



Franklinton Farm

Solar Project

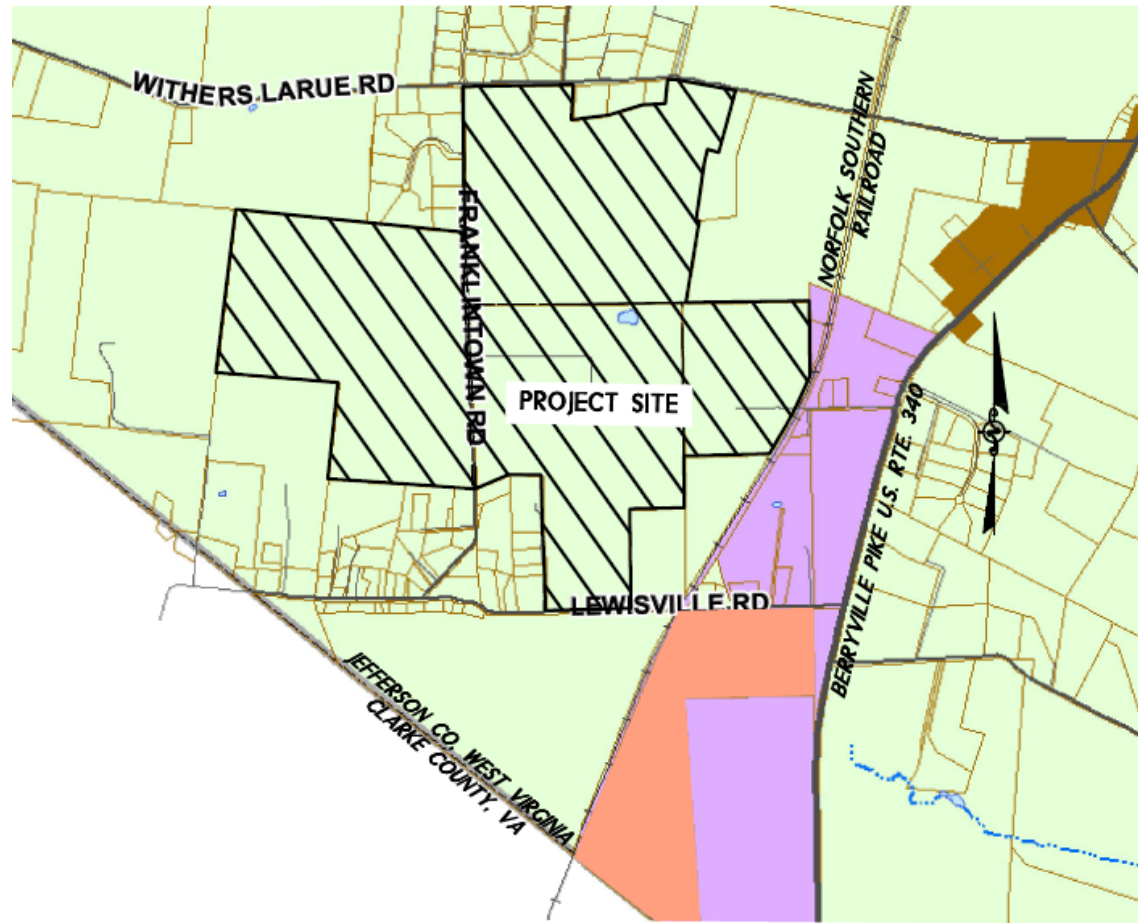
Jefferson County, West Virginia
August 22, 2024

Presented to:
The Jefferson County Board of Zoning Appeals

Applicant:
Franklinton Farm, LLC

INTRODUCTION

- **Project Name:** Franklinton Farm Solar Project
- **Proposed Land Use:** Solar Farm (connected to electrical utility grid)
- **Project Area:** 501.31 acres of routinely-disturbed farmland on 4 parcels
- **Solar Production:** 80 MW
- **Battery Storage:** 20 MW (BESS = Battery Energy Storage System)
- **Grid Interconnection:** Connects to existing 138 kV transmission line that intersects the site along the southern side (Lewisville Road)
- Construction to begin in 2026 and to last approximately 12 months
- Anticipated 30-year project life
- Includes a by-right electrical substation



VICINITY MAP

SCALE: 1"= 2,000'

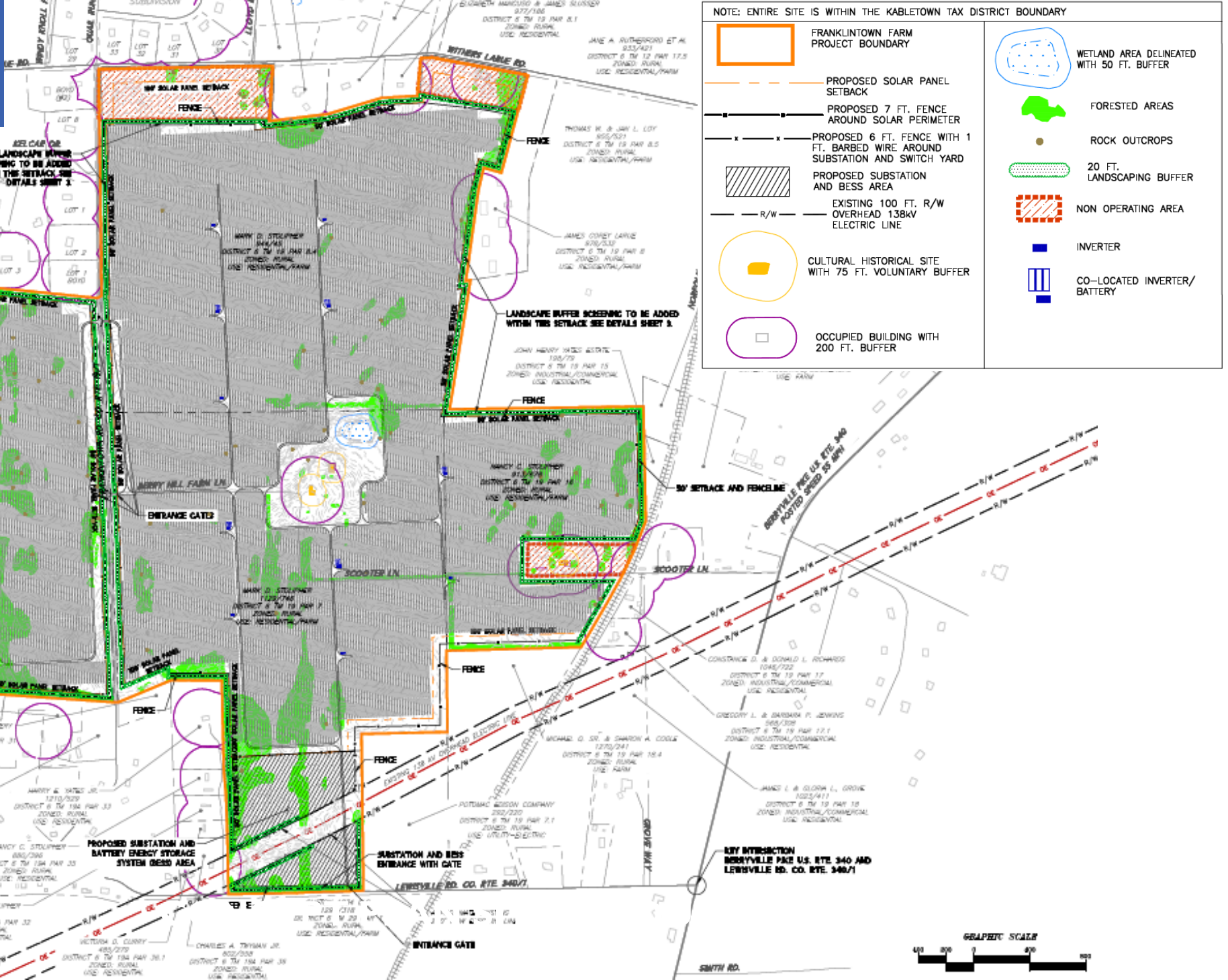
ZONING LEGEND

 RURAL	 INDUSTRIAL/COMMERCIAL
 RESIDENTIAL/LIGHT INDUSTRIAL/COMMERCIAL	 PARCELS
 VILLAGE	

- Project is bound by Withers Larue Road to the North, Lewisville Road to the South, and the Norfolk Southern railroad tracks to the East.
- Franklinton Road bisects the project north-to-south.
- All four (4) project parcels are in the Rural Zoning District.
- The eastern end of the project abuts an Industrial/Commercial Zoning District.
- The southeastern corner of the project abuts a Residential/Light Industrial/Commercial Zoning District.

PROJECT LOCATION AND ZONING

CONCEPT PLAN



SETBACKS & BUFFERS

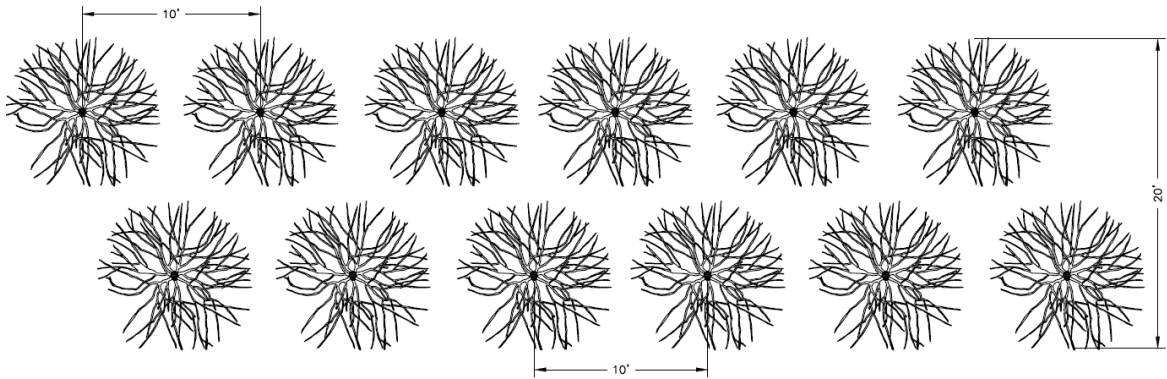
- In locations where the project abuts residential parcels or a roadway, a **50 ft setback** to the fence shall be applied from the property boundary or edge of road right-of-way. In these locations, a 20' wide vegetative buffer will be planted within the setback area.
- In locations where the project abuts a parcel primarily in agricultural use, a **100 ft setback** to the fence shall be applied with no vegetative buffer.
- A **100 ft setback** will be applied adjacent to the Locust Grove Cemetery and will include a 20' wide vegetative buffer within the setback area. Ground penetrating radar (GPR) will be performed around the historical cemetery prior to construction.
- 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' wide vegetative buffer along common property lines within the setback area.



VEGETATIVE BUFFER



- Two rows of evergreen trees, staggered. Trees will be planted at a minimum of 6 feet high and will be 10 feet on center.
- Species have been selected to optimize survival, and to provide visual interest.
- Evergreens will be properly maintained and watered until established.
- Dead or dying trees will be promptly replaced by the solar farm owner.



PLANTING DESCRIPTION:
TWO ROWS OF EVERGREENS, 10' ON CENTER, PLANTED AT MINIMUM 6' HIGH

PROPOSED LANDSCAPE BUFFER LAYOUT

NO SCALE

Botanical Name	Common Name	Height at Planting	Growth Rate (in/year)	Estimated Height and Spread at Maturity	Spacing	Root
EVERGREEN TREES						
Ilex opaca	American Holly	6'	12-24	30' x 20'	10' O.C.	B&B
Juniperus virginiana	Eastern Red Cedar	6'	12-18	50' x 25'	10' O.C.	B&B
Ilex opaca 'Dan Fenton'	Dan Fenton American Holly	6'	12-24	40' x 25'	10' O.C.	B&B
Cryptomeria japonica 'Sekkan Sugi'	Japanese Cedar	6'	12-14	30' x 25'	10' O.C.	B&B
Thuja x 'Green Giant'	Green Giant Arborvitae	6'	36-60	50' x 20'	10' O.C.	B&B

EVERGREEN BUFFER PLANT SCHEDULE

VISUAL SIMULATIONS

SIMULATED CONDITION
YEAR 0: LANDSCAPE



VIEWPOINT 1

FRANKLINTOWN RD
looking north

KEYMAP



SIMULATED CONDITION
YEAR 2: LANDSCAPE



VIEWPOINT 1

FRANKLINTOWN RD
looking north

KEYMAP





SIMULATED CONDITION

YEAR 5: LANDSCAPE



VIEWPOINT 1

FRANKLINTOWN RD
looking north

KEYMAP



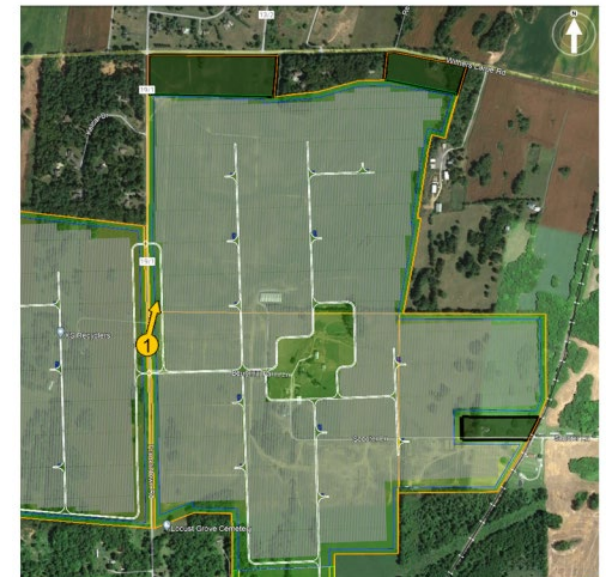
SIMULATED CONDITION
YEAR 15: LANDSCAPE



VIEWPOINT 1

FRANKLINTOWN RD
looking north

KEYMAP



SIMULATED CONDITION
YEAR 0: LANDSCAPE



VIEWPOINT 2

FRANKLINTOWN RD
looking south

KEYMAP



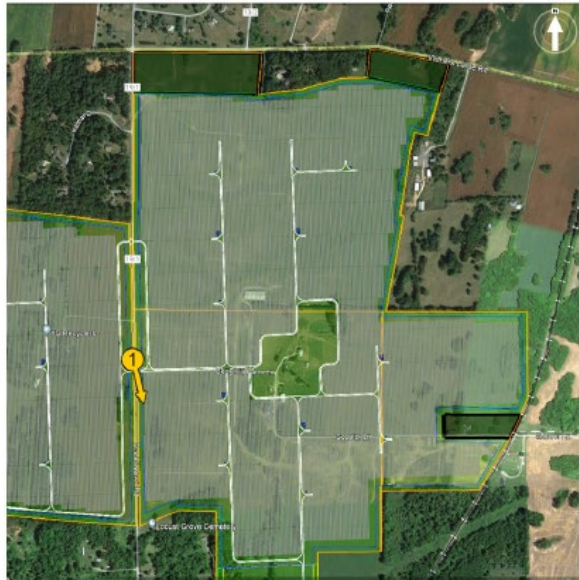
SIMULATED CONDITION
YEAR 2: LANDSCAPE



VIEWPOINT 2

FRANKLINTOWN RD
looking south

KEYMAP



SIMULATED CONDITION
YEAR 5: LANDSCAPE



VIEWPOINT 2

FRANKLINTOWN RD
looking south

KEYMAP



SIMULATED CONDITION
YEAR 15: LANDSCAPE



VIEWPOINT 2

FRANKLINTOWN RD
looking south

KEYMAP



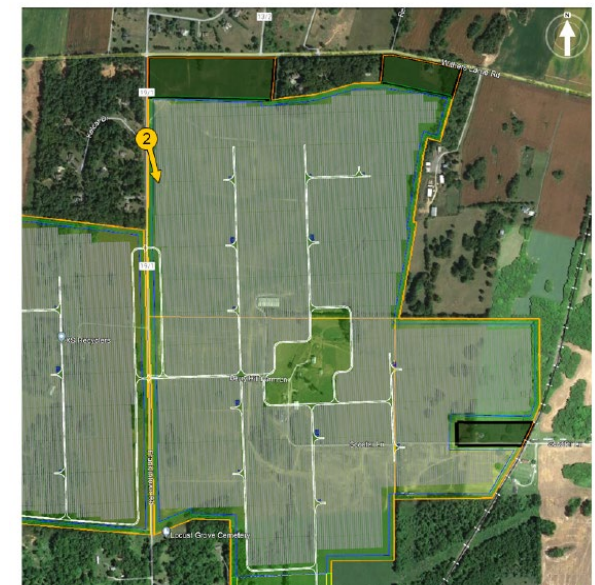
SIMULATED CONDITION
YEAR 0: LANDSCAPE



VIEWPOINT 3

FRANKLINTOWN ROAD

KEYMAP



SIMULATED CONDITION
YEAR 2: LANDSCAPE



VIEWPOINT 3

FRANKLINTOWN ROAD

KEYMAP



SIMULATED CONDITION
YEAR 5: LANDSCAPE



VIEWPOINT 3

FRANKLINTOWN ROAD

KEYMAP



SIMULATED CONDITION
YEAR 15: LANDSCAPE



VIEWPOINT 3

FRANKLINTOWN ROAD

KEYMAP





SIMULATED CONDITION

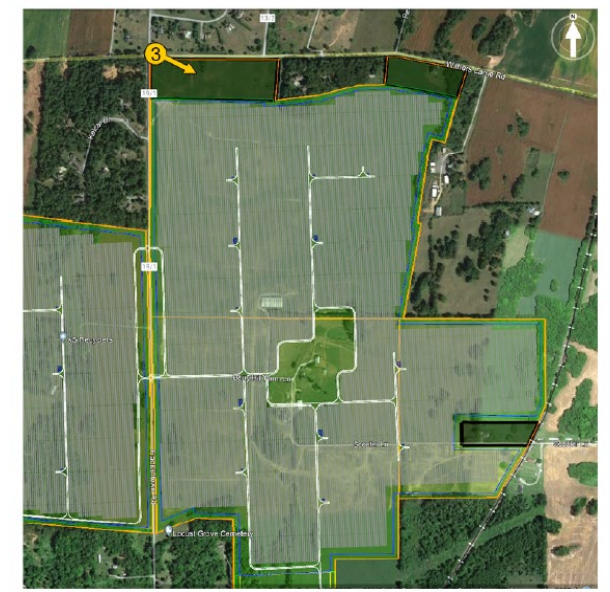
YEAR 0: LANDSCAPE



VIEWPOINT 4

WITHERS LARUE RD

KEYMAP



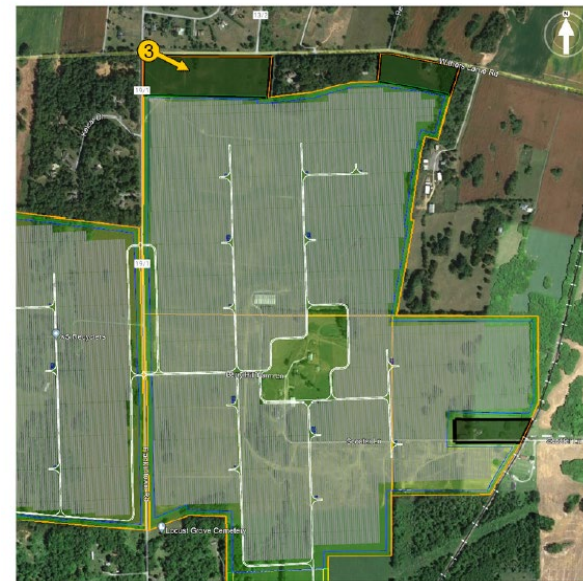
SIMULATED CONDITION
YEAR 2: LANDSCAPE



VIEWPOINT 4

WITHERS LARUE RD

KEYMAP



SIMULATED CONDITION
YEAR 5: LANDSCAPE



VIEWPOINT 4

WITHERS LARUE RD

KEYMAP



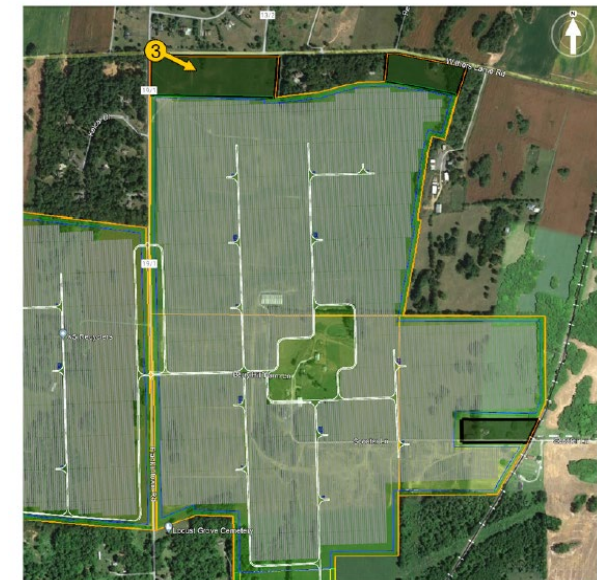
SIMULATED CONDITION
YEAR 15: LANDSCAPE



VIEWPOINT 4

WITHERS LARUE RD

KEYMAP



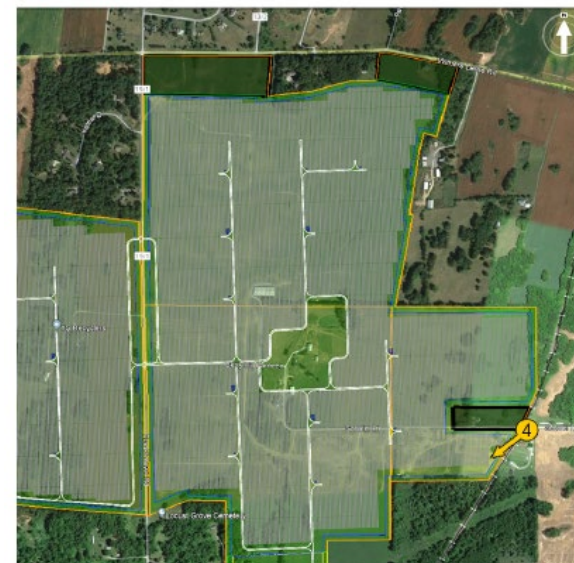
SIMULATED CONDITION
YEAR 0: LANDSCAPE



VIEWPOINT 5

SCOOTER LN
looking south

KEYMAP



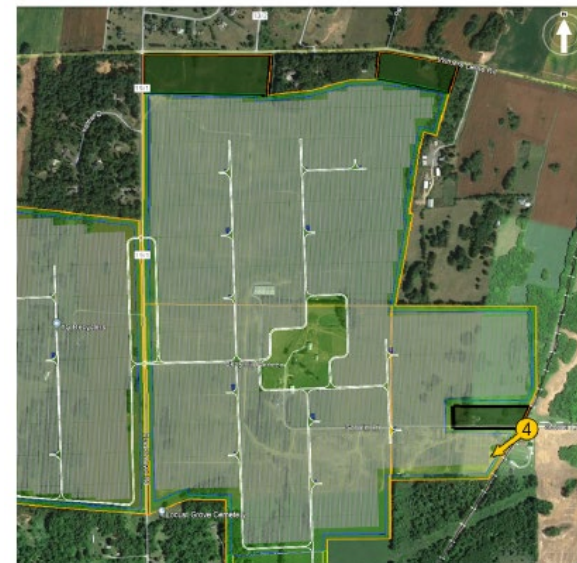
SIMULATED CONDITION
YEAR 2: LANDSCAPE



VIEWPOINT 5

SCOOTER LN
looking south

KEYMAP





SIMULATED CONDITION

YEAR 5: LANDSCAPE



VIEWPOINT 5

SCOOTER LN
looking south

KEYMAP



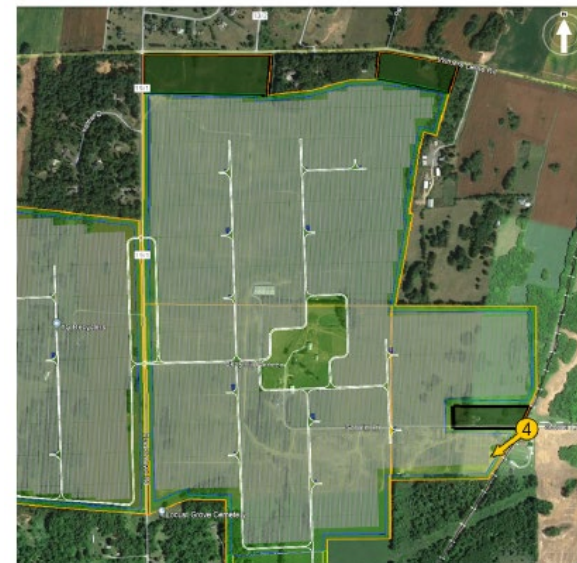
SIMULATED CONDITION
YEAR 15: LANDSCAPE



VIEWPOINT 5

SCOOTER LN
looking south

KEYMAP



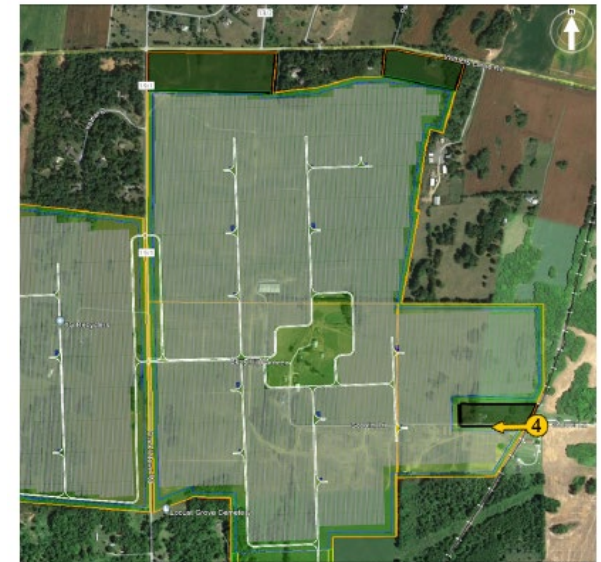
SIMULATED CONDITION
YEAR 0: LANDSCAPE



VIEWPOINT 6

SCOOTER LN
looking west

KEYMAP





SIMULATED CONDITION

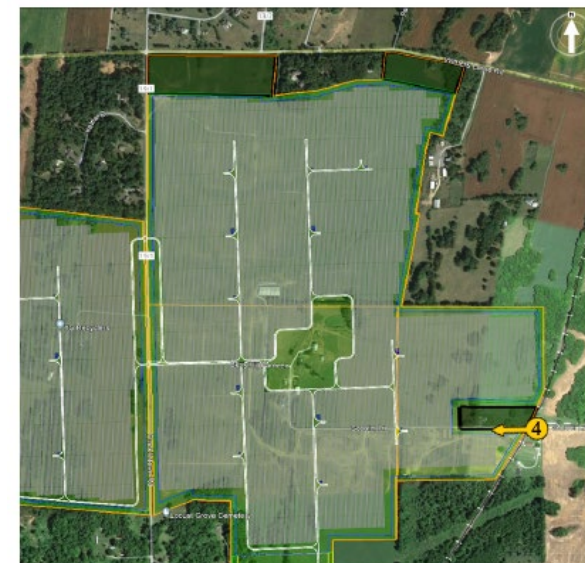
YEAR 2: LANDSCAPE



VIEWPOINT 6

SCOOTER LN
looking west

KEYMAP





SIMULATED CONDITION

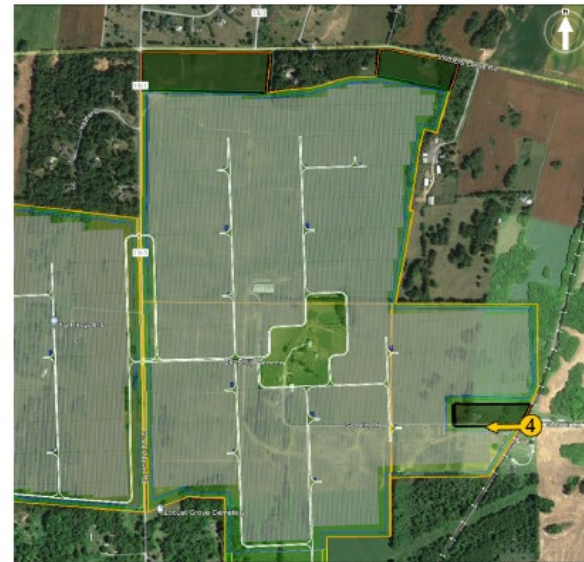
YEAR 5: LANDSCAPE



VIEWPOINT 6

SCOOTER LN
looking west

KEYMAP



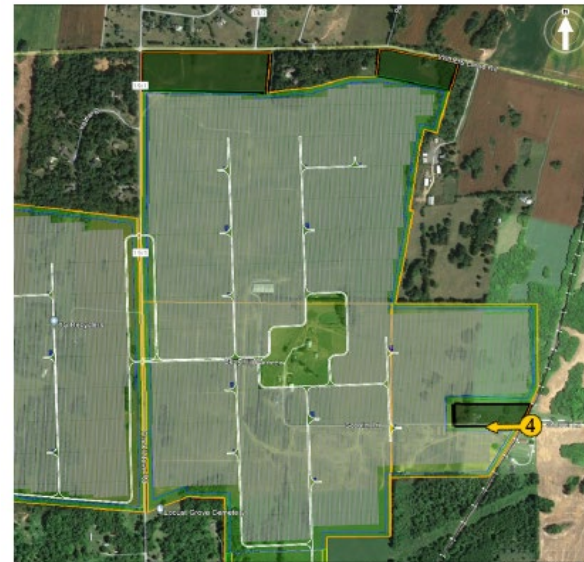
SIMULATED CONDITION
YEAR 15: LANDSCAPE



VIEWPOINT 6

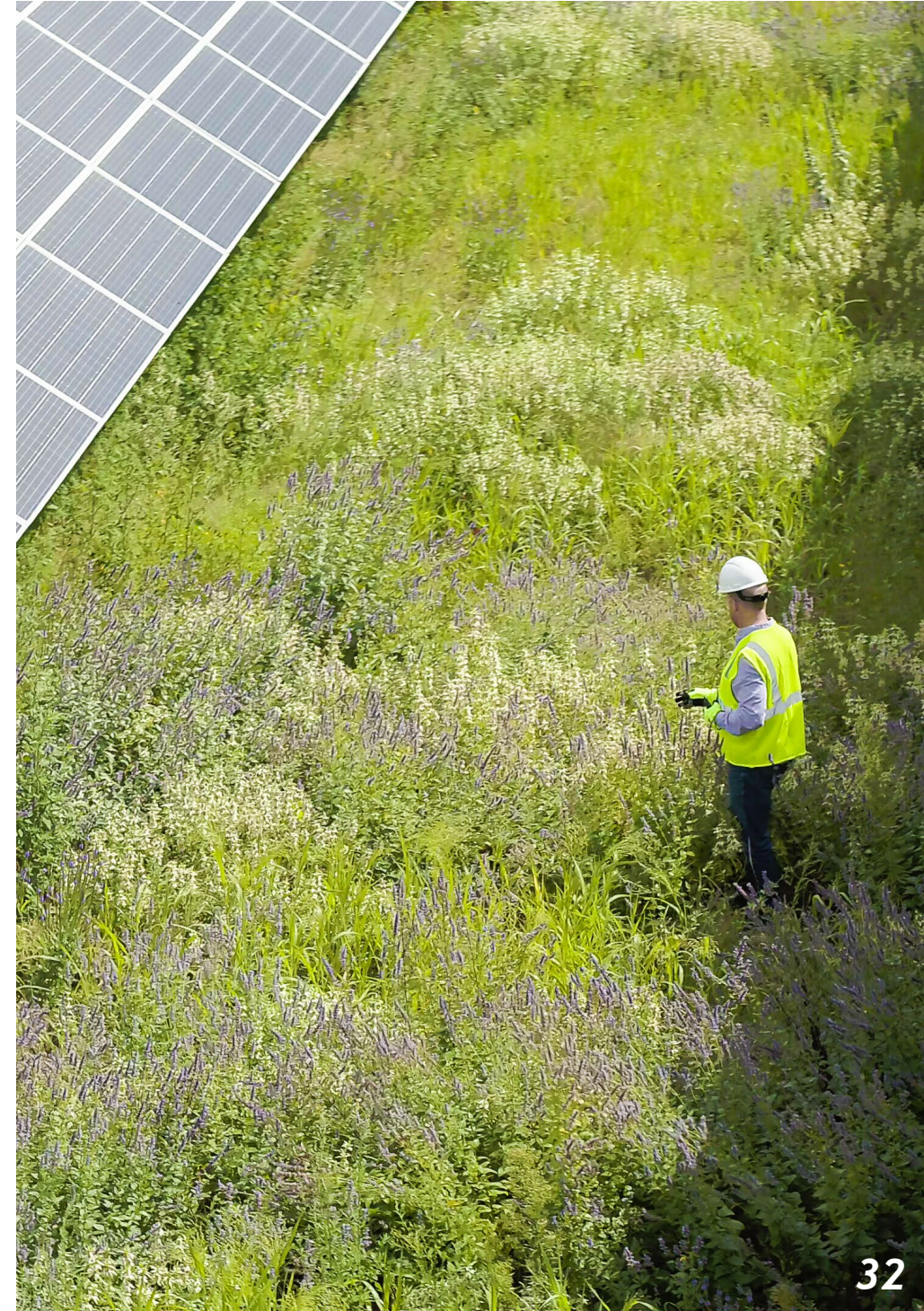
SCOOTER LN
looking west

KEYMAP



GROUND COVER

- Site will be seeded with native and/or naturalized perennial vegetation to create a meadow condition.
- A Vegetation Management Plan has been established for the project to guide the activities of site preparation, installation, and overall management of the established vegetation on the site.
- The seed mix has been formulated with the goals of stabilizing soil, reducing chemical use, reducing runoff and enhancing wildlife habitat.
- Cultivating native vegetation at solar sites is a regenerative practice that stores nutrients in the landscape for long-term ecological and biodiversity value, even after decommissioning. It also establishes favorable conditions for stormwater protection and carbon sequestration.
- The site is not currently planned to utilize grazing as a method of maintenance.



TOPSOIL MANAGEMENT

- A main objective during civil design is to avoid regrading altogether. This is achieved by modifying the “reveal heights” of the steel support piles to stay within the racking system’s design constraints.
- Regrading is only used when existing slopes are just too high for the racking system selected. If regrading is necessary in some locations, the topsoil will be segregated and stockpiled.
- The Soil Management Plan will include topsoil salvage and storage requirements, as well as guidelines for the contractors to follow related to topsoil handling and conservation.
- Topsoil will be redistributed throughout the site prior to groundcover seeding.





NOISE & GLARE

- Applicant recognizes that the project must be in conformance with all environmental standards as described in Article 8, Section 8.9 of the Jefferson County Zoning and Land Development Ordinance.
- An operational noise assessment concluded that Project-generated noise levels would be well below the County Zoning standard of 60 dBA during the daytime and 50 dBA during the nighttime.
- Photovoltaic panels are generally designed to absorb sunlight rather than reflect it.
- A third-party glare analysis was performed and concluded that there are no predicted unacceptable glare occurrences for nearby residences or roadways as a result of the single-axis tracking arrays.
- Panels will be installed at a 10 degree or greater angle while they are in their "stored" position, prior to the motors being hooked up to eliminate any potential glare occurrences.

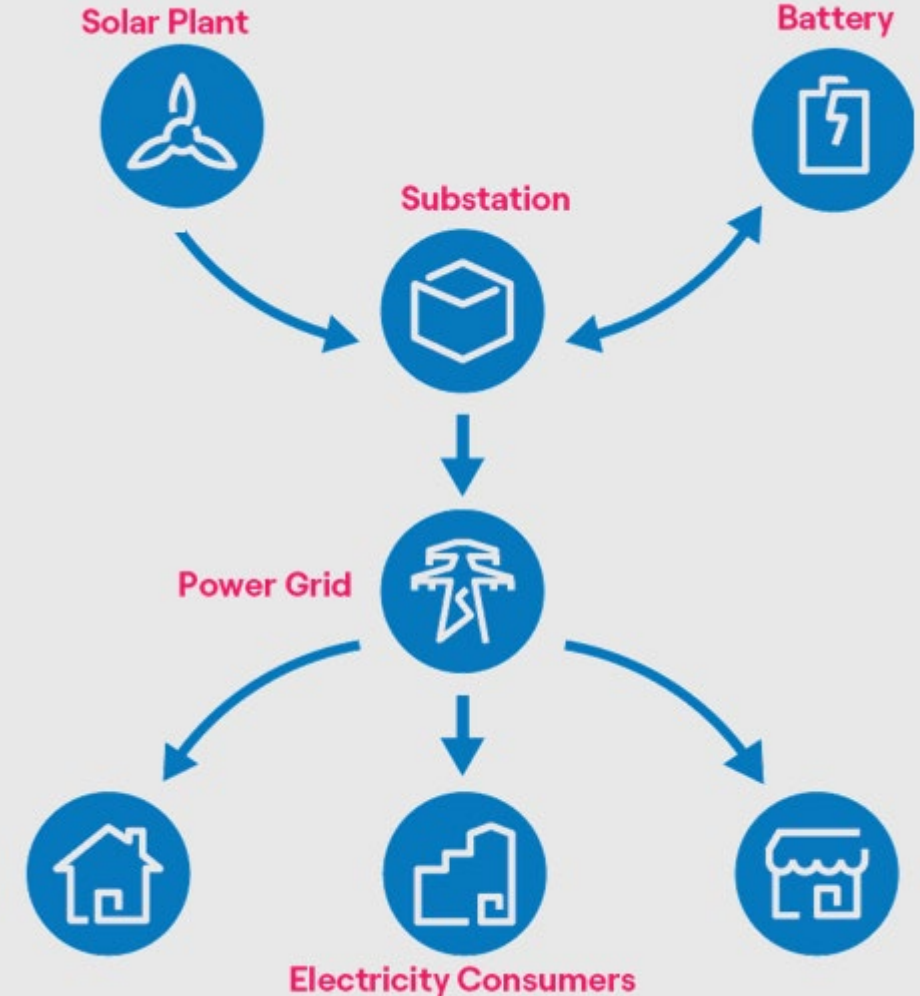


TRAFFIC

- The operation and maintenance of the solar facility will result in minimal vehicular traffic generation post-construction.
- Approximately 2-3 vehicles per day

BATTERY ENERGY STORAGE SYSTEMS

- Battery Energy Storage Systems (BESS) are a technology that allows energy to be stored and dispatched on demand.
- Units consist of batteries housed in a container, connected to the power grid.
- Each battery container has its own HVAC and a power conversion system and are tested to meet the most stringent standards such as UL9540/UL9540A.
- The BESS will either be located adjacent to the substation (just north of Lewisville Road) or they will be dispersed throughout the site and co-located near some of the electrical inverters.





STORMWATER MANAGEMENT

- Stormwater Management for this Project will follow the amended Jefferson County Stormwater Management Ordinance, Article I D.2.h for Solar Energy Facilities. A Stormwater Management report with documentation and drawings will be submitted to Jefferson County for review and approval.
- Additionally, the Applicant's Engineer has met with the County Engineer and agreed to incorporate some of the County's suggested enhancements to the existing SWM Ordinance based on the County's experience with the previous Solar Projects.
- The Project will also develop the required Erosion and Sediment Control Plan, Stormwater Pollution Prevention Plan, and Groundwater Protection Plan and apply for the WVDEP National Pollution Discharge Elimination System (NPDES) permit for construction.
- Will follow the West Virginia Department of Environmental Protection (WVDEP) approved Erosion and Sediment Controls (E&S) Plans. Will limit grading to only areas necessary and will be seeded immediately.
- Native grasses and/or naturalized perennial vegetation will be planted to minimize erosion and to provide a natural filtration system for stormwater.
- Will develop permanent Stormwater Management structures as necessary to meet pre-development flows (County & State requirement).
- Will follow Best Management Practices and control stormwater runoff until vegetation is re-established, including routine inspections.

DECOMMISSIONING & SITE RESTORATION

The West Virginia Department of Environmental Protection (WVDEP) has requirements for decommissioning solar facilities, including:

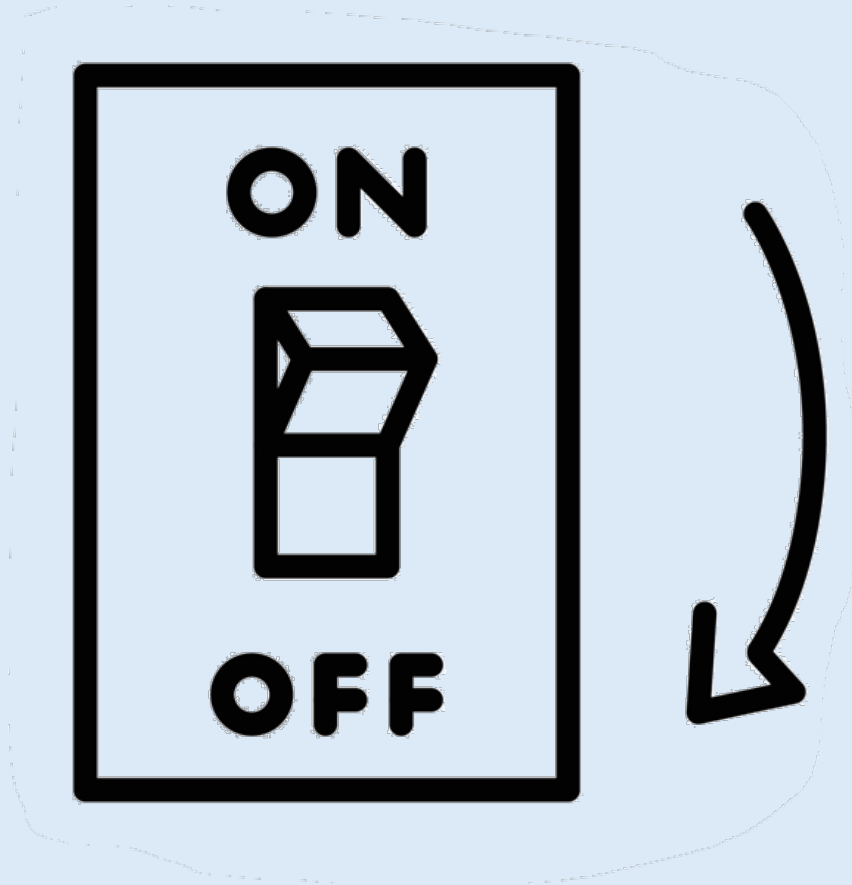
- **Decommissioning Plan:** The plan must include a commitment to remove all aboveground solar panels, wind turbines, and towers.
- **Bonding:** Owners can apply to the WVDEP for a reduction in the amount of the decommissioning bond every five years. The application must include written evidence of a reduction in the total disturbed acreage and a modification fee of \$50 per megawatt of nameplate generation capacity.
- **Decommissioning Agreements:** Agreements must address at a minimum the term and scope of the agreement.
- Submitting an intent to decommission to the permit authority 60 days before the end of commercial service.
- Removing structures and foundations to a depth of 3-feet below grade, roads, gravel areas, and cables to a depth of 2-feet below grade.
- Restoring the ground to a similar condition to before the solar project was built.

SITE ACCESS & SECURITY



- Fencing:
 - Solar Facility Perimeter: 7-foot-high chain link security fence will be installed around the facility.
 - Substation Area: 7-foot-high chain link security fence (including 1-foot of barbed wire) will be installed around the substation.
- Security gates will be located at each entrance.
- 24/7 remote monitoring at control center.
- Local operations team members.
- Knox boxes to allow for unimpeded access for first responders.

SITE LIGHTING



- Light fixtures are located only at the Substation and BESS Yard.
- Full cutoff light fixtures are turned on/off via a light switch by operators.
- The lights will normally be OFF unless activated by operations personnel.
- Lighting shall be shielded and directed down to prevent glare and to minimize light trespass.
- Lighting will follow the "Five Lighting Principles for Responsible Outdoor Lighting" as defined by DarkSky International.



COMPREHENSIVE PLAN

GOALS

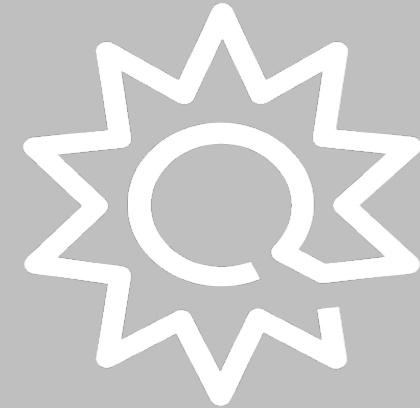
- The site is compatible with the goals of the Comprehensive Plan and will ensure the preservation and enhancement of the agricultural economy, rural land use, rural neighborhoods, and rural character of Jefferson County.
- Development of facility will follow compliance with both the Zoning and Concept Plan Standards.

COMPREHENSIVE PLAN

RECOMMENDATIONS

The Comprehensive Plan recommends the following:

1. Encourage public entities to utilize alternative and renewable energy sources, specifically solar
2. Enable the construction of renewable energy generation facilities
3. Consider implementation of alternative energy systems
4. Encourage the creation of and use of a variety of energy sources (including renewable energy)



PUBLIC HEALTH, SAFETY AND WELFARE

- Our first priority is ensuring the safety of our workers, contractors, first responders, operators and the surrounding communities at each of our projects. **We will develop a site-specific Emergency Response Plan (ERP) to outline response procedures to protect people, property, and the environment during an emergency or disaster situation.**
- The ERP is developed in coordination with Health and Safety professionals, facility operators, equipment manufacturers, and local first responders. We will work closely with local first responders throughout development, construction, and operations of the Project.
- The Project Team has had preliminary discussions with the Citizens Fire Company and the Jefferson County Emergency Services Agency, and will continue discussions and coordination throughout development, construction and operations.
- Additional training and resources will be provided to local first responders to ensure they can execute necessary elements related to the plan and protocols. Mock emergency drills are often held during construction and operations, in coordination with first responders, to ensure readiness and validate that the ERP is effective.
- Fires at solar farms are exceptionally rare and facilities are monitored remotely 24/7.



SCALE AND INTENSITY

- The scale and intensity of the Project will remain compatible with the surrounding land uses in terms of sound, traffic, dust, and other things typically involved in farming of the surrounding areas. Upon completion, there will be very little traffic generated by the Project.
- There are no paved areas in and around the solar panel arrays. Furthermore, the Project will not require new sewer service, new water service, nor new public roads and it will not add any burden to the school system.
- Suitable buffers to neighboring properties will be installed and maintained as required by the Jefferson County Ordinances.
- Solar will be less intrusive than a permitted residential development in the rural district which could develop one house lot for every 5 acres.

LOW-IMPACT DEVELOPMENT

- Land use for solar will be no more intensive than the existing farm use.
- Low-growing vegetation is utilized to minimize mowing needs.
- Reduces herbicide use by providing spot-treatments of invasive/weedy species on a limited, as-needed basis.
- Decreases fertilizer and pesticide use from previous land uses.
- Allows land to remain fallow, accumulating organic materials and improving soil and water quality.
- Solar farm has easy access to the electrical utility grid and there are no new transmission lines required for the project.
- No need for public services like water or sewer.





NEIGHBORHOOD CHARACTER

- County setback and screening requirements will be met or exceeded.
- Panels are mostly hidden behind vegetative screening resulting in minimal visual impacts.
- No impact on public services (no new public roads, no sewer, no water, no added strain on public school system).
- No increased traffic post-construction.
- No additional noise generated which maintains the quiet feel of the surrounding agricultural community.
- Low-intensity development – consists of gravel access roads and naturalized perennial vegetation to create a meadow condition.

PROPERTY VALUES

- A third-party Property Impact Analysis was performed by Richard Kirkland, MAI. Richard has been researching solar project impacts related to property values since 2008, including over 1,000 solar projects in over 25 states.
- The analysis shows no impact on home values due to abutting or adjoining a solar farm as well as no impact to abutting or adjacent vacant residential or agricultural land where the solar farm is properly screened and buffered.
- The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all indicate that a solar farm is a compatible use for rural/residential transition areas and that it would function in a harmonious manner with this area.
- The report noted that some of the positive implications of a solar farm that have been expressed by people living next to solar farms include protection from future residential developments or other more intrusive uses, reduced dust, odor and chemicals from former farming operations, protection from light pollution at night, it is quiet, and there is minimal traffic.



HISTORICAL COMPLIANCE

- Applicant has performed a Cultural Desktop Study.
- According to the JC Historical Landmarks Commission (JCHLC) online maps and database, there are no Category I sites on, or adjacent to, the project. There is one Category II site within project boundaries. No solar panels nor land disturbance is proposed within this site's buffer.
- A 200' buffer has been added around all recognized JCHLC historic sites within the project boundaries.
- JCHLC will have 14 days to review and comment on project during Concept Plan Process.



FUTURE LAND USE



- Solar farm groundcover consists of natural vegetation like deep-rooted fescue grass that improves the organic content and richness of the soil as the land lies uncultivated.
- Solar farm infrastructure can be removed once the solar farm reaches the end of its useful life.
- The land can be restored back to its original state through the site restoration and decommissioning process.



CONTACT INFORMATION

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