SPECIAL USE PERMIT
APPLICATION NARRATIVE

SUNFISH SOLAR
ORANGE COUNTY, VIRGINIA

APPLICANT:
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I. EXECUTIVE SUMMARY

Sunfish Solar, LLC (the "Applicant"), a subsidiary of BayWa r.e. U.S. Solar Projects, seeks the issuance of a Special Use Permit for a proposed solar energy facility ("Sunfish Solar" or "Project") in Orange County, Virginia. For over 25 years, BayWa r.e. has been a leading developer in the fully integrated utility-scale solar market, overseeing all aspects of development from site origination through operations and asset management. Globally, BayWa r.e. has successfully brought online over 5.5 gigawatts (GW) of renewable energy and oversees the operations and management of over 10GW of renewable energy assets.

Sunfish Solar, LLC is committed to rethinking energy hand-in-hand with landowners, community partners, and local leaders by partnering with regional organizations to fund local initiatives, recognizing and supporting existing industry within prospective communities, providing workforce training programs, scholarships, and continues to reduce their environmental impacts through the integration of sustainability and biodiversity measures into their project plans. As of this submission, Sunfish Solar, LLC has partnered with several local community organizations to support their ongoing needs and strategic direction: supporting the Orange County Future Farmers of America (FFA) annual trip to Indianapolis and the Mine Run Volunteer Fire Department's goal of providing free fire and carbon monoxide detectors to local residents. Sunfish Solar is proud to support these organizations and continues to explore partnership opportunities in Orange County.

The Project is located at the northern edge of Orange County, Virginia, northeast of U.S. Route 522 – Zachary Taylor Highway, and east of the Orange County/Culpepper County border. The Project is comprised of an approximately 932-acre tract of land consisting of four parcels (PINs: 01900000000010, 00800000000150, 00800000000140, and 0080000000014D), which are currently zoned "A – Agricultural" (hereto the "Site") per the online Orange County, VA Tax Parcel Viewer Application (Orange County Department of Information Technology; 2023). At present, the Project Site is predominantly made up of cultivated agricultural fields interspersed with pastures, forested field edges, drainages, and riparian corridors. The surrounding area is rural, primarily agricultural land and undeveloped forestland with a few single-family residences.

Current Site design for Sunfish Solar utilizes approximately 575 of the 932 acres available under Option to Sunfish Solar, LLC. Of these 575 acres, the proposed Project layout shows a fenced area of only 434 acres. As design evolves, the proposed Project's acreage may fluctuate as stormwater facilities are finalized. The current plan does not intend to disturb areas within any setbacks from existing structures, rights-of-way and easements, wetlands, floodplains, and cultural areas. The remnants of Morton Hall, a previous eighteenth-century dwelling and gravesite, are in the southeasternmost parcel (Parcel No. 800000000150) of the Site (see Attachment K). Both were previously determined eligible for listing in the National Register of Historic Places; therefore, the Project intends to avoid these features by implementing a 100-foot setback to their boundaries and will comply with all VDHR requirements for the historic preservation of these resources. (Attachment B).

The Sunfish Solar Site consists of the solar facility, all interconnection facilities to step up power to the transmission grid system, and all ancillary Project facilities. The proposed Project interconnects to the 115kV Mitchell – Mountain Run transmission line via a proposed substation (±2 acres) and switchyard (±2 acres) facility located just north of True Blue Road. Ancillary Project facilities will include erosion control/stormwater management facilities, electrical equipment pads, utility infrastructure, an operations and maintenance building, and security fencing surrounding electrical equipment for safety. The seed mixture selected for the Site will contain low-growth, hearty, perennial species intermixed with pollinator species. Vegetation will be maintained across the Site to ensure erosion control measures, promote a diverse ecological habitat, and support soil health following the lifetime of the Project. Furthermore, construction of the proposed facility will be planned so that final vegetative cover can be established during pre-construction activities.

The proposed Project has been designed to be consistent with Orange County's land use standards and Comprehensive Plan (Orange County Planning and Zoning Services, *2013 Orange County Comprehensive Plan* [Amended May 8, 2018]). The proposed Project is expected to support the County's rural community, diversify income for landowners and revenues for the County, and recognize the pastoral legacy of the region through the development of several community-based programs and partnerships. The proposed Project is compliant with Chapter 70 Article II Division 5 of the Orange County Code of Ordinances as demonstrated by the Preliminary Site Plan (Attachment B) and the contents of this application (Orange County Planning and Zoning Services, *Orange County Code of Ordinances* [Adopted February 8, 2000]). Additionally, the proposed Project is substantially in accord with the County's Comprehensive Plan or part thereof, as is detailed in the text of this narrative.

The Project's development process is typical of most energy generation projects. After completing interconnection screenings and study, Sunfish Solar began speaking with prospective Project area constituents in the Fall of 2020. Over approximately three years, an initial Project boundary was created. In the Summer of 2023, Sunfish Solar began speaking with the greater community and local officials to introduce the Project. Before application submittal, Sunfish Solar met with the Orange County Development Services team in person on three separate occasions to document and incorporate pre-application recommendations from staff. Since the submittal of the application, the county Application Review Committee (ARC) has reviewed our submittal and provided comments on January 25, 2024. Those comments have been addressed throughout the application and are provided within Attachment M – ARC Review Comments and Responses.

After consultation, Sunfish Solar has implemented the following:

1) A minimum of 50 feet vegetative screening along parcel boundaries. Fifty-two percent (52%)

of the Project's perimeter contains existing vegetative screening; however, additional buffering width will be preserved as shown on the Preliminary Landscape Plan outside of all state and federally jurisdictional waters identified in the Wetland Delineation Report (Attachment G).

2) Setbacks including:
    a. 100-feet from non-participating property boundaries;
    b. 100-feet from right-of-way along major roadways;
    c. 100-feet from right-of-way along state roads;
    d. 100 feet from participating and non-participating residences and structures; and
    e. 300-feet from cemeteries
3) As many as three (3) wildlife corridors to provide for wildlife movement through the Site, as shown on the Preliminary Landscape Plan.
4) Natural environment protections:
    a. Conserving habitats by minimizing clearing to the maximum extent practicable; and
    b. Establishing a 50-foot setback from jurisdictional aquatic resources and FEMA-regulated floodplains to prevent disturbance.

Sunfish Solar will continue its commitment to community engagement in Orange County by providing Project updates on its website (https://us.baywa-re.com/en/americas-cases/sunfish-solar), alongside hosting drop-in hours at its Project office in Rhoadesville, Virginia (26322 Constitution Hwy) every Monday from 3 pm – 6pm with members of the Project development team. As recommended by the Development Services team, Sunfish Solar will host a Project Public Information Meeting in winter 2024 to introduce the Project, answer community questions, and listen to any community concerns.

II. PROJECT DESCRIPTION

A. Purpose and Proposed Use

This Application for a Special Use Permit is submitted to Orange County according to Chapter 70 Article II Division 5 of the Orange County Code to construct and operate the proposed Sunfish Solar Project. A completed Special Use Permit Application form is attached for your review (Attachment A).

The proposed Project will generate as many as 80MWac of clean, affordable electricity in Orange County for use by all electricity customers in Orange County and beyond. Solar energy, electricity derived from the sun's rays, is an unlimited power resource that can help supply growing domestic electricity demands (SEIA; n.d.). Electricity from the Project will emit zero air emissions and will use virtually no fuels or water. Once operational, the Project is anticipated to produce electricity for 35 years, providing renewable power to up to 22,043 Orange County electricity customers annually. In addition, the electricity generated from the Project is estimated to offset approximately 113,290

metric tons of carbon dioxide emissions annually.

The Project Site Plan, shown in Attachment B, anticipates approximately 180,830 photovoltaic (PV) solar panels (modules) with an average of 580W panel rating mounted on a racking system, inverters, collector lines, a Project substation, internal access roads, driveway entrances, and as many as three wildlife corridors. Individual modules will be mounted on a fixed racking system or a tracker system that tilts with the sun throughout the day. All of the electricity generated by a row of modules is collected and routed to inverters, which are dispersed throughout the Project Site. The inverters collect electricity generated from the solar arrays and convert the electricity from direct current (DC) to alternating current (AC). Collector lines or 34.5 kV Medium Voltage (MV) underground cables will bring the generated electricity to the Project substation. The Project substation combines the generated power, and a Project switchyard translates that electrical generation to the Mitchell – Oak Green 115kV transmission line. The Project will be enclosed by security fencing to ensure compliance with Section 110.31 of the National Electric Code. This requires that "a wall, screen, or fence shall be used to enclose an outdoor electrical installation to deter access by persons who are not qualified. A fence shall not be less than 2.1 m (7 ft) in height or a combination of 1.8 m (6 ft) or more of fence fabric and a 300 mm (1 ft) or more extension utilizing three or more strands of barbed wire or equivalent." The Site will include driveway accesses off public roadways. See section C below for more details on the solar system components. The technology may change in the final Project based on the readily available products at the time of final design.

The Project is in line with the goals of the Virginia Clean Economy Act (VCEA) by promoting and directly participating in the advancement of clean energy in the Commonwealth. The VCEA declared that over 16,000 MW of onshore solar and wind are in the public's interest. The Project will help the Commonwealth achieve this goal and meet the increasing energy needs of residents and businesses.

B. Applicant Information

With over 100 years of experience in agribusiness and energy markets, BayWa r.e. brings global expertise to its projects and local community partnerships. Globally, BayWa r.e. has successfully brought over 5.5GW of renewable energy online while managing over 10GW of renewable assets. Within BayWa r.e. is BayWa r.e. Solar Projects LLC, a leading, fully integrated utility-scale solar developer in North America, overseeing all aspects of development from site origination through operations and asset management. Sunfish Solar, LLC (owned by BayWa r.e. Solar Projects LLC) has Option to Lease and Option to Purchase agreements with current property owners and is developing the Project.

BayWa r.e. Solar Projects LLC values long-term community partnerships and works closely with local stakeholders, community partners, and local leaders to develop, construct, and operate their solar projects. This approach allows BayWa r.e. Solar Projects LLC to implement regional initiatives including but not limited to:

- Funding and creating local workforce development trainings

- Funding and creating local scholarship programs
- Supporting local EMS and Fire districts through training and donations
- Donations to local FFA and 4-H programs
- Supporting regional and local natural disaster relief efforts
- Integrating sustainability and biodiversity measures into project plans
- Hosting opportunities to gather community and stakeholder feedback

Sunfish Solar LLC is committed to rethinking energy hand-in-hand with participating landowners, community partners, and local leaders throughout the Project development and permitting process.

C. Project Location and Site Description

The Project Site is located in northern Orange County, VA. The proposed Project is east of U.S. Route 522 – Zachary Taylor Highway and south of the Rapidan River near the Orange County/Culpepper County border. The Project is to be located on an approximately 932-acre tract of land comprised of four parcels that are currently zoned "A – Agricultural" (PINs: 01900000000010, 00800000000150, 00800000000140, and 0080000000014D). Of these parcels, Sunfish Solar LLC holds an option agreement to lease parcels 00800000000150, 00800000000140, and 0080000000014D and a purchase option for parcel 01900000000010.

The Site predominantly consists of cultivated agriculture fields interspersed with pastures, forested field edges, drainages, and riparian corridors. The topography within the Site is generally composed of rolling hills and narrow valleys, with slopes generally below 12% and elevations ranging from 290 feet to 430 feet above mean sea level (MSL). The Applicant has completed numerous due diligence studies within the Site, including a Waters of the U.S. Delineation (Attachment G), a Threatened and Endangered Species Investigation (Attachment H), a Phase IA Cultural Resources Assessment (Attachment K), and a Glint and Glare Analysis (Attachment D). The results of these studies are further detailed below in Section IV (B). The Applicant is in the process of conducting a Phase I Environmental Site Assessment within the Site. In addition, the Project anticipates the following studies, permits, and/or approvals after the Special Use Permit process: Virginia Permit By Rule (PBR) approval from the Virginia Department of Environmental Quality (VDEQ), a Section 404 Nationwide Permit authorized by the U.S. Army Corps of Engineers (USACE), a Section 401 Water Quality Certification certified by VDEQ, Section 106 Consultation with the State Historic Preservation Office (SHPO), Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS), Land Use Permit for the proposed driveway entrances from the Virginia Department of Transportation (VDOT), Major Site Plan permit (including site, grading, erosion control, and landscape) reviewed and approved by Orange County, Orange County Land Disturbance Permit, Virginia General Permit for Discharges of Stormwater from Construction Activities reviewed and approved by VDEQ, and Orange County Building Permit.

The Project Site is bordered by 37 parcels, 34 of which are zoned "A – Agricultural" and 3 of which

are zoned “I – Industrial”. The surrounding area is rural, primarily agricultural land and undeveloped forestland with few single-family residences. Most of the Site is bounded by existing tree lines or forested areas separating the Project parcels from non-participating properties. Approximately 73% of the Site perimeter abuts existing tree lines or forested areas – of this 73%, about 52% of the existing trees will remain as vegetative screening, and the remaining 21% will be supplementally planted to serve as vegetative screening for the Project. In areas where existing vegetation is limited along the Project boundary, the Applicant proposes to install a vegetative screen with a minimum width of 50 feet to ensure viewshed impacts from neighboring properties are minimal.

In conclusion, based on the existing land uses in and within the vicinity of the Site, the results of the studies conducted within the Site, and the minimal impacts anticipated to result from the implementation of the Project as discussed below, the Site is a suitable candidate for a utility-scale solar energy facility.

This Special Use Permit application is intended for the entirety of the Optioned area; however, the exact placement of the proposed solar facility and associated features within the 932-acre Site is preliminary and subject to change before issuance of construction permits. The final placement of the proposed solar facility and related features, including but not limited to interior access roads, panel configurations, staging areas, and fencing, will be determined through final civil and electrical design. The Project's final design will depend on several future considerations, including cultural resources, contractor and utility input, labor plans, and continued community feedback. Any adjustments to the Project design will be made within the Site and outside the setbacks represented in this SUP application.

D. Community Outreach

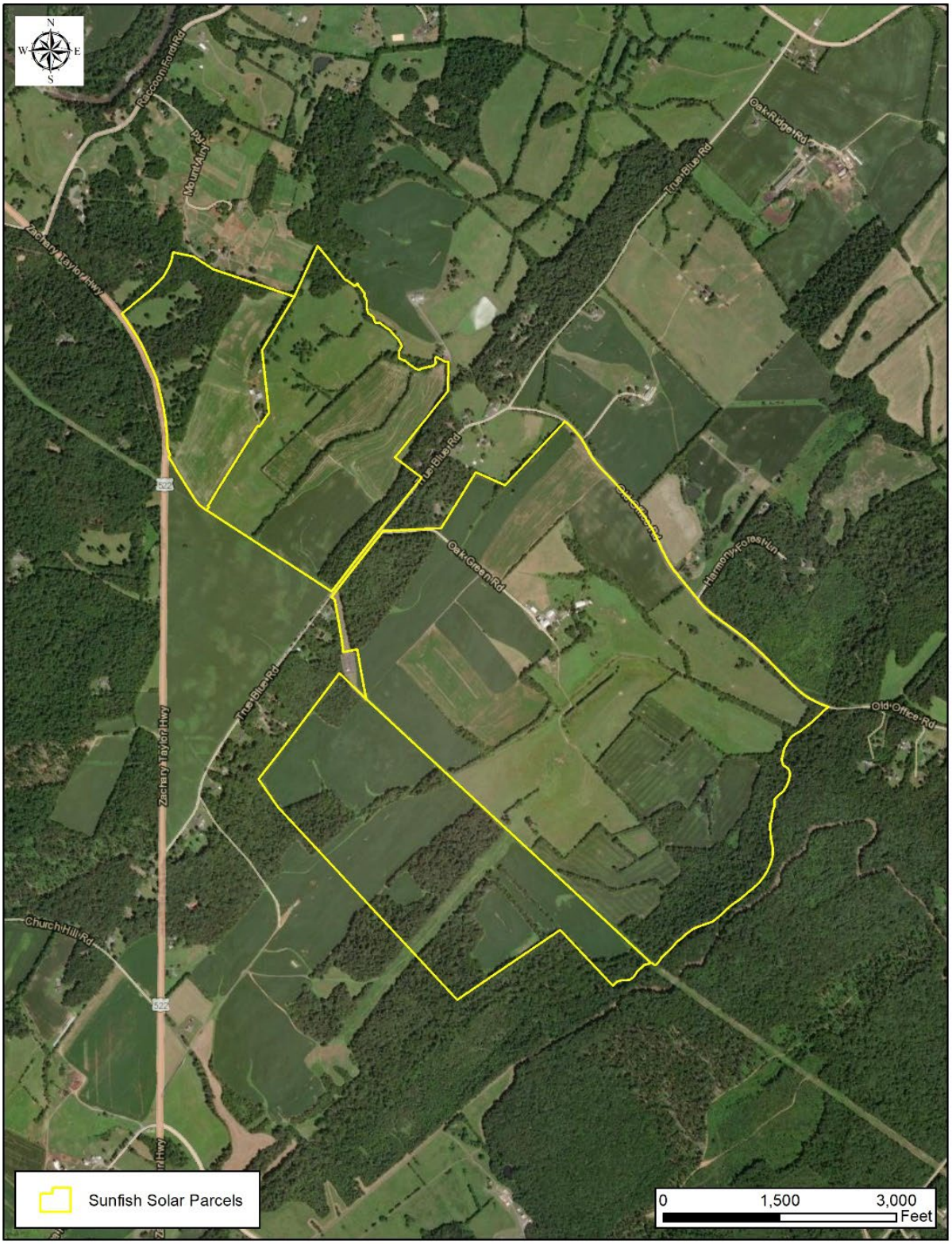
The Applicant has developed a multi-stage approach to provide a range of community engagement opportunities for the Orange County Community. The Applicant will:

- Provide project information, share proposed site plans, provide contact information for a Sunfish Solar representative, and gather feedback from adjacent property owners;
- Provide a field office within Orange County to open office hours with the intent to distribute information, collect feedback, and provide opportunities for community interaction;
- Host an open house to collect community feedback on the proposed Project;
- Provide a public website with regular updates on engagement activities and
- Conduct interviews with key identified stakeholders to provide information and identify needs and opportunities for partnerships.

In Fall 2023, the Applicant began a local canvassing campaign to provide public education on the Project. To date, the Project outreach team has door-knocked and spoken with 81 households in the surrounding Project area. Additionally, Sunfish Solar held a Public Information Meeting on January

31, 2024 at the Orange Train Station. The Project intends to continue its community outreach and public education efforts throughout the development process, emphasizing in-person communication where possible.

Figure 1 – Site Location Map



III. COMPLIANCE WITH THE ORANGE COUNTY COMPREHENSIVE PLAN

Section 15.2-2232 of the *Code of Virginia* states that "public utility facilities" (whether publicly or privately owned), including solar facilities, may not be constructed, established, or authorized until "the general location or approximate location, character, and extent thereof" is submitted to and approved by the local planning commission as being "substantially in accord with the adopted comprehensive plan or part thereof." This public facilities review is commonly referred to as a "2232 Review".

In Orange County, Chapter 70 Article II Division 5 of the Orange County Zoning Ordinance expressly states that "the planning commission and the board of supervisors shall consider whether the proposed use would further the purposes of the comprehensive plan and this chapter; whether it would threaten the public health, safety or welfare; whether it would be compatible with its surroundings; whether it would impact the environment or any natural, scenic, or historic features; and whether it would result in a substantial detriment to the surrounding property."

For the reasons outlined below and as reflected in the supporting documentation submitted with this application, the Project is "substantially in accord" with and furthers the goals and vision of the Orange County Comprehensive Plan. Additionally, the County Planning Commission has reviewed and found at least two other solar projects to conform with the Comprehensive Plan.

Goal 1: Promote and Preserve Orange County's Unique Historic and Environmental Resources

Objective A: Promote Preservation of Significant Historical Areas, Sites, and Buildings
The Applicant has completed a cultural review and is proposing avoidance measures around potential historical areas identified in Attachment K of this application. The applicant will continue to request feedback from the State Historic Preservation Office (SHPO) on practical approaches to mitigate the potential impacts of the proposed Project. The Phase IA Cultural Resources Assessment included in Attachment K provides an assessment of the cultural and historical resources that are potentially present within the Project Site. Notably, Morton Hall (VDHR #068-0031), an eighteenth-century dwelling and gravesite that was previously determined eligible for listing in the National Register of Historic Places, is centrally located in the southeastern parcel of the Site. The proposed Project layout has implemented a 100-foot setback buffer around Morton Hall to ensure the proposed development avoids the remnants of this historic site.

The Applicant is working with a Virginia-certified professional archaeologist to determine if additional National Register-eligible prehistoric and historic resources are located within the Project limits. If other resources are identified, the Project will work with the SHPO to avoid and preserve these resources with an appropriate setback buffer or mitigate any necessary impacts to these resources through coordination with the Virginia Department of Historic Resources (VDHR).

Objective B: Sustain and Enhance Agricultural and Forestal Uses
Most of the Project Site exists as cultivated fields interspersed with pastures, forested field edges, drainages, and riparian corridors. The Project will preserve these land uses throughout the Site where feasible and avoid wetlands and identified sensitive areas, including the southeastern portion

of the Site along Mountain Run, which will not be developed and will remain in either agriculture or forestland. The proposed Project will revegetate disturbed areas with a pollinator and native seed mix as available during construction. This seed mix will stabilize exposed soils and native foraging habitat for pollinator species.

The Applicant is partnering with the Bee and Butterfly Habitat Fund through their "Solar Synergy" program to promote native pollinator habitat throughout the Site. The Solar Synergy program works with utility-scale solar projects to specify and provide a seed mix curated for local pollinator species, including honeybees and monarch butterflies, among others. In addition, the Bee and Butterfly Habitat Fund will work with solar project developers to document the carbon sequestration gains realized on the Site over six years, monitor pollinator habitat, plant performance, and population responses on Site, and connect the Applicant with beekeepers to increase US-sourced honey production and support local beekeepers.

In addition to ensuring site stability and promoting pollinator species in the area, the vegetative cover will allow soils to fallow over the life of the Project, restoring soil nutrients from past intensive agriculture use. As detailed in the Project Decommissioning Plan (Attachment C), the Site will be returned to a condition reasonably and commercially similar to its original condition, normal wear and tear excepted, allowing for continued agricultural and forestal use of the underlying properties with minimal lasting impact to the Site.

Objective C: Develop Plans to Protect the Quality and Supply of Surface Water, Groundwater, and Other Valuable Environmental Resources

The Project will implement the Virginia Department of Environmental Quality (DEQ) Best Management Practices (BMP) to ensure surface runoff meets or exceeds the requirements to protect downstream areas and groundwater resources. These BMPs may consist of erosion control basins/traps, ditches, silt fences, surface roughening, matting, temporary/permanent seeding, dry detention ponds, wet ponds, and swales. The proposed site design will protect against soil erosion and sedimentation, as all such facilities must develop erosion and sediment control and stormwater management plans that satisfy applicable State requirements (i.e., 9VAC25-840-40. Minimum standards; 9VAC25-870. Virginia Stormwater Management Program Regulation; 9VAC25-31. Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation) during the site plan permitting process.

The Applicant has developed a Preliminary Grading Plan (Attachment B), which shows the anticipated site grading and approximate erosion control facilities. During construction, multiple erosion and sediment control measures, as well as natural infiltration, will be utilized to ensure no adverse downstream impacts or local erosion occurs. Following construction, temporary basins will remain as permanent fixtures of the Site, allowing for additional and conservative collection, detention, infiltration, and treatment of stormwater runoff. Furthermore, no chemicals, heavy metals, or other elements are planned to be added to the soil that would result in contamination.

The entirety of the development area will be stabilized and maintained with vegetative cover following construction. Areas between and beneath the solar arrays will be planted with native grasses and pollinator seed mixes to ensure stabilization and reduce runoff. Additionally, changing

the land use from agricultural row crops to solar energy generation will replace the current row crops with meadow grass, which is anticipated to decrease stormwater runoff and erosion from the Project Site.

Goal 2: Ensure the County is a Competitive Location for Economic Development Opportunities

Objective A: Provide Adequate Adult Training Resources to Ensure a Marketable and Sustainable Labor Force

The Applicant will provide a workforce development training program to support a skilled local workforce to fund solar installations. The Applicant shall develop this program based on community feedback, which may consider opportunities such as K-12 education partnerships with local organizations to provide specialized training or technical training programs.

Objective B: Utilize the Recommendations Contained in the Existing and Target Industry Analysis and Target the Following Industries Based on the Screening Criteria Contained in the Report

Not applicable to the proposed Project.

Objective C: Evaluate the County's Overall Approach to Retaining and Attracting Business and Industry

Construction and operation of the Project will generate labor income and economic development for regional businesses, including engineering and construction, consulting, landscaping, and hospitality firms. Additionally, the Project will provide reliable, renewable energy to the local grid. While not directly applicable to this Objective, the Project will help grow the local economy and provide dependable infrastructure for the region by creating jobs and induced economic impacts. Additionally, the Project is expected to diversify the Orange County economy through new job creation while providing additional income for participating landowners. See Section 3. Economic Impacts for more information.

Objective D: Assure that Sufficient Land in Desirable Locations is Designated for Economic Development Uses

The proposed Project will not impact land designated as Economic Development areas.

Objective E: Promote Tourism as a Viable Component of the County's Economy

Not applicable to the proposed Project.

Objective F: Promote Health Services as a Viable Component of the County's Economy

Not applicable to the proposed Project.

Objective G: Develop and Implement a Comprehensive Telecommunications Strategic Initiative that Ensures the Community's Current and Future Broadband and Fiber Optic Needs are Met

Not applicable to the proposed Project.

Goal 3: Provide for Adequate Public Services and Facilities to Serve the Needs of County Citizens

Objective A: Promote Effective and Efficient Government
Not applicable to the proposed Project.

Objective B: Ensure Quality Education for All County Citizens
The Applicant will provide a diversity of educational opportunities to citizens. The Applicant will support existing agricultural education programs, such as the Future Farmers of America (FFA), through financial partnerships to help agricultural educators achieve ongoing youth education initiatives. The Applicant will also sponsor a workforce development program related to solar energy production to help foster a local workforce. This may include opportunities such as K-12 education or technical training programs.

Objective C: Consider the Health and Human Services Needs of County Citizens
Not applicable to the proposed Project.

Objective D: Encourage Affordable Housing Development
Not applicable to the proposed Project.

Objective E: Provide for Public Safety Through Adequate Emergency Services and Law Enforcement
The Project will provide appropriate training to Orange County Fire and EMS for proposed solar facilities. This will be coordinated through the Mine Run Volunteer Fire Department. For solar facilities, there are not typical, reoccurring demands on law enforcement usage. To ensure County preparedness in the unlikely event of an emergency, Sunfish Solar LLC will coordinate with the Sheriff's Office and Fire and Emergency Services teams prior to start of construction to walkthrough safety procedures and emergency preparedness planning. Sunfish Solar will be designed to meet or exceed the latest standards from the North American Electric Reliability Corporation (NERC) for bulk electric systems. These standards include physical and cyber security measures mandated throughout the nation to protect critical infrastructure assets, such as the proposed Sunfish Solar site. Proper implementation of these standards would minimize or eliminate any demands for local law enforcement in relation to the proposed project.

Objective F: Ensure Adequate Infrastructure
The Project will provide power to the grid, providing a reliable and local source of energy production. In addition, the Project is anticipated to generate over $11,200,000 in tax revenue. The County can use these tax dollars to improve and expand its infrastructure in accordance with the Orange County Comprehensive Plan.

Goal 4: Provide Citizens of Orange County with the Safest and Most Efficient Transportation System Based on State, Local, and Regional Future Land Use and Transportation Plans

Objective A: Provide a Safe and Efficient Transportation Network for Orange County
The Applicant is coordinating with the Virginia Department of Transportation (VDOT) to determine

the level of traffic analysis warranted from the proposed Project. Due to the passive nature of the proposed facility, traffic impacts will be minimal. Trip generation is one of the first steps in a traffic impact analysis for a proposed land use. For this Project, there are no on-site personnel required for day-to-day operations, and the Site will not be open to the public. Accordingly, trip generation and impacts on the transportation network are anticipated to be negligible. Traffic impacts will be most noticeable during the construction of the facility. The total duration of construction will last approximately 12 to 18 months, with peak traffic volumes only occurring during major equipment delivery and installation. The types of vehicles expected to be accessing the Site during construction include equipment hauling trucks, passenger vehicles, fuel delivery vehicles, and material delivery trucks. No oversized or overweight loads are anticipated outside the delivery of the main power transformer, inverter, and control house.

Objective B: Coordinate Regional Transportation Needs with Surrounding Localities, Including Phasing Implementation of an Intermodal Transportation Network, by Coordinating Planning Efforts with the Towns of Orange and Gordonsville as Necessary
Not applicable to the proposed Project.

Objective C: Encourage a System of Non-motorized Recreational Trails Throughout the County
Not applicable to the proposed Project.

IV. POTENTIAL IMPACTS AND MITIGATION

A. Public Health, Safety, and Welfare

As the nation continues to push towards a carbon-neutral electrical grid, it is essential to note that solar farms do not endanger public health or safety. The facility will be designed and built to all applicable electrical, construction, and environmental codes and regulations, as follows. The Project will implement the Virginia Department of Environmental Quality (DEQ) Best Management Practices (BMP) to ensure surface runoff meets or exceeds the requirements to protect downstream areas and groundwater resources. Some of these BMPs may consist of erosion control basins/traps, ditches, silt fences, surface roughening, matting, temporary/permanent seeding, dry detention ponds, wet ponds, and swales. The proposed site design will protect against soil erosion and sedimentation, as all such facilities must develop erosion and sediment control and stormwater management plans that satisfy applicable State requirements (i.e., 9VAC25-840-40. Minimum standards; 9VAC25-870. Virginia Stormwater Management Program Regulation; 9VAC25-31. Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation) during the site plan permitting process.

The Applicant has developed a Preliminary Grading Plan (Attachment B), which shows the anticipated site grading and approximate erosion control facilities. During construction, multiple erosion and sediment control measures, as well as natural infiltration, will be utilized to ensure no adverse downstream impacts or local erosion occurs. Following construction, temporary basins will remain as permanent fixtures of the Site, allowing for additional and conservative collection, detention, infiltration, and treatment of stormwater runoff.

The entirety of the development area will be stabilized and maintained with vegetative cover following construction. Areas between and beneath the solar arrays will be planted with native grasses and pollinator seed mixes to ensure stabilization and reduce runoff. Additionally, changing the land use from agricultural row crops to solar energy generation will replace the current row crops with meadow grass, which is anticipated to decrease stormwater runoff and erosion from the Project Site.

Based on a study completed by the NC Clean Energy Technology Center, the health and safety impacts of utility-scale solar development are negligible. In contrast, the study found that the public health and safety benefits are substantial. In summary:

- Solar energy facilities do not present any harm to surrounding communities. How solar and electrical equipment is constructed, installed, and maintained will prevent public health concerns.
- Solar energy facilities generate electromagnetic fields (EMFs); however, outside of the proposed security fence around solar arrays, the exposure to EMFs generated from solar facilities is insignificant. Therefore, there are no negative health impacts that would result in the EMF produced by a solar energy facility.

For a detailed review of the health and safety impacts of solar facilities noted above, please see the complete study in Attachment F – Health and Safety Impacts of Solar Photovoltaics.

The Project will be surrounded by a perimeter safety fence of at least 6 feet. Access will be provided only through designated locked gates for each group of panels. The type of fence will be wildlife-friendly and will be further discussed with the community and County on what is desired. The fence is intended to restrict public access, and only emergency services or other authorized individuals will be granted entry. The Project will be monitored via a remote operations system, which provides live site generation data 24/7, 365 days a year. All components of the Project will be inspected and maintained regularly to ensure they are in proper working order. Site inspections are utilized to confirm that no risk to public health, safety, or welfare may result from the operation of the proposed Project.

The Applicant will provide on-site emergency training to Orange County Fire and EMS to prepare for a fire, injury, or other emergency scenario within the Site boundary. As part of training, Orange County Fire and EMS will be shown access routes and provided lockbox codes to obtain gate keys for future site entry. For solar facilities, there are not typical, reoccurring demands on law enforcement usage. To ensure County preparedness in the unlikely event of an emergency, Sunfish Solar LLC will coordinate with the Sheriff's Office and Fire and Emergency Services teams prior to start of construction to walkthrough safety procedures and emergency preparedness planning. Sunfish Solar will be designed to meet or exceed the latest standards from the North American Electric Reliability Corporation (NERC) for bulk electric systems. These standards include physical and cyber security measures mandated throughout the nation to protect critical infrastructure assets, such as the proposed Sunfish Solar site. Proper implementation of these standards would minimize or eliminate any demands for local law enforcement in relation to the proposed project.

B. Environmental, Scenic, and Historic Assets

Streams and Wetlands

The Wetland Delineation Report included in Attachment G provides a detailed narrative of the potentially jurisdictional streams, wetlands, and other waters identified within the Project Site. In summary, approximately 24,106 linear feet (LF) of perennial streams, 13,961 LF of intermittent streams, and 3,923 LF of ephemeral streams were identified within the Project Site. Additionally, approximately 38.4 acres of potentially federally jurisdictional wetlands and 40.54 acres of potentially state jurisdictional wetlands were identified within the Site. The Applicant is in the process of requesting a Jurisdictional Determination from the U.S. Army Corps of Engineers (USACE) and a State Surface Waters Determination from the Virginia Department of Environmental Quality (VDEQ) to determine which delineated features within the Site are subject to federal- and state-jurisdiction.

Based on the Preliminary Site Plan, the Project anticipates improvements to two existing culverts along potentially jurisdictional features and the construction of approximately five new road crossings over potentially jurisdictional features. The Applicant anticipates that the stream and wetland impacts resulting from the Project will remain under the Section 404 Nationwide Permit Program and accompanying Section 401 General Permit. It is assumed that the proposed Project will qualify for authorization under a Section 404 Nationwide Permit Number 51 or 57. In addition to complying with USACE 404 and VDEQ 401 regulations, Sunfish Solar will obtain a VDEQ General Construction Stormwater Permit (VAR10) and gain approval of an Erosion and Sediment Control Plan from Orange County. Both set standards and requirements for sediment and erosion control on site. As a part of the VAR10 permitting process, Sunfish Solar will create a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will accurately site all appropriate best management practices (BMPs) to prevent downstream degradation on and off site. The total number of anticipated stream and wetland crossings and the resulting impacts will be refined as the project design progresses. It is expected that the Project will result in no more than minimal individual and cumulative adverse environmental effects to jurisdictional waters within the Site.

Wildlife

The proposed Site is currently utilized for agricultural (approximately 660 acres) purposes and contains small areas of forested habitat (approximately 318 acres), mainly within riparian corridors. A Threatened and Endangered Species Memorandum was completed in 2021 by Timmons Group (Attachment H). During this assessment, a protected species database search was conducted that utilized information from the United States Fish and Wildlife Service (USFWS), the Virginia Department of Wildlife Resources (VDWR), the Virginia Department of Conservation and Recreation (VDCR), the Center for Conservation Biology (CCB), and the Virginia Coastal Zone Management Program. This database review concluded that the northern long-eared bat (*Myotis septentrionalis;* federally endangered), the yellow lance (*Elliptio lanceolate;* federally threatened), and the green floater (*Lasmigona subviridis;* state threatened) may have potentially suitable habitat on Site. Furthermore, Timmons reviewed the VDWR northern long-eared bat (NLEB) winter habitat and roost tree locator to identify the nearest known maternity roosts or hibernacula to the proposed Project. In conclusion, there are no known NLEB maternity roost trees nor hibernacula within 10 miles of the Site; therefore, the project would not adversely affect the NLEB. In addition to the lack

of known roost trees and hibernacula within the Site vicinity, the Project proposes to clear approximately 90 acres of forests (28% percent of total forests on Site) within the Site during the inactive season (November 15 to March 31) to avoid any potential impacts to bat species.

In addition to the desktop review, Timmons Group conducted a field verification, identifying potential habitat for the NLEB, yellow lance, and the green floater within Mountain Run and its adjacent forested area. To avoid impacts to these species and preserve biodiversity on site, the Project intends to avoid impacts to Mountain Run and its adjoining forests altogether. Therefore, the proposed Project would not adversely affect any protected species (Attachment I – USFWS Official IPaC Species List; Attachment J – Northern Long-eared Bat Determination Key Results).

Aside from these avoidance measures, the Applicant will also leave wildlife corridors throughout the Site to prevent habitat fragmentation, as shown in the Preliminary Landscape Plan in Attachment E. By providing wildlife corridors, terrestrial species will continue to move throughout the area and safely forage outside of the proposed panel arrays.

Grading

A Preliminary Grading Plan has been prepared and included in Attachment B of this application. Due to the existing topography within the Site, selective grading will be necessary to level portions of the Site to accommodate the proposed solar arrays. The proposed grading will be limited to the minimum required to install and efficiently operate the proposed solar energy facility safely. In the Preliminary Grading Plan, grading is shown where the existing slopes exceed 10%. These planned grading activities will not result in soils being removed from the proposed site. All grading has been designed to balance the earthwork so that no significant import or export of soils is needed. After the grading of the Site has been completed, naturalized seed mixes and grasses will be planted throughout the panel areas. The only gravel related to the project will be constructed for the proposed access roads, around the equipment pads, and the substation (approximately 2% of the entire project area). The Site will be vegetated similar to what is shown below in the section about the Project Components.

Viewsheds and Scenic Assets

A Preliminary Landscape Buffer Plan is included in Attachment E of this application. The solar development area spans most of the four Project parcels, which are surrounded primarily by forests and agricultural fields with few single-family residences. The solar arrays will be set back 100 feet from major public rights-of-way and 100 feet from right-of-way along state roads. The nearest adjacent residence is over 100 feet from the Project's solar arrays, the closest state highway is over 100 feet from the Project's solar arrays, and the nearest state road is over 100 feet from the Project's solar arrays, as summarized in the setback information below.

The Applicant proposes maintaining a minimum of 50-foot vegetation screen along the parcel boundaries to limit any view of the Project. Existing vegetation lines most of the property perimeter, providing screening to the Site. Where the buffer comprises existing vegetation, additional buffering width will be preserved, as shown in the Preliminary Landscape Plan. Existing vegetation appears to be primarily deciduous, and, where necessary, the Project proposes supplementing the existing deciduous vegetation with evergreen shrubs for year-round screening. Portions of the Project

perimeter that do not contain sufficient existing vegetation to provide the required vegetative screening buffer will be planted with evergreen vegetation and coordinated with the County staff during the site plan design and permitting process. The proposed vegetative buffer location is shown in the Preliminary Landscape Plan in Attachment E.

To ensure viewshed impacts are minimized and avoided to the maximum extent practicable, the following setbacks from the Project boundary are proposed:

- 100 feet from non-participating property boundaries
- 100 feet from right-of-way along major roadways (i.e., Zachary Taylor Highway)
- 100 feet from right-of-way along state roads
- 100 feet from participating and non-participating residences and structures
- 50 feet from overhead utility line easements
- 150 feet from natural gas line easements
- 50 feet from wells
- 300 feet from cemeteries
- 50 feet from jurisdictional streams, wetlands, and waters, and FEMA-regulated floodplains

Given the forested land cover on neighboring properties, the proposed setbacks are considered adequate for the Project. Note that no solar facilities will be located within these setback areas.

Glint and Glare

In addition to vegetated buffers and setbacks, the Applicant has performed a glint and glare analysis for both the fixed-tilt and tracker layouts of the project to ensure that the solar arrays do not result in significant glare impacts to aircraft and adjacent properties and roadways (Attachment D).

Fixed-Tilt Glint & Glare Analysis

A glint and glare analysis was performed for the Project utilizing the fixed-tilt system, which accounted for only existing onsite vegetation. This initial analysis with only existing vegetation resulted in rather substantial glare from the Project between Old Office Road and True Blue Road, two of the adjacent roadway receptors modeled in the analysis. Based on the results of this initial analysis, a second glint and glare analysis was performed to incorporate the proposed vegetative buffers surrounding the Site. The vegetative buffers were modeled at 10 feet tall and placed per the Preliminary Landscape Plan (Attachment E). In summary, the glint and glare analysis, which incorporated the proposed vegetative buffers, did not reveal any red glare (concentrated glare) at the Site, and only a few instances of yellow glare (potential to cause after-image flash blindness) and green glare (low potential to cause after-image flash blindness) at the Site. Yellow glare was identified at all four adjacent roadways (1.0 – 112.4 hours/year) and two of ten observation points (0.5 – 2.0 hours/year). The durations of glare mentioned are not a total of the entire Site; instead, they are a per-panel analysis. For instance, if three panels produce yellow glare for 1 hour, this is measured as 3 hours total. The purpose of this analysis is to assess the location of glare within the

Site. No glare issues were identified for the modeled flight approaches. The results of the second fixed-tilt glint and glare analysis, which incorporates the Applicant's proposed vegetative screening buffers, resulted in a 66% and 33% decrease in yellow and green glare across the Site, respectively.

Single-Axis Tracker Glint & Glare Analysis

The Applicant intends to retain the option to install a fixed-tilt system or a single-axis tracker system, and a third glint and glare analysis was performed to model the potential glare produced from the proposed single-axis tracker layout. The single-axis tracker glint and glare analysis was conducted assuming that the solar panels would not backtrack – a tracker control program that reduces panel shading during the morning and afternoon hours when the sun is low. In summary, the single-axis tracker system would not produce any red, yellow, or green glare at the analyzed locations.

In conclusion, glare resulting from analyzed receptors varies depending on the solar panel racking system installed. The Project proposes to install vegetative screening around the Site to reduce potential glare effects on neighboring properties and roadways to the extent possible. If the Project installs a single-axis tracker system, no glare impacts are anticipated to result from the proposed panels. If the Project installs a fixed-tilt system, only minimal yellow and green glare is expected during the evening hours along adjacent roadways. Additionally, since there is no direct line of sight from the Project to the locations identified in the study, the glare resulting from the installation of either racking system is unlikely to impact pilots, motorists, and residents.

Historic/Cultural Resources

The Phase IA Cultural Resources Assessment included in Attachment K provides a limited assessment of the cultural and historical resources potentially present within the Project Site. Notably, Morton Hall, an eighteenth-century dwelling and gravesite that was previously determined eligible for listing in the National Register of Historic Places, is centrally located in the southeastern parcel of the Site. The Applicant will continue to work with the SHPO to understand the limits of historically significant resources on site; however, the Applicant believes they have avoided all known historical resources on Site. The proposed Project layout has implemented a 100-foot setback buffer around Morton Hall to ensure the proposed development avoids the remnants of this historic site.

The Applicant is working with a Virginia-certified professional archaeologist to determine if additional National Register-eligible prehistoric and historic resources are located within the Project limits. If additional resources are identified, the Project will avoid and preserve these resources with an appropriate setback buffer or mitigate any necessary impacts to these resources through coordination with the Virginia Department of Historic Resources.

C. Compatibility with Surroundings

Construction Considerations

The proposed Project will be constructed in three phases: 1) site work, 2) structure installation, and 3) electrical installation. The first phase consists of installing initial erosion control features (i.e., perimeter silt fence, sediment ponds, etc.), the site access road, and the perimeter security fence. The second phase consists of driving the support piles into the ground, connecting the racking system

to the piles, attaching the solar panels to the racking system, and installing the concrete pad for the transformer and electrical pad. The third phase consists of trenching for the underground electrical conduits, installing the electrical components, directional boring or trenching the Medium Voltage Line ("MVL") to the POI, erecting the tie-in poles, and connecting the system to the existing grid. Complete construction of the Project will take approximately 12 to 18 months from breaking ground to commercial operation. Approximately 185 workers will be onsite during the peak of the construction phase.

Traffic

The Applicant is in coordination with the Virginia Department of Transportation (VDOT), and based on the initial discussion of the project, a traffic analysis is not warranted for the proposed Project. Due to the passive nature of the proposed facility, traffic impacts will be minimal. For this Project, there are no on-site personnel required for day-to-day operations, and the Site will not be open to the public. Accordingly, trip generation and impact on the transportation network are anticipated to be negligible. Traffic impacts will be most noticeable during the construction of the facility. Construction will last approximately 12 to 18 months, with peak traffic volumes limited to major equipment delivery and installation. During construction, the vehicle types expected to access the Site include equipment hauling trucks, passenger vehicles, fuel delivery vehicles, and material delivery trucks. No oversized or overweight loads are anticipated. The delivery traffic will be dispersed amongst the project entrances; therefore, no single entrance will be used for all deliveries. This will help reduce the impact of construction traffic on the existing road network.

Sound

Transformers and inverters are the loudest components of an operational solar project. The transformers on Site would average about 80 decibels (dB) at a distance of three feet. However, due to their central location within the Project parcels, sound from these systems will dissipate down to background sound levels and will not impact adjacent properties. The Project is considered a "passive" power generation facility and will not be audible outside the Project parcels. Additionally, the fixed tilt and tracker systems do not make sounds that would be audible at the Project boundary during operations. The Sunfish Solar facility will comply with all sound regulations in Orange County, Virginia.

Project Components

The Applicant is evaluating two solar panel racking systems: a fixed tilt system where solar panels face south and are stationary and a single-axis tracker system where solar panels rotate east/west with the sun's angle to increase energy capture. As a result, the exact specifications of the proposed solar energy facility equipment have not been selected. As part of this SUP application, the Applicant requests the right to install either of these systems as electrical design and energy output is refined. Both types of systems have been reviewed and addressed with this application to show how either system does not negatively impact adjacent properties.

The Project will include the following key components:

- Rows of photovoltaic (PV) panels mounted on steel posts principally driven into the ground.

Panels will not exceed 16 feet in height. Rows of panels are typically spaced 15-25 feet apart.

- The steel posts are driven individually to minimize the amount of on-site grading and are engineered to be driven to a depth in the ground that does not require concrete reinforcement.
- Solar PV panels will be mounted on either fixed tilt racking or single-axis trackers running east to west with the panels angled facing south to maximize sun exposure.
- As with most technology, equipment improves continuously, and markets fluctuate. Thus, the specific manufacturer and equipment models will not be known until the end of the engineering design process.
- The photographs below illustrate a typical fixed tilt system and a typical single-axis tracker system similar to what will be installed on this Site.

Fixed Tilt System

Single-Axis Tracker System

- Inverters and transformers will be located within pad-mounted modular metal cabinets. This equipment converts electricity from direct current (DC) to alternating current (AC) and increases its voltage to deliver the energy to the existing utility's distribution grid.
- Electrical collection and communications lines either mounted on the racking, buried in conduits or located on overhead utility poles.
- Gravel onsite access roads, grassy driving aisles, and gravel entrances from public roads.
- Chain-link security fencing topped with barbed wire, or an approved equal, located around the perimeter of the solar array and developed Site areas.
- Stormwater, erosion, and sedimentation control features designed to meet county and state requirements.
- A storage container placed on site for operations and maintenance materials storage.

D. Impacts to County Services

There will be no need for County water or sewer service for the solar facility. Temporary, portable sanitary facilities will be utilized during construction. Solid waste generated from the Site will be disposed of in large dumpsters and hauled offsite for an appropriate waste and recycling facility.

The Project will provide appropriate training to Orange County Fire and EMS for the proposed solar

facilities. This will be coordinated through the Mine Run Volunteer Fire Department.

No other County services are anticipated to be impacted by the Project.

E. Economic Impacts

The Project will bring several economic benefits to Orange County and Virginia. These economic benefits can be found in the Economic Impact Study (Attachment L) and include:

Jobs
As a result of the proposed Project, it is anticipated that Orange County citizens will benefit from adding 185 temporary construction jobs and four local long-term jobs during the Project's commercial operation. The temporary jobs created for construction will last between 12 to 18 months and are broken down into three categories. These categories are direct jobs from Project development and onsite labor impacts (122 potential jobs), indirect jobs from module and supply chain impacts (50 potential jobs), and indirect jobs as a result of induced impacts (i.e., additional revenue spent locally, 13 potential jobs). The construction of the proposed facility would provide training to those hired, instilling a skillset that is desired throughout the nation.

Long-term jobs created from the operation of the proposed facility would last throughout the commercial operation of the Project. These jobs would result from direct labor needs (one potential job), indirect needs from local revenue and supply chain impacts (two potential jobs), and indirect jobs as a result of induced impacts (one possible job).

Revenue Generation and Economic Benefits
Based on our Economic Impact Study, the construction of the proposed Project would generate approximately $7,878,693 of earnings within Orange County due to construction. This estimate is compiled of potential Project development and onsite earnings ($5,121,606), likely module and supply chain impacts ($2,285,238), and potential induced impacts ($472,849). During the commercial operation of the proposed facility, it is estimated that the Project will generate approximately $204,200 in earnings annually. This estimate contains potential onsite labor ($44,346), potential local revenue and supply chain impacts ($112,979), and potential induced impacts ($46,875).

The local economic output for Orange County is projected to be $27,748,278 during construction and $1,655,634 annually during operations. A complete breakdown of these estimates, along with economic benefits for the Commonwealth of Virginia, can be found in Attachment L.

Community Benefits
In addition to the expected revenue for the Project, the Applicant will provide additional funding through a siting agreement. This will be negotiated between the Applicant and the County. The Applicant expects the proposed Project to aid in the diversification of the Orange County economy and provide additional income to participating landowners.

The Applicant is a proud sponsor of and donor to multiple Orange County community organizations,

with over $33k donated to date. Donations include the

- Sponsorship of the Orange Future Farmers of America for their annual trip to Indianapolis,
- Sponsorship of scholarships for local Boy Scout and Girl Scout Troops,
- Sponsorship of the 2024 annual fire alarm and carbon monoxide detector program for the Mine Run Volunteer Fire Department
- A Donation to the Orange 4-H Dairy Club for a milkshake machine, which creates operational revenue and entrepreneurial opportunities for youth interested in dairy farming

Sunfish intends to continue its commitment to community partnership through similar local programs. During development, weekly office hours have been established to better identify community needs alongside other opportunities for additional community benefit.

In addition to partnering with local community organizations, Sunfish Solar will provide workforce development opportunities to residents. This program will be developed around community interest and may include opportunities such as K-12 education, certification trainings, or internships with local higher education institutions.

F. Decommissioning of the Project

At the end of the Project life, the Site will be decommissioned according to the decommissioning narrative and decommissioning cost provided in Attachment C. Decommissioning generally consists of the removal of the Project structural, electrical, and ancillary elements (fencing, foundations, etc.) and restoring the project to a stabilized condition after the removal. This will include assessing the Site for compacted soils and restoring compacted soils following VDEQ standards. Any Project elements (i.e., the substation and switchyard) owned by Virginia Electric and Power Company (VEPCO) will be removed at the sole discretion of VEPCO. Additionally, any elements the landowner requests to stay in place, such as stormwater basins and roads, will remain in place. These elements may have future use at the property owner's discretion and can stay in place. The anticipated costs do not vary significantly between a fixed tilt and tracker system; therefore, without the final design, the costs presented at this level represent the magnitude of anticipated costs. As the Site is designed and permitted, a detailed decommissioning plan and estimate will be produced. Additional details can be found in Attachment C.

V. Conclusion

The Applicant respectfully requests approval of a Special Use Permit for the proposed Project. The Project plan, as described above, and the Preliminary Site Plan (Attachment B) demonstrate a well-conceived Project that conforms to the Orange County Comprehensive Plan and the latest Zoning Ordinance requirements. Solar energy is clean and efficient. An adequately sited solar facility such as this Project is safe and quiet. Further, approval of the Project by the County is a substantial contribution toward advancing the Commonwealth's Energy Policy and Plan while providing significant benefits to the County by diversifying local industry, revenues, and income for participating landowners.

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