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## Montgomery County Solar Array at the Former Oaks Landfill, Mandatory Referral, MR2021034

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### Description

Request to construct a new solar array at 6010 Riggs Road, Gaithersburg, Maryland.

**Location:** the eastern quadrant of the intersection of Olney-Laytonsville Road and Riggs Road

**Size:** 24.0 acres

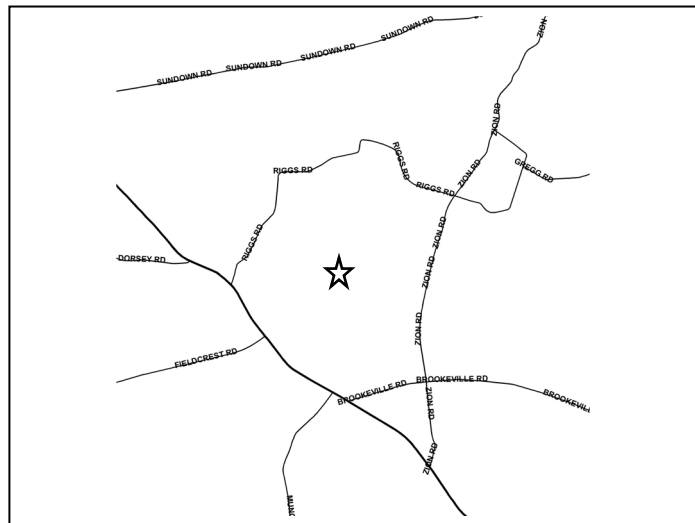
**Zone:** AR

**Master Plan:** 2005 *Olney Master Plan*

**Applicant:** Montgomery County Department of General Services

**Accepted Date:** July 1, 2021

**Review Basis:** 20-301 et seq. of the Land Use Article, Mandatory Referral



### Summary

- Staff recommends **Approval** of the Mandatory Referral MR2021034.
- The former Oaks Landfill site is owned by Montgomery County. The landfill received mixed municipal solid waste from June 1982 until the Spring of 1995 and is currently closed and capped.
- The Project will be located on approximately 24 acres of the 170 capped acres.
- The solar array facility will be a 6-megawatt (MW) AC project split into three arrays, each of which are rated at approximately 2 MW AC. The facility will be capable of producing approximately 11.4 million kWh of AC electrical power annually, and will provide reliable, clean energy for low-to-moderate income households and County Government.

## **INTRODUCTION**

### **Project Background**

Montgomery County, Maryland continues to invest in solar energy projects, moving toward the ambitious goal of eliminating greenhouse emissions by 2035. Consistent with this vision, the County intends to install a new solar array that will provide reliable, clean energy for low-to-moderate income households and County Government at the site of the closed Oaks Landfill, located at 6010 Riggs Road, in the eastern quadrant of the intersection of Olney-Laytonsville Road and Riggs Road (Property or Subject Property) and within the 2005 *Olney Master Plan* area.

The project is being implemented as part of the County's efforts to reduce greenhouse gas emissions under the 2009 Climate Protection Plan and as envisioned by the County Council in the Climate Emergency Mobilization Resolution adopted in 2017. Both the Climate Protection Plan and Climate Emergency Mobilization Resolution focus on promoting actions to reduce greenhouse gas emissions and identify the deployment of technologies utilized in this project, namely solar energy.

The project is part of a broader effort to install solar energy and resilient energy systems on all County facilities and properties where it is technically and economically feasible. Specifically, this Project leverages an underutilized public brownfield with limited future uses to generate clean, renewable energy to both County government and low-to-moderate income households.

Additionally, a partnership with local vocational and educational institutions will be created to provide opportunities for aspiring professionals during design and construction. The County's youngest residents will also have a unique opportunity to learn from the project. Ameresco, the County's partner in the Project, designed and built a solar power wagon as a hands-on learning tool appropriate for K-12 students. This will be used as a way to educate students on the benefits of solar systems and job opportunities that exist. Further, Ameresco will work with the County's Department of Environmental Protection to promote community awareness of the Project and how the County, by installing this system, is providing specific local community benefits. For example, an information board on the Project may be installed along the Blue Mash Trail.

### **Site Description**

The ground mount solar arrays that comprise this solar energy collection project will be located on the grounds of the closed Oaks Landfill, located at 6010 Olney-Laytonsville Road. The Property is owned by Montgomery County and is a closed and capped landfill. The landfill received mixed municipal solid waste from June 1982 until the Spring of 1995. The landfill currently generates electricity using methane gas naturally produced by the site. The Property totals approximately 545 acres, which includes a capped footprint of 170 acres spread across four parcels. It is the County's intent to install a ballasted ground-mount solar energy system at the former landfill on top of the closed cap. The Project will be located on approximately 24 acres of the 170 capped acres.





*Figure 1: Aerial Photograph of Vicinity*



*Figure 2: Aerial Photograph of the Site*

### **Project Description and Design**

Montgomery County Department of General Services ("Applicant") is proposing a 6-megawatt (MW) AC project split into three arrays each of which are rated at approximately 2 MW AC. There will be a total of approximately 20,000 solar panels capable of producing approximately 11.4 million kWh of AC electrical



power annually. In addition to the arrays, associated equipment pads, electrical appurtenances, and security fencing will be installed. A 12-foot wide gravel access road will be utilized during construction and operation of the solar array. The arrays will be surrounded by a seven-foot tall chain link security fence.

The solar arrays will be installed utilizing a ballasted mounting system so as not to penetrate the landfill cap. The panel racks will be equipped with fixed tilt panels. The panels are elevated on structural supports which are held down by the ballasts.

### Equipment Information

The solar panels are made from primarily silicon (PV cells), silica (glass), and aluminum (framing) and are manufactured with an antireflective coating to reduce the amount of sunlight lost to reflection. This has the added benefit of reducing any glare from the panels. The panels will be installed so that the bottom will be approximately 2.5 feet from the ground and the top of the panels, based on a planned 25-degree tilt, will be approximately eight feet high.

The racking system for the panels and associated ballast blocks are designed to meet local wind resistance and uplift requirements. Maintenance of these solar arrays will be minimal – typically maintenance technicians will visit the site once or twice per year unless there is a system issue that requires on-site attention. Landscaping will include mowing as necessary during the growing season to keep grass below the bottom of the panels. The system performance will be remotely monitored 24/7 via a web enabled data acquisition system.



Figure 3: Proposed Site Layout

### Landscape and Lighting

There are no landscape or lighting changes to the property as part of the project and the array is located internally to the Property. Therefore, a landscape and lighting plan was not required.

### Operating Hours

Normal operational hours for the County are 8:00am to 5:00pm, seven days a week. The Project will not impact these hours of operation. The hours of operation for the solar project will be 24 hours per day, seven days per week, with power generation being during daylight hours. This Project does not add any new employees, but does help to contribute to the County's long-term energy goals.

### Noise

The Project will be in compliance with the Montgomery County Noise Ordinance. The system inverters are rated at noise levels of 73 dBA at a one-meter distance and 67 dBA at three meters. The transformers have a noise level of 61 dBA. During nighttime hours, the equipment is not operating and there is no noise generation. The closest that any system equipment is to the edge of the Property is approximately 30 feet.

## **ANALYSIS**

### **Neighborhood Compatibility**

As stated previously, the Property totals approximately 545 acres, which includes a capped footprint of 170 acres spread across four parcels. The Project will be located on approximately 24 acres of the 170 capped acres and is located internally to the landfill site and will have little to no impact on surrounding land uses.

### **Master Plan Conformance**

The Property is within the 2005 *Olney Master Plan* area ("Master Plan"). The Master Plan notes that the former Oaks Landfill should remain in public ownership. The Project is a County project, and the County will continue to maintain ownership of the land. As this Project is a public project on public land, it is a "Public Use" under Section 3.4.9 of the Montgomery County Zoning Ordinance. The power generated from the Project will be used by Montgomery County Government and for community solar targeting low- and moderate-income County subscribers. While the Property is zoned AR, the site is not utilized for agriculture and is a brownfield.

### **Zoning**

The Subject Property is in the AR zone under the Montgomery County Zoning Ordinance (Chapter 59) (the "Zoning Code"). The AR zone is considered a rural zone. The proposed use under the Zoning Code is "Public Use (Except Utilities)," covered by Section 3.4.9 of the Code. **A Public Use is a permitted use in all zones.** According to the Zoning Code:

*Public Use (Except Utilities) means a publicly-owned or publicly operated use. Public Use (Except Utilities) includes County office buildings, maintenance facilities, public schools and parks, post office, State and Federal buildings. Public Use (Except Utilities) does not include a Public Utility Structure (see Section 3.6.7.E, Public Utility Structure).*

Section 3.4.9 does not provide review standards for a public utility structure. Although the proposed use is a public use, and not a conditional use, it is similar in character to a Solar Collection System, which is a limited/conditional use. Therefore, Section 59.3.7.2.B.2 of the Zoning Ordinance, "Solar Collection System," provides the best guidance to inform this report.

A Solar Collection system in the AR Zone is a Limited Use or Conditional Use in the land use table. This Solar Collection Facility would exceed the 200% of annual baseline energy use on the Property. For these reasons Staff compared the Public Use Solar array to the Conditional Use standards in the Code.

The Conditional Use standards for a Solar Collection System are numerous, but because the application is for a Mandatory Referral and not a Conditional Use, **these standards are not mandatory.**

*A Solar Collection System may be allowed as a Conditional Use in the AR zone if it exceeds a facility rated at more than 200% of on-site energy use and is less than 2 megawatts (AC). Where a Solar Collection System is allowed as a conditional use in the AR zone, it may be permitted by the Hearing Examiner under Section 7.3.1. Conditional Use and the following standards:*

The facility rated at is 6 megawatts and does not comply with this section.

*a. The Solar Collection System is prohibited:*

*i. on soils classified by the United States Department of Agriculture as either Soil Classification Category I or Category II;*

The soil classification is “100 Dumps, Refuse” and is not listed as Category I or Category II classification.

*ii. in a stream buffer;*

There are no stream buffers present.

*iii. on wetlands; or*

There are no wetlands present.

*iv. on slopes equal to or greater than 15%.*

All slopes are less than 15%.

*b. Scraping topsoil from the site is prohibited.*

No topsoil will be scraped from the site.

*c. Grading and any soil removal are minimized.*

Grading and soil removal has been minimized to not disrupt the underlying cap on the landfill.

*d. The solar collection system is compliant with the requirements of the State's net metering program under Maryland Code §7-306, COMAR 20.50.10, and COMAR 20.62.*

The application will meet all these requirements.

*e. The area under the solar facility must be actively used for farming or agricultural purposes by satisfying one or more of the following requirements:*

*(i) designated pollinator-friendly under the Maryland Pollinator-Friendly Designation Program;*

- (ii) planted, managed, maintained, and used for grazing farm animals; or*
- (iii) planted, managed, maintained, and used for any other agrivoltaic plant material.*

The land is not agricultural in nature and is maintained as a capped landfill and can not comply with this section.

- f. The applicant must provide evidence that the local utility company will allow the Solar Collection System to be connected to the utility grid.*

The Applicant has demonstrated the local utility company will allow the Solar Collection System to be connected to the utility grid.

- g. The applicant must provide evidence that the application was submitted to the Office of Agriculture.*

The land is not agricultural in nature and is maintained as a capped landfill. Thus, the Office of Agriculture had no comment on this application.

- h. Removal of trees or landscaping otherwise required or attached as a condition of approval of any plan, application, or permit for the installation or operation of a Solar Collection System is prohibited.*

No trees or landscaping otherwise required or attached as a condition of approval of any plan, application, or permit for the installation or operation are being removed.

- i. Any tree in or on a floodplain, stream buffer, steep slope, critical habitat, contiguous forest, or historic site, and any champion tree or other exceptionally large tree is left undisturbed unless a disturbance is allowed under Section 22A-12(b)(1).*

No trees in or on a floodplain, stream buffer, steep slope, critical habitat, contiguous forest, or historic site, and any champion tree are being disturbed.

- j. Except for pad areas for transformers and electrical equipment, the use of concrete is prohibited.*

Due to the existing use as a capped landfill concrete ballasts must be used because traditional mounting could puncture the cap of the landfill.

- k. Screening that satisfies Section 59.6.5.3.C.8 (Option A) on the sides of the facility within 200 feet of any neighboring house is required; however, a fence may not be required or prohibited.*

N/A

- l. The Hearing Examiner's decision must consider the recommendations of the Office of Agriculture.*

N/A

- m. The applicant must include a calculation of the total acreage used for the Solar Collection System, including any required setbacks and all acreage within the fenced or shrubbed area.*

The total acreage for the Solar Collection System is 24 acres.

*n. The land area approved for the Conditional Use, in addition to all other Conditional Use approvals for solar facilities in the AR zone, will not exceed 1,800 acres of land.*

N/A

While the project meets the majority of the standards required for a Conditional Use, it is larger than the permitted size and will not be in agricultural use. These two standards can't be met due to the specific conditions of this Project and the existing land use as a capped landfill. The standards that have not been met are not critical in the review of this Project and the creative, adaptive reuse of a brownfields site.

## **TRANSPORTATION ANALYSIS**

### Master-Planned Roadway and Bikeways

The Subject Property is located along Olney-Laytonsville Rd (MD 108), a Major Highway with a master-planned 150 foot right-of-way and Riggs Road, an unclassified street. The solar field itself is located well in the interior of the Subject Property and does not directly confront any public road. The Subject Property additionally fronts the Blue Marsh multi-use nature trail, which parallels both roads.

### Access, Circulation, Queueing, and Parking

The proposal will be accessed via an existing internal driveway network that serves the existing landfill use. These roads are designed to carry large, heavy vehicles and will remain adequate for the proposed use. Following construction, the solar field itself will rarely require additional access, limited to minimal routine maintenance that will not result in an increase in local trips. The field will not require additional parking and will not result in queueing.

## **ENVIRONMENT**

### Forest Conservation

The Application satisfies all of the applicable requirements of the Forest Conservation Law ("FCL"), Montgomery County Code, Chapter 22A and is in compliance with the Montgomery County Planning Department's Environmental Guidelines. A Forest Conservation Exemption request to be exempt from Article II of the FCL, Plan No. 42021238E, was confirmed on June 8, 2021 (Attachment C). The Project Site is exempt from Article II of the FCL under exemption category 22A-5(t)(1) because the Project Site is a modification to an existing non-residential developed property.

## **COMMUNITY OUTREACH AND NOTIFICATION**

Representatives from Montgomery County Department of General Services held a community meeting to solicit public feedback and answer questions from the surrounding neighbors on June 30, 2021. Staff has not received comment as of the date of this report.

## **CONCLUSION**

Based on information provided by the Applicant and the analysis contained in this report, Staff concludes that the proposed Mandatory Referral for the Montgomery County solar array at the Former Oaks Landfill will be compatible within its Site context and in substantial conformance with the Master Plan. Therefore, Staff recommends **Approval** of the Mandatory Referral and recommends this be transmitted to the Montgomery County Department of General Services.



**Attachments:**

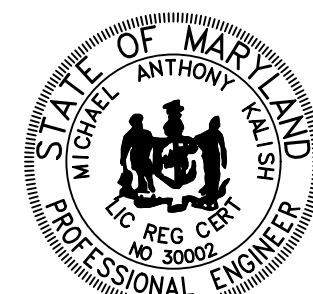
1. Proposed Site Plans
2. Traffic Statement
3. Forest Conservation Exemption Letter





**NOTES:**

1. PROJECT SITE ZONED AGRICULTURAL.
2. NO HISTORICAL PROPERTIES ON PROJECT SITE.
3. NO PUBLIC AMENITIES, PARK LANDS OR COMMUNITY FACILITIES ON-SITE.
4. NO DISTURBANCE TO SPECIAL PROTECTION AREAS ON PROJECT SITE
5. NO CAPITAL PARK PROPERTY WILL BE IMPACTED BY THIS PROJECT.



NO.	REVISION	DATE
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## LOCAL AREA DRAWING

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**SOLAR ARRAY  
MANDATORY REFERRAL  
SUPPORTING PLAN DRAWINGS**

CLIENT

# SCS ENGINEERS

**STEARNS, CONRAD AND SCHMIDT  
CONSULTING ENGINEERS, INC.**  
11260 ROGER BACON DRIVE - RESTON, VA 20190  
PH. (703) 471-6150 FAX. (703) 471-6676

Q/A RVW BY:	DWN. BY:	Q/A RVW BY:
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CADD FILE

DATE: APRIL 2021

SCALE:  
1"=200'

DRAWING NO.

2 of 6





**MONTGOMERY COUNTY PLANNING DEPARTMENT**  
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

June 8, 2021

Emily Murrell  
25 Old Solomons Road  
Annapolis, MD 21401

Re: Forest Conservation Exemption Request  
**#42021238E – Oaks Landfill Solar Project**  
**CONFIRMED**

Dear Ms. Murrell,

Based on the review by staff of the Montgomery County Planning Department, the Forest Conservation Plan Exemption request submitted for the plan identified above, is confirmed. The project site is exempt from Article II of the Montgomery County Code, Chapter 22A (Forest Conservation Law), Section 22A-5(t)(1) because the site is a modification to an existing non-residential developed property where:

- (A) no more than 5,000 square feet of forest is ever cleared at one time or cumulatively after an exemption is issued;
- (B) the modification does not result in the cutting, clearing, or grading of any forest in a stream buffer or forest located on property in a special protection area which must submit a water quality plan;
- (C) the modification does not require approval of a preliminary plan, administrative subdivision plan, or conditional use/special exception;
- (D) the modification does not increase the developed area by more than 50%, and any existing principal building, as defined in Chapter 59, is retained; and
- (E) the pending development application does not propose any residential uses

**This plan approval will expire on June 7, 2026 if not started by that date.** A pre-construction meeting is required after the limits of disturbance have been staked prior to clearing and grading. The property owner, construction superintendent, forest conservation inspector, and the Montgomery County Department of Permitting Services sediment control inspector shall attend this meeting. If you have any questions regarding these actions, please feel free to contact me at 301-495-4603 or at [michael.sharp@montgomeryplanning.org](mailto:michael.sharp@montgomeryplanning.org).

Sincerely,

*Michael J. Sharp*

Michael Sharp  
Senior Planner, Forest Conservation Inspector  
M-NCPPC



DEPARTMENT OF GENERAL SERVICES

Marc Elrich  
*County Executive*

David E. Dise  
*Director*

**Mandatory Referral MR2021034 for Montgomery  
County Solar Array at the Former Oaks Landfill**

**16-RESPONSE-MR2021034**

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**Circulation Map - 05-CIRC-MR2021034:** A 12-foot wide gravel access road will be utilized during construction and operation of the solar array and will include MCFRS Modified Residential Driveway apron connecting this new access road to the existing gravel landfill access road. In addition, a centralized Montgomery County Fire and Rescue Compliant Apparatus Turnaround will be constructed for use by emergency vehicles should the need arise. The gravel access route will be in compliance with existing County zoning and fire code standards.

This Project does not impede the Blue Mash Trail on site nor impact any trailheads. Additionally, the Project does not impact an existing license agreement between the County and the Capital Area Soaring Association which allows use of the former Landfill site for model airplane soaring activities.

Please refer to 03-MRPLAN-MR2021034-003, which shows the gravel road.

**Approved NRI/FSD Plan – 06-EXCOND- MR2021034E:** A Forest Conservation Plan Exemption was granted on June 8, 2021; application 42021238E.

See file 08-FCPEX-MR2021034-001.

**Special Protection Area Map – 07-SPA-MR2021034:** The Project is not within an SPA.

**Landscaping and Lighting Plan – 10-LL-MR2021034:** There are no landscape or lighting changes to the property as part of the Project. Therefore, a landscape and lighting plan is not applicable.

**Statement of Compliance - 11-SOC-MR2021034:** The project will be in compliance with the Montgomery County Noise Ordinance. The system inverters are rated at noise levels of 73 dBA at a one-meter distance and 67 dBA at three meters. The transformers have a noise level of 61 dBA. During nighttime hours, the equipment is not operating and therefore there is no noise generation. The closest that any system equipment is to the edge of the property is approximately 30 feet.



**Architectural Drawing - 12-ARCH-MR2021034:** The Project does not add any buildings, therefore there are no elevations/architectural drawings. Representative examples of what the solar array will look like can be found in files 16-PHOTO-MR2021034-001 and 16-PHOTO-MR2021034-002.

**Traffic Impact Analysis - 13-TIS/TS-MR2021034:** The Montgomery County Solar Array at the Former Oaks Landfill project does not impact staffing at the site. Therefore, no additional weekday peak-hour trips will be generated and the Project should be exempt from LATR.