and restored to good working condition or replaced immediately.

d. All disturbed soils shall be seeded and temporarily stabilized within seven (7) days after final grade is reached on any portion of the Property. Seed mixes used for permanent stabilization shall provide self-propagating, low maintenance groundcover that will minimize erosion and sedimentation while providing wildlife and pollinator habitat benefits.

e. Drill seeding shall be used as the primary mechanism for installation of seed. In areas where access is limited, hydroseed or spraying of seed is an approved method of application. In areas that are drill seeded, mulch shall not be at a depth which inhibits germination, as field-determined. All seeding installation, bed preparations, seed mixes, lime, fertilizer, and mulch shall meet VESCH minimum standards and specifications for permanent and/or temporary seeding as applicable.

f. Slopes at a grade of thirty-three percent (33% (3:1)) or steeper shall be stabilized with steep-slope soil stabilization blankets or erosion-control fabric, such as bonded fiber blankets or jute thatching. The blanket shall be nontoxic to vegetation and to the germination of seed and shall be entwined and anchored to the slope.

D. Burning and Fire, Rescue, and Emergency Management:

1. The Operator shall follow the policies and procedures contained in the "Emergency Response Plan – Construction", dated November 19, 2018, attached hereto as "Exhibit C" and incorporated herein by reference, throughout the course of the Facility's construction. To the extent the "Emergency Response Plan – Construction", dated November 19, 2018 is contrary to the conditions herein, as determined solely by the County, the conditions herein shall supersede and control.
2. The burning of timber waste shall be limited to no more than fifty percent (50%) of the timber waste produced by the construction of the Facility to include, but not be limited to, all clearing and grading of the Property. This shall be evidenced by a report submitted every thirty (30) days to the Zoning Administrator detailing the amount of timber waste burned and the amount of timber waste mulched or disposed of offsite over the previous thirty (30) days. The burning of any other matter shall be prohibited.
3. The burning of timber waste shall be done only if via open pit incineration using incinerator 2018 model T-300 Trench burner or newer, in accordance with the manufacturer's recommendations, a copy of which shall be provided to the Fire

Marshal. Open pit incineration shall be done in accordance with the above-referenced Emergency Management Plan - Construction, except that any open pit incineration shall be set back a minimum of 2,000 feet from any boundary line of the Property. Trenches shall be maintained at depths in accordance with the trench burner specifications and such specifications shall be provided by the Operator to the Fire Marshal. The Operator shall be required to demonstrate sufficient access to proposed trench pit locations for Fire, Rescue, and Emergency Management ("FREM") vehicles prior to the County issuance of any burning permit. Sufficient access shall be determined by an inspection from the Fire Marshal or designee.

4. The Operator shall follow the policies and procedures contained in the "Emergency Response Plan – Operations", prepared by sPower dated November 19, 2018 attached hereto as "Exhibit D" and incorporated herein by reference. To the extent the "Emergency Response Plan – Operations", prepared by sPower and dated November 19, 2018 is contrary to the conditions herein, as determined solely by the County, the conditions herein shall supersede and control.
5. The Operator shall follow the policies and procedures contained in the "Site Specific Safety Plan – Construction", dated November 19, 2018 attached hereto as "Exhibit F" and incorporated herein by reference. To the extent the "Site Specific Safety Plan – Construction", dated November 19, 2018 is contrary to the conditions herein, as determined solely by the County, the conditions herein shall supersede and control.
6. The Operator shall install signage within the Facility and provide to the Fire Chief a Wayfinding Map that shows each road segment within the Facility with a designated name and/or identifier and each array with an individual identifier prior to the approval of any site plan or land disturbing permit.
7. All roads within the Property shall be designed, planned, and constructed for adequate FREM access as determined by the Fire Chief based on all applicable standards and regulations at the time of site plan review. All roads within the Property shall be constructed pursuant to the International Code Council Section 503 for adequate FREM access. Road aggregate material shall be placed in accordance with the requirements of the applicable specifications governing the type of material or construction being used and shall be compacted at optimum moisture, within ± two (2) percentage points of optimum per Appendix C of VDOT's Road & Bridge Specifications.
8. All internal crossings shall be permanent and be designed to a minimum of FAST Act standards for EV2 and EV3 class vehicles, with a rating defined as H-20 per the VDOT IIM-S&B-86.1 guidance document.
9. As each portion of the Facility becomes operational the Operator shall install and maintain video cameras throughout said portion, and, upon completion, the entire Facility shall be covered by comprehensive remote surveillance. The cameras shall be monitored twenty-four (24) hours a day by the Operator for potential security, hazard, and general maintenance concerns. These camera feeds shall be recorded and recordings shall be retained a minimum of six (6) months and shall be made available

upon request in cases of emergency as determined by the County Fire Marshal or the County Sheriff.

10. Two (2) 50,000-gallon water tanks shall be located on the Property and those tanks shall provide off-site access for FREM use in an emergency at a location approved by the Fire Chief. The tanks shall remain at least fifty-percent (50%) full at all times in order to serve potential FREM needs.
11. A minimum twenty-(20) foot-wide fire break shall be maintained around the perimeter of the Property and within the Property between the arrays, inverters, and generators and the Property boundary. Portions of the fire break that are vegetative shall be mowed and maintained to a height of four (4) inches or less. Fire breaks may include surface materials, such as gravel, provided they are devoid of all combustible materials.
12. All timber waste, which is not burned, shall be mulched and utilized onsite or disposed of offsite. The storage of mulched timber waste ("Mulch") on site shall be limited in accordance with the following:
    a. Mulch storage shall be set back a minimum of 500 feet from the Property boundary.
    b. Mulch storage shall not be located within any RPA.
    c. Stored Mulch shall be kept in piles or rows which shall not exceed ten (10) feet in height, fifteen (15) feet in width, and 150 feet in length.
    d. Stored Mulch shall not be compacted.
    e. Piles and rows of stored Mulch must be separated by a minimum of ten (10) feet from any other Mulch pile or row.
    f. Piles and rows of stored Mulch shall be regularly wetted to maintain a minimum fifty percent (50%) moisture content.
    g. Piles and rows of stored Mulch shall be turned or reassembled at least once every ninety (90) days.
    h. Piles and rows of stored Mulch shall be monitored weekly by taking an internal temperature reading at the center of the pile; if Mulch is stored in a row then internal readings shall be taken every twenty (20) linear feet.
    i. Piles and rows of stored Mulch shall be immediately wetted and turned or reassembled when the internal temperature reading reaches a minimum 160 degrees Fahrenheit.
    j. Piles and rows of stored Mulch shall be immediately turned or reassembled when the internal temperature reaches a minimum 140 degrees Fahrenheit.

E. Landscaping, Maintenance, Setbacks, and Buffers:

1. The Operator shall follow the Invasive Species Management Plan which is attached hereto as "Exhibit E" and is incorporated by reference herein. To the extent the Invasive Species Management Plan is contrary to the conditions herein, as determined solely by the County, the conditions herein shall supersede and control.
2. Inverters and generators shall be set back a minimum of 400 feet from the boundary of the Property.

3. No structure, improvement, or equipment, including but not limited to, solar arrays and supporting structures, shall be located within 425 feet of any real property improvement that complies with all legal requirements for residential occupancy ("Residential Structure"). This shall not apply to construction or maintenance equipment, which is temporary in nature, during the periods when it is actively being used during construction or maintenance activities. This setback shall not apply along any boundary shared between the Property and another property owned by the Operator.
4. No structure, improvement, or equipment, including but not limited to, solar arrays and supporting structures, shall be located within 425 feet of the center point of any lot that is the subject of a residential site plan application or is part of an approved residential site plan as of the date the Facility's site plan application is deemed complete by the Department of Planning. This shall not apply to construction or maintenance equipment, which is temporary in nature, during the periods when it is actively being used during construction or maintenance activities. This setback shall not apply along any boundary shared between the Property and another property owned by the Operator.
5. The minimum setback of any structure, improvement, or equipment, including but not limited to, inverters, generators, and solar arrays and supporting structures, from any VDOT right-of-way shall be one hundred (100) feet. This shall not apply to construction and maintenance equipment which is temporary in nature during the periods when it is actively being used during construction or maintenance activities.
6. These setback requirements do not apply to fencing, berms, landscaping, plantings, access roads, bridges, and above-ground utility poles.
7. Fencing shall be to the interior of all berms and re-vegetated buffers with plantings required in the document attached hereto as "Exhibit H."
8. No trees shall be removed from any one hundred-(100) foot setback area or one hundred-(100) foot preserved buffer as shown on Exhibit H except for the removal of non-native species (which is anything not included in the native species list in the County's Design Standards Manual ("DSM")), hand-clearing for safety or the removal of dead or dying trees, or any clearing necessary for ingress/egress or infrastructure connectivity.
9. The shared boundaries between the Property and abutting parcels and between the Property and any VDOT right-of-way shall be screened with berms with plantings, preserved vegetation, re-vegetated areas with plantings, and vegetated areas left to regrow as applicable according to Exhibit H.
10. Plantings required in Exhibit H shall comply with the GDP's Landscape Plan except that to the extent the GDP's Landscape Plan is contrary to the conditions herein, as determined solely by the County, the conditions herein shall supersede and control.
11. Only earth, which is defined as soil, shall be used to create any berm on the Property.
12. Re-vegetated buffers with plantings and berms with plantings required in Exhibit H shall be installed with each phase of the Facility's development during site grading and prior to the driving of pilings within 1,000 feet of the required buffers and berms.

13. A landscaped buffer consisting of a row of compact evergreen trees with a minimum height of six (6) feet every ten (10) feet shall be required between the Operator's Entrance 4 and the adjacent parcel 28A-1-21A.
14. At site plan, a Landscape Architect, licensed and certified in accordance with Virginia Code Title 54.1, shall design all buffers and berms so that they minimize visibility, maximize survivability and stability, and minimize losses from deer or other wildlife consumption.
15. Plant and tree species shall be installed as early as possible following establishment of erosion and stormwater management controls, and shall be selected based upon their ability to provide the desired screening after two (2) years of growth.
16. The Operator shall use a variety of native plants and native evergreen trees, selected from the County's DSM, which are drought tolerant, environmentally friendly, and compatible with local wildlife.
17. If, in the sole discretion of the Director of Planning, supplemental plantings are needed to effectuate the intent of these conditions to provide adequate screening, the Operator shall engage a Landscape Architect, licensed and certified in accordance with Virginia Code Title 54.1, to design such supplemental plantings consistent with the requirements herein.
18. Understory vegetation and seeding shall conform with the County-approved seed list.
19. The landscaping bond as required by Article 6 of the DSM shall be in effect for three (3) years after the planting of landscaping. Because the landscaping is to be done in phases, this bond will not be fully released until the last phase of the landscaping is completed and three (3) years has elapsed from that date.
20. Operator shall be responsible for maintaining all planted trees and shrubs. Operator shall have an Arborist certified by the International Society of Arboriculture inspect all plantings biennially in August to determine which, if any, trees and shrubs require replacement. Operator shall replace such trees and shrubs as indicated by the Arborist and shall submit to the Zoning Administrator by December 31st of that year a report of the Arborist's findings and the replacement plantings installed, if any.

F. Biological:
1. A minimum of a four (4)-person landscaping team with necessary equipment, supplemented by additional staffing and equipment as needed during high-growth rate periods, shall minimize uncontrolled and/or undesired growth.
2. The Operator shall follow the requirements of Exhibit E as applicable to these provisions in F. To the extent the relevant portions of Exhibit E are contrary to the conditions herein, as determined solely by the County, the conditions herein shall supersede and control.
3. Herbicide use shall be limited to non-residual herbicides that break down in the soil within fourteen (14) days.
4. Herbicides and fertilizers shall be applied following manufacturers specifications and shall not be applied during rain, when wind speed exceeds ten (10) miles per hour, or within fifty (50) feet of any surface water body.

5. Fertilizers shall not contain phosphorus, except that fertilizers applied during construction in order to establish vegetative growth may contain phosphorus if determined necessary to support the growth. Fertilizer composition as regulated by Sec. 10.1-104.2 of the Code of Virginia shall be based upon soil testing. All fertilizers shall be applied by a Virginia Department of Agriculture and Consumer Sciences Certified Fertilizer Applicator and fertilizer shall only be applied at rates, times, and by methods that are consistent with standards and criteria for nutrient management promulgated pursuant to Sec. 10.1-104.2 of the Code of Virginia.
6. Pesticides shall be limited to biorational pesticides and shall be applied by a licensed pest control professional.
7. Only biodegradable soap and water may be used for cleaning of solar panels during operation of the Facility.
8. The Operator shall ensure employees are trained to identify the Loggerhead shrike and the Northern long-eared bat, and be instructed to contact the Virginia Department of Game and Inland Fisheries should either species be identified.
9. The Operator shall not plant and shall remove invasive species identified in Virginia Department of Conservation and Recreation's ("VDCR") "Virginia Invasive Plant Species List" and VDEQ's invasive seed in the "Frequently Asked Questions (FAQ) Native vs. Invasive Plant Species for Erosion and Sediment Control" dated April 2017.
10. Seed mixtures shall be developed and identified on the Landscape Plan of the Site Plan based on guidance from VDEQ related to invasive species and utilizing VDCR's Virginia Solar Site Native Plant Finder.
11. The Operator shall spread pollinator supportive seed mixture within a minimum of fifty percent (50%) of new landscape buffers and adopt best management practices to increase pollinator activity during operation of the facility in order to achieve a minimum score of 145 points on VDCR's "Virginia Solar Site Pollinator/Bird Habitat Scorecard" dated March 2018.
12. Rumble Strip Locations shall be in place during construction to reduce the introduction of invasive seeds.

G. Water:

1. The Operator shall only utilize public water during the construction and operations phases of the Facility. No on-site groundwater shall be used during the construction or operation of the Facility. Wells shall only be accessed to perform water testing.
2. Any connection by the Operator to the public water system for bulk use (greater than a single ¾" meter) shall be controlled by the Spotsylvania County Utilities Department ("Utilities Department") in a manner that will not negatively impact the existing distribution system. Said connection shall include a pressure sustaining function and flow control function, with the setting of those functions at the discretion and direct control of the Utilities Department. The County does not guarantee any volume of bulk withdrawal available to the Operator.
3. For the Project, bulk withdrawal from the 531-foot pressure zone as determined by the Utilities Department shall be limited to between the hours of 10 p.m. and 4 a.m.

with a maximum aggregate volume usage of 69,000 gallons per day from October to April and 56,000 gallons per day from May to September.

4. For the Project, bulk withdrawal from an upgraded public water system shall be limited to between the hours of 10 p.m. and 4 a.m. with a maximum aggregate volume usage of 166,000 gallons per day from October to April and 153,000 gallons per day from May to September. Upgraded public water system referenced above shall be defined as increasing the water transmission main size within the 531-foot pressure zone from twelve (12) inches to sixteen (16) inches from the existing Lake Bottom Booster Station to the main 12-inch loop feed within the Fawn Lake Subdivision. This will include all appurtenances (i.e., fire hydrants, pressure reduction valves, etc.) as required by the Utilities Department.

BE IT FINALLY RESOLVED that the Spotsylvania County Board of Supervisors' approval and adoption of any conditions does not relieve the Applicant and/or subsequent owners from compliance with the provisions of any applicable Spotsylvania County Ordinances, rules, regulations, or adopted standards. To the extent anything in this Special Use Permit is less restrictive than the County's Ordinances, or its rules, regulations, or adopted standards, the lessened restriction shall be superseded and the County's Ordinances, or its rules, regulations, or adopted standards shall control and be applicable to the approved use, but the superseded condition shall not be deemed unlawful, unenforceable, or otherwise rendered void so as to void the Special Use Permit as set out below. The Spotsylvania County Board of Supervisors' decision to approve this Special Use Permit is predicated on the Spotsylvania County Board of Supervisors' understanding that the above conditions the Spotsylvania County Board of Supervisors hereby imposes upon this Special Use Permit are valid, lawful, and shall apply to the approved use for the life of the use; therefore, these conditions, independently and in the aggregate, are not severable from the Spotsylvania County Board of Supervisors' action to approve this Special Use Permit. Should any condition imposed by this Special Use Permit be found to be unlawful, unenforceable, or otherwise rendered void, this Special Use Permit shall be void and the use shall be deemed unlawful.

(SEAL) A COPY TESTE:

Aimee R. Mann
Deputy Clerk to the Board of Supervisors

302 N. Main Street
Culpeper, Virginia 22701

UTILITY SCALE SOLAR FACILITY DEVELOPMENT POLICY

WHEREAS, the Code of Virginia (1950), as amended, at Title 67, Section 67-103. Role of Local Governments in Achieving Objectives of the Commonwealth Energy Policy, addresses the regulatory arrangement in the Commonwealth of Virginia as to renewable energy; and

WHEREAS, the General Assembly of the Commonwealth of Virginia has enacted statutes that limit a locality's ability to establish ordinances regarding renewable energy facilities by requiring such ordinances to:

1. Be consistent with the provisions of the Commonwealth Energy Policy pursuant to subsection C of §67-102;
2. Provide reasonable criteria to be addressed in the siting of any renewable energy facility that generates electricity from wind and solar resources. The criteria shall provide for the protection of the locality in a manner consistent with the goals of the commonwealth to promote the generation of energy from wind and solar resources; and
3. Include provisions establishing reasonable requirements upon the siting of any renewable energy facility, including provisions limiting noise, requiring buffer areas and setbacks, insuring limits on mass grading and addressing generation facility decommissioning; and

WHEREAS, Culpeper County will require those requesting to establish utility scale solar energy generation facilities in the A-1 (Agricultural) and RA (Rural Area) Zoning Districts to obtain a conditional use permit, pursuant to Article 17 of the Culpeper County Zoning Ordinance; and

WHEREAS, in accordance with Article 17 of Appendix A of the Culpeper County Code, any solar energy generation facilities found to: 1) Adversely affect the health or safety of persons residing or working in the neighborhood of the proposed use; 2) Be detrimental to the public welfare or injurious to the property or improvements in the neighborhood; or 3) Be in conflict with the purposes of the Comprehensive Plan of the County of Culpeper, will be not be approved under any circumstance; and

WHEREAS, Culpeper County expressly intends to limit "utility scale solar sprawl" in order to preserve farmland, protect historic resources and insure development is compatible with neighboring properties by limiting both the overall number of acres dedicated to this land use in the County and by limiting the size of individual projects;

NOW THEREFORE BE IT RESOLVED that the Board of Supervisors will review renewable energy facility use permit applications on a case-by-case, individual basis in consideration of the factors and criteria set forth in the application submittal. The County reserves the right to collect reasonable building permit fees, plan review fees and other associated fees as needed to properly administer the goals established in this policy; and

BE IT FURTHER RESOLVED that the attached Draft Example Conditions for Renewable Energy Facility Use Permits and the stipulations outlined below shall be used as a guideline in the consideration of all applications for such facilities.

UTILITY SCALE SOLAR FACILITIES – GENERAL GUIDELINES

1. Culpeper County seeks to establish "draft" or "example" conditions for renewable energy facility use permits as an addendum (SEE EXHIBIT A) to this policy to help guide the County's review of and the applicant's submission of any future applications for renewable energy generation facilities. The County shall consider the economic impact of any conditions considered, attendant to the conditional use permit, to be imposed upon the Solar Energy Generation Facility.

2. Studies* reflect that the operation of Solar generation facilities, post-construction, do not pose any identified noise, toxicity, or EMF/Radiation concerns. Thus, each of these factors would unlikely be considered as the sole reason for denial of a conditional use permit.

3. Culpeper County seeks to ensure that any utility scale renewable energy generation facility is consistent with and furthers the goals as found in the most current Comprehensive Plan. Furthermore, Culpeper desires to balance this land use with the various and valuable existing and planned land uses and resources throughout the County and to that end, the following elements, at a minimum, should be considered, studied, researched, and vetted with each and every application for a renewable energy facility:

    A. Culpeper County desires to protect the County's historic properties and resources as identified by balancing those interests with the interests of the solar generation facilities.
        i. Setbacks and buffering should be considered when an application is adjacent to such resource.
        ii. Certain property, because of its historic value, should be discouraged from this land use entirely.
    B. Culpeper County desires to protect and enhance its agricultural and rural heritage and resources.
        i. Among other things size and scale of a renewable energy generation facility should strongly be considered in order to maintain the County's rural viewshed and character.
        ii. Siting of a facility on prime agricultural soils is discouraged. Non-agricultural producing lands or land which is of lower agricultural value should be explored first, e.g. State Land Evaluation and Advisory Council

[1] *For example, based upon "Health and Safety Impacts of Solar Photovoltaics" produced by the NC Clean Energy Center, NC State University, which also cites numerous additional studies and sources.

(SLEAC) and soils classification may be considered in determining agricultural value.

iii. In order to protect the integrity of agricultural soils, mass grading of sites shall be limited to fifty (50) acres at a time.

iv. Facilities on or adjacent to agricultural and forestal district properties shall take into account the impact upon such districts, if any.

v. A plan should be developed with any proposal to minimize any negative visual impact to the greatest extent possible.

C. Culpeper County desires to protect and enhance its economic and employment producers.

D. Culpeper County desires to protect its interests at the Culpeper Regional Airport. Any application for a utility scale solar facility shall include the data necessary to perform an analysis using the Solar Glare Hazardous Analysis Tool (SGHAT) available from the Federal Aviation Administration.

E. All solar panels will be designed to minimize the reflection of light.

4. The applicant shall provide information demonstrating the local economic benefits of the project or a cost/benefit analysis. Prior to the issuance of a land disturbance permit, the Applicant may also enter into a written agreement with the County providing for payments to the County in addition to real estate taxes.

5. The applicant must provide written comments from the relevant electric company regarding the capacity of the transmission lines as part of any use permit application. An applicant can satisfy this requirement by submitting proof of application for interconnection to the electricity system.

6. Adequate bonding shall be required for all phases of all projects, including but not limited to: an Erosion and Sediment Control Bond, Stormwater Management Bond, Construction and Performance Bond, Landscaping Bond, Decommissioning Bond, and Liability Insurance.

7. The applicant shall provide a decommissioning plan, which will be required to be updated every three (3) years to insure (i) that the real property will be returned to its original condition upon closure of any facility, or at the end of its useful life, and (ii) that decommissioned equipment and panels are disposed of appropriately and in an environmentally sound manner. Favor will be given to decommissioning plans that provide for recycling of equipment and panels. In any event, decommissioning shall be guaranteed by cash, commercial surety, letter of credit, performance bond, etc. subject to the approval of the County Attorney and in accordance with any adopted County policy. Favor shall be afforded to surety in the form of cash and letter of credit. Moreover, final reporting at the conclusion of decommissioning will be required before any guarantee is released. Decommissioning surety shall be in place and adequate for the complete decommissioning of the project from its onset until it is decommissioned.

8. Noise, traffic, parking and other impacts are identified with regard to the construction and decommissioning attendant to these projects. Applications for utility scale solar facilities shall address mitigation of impacts not only upon completion of the facility, but also these and other identified impacts occurring during construction and at the time of decommissioning. A traffic and parking plan must be provided with any conditional use permit application. Stormwater management must be specifically addressed as part of any application, at all stages of construction, operation, and decommissioning. During construction, mass grading of an approved site shall be limited to fifty (50) acres disturbed at any given time.

9. Site Plan, Building Permit, Plan Review, and other associated fees will be collected based upon the County fee schedule. Reductions of such fees will not be negotiated.

10. No facility shall be located on a property designated by the Virginia Department of Historic Resources (DHR) as included within a historic battlefield boundary, pursuant to the federal Civil War Sites Advisory Commission *Report on the Nation's Civil War Battlefields* as updated by the National Park Service (SEE EXHIBIT B). Any facility adjacent to designated battlefield lands which were placed in an historic conservation easement prior to application being filed for such facility will be discouraged. Any facility adjacent to a significant historic resource shall have a vegetative buffer pursuant to Article 33-9(c)(4) of the Culpeper County Zoning Ordinance. Screening of historically significant properties and the viewshed for those properties is desired. The County may require screening of any use, or portion thereof, upon determination that the use would otherwise have a direct negative visual impact. Visual impact on property designated as historic by its inclusion in the Comprehensive Plan or as defined by 9VAC15-60-10 (Definitions) of the Code of Virginia as a "Historic Resource" shall be minimized to the greatest extent possible.

11. The cumulative impact of previously approved or permitted sites shall be considered. Specifically, it is intended that approximately 2,400 total acres or 240 megawatts of production serve as an upper target for utility scale solar development, which is representative of the County's footprint on the electrical grid.

    A. The Culpeper County Comprehensive Plan emphasizes the County's commitment to the preservation of agriculture as its primary industry. The limitation of utility scale solar development furthers this goal. A limit of 2,400 acres equates to one percent (1%) of the total land mass of Culpeper County.

    B. Based upon the population projections of the 2015 Culpeper County Comprehensive Plan, the residential consumption of power by 2040 would be approximately 162 MW. It is recognized that solar power produced in Culpeper County will not necessarily be consumed in Culpeper County, nevertheless, the County's own energy needs are a reasonable basis for the limitation of 240 MW of utility scale solar development.

12. The scope or scale of utility scale solar projects will have a direct correlation to numerous factors of concern. These include potential land disturbance, the ability to effectively screen and landscape a project, the traffic and other impacts during the construction process, the ease of decommissioning and other factors. In light of this, any single utility scale solar application should be limited to no more than 300 acres of actual panel installation.

13. Applicants for utility scale solar developments should provide preliminary information as to the phasing of the project, identifying watersheds and specifying the phasing of land disturbance activity in order to comply with the fifty (50) acre limitation in numbers 3 and 7, above. This information should also include proposed Virginia native species of grasses and other plantings which are non-invasive. Invasive non-native species will not be permitted.

14. Use permit conditions for any utility scale solar development shall include provisions to insure that adequate erosion control, stormwater management and building code inspections are insured, potentially through third parties, the cost of which shall be fully covered by the developer of the project. The cost of plan review by third parties shall also be addressed.

15. Applications that include evidence of project viability will be viewed more favorably than those absent such evidence. The following are helpful in determining a project's viability and are encouraged to be included in the applicant's submittal to the County.

    A. Written comments from the relevant electric company regarding the capacity of the transmission lines or other electrical infrastructure as part of any use permit application, e.g., submitting proof of application for interconnection to the electrical system;

    B. Offtake agreement, power purchase agreement, or other communication or document that identifies a clear path to an off taker or purchaser of the electricity generated from the project; and,

    C. Further, preference will be given to projects and agreements that provide for the local use of the electricity being generated.

This Policy is adopted effective October 1, 2019.

Brad Rosenberger

The Honorable Brad Rosenberger
Chairman, Culpeper County Board of Supervisors

ATTEST:

John C. Egertson, Clerk to the Board

Approved as to form:

Bobbi Jo Alexis, County Attorney

EXHIBIT A

Draft Example Conditions for Renewable Energy Facility Use Permits

The following stipulations are suggested as a condition of approval for any utility scale solar facility. These conditions are not all inclusive, as additional conditions may be deemed necessary in order to mitigate impacts based upon specific site conditions. Likewise, the conditions below may need to be modified, or even deleted based upon specific site conditions. Final conditions set for any use permit will be at the sole discretion of the Culpeper County Board of Supervisors.

1. **Use Permit is nontransferable.** This permit shall be granted solely for the subject property for operation of a utility scale solar facility. This conditional use permit shall be binding on any successors, assignees, current or future lessee, sub-lessee, or owner of the renewable energy facility. The permit shall not be assignable to a third party absent the written consent of the Board of Supervisors of Culpeper County. It is important that successors-in-interest be on written notice of the Permit and its terms and conditions.

2. **Access.** Access for inspections shall be accommodated for staff and/or other appropriate County officials with a 24-hour notice to the applicant.

3. **Maintenance of site features.** All site features, including landscaping, fencing, etc. shall be properly maintained throughout the life of the permit. Maintenance of such features may be guaranteed by a surety agreement and a surety acceptable to the Culpeper Attorney as required by the Board of Supervisors. If any structures at the facility site have been determined to be unsafe under the Uniform Statewide Building Code (USBC) by the County's Building Official, said structure 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 structure, as may be lawfully authorized under the USBC.

4. **Submission of site plan.** A site plan in accordance with Article 20 of Appendix A of the Culpeper County Code shall be submitted prior to issuance of any building permits. The County may choose to contract with a third-party plan reviewer to help with this site plan review process. All fees associated with any third-party plan review shall be paid by the applicant or its successors-in-interest.

5. **Decommissioning of facility**. Either at the end of its lifespan or in the event of inactivity for more than two consecutive years, this facility must be decommissioned. All solar panels and pilings shall not be anchored with concrete footings for ease of removal after the useful life of the facility. The decommissioning plan shall include the removal of all surface and subsurface features. The plan shall be updated every three (3) years as necessary.
   a. Notice of inactivity- The applicant or owner shall be responsible for notifying the Zoning Administrator within 30 days of the facility becoming inactive or after it no longer produces electric power for transmission by a public utility. Notification shall be provided in writing.

b. Except for an event of force majeure, if the Facility remains inactive for more than twelve (12) consecutive months, the Permit may be subject to revocation; provided, however, that, if after such 12-month period, Applicant or its financing provider is diligently working to restore the Facility to operation, then, so long as the restoration process remains active, the Permit shall not be revoked in the instance of a force majeure.
c. Decommissioning process- Upon completion of the facility's lifespan or following revocation of the special use permit, the facility shall be decommissioned and the site shall be returned to the condition which existed prior to construction of the facility, including removal of all equipment and debris.
d. Trenches or other borings or excavations made in association with the facility shall be filled and compacted.
e. All wetland protections, natural vegetation, erosion control, and stormwater features shall remain in place.
f. The Applicant or owner shall provide a decommissioning plan to staff and obtain all required permits prior to conducting decommissioning activities.
g. All decommissioning activities shall be completed within nine (9) months of providing notice of inactivity.
h. If the facility is not removed within the specified time herein, the County may cause the removal of the facility, with costs being borne by the project owner, the property owner, or both.
i. Components of the Facility removed from the site as a part of decommissioning shall be handled and disposed of in compliance with all applicable legal requirements (local, state, and federal law and regulations). Applicant shall emphasize the feasible and cost-effective re-use or recycling of components, including any "extended producer responsibility" programs offered by vendors of the particular component, over landfill disposal.
j. In no event, shall any hardware, parts, structures, or any portions of the project that are damaged, replaced, and/or decommissioned be brought to or disposed of in a landfill or solid waste transfer station in Culpeper County.
k. A surety agreement for decommissioning and surety in a form acceptable to the County Attorney shall be submitted prior to the issuance of a construction permit. The surety amount shall be reviewed every 3 years and adjusted according to inflation. The surety agreement and guarantee may also specify that the land owner is responsible for decommissioning in the event that the applicant/project owner fails to perform.

6. **Surety for Decommissioning.** Prior to the issuance of any building permit for the Property, the Applicant shall enter into a surety agreement for decommissioning and post surety in a form acceptable to the County Administrator and the County Attorney in an amount determined appropriate by the Board of Supervisors based on the size and scope of the permitted project.

   a. The surety amount shall be reviewed and adjusted by an independent professional engineer. The independent professional engineer shall be selected and compensated by the Applicant, but selection of the independent professional engineer is conditioned upon and subject to approval by the County Administrator and/or his designee.
   b. The amount of the requisite surety, thereafter, shall be set in an amount equal to a reasonable estimate of the projected gross cost of decommissioning the Facility.

c. Every three (3) years, an independent professional engineer shall review the surety amount and shall determine whether it should be revised, according to inflation and other relevant cost variables to ensure that the posted surety will cover the projected gross cost. Again, the independent professional engineer shall be selected and compensated by the Applicant, but selection of the independent professional engineer is conditioned upon and subject to approval by the County Administrator and/or his designee.
d. The surety document and/or funds shall be released, but only after the decommissioning is complete and the Applicant has submitted a report to the County Administrator and/or his designee demonstrating compliance with all decommissioning requirements to the satisfaction of the County Administrator and/or his designee.

7. **Fire & EMS coordination and training.** The applicant will work proactively with the Director of Emergency Services to develop an Emergency Response Plan which will include an agreed-upon set of procedures and protocols for managing risk of fire and for responding in the event of an emergency at the facility (i) at the time of and during construction, (ii) post-construction and during the course of regular operations, and, (iii) at decommissioning.

   The applicant at a minimum will provide:

   a. Emergency communications direction as well as emergency phone numbers and key points of contact.
   b. Special training for fire and emergency services personnel and a tour of the site to ensure upfront awareness of the site and equipment as well as points of ingress/egress.
   c. Designated shut off procedure and location for equipment shut off.
   d. Maps outlining the location of key equipment such as the location of lockboxes, inverters, transformers, system/electrical cut-off switches and points of ingress/egress at the facility.
   e. The Emergency Response Plan shall be submitted and reviewed in conjunction with the Permit application material and adopted as part of the Permit approval documentation.

8. **Noise.** All construction activities shall be limited to the hours of 8:00 a.m. to 6:00 p.m., Monday-Saturday and will be prohibited on Sundays. This condition shall apply to noise generated during the construction of the facility and to its ongoing operation and maintenance and any replacement of equipment or decommissioning of the facility.

9. **Entrance requirements.** The following conditions shall apply to the property entrances:
   a. The applicant shall obtain all required permits from VDOT and complete all required improvements to the property entrances prior to issuance of a building permit.
   b. In the event that there is damage to the adjoining properties as a result of ingress/egress of construction vehicles, the applicant shall remedy all damage in full prior to issuance of a certificate of occupancy.
   c. Access roads are to be marked with identifying signage.

10. **Landscaping Plan.** The intent of any landscaping plan is to provide buffering, screening of adjacent uses such as residential dwellings, public facilities and or resources, historic properties and resources, and public transportation corridors, etc. The following conditions shall govern the installation of landscaping in accordance with the approved plan:

a. A Preliminary Landscaping Plan shall be submitted, reviewed and approved in conjunction with the Permit review and approval.
b. All landscaping shown on the approved landscaping plan shall be installed and shall be in good condition prior to issuance of a Certificate of Occupancy and prior to beginning production of electric power.
c. In the event that the applicant requires a minor deviation from the approved landscaping plan or site plan, such deviation shall be provided on a revised plan sheet for review and approval by the County Administrator and/or his designee.
d. In areas where there is not at least 50' of a native timber buffer remaining on the project parcel, a minimum of a double row of evergreens will be planted within any required setback and/or buffer area. All native timber buffers are subject to review and approval by the County. The use of native timber and natural screening is preferable. Such evergreens shall be planted, at a minimum, on fifteen (15) foot centers, with rows offset. The evergreens installed shall have an anticipated mature height of thirty (30) to forty (40) feet. The composition of this landscape buffer may be a mixture of evergreens and/or deciduous trees as deemed appropriate by the Board of Supervisors. These evergreens shall be planted during the appropriate time of year, subsequent to the completion of construction. (This requirement may be reduced or waived if agreed to, in writing, by the owner of the adjacent residence, including residences across a public right of way.) The composition and layout above is suggested as a typical planting arrangement, however the County reserves the right to modify this depending on the circumstances.
e. Evergreen plantings shall have a minimum beginning planting height of 6 feet. Any deciduous tree shall have a minimum caliper of two to two and one-half inches measured six inches above final grade at the time of planting.
f. All landscaping will be reviewed by the County following installation, at one-year completion, and as necessary after this to ensure the landscaping is being maintained.
g. A surety agreement for landscape maintenance in a form acceptable to the County Attorney shall be submitted and approved prior to the issuance of any building permits. The amount of the surety shall be determined by an independent landscape architect selected and compensated by the Applicant but approved by the County Administrator and/or his designee. The amount of the surety shall be equal to a reasonable estimate of the amount needed to establish, and following establishment, to maintain the landscaping required by the approved landscaping plan for two (2) years after initial installation. Once the landscaping has been successfully established, the surety amount will be reduced to that needed for two (2) years of maintenance thereafter. The surety will be released only after decommissioning is complete.
h. The County reserves the right to impose conditions on the site plan approval which specify species of landscaping, for example pollinator species.
i. The use of herbicides and pesticides shall be limited or prohibited.

11. **Signage.** No signage of any type may be placed on the facility other than notices, warnings, and identification information required by law. During construction only, limited signage may be permitted to identify the companies performing the construction and to provide notice to the general public.

12. **Security/Fencing.** The facility should be enclosed by security fencing not less than six (6) feet in height. Type of fencing shall be in keeping with the area character as much as possible. For example, board fencing may be a more suitable security fencing which more closely matches area character and/or improves aesthetics. However, any fencing desired shall be required to meet the standards of the National Electric Code and other applicable safety regulations. To the extent possible, all required fencing shall be placed behind planned perimeter landscaping.

13. **Lighting.** Lighting shall be the minimum necessary for safety and/or security purposes and shall use shielded fixtures to minimize off-site glare. Any desired lighting shall comply with Article 32 of the Zoning Ordinance. The full site plan shall include a photometric plan that depicts the location, type, power and predicted lighting levels of each permanent fixture.
14. **Structures.** Any proposed structures shall be of a neutral color so as to reduce visual obtrusiveness. Any supporting electrical and mechanical equipment such as racking for the panels, inverters, etc. must be of a neutral color that is identical to, or closely compatible with, the color of the supporting structure so as to make related equipment more visually unobtrusive
    a. The storage of power generated by the facility is prohibited. No batteries shall be used in conjunction with the facility to store power for electrical transmission.

15. **Acquiring Permits.** Zoning and Building permits must be obtained within 24 months of obtaining this conditional use permit, otherwise the conditional use permit shall be null and void.

16. **Setbacks/Buffers.** A minimum setback of one hundred and fifty (150) feet shall be maintained from any above ground equipment to the nearest property line. This requirement may be reduced or waived if agreed to in writing by the owner of the adjoining property. This area may include the requirement to maintain any existing vegetation and/or fencing that is in place and may require supplementary landscaping. These setback requirements shall not apply to any interior property lines that may exist.

17. **Annual Notice of Activity.** The County will require as practical for the owner of an approved facility to provide an annual statement of activity to the County Administrator and/or his designee. This will help ensure that the facility is still actively producing electricity for the power grid.

18. **Violation of Conditions.** A Notice of Violation shall be sent to the owner of the facility and the landowner if there is evidence that suggests the use in not in conformance with any of the adopted conditions of approval. If violations remain after notice of violation is received, any continued violation of any of the conditions of approval shall be grounds for revocation of the conditional use permit.

19. **Construction Traffic Management Plan.** The Applicant shall submit a proposed construction traffic management plan to the County Administrator and/or his designee for review and approval as part of the full site plan. The construction traffic management plan shall:

a. Provide vehicle and trip estimates, propose steps to manage traffic safely and minimize inconvenience to the travelling public.
b. Provide procedures for communication with area residents about construction and anticipated traffic conditions.
c. Prohibit any personnel associated with the Facility, while working on the construction of the Facility, from parking their vehicles at locations other than the Facility. Provide onsite parking for all associated construction related activities. Offsite parking and use of shuttles from offsite parking areas may be utilized if approved in advance by the County Administrator and/or his designee.
d. Provide for truck deliveries to be avoided during the periods that school buses are scheduled to use the roads in the vicinity of the Facility.

20. Maximum Height of Facility. Except for the collection yard and substation, the solar panels (when at their highest point during operations) and other structures comprising the Facility shall not exceed a height of 12 feet from the ground surface at the location of the particular structure. The County Administrator and/or his designee may approve minor deviations from this limitation as part of the review of the full site plan to account for low-lying areas in which structures higher than twelve (12) feet merely provide a uniform height across an adjacent group of structures and does not materially affect the apparent height of the Facility from off-site locations.

21. Erosion and Sediment Control Plan. The Applicant shall submit prior to the issuance of any land disturbance permits a proposed erosion and sediment control plan in accordance with Chapter 8 of the Culpeper County Code. The erosion and sediment control plan shall:

a. Adhere to the Virginia Erosion and Sedimentation Control Regulations and the Virginia Erosion and Sedimentation Control Handbook (a/k/a the "Green Book").
b. Provide that no topsoil will be removed from the Facility but instead will be used on site to establish ground cover.
c. Incorporate riparian buffers of at least 50 feet from the top-of-bank of all stream segments.
d. Incorporate a protocol developed in coordination with the County Administrator and/or his designee, the Culpeper County Soil and Water Conservation District, and the Virginia Department of Environmental Quality ("DEQ") that specifies the phased construction of designated units of land so that the total area of disturbed land at any one time is appropriately limited given the nature of the construction activities, the size of the Project, the topography and water resources of and in the Project Area, and the erosion and sediment controls to be employed . The protocol will be designed to ensure that ground cover is expeditiously established, and appropriate site stabilization achieved throughout construction.
e. Include sufficient surety to guarantee that funding is available to implement and maintain all required erosion and sediment control measures.
f. Provide for Applicant funding, for the period of construction, and as needed a third-party erosion and sediment control inspector, to be selected and directed by the County Administrator and/or his designee.
g. Final phasing plan shall be fully determined with the submission of the full site plan. No land disturbing activity associated with any phase of the project shall disturb more than 50 acres at a time. Each phase shall be fully stabilized prior to a permit will be issued for the next land disturbance phase.

22. Stormwater Management Program Permit. Prior to the start of construction of the Facility, Applicant shall apply for and obtain from the DEQ a Virginia Stormwater Management Program Permit ("VSMP Permit"), including a proposed Stormwater Pollution Prevention Plan ("SWPPP"), for the construction of the Facility.

23. Vegetation Management Plan. The Applicant shall submit a proposed vegetation management plan for ground cover within the fence lines of the Facility to the County Administrator and/or his designee for review and approval as part of the full site plan, which shall:

Describe in detail the design of the ground cover, which will consist primarily of native grasses and associated low-growing species.

a. Include a general plan and schedule for managing the growth of the vegetation over the operational life of the Facility so as to maintain a neat and clean appearance.
b. Include measures to prevent and control noxious weeds and invasive species.
c. Emphasize mowing and other mechanical means as the primary method of managing vegetation growth.
d. Identify any class of herbicide to be used and provide that use of any such herbicide will be in accordance with its approved label.
e. Demonstrate that the quantity of herbicides expected to be used annually for the Facility will be less than the amounts that generally were used on the agricultural fields hosting the Facility during the 12 months prior to the start of construction.
f. Provide that only biodegradable soap and water, and no other chemicals, may be used to clean the surface of solar panels.
g. Provide for the review by the County Administrator and/or his designee of any proposed significant changes to the vegetation management plan during the operational life of the Facility.

24. Protection of Soils. In addition to using only biodegradable soap and water to clean solar panels and the above limitations on herbicides, Applicant shall take the following steps to ensure the protection of soils from the operation of the Facility:

a. Promptly make an oral report to the County Administrator and/or his designee of (1) any breakage or loss of integrity of any component that has the potential to result in hazardous materials reaching the ground surface; and (2) any spillage of fluid other than water to the ground surface, such as the leakage from an inverter of transformer cooling oil. Within 7 days following the incident, Applicant shall provide a written, follow-up report to the County Administrator and/or his designee that describes in detail the incident, the area affected, and the measures taken by Applicant to respond to and/or remediate the situation.
b. Take representative soil samples from the Project Area prior to land disturbance activities for the project, then once during the first year of operation to establish a baseline of constituents important for agricultural productivity and compare the results to paired samples of those constituents from the same locations taken at the start of decommissioning. Any significant difference that may adversely affect agricultural productivity and that is reasonably attributable to the operation of the Facility shall be addressed as part of Applicant's obligation to return the area to substantially the condition that existed prior to construction.
c. A sealed dry-waste container shall be maintained at the Facility for the disposal of any damaged solar panels.

25. Local Contractor and Job Fairs. No later than ninety (90) days prior to the start of construction of the Facility, the Applicant shall hold at least two (2) contractor and job fairs, one on a weekday evening and one on a Saturday, in Culpeper County. The purpose of the contractor and job fairs shall be to attract qualified construction sub-contractors with operations in Culpeper County and individual job applicants who reside in Culpeper County for the construction or operation of the Facility. The contractor and job fairs shall be advertised in the local newspaper at least two (2) weeks in advance.

26. Emphasis on Local Employment. The Applicant shall, in any request for proposals for the employment of non-specialized services such as but not limited to, landscaping and grounds maintenance, road construction, and similar non-technical services, ensure that its contractors include a requirement to use best commercial efforts to attract and retain companies based in Culpeper County or the Town of Culpeper, or persons residing in either jurisdiction.

27. Road Repair. The Applicant shall repair expeditiously any damage to public roads or related infrastructure caused by the construction traffic for the Facility as required or determined by the County or VDOT, which shall be contemplated and covered by the surety/bonding and the liability insurance policy.

28. Permit Duration. This Permit shall be valid for a specified length of time from the start of commercial operations of the Facility, which shall be the date on which the Facility first delivers non-test energy to the high-voltage transmission system, -- or until hereunder this Permit lawfully terminated or terminated as a matter of ordinance or other law prior to the natural expiration date, whichever is sooner. At the end of the specified amount of time – unless hereunder this Permit decommissioning is lawfully permitted to be required sooner, the Facility shall be deemed to have reached the end of its lifespan and decommissioning shall begin.

29. Reconstruction.

a. This Permit authorizes only the initial construction, operation and decommissioning of the Facility and does not authorize the reconstruction or substantial change in location of the major land-disturbing components of the Facility, such as the collection yard, pilings, racking, roads, buried collection lines, and fencing. Any such reconstruction may be authorized only pursuant to the County's requirements at the time applicable to new projects.
b. This condition does not apply to routine maintenance, repair and replacement of components and does not preclude the wholesale replacement of operating components of the Project not involving significant land disturbance, such as the replacement of operating components of the collection yard, solar panels, inverters, and pyranometers. Any equipment replacement program that will result in significant truck traffic potentially disruptive to neighbors shall be undertaken only after approval by the County Administrator and/or his designee of a traffic management plan and shall be limited to the hours of 8:00 a.m. to 6:00 p.m., Monday through Saturday.

30. Panel Specifications and Composition. At the time of construction, the Applicant shall provide to the County Administrator, with a copy to the County Attorney, a written panel specification disclosure document that includes the composition, toxicological information, and the physical and chemical properties of all of the solar panels being utilized for the Project.

31. Corporate Structure, Associations, and Information.

a. The Applicant upon issuance of the Permit, shall provide written contact information/relational charts to the County Administrator, with a copy to the County Attorney, regarding its business structure and its affiliations, including but not limited to its affiliations, members, parent company, and subsidiaries.
b. Applicant and all successors-in-interest, including current and future owners, lessees, sub-lessees, and permitted assignees shall provide the County Administrator, with a copy to the County Attorney, written notice of changes of ownership within thirty (30) days thereof.

32. Substantial upgrades and/or changes in design and/or operation. Any substantial upgrades or changes made to the design or operation of the solar facility and/or the Project that are planned shall be disclosed to the County Administrator and/or his designee at least (ninety) 90 days before the intended implementation of the upgrades or changes – except as provided herein. Any substantial upgrades and/or changes resulting solely from a bona fide emergency and force majeure shall be disclosed no later than (sixty) 60 days thereafter.

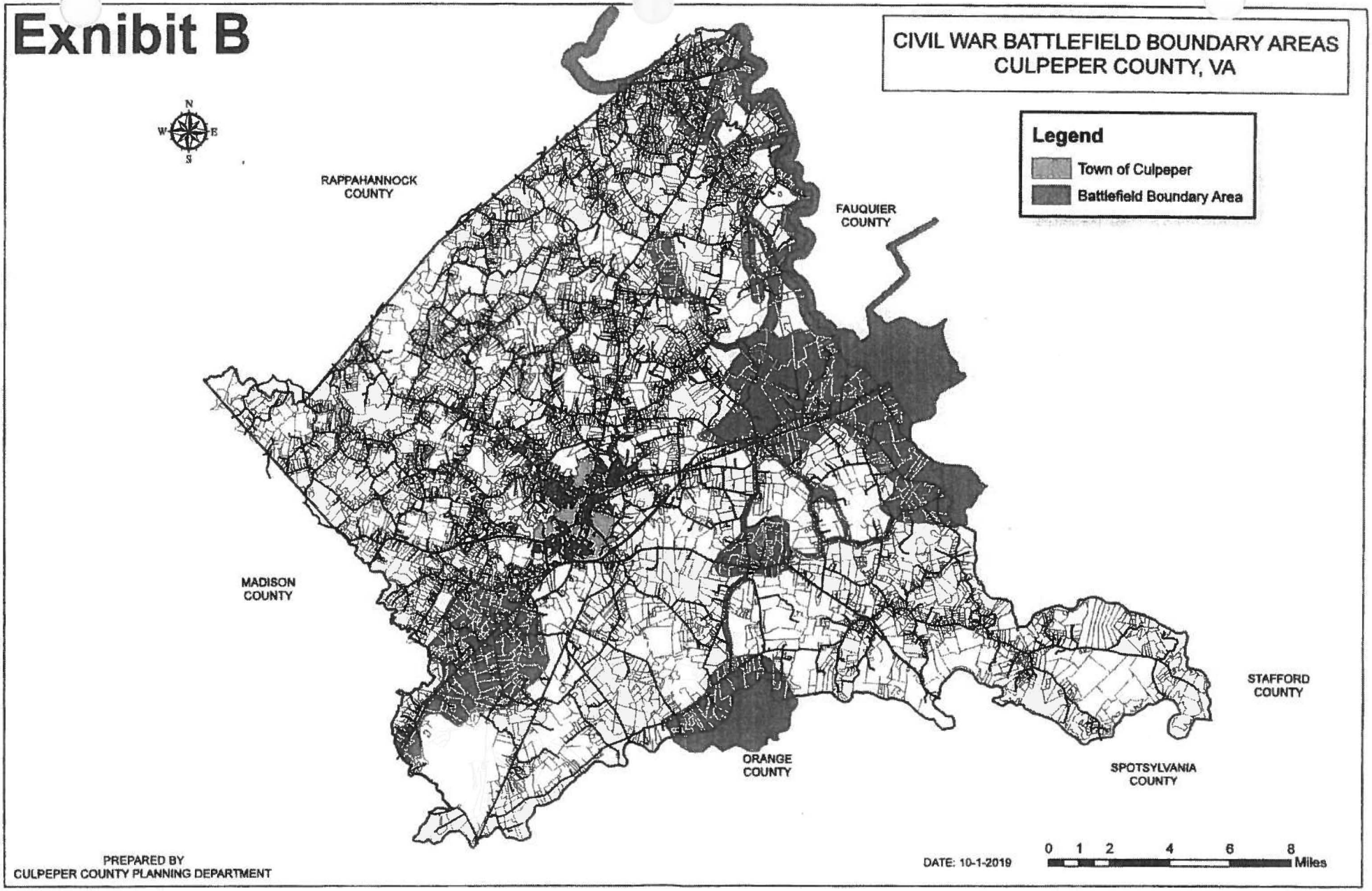
33. Additional Measures to Mitigate Construction Impact. The Applicant shall implement the following additional measures during construction:

a. Maintain all construction-related vehicles in good working order.
b. Provide notice to owners or tenants of homes located on properties adjacent to areas where construction activity will take place when such activity will occur.
c. Designate a specific individual and provide that individual's name and contact information to the County Administrator and/or his designee, to which questions, complaints, or concerns during construction may be directed.
d. Prior to the initiation of construction, mail a notice of construction activity to all property owners whose properties are adjacent to areas on which the Facility will be constructed or who reside along all roads from the nearest primary road to those points that have been identified to the County Administrator and/or his designee as points at which workers, materials, and supplies will be delivered. The notice shall summarize upcoming construction activities, describe the areas in which construction will occur, including the main routes of delivery, and provide the name and contact information of the Facility representative to whom any complaints, concerns, or comments may be addressed.
e. Provide adequate portable sanitation facilities that are located in a manner that facilitates ease of disposal but that are not within one hundred and fifty (150) feet of any property boundary of a parcel on which a home is located and whose owner is not participating in the Facility.
f. Prohibit any personnel associated with the construction of the Facility from overnight lodging at the Facility.

34. Operator's Commercial General Liability Coverage. The Applicant shall secure and maintain at all times public liability insurance for personal injuries, death, and property damage, including damage to public roads, and umbrella insurance coverage for the duration of the Permit in a minimum amount as established by the Board of Supervisors.

a. The Operator shall provide the County Administrator and/or his designee Certificates of Insurance annually, and the amounts of required insurance shall be reviewed every two years for adequacy.

Exnibit B


CIVIL WAR BATTLEFIELD BOUNDARY AREAS
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FAUQUIER COUNTY
MADISON COUNTY
ORANGE COUNTY
SPOTSYLVANIA COUNTY
STAFFORD COUNTY
PREPARED BY
CULPEPER COUNTY PLANNING DEPARTMENT
DATE: 10-1-2019
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Jefferson County | Development Authority

August 19, 2020

The Honorable Commissioner Jane Tabb, President
The Honorable Commissioner Josh Compton
The Honorable Commissioner Caleb Hudson
The Honorable Commissioner Ralph Lorenzetti
The Honorable Commissioner Patsy Noland
Jefferson County Commission
P. O. Box 250
Charles Town, West Virginia 25414

Dear Jefferson County Commissioners:

By majority vote with one abstention at its regular board meeting on August 18, 2020, the Jefferson County Development Authority (JCDA) voted to respectfully submit the following recommendations regarding the proposed amendments to the County Zoning Code to Allow Solar Energy Facilities as Principal Permitted Use.

The JCDA supports the appropriate development and use of alternative energy in Jefferson County. Alternative energy, including solar energy, can help strengthen and enhance the overall economic well-being of businesses, create well-paying jobs, and maintain the high quality of life of residents in our county.

The County Planning staff has assured us that the proposed zoning amendment specifically addresses large-scale solar facilities as a principal land use and, as such, would have no effect on small- or medium-scale solar facilities including residential rooftop solar systems.

Issues and Recommendations

Issue 1: Potential impact of large-scale solar energy facilities such as solar farms.
Envision 2035, Appendix D, Goals & Objectives, Goal 10, Objective 9 states: "Encourage the creation of and use of a variety of energy sources (including renewable energy) within Jefferson County in ways that respect the character of the county."

Recommendation. In keeping with this **Envision 2035** requirement to encourage a variety of energy sources in ways that respect the character of the county, the JCDA recommends that the County Commission should update the zoning code to authorize large-scale solar energy facilities while also establishing guardrails to reduce any potentially negative effects of these facilities on the view shed, storm water runoff, and other environmental matters in Jefferson County. Specifically, the JCDA recommends that the County Commission should take the following actions:

a. Establish that large-scale solar energy facilities would be permitted only as a conditional use in appropriate zoning categories rather than as a permitted use.
b. Develop conditions for approval of such solar energy facilities with input from the public. The American Planning Association has prepared a model zoning ordinance in its PAS Memo, "Planning for Utility-Scale Solar Energy Facilities" that includes reasonable conditions, based on experience in several Virginia jurisdictions.
c. Consider limiting the size of individual large-scale solar energy facilities and also limiting the overall amount of land throughout the county used for such facilities. The County should consider best practices used in other states and counties on this topic.
d. Place reasonable restrictions on the nature of the solar panels (or other energy-producing technology that could be used) at these facilities to protect the view shed and control storm water runoff.
e. Ensure that the zoning code will require that owners of large-scale solar energy facilities, and landowners who lease land for these facilities, must use best practices for controlling and mitigating storm water caused by the facilities.
f. Establish clear requirements and procedures for the county's monitoring and enforcement of any large-scale solar energy facilities that are built in this county. For example, ensure the landowner or renter follows the zoning requirements for setbacks, screening, and so forth. In addition, the County Commission should identify the county office that will be responsible for monitoring these facilities and ensure that the responsible office receives adequate funding to perform this function.
g. Identify potential negative impacts of large-scale solar energy facilities on the county's public safety response capabilities and indicate the specific actions the County Commission will take to mitigate the negative impacts.

Issue 2: Educate county residents and businesses on placing solar energy facilities on their property.
It is important that county residents and businesses have clear information on the benefits and potential challenges with placing large-scale solar energy production facilities on their property and on leasing their property to others for this purpose.

Recommendation.
The JCDA recommends that if the proposed zoning amendment is adopted, the County Commission should establish educational programs to help landowners determine whether to lease their land for solar farms. The education programs should include such topics as:

a. How to determine whether a parcel of land is better suited for this purpose rather than an agricultural purpose;
b. Landowners' potential liability for leasing land to an energy producer. This might include, for example, the landowners' liability for administering a "decommission plan" of the solar farm on their property including in the case of when the solar producer does not follow the decommissioning requirements or storm water requirements.

The JDCA is eager to collaborate with the County Commission to increase the availability and production of alternative energy in the county, as outlined in the Envision 2035 document. To this end, the JCDA

will examine opportunities and challenges with the development of small and medium-size alternative energy facilities in Jefferson County (such as rooftop solar installations and cooperative arrangements where a group of landowners jointly generate solar energy to serve multiple houses). In addition, the JCDA also supports legislative proposals to authorize Power Purchase Agreements (PPA) which are necessary for the development of smaller facilities and more efficient rooftop systems. The availability of PPAs in West Virginia and in this county would be very helpful in expanding the renewable energy industry and would produce many well-paying jobs for county residents. Please see the JCDA's letter to state legislators in support of PPA, as attached.

As a next step, JCDA is planning to facilitate a public dialogue to inform the public about renewable energy options and to gain resident input on the types of alternative energy production that could be appropriate in Jefferson County.

Sincerely,

Neil R. McLaughlin, President

Attachment:
Correspondence dated January 20, 2020, from the JCDA to State Legislators in Support of S.B. 611, a proposal to authorize power purchase agreements in West Virginia.

RECEIVED
February 2, 2021
Jefferson County, WV
Office of Planning & Zoning

February 2, 2021

Planning Commissioners:

Consider the following additions to Section 8.20A.2:

e. intended earthwork that would alter the natural topography;
f. compatibility of the project with the surrounding area in terms of land use and visual appearance;
g. impact on wildlife population and endangered species;
h. proposed construction entrance locations.

This is the same or similar information which the developer is required to file with the PSC.

Thanks,
Doug Rockwell

IDEAS for
Will and Nathan

I

A solar energy facility may locate in the following zoning districts:

1) As a Principal Permitted Use in those parts of the Major Industrial, Light Industrial, Industrial/Commercial, General Commercial, Highway Commercial, Residential/Light Industrial/Commercial, Residential Growth and Rural Districts within the Urban Growth Boundary and Preferred Growth Areas as shown on the Future Land Use Guide of the Envision Jefferson 2035 Comprehensive Plan.

2) As a Conditional Use in the Rural District outside of the Urban Growth Boundary on any parcel of land which existed before July 1, 2020 and is within 500 feet of an existing electric transmission line with a capacity of at least 138 K.V. The conditional use shall be subject to review and approval by the Board of Zoning Appeals in accordance with Section 6.3 of this Ordinance.

II

- One of the highest priorities of the Plan is to preserve agricultural activity, rural landscape and heritage. (p. 36)

- Non-agricultural/non-residential related rural CUP's shall only be proposed on a small portion of a rural property to help preserve farmland and open spaces and continued agricultural operations. (p. 74) See p. 37 also.

- It is important that viable existing farmland be protected. (p. 34).

- A non-agriculturally related commercial use is allowed in the Rural District by CUP if (1) the use is agriculturally and rurally compatible in scale and intensity, (2) poses no threat to public health, safety and welfare and (3) the use helps preserve farmland and open spaces and continued agricultural operations. (Goal 8-5.b p. 77)

Suggestion:

Site Size - Rural District

A solar energy facility in the Rural District outside of the Urban Growth Boundary may only be located on a tract or parcel of land which existed before July

Submitted by Doug Rockwell RE: ZTA 19-03

1, 2020 and shall occupy no more than ~~33 1/3%~~ 50% of the said tract or parcel nothwithstanding the size of the parcel of land. Transfer or assignment of development rights between parcels or tracts of land is prohibited unless the parcels or tracts are owned by the same individual or entity and have a shared boundary.

III

Transferable

The zoning certificate or permit shall be granted solely for the subject property for operation of a solar energy facility and shall terminate when the facility is decommissioned. The certificate or permit shall not be assigned to a third party absent the written consent of the County Commission of Jefferson County.

Height

Inverters and solar panels, measured from the grade of the ground on which the structures sit to their highest possible point, shall not exceed a height of ten (10) feet.

Panel Specifications

At the time of construction, the Applicant shall provide to the Zoning Administrator, a written panel specification disclosure that includes the composition, toxicological information and the physical and chemical properties of the solar panels being utilized for the facility.

Setback

A solar energy facility, including fencing, must be a minimum of 200 feet from all property lines and State Road rights of way.

Landscape Buffer

Appearance and visual impact shall be minimized by a buffer and greenspace, including evergreen trees around the solar energy facility. The trees shall be 6 feet in height when planted and likely to reach a height of 20 feet in maturity. The trees shall be planted every 15 linear feet.

Agricultural and Rural Economy Recommendations (Goal 8)	
1.	Support West Virginia's and Jefferson County's "Right to Farm" policies which protect the rights of existing and future farms and farmers by developing zoning standards, other legislation, and educational programs designed to reduce potential conflicts arising from the proximity of agriculture to residential development (State Code § 19-19; Section 4.5 of the County's Zoning Ordinance).
	a. Identify and utilize a wider variety of funding sources that could serve to expand the County's farmland protection program.
	b. Create an educational pamphlet informing developers, realtors, and potential homeowners of the offsite impacts of living adjacent to farming activities.
2.	Enact Zoning Ordinance provisions to reduce the intensity of residential development in the Rural zone, other than by clustering, thereby protecting and increasing the investment potential and attractiveness of the agricultural lands for families, entrepreneurs, and businesses.
	a. Decrease the problems of rural traffic volume and the need for additional costly public infrastructure services in rural areas while conserving areas of the Rural zone for agricultural uses and the rural economy through support for rural cluster development vs large subdivisions of new home growth.
3.	Support the rural economy by amending the Subdivision Regulations to establish rural business site plan standards to include:
	a. performance criteria, including compatible size, scale, use, intensity, traffic capacity limits, employee limits, site design standards (i.e. buffering, siting), and standards that protect public health, safety, and welfare; and
	b. the adaptive reuse of existing historic and agricultural structures.
4.	Collaborate with the County's agricultural community to assess the current land use regulations and determine what opportunities for agriculture might currently exist and what additional opportunities might be able to succeed in Jefferson County.
5.	Amend the Zoning and Land Development Ordinance to permit additional non-residential rurally compatible uses.
	a. Incorporate into the zoning provisions innovative agricultural uses including the creation of standards which permit flexibility in the sale of farm products and related auxiliary products.
	b. Amend local land use regulations to permit non-agriculturally related commercial uses by the Conditional Use Permit (CUP) process in the Rural zone if the use is agriculturally and rurally compatible in scale and intensity, poses no threat to public health, safety, and welfare, and if the use helps to preserve farmland and open space and continue agricultural operations.

	c. Require that new non-rural commercial uses that are not compatible with the dominant agricultural land use pattern locate only in the Urban Growth Boundaries (UGBs) and Preferred Growth Areas (PGAs) as identified by the future land use recommendations of this Plan.
6.	Coordinate with local businesses and the Jefferson County Development Authority (JCDA) to brand and market Jefferson County farms and products by identifying and linking potential partnerships and matching suppliers with potential local and regional markets.
	a. Conduct market research on high-value agricultural products, ancillary farm businesses, and other rural economic uses such as farm agri-tourism, retreats, and country inns;
	b. Develop and expand, in conjunction with the Jefferson County Convention and Visitors Bureau, brand identification of Jefferson County farm products;
	c. Provide more alternatives to promote rural tourism and rural land uses.
7.	Work with Jefferson County's agricultural community to effectively distribute local agricultural products and encourage the growth of the market for local products.
	a. Facilitate the establishment of year round marketing outlets to support the farm community, such as farmers' markets or a product distribution center;
	b. Encourage the expansion of off-site farmers' markets to provide marketplaces for farmers and artisans to sell their goods within a variety of Jefferson County commercial venues;
	c. Promote products to Jefferson County based businesses.
8.	Coordinate with key agricultural and rural stakeholders to identify ways to expand marketing and value added production activities for farmers and artisans on their properties in rural areas of Jefferson County.
	a. Amend existing regulations in order to identify and facilitate ways to allow the sale of items grown, processed, crafted, or manufactured in Jefferson County on farms other than the farm where the product originated.
	b. Develop a streamlined process for such uses when there are minimal impacts to surrounding neighbors.
	c. Expand and improve high speed Information Technology (IT) connections in rural areas of Jefferson County with local internet or advanced technologies providers to enable residents to run businesses from home or to telecommute.
9.	Collaborate with the local artisan community and Jefferson Arts Council to review and amend the local land use regulations to promote and enhance the viability and livelihood of artisans in the rural areas of Jefferson County.
	a. Encourage local non-profit organizations and local and regional economic development agencies to create a regular forum where all County artisans, businesses, and members of the non-profit and arts communities can meet to network and collaborate.

Urban Level Development Recommendations (Goal 1)	
1.	Recognize the existing vested rights, development entitlements, and permitted density levels on properties in Jefferson County.
	a. No property's zoning status will be changed as part of this Plan.
2.	Recognize that the County Commission has the authority to make land use decisions including Zoning Map Amendments based upon the finding of consistency with the Future Land Use Guide and the recommendations of this Plan; the County Commission may determine that petitions or decisions for zoning map amendments are consistent with the Comprehensive Plan if any of the following conditions are met after the entire Plan is taken into consideration:
	a. Economic Well-Being of the County; or
	b. Error or Under Scrutinized Property on the Future Land Use Guide; or
	c. Change in Neighborhood; or
	d. Any Other Circumstance that the Governing Body determines should have been considered when drafting the Future Land Use Guide; and/or
	e. Environmental impacts are considered.
3.	Identify opportunities for small area plans and involve key stakeholders.
4.	In coordination with the Jefferson County Development Authority, utility providers, and other agencies, extend natural gas services and alternative energy sources into Jefferson County and encourage the extension of these services into new subdivisions to provide access to alternatives for heating and cooking uses.
5.	Create urban level land uses within the municipalities, UGBs, PGAs, or Villages through rezoning that is consistent with the Plan recommendations.
	a. Direct new urban level residential developments to locate in preferred areas within the municipalities, UGBs, PGAs, or Villages where water and sewer services are available.
	b. Reduce application fees for urban level development located within the areas desired for urban future growth.
	c. Establish a greater variety of zoning district options (in commercial, residential, and mixed-use zoning categories) that adhere to predictability of land use options and outcomes based on the Plan recommendations.
	d. Consider the utilization of alternatives to use-separated (Euclidean) zoning within the UGB and PGA, such as the SmartCode adopted by the City of Ranson or performance based zoning to achieve the desired land used goals.
	e. Update the County's zoning regulations in a way that balances flexibility of use for property owners and developers while preserving the quality of life for residents.

Jefferson County | Development Authority

August 19, 2020

The Honorable Commissioner Jane Tabb, President
The Honorable Commissioner Josh Compton
The Honorable Commissioner Caleb Hudson
The Honorable Commissioner Ralph Lorenzetti
The Honorable Commissioner Patsy Noland
Jefferson County Commission
P. O. Box 250
Charles Town, West Virginia 25414

Dear Jefferson County Commissioners:

By majority vote with one abstention at its regular board meeting on August 18, 2020, the Jefferson County Development Authority (JCDA) voted to respectfully submit the following recommendations regarding the proposed amendments to the County Zoning Code to Allow Solar Energy Facilities as Principal Permitted Use.

The JCDA supports the appropriate development and use of alternative energy in Jefferson County. Alternative energy, including solar energy, can help strengthen and enhance the overall economic well-being of businesses, create well-paying jobs, and maintain the high quality of life of residents in our county.

The County Planning staff has assured us that the proposed zoning amendment specifically addresses large-scale solar facilities as a principal land use and, as such, would have no effect on small- or medium-scale solar facilities including residential rooftop solar systems.

Issues and Recommendations

Issue 1: Potential impact of large-scale solar energy facilities such as solar farms.
Envision 2035, Appendix D, Goals & Objectives, Goal 10, Objective 9 states: "Encourage the creation of and use of a variety of energy sources (including renewable energy) within Jefferson County in ways that respect the character of the county."

Recommendation. In keeping with this **Envision 2035** requirement to encourage a variety of energy sources in ways that respect the character of the county, the JCDA recommends that the County Commission should update the zoning code to authorize large-scale solar energy facilities while also establishing guardrails to reduce any potentially negative effects of these facilities on the view shed, storm water runoff, and other environmental matters in Jefferson County. Specifically, the JCDA recommends that the County Commission should take the following actions:

a. Establish that large-scale solar energy facilities would be permitted only as a conditional use in appropriate zoning categories rather than as a permitted use.
b. Develop conditions for approval of such solar energy facilities with input from the public. The American Planning Association has prepared a model zoning ordinance in its PAS Memo, "Planning for Utility-Scale Solar Energy Facilities" that includes reasonable conditions, based on experience in several Virginia jurisdictions.
c. Consider limiting the size of individual large-scale solar energy facilities and also limiting the overall amount of land throughout the county used for such facilities. The County should consider best practices used in other states and counties on this topic.
d. Place reasonable restrictions on the nature of the solar panels (or other energy-producing technology that could be used) at these facilities to protect the view shed and control storm water runoff.
e. Ensure that the zoning code will require that owners of large-scale solar energy facilities, and landowners who lease land for these facilities, must use best practices for controlling and mitigating storm water caused by the facilities.
f. Establish clear requirements and procedures for the county's monitoring and enforcement of any large-scale solar energy facilities that are built in this county. For example, ensure the landowner or renter follows the zoning requirements for setbacks, screening, and so forth. In addition, the County Commission should identify the county office that will be responsible for monitoring these facilities and ensure that the responsible office receives adequate funding to perform this function.
g. Identify potential negative impacts of large-scale solar energy facilities on the county's public safety response capabilities and indicate the specific actions the County Commission will take to mitigate the negative impacts.

Issue 2: Educate county residents and businesses on placing solar energy facilities on their property. It is important that county residents and businesses have clear information on the benefits and potential challenges with placing large-scale solar energy production facilities on their property and on leasing their property to others for this purpose.

Recommendation.
The JCDA recommends that if the proposed zoning amendment is adopted, the County Commission should establish educational programs to help landowners determine whether to lease their land for solar farms. The education programs should include such topics as:

a. How to determine whether a parcel of land is better suited for this purpose rather than an agricultural purpose;
b. Landowners' potential liability for leasing land to an energy producer. This might include, for example, the landowners' liability for administering a "decommission plan" of the solar farm on their property including in the case of when the solar producer does not follow the decommissioning requirements or storm water requirements.

The JDCA is eager to collaborate with the County Commission to increase the availability and production of alternative energy in the county, as outlined in the Envision 2035 document. To this end, the JCDA

will examine opportunities and challenges with the development of small and medium-size alternative energy facilities in Jefferson County (such as rooftop solar installations and cooperative arrangements where a group of landowners jointly generate solar energy to serve multiple houses). In addition, the JCDA also supports legislative proposals to authorize Power Purchase Agreements (PPA) which are necessary for the development of smaller facilities and more efficient rooftop systems. The availability of PPAs in West Virginia and in this county would be very helpful in expanding the renewable energy industry and would produce many well-paying jobs for county residents. Please see the JCDA's letter to state legislators in support of PPA, as attached.

As a next step, JCDA is planning to facilitate a public dialogue to inform the public about renewable energy options and to gain resident input on the types of alternative energy production that could be appropriate in Jefferson County.

Sincerely,

Neil R. McLaughlin, President

Attachment:
Correspondence dated January 20, 2020, from the JCDA to State Legislators in Support of S.B. 611, a proposal to authorize power purchase agreements in West Virginia.

Planning Department

From: tim ross <trxcel@gmail.com>
Sent: Tuesday, February 2, 2021 4:02 PM
To: Planning Department
Subject: Comments for the February 9, 2021 PC hearing
Attachments: TROSS comments zta19-03 comments.docx

Categories: Planning Commission

Dear Alex, Attached are my comments for the Planning Commission to consider. Thank you very much for distributing them to the PC. Also, I hope that since this is the same amendment as before, that the PC will be provided the comments that had been sent in to them last year.

Sincerely,
Tim Ross

RECEIVED
February 2, 2021
Jefferson County, WV
Office of Planning & Zoning

Comments from Tim Ross on a proposed text amendment to the Jefferson County Zoning and Land Development Ordinance, File #ZTA19-03 to allow Solar Energy Facilities to process as a Principal Permitted Use etc.

I believe that this Ordinance should not be allowed as a Principal Use. It also should not be allowed in Rural zones. The proposed land use is not for a renewable energy source as described in the Jefferson County Comprehensive Plan, but for Solar Exempt Wholesale Generators (EWG) and thus violates the Jefferson County Comprehensive Plan. These EWG are by name and design a commercial, industrial installation that by logic should only be in areas zoned; light or major industrial, Industrial Commercial, or perhaps in those Residential - Light Industrial Commercial areas. In the amendment before you, you will see quotes from the 2035 Comprehensive Plan that explains exactly what the plan means by the term solar facilities. I refer you to pages 83-87 of your packet. The plan provides examples as in the parking shelters at APUS, calls on public buildings to utilize solar, and for legislation to make it easier for homeowners to establish community/neighborhood sized solar facilities. These examples are what the community is expecting by the Plan. Not for EWG that are meant to sell the electricity generated unknown on the wholesale market. Yes, the energy generated can end up in our powerlines, but we would still pay retail rates.

It appears this amendment is trying to get around the Comprehensive Plan by changing the intent of what the plan clearly means for alternative energy by calling an EWG a Solar Energy Facility. Furthermore, the definition of a Solar Energy Facility in the amendment contains references to "Essential Utility Equipment." An EWG is not an "Essential Utility." A renewable Energy Facility is already described by state code, which you should read. Even though paragraph 3a seems to be quoting that state code, an EWG is not a Solar Energy Facility as described by code:

https://www.wvlegislature.gov/Bill_Status/bills_text.cfm?billdoc=SB583%20SUB1%20ENR.htm&yr=2020&sesstype=RS&i=583

You should also familiarize yourself with the following code:

https://www.wvlegislature.gov/wvcode/ChapterEntire.cfm?chap=24&art=2&section=1O#2

Please pay particular attention to paragraph "n." Paragraph "n" is the only paragraph in the code that applies to Solar EWGs. There is no way that solar panels at the APUS parking lot are the same thing as an 800 acre EWG. The PC might wish to engage an attorney with experience with the WV Public Service Commission (PSC) rather to explain the nuances of the code and PSC regulations.

Some other questions that each planning commission member should consider asking:

Is Mr. Dunn still interested in submitting this amendment? Does Mr. Dunn have a contract for installing an EWG on his property? If not, why did Mr. Dunn sponsor this amendment? If Mr. Dunn does not positively state he wants the amendment to continue and has no reason for it to, then the amendment should be withdrawn from consideration because an amendment needs a Jefferson County resident as a sponsor. I don't see anything in the packet that contains any statement by anyone requesting this amendment.

As of February 2, 2020, the only application extant for an EWG in Jefferson County is that submitted by EDF (DBA Wild Hill) to the PSC. Mr. Dunn's land is not part of that application. It appears that EDF is awaiting the approval of this zoning amendment so they can move forward on their EWG if the PSC

approves it. EDF and the landowners associated with their EWG application are the entities that will most immediately profit from this zoning amendment.

Each member of the Planning Commission should publicly state that neither they, nor a company they or family members are associated with, will profit in any way from the passing of this amendment, and/or the creation of an EWG on Mr. Dunn's property, or on any project under review by the PSC. Any member who cannot answer in the negative should recuse themselves from any discussion or approval of this amendment.

This amendment as written was previously approved by the Planning Commission and the Jefferson County Commission and became the genesis of a legal complaint that led to an injunction against the amendment. It was finally vacated by the JCC in a settlement. It would be arrogant and fool hardy to once again approve it in its current form. I encourage you all to ask yourselves and each other as to how and why this amendment was basically judged to be indefensible by the JCC? Logically, a part of this questioning should lead you to find a way that it wouldn't be judged illegal.

If you have paid attention to the hearings and workshops where EDF and Torch Energy participated you heard both companies say that there are only three locations in Jefferson County where EWGs could be sited. If this is so, then why was the original amendment changed from conditional use in Rural to allow EWGs to be sited by right in over 80 percent of the County?

Perhaps there are only three possible locations for EWG in this county at this time, but the amendment you are considering is for all time, and the only people that are down-playing the extent EWGs could cover are those whose livelihood comes from developing them.

If you do believe that EWGs meet the criteria spelled out in the Comprehensive Plan and feel you must approve them then they should only be approved under Conditional Use. Our County, with prime soils and farmland, is too precious to be given up for all time to what amounts to be a cookie cutter process with limited public input. I believe that our country needs to embrace renewable energy and our farmers need to be able to diversify their income. I also believe that there has to be a better way to combine the two industries rather than resorting to an either/or solution. Thank you for considering my comments. I will watch the hearing with much interest.

Planning Department
PlanningDepartment@jeffersoncountywv.org
Alexandra Beaulieu
Zoning Administrator
Jefferson County – West Virginia

RECEIVED
February 2, 2021
Jefferson County, WV
Office of Planning & Zoning

Zoning Ordinance Text Amendment concerning comments of the Solar Amendment to be discussed via the JCPlanning Commission then onto the Jefferson County Commissioners. I understand written comments that are received before 5:00 PM feb 2, 2021 will be included in the agenda packet for the hearing on Feb 9, 2021.

Thank you for the opportunity to submit my comments. I understand the solar amendment had been vacated and a re-write by the JC Planning Commission is expected to be provided to the Jefferson County Commission for vote.

Consideration of the following should be discussed and included for the good of the County, the residents, and businesses regarding solar. Missing information creates misnomers, confusion and distrust of elected and appointed officials charged with leadership for and of our county and state.

1. DEFINITIONS: there are blatant differences - residential solar, commercial solar, solar energy system, solar energy facility, solar farm and exempt/non-exempt wholesale generator(s). Fulfilling an hones definition list is imperative so as to avoid guessing and misrepresentation.

The JC Ordinance does not define the following clearly:

2. Amendment vocabulary that is mis-leading and/or ambiguous. For example “shall” is not either or. It is “must”. Probable, possible, expectation, most likely, and other ambiguous vocabulary.
3. BOND is understood to be provided by a commercial business to cover expenses via promissory contract recorded with the county clerk. However, in the amendment a BOND does not outline the ability of transfer, reinstatement or even a release when the initial business is no longer in place and/or another business steps in. The Bond needs to be included at all phases for a commercial business.
4. Decommission of a solar business identified specifically as an EXEMPT WHOLSALE GENERATOR must be contracted, not to be assumed the original business will be in place at the end of a 20-30-40 year lifetime contract.
5. Notification must include ALL landowners by owner name and street address at ALL easement boundaries, the entire perimeter (no matter the shape) of a project, e.g. solar, to be considered for installation. (notification to “neighbor” is meaningless) Public participation must be transparent.
6. Conditional Use Permit is imperative for the protection of the county, landowners and businesses. Yes, the nick-name “solar farm” is passed around, however the harvested crop is actually a business for exempt wholesale electricity sold to states outside of West Virginia. Jefferson County must realize the tax income at the onset does not provide longevity for the county or the use of the harvested electricity for its own residents. The vacated amendment assumes a solar facility to be a temporary commercial business. Temporary must be defined in a conditional use permit.
7. The vacated amendment states BUFFERING “solar panels that are located within 200 feet of any residence” residence is a structure not an easement boundary line separating the business

perimeter from the owner's structure. Measuring from the solar panel(s) to the owner's structure (their home) is NOT acceptable. Measuring from the boundary line toward the panel(s) is expected. (layman's example, a gas station perimeter is located x feet from a neighboring property line. The gas pump position is not measured from any residence or structure beyond the gas station's footprint perimeter.)

Thank you for including my comments for consideration & dialog when re-writing the amendment. I expect the original amendment will have significant changes and I do not expect the re-submitted vacated amendment to be acceptable.

Respectfully,

Nance Briscoe
(304) 728-2201 Direct
22 Cloverdale Place
Charles Town, WV 25414
nancebriscoe@comcast.net

Planning Department

From: Christine Marshall <balmertmarshall@icloud.com>
Sent: Tuesday, February 2, 2021 3:08 PM
To: Planning Department
Subject: February 2 2021 Public Comment ZTA 19-03 Solar Energy Facilities
Attachments: Untitled 7 1.pdf; ATT00001.htm

Categories: Planning Commission

February 2, 2021

Public Comment on Zoning Text Amendment, ZTA 19-03, to the Jefferson County Zoning and Land Development Ordinance to allow Solar Energy Facilities.

Dear Planning Commissioners,

Thank you for providing the opportunity to comment on the proposed Jefferson County Zoning and Land Development Ordinance text amendment, ZTA 19-03 Solar Energy Facilities (SEF).

I encourage the Planning Commission (PC) to work with the public and independent third party consultants to develop detailed plans on the development of ordinances that allow SEF that are conducive to preserving and enhancing the quality of life for the various communities in Jefferson County (JC); rural, farming, residential growth, business etc. In addition, a thorough examination of the expected long term financial outcome and impact of siting SEF in JC (tax revenue, decommissioning liability and funding, jobs, Power Purchase Agreements, etc.), is critical. Effects on county government, neighboring communities, residential and rural property values, the preservation of farming, scenic and historic landscapes should be evaluated to arrive at a model plan that benefits all citizens of the county as well as the solar energy facility owner.

Possible improvements to the draft text amendment are as follows:

Ordinance p. 39 - Definition of Solar Energy Facility. Please make a distinction and create separate definitions for SEF that are utility scale operations (that sell energy to the wholesale market and provide electricity to customers outside of JC) and small scale systems that provide electricity for the home or facility locally (APUS, hotels, residential homes, etc.).

Ordinance p. 39 - The PC and Jefferson County Commission (JCC) should have in place very detailed plans regarding decommissioning for utility scale SEF. The Decommissioning Plan requirements should also have a funding mechanism in place for future removal and disposal of all equipment and restoration of land to its former condition. The Decommissioning Plan should not make any assumptions that the salvage value will exceed removal and disposal costs. Costs should be evaluated by an independent third party. This will ensure that future taxpayers will not be left to pay for site restoration on thousands of acres in JC.

Ordinance p. 137 - Appendix C - Development of SEF should process under the Conditional Use Permit process in all proposed permitted Zoning Districts, which should include concept and site plans that can be modified specifically to the unique location of the project. This is especially important when considering stormwater management plans, adjacent properties and primary land use in a proposed location.

Ordinance p. 107-111 - Section 8.20.B.2 - Setbacks - a. Solar Panels - I. Front, Side and Rear. Please increase the setback to 200 feet from property lines and add a vegetative buffer between property lines, roads, rights of ways and the fencing that surrounds the SEF primary structures.

Section 8.20.B.3 - Buffering Landscaping, Security and Access. a.&b. - Please require the addition of a 50 foot wide vegetative buffer screen along all property lines. d. Security Fences - please require fences of a minimum height to exclude deer or 8 feet. Please also consider wildlife migration and create corridors to allow for the passage of animals on large tracts of land. For example an 800 acre SEF may be fenced into 8 separate 100 acre parcels or 4, 200 acre parcels and so on. This would allow deer and other wildlife to pass through the site safely and without driving all of the animals to neighboring properties. Consider consulting with the US Fish and Wildlife Service for advise.

Section 8.20.B.4 - Stormwater Management - Stormwater Management Plans (SMP) should be site specific and included in the Site Plan. SEF should not be exempt from providing SMPs.

Section 8.20.B.5 - Decommissioning Plan - a.i. - Please provide more sensitive triggers for initiating the decommissioning process than “ceased producing electricity for a period of 12 months”. Consider adding a measure of electricity produced (percentage) as an end of electricity production. . b.i. - Please develop a specific County Solar Decommissioning Ordinance for utility scale SEF before passing this zoning text amendment and allow the public to review and make Public Comment on this document first. b.ii. - If the JCC or PC does not have the legal authority to require a Decommissioning Bond of utility scale SEF owners, the JCC must reach out to the WV State Legislature to create state law that permits the county government to require Decommissioning Bonds.

Attached is a document that explores in detail aspects to cover when developing utility scale SEF within a county. Contained there in are examples of Ordinances and Zoning requirements. I believe some of these components could be added to Jefferson County’s own Zoning Ordinance document.

Thank you for considering my comments.

Christine Marshall
Jefferson County, WV

PAS MEMO — SEPTEMBER/OCTOBER 2019

Planning for Utility-Scale Solar Energy Facilities

Download PDF version (pdf) (/publications/document/9184153/)

By Darren Coffey, AICP

Solar photovoltaics (PV) are the fastest-growing energy source in the world due to the decreasing cost per kilowatt-hour — 60 percent to date since 2010, according to the U.S. Department of Energy (U.S. DOE n.d.) — and the comparative speed in constructing a facility. Solar currently generates 0.4 percent of global electricity, but some University of Oxford researchers estimate its share could increase to 20 percent by 2027 (Hawken 2017). Utility-scale solar installations are the most cost-effective solar PV option (Hawken 2017).

Transitioning from coal plants to solar significantly decreases carbon dioxide emissions and eliminates sulfur, nitrous oxides, and mercury emissions. As the U.S. Department of Energy states, "As the cleanest domestic energy source available, solar supports broader national priorities, including national security, economic growth, climate change mitigation, and job creation" (U.S. DOE n.d.). As a result, there is growing demand for solar energy from companies (e.g., the "RE100 (http://there100.org/)," 100 global corporations committed to sourcing 100 percent renewable electricity by 2050) and governments (e.g., the Virginia Energy Plan (https://www.dmme.virginia.gov/DE/VirginiaEnergyPlan.shtml) commits the state to 16 percent renewable energy by 2022).

Federal and state tax incentives have accelerated the energy industry's efforts to bring facilities online as quickly as possible. This has created a new challenge for local governments, as many are ill-prepared to consider this new and unique land-use option. Localities are struggling with how to evaluate utility-scale solar facility applications, how to update their land-use regulations, and how to achieve positive benefits for hosting these clean energy facilities.

As a land-use application, utility-scale solar facilities are processed as any other land-use permit. Localities use the tools available: the existing comprehensive (general) plan and zoning ordinance. In many cases, however, plans and ordinances do not address this type of use. Planners will need to amend these documents to bring some structure, consistency, and transparency to the evaluation process for utility-scale solar facilities.

Unlike many land uses, these solar installations will occupy vast tracts of land for one or more generations; they require tremendous local resources to monitor during construction (and presumably decommissioning); they can have significant impacts on the community depending on their location, buffers, installation techniques, and other factors (Figure 1); and they are not readily adaptable for another industrial or commercial use, hence the need for decommissioning.

Figure 1. Utility-scale solar facilities are large-scale uses that can have significant land-use impacts on communities. Photo by Flickr user U.S. Department of Energy/Michael Faria.

While solar energy aligns with sustainability goals held by an increasing number of communities, solar industries must bring an overall value to the locality beyond the clean energy label. Localities must consider the other elements of sustainability and make deliberate decisions regarding impacts and benefits to the social fabric, natural environment, and local economy. How should a locality properly evaluate the overall impacts of a large-scale clean energy land use on the community?

This *PAS Memo* examines utility-scale solar facility uses and related land-use issues. It defines and classifies these facilities, analyzes their land-use impacts, and makes recommendations for how to evaluate and mitigate those impacts. While public officials tend to focus on the economics of these facilities and their overall fiscal impact to the community, the emphasis for planners is on the direct land-use considerations that should be carefully evaluated (e.g., zoning, neighbors, viewsheds, and environmental impacts). Specific recommendations and sample language for addressing utility-scale solar in comprehensive plans and zoning ordinances are provided at the end of the article.

The Utility-Scale Solar Backdrop

In contrast to solar energy systems generating power for on-site consumption, utility-scale solar, or a solar farm, is an energy generation facility that supplies power to the grid. These facilities are generally more than two acres in size and have capacities in excess of one megawatt; today's utility-scale solar facilities may encompass hundreds or even thousands of acres. A solar site may also include a substation and a switchyard, and it may require generator lead lines (*gen-tie* lines) to *interconnect* to the grid (Figure 2).

Figure 2. Components of a solar farm: solar panels (left), substation (center), and high-voltage transmission lines (right). Photos courtesy Berkley Group (left, right) and Pixabay (center).

From 2008 to 2019, U.S. solar photovoltaic (PV) installations have grown from generating 1.2 gigawatts (GW) to 30 GW (SEIA 2019). The top 10 states generating energy from solar PV are shown in Figure 3. For many of these initial projects, local planning staff independently compiled information through research, used model ordinances, and relied on professional networks to cobble together local processes and permit conditions to better address the adverse impacts associated with utility-scale solar.

However, each individual project brings unique challenges related to size, siting, compatibility with surrounding uses, mitigating impacts through setbacks and buffers, land disturbance processes and permits, financial securities, and other factors. This has proven to be a significant and ongoing challenge to local planning staff, planning commissions, and governing bodies.

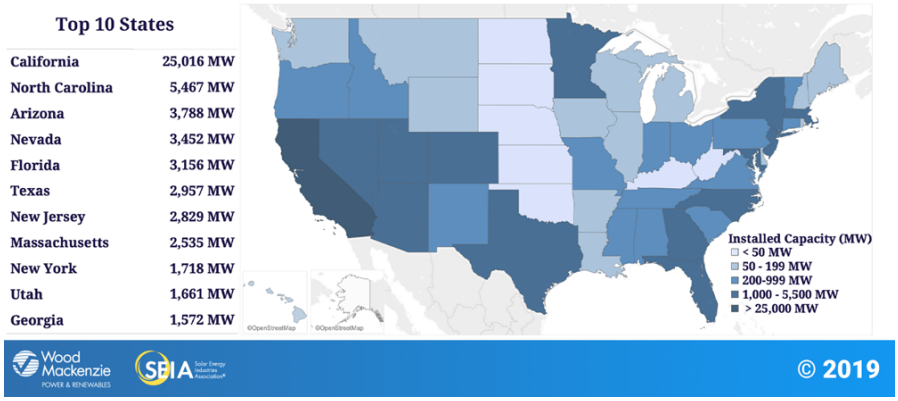

Figure 3. Utility solar capacity in the United States in 2019. Courtesy Solar Energy Industry Association.

Some localities have adopted zoning regulations to address utility-scale solar facilities based on model solar ordinance templates created by state or other agencies for solar energy facilities. However, these ordinances may not be sufficient to properly mitigate the adverse impacts of these facilities on communities. Many of these initial models released in the early 2010s aimed to promote clean energy and have failed to incorporate lessons learned from actual facility development. In addition, the solar industry has been changing at a rapid pace, particularly regarding the increasing scale of facilities. Planners should therefore revisit any existing zoning regulations for utility-scale solar facilities to ensure their relevance and effectiveness.

Rapid growth of utility-scale solar facilities has emerged for rural communities, particularly those that have significant electrical grid infrastructure. Many rural counties have thousands of acres of agricultural and forested properties in various levels of production. Land prices tend to be much more cost-effective in rural localities, and areas located close to high-voltage electric transmission lines offer significant cost savings to the industry. Figure 4 shows the extent of existing electric transmission lines in one rural Virginia county.

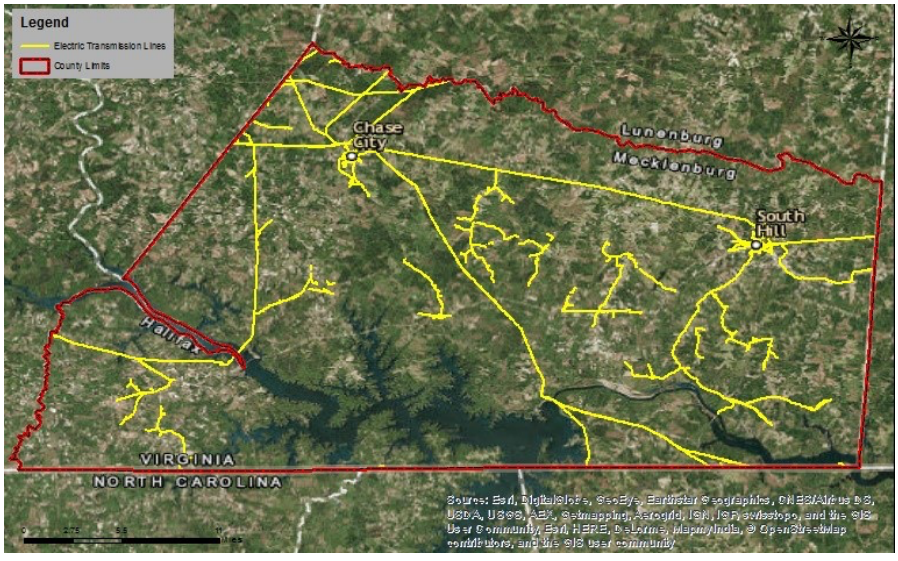

Figure 4. Electric transmission lines in Mecklenburg County, Virginia. Courtesy Berkley Group.

Federal and state tax incentives have further accelerated the pace of utility-scale solar developments, along with decreasing solar panel production costs. These factors all combine to create land-use development pressure that, absent effective and relevant land-use regulatory and planning tools, creates an environment where it is difficult to properly evaluate and make informed decisions for the community's benefit.

Solar Facility Land-Use Impacts

As with any land-use application, there are numerous potential impacts that need to be evaluated with solar facility uses. All solar facilities are not created equal, and land-use regulations should reflect those differences in scale and impact accordingly.

Utility-scale solar energy facilities involve large tracts of land involving hundreds, if not thousands, of acres. On these large tracts, the solar panels often cover more than half of the land area. The solar facility use is often pitched as "temporary" by developers, but it has a significant duration — typically projected by applicants as up to 40 years.

Establishing such a solar facility use may take an existing agricultural or forestry operation out of production, and resuming such operations in the future will be a challenge. Utility-scale solar can take up valuable future residential, commercial, or industrial growth land when located near cities, towns, or other identified growth areas. If a solar facility is close to a major road or cultural asset, it could affect the viewshed and attractiveness of the area. Because of its size, a utility-scale solar facility can change the character of these areas and their suitability for future development. There may be other locally specific potential impacts. In short, utility-scale solar facility proposals must be carefully evaluated regarding the size and scale of the use; the conversion of agricultural, forestry, or residential land to an industrial-scale use; and the potential environmental, social, and economic impacts on nearby properties and the area in general.

To emphasize the potential impact of utility-scale solar facilities, consider the example of one 1,408-acre (2.2-square-mile) Virginia town with a 946-acre solar facility surrounding its north and east sides. The solar project area is equal to approximately 67 percent of the town's area. A proposed 332.5-acre solar facility west of town increases the solar acres to 1,278.5, nearly the size of the town. Due to its proximity to multiple high-voltage electrical transmission lines, other utility-scale solar facilities are also proposed for this area, which would effectively lock in the town's surrounding land-use pattern for the next generation or more.

The following considerations are some of the important land-use impacts that utility-scale solar may have on nearby communities.

CHANGE IN USE/FUTURE LAND USE

A primary impact of utility-scale solar facilities is the removal of forest or agricultural land from active use. An argument often made by the solar industry is that this preserves the land for future agricultural use, and applicants typically state that the land will be restored to its previous condition. This is easiest when the land was initially used for grazing, but it is still not without its challenges, particularly over large acreages. Land with significant topography, active agricultural land, or forests is more challenging to restore.

It is important that planners consider whether the industrial nature of a utility-scale solar use is compatible with the locality's vision. Equally as important are imposing conditions that will enforce the assertions made by applicants regarding the future restoration of the site and denying applications where those conditions are not feasible.

Agricultural/Forestry Use. Agricultural and forested areas are typical sites for utility-scale solar facility uses. However, the use of prime agricultural land (as identified by the USDA or by state agencies) and ecologically sensitive lands (e.g., riparian buffers, critical habitats, hardwood forests) for these facilities should be scrutinized.

For a solar facility, the site will need to be graded in places and revegetated to stabilize the soil. That vegetation typically needs to be managed (e.g., by mowing, herbicide use, or sheep grazing) over a long period of time. This prolonged vegetation management can change the natural characteristics of the soil, making restoration of the site for future agricultural use more difficult. While native plants, pollinator plants, and grazing options exist and are continually being explored, there are logistical issues with all of them, from soil quality impacts to compatibility of animals with the solar equipment.

A deforested site can be reforested in the future, but over an additional extended length of time, and this may be delayed or the land left unforested at the request of the landowner at the time of decommissioning. Clearcutting forest in anticipation of a utility-scale solar application should be avoided but is not uncommon. This practice potentially undermines

the credibility of the application, eliminates what could have been natural buffers and screening, and eliminates other landowner options to monetize the forest asset (such as for carbon or nutrient credits).

For decommissioning, the industry usually stipulates removal of anything within 36 inches below the ground surface. Unless all equipment is specified for complete removal and this is properly enforced during decommissioning, future agricultural operations would be planting crops over anything left in the ground below that depth, such as metal poles, concrete footers, or wires.

Residential Use. While replacing agricultural uses with residential uses is a more typical land-use planning concern, in some areas this is anticipated and desired over time. "People have to live somewhere," and this should be near existing infrastructure typical of cities, towns, and villages rather than sprawled out over the countryside. This makes land lying within designated growth areas or otherwise located near existing population centers a logical location for future residential use. Designated growth areas can be important land-use strategies to accommodate future growth in a region. Permitting a utility-scale use on such land ties it up for 20–40 years (a generation or two), which may be appropriate in some areas, but not others.

Industrially Zoned Land. Solar facilities can be a good use of brownfields or other previously disturbed land. A challenge in many rural areas, however, is that industrially zoned land is limited, and both public officials and comprehensive plan policies place a premium on industries that create and retain well-paying jobs. While utility-scale solar facilities are not necessarily incompatible with other commercial and industrial uses, the amount of space they require make them an inefficient use of industrially zoned land, for which the "highest and best use" often entails high-quality jobs and an array of taxes paid to the locality (personal property, real estate, machinery and tool, and other taxes).

LOCATION

The location of utility-scale solar facilities is the single most important factor in evaluating an application because of the large amount of land required and the extended period that land is dedicated to this singular use, as discussed above.

Solar facilities can be appropriately located in areas where they are difficult to detect, the prior use of the land has been marginal, and there is no designated future use specified (i.e., not in growth areas, not on prime farmland, and not near recreational or historic areas). Proposed facilities adjacent to corporate boundaries, public rights-of-way, or recreational or cultural resources are likely to be more controversial than facilities that are well placed away from existing homes, have natural buffers, and don't change the character of the area from the view of local residents and other stakeholders.

CONCENTRATION OF USES

A concentration of solar facilities is another primary concern. The large scale of this land use, particularly when solar facilities are concentrated, also significantly exacerbates adverse impacts to the community in terms of land consumption, use pattern disruptions, and environmental impacts (e.g., stormwater, erosion, habitat). Any large-scale homogenous land use should be carefully examined — whether it is rooftops, impervious surface, or solar panels. Such concentrated land uses change the character of the area and alter the natural and historic development pattern of a community.

The attraction of solar facilities to areas near population centers is a response to the same forces that attract other uses — the infrastructure is already there (electrical grid, water and sewer, and roads). One solar facility in a given geographic area may be an acceptable use of the land, but when multiple facilities are attracted to the same geography for the same reasons, this tips the land-use balance toward too much of a single use. The willingness of landowners to cooperate with energy companies is understandable, but that does not automatically translate into good planning for the community. The short- and medium-term gains for individual landowners can have a lasting negative impact on the larger community.

VISUAL IMPACTS

The visual impact of utility-scale solar facilities can be significantly minimized with effective screening and buffering, but this is more challenging in historic or scenic landscapes. Solar facilities adjacent to scenic byways or historic corridors may negatively impact the rural aesthetic along these transportation routes. Buffering or screening may also be appropriate along main arterials or any public right-of-way, regardless of special scenic or historic designation.

The location of large solar facilities also needs to account for views from public rights-of-way (Figure 5). Scenic or historic areas should be avoided, while other sites should be effectively screened from view with substantial vegetative or other types of buffers. Berms, for example, can provide a very effective screen, particularly if combined with appropriate vegetation.

Figure 5. This scenic vista would be impacted by a solar facility proposed for the far knoll. Photo courtesy Berkley Group.

DECOMMISSIONING

The proper decommissioning and removal of equipment and other improvements when the facility is no longer operational presents significant challenges to localities.

Decommissioning can cost millions in today's dollars. The industry strongly asserts that there is a significant salvage value to the solar arrays, but there may or may not be a market to salvage the equipment when removed. Further, the feasibility of realizing salvage value may depend on who removes the equipment — the operator, the tenant, or the landowner (who may not be the same parties as during construction) — as well as when it is removed.

Providing for adequate security to ensure that financial resources are available to remove the equipment is a significant challenge. Cash escrow is the most reliable security for a locality but is the most expensive for the industry and potentially a financial deal breaker. Insurance bonds or letters of credit seem to be the most acceptable forms of security but can be difficult to enforce as a practical matter. The impact of inflation over decades is difficult to calculate; therefore, the posted financial security to ensure a proper decommissioning should be reevaluated periodically — usually every five years or so. The worst possible outcome for a community (and a farmer or landowner) would be an abandoned utility-scale solar facility with no resources available to pay for its removal.

Additional Solar Facility Impacts

In addition to the land-use impacts previously discussed, there are a number of significant environmental and economic impacts associated with utility-scale solar facilities that should be addressed as part of the land-use application process.

ENVIRONMENTAL IMPACTS

While solar energy is a renewable, green resource, its generation is not without environmental impacts. Though utility-scale solar facilities do not generate the air or water pollution typical of other large-scale fossil-fuel power production facilities, impacts on wildlife habitat and stormwater management can be significant due to the large scale of these uses and the resulting extent of land disturbance. The location of sites, the arrangement of panels within the site, and the ongoing management of the site are important in the mitigation of such impacts.

Wildlife Corridors. In addition to mitigating the visual impact of utility-scale solar facilities, substantial buffers can act as wildlife corridors along project perimeters. The arrangement of panels within a project site is also important to maintain areas conducive to wildlife travel through the site. Existing trees, wetlands, or other vegetation that link open areas should be preserved as wildlife cover. Such sensitivity to the land's environmental features also breaks up the panel bay groups and will make the eventual restoration of the land to its previous

state that much easier and more effective. A perimeter fence is a barrier to wildlife movement, while fencing around but not in between solar panel bays creates open areas through which animals can continue to travel (Figure 6).

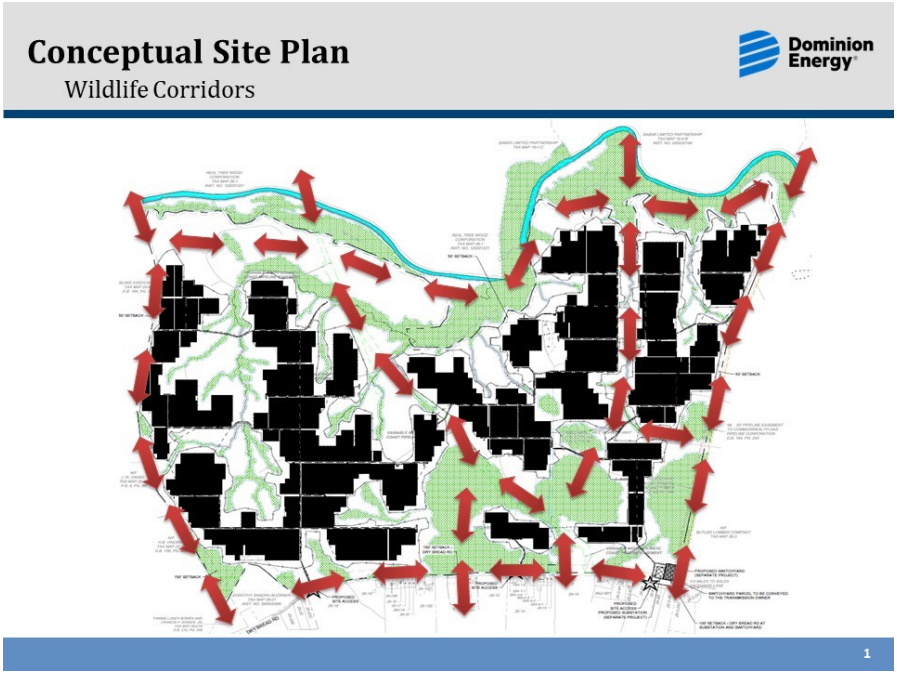

Figure 6. A conceptual site plan for a 1,491-acre utility-scale solar facility showing wildlife corridors throughout the site. Courtesy Dominion Energy.

Stormwater, Erosion, and Sediment Control. The site disturbance required for utility-scale solar facilities is significant due to the size of the facilities and the infrastructure needed to operate them. These projects require the submission of both stormwater (SWP) and erosion/sediment control (ESC) plans to comply with federal and state environmental regulations.

Depending on the site orientation and the panels to be used, significant grading may be required for panel placement, roads, and other support infrastructure. The plan review and submission processes are no different with these facilities than for any other land-disturbing activity. However, such large-scale grading project plans are more complex than those for other uses due primarily to the scale of utility solar. Additionally, the impervious nature of the panels themselves creates stormwater runoff that must be properly controlled, managed, and maintained.

Due to this complexity, it is recommended that an independent third party review all SWP and ESC plans in addition to the normal review procedures. Many review agencies (local, regional, or state) are under-resourced or not familiar with large-scale grading projects or appropriate and effective mitigation measures. It is in a locality's best interest to have the applicant's engineering and site plans reviewed by a licensed third party prior to and in addition to the formal plan review process. Most localities have engineering firms on call that can perform such reviews on behalf of the jurisdiction prior to formal plan review submittal and approval. This extra step, typically paid for by the applicant, helps to ensure the proper design of these environmental protections (Figure 7).

Figure 7. Example of compliance (left) and noncompliance (right) with erosion and sediment control requirements. Photos courtesy Berkley Group.

The successful implementation of these plans and ongoing maintenance of the mitigation measures is also critical and should be addressed in each proposal through sufficient performance security requirements and long-term maintenance provisions.

Cultural, Environmental, and Recreational Resources. Every proposed site should undergo an evaluation to identify any architectural, archaeological, or other cultural resources on or near proposed facilities. Additionally, sites located near recreational, historic, or environmental resources should be avoided. Tourism is recognized as a key sector for economic growth in many regions, and any utility-scale solar facilities that might be visible from a scenic byway, historic site, recreational amenity, or similar resources could have negative consequences for those tourist attractions.

ECONOMIC IMPACTS

This *PAS Memo* focuses on the land-use impacts of utility-scale solar facilities, but planners should also be aware of economic considerations surrounding these uses for local governments and communities.

Financial Incentives. Federal and state tax incentives benefit the energy industry at the expense of localities. The initial intent of industry-targeted tax credits was to act as an economic catalyst to encourage the development of green energy. An unintended consequence has been to benefit the solar industry by saving it tax costs at the expense of localities, which don't receive the benefit of the full taxable rate they would normally receive.

Employment. Jobs during construction (and decommissioning) can be numerous, but utility-scale solar facilities have minimal operational requirements otherwise. Very large facilities may employ one or two full-time-equivalent employees. During the construction phase there are typically hundreds of employees who need local housing, food, and entertainment.

Fiscal Impact. The positive fiscal impact to landowners who lease or sell property for utility-scale solar facilities is clear. However, the fiscal impact of utility-scale solar facilities to the community as a whole is less clear and, in the case of many localities, may be negligible compared with their overall budget due to tax credits, low long-term job creation, and other factors.

Property values. The impact of utility-scale solar facilities is typically negligible on neighboring property values. This can be a significant concern of adjacent residents, but negative impacts to property values are rarely demonstrated and are usually directly addressed by applicants as part of their project submittal.

Solar Facilities in Local Policy and Regulatory Documents

The two foundational land-use tools for most communities are their comprehensive (general) plans and zoning ordinances. These two land-use documents are equally critical in the evaluation of utility-scale solar facilities. A community's plan should discuss green energy, and its zoning ordinance should properly enable and regulate green energy uses.

THE COMPREHENSIVE PLAN

The comprehensive plan establishes the vision for a community and should discuss public facilities and utilities. However, solar facilities are not directly addressed in many comprehensive plans.

If solar energy facilities are desired in a community, they should be discussed in the comprehensive plan in terms of green infrastructure, environment, and economic development goals. Specific direction should be given in terms of policy objectives such as appropriate locations and conditions. If a community does not desire such large-scale land uses because of their impacts on agriculture or forestry or other concerns, then that should be directly addressed in the plan.

Some states, such as Virginia, require a plan review of public facilities — including utility-scale solar facilities — for substantial conformance with the local comprehensive plan (see *Code of Virginia* §15.2-2232 (https://law.lis.virginia.gov/vacode/title15.2/chapter22/section15.2-2232/)). This typically requires a review by the planning commission of public utility facility proposals, whether publicly or privately owned, to determine if their general or approximate locations, characters, and extents are substantially in accord with the comprehensive plan.

Most comprehensive plans discuss the types of industry desired by the community, the importance of agricultural operations, and any cultural, recreational, historic, or scenic rural landscape features. An emphasis on tourism, job growth, and natural and scenic resource protection may not be consistent with the use pattern associated with utility-scale solar facilities. If a plan is silent on the solar issue, this may act as a barrier to approving this use. Plans should make clear whether utility-scale solar is desired and, if so, under what circumstances.

This plan review process should precede any other land-use application submittal, though it may be performed concurrently with other zoning approvals. Planners and other public officials should keep in mind that even if a facility is found to be substantially in accord with a comprehensive plan, that does not mean the land-use application must be approved. Use permits are discretionary. If a particular application does not sufficiently mitigate the adverse impacts of the proposed land use, then it can and should be denied regardless of its conformance with the comprehensive plan.

Similarly, in Virginia, a utility-scale solar facility receiving use permit approval without a comprehensive plan review may not be in compliance with state code. The permit approval process is a two-step process, with the comprehensive plan review preferably preceding the consideration of a use permit application.

THE ZONING ORDINANCE

While a community's comprehensive plan is its policy guide, the zoning ordinance is the regulatory document that implements that policy. Plans are advisory in nature, although often upheld in court decisions, whereas ordinance regulations are mandatory. In addition to comprehensive plan amendments, the zoning ordinance should specifically set forth the process and requirements necessary for the evaluation of a utility-scale solar application.

In zoning regulations, uses may be permitted either by right (with or without designated performance measures such as use and design standards) or as conditional or special uses, which require discretionary review and approval. Solar facilities generating power for on-site use are typically regulated as by-right uses depending on their size and location.

Utility-scale solar facilities, however, should in most cases be conditionally permitted regardless of the zoning district and are most appropriate on brownfield sites, in remote areas, or in agriculturally zoned areas. This is particularly true for more populated areas due to the more compact nature of land uses. There are, however, areas throughout the country where utility-scale solar might be permitted by right under strict design standards that are compatible with community objectives.

To better mitigate the potential adverse impacts of utility-scale solar facilities, required application documents should include the following:

- Concept plan
- Site plan
- Construction plan
- Maintenance plan
- Erosion and sediment control and stormwater plans

Performance measures should address these issues:

- Setbacks and screening

- Plan review process
- Construction/deconstruction mitigation and associated financial securities
- Signage
- Nuisance issues (glare, noise)

The model specific planning and zoning recommendations below outline comprehensive plan and zoning ordinance amendments, the application process, and conditions for consideration during the permitting process.

The Virginia Experience

The recommendations presented in this *PAS Memo* are derived from research and the author's direct experience with the described planning, ordinance amendment, and application and regulatory processes in the following three Virginia localities, all rural counties in the southern or eastern parts of the state.

MECKLENBURG COUNTY

When Mecklenburg County began seeing interest in utility-scale solar facilities, the county's long-range plan did not address solar facilities, and the zoning ordinance was based on an inadequate and outdated state model that did not adequately regulate this land use.

The town of Chase City is located near the confluence of several high-voltage utility lines, and all proposed facilities were located near or within the town's corporate limits. The county approved the first utility-scale solar facility application in the jurisdiction without any conditions or much consideration. When the second application for a much larger facility (more than 900 acres) came in soon after, with significant interest from other potential applicants as well, the county commissioned the author's consulting firm, The Berkley Group, to undertake a land-use and industry study regarding utility-scale solar facilities.

As Mecklenburg officials continued with the approval process on the second utility-scale solar facility under existing regulations, they received the results of the industry study and began considering a series of amendments to the comprehensive plan and zoning ordinance. Though county officials were particularly worried about the potential concentration of facilities around Chase City, town officials expressed formal support for the proposed land use. Other Mecklenburg communities expressed more concern and wanted the facilities to be located a significant distance away from their corporate boundaries. These discussions led to standards limiting the concentration of facilities, encouraging proximity to the electrical grid, and establishing distances from corporate boundaries where future solar facilities could not be located.

Since the adoption of the new regulations, numerous other utility-scale solar applications have been submitted and while some have been denied, most have been approved. Solar industry representatives' concerns that the new regulations were an attempt to prevent this land use have therefore not been realized; these are simply the land-use tools that public officials wanted and needed to appropriately evaluate solar facility applications. Many of the examples and best practices recommended in this article, including the model language provided at the end of the article, are a result of the utility-scale solar study commissioned by the county (Berkley Group 2017) and the subsequent policies and regulations it adopted.

SUSSEX COUNTY

Sussex County is located east and north of Mecklenburg, and the interest in utility-scale solar projects there has been no less immediate or profound. The announcement of the new Amazon headquarters in Arlington, Virginia, along with the company's interest in offsetting its operational energy use with green energy sources furthered interest in this rural county more than 100 miles south of Arlington.

As in Mecklenburg County, local regulations did not address utility-scale solar uses, so public officials asked for assistance from The Berkley Group to develop policies and regulations appropriate for their community. Sussex County officials outlined an aggressive timeline for considering new regulations regarding solar facilities and, within one month of initiation, swiftly adopted amended regulations for solar energy facilities.

The same metrics and policy issues examined and adopted for Mecklenburg County were used for the initial discussion in Sussex at a joint work session between the board of supervisors (the governing body) and the planning commission. Public officials tailored the proposed standards and regulations to the county context based on geography, cultural priorities, and other concerns. They then set a joint public hearing for their next scheduled meeting to solicit public comment.

Under Virginia law, land-use matters may be considered at a joint public hearing with a recommendation from the planning commission going to the governing body and that body taking action thereafter. This is not a typical or recommended practice for local governments since it tends to limit debate, transparency, and good governance, but due to the intense interest from the solar industry, coupled with the lack of land-use regulations addressing the proposed utility-scale solar uses, county officials utilized that expedited process.

No citizens and only two industry officials spoke at the public hearing, and after two hours of questions, discussion, and some negotiation of proposed standards, the new regulations were adopted the same evening.

Since the new regulations have been put into place, no new solar applications have been received, but informal discussions with public officials and staff suggest that interest from the industry remains strong.

GREENSVILLE COUNTY

Greensville County, like Mecklenburg, lies on the Virginia-North Carolina boundary. The county has processed four solar energy applications to date (three were approved and one was denied) and continues to process additional applications. Concurrently, the county is in the process of evaluating its land-use policies and regulations, which were amended in late 2016 at the behest of solar energy interests.

The reality of the land-use approval process has proved more challenging than the theory of the facilities when considered a few years ago. As with other localities experiencing interest from the solar energy industry, the issues of scale, concentration, buffers/setbacks, and other land-use considerations have been debated at each public hearing for each application. Neighbors and families have been divided, and lifelong relationships have been severed or strained. The board of supervisors has found it difficult in the face of their friends, neighbors, and existing corporate citizens to deny applications that otherwise might not have been approved.

County officials have agreed that they do want to amend their existing policies and regulations to be more specific and less open to interpretation by applicants and citizens. One of their primary challenges has been dedicating the time to discuss proposed changes to their comprehensive plan and zoning ordinance. A joint work session between the board of supervisors and planning commission is being scheduled and should lead to subsequent public hearings and actions by those respective bodies to enact new regulations for future utility-scale solar applicants.

Action Steps for Planners

There are four primary actions that planners can pursue with their planning commissions and governing bodies to ensure that their communities are ready for utility-scale solar.

REVIEW AND AMEND THE PLAN

The first, and most important, step from a planning viewpoint is to review and amend the comprehensive plan to align with how a community wants to regulate utility-scale solar uses. Some communities don't want them at all, and many cities and towns don't have the land for them. Larger municipalities and counties around the country may have to deal with this land use at some point, if they haven't already. Local governments should get their planning houses in order by amending plans before the land-use applications arrive.

REVIEW AND AMEND LAND-USE ORDINANCES

Once the plan is updated, the next step is to review and amend land-use ordinances (namely the zoning ordinance) accordingly. These ordinances are vital land-use tools that need to be up to date and on point to effectively regulate large and complex solar facilities. If local governments do not create regulations for utility-scale solar facilities, applications for these projects will occupy excessive staff time, energy, and talents, resulting in much less efficient and more open-ended results.

EVALUATE EACH APPLICATION BASED ON ITS OWN MERITS

This should go without saying, but it is important, particularly from a legal perspective, that each project application is evaluated based on its own merits. All planners have probably seen a project denied due to the politics at play with regard to other projects: "That one shouldn't have been approved so we're going to deny this one." "The next one is better so this one needs to be denied."

The focus of each application should be on the potential adverse impacts of the project on the community and what can be done successfully to mitigate those impacts. Whether the applicant is a public utility or a private company, the issues and complexities of the project are the same. The bottom line should never be who the applicant is; rather, it should be whether the project's adverse impacts can be properly mitigated so that the impact to the community is positive.

LEARN FROM OTHERS

Mecklenburg County's revised solar energy policies and regulations began with emails and phone calls to planning colleagues to see how they had handled utility-scale solar projects in their jurisdictions. The primary resources used were internet research, other planners, and old-fashioned planner ingenuity and creativity.

While it is the author's hope and intent that this article offers valuable information on this topic, nothing beats the tried and true formula of "learn from and lean on your colleagues."

Conclusion

The solar energy market is having major impacts on land use across the country, and federal and state tax incentives have contributed to a flood of applications in recent years. While the benefits of clean energy are often touted, the impacts of utility-scale solar facilities on a community can be significant. Applicants often say that a particular project will "only" take up some small percentage of agricultural, forestry, or other land-use category — but the impact of these uses extends beyond simply replacing an existing (or future) land use. Fiscal benefit to a community is also often cited as an incentive, but this alone is not a compelling reason to approve (or disapprove) a land-use application.

The scale and duration of utility-scale solar facilities complicate everything from the land disturbance permitting process through surety requirements. If not done properly, these uses can change the character of an area, altering the future of communities for generations.

Local officials need to weigh these land-use decisions within the context of their comprehensive plan and carefully consider each individual application in terms of the impact that it will have in that area of the community, not only by itself but also if combined with additional sites. The concentration of solar facilities is a major consideration in addition to their individual locations. A solar facility located by itself in a rural area, close to major transmission lines, not prominently visible from public rights-of-way or adjacent properties, and not located in growth areas, on prime farmland, or near cultural, historic, or recreational sites may be an acceptable land use with a beneficial impact on the community.

Properly evaluating and, to the extent possible, mitigating the impacts of these facilities by carefully controlling their location, scale, size, and other site-specific impacts is key to ensuring that utility-scale solar facilities can help meet broader sustainability goals without compromising a community's vision and land-use future.

Specific Planning and Zoning Recommendations for Utility-Scale Solar

This guidance and sample ordinance language for utility-scale solar facilities is drawn from actual comprehensive plan and zoning ordinance amendments as well as conditional (special) use permit conditions. These examples are from Virginia and should be tailored to localities within the context of each state's enabling legislation regarding land use.

The Comprehensive (General) Plan

The following topics should be addressed for comprehensive plan amendments:

- Identification of major electrical facility infrastructure (i.e., transmission lines, transfer stations, generation facilities, etc.)

- Identification of growth area boundaries around each city, town, or appropriate population center
- Additional public review and comment opportunities for land-use applications within a growth area boundary, within a specified distance from an identified growth area boundary, or within a specified distance from identified population centers (e.g., city or town limits)
- Recommended parameters for utility-scale solar facilities, such as:
- maximum acreage or density (e.g., not more than two facilities within a two-mile radius) to mitigate the impacts related to the scale of these facilities
- maximum percent usage (i.e., "under panel" or impervious surface) of assembled property to mitigate impacts to habitat, soil erosion, and stormwater runoff
- location adjacent or close to existing electric transmission lines
- location outside of growth areas or town boundary or a specified distance from an identified growth boundary
- location on brownfields or near existing industrial uses (but not within growth boundaries)
- avoidance of or minimization of impact to prime farmland as defined by the USDA
- avoidance of or minimization of impact to the viewshed of any scenic, cultural, or recreational resources (i.e., large solar facilities may not be seen from surrounding points that are in line-of-sight with a resource location)
- Identification of general conditions to mitigate negative effects, including the following:
- Concept plan compliance
- Buffers and screening (e.g., berms, vegetation, etc.)
- Third-party plan review (for erosion and sediment controls, stormwater management, grading)
- Setbacks
- Landscaping maintenance
- Decommissioning plan and security

The Zoning Ordinance

In addition to, or separate from, comprehensive plan amendments, the zoning ordinance should be amended to more specifically set forth the process and requirements necessary for a thorough land-use evaluation of an application.

RECOMMENDED APPLICATION PROCESS

Pre-Application Meeting

The process of requiring applicants to meet with staff prior to the submission of an application often results in a better, more complete application and a smoother process once an application is submitted. This meeting allows the potential applicant and staff to sit down to discuss the location, scale, and nature of the proposed use and what will be expected during that process. The pre-application meeting is one of the most effective tools planners can use to ensure a more efficient, substantive process.

Comprehensive Plan Review

As discussed in the article, a comprehensive plan review for public utility facilities, if required, can occur prior to or as part of the land-use application process. Any application not including the review would be subject to such review in compliance if required by state code. If the plan review is not done concurrently with the land-use application, then it should be conducted prior to the receipt of the application.

An application not substantially in accord with the comprehensive plan should not be recommended for approval, regardless of the conditions placed on the use. Depending on the location, scale, and extent of the project, it is difficult to sufficiently mitigate the adverse impacts of a project that does not conform with the plan.

Land-Use Application

If the comprehensive plan review is completed and the project is found to be in compliance with the comprehensive plan, then the use permit process can proceed once a complete application is submitted. Application completion consists of the submission of all requirements set forth in the zoning ordinance and is at the discretion of the zoning administrator if there is any question as to what is required or when it is required.

Applications should contain all required elements at the time of submittal and no components should be outstanding at the time of submittal.

SAMPLE ORDINANCE LANGUAGE

The following sample ordinance language addresses requirements for applications, public notice, development standards, decommissioning, site plan review, and other process elements.

1. Application requirements. Each applicant requesting a use permit shall submit the following:

a. A complete application form.
b. Documents demonstrating the ownership of the subject parcel(s).
c. Proof that the applicant has authorization to act upon the owner's behalf.
d. Identification of the intended utility company who will interconnect to the facility.
e. List of all adjacent property owners, their tax map numbers, and addresses.
f. A description of the current use and physical characteristics of the subject parcels.
g. A description of the existing uses of adjacent properties and the identification of any solar facilities — existing or proposed — within a five-mile radius of the proposed location.
h. Aerial imagery which shows the proposed location of the solar energy facility, fenced areas and driveways with the closest distance to all adjacent property lines, and nearby dwellings, along with main points of ingress/egress.
i. Concept plan.

> The facility shall be constructed and operated in substantial compliance with the approved concept plan, with allowances for changes required by any federal or state agency. The project shall be limited to the phases and conditions set forth in the concept plan that constitutes part of this application, notwithstanding any other state or federal requirements. No additional phasing or reduction in facility size shall be permitted, and no extensions beyond the initial period shall be granted without amending the use permit. The concept plan shall include the subject parcels; the proposed location of the solar panels and related facilities; the location of proposed fencing, driveways, internal roads, and structures; the closest distance to adjacent property lines and dwellings; the location of proposed setbacks; the location and nature of proposed buffers, including vegetative and constructed buffers and berms; the location of points of ingress/egress; any proposed construction phases.

j. A detailed decommissioning plan (see item 5 below).
k. A reliable and detailed estimate of the costs of decommissioning, including provisions for inflation (see item 5 below).
l. A proposed method of providing appropriate escrow, surety, or security for the cost of the decommissioning plan (see item 5 below).
m. Traffic study modelling the construction and decommissioning processes. Staff will review the study in cooperation with the state department of transportation or other official transportation authority.
n. An estimated construction schedule.
o. [x number of] hard copy sets (11"× 17" or larger), one reduced copy (8½"× 11"), and one electronic copy of site plans, including elevations and landscape plans as required. Site plans shall meet the requirements of this ordinance.
p. The locality may require additional information deemed necessary to assess compliance with this section based on the specific characteristics of the property or other project elements as determined on a case by case basis.
q. Application fee to cover any additional review costs, advertising, or other required staff time.

2. Public notice.

a. Use permits shall follow the public notice requirements as set forth in the zoning ordinance or by state code as applicable.
b. Neighborhood 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 project.

i. 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.
ii. The date, time, and location of the meeting shall be advertised in the newspaper of record by the applicant, at least seven but no more than 14 days in advance of the meeting date.
iii. The meeting shall be held within the community, at a location open to the general public with adequate parking and seating facilities which may accommodate persons with disabilities.
iv. The meeting shall give members of the public the opportunity to review application materials, ask questions of the applicant, and make comments regarding the proposal.
v. The applicant shall provide to the zoning administrator a summary of any input received from members of the public at the meeting.

3. Minimum development standards.

a. No solar facility shall be located within a reasonable radius of an existing or permitted solar facility, airport, or municipal boundary.
b. The minimum setback from property lines shall be a reasonable distance (e.g., at least 100 feet) and correlated with the buffer requirement.
c. The facilities, including fencing, shall be significantly screened from the ground-level view of adjacent properties by a buffer zone of a reasonable distance extending from the property line that shall be landscaped with plant materials consisting of an evergreen and deciduous mix (as approved by staff), except to the extent that existing vegetation or natural landforms on the site provide such screening as determined by the zoning administrator. In the event that existing vegetation or landforms providing the screening are disturbed, new plantings shall be provided which accomplish the same. Opaque architectural fencing may be used to supplement other screening methods but shall not be the primary method.
d. The design of support buildings and related structures shall use materials, colors, textures, screening, and landscaping that will blend the facilities to the natural setting and surrounding structures.
e. Maximum height of primary structures and accessory buildings shall be a reasonable height as measured from the finished grade at the base of the structure to its highest point, including appurtenances (e.g., 15 feet). The board of supervisors may approve a greater height based upon the demonstration of a significant need where the impacts of increased height are mitigated.
f. All solar facilities must meet or exceed the standards and regulations of the Federal Aviation Administration (FAA), State Corporation Commission (SCC) or equivalent, and any other agency of the local, state, or federal government with the authority to regulate such facilities that are in force at the time of the application.
g. To ensure the structural integrity of the solar facility, the owner shall ensure that it is designed and maintained in compliance with standards contained in applicable local, state, and federal building codes and regulations that were in force at the time of the permit approval.
h. The facilities shall be enclosed by security fencing on the interior of the buffer area (not to be seen by other properties) of a reasonable height. A performance bond reflecting the costs of anticipated fence maintenance shall be posted and maintained. Failure to maintain the security fencing shall result in revocation of the use permit and the facility's decommissioning.
i. Ground cover on the site shall be native vegetation and maintained in accordance with established performance measures or permit conditions.
j. Lighting shall use fixtures as approved by the municipality to minimize off-site glare and shall be the minimum necessary for safety and security purposes. Any exceptions shall be enumerated on the concept plan and approved by the zoning administrator.
k. No facility shall produce glare that would constitute a nuisance to the public.
l. Any equipment or situations on the project site that are determined to be unsafe must be corrected within 30 days of citation of the unsafe condition.
m. Any other condition added by the planning commission or governing body as part of a permit approval.

4. Coordination of local emergency services. Applicants for new solar energy facilities shall coordinate with emergency services staff to provide materials, education and/or training to the departments serving the property with emergency services in how to

safely respond to on-site emergencies.

5. Decommissioning. The following requirements shall be met:

a. Utility-scale solar facilities which have reached the end of their useful life or have not been in active and continuous service for a reasonable period of time shall be removed at the owner's or operator's expense, except if the project is being repowered or a force majeure event has or is occurring requiring longer repairs; however, the municipality may require evidentiary support that a longer repair period is necessary.
b. Decommissioning shall include removal of all solar electric systems, buildings, cabling, electrical components, security barriers, roads, foundations, pilings, and any other associated facilities, so that any agricultural ground upon which the facility or system was located is again tillable and suitable for agricultural uses. The site shall be graded and reseeded to restore it to as natural a condition as possible, unless the land owner requests in writing that the access roads or other land surface areas not be restored, and this request is approved by the governing body (other conditions might be more beneficial or desirable at that time).
c. The site shall be regraded and reseeded to as natural condition as possible within a reasonable timeframe after equipment removal.
d. The owner or operator shall notify the zoning administrator by certified mail, return receipt requested, of the proposed date of discontinued operations and plans for removal.
e. Decommissioning shall be performed in compliance with the approved decommissioning plan. The governing body may approve any appropriate amendments to or modifications of the decommissioning plan.
f. Hazardous material from the property shall be disposed of in accordance with federal and state law.
g. The applicant shall provide a reliable and detailed cost estimate for the decommissioning of the facility prepared by a professional engineer or contractor who has expertise in the removal of solar facilities. The decommissioning cost estimate shall explicitly detail the cost and shall include a mechanism for calculating increased removal costs due to inflation and without any reduction for salvage value. This cost estimate shall be recalculated every five (5) years and the surety shall be updated in kind.
h. The decommissioning cost shall be guaranteed by cash escrow at a federally insured financial institution approved by the municipality before any building permits are issued. The governing body may approve alternative methods of surety or security, such as a performance bond, letter of credit, or other surety approved by the municipality, to secure the financial ability of the owner or operator to decommission the facility.
i. If the owner or operator of the solar facility fails to remove the installation in accordance with the requirements of this permit or within the proposed date of decommissioning, the municipality may collect the surety and staff or a hired third party may enter the property to physically remove the installation.

6. Site plan requirements. In addition to the site plan requirements set forth in the zoning ordinance, a construction management plan shall be submitted that includes:

- Traffic control plan (subject to state and local approval, as appropriate)
- Delivery and parking areas
- Delivery routes
- Permits (state/local)

Additionally, a construction/deconstruction mitigation plan shall also be submitted including:

- Hours of operation
- Noise mitigation (e.g., construction hours)
- Smoke and burn mitigation (if necessary)
- Dust mitigation
- Road monitoring and maintenance

7. The building permit must be obtained within [18 months] of obtaining the use permit and commencement of the operation shall begin within [one year] from building permit issuance.

8. All solar panels and devices are considered primary structures and subject to the requirements for such, along with the established setbacks and other requirements for solar facilities.

9. Site maintenance.

a. Native grasses shall be used to stabilize the site for the duration of the facility's use.
b. Weed control or mowing shall be performed routinely and a performance bond reflecting the costs of such maintenance for a period of [six (6) months] shall be posted and maintained. Failure to maintain the site may result in revocation of the use permit and the facility's decommissioning.
c. Anti-reflection coatings. Exterior surfaces of the collectors and related equipment shall have a nonreflective finish and solar panels shall be designed and installed to limit glare to a degree that no after image would occur towards vehicular traffic and any adjacent building.
d. Repair of panels. Panels shall be repaired or replaced when either nonfunctional or in visible disrepair.

10. Signage shall identify the facility owner, provide a 24-hour emergency contact phone number, and conform to the requirements set forth in the Zoning Ordinance.

11. At all times, the solar facility shall comply with any local noise ordinance.

12. The solar facility shall not obtain a building permit until evidence is given to the municipality that an electric utility company has a signed interconnection agreement with the permittee.

13. All documentation submitted by the applicant in support of this permit request becomes a part of the conditions. Conditions imposed by the governing body shall control over any inconsistent provision in any documentation provided by the applicant.

14. If any one or more of the conditions is declared void for any reason, such decision shall not affect the remaining portion of the permit, which shall remain in full force and effect, and for this purpose, the provisions of this are hereby declared to be severable.

15. Any infraction of the above-mentioned conditions, or any zoning ordinance regulations, may lead to a stop order and revocation of the permit.

16. The administrator/manager, building official, or zoning administrator, or any other parties designated by those public officials, shall be allowed to enter the property at any reasonable time, and with proper notice, to check for compliance with the provisions of this permit.

Example of Recommended Use Permit Conditions (In Virginia: Conditional Uses, Special Uses, Special Exceptions)

Conditions ([approved/revised] at the Planning Commission meeting on [date])

If the Board determines that the application furthers the comprehensive plan's goals and objectives and that it meets the criteria set forth in the zoning ordinance, then the Planning Commission recommended the following conditions to mitigate the adverse effects of this utility-scale solar generation facility with any Board recommendation for permit approval.

1. The Applicant will develop the Solar Facility in substantial accord with the Conceptual Site Plan dated _____ included with the application as determined by the Zoning Administrator. Significant deviations or additions, including any enclosed building structures, to the Site Plan will require review and approval by the Planning Commission and Board of Supervisors.

2. Site Plan Requirements. In addition to all State site plan requirements and site plan requirements of the Zoning Administrator, the Applicant shall provide the following plans for review and approval for the Solar Facility prior to the issuance of a building permit:

a. *Construction Management Plan.* The Applicant shall prepare a Construction Management Plan for each applicable site plan for the Solar Facility, and each plan shall address the following:

    i. Traffic control methods (in coordination with the Department of Transportation prior to initiation of construction), including lane closures, signage, and flagging procedures.

ii. Site access planning directing employee and delivery traffic to minimize conflicts with local traffic.
iii. Fencing. The Applicant shall install temporary security fencing prior to the commencement of construction activities occurring on the Solar Facility.
iv. Lighting. During construction of the Solar Facility, any temporary construction lighting shall be positioned downward, inward, and shielded to eliminate glare from all adjacent properties. Emergency and safety lighting shall be exempt from this construction lighting condition.

b. *Construction Mitigation Plan.* The Applicant shall prepare a Construction Mitigation Plan for each applicable site plan for the Solar Facility to the satisfaction of the Zoning Administrator. Each plan shall address, at a minimum, the effective mitigation of dust, burning operations, hours of construction activity, access and road improvements, and handling of general construction complaints.
c. *Grading plan.* The Solar Facility shall be constructed in compliance with the County-approved grading plan as determined and approved by the Zoning Administrator or his designee prior to the commencement of any construction activities and a bond or other security will be posted for the grading operations. The grading plan shall:

i. Clearly show existing and proposed contours;
ii. Note the locations and amount of topsoil to be removed (if any) and the percent of the site to be graded;
iii. Limit grading to the greatest extent practicable by avoiding steep slopes and laying out arrays parallel to landforms;
iv. Require an earthwork balance to be achieved on-site with no import or export of soil;
v. Require topsoil to first be stripped and stockpiled on-site to be used to increase the fertility of areas intended to be seeded in areas proposed to be permanent access roads which will receive gravel or in any areas where more than a few inches of cut are required;
vi. Take advantage of natural flow patterns in drainage design and keep the amount of impervious surface as low as possible to reduce stormwater storage needs.

d. *Erosion and Sediment Control Plan.* The County will have a third-party review with corrections completed prior to submittal for Department of Environmental Quality (DEQ) review and approval. The owner or operator shall construct, maintain, and operate the project in compliance with the approved plan. An E&S bond (or other security) will be posted for the construction portion of the project.
e. *Stormwater Management Plan.* The County will have a third-party review with corrections completed prior to submittal for DEQ review and approval. The owner or operator shall construct, maintain, and operate the project in compliance with the approved plan. A stormwater control bond (or other security) will be posted for the project for both construction and post construction as applicable and determined by the Zoning Administrator.
f. *Solar Facility Screening and Vegetation Plan.* The owner or operator shall construct, maintain, and operate the facility in compliance with the approved plan. A separate security shall be posted for the ongoing maintenance of the project's vegetative buffers in an amount deemed sufficient by the Zoning Administrator.
g. The Applicant will compensate the County in obtaining an independent third-party review of any site plans or construction plans or part thereof.
h. The design, installation, maintenance, and repair of the Solar Facility shall be in accordance with the most current National Electrical Code (NFPA 70) available (2017 version or later as applicable).

3. Operations.

a. *Permanent Security Fence.* The Applicant shall install a permanent security fence, consisting of chain link, 2-inch square mesh, 6 feet in height, surmounted by three strands of barbed wire, around the Solar Facility prior to the commencement of operations of the Solar Facility. Failure to maintain the fence in a good and functional condition will result in revocation of the permit.
b. *Lighting.* Any on-site lighting provided for the operational phase of the Solar Facility shall be dark-sky compliant, shielded away from adjacent properties, and positioned downward to minimize light spillage onto adjacent properties.
c. *Noise.* Daytime noise will be under 67 dBA during the day with no noise emissions at night.
d. *Ingress/Egress.* Permanent access roads and parking areas will be stabilized with

gravel, asphalt, or concrete to minimize dust and impacts to adjacent properties.

4. Buffers.

a. *Setbacks.*
   i. A minimum 150-foot setback, which includes a 50-foot planted buffer as described below, shall be maintained from a principal Solar Facility structure to the street line (edge of right-of-way) where the Property abuts any public rights-of-way.
   ii. A minimum 150-foot setback, which includes a 50-foot planted buffer as described below, shall be maintained from a principal Solar Facility structure to any adjoining property line which is a perimeter boundary line for the project area.

b. *Screening.* A minimum 50-foot vegetative buffer (consisting of existing trees and vegetation) shall be maintained. If there is no existing vegetation or if the existing vegetation is inadequate to serve as a buffer as determined by the Zoning Administrator, a triple row of trees and shrubs will be planted on approximately 10-foot centers in the 25 feet immediately adjacent to the security fence. New plantings of trees and shrubs shall be approximately 6 feet in height at time of planting. In addition, pine seedlings will be installed in the remaining 25 feet of the 50-foot buffer. Ancillary project facilities may be included in the buffer as described in the application where such facilities do not interfere with the effectiveness of the buffer as determined by the Zoning Administrator.

c. *Wildlife corridors.* The Applicant shall identify an access corridor for wildlife to navigate through the Solar Facility. The proposed wildlife corridor shall be shown on the site plan submitted to the County. Areas between fencing shall be kept open to allow for the movement of migratory animals and other wildlife.

5. Height of Structures. Solar facility structures shall not exceed 15 feet, however, towers constructed for electrical lines may exceed the maximum permitted height as provided in the zoning district regulations, provided that no structure shall exceed the height of 25 feet above ground level, unless required by applicable code to interconnect into existing electric infrastructure or necessitated by applicable code to cross certain structures (e.g. pipelines).

6. Inspections. The Applicant will allow designated County representatives or employees access to the facility at any time for inspection purposes as set forth in their application.

7. Training. The Applicant shall arrange a training session with the Fire Department to familiarize personnel with issues unique to a solar facility before operations begin.

8. Compliance. The Solar Facility shall be designed, constructed, and tested to meet relevant local, state, and federal standards as applicable.

9. Decommissioning.

a. *Decommissioning Plan*. The Applicant shall submit a decommissioning plan to the County for approval in conjunction with the building permit. The purpose of the decommissioning plan is to specify the procedure by which the Applicant or its successor would remove the Solar Facility after the end of its useful life and to restore the property for agricultural uses.

b. *Decommissioning Cost Estimate*. The decommissioning plan shall include a decommissioning cost estimate prepared by a State licensed professional engineer.
   i. The cost estimate shall provide the gross estimated cost to decommission the Solar Facility in accordance with the decommissioning plan and these conditions. The decommissioning cost estimate shall not include any estimates or offsets for the resale or salvage values of the Solar Facility equipment and materials.
   ii. The Applicant, or its successor, shall reimburse the County for an independent review and analysis by a licensed engineer of the initial decommissioning cost estimate.
   iii. The Applicant, or its successor, will update the decommissioning cost estimate every 5 years and reimburse the County for an independent review and analysis by a licensed engineer of each decommissioning cost estimate revision.

c. *Security.*
   i. Prior to the County's approval of the building permit, the Applicant shall provide decommissioning security in one of the two following alternatives:
      1. Letter of Credit for Full Decommissioning Cost: A letter of credit issued by a financial institution that has (i) a credit Rating from one or both of S&P and Moody's of at least A from S&P or A2 from Moody's and (ii) a

capital surplus of at least $10,000,000,000; or (iii) other credit rating and capitalization reasonably acceptable to the County, in the full amount of the decommissioning estimate; or

2. Tiered Security:
    a. 10 percent of the decommissioning cost estimate to be deposited in a cash escrow at a financial institution reasonably acceptable to the County; and
    b. 10 percent of the decommissioning cost estimate in the form of a letter of credit issued by a financial institution that has (i) a credit rating from one or both of S&P and Moody's of at least A from S&P or A2 from Moody's and (ii) a capital surplus of at least $10,000,000,000, or (iii) other credit rating and capitalization reasonably acceptable to the County, with the amount of the letter of credit increasing by an additional 10 percent each year in years 2–9 after commencement of operation of the Solar Facility; and
    c. The Owner, not the Applicant, will provide its guaranty of the decommissioning obligations. The guaranty will be in a form reasonably acceptable to the County. The Owner, or its successor, should have a minimum credit rating of (i) Baa3 or higher by Moody's or (ii) BBB- or higher by S&P; and
    d. In the tenth year after operation, the Applicant will have increased the value of the letter of credit to 100 percent of the decommissioning cost estimate. At such time, the Applicant may be entitled to a return of the 10 percent cash escrow.

ii. Upon the receipt of the first revised decommissioning cost estimate (following the 5th anniversary), any increase or decrease in the decommissioning security shall be funded by the Applicant or refunded to Applicant (if permissible by the form of security) within 90 days and will be similarly trued up for every subsequent five-year updated decommissioning cost estimate.

iii. The security must be received prior to the approval of the building permit and must stay in force for the duration of the life span of the Solar Facility and until all decommissioning is completed. If the County receives notice or reasonably believes that any form of security has been revoked or the County receives notice that any security may be revoked, the County may revoke the special use permit and shall be entitled to take all action to obtain the rights to the form of security.

d. *Applicant/Property Owner Obligation*. Within 6 months after the cessation of use of the Solar Facility for electrical power generation or transmission, the Applicant or its successor, at its sole cost and expense, shall decommission the Solar Facility in accordance with the decommissioning plan approved by the County. If the Applicant or its successor fails to decommission the Solar Facility within 6 months, the property owners shall commence decommissioning activities in accordance with the decommissioning plan. Following the completion of decommissioning of the entire Solar Facility arising out of a default by the Applicant or its successor, any remaining security funds held by the County shall be distributed to the property owners in a proportion of the security funds and the property owner's acreage ownership of the Solar Facility.

e. *Applicant/Property Owner Default; Decommissioning by the County*.
    i. If the Applicant, its successor, or the property owners fail to decommission the Solar Facility within 6 months, the County shall have the right, but not the obligation, to commence decommissioning activities and shall have access to the property, access to the full amount of the decommissioning security, and the rights to the Solar Facility equipment and materials on the property.
    ii. If applicable, any excess decommissioning security funds shall be returned to the current owner of the property after the County has completed the decommissioning activities.
    iii. Prior to the issuance of any permits, the Applicant and the property owners shall deliver a legal instrument to the County granting the County (1) the right to access the property, and (2) an interest in the Solar Facility equipment and materials to complete the decommissioning upon the Applicant's and property owner's default. Such instrument(s) shall bind the Applicant and property owners and their successors, heirs, and assigns. Nothing herein shall limit other rights or remedies that may be available to the County to enforce the obligations of the Applicant, including under the County's zoning powers.

f. *Equipment/Building Removal.* All physical improvements, materials, and equipment related to solar energy generation, both surface and subsurface components, shall be removed in their entirety. The soil grade will also be restored following disturbance caused in the removal process. Perimeter fencing will be removed and recycled or reused. Where the current or future landowner prefers to retain the fencing, these portions of fence will be left in place.
g. *Infrastructure Removal.* All access roads will be removed, including any geotextile material beneath the roads and granular material. The exception to removal of the access roads and associated culverts or their related material would be upon written request from the current or future landowner to leave all or a portion of these facilities in place for use by that landowner. Access roads will be removed within areas that were previously used for agricultural purposes and topsoil will be redistributed to provide substantially similar growing media as was present within the areas prior to site disturbance.
h. *Partial Decommissioning.* If decommissioning is triggered for a portion, but not the entire Solar Facility, then the Applicant or its successor will commence and complete decommissioning, in accordance with the decommissioning plan, for the applicable portion of the Solar Facility; the remaining portion of the Solar Facility would continue to be subject to the decommissioning plan. Any reference to decommissioning the Solar Facility shall include the obligation to decommission all or a portion of the Solar Facility whichever is applicable with respect to a particular situation.

10. Power Purchase Agreement. At the time of the Applicant's site plan submission, the Applicant shall have executed a power purchase agreement with a third-party providing for the sale of a minimum of 80% of the Solar Facility's anticipated generation capacity for not less than 10 years from commencement of operation. Upon the County's request, the Applicant shall provide the County and legal counsel with a redacted version of the executed power purchase agreement.

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PAS Memo is a bimonthly online publication of APA's Planning Advisory Service. Joel Albizo, FASAE, CAE, Chief Executive Officer; Petra Hurtado, PhD, Director of Research; Ann F. Dillemuth, AICP, Editor. Learn more at www.planning.org/pas (/pas/).

Chicago

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Washington, D.C.

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1030 15th St., NW Suite 750 West
Washington, DC 20005-1503

Phone: 202-349-1016

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Foundation Board (/foundation/board/)

Planning Department

From: Thomas Moore Lawson, Esq. <tlawson@LSPLC.COM>
Sent: Tuesday, February 2, 2021 3:44 PM
To: Alexandra Beaulieu; Planning Department
Subject: Solar Energy Facilities Text Amendment
Attachments: Proposed Solar Ordinance RL.pdf; SOLAR PANEL ELEVATIONS.pdf

Ms. Beaulieu,

Attached please find a redline of the proposed Solar Energy Facilities text amendment which is scheduled to be heard by the members of the Planning Commission at its upcoming meeting on February 9, 2021 as well as viewshed exhibits. Please distribute these to the members of the Planning Commission for their consideration.

Thank you.

Thomas Moore Lawson, Esquire
Thomas Moore Lawson, P.C.
Of Counsel-Williams Mullen
P.O. Box 2740
Winchester, VA 22604
Ph: 540-665-0050
Fax: 540-722-4051
Email: tlawson@lsplc.com

RECEIVED
February 2, 2021
Jefferson County, WV
Office of Planning & Zoning

Section 8.20 Solar Energy Facilities

Solar Energy Facilities are permitted as indicated in Appendix C.

A. Application

1. A Pre-Proposal Conference is recommended, pursuant to the Jefferson County Subdivision and Land Development Regulations.

2. A Concept Plan, pursuant to the Minor Site Development Concept Plan standards established in the Jefferson County Subdivision and Land Development Regulations is required; except that after the Planning Commission direction is given, the next steps are Application for a Zoning Certificate and Building Permits, including submission of final Decommissioning Plan. In addition to the Concept Plan requirements outlined in the Subdivision Regulations, the Concept Plan shall also include the following standards:

   (a) Property or Properties Location;

   (b) Access Points;

   (c) Anticipated location of all proposed components of the Solar Energy Facility; and

   (d) Landscaping, Buffering, Ground Cover Plan, and Fencing.

   Each proposed solar panel is not required to be located on the Plan, if compliance with setbacks can be established by what is depicted on the Plan.

   If the project is to be completed in phases, the Concept Plan shall reflect phasing of the project.

3. A Zoning Certificate based on an approved Concept Plan is required prior to initiating any use regarding Solar Energy Facilities.

   (a) In addition to the standards found in Section 8.20, any Zoning Certificate regarding Solar Energy Facilities shall be issued conditioned on all other State Regulations and approvals being granted, including, but not limited to, the WV Public Service Commission, WVDEP applicable NPDES Permits, Fire Marshal Approval, Building Permits through the Department of Engineering, Planning, and Zoning, and approval of the Stormwater Management Report pursuant to the Jefferson County Stormwater Management Ordinance.

B. Standards

1. Multiple adjacent properties under the same ownership or leased by the same company shall be considered one property for the purpose of these regulations. Internal boundary lines on adjacent properties under the same ownership or leased by the same company are not subject to the setbacks or buffer requirements provided below.

2. Setbacks

(a) Solar Panels and Accessory Components

~~i. Front, Side, and Rear Setbacks shall be 100 feet from all external/perimeter property lines and from the edge of the State ROW or Easement of any State Road.~~

i. Solar panels ~~and accessory components~~ may be located on a common side or rear lot line of contiguous property owned by the same entity.

ii. Setback for solar panels to be determined by the type of buffer provided.

iii. Unscreened Buffer – Front, Side, and Rear Setbacks shall be 100 feet from all external/perimeter property lines and from the edge of the State ROW or Easement of any State Road.

iv. Residential Solar Buffer – Front, Side, and Rear Setbacks shall be 100 feet from all external/perimeter property lines and from the edge of the State ROW or Easement of any State Road.

~~ii.~~v. Community Solar Buffer – Front, Side, and Rear Setbacks shall be 55 feet from all external/perimeter property lines and from the edge of the State ROW or Easement of any State Road.

(b) Accessory components~~, excluding solar panels~~.

i. Accessory components may be located on a common side or rear lot line of contiguous property owned by the same entity.

ii. Accessory components may be located within a buffer.

~~i.~~iii. Front, side and rear setbacks shall be 25~~'~~ feet from all external/perimeter property lines and from the edge of the State ROW or Easement of any State Road.

3. ~~Buffering, Landscaping, Security and Access~~Buffer Determination

(a) A buffer is required for all solar panels.

(b) Residential Solar Buffer is required for solar panels that are within 200 feet of the following structures/uses:

i. Residential structure, distance measured from corner of structure;

ii. ~~Solar Panels that are located within 200 feet of any residence,~~ Category 1 Historic Resource, distance measured from property line; ~~,~~

iii. Institution for Human Care, Church, or structure with similar use ~~or structure~~ as determined by the Zoning Administrator, distance measured from corner of structure. ~~shall provide a 20 foot wide buffer along common property lines. The buffer shall be provided anywhere within the 200 foot radius from the structures/uses herein and is not required to be provided along the entire length of the common property line.~~

(c) Unscreened Solar Buffer is permitted under the following conditions:

i. Solar panels are further than 200 feet from structure/uses defined under 3(b);

ii. Solar panels are 100 feet or more from external/perimeter property line and from the edge of the State ROW or Easement of any State Road.

(d) Community Solar Buffer is permitted under the following conditions:

i. Solar panels are further than 200 feet from structures/uses defined under 3(b);

ii. Solar panels are 55 feet to 100 feet from external/perimeter property line and from the edge of the State ROW or Easement of any State Road.

~~(a) The buffer screen may be either vegetative or opaque fencing and may be placed anywhere within the buffer area. No structures, materials, or vehicular parking shall be permitted within the side and rear yard buffers. Existing, natural vegetation may be used in lieu of a planted buffer if documentation is submitted to the Zoning Administrator verifying how the existing natural vegetation complies with the required buffer standard.~~

~~(b) Accessory Components (excluding solar panels) that are located within 200 feet of any residence, Category 1 Historic Resource, Institution for Human Care, Church, or similar use as determined by the Zoning Administrator, shall comply with the commercial provisions of Section 4.11, with the exception that the Zoning Administrator can allow the use of existing, natural vegetation as appropriate to achieve the intent of the required buffering.~~

~~(c) A security fence with secured gates shall be erected around the operating areas of the Solar Energy Facility with a minimum height of 6 feet and a maximum height of 10 feet.~~

~~i. Arrangements shall be made with the appropriate Fire Department for Access. A letter documenting approval of access from the Fire Department shall be provided with the Zoning Certificate application. The Fire Department shall respond within 15 days of the date of the letter. If no response is provided, the Fire Department shall be deemed by this Ordinance to have approved the access.~~

~~ii. Upon three business days notice by the Department of Engineering, Planning, and Zoning, access shall be provided to Staff.~~

4. Buffer Requirements

(a) Buffers consist of up to four zones, each with a different function.

i. Zone 1 (Conservation) is intended to allow for the conservation of existing forest, hedge rows and vegetation. Area will not be cleared/mowed and will be allowed to naturalize. When this area is used for field crops it will be seeded with grass to initiate the naturalization process.

ii. Zone 2 (Enhanced Sustainability) area to be seeded with native or naturalized perennial species. Maintaining existing forested area within Zone 2 will be an acceptable alternative to new sustainable/pollinator planting.

iii. Zone 3 (Screening) is new tree and shrub planting to screen the solar panels. The plant quantity will be calculated based on 4 trees and 10 shrubs every 100 feet. Trees and shrubs may be clustered and should be placed to enhance screening from adjacent properties. This area shall be mowed for a minimum of two years, but may be allowed to naturalize after this period. Maintaining existing forested area within the third layer will be an acceptable alternative to the tree and shrub planting. Trees shall be a minimum of 4 feet tall at planting. Shrubs shall be a minimum of two gallon pot size.

iv. Zone 4 (Security) is fence and maintained turf. Fence must be placed along the exterior edge of this zone within 15 feet of managed turf located on the interior of Zone 4.

(b) Unscreened Solar Buffer – 100 feet

i. Width of buffer may be increased by Owner.

ii. Zone 1 – 85 feet minimum

iii. Zone 2 – N/A

iv. Zone 3 – N/A

v. Zone 4 – 15 feet

(c) Residential Solar Buffer – 100 feet minimum

i. Width of buffer may be increased by Owner.

ii. Zone 1 – 50 feet

iii. Zone 2 – 15 feet

iv. Zone 3 – 20 feet

v. Zone 4 – 15 feet

(d) Community Solar Buffer – 55 feet minimum

i. Width of buffer may be increased by Owner.

ii. Zone 1 – 20 feet

iii. Zone 2 – 10 feet

iv. Zone 3 – 10 feet

v. Zone 4 – 15 feet

(e) Stormwater management facilities may be located within a buffer.

5. Fencing and Access

(a) Site access is permitted to be constructed through a buffer.

(b) A security fence with secured gates shall be erected around the operating areas of the Solar Energy Facility with a minimum height of 6 feet and a maximum height of 10 feet.

(c) Arrangements shall be made with the appropriate Fire Department for Access. A letter documenting approval of access from the Fire Department shall be provided with the Zoning Certificate application. The Fire Department shall respond within 15 days of the date of the letter. If no response is provided, the Fire Department shall be deemed by this Ordinance to have approved the access.

(d) Upon three business days' notice by the Department of Engineering, Planning, and Zoning, access shall be provided to Staff.

~~4.~~6. Stormwater Management

(a) Stormwater management facilities may be located within a buffer.

(b) Stormwater Management shall be required in accordance with the Jefferson County Stormwater Management Ordinance. Solar Energy Facilities may be exempt from providing stormwater management if the conditions for granting exemption under Article I.D.2.h of the Stormwater Management Ordinance are satisfied.

~~5.~~7. Decommissioning Plan

(a) W.Va. Code §7-1-3kk provides that the County Commission may enact ordinances, issue orders, and take other appropriate and necessary actions for the elimination of hazards to public health and safety and to abate or cause to be abated anything which the C~~c~~ommission determines to be a public nuisance.

i. The County Commission hereby finds and declares that a solar facility that has ceased producing electricity for a period of 12 months is a public nuisance and/or hazard pursuant to West Virginia Code §7-1-3kk and other applicable authority.

ii. The County Commission therefore finds that an unused solar facility must be decommissioned and removed from the property on which it is located. This means that all of the solar facility's structures and other associated property must be removed from the premises and the land must be restored to a condition reasonably similar to its original condition prior to the installation of the solar facility.

iii. A general outline of the decommissioning of the Solar Energy Facility shall be included with the Concept Plan. This outline shall include a general discussion on the timeline of the lease or operating plan and a general plan for removal of the Solar Energy Facility. A full Solar Decommissioning Plan is not required until submission of the Zoning Certificate application for the Facility.

(b) The County Commission finds that, as a condition of approval, a Solar Energy Facility must:

i. Develop a decommissioning plan acceptable to the County Engineering Staff in accord with County Solar Decommissioning Guidelines that will provide that all parts of the solar facility be removed from the premises and the land must be restored to a condition reasonably similar to its original condition prior to the installation of the solar facility; and

ii. Post surety in an amount that would enable the decommissioning and removal of the solar facility in accord with the County Solar Decommissioning Guidelines in the event that the solar facility has ceased to produce electricity as defined.

(c) The approved Solar Decommissioning Plan shall be submitted as part of the Zoning Certificate Application. Either the Zoning Administrator or the Applicant may request that the Planning Commission approve or disapprove any component of the Solar Decommissioning Plan.

(d) Staff shall be notified by certified mail at least 60 days in advance of the intended decommissioning of the Solar Energy Facility. Staff will place the notice on the next regularly scheduled Planning Commission meeting under "non-actionable correspondence".

(e) Failure of the Lessee or Property Owner to meet and/or comply with the Solar Decommissioning Plan may result in the County pursuing legal action pursuant to Section 3 of this Ordinance, including legal action to have the Solar Energy Facility, or portions thereof as applicable, removed at the Property Owner's expense. The County may seek to recover its costs, legal fees, and legal expenses incurred to have the facility decommissioned in compliance with the Solar Decommissioning Plan.

C. General Requirements

1. Design, construction, and installation of the Solar Energy Facility shall conform to applicable industry standards, including those of the American National Standards Institute (ANNSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM) or other similar certifying organizations and shall comply with the West Virginia Fire and Building Codes, including compliance with the Jefferson County Building Code.

2. Prior to commencing the transmission of electricity, the Solar Energy Facility shall provide documentation evidencing an interconnection agreement or similar agreement with the applicable public utility or approved entity in accordance with applicable law.

3. Generation of electrical power shall be limited to photovoltaic panels, provided that any on-site buildings may utilize integrated photovoltaic building materials.

4. Solvents necessary for the cleaning of the Solar Panels shall be biodegradable.

5. Internal wiring, excluding that which is on or between the Solar Arrays, connected to substations or between Solar Panels, shall be located underground, ~~accept~~ except where necessary to mitigate impact to environmental and/or terrain features.

6. Onsight lighting shall be the minimum necessary for security and onsite management and maintenance and shall comply with the standards outlined in the Subdivision Regulations.

7. Photovoltaic Panels shall use antireflective glass that is designed to absorb rather than reflect light.

8. Ground Cover comprised of natural vegetation is required. Ground cover that uses native or naturalized perennial vegetation and that provides foraging habitat that is beneficial for songbirds, gamebirds and pollinators is encouraged but not required.

9. Collocation of other agricultural activities such as small market hand-picked crops, grazing and apiary activities are permitted and encouraged.

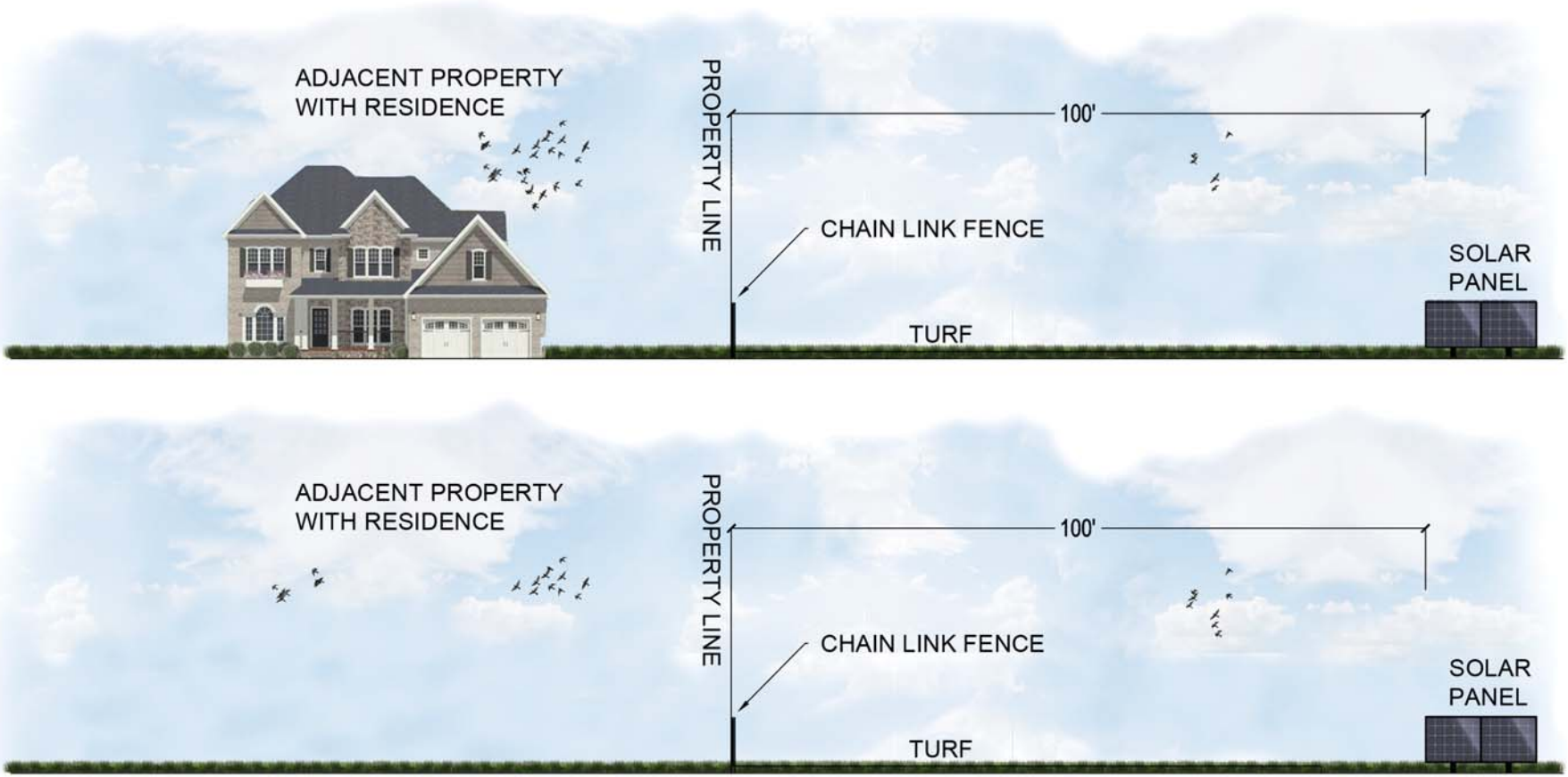
10. No signage or advertising is permitted on the Solar Energy Facilities other than an identifying sign at the entrance of the Facility that shall be approved by the Zoning

Administrator in accordance with Article 10. All other signage must be approved by Special Exception by the Board of Zoning Appeals.

11. Solar Energy Facilities shall comply with Article 8, Section 8.9 of this Ordinance.

12. The Solar Energy Facility Use is not considered abandoned until such time as it is Decommissioned.

13. Damaged or unusable panels shall be removed within 60 days from discovery of damage; provided, however, longer periods may be approved by the County Engineer due to extenuating circumstances.

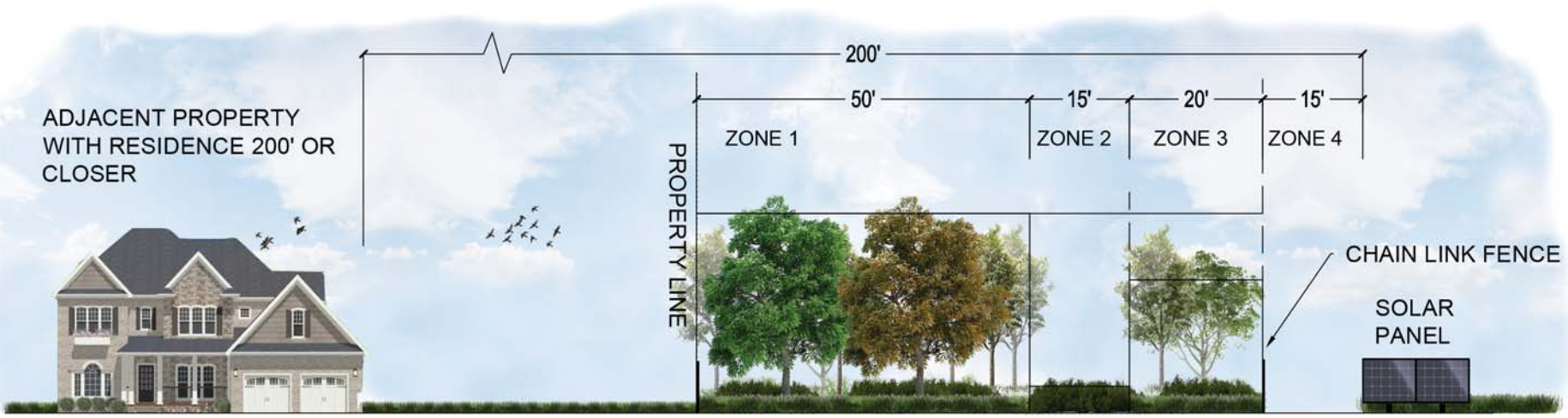


1. 100' SETBACK PERMITTED WITH OR WITHOUT ADJACENT RESIDENTIAL DWELLING

SOLAR PANEL WITH 100' SETBACK

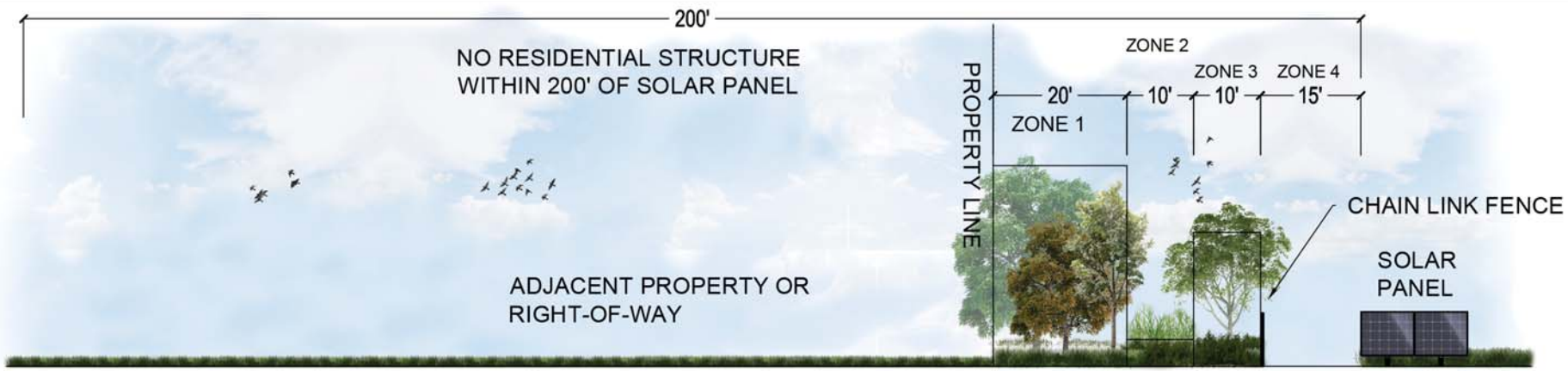
1. ZONE 1 - CONSERVATION
2. ZONE 4 - SECURITY
3. CONSERVATION ZONE SHOWN AT MATURITY.

UNSCREENED SOLAR BUFFER



1. BUFFER REQUIRED BECAUSE RESIDENCE IS WITHIN 200'.
2. ZONE 1 - CONSERVATION
3. ZONE 2 - ENHANCED SUSTAINABILITY
4. ZONE 3 - SCREENING
5. ZONE 4 - SECURITY
6. CONSERVATION AND SCREENING ZONES SHOWN AT MATURITY.

RESIDENTIAL SOLAR BUFFER



1. COMMUNITY SOLAR BUFFER ONLY PERMITTED WHEN NO RESIDENTIAL CATEGORY 1 HISTORIC RESOURCES, INSTITUTION FOR HUMAN CARE, OR CHURCHES ARE WITHIN 200' OF SOLAR PANELS.
2. ZONE 1 - CONSERVATION
3. ZONE 2 - ENHANCED SUSTAINABILITY
4. ZONE 3 - SCREENING
5. ZONE 4 - SECURITY
6. CONSERVATION AND SCREENING ZONES SHOWN AT MATURITY.

COMMUNITY SOLAR BUFFER

Zoning

From: Sam Gulland <sgulland@torchcleanenergy.com>
Sent: Tuesday, February 2, 2021 6:54 PM
To: JCCInfo
Cc: Zoning
Subject: Comment regarding ZTA19-03 (Solar Energy Facilities)

Jefferson County Planning Commission:

The Zoning Text Amendment establishes a setback for "accessory components" of 25 feet from property lines and easements of state roads. One possible component of a project is an underground power line that connects portions of a project and crosses a field that will continue to be farmed or used.

An underground line is not visible to the neighbor and is not disturbed during the operation of the project. Installing a line close to the property line would be more efficient to a landowner who wants to keep farming his land, or may have a different use for it in the future.

I request that a third category for "setbacks" be added to the Zoning Text Amendment:

"c. Underground Power Lines. No setback shall be required for underground power lines."

Thank you again to the Planning Commission and Staff for their work on this.

Respectfully,

Sam Gulland
Development Manager
Torch Clean Energy
Email: sgulland@torchcleanenergy.com
Phone: (703) 999-4280

Planning Department

From: Barbara Spicher <bspicher@frontiernet.net>
Sent: Friday, February 5, 2021 6:50 PM
To: Planning Department
Subject: Solar Text Amendment

Dear Planning Department,
As you are amending the zoning for future sites of EWGs, I strongly ask that these sites be considered on an individual basis, rather than a blanket approval for "anything goes" over 80% of our county. You do not need to approve future solar energy farms at this point, and Wild Hill Solar Project with its 795 acres, is quite enough for now.

Please be respectful to our rural landscape.

Thank you,
Barbara Spicher
1328 Terrapin Neck Rd.
Shepherdstown, WV 25443

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 4:05 PM
To: 'bernard demartini'
Subject: RE: solar EWGs

Good afternoon,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: bernard demartini <bdemartini2@email.com>
Sent: Monday, February 8, 2021 3:58 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: solar EWGs

as a Jefferson county resident, I have come to value the scenic character of our county. Berkeley county is industrial; Jefferson county is scenic and agricultural. the Jefferson County Commission has an important role in protecting the valuable qualities of the county.

the proposed zoning ordinance that would open 80% of county land to industrial solar installations will harm our county. the eligible acres covered by the ordinance should be reduced from 80% to 15%. industrial development in general should be kept to an absolute minimum.

industrial activity should be located in Berkeley county, not Jefferson county.

thanks,
Bernard DeMartini

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:16 AM
To: 'Bill and Carole Telfair'
Cc: Chrissy Wimer; Darah Kehnemuyi
Subject: RE: Solar Energy Facilities Zoning Ordinance #ZTA19-03

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Bill and Carole Telfair <wbchtelfair@sbcglobal.net>
Sent: Friday, February 5, 2021 9:46 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Cc: Chrissy Wimer <clwimer1@yahoo.com>; Darah Kehnemuyi <darahk1@yahoo.com>
Subject: Solar Energy Facilities Zoning Ordinance #ZTA19-03

Dear Zoning commissioner,

The Solar Energy Facility Zoning Ordinance proposed is needed to allow large solar power arrays to be built in Jefferson county. However, it should be approved on a "conditional use" basis - NOT the "by-Right" basis. This will allow review of each facility being proposed, since the facilities are very large and complex. Again since they are large there will not be too many of them to review, so the burden on you will not be excessive. And you will want to be sure that they are safe and beneficial to the county and its residents - NOT just for the power companies.

Also the decommissioning and clean-up (as well as maintenance) of the facility MUST be the responsibility of the corporation that builds and uses the facility - NOT the farmer who is renting the land for its use.

In addition to the solar panels on individual houses and this huge solar array usage for large power companies, we (the citizens, small business owners, county school owners and larger business owners) need to have PPA's (Power Purchase Agreements) approved and zoned. This will not only increase the local business activity, but will allow local businesses to use local medium sized solar arrays to generate their own power on a much more distributed basis. It will also facilitate the construction of solar arrays on schools, parking lots and other spaces that are currently not being taken advantage of instead of using good farm land. This will generate much more local power where it is used and needed. All this will benefit Jefferson county rather than benefitting the power

company. You should plan ahead for this solar power usage in combination to the huge arrays being considered in the current amendment.

Respectfully yours,
William B. Telfair PhD, resident of Jefferson County, WV

PS I have a PhD in Physics and have installed PV solar panels on both of my houses since 2005. In addition my father was a Physics professor teaching the principles of both active and passive solar design for small, medium and large-scale solar arrays. In 1978 he modified his house with both active and passive solar designs.

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:17 AM
To: 'Christina Melocik'
Subject: RE: Solar Energy Zoning Amendment

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Christina Melocik <chris.tiny@comcast.net>
Sent: Saturday, February 6, 2021 11:22 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar Energy Zoning Amendment

To Jefferson County Planning Commission:

While increased use of renewable energy is in all of our best interests, there should not be an amendment to allow Solar Exempt Wholesale Generators (EWGs) to be located in **80%** of our County's land "by-right". EWGs should go through a Conditional Use Permit process, which would allow for hearings and public comment for each project. Sustainable development can be achieved but it also needs to be balanced with other needs in the community.

Thank you,
Christina Melocik

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:08 AM
To: 'Cynthia Feeser'
Subject: RE: Solar zones

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Cynthia Feeser <cjfeeser@gmail.com>
Sent: Friday, February 5, 2021 5:38 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar zones

Jefferson county should use a balance of renewable energy sources. EWGs should go through a Conditional Use Permit process, which would allow for hearings and public comment for each project, unlike the by-right process. Agriculture is important and decreasing these uses on rural land should be kept to a minimum.

Cindy Feeser
Shepherdstown

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:16 AM
To: 'Danielle'
Subject: RE: Solar Energy Zoning

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Danielle <danie_n0329@yahoo.com>
Sent: Saturday, February 6, 2021 10:45 AM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar Energy Zoning

Dear Planning Commission,

As a life long Jefferson County resident, I personally believe that Jefferson County should have a healthy a balance of renewable energy sources. I do believe that anything taking up that much land should have to go through a Conditional Use Permit process, which would allow for hearings and public comment for each project, unlike the by-right process. We keep saying we don't want to effect our farms because we love our county and our current way of life here, yet we keep approving things that will eventually put all farms in our county out of business. Many local farmers depend on the open land to lease or plant crops that are required for other aspects of their business Agriculture is important and decreasing these uses on rural land should be kept to a minimum.

Thank you for considering my comments!
Respectfully,
Danielle Patterson
Kearneysville

Sent from my iPhone

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:09 AM
To: 'Dilly Jackson'
Subject: RE: Solar Panels in Jefferson County

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Dilly Jackson <mandrakefarm@gmail.com>
Sent: Friday, February 5, 2021 6:22 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar Panels in Jefferson County

To Whom it May Concern:
I would like to voice my opposition to solar panel "farms" in Jefferson County. In addition to being an major eyesore, I believe it would be harmful to our wildlife as well as cause devaluation of properties nearby.
Respectfully,
Carolyn Jackson
Jefferson County Resident

Zoning

From: Carol Rockwell <cdrockwell@hotmail.com>
Sent: Monday, February 8, 2021 9:54 AM
To: Zoning
Subject: ZTA19-03

Alex, the Wild Hill Solar, LLC facility is to locate in the Rural District on land w/i and w/o of the UGB. This issue can be handled in Section 8.20.A.2 which will require a rewrite anyway for CUP in the RD. The following or similar words could be used: "If a solar energy facility is to locate on lands which are both within and without of the Urban Growth Boundary then it will proceed to the Conditional Use process but ONLY as to the part of the facility located outside of the Urban Growth Boundary." Doug

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:10 AM
To: 'Edmond Uzan'
Subject: RE: Solar Farm

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Edmond Uzan <euzan65@gmail.com>
Sent: Friday, February 5, 2021 7:52 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar Farm

Unless the Panels are constructed in the USA and assembled in the USA I vote NO!

--
Edmond Uzan
(304) 261-4063

Planning Department

From: j4shock@frontiernet.net
Sent: Friday, February 5, 2021 5:31 PM
To: Planning Department
Subject: Solar amendment

As a resident of jefferson County I love the idea of solar energy and our county contributing to that effort. HOWEVER, I do not think it is ok to allow any type of commercial or industrial business by right in most of the county. Businesses should need to show how they can contribute to our county and be built in appropriate areas. Permits to build solar array should be given after hearing and with conditional use permit. We need to protect and properly manage the future development of our county. Sincerely, Elizabeth Shockley

Sent from Yahoo Mail on Android
<https://go.onelink.me/107872968?pid=InProduct&c=Global_Internal_YGrowth_AndroidEmailSig__AndroidUsers&af_wl=ym&af_sub1=Internal&af_sub2=Global_YGrowth&af_sub3=EmailSignature>

Planning Department

From: Gavin Perry <gavarch@gmail.com>
Sent: Sunday, February 7, 2021 5:32 PM
To: Planning Department
Cc: Gavin Perry
Subject: Solar Farms in JC, zoning amendment

Dear Planning Commission,
I am an architect and LEED Accredited Professional. I obviously strongly support solar and renewable energy projects. I am also on the JC Farmland Protection Board and strongly support farmland, farmers and local food production

I am strongly opposed to the proposed zoning amendment which would allow solar projects to be built on productive farmland.

Common sense tells us that they should be built on impervious surfaces, such as the roof of large buildings, factories, werehouses, parking garages, hard land surfaces and non farmland. We need farmland to provide us with food. Energy projects should be built on land that does not provide us with food.

The Planning Commission would better service the local community, economy and the environment by rejecting the current zoning amendment and replace it with the requirement to place solar panels on the above mentioned impervious surfaces.

Thank you for your consideration.
G.A. Perry, Architect, LEED AP

Gavin

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:09 AM
To: 'ksmgregoryk'
Subject: RE: Solar Farms

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: ksmgregoryk <ksmgregoryk@aol.com>
Sent: Friday, February 5, 2021 5:42 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar Farms

Why is this area of West Virginia continually being targeted to hook up existing power lines to benefit other areas of the country? In 2009 citizens fought PATH, now this.
How is this going to effect residents living near the Power lines?

Gregoryk

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:17 AM
To: 'Joanne Bario'
Subject: RE: The Proposed Solar Panels for Industry

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Joanne Bario <joannebario@gmail.com>
Sent: Sunday, February 7, 2021 3:14 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: The Proposed Solar Panels for Industry

Dear Planning Department,

Though I approve of solar when it is used discreetly or on private home, I strongly oppose the use of vast amounts of our county land to support a project that will ruin the beauty of our county and support only industries that needn't be in our rural county in the first place. Jefferson County is a beautiful natural area. Please don't destroy it for dollar signs.

Sincerely,

Joanne Bario
64 Sage Place
Shepherdstown, WV 25443

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:16 AM
To: 'KH'
Subject: RE: Solar farms vs food and livestock

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228
-----Original Message-----
From: KH <henrykaren44@yahoo.com>
Sent: Saturday, February 6, 2021 11:52 AM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar farms vs food and livestock

Dear planning department,
Renewable energy is ABSOLUTELY the direction to go however, wholesale approval of projects is not.
Please approve conditional use versus by-right land use.

Thank you
Karen Henry

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:11 AM
To: 'lovejoy444@aol.com'
Subject: RE: Solar Energy Zoning Amendment

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: lovejoy444@aol.com <lovejoy444@aol.com>
Sent: Friday, February 5, 2021 8:40 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar Energy Zoning Amendment

I DO NOT support industrial solar facilities having access to pretty much all of our green spaces outside of city limits! While I do absolutely support alternative energy, there has to be a better way than just plowing under our natural spaces. Further, we need to have conditional use permitting rather than by-right. We need to be able to evaluate each proposed use individually.

Thank you.

Best Regards,
Laurie Allen
Charles Town

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 3:37 PM
To: 'Mary Vandevander'
Subject: RE: Solar power

Good afternoon,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

-----Original Message-----
From: Mary Vandevander <srv5004@yahoo.com>
Sent: Monday, February 8, 2021 2:20 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar power

I am very much in favor of clean energy. I hope you will encourage solar power compAnies to locate here as soon as possible. We must get away from using fossil fuels because of climate change and damage to our water supply. The details of how you get this to happen are best decided by you who have the knowledge of how this business will be monitored. We can't worry about "not in my backyard", I trust this commission to do what is right for our future.

Sent from my iPhone

Planning Department

From: Melissa Howell <mhowelljp@yahoo.com>
Sent: Friday, February 5, 2021 7:43 PM
To: Planning Department
Subject: Solar energy zoning amendment

Dear Planning Commission,

I am all for bettering Jefferson County and the planet however to use 80% of our land is unacceptable!
We need balance! Yes solar is a great thing for our community but lets keep it in balance and not use all of our farm land!

The citizens of Jefferson County need to be informed and be involved in the decision making process in this major matter that involves every citizen in our county.

Sincerely,
Melissa Howell
Sent from Yahoo Mail on Android

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:18 AM
To: 'Nance Briscoe'
Subject: RE: ZTA19-03 Solar Text Amendment Comment

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

-----Original Message-----
From: Nance Briscoe <nancebriscoe@comcast.net>
Sent: Sunday, February 7, 2021 5:52 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Cc: Vinemont.farm@gmail.com
Subject: ZTA19-03 Solar Text Amendment Comment

Dear Jefferson County Planning Department Solar Amendment Drafters,

I firmly believe our farm owners should have the right to do with their land as they so choose. I firmly believe in farm to table.

However, I disagree rezoning does not require a conditional use permit (CUP). Property that involves zoning, rezoning and/or construction requires permits. It also requires public comment. This is clearly evident with past meeting minutes of Planning, Zoning and County Commissions over the years. Transparency is good business and benefits all.

The Solar Facilities title for the amendment is a misnomer. It really is an amendment for Exempt Wholesale Generators (EWG) as defined with the Federal Energy Regulatory Commission. Please reconsider the title for this important amendment.

Individual owner's property rights must be respected. The current ordinance makes every effort to trespass by measurement from an individual's residence to the other land owner's property for placement of one or more solar panels or buffer. The residence is in error. The measurement should be the property line and easement as outlined on plats of ownership surveyed by licensed land surveyors.

Respecting the survey does not provide authority to any company to measure from an unrelated residence into the adjoining property to place a solar panel. That distance is relative only to the land where the EWGs will be located. The placement of solar panels have no relevancy to anyone else's private property.

Thank you for providing an opportunity to comment at this time.

Regards,

Nance Briscoe
22 Cloverdale Place
Charles Town, WV 25414
(304) 728-2201
nancebriscoe@comcast.net

CC: Jane Tabb, JCC President

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 3:39 PM
To: 'nicola bastian'
Subject: RE: Solar Installations

Good afternoon,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: nicola bastian <nicolabastian@yahoo.de>
Sent: Monday, February 8, 2021 3:26 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>; Editor <editor@spiritofjefferson.com>
Subject: Solar Installations

Planning Commissioners,
below two statements I compos3ed
The first: To the PSC
The second: at the JC Planning Commision.
Please enter them into the record for tomorrows hearing.
Be assured we are proponents of solar energy . We simply are taking a longer view -
are taking time to ancipate possible problems down the road we can avoid before they happen.
We are sincerely bent to aid you in your decision making process unless it is all about the now,
money now! The issues facing us are of an ever increasing complicated make up that we think a couple of more heads put together in study is a positive thing.
Don't you?
Thank you
in a most sincere cooperative spirit
nicola bastian
304 5356907

Editor:

From
Nicola Bastian
Millville WV 25432
nicolabastian@yahoo.de
304 535 6907

To whom it may concern,

I am writing today to urge our Jefferson County officials and residents to consider addressing following questions/ issues regarding Solar Farm Installations before committing to re-zone and permit big size solar installations. .

1) re DECOMMISSIONING

a) Is there appropriate bonding issued so the companies can be held responsible for any clean-up/ environmental damage?
b) If panels are to break due to acts of God and men , where will they be disposed of ? Broken panels cannot be recycled are considered ‚hazardous waste' (cadmium – a cancer agent, and lead, both used in welding connections.
c) Collection sites for broken and recyclable panels need to be planned ahead of time.

2) For determining BEST LOCATION:
a) Establish data of ground testings and use most polluted fields . It will make the most sense to help them ‚recover' by taking them out of farming for a while.
b) Reconsider whether it would not be more fair to place solar installations near areas devastated by a shrinking coal industry and give people there the opportunity to get into the solar business. Rather then in a county that was mostly unaffected by that change.

3) Re: WATER
a) Cleansing of panels necessary – with water and/or chemicals?
b) Rain water runoff regulation with large size installations?
c) Water/soil pollution via lead and cadmium leaks from broken panels (quick responsible removal of broken panels needs to be pre-regulated and violations promptly addressed)

4) Re: WEST VIRGINIA UNDER OUTSIDE ECONOMIC CONTROL
a) If we anticipate a future with increased solar participation in the energy production portfolio, why not consider seriously to produce solar panels in Jefferson County. The Rockwool site would lend itself perfectly and would truly be of benefit to our county in terms of employment and expandability ,self reliance, recycling panels, and control what goes into the making of it. Important especially in times of insecurity in China trade relationships.
b) By the time that business would be flourishing , WV laws regulating use of solar energy will have tipped in favor of localities using their own solar produced energy. Then we can say, these installations truly benefit our county in important ways.

I support whole heartedly to have alternatives for farmers to make a living , . That is an issue we all should seriously address before we commit to further reduce land available for food production, especially in times when it seems more important then ever to have food grown close to to urban centers like DC and Baltimore.

I pray this matter will be tabled until the questions can be fully answered and the impact understood. Or at least until WV favors local solar power use, i. e. passes the Power Purchase Agreement ! Frederick , Md has a solar installation that powers many of its local government buildings.

Thank you for your consideration.
Questions?
Please contact
nicolabastian@yahoo.de

Back | Archive | Move | Delete | Spam

include in tonights meeting , public comments 2

Yahoo/Sent

nicola bastian <nicolabastian@yahoo.de>
To: info@jeffersoncountyyyy.org

Thu, Jul 16 at 4:59 PM

Caretakers of beloved Jefferson County,
I have emailed a comment to above address a few days ago.
Below an addendum to
Nicola Bastian's comment, as i am looking for answers posed in my previous mail.
Some of them i found in German literature.As they have dealt with the plus and minus
of solar installations longer then we have and they have a strong non profit
" in defense of things natural" who have laid down certain principle that Solar industries
have agreed to.
1) The disposal is an increasing problem. German science computed :
250.000 metric tons of panels to be disposed of.
The contain lead and cadmium as the primary problems.
If panels get destroyed (as most did in the storm in Puerto Rico and in the "Desert Sunlight
Installation in California due to a tornado) even more cadmium and lead will seep into the groundwater,
and the remains have become "hazardous waste" to be deposited where?
Some recycling is possible. Question remains : labor intensive dismantling plus recyling may drive the cost of aluminum higher then the market price.

2) Firms need to be held responsible to pay for complete cleanup.
8 firms since 2016 in the US have gone bancrupt.

3) land used should be land like poisoned land, brownfields, od industrial, military , or best on bare mountaintops.

4) water runoff in such dimensions needs to be completely clear before giving go ahead.

thank you for considering my questions and comment
and please send the whole thing back to Planning- until more facts are in.
Eg in production of panels the chemicals used are quite different- we need to know who produces these panels and what the reputaion of the company is who installs.

nicola bastian
304 535 6907

---

nicola bastian <nicolabastian@yahoo.de>
To: info@jeffersoncountyyy.org, gls@jeffersoncountyyy.org

Thu, Jul 16 at 5:03 PM

the mail to the "info" address came back
hope you received my previous one
i added the contact given in the internet

and now i may be too late

Show original message

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 10:13 AM
To: 'Robyn Schneiderman'
Subject: RE: I support expanded solar

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Robyn Schneiderman <robynschneiderman@yahoo.com>
Sent: Monday, February 8, 2021 10:03 AM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: I support expanded solar

As a more than 20 year resident and homeowner in Jefferson County, I support expanding solar and renewable energy options in this region and throughout all of West Virginia.

Please help us usher in a new kind of energy economy in our state.

Sincerely,

Robyn Schneiderman, Shepherdstown

Planning Department

From: Planning Department
Sent: Monday, February 8, 2021 9:10 AM
To: 'Roxanne Quade'
Subject: RE: Conditional use

Good morning,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Roxanne Quade <roxyplu@yahoo.com>
Sent: Friday, February 5, 2021 6:35 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Conditional use

I am requesting conditional use versus by- right solar panel use

Sent from my iPhone

RECEIVED
February 9, 2021
Jefferson County, WV
Office of Planning & Zoning

Subject: ZTA19-03

Alex,

To make the rewrite of the Amendment easier, add the following as a new section.

Rural District

A. A solar energy facility may locate as:

1. A Principal Permitted Use on lands within the Urban Growth Boundary.

2. Conditional Use outside of the Urban Growth Boundary on any parcel of land which existed before July 1, 2020 and is within 500 feet of an existing electric transmission line with a capacity of at least 138 K.V. The conditional use shall be subject to review and approval by the Board of Zoning Appeals in accordance with Section 6.3 of this Ordinance.

B. Site Size - A solar energy facility in the Rural District outside of the Urban Growth Boundary may only be located on a tract or parcel of land which existed before July 1, 2020 and shall occupy no more than 50% of the said tract or parcel notwithstanding the size of the parcel of land. Transfer or assignment of development rights between parcels or tracts of land is prohibited unless the parcels or tracts are owned by the same individual or entity and have a shared boundary.

On Appendix C - PP & CU Table -Under R-insert PC and in the last column reference this new section.

Thanks, Doug Rockwell

RECEIVED
February 9, 2021
Jefferson County, WV
Office of Planning & Zoning

EDF Renewables North America
10 2nd Street NE #400
Minneapolis, MN 55413

February 9, 2021

Mike Shepp, President
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

J Ware
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Donnie Fisher, Vice President
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Shane Roper
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Wade Louthan, Secretary
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Jack Hefestay
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Ron Thomas
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Steve Stolipher, County Commission Liaison
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Matt Knott
Jefferson County Planning Commission
P.O. Box 716
Charles Town, WV 25414

Re: Solar Text Amendment

Dear Commissioners:

This letter is submitted on behalf of Wild Hill Solar, LLC, a subsidiary of EDF, an established solar power generator with a proven national record of responsible development in rural areas. Our counsel, Jackson Kelly, has previously prepared a "white paper" entitled "History of Solar Text Amendment" which explains both the history of the original solar text amendment and why it is consistent with Jefferson County's Comprehensive Plan. A copy of that paper is attached. This letter supplements that paper to address more recent and specific claims of opponents of the original text amendment that it is inconsistent with the Comprehensive Plan.

Both State and County land use laws recognize three ways of authorizing new development. First, some proposed land uses may be authorized as principal permitted uses without the need for further zoning approval so long as they meet whatever criteria are established in the zoning ordinance. Second, uses may be permitted as "conditional uses" which may only advance if they obtain a "conditional use permit" from the Board of Zoning Appeals. And, finally, some uses are exempted from zoning controls altogether.

In early 2020, the Planning Commission ("PC") appointed a subcommittee to work with staff to draft an amendment to the County zoning ordinance which authorized solar development as a "principal permitted use" ("PPU") rather than requiring a conditional use permit ("CUP"). The Subcommittee prepared the draft amendment after listening to developers and farmers about their respective needs. They learned that solar facility developers generally needed to be located near existing electrical infrastructure (high-power lines and substations) to make their projects viable.

The Subcommittee learned also that many farmers in the region are looking for less labor-intensive land uses that yield additional income streams which will allow them to stay on their farms and which do not permanently convert the land to non-agricultural uses. To accommodate those goals, the Subcommittee drafted a text amendment to the zoning ordinance authorizing solar facilities as a PPU ("PPU Amendment"), but with protections (setbacks and buffers) to protect aesthetics and a requirement for a bonded decommissioning plan to restore the capability of the land to support agricultural uses.

The PC then recommended the PPU Amendment be approved by the County Commission after finding that it was consistent with the County's Comprehensive Plan. State land use law requires that the County Commission must, with the advice of the PC, either find that a zoning ordinance amendment is "consistent with the adopted comprehensive plan" or, if it is inconsistent, that there have been major unanticipated economic, physical or social changes in the area that have substantially altered the characteristics of the area. W.Va. Code § 8A-7-8. The determination of consistency is not a high bar.

While zoning ordinances are law, comprehensive plans are not; they are merely guidelines. *See Singer v Davenport*, 264 S.E. 2d 627, 640 (W.Va. 1980). The State Supreme Court has previously counseled that zoning authorities may not pluck individual statements from the Jefferson County Comprehensive Plan as a means of preserving agricultural uses to the exclusion of other uses. *See Corliss v. Jefferson City Board of Zoning Appeals,* 591 S.E. 2d 93, 105 (2003) (farmland preservation but "one of multiple many goals identified in either the Ordinance or the [Comprehensive] Plan.").

Now, though, a small group comprised primarily of non-farmers, opposes the use of a PPU amendment to authorize solar facilities. These opponents argue that such an amendment is inconsistent with the Comprehensive Plan, and that solar development should only advance under an amendment which forces landowners and developers into a lengthy and unpredictable CUP process. They have plucked a few phrases from the hundreds of pages of the Comprehensive Plan and rely on them as hardened expressions of law that prohibit a PPU-based ordinance.

In particular they cite a "recommendation" in the Plan that the County Commission amend the County's zoning ordinance to allow approval of non-agricultural uses in rural areas with a CUP approach:

> 5. Amend the Zoning and Land Development Ordinance to permit additional non-residential rurally compatible uses.
>
> ***
>
> b. Amend local land use regulations to permit non-agriculturally related commercial uses by the Conditional Use Permit (CUP) process in the Rural zone if the use is agriculturally and rurally compatible …and if the use helps to preserve farmland and open space and continue agricultural operations.

Comprehensive Plan, pp. 77. But this recommendation does not render the the use of a PPU Amendment to authorize solar facilities inconsistent with the Plan.

First, it is not clear that solar facilities fall within the non-agricultural "commercial" uses subject to the recommendations in Section 5. Indeed elsewhere, the Plan recommends that renewable generation facilities be encouraged and does not restrict their development to the CUP process. *See* Comprehensive Plan, p. 93, Recommendation 8.a. And, the County's zoning ordinance broadly defines "essential utility equipment" to include "local serving [or] nonlocal [generation] or transmission" and then exempts it from the zoning ordinance altogether. Zoning Ordinance, §§ 2,1 & 4.6.

Second the Plan's recommendation in paragraph 5.b to allow non-agricultural "commercial" uses by the CUP process is not the "goal" of the Plan; it is, instead, just a recommended means of achieving a larger goal. The paramount objective of the Plan in rural areas is to provide farmers with the flexibility to engage in other activities which are compatible with area uses and which allow farmers to generate income sufficient to stay on their farms. Thus, the larger goals or priorities recognized by the Plan include:

> "*the desire [by farmers]to have more flexibility in the types of uses and activities that take place on their properties.* While there has been an increase in the number of farms in Jefferson County in recent years, *many of the farms provide a limited income from farming activities."*

Continuing, the Plan notes that:

> "*By having additional flexibility in uses and operations, farm operators might be able to continue to have a viable business* while devoting more time and resources to on-site needs, instead of having to work off-site to pay for the farm.

Comprehensive Plan, p. 38. If these objectives can be achieved by the use of a PPU ordinance for solar development rather than a CUP process, then the PPU Amendment is consistent with the Plan.

Here, as the PC well knows, the PPU Amendment itself has been carefully crafted to balance the interests in preserving the nature of the area while providing farmers with additional revenue from a use that does not permanently convert the land to non-agricultural uses. In that respect, solar facilities and the solar amendment are unique: they address a non-agricultural use that is noiseless, non-polluting, does not increase non-construction traffic, does not intrude significantly into the vertical viewscape and will be removed at the end of its useful life via a plan requiring restoration of the land. Thus, while commercial uses may require a CUP process to achieve the goals of the Plan, a solar use does not. Indeed, to the extent that the Plan also encourages the use of renewables (as noted in earlier memos from staff), adding the layer of a CUP requirement to the proposed PPU Amendment is itself arguably inconsistent with the Comprehensive Plan.

Finally, in the six to seven years since the Comprehensive Plan was drafted, much has changed that was never contemplated by the current Plan. The costs of solar production have dropped; the demand for fossil fuels has declined precipitously; the demand for renewables, especially solar, has soared in the region while the rate of employment in Jefferson County has dropped and remained lower compared to surrounding counties. *See* Work Force West Virginia 1/26/21. And, the West Virginia Legislature has, since the Plan was approved, established an expedited process favoring the siting of renewable power generation. All of these facts favor the use of a PPU amendment to authorize solar facilities rather than to impede their development with a lengthy CUP process. We encourage the Planning Commission to approve the PPU Amendment as consistent with the Comprehensive Plan.

Very truly yours,

emily dalager

Emily Dalager
Project Development Manager

RECEIVED
February 9, 2021
Jefferson County, WV
Office of Planning & Zoning

History of Solar Text Amendment

Planning Commission Review:

- 11/18/19: Mr. Stanley Dunn, dairy farmer, requests Planning Commission (PC) to amend zoning ordinance to allow solar farms in rural districts.

- 12/10/19: PC unanimously approves motion to consider a solar text amendment in its work plan. *See* PC Minutes 12/10/19, ¶6; Memo of 5/27/20 from Zoning Administrator to PC.

- 2/11/20: PC appointed subcommittee to work with staff and interested parties to "draft a text amendment to allow solar facilities as a Principal Permitted Use." *See* Memo of 5/27/20 from Zoning Administrator to PC.

- 5/5/20: Staff presented draft text amendment allowing solar facilities as a principal permitted use to Planning Commission. *See* PC Meeting Minutes, 5/5/20, ¶ 9. The PC approved a motion to schedule a public hearing on 6/2/20.

- 6/2/20: PC meeting. Staff provided overview of proposed text amendment recognizing solar energy production as a principal permitted use in rural and other zoning districts. PC Minutes, 6/2/20. Amendment included buffering, setbacks and a decommissioning obligation. Public comments were accepted at the meeting and comment period was extended 10 more days.

- 6/23/20: PC met to review proposed amendment and Staff's compilation of public comments received through 6/16/20. *See* Public Comment Matrix available on PC webpage. PC revised the draft amendment in response to public comment to include decommissioning and bonding requirements as well as to add solar facilities as principal permitted uses in "residential growth districts." The PC then voted 8-1 to forward the draft amendment to the County Commission with a finding that the text amendment is consistent with the Comprehensive Plan. PC Minutes, 6/23/20, ¶ 3.

County Commission Review:

- 7/16/20: Staff provided overview of solar facilities text amendment and discussed scheduling a public hearing. Motion by Ms. Tabb to send amendment back to PC for further edits failed 2-3. Motion by Ms. Noland for County Commission (CC) to hold public workshop passed unanimously.

- 8/6/20: Staff Workshop on proposed solar text amendment. Consensus of CC to hold another workshop on 8/20/20 and to hold a public hearing on 9/11/20. CC Minutes 8/6/20, ¶ 7.

- 8/20/20: CC conducted a 2nd workshop on the solar facilities text amendment. *See* PowerPoint presentations at http://www.jeffersoncountywv.org/county-government/departments/engineering-planning-and-zoning/office-of-planning-and-zoning/solar-facilities

- 9/11/20: CC public hearing to accept public comment on solar text amendment; CC extended period to file written comments for 2 weeks and noted that it planned to take action on 10/1/20. CC Minutes 9/11/20.

- 10/1/20: CC approves text amendment by 3-2 vote to allow solar facilities as a principal permitted use in various zoning districts, including rural residential growth districts, after declaring the text consistent with the County's Comprehensive Plan. Amendment to take effect in 45 days. Also approved amendment to ordinance to increase required setbacks from 100' to 200'. *See* CC Minutes 10/1/20, ¶ 10.

Lawsuit:

- 11/2/20: Lawsuit filed challenging ordinance on grounds that the ordinance is not consistent with Comprehensive Plan. *See Aitcheson et al v. County Commission*, Civil Action No. CC-19-2020-C-125. Complaint cited provisions of Comprehensive Plan that note one goal of the Plan "is to to preserve the rural character of the County and the agricultural community."

- Court issued temporary restraining order (without first providing a hearing to the County or the public) pending a preliminary injunction hearing.

- 12/10/20: Prior to preliminary injunction hearing, Plaintiffs and CC settle the lawsuit. CC votes 3-2 to vacate existing amendment "to return the Text Amendment to the [PC] for further review, consideration and public hearing, if required by law."

The Text Amendment is Consistent with the Comprehensive Plan:

- State law and the County zoning ordinance require that before the CC amends a zoning ordinance, "with the advice of the planning commission, [it] must find that the amendment is consistent with the adopted comprehensive plan." *See* W.Va. Code § 8A-7-8. County zoning authorities are entitled to significant deference in making that determination.

- **Staff earlier noted that portions of Comprehensive Plans encourage the development of renewable energy**:

  - *See* May 27, 2020 memo from County Zoning Administrator to Planning Commission with highlighted excerpts from Comprehensive Plan encouraging development of renewable energy) (citing Comp. Plan, pp. 89-90 & 93).

- (pp. 89-90: noting the need to reduce use of finite resources, citing WV Legislative enactment requiring investor owned utilities to supply 25% of retail sales from renewable sources, and noting the benefits of solar energy production & p. 93, ¶8.a: listing among "Infrastructure and Technology Recommendations" the "[e]ncourage[ment of] public entities to utilize … renewable energy sources…." and "[e]nabl[ing] the construction of renewable energy generation facilities by residents and businesses.")

- **The Comprehensive Plan recognizes the need for flexibility in the use of agricultural properties**: Under the heading "Rural Land Use Planning," the Plan observes:

> Prevalent in discussions with Jefferson County's agricultural communities was *the desire to have more flexibility in the types of uses and activities that take place on their properties.* While there has been an increase in the number of farms in Jefferson County in recent years, *many of the farms provide a limited income from farming activities.*
>
> ***
>
> As a result, many farm operators are in the position of working the equivalent of multiple full time jobs (the job that pays for the farm, as well as the work needed to continue operations of the farm). *By having additional flexibility in uses and operations, farm operators might be able to continue to have a viable business* while devoting more time and resources to on-site needs, instead of having to work off-site to pay for the farm.
>
> Comprehensive Plan, p. 38. This is consistent with the comments of several farmers who supported the solar amendment.

  - **The Comprehensive Plan rejects preservation of farms without farmers**:

    - Under the heading "Agriculture and the Rural Economy," the Plan notes that "[i]t is important that this decision *not be framed by the concept of preservation but of creating opportunities for farms to be economically viable. *** There must be a viable rural economy to maintain the rural landscape*." Comp. Plan, p. 72 (emphasis supplied).

  - **The Amendment preserves future use of land for farming**:

    - The amendment requires a "decommissioning plan" to restore land to pre-solar condition after power production ceases and a bond to cover the costs of the decommissioning. No such requirement exists for the conversion of farmland to residential or other uses that permanently convert the land to non-agricultural uses.

  - **Amendment encourages co-location of facilities with existing exempted electrical infrastructure**:

- Commercial or utility scale solar development is impracticable unless sited close to existing electric infrastructure such as substations and transmission lines, which are already exempted from zoning restrictions as "essential utilities and equipment" under state and county law. W.Va. Code §§8A-1-2(f) (defining essential utilities) &8A-7-3(e) (providing essential utilities are "a permitted use in any zoning district); JC Zoning Ordinance § 4.7(exempting essential utility equipment from zoning ordinance)

- By authorizing solar development near infrastructure that is already exempted from zoning restrictions the amendment minimizes aesthetic impacts. Suggestions by opponents that solar development be restricted to Urban Growth Areas and Preferred Growth Areas ignore that they are not necessarily located near existing electrical infrastructure.

- **The Amendment also includes screening, buffering and setback requirements to minimize the aesthetic impacts of solar facilities**.

Planning Department

From: Planning Department
Sent: Tuesday, February 9, 2021 4:09 PM
To: 'o6redleg@aol.com'
Subject: RE: Solar Energy Zoning Amendment at the Planning Commission Hearing on Tuesday, February 9th

Good afternoon,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: o6redleg@aol.com <o6redleg@aol.com>
Sent: Tuesday, February 9, 2021 3:55 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Solar Energy Zoning Amendment at the Planning Commission Hearing on Tuesday, February 9th

Please see my attached comments concerning the Hearing this evening.

Any questions please contact me at o6redleg@aol.com

Thank you,

Robin Huyett Thomas

February 9, 2021

Alexandra Beaulieu
Zoning Administrator
Jefferson County, WV

Re: ZTA19-03, Solar Energy Facilities

Following are comments for the Jefferson County Planning Commission Hearing 2.9.2021

1. The revision for the set back from 100 ft to 200 ft approved by the Jefferson County Commission should remain in the ordinance to mitigate impact on adjacent properties.

2. The Jefferson County Planning Commission excerpts provided from Envision Jefferson 2035 Comprehensive Plan to support their submittal only include excerpts from Sections 1.A and 2.A, Urban Level Development Area and Economic Development and Employment.
   There is no representation from the Comprehensive Plan from Sections 1.B and 2.B regarding Rural Land Use Planning and Agricultural and Rural Economy.
   All applicable sections of the Comprehensive Plan should be evaluated regarding the change in zoning and siting of these facilities.

3. If the County adopts the zoning change to allow these facilities it should be with a Conditional Use Permit and not by right (see page 77 of the Comprehensive Plan) to address the uniqueness of each property under consideration as well as impact to surrounding conditions unique to that particular site.

4. It is common knowledge in the County that other developers of these facilities are actively talking to landowners looking for potential development sites.

5. Has the Planning Commission evaluated the potential of number of acres that could be removed from agricultural to commercial use in the County with the zoning change allowing Solar Energy Facilities?

6. The AEP 138 kv transmission line used to send the wholesale energy North is outdated and the structures are old. If upgrade is required due to energy increase through the lines the rate payers will pay for upgrades and EMF levels could increase.

7. Dalager's statement in the February 3rd – February 9th Spirit of Jefferson article about the acreage covered by the panels is misleading. The statement that the panels would cover 318 acres does not include the negative space required in the layout of the panels, ie the rows between the panels making it sound like the installation covers less acreage.

8. Dalager's statement in the February 3rd – February 9th Spirit of Jefferson article that the facility will be generating 218 kilowatts of electrical power annually that would be

consumed by Jefferson County residents is misleading. This is a wholesale energy facility that is sending energy out of state. It is not dedicated for Jefferson County and what power may transfer will not be at wholesale rates.

9. Dalager also states that this project will pose no negative impact on wildlife which is also repeated in the mailing that they sent out to landowners. There is no mitigation for loss of habitat and no corridors for wildlife that would normally move through or get caught in the encapsulated 795 acres.

10. Decommissioning of the Facility may involve mitigation of metals and other contaminates on the land. A zoning change should provide provisions for a decommissioning plan to include surety requirements.

11. There should be no exemption to storm water management. Storm water management and runoff into the local streams and Shenandoah River is an ever growing impact to the health of our natural waterways in the County.

12. I believe there is a conflict of interest on the new County Commission Board.

13. I believe the Jefferson County Planning Commission and County Commission are in office to represent all citizens of the County making every effort to reach a best compromise solution from all concerns heard.

Thank you,

Robin Huyett Thomas
534 S. Samuel St./165 Sesame St.
Charles Town, WV

Planning Department

From: Planning Department
Sent: Tuesday, February 9, 2021 12:41 PM
To: 'Robin Moore'
Subject: RE: NO to Zoning Amendment

Good afternoon,

This email is to confirm the submission of your email. Please note that as your comment has come in after the deadline, your comments will be forwarded to the Commissioners just prior to the meeting.

Thank you and a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Robin Moore <robinlbmoore@hotmail.com>
Sent: Tuesday, February 9, 2021 12:31 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: NO to Zoning Amendment

Greetings,

Prior to your meeting this evening, I would just like to ask you to deny the zoning amendment which would allow essentially unlimited development of solar farms. Jefferson County is known for its beauty and history. We CANNOT sell out to companies and allow our scenic vistas and quality of life to be destroyed. I would certainly support solar farms that are carefully and thoughtfully planned and developed. The view that brought me to Jefferson County 18 years ago is in danger of the Wild Hill solar project. From where I sit, I am looking right at the proposed project site which is between my home and the gorgeous Blue Ridge. Certainly there are locations for these projects that would not be in direct view of homes.

Thank you for your consideration and for looking out for our county's best interests.

Robin Moore
96 Stephen Court
Charles Town (Cloverdale Heights)

Planning Department

From: Zac Curry <zcurryarmy@hotmail.com>
Sent: Tuesday, February 9, 2021 5:22 PM
To: Planning Department
Subject: Solar Panels

To Whom It May Concern,

I am a decade long resident of Jefferson County. I am a military veteran and coach one of the largest sports leagues in this county with over 100 Jefferson County families trusting me with their children, clearly I am dedicated to the future of our land. We moved to this county because of its scenic beauty and natural offerings. We are disgusted by the Planning Commissions activities concerning these panels and with their putting profit (sometimes personal) over the good of the county. Please do the right thing and vote down "by right" usage and vote for conditional use!

Thank you!

Very Respectfully,

Zac Curry

Planning Department

From: Planning Department
Sent: Wednesday, February 10, 2021 10:49 AM
To: 'Stacy'
Subject: RE: Public Comment #ZTA19-03

Good morning Ms. Tabb,

Thank you for submitting your comments to our office. We will include this email in the file.

Have a nice day.

Sincerely,

Jennilee Hartman, Zoning Clerk
Office of Planning and Zoning
304-728-3228

From: Stacy <sevanisko@hotmail.com>
Sent: Tuesday, February 9, 2021 8:42 PM
To: Planning Department <PlanningDepartment@jeffersoncountywv.org>
Subject: Public Comment #ZTA19-03

Planning Commission,

For the record, this is my public comment given today 2/9/21 at the public hearing.

Today, with the realized negative effects of traditional energy sources, it's expected that alternative, renewable energy would be explored. However, with what we are discussing here, there is no direct mechanism in effect in West Virginia for our homes nor small businesses to purchase the electricity to be generated, this is wholesale, in a regulated state.

When you read through Envision 2035, it lays out the desired infrastructure for what this County anticipated to develop. Now as renewables are gaining ground the task comes to you to design the terms and conditions according to the Comprehensive Plan framework. And, to do so in coordination with the JCDA, who recommended establishing guardrails for solar facilities including "only as a conditional use in appropriate zoning categories." Clearly there were inaccuracies with the proposed ordinance before and we find ourselves here again to address the requirements.

I am participating in this process because I am requesting appropriate change and growth. I respect the beauty of what we are made of here, and don't want to see it rapidly change in a way that deteriorates the identity.

What the applicant, Mr. Dunn requested and what has been proposed in Ordinance #ZTA19-03 are inconsistent. As currently written, the ordinance does not offer enough – such as the decommissioning, bonding and stormwater – to mitigate potential negative impacts. Allowing unconditional permitted solar projects almost anywhere in the County could transform hundreds if not thousands of acres. That's the potential size of each project. No other development in our County currently consumes that much space besides clusters of farms, homes and public lands.

We have the opportunity available now to evaluate proper land use in scale and intensity for solar projects and site the best-fit projects per location.

Opposition grows, not because people want to stunt growth, but because it is not being done in a complementary manner. Too often the interests of those of us who are tax paying residents, aren't seen as long-term community stakeholders, or given the opportunity to provide valued input. We DO participate in the creation of the Comprehensive Plan, and I am asking you to reevaluate those guidelines and modify the proposal to align with the Plan.

If facilities will be built, follow the Conditional Use Process, allow each project to be evaluated on its own merits and whether it's compatible with the surroundings. Give consideration to the adjacent landowners who know the lay of the land and how these large installations would directly affect them.

You are defining these allowed uses within our County, so I hope we get it right the second time. Thank You.

Anastasya Tabb

248 Willowdale Dr.

Shepherdstown, WV 25443