

# Dinwiddie County Planning and Zoning Department

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**To: Dinwiddie County Planning Commission**

**From: Mark Bassett, Planning Director**

**Date: October 1, 2019**

**Subject: Substantial Accord Determination, Proposed Solar Generating Facility, Reams Solar I, a 5 MW AC, 6.5 MW DC Photovoltaic Solar Facility with Onsite Battery Storage**

## Proposed Solar Energy Project Description

As provided for in Va. Code Sec. 15.2-2232, as amended, the Planning Commission is to determine whether the general location, character, and extent of the proposed solar generating facility, Reams Solar I, a 5 MW AC, 6.5 MW DC photovoltaic solar facility with onsite battery storage, is substantially in accord with the adopted Comprehensive Plan (the "Plan"). The project is proposed to be constructed at 24413 Old Vaughan Rd. (Route 605) Dinwiddie, VA and is further defined as Tax Map Parcel No. 47-74. The project applicants are requesting to rezone with proffers property containing approximately 38.00 +/- acres from A-2, Agricultural General, to M-2, Industrial General. The M-2, Industrial General, zoning classification allows for a public utility generating facility with a conditional use permit. The proposed proffered use of the subject property limits the use and structures to a solar energy generating facility, comprised of solar modules, racking, inverters, transformers, cabling and battery energy storage devices. Since the proposed solar energy facility has a rated capacity no greater than 5 megawatts, the Department of Environmental Quality (DEQ) Permit by Rule (PBR) is not required for the proposed project. The applicant does have to notify DEQ of the solar project and submit a certification by the County's Board of Supervisors that the project complies with all applicable land use ordinances. The project is to be interconnected to Southside Electric Cooperative's distribution grid and will deliver renewable energy to the neighboring community.

## Existing Land Use and Zoning:

The surrounding properties in the immediate area surrounding the subject land parcel include agricultural and forestal land, low-density single-family residential, and institutional (a Church located northwest across Old Vaughan Road) land uses. The subject property and all of the surrounding properties are zoned A-2, Agricultural, General.

## Location, Appearance and Operation Impacts:

*Setbacks and Buffers:* The concept plan for development of the site indicates that the proposed dual portrait solar panels mounted to the single-axis tracking system are to be located on 26.0 +/- acres on the middle and rear portion of the subject property approximately 756.0 +/- feet inward from Old Vaughan Road. Additionally, per the concept site plan, the proposed solar panels are located 250 +/- feet from the existing residence on an adjoining parcel to the west, and on the east 285 +/- feet from one existing residence and 670 +/- from a second residence. There are existing trees on the west side of the site to screen the solar panels from the residence, but the applicant is proposing to remove the trees, which will no longer provide a vegetative buffer on the subject property between the residence and the proposed solar panels. On the east side of the subject property, there are no existing trees to provide a vegetative buffer on the subject property between the solar panels and the existing residences. To help screen the visual impact of the solar facility from Old Vaughan Road there is a vegetative buffer proposed on the northern portion of the facility between the proposed solar panels and Old Vaughan Road.

To mitigate the visual impacts of the solar panels on the adjoining properties and residences, Staff recommends that if the existing trees are removed from the west side of the site that opaque fencing or a low profile vegetative barrier is installed to screen the solar panels from the residence on Tax Map Parcel 47-85. In addition, on the east side of the property that opaque fencing or a low profile vegetative barrier is installed to screen the solar panels from the residences on Tax Map Parcels 47-72D, 47-72E, and 47-72C.

Additionally, concerning buffers and landscaping/tree planting the Dinwiddie County Zoning Ordinance requires 10% tree cover at ten year's maturity for the site. With the proposed M-2 zoning adjacent to the existing A-2 zoned property The Zoning Ordinance requires a 75-foot wide landscaped buffer for the perimeter of the site between the solar panels and the property lines of the adjoining A-2 zoned property. If the rezoning is approved and a conditional use permit is granted the site developer may request a variance from the aforementioned buffer requirements. Where landscape buffers are planned and/or required the use of native plants is encouraged, and where feasible the buffer areas and panel zones should utilize season grasses and pollinator plants.

*Wildlife Corridors:* There are no wildlife corridors shown on the concept plan. It does appear that there is adequate room around the perimeter of the site to permit movement for wildlife. Planting warm season grasses and pollinator plants will also enhance the wildlife habitats in the general area of the facility.

*Height of the Solar Panels:* There is no indication on the concept plan or in the application for the height of the dual portrait solar panels. It is recommended that a 20-foot maximum height for the solar panels is maintained for the entire project site.

#### Environmental:

The subject property drains to Gravelly Run and Rowanty Creek to the northeast and flows to Jones Hole Swamp. The soils in the general area are Emporia-Mattaponi-Slagle and specifically Mattaponi sandy loam for the subject property. This soil type is considered prime farmland and forestal land. According to the USDA Soil Survey of Dinwiddie Area, VA about 208,000 acres, or nearly percent of the total acreage, meets the soil requirements for prime farmland. According

to the FEMA Floodplain maps there are no Zone A 100-year floodplain areas designated on the subject property. The applicant has indicated that there is no mass grading planned for the subject property. If the rezoning is approved at the time of site plan review a separate surety (cash, letter of credit, or bond), should be posted at the County for grading, erosion and sediment controls, and stormwater controls prior to issuance of a land disturbance permit.

#### Cultural Resources:

The applicant commissioned the Limited National Environmental Policy Act (NEPA) Review for the Rams Solar I facility/site looked at threatened and endangered species and the potential presence of cultural and historical resources. If any site work is proposed in wetlands or waters of the U.S., then Section 401 and Section 404 Clean Water Act permits are required. If a Section 404 Clean water Act Permit is required then a review of threatened and endangered species and cultural resources is required. According to the Limited NEPA Review five architectural resources and two archaeological resources are identified within the general area of the proposed solar facility. Two of the cultural resources are located on the site and are both classified as eligible for listing on the National Register of Historic Places (NRHP). The remaining resources have not yet been evaluated. The cross-hatched area along Old Vaughan Road (Route 605) on the concept plan indicates the potential for historic resources which include troop movements associated with the Reams Station Battlefields (I&II) located to the east of the subject property. In addition, there is a neighboring property located at 24205 Old Vaughan Road that does have a historic home that is of architectural significance. The concept plan does indicate that the solar panels are proposed to be constructed outside of the cross-hatched area where the troop movements are found.

#### Public Facilities:

There are no impacts to the school system with the proposed rezoning allowing for construction of the solar energy facility. The potential impact on public safety with the rezoning of the subject property include the proposed solar arrays, battery storage areas, inverter and transformers having to address fire protections as required by the applicable National and local Fire Code and Building Code. The impact on public utilities involves the point of interconnection with Southside Electric Cooperative's existing three-phase power line which is to be located at the front of the subject property. The existing power lines connect the proposed solar energy facility to the Reams power substation that is located approximately 2,000 feet from the subject property.

#### Transportation:

With utility scale solar energy facilities generating very few vehicle trips, the impacts on the existing transportation network are minimal. The proposed solar energy facility will, however, generate substantial traffic during construction and have an impact on the secondary roads in the area. A majority of the traffic generated is truck traffic delivering materials to the site and also traffic generated from construction vehicles and construction workers travelling to the site. The secondary roads in the general area of the site are not designed for large volumes of heavy traffic and as a result, increased road maintenance costs arise. To ameliorate the impacts of the increased traffic on area roads VDOT is recommending that a Construction Traffic Management Plan (CTMP) is included in the rezoning Proffers to account for the transportation impacts related to the development of the property. The CTMP includes (1) a plan to show proposed construction

access routes to the development site from the State primary routes; (2) a pre-construction assessment of the condition of the secondary roadways to be used as a haul route to the facility with a commitment from the applicant to repair any damage caused during construction and to restore the roadways to pre-construction conditions; and (3) a plan to identify on-site areas suitable for parking for the construction workers and areas exist on-site to allow trucks to be unloaded and to turn around without having to back onto State maintained roadways.

Additionally, VDOT anticipates that a low-volume commercial entrance is required to serve the proposed solar energy facility. The low volume commercial entrance has to demonstrate that stopping sight distance for a 55 MPH speed limit is available at the proposed entrance location. Old Vaughan Road (Route 605) is a secondary local roadway and VDOT Access management spacing standards are not applicable on local roads or for low volume commercial entrances. All future transportation related improvements for the commercial entrance will have to meet VDOT design and construction requirements and standards. (Please see attached VDOT Land Use Amendment Comment Letter for P-19-4).

#### Comprehensive Plan Elements:

The subject property is located within the Rural Conservation Area as defined by the Comprehensive Land Use Plan. The Rural Conservation Area includes existing large-lot, low density, single-family subdivisions with lot sizes averaging five (5) acres or greater with limited commercial and industrial development. The above existing areas uses are compatible with the uses permitted in the A-1 and A-2 zoning classifications. If new uses are introduced in the rural Conservation Area, a proposed use should take into consideration the special planning considerations, battlefield preservation, and planning guidelines set forth in the Comprehensive Plan. As mentioned previously, the proposed use is limited through the zoning proffers to a solar energy generating facility, comprised of solar modules, racking, inverters, transformers, cabling and battery energy storage devices. Special planning considerations include the fact that the proposed solar energy generating facility is located on land classified as prime agricultural land. The proposed project is sited on the subject property allowing the front portion of the property to remain as an agricultural use while visually buffering the solar panels utilizing existing landscape vegetation and increased setbacks from Old Vaughan Road. Battlefield preservation is accounted for with siting the proposed solar panels outside of the area where troop movements associated with the Reams Station Battlefields (I&II) are documented. The siting of the proposed solar energy generating facility does address maintain the rural character of the surrounding area maintaining vegetative buffers around the perimeter of the site and through increased setbacks from Old Vaughan Road.

In addition, included under the Comprehensive Plan's Chapter XI Policies, Goals and Objectives are the following relevant Policy statements: (1) Preserve the rural character of Dinwiddie County which includes agriculture, open space, clean environment, low taxes, quality education, safe environs, and a strong sense of community. (2) Conserve and protect the County's natural and historic resources and environmentally sensitive areas. (3) Maintain and enhance the County's ability to coordinate a balanced land use program among various types of residential, commercial, and industrial interest by encouraging development within areas defined as growth centers and/or growth corridors. (4) Preserve productive agricultural and timber lands from premature conversion

to urban uses by discouraging urban development patterns throughout the County. (5) Provide and maintain needed community facilities and services in a cost-efficient manner. An impact analysis will be required for all major development so that public, health, safety, and welfare are protected.

In addition to the relevant Policy statements, there are additional relevant goals and objectives for each element of the Comprehensive Plan as set forth below:

*Agricultural and Timber Lands:* Goal: Preserve a significant portion of the County's productive agricultural and timber lands. Objectives: (b) Protect existing agricultural operations from conflicts with other land uses. (c) Establish a pattern of residential and commercial development that causes minimal conversion of agricultural land or disruption to agricultural areas. (f) Identify and designate prime agricultural land.

*Public Facilities and Services:* Goal: Provide County facilities and services necessary to promote a safe, healthful, and desirable community in which to live. Objectives: (a) ensure that the intensity, timing, and implementation of future development is subject to the provision of adequate and coordinated public facilities and services. (d) Recognize the need for continued planning in order to maintain adequate and efficient public facilities and services for existing and future residents.

*Open Space, Recreation, and Historic Preservation:* Goal 3: Preserve "open space" areas throughout the County such that these areas will become an integral part of the community as the growth corridors and centers expand. Objectives: (a) Protect and conserve natural features of the environment, i.e., wetlands, floodplains, etc., from improper development. Goal 4: Preserve and protect historic sites and buildings in Dinwiddie County. (h) Preserve and protect the County's historic sites and cultural heritage.

*Environment:* Goal: Protect the county's high level of environmental quality. Objectives: (a) Protect the environment and conserve resources for future uses. (b) Assure that new development minimizes adverse impacts on the natural land and/or built environment. (c) Preserve the County's scenic, cultural, and historic resources as being essential to both the County's rural and historic character and the overall quality of life. (d) Protect and preserve the County's agricultural and timber lands and activities. (f) Maintain and enhance the agricultural and farming resources as an integral sector in the County. (g) Protect and preserve the natural and physical environment.

*Land Use and Development:* Goal: Ensure that sound practices are employed and guide future development in an efficient and serviceable manner, which is protective of the County's predominately-rural character and concentrates development in designated areas.

Objectives: (f) Encourage development which is compatible with anticipated rates of growth, available resources, and available or planned utilities, schools, and other community facilities and services. (g) Emphasive community planning and industrial development that is designed to economize the costs of roads, utilities, and land use. (h) Make planning and industrial development that is designed to economize the costs of roads, utilities, and land use.

The subject property is located within the Rural Conservation Area as defined by the Comprehensive Land Use Plan. While the Comprehensive Plan does not specifically address renewable energy ie. solar energy generation, it does account for future utility growth and expansion in accordance with the Comprehensive Plan.

**Planning Commission Recommendation**

The Planning Commission has to determine the location, character, and physical extent of the proposed solar generating facility, Reams Solar I, a 5 MW AC, 6.5 MW DC photovoltaic solar facility with onsite battery storage, is in substantial accord with the Comprehensive Plan as specified in Va. Code Sec. 15.2-2232, as amended.

**Planning Commission Action**

**WHEREAS, in accordance with Va. Code §§ 15.2-2232, as amended, the Dinwiddie County Planning Commission is of the opinion that the subject solar generating facility, Reams Solar I, a 5 MW AC, 6.5 MW DC photovoltaic solar facility with onsite battery storage, (satisfies does not satisfy) the criteria of location, character, and physical extent:**

**NOW, THEREFORE, BE IT RESOLVED that the Dinwiddie County Planning Commission does hereby find that the subject solar generating facility, Reams Solar I, a 5 MW AC, 6.5 MW DC photovoltaic solar facility with onsite battery storage, (is or is not) substantially in accord with provisions of the Comprehensive Plan.**

Attachments: Rezoning Application, Statement of Proffers, Location Map, Reams Solar I Conceptual Site Plan, VDOT Land Use Amendment Comment Letter for P-19-4, Reams Comprehensive Plan Accordance Narrative, Reams Limited NEPA Review, Reams Fiscal Impact Report V4, Reams Decommissioning Plan V3