

## MANDATORY REFERRAL NO. MR2024012

### MONTGOMERY COUNTY EQUIPMENT MAINTENANCE AND TRANSIT OPERATIONS CENTER (EMTOC) MICROGRID

#### Description

The Montgomery County Department of General Services is proposing to install solar panels, battery energy storage, battery electric bus chargers, and microgrid controls to support the zero-emission Ride On transit bus fleet located at the County's Equipment Maintenance and Transit Operations Center (EMTOC).

No. MR2024012  
Completed: 6-10-2024

MCPB  
Item No. 8  
6-20-2024

Montgomery County  
Planning Board  
2425 Reedie Drive  
Floor 14  
Wheaton, MD 20902

## Planning Staff



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### LOCATION

16700 Crabbs Branch Way, Rockville

### MASTER PLAN, ZONE

2021 Shady Grove Minor Master Plan Amendment,  
Employment Office (EOF-0.75, H-60)

### PROPERTY SIZE

15.11 acres

### APPLICATION

Mandatory Referral

### ACCEPTANCE DATE

April 24, 2024

### REVIEW BASIS

Md. Land Use Article, Section 20-301, et seq.

## Summary:

- Staff recommends approval and transmittal of comments.
- The Montgomery County Department of General Services Office of Energy and Sustainability proposes to upgrade the Equipment Maintenance and Transit Operations Center (EMTOC) with electrical infrastructure, solar PV canopies, a battery energy storage system, connection of the existing back-up generators into the microgrid, (11) DC fast chargers, and (5) Level-2 chargers.
- 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.
- No changes are proposed to the building's footprints, open space, or circulation.
- The Project is consistent with the County's 2009 Climate Change Action Plan and the sustainability goals of the *Thrive Montgomery 2050* General Plan.
- The project is subject to Chapter 22A, Forest Conservation Law; however, no disturbance is proposed.
- No public correspondence has been received.

## SECTION 1 - RECOMMENDATIONS

Staff recommends approval and the transmittal of comments to the Montgomery County Department of General Services:

1. The Project is not proposing any lighting changes. Due to the extensive shading that occurs with solar panels, consider evaluating the addition or adjustment of lights for the main parking area to aid pedestrian circulation. These lights could be timed seasonally.

## SECTION 2 - INTRODUCTION

### Review Process

This report is Planning Staff's review of the Mandatory Referral for the construction of solar panels, battery energy storage, battery electric bus chargers, and microgrid controls, submitted by Montgomery County Department of General Services (DGS), pursuant to the Maryland Land Use Article, Section 20-301.

## SECTION 3 - PROJECT DESCRIPTION

### Background

The Department of Transportation Division of Fleet Management Services operates four main facilities which include the Subject Property that is an active public transit bus depot that provides direct vehicle maintenance support for the Division of Highway Services.

Montgomery County Government previously submitted Mandatory Referrals No. MR2010709 and No. MR2009749 that were approved for the Site on May 21, 2010. Application No. MR2010709 proposed to relocate the Department of Transportation's Equipment Maintenance Operations Center (EMOC) from the County Service Park located adjacent to the Shady Grove Metro Station to the Casey 6 and 7 Properties and a portion of the Roberts Oxygen Property. The facilities to be relocated included Transit Services (Ride On bus system), Fleet Services (County vehicles), and the Highway Maintenance Facilities (maintenance of roads and bridges). Application No. MR2009749 covered the 5.04-acre Roberts Oxygen Property and was associated with the site selection in connection with the EMOC relocation noted above.

### Surrounding Neighborhood

The Subject Property is located at the intersection of Crabbs Branch Way and Shady Grove Road and within the 2021 *Shady Grove Minor Master Plan Amendment* area. The surrounding area is characterized by primarily industrial and commercial uses with some residential. The Site is bounded by I-370 to the north, the Grove Shopping Center to the east, the B&O Railroad to the west, and the Westside at Shady Grove townhome community immediately south of Shady Grove Road. Further south is the Shady Grove Metro Station and the Metro North neighborhood, as shown in the vicinity map below.

The Montgomery County Public Schools (MCPS) bus depot is situated to the southeast of the EMTOC Subject Property and located at 16651 Crabbs Branch Way. The 2006 *Shady Grove Sector Plan* envisions the redevelopment of the MCPS bus depot site into a walkable, mixed-use community. In a

separate forthcoming project, the County will be replacing the school bus depot with a co-located bus depot that will support both Montgomery County Public Schools and the Montgomery County Department of Transportation. The new version of the MCPS bus depot site redevelopment would also include new amenities and open space to support the new uses. Similar to the EMTOC Project, this site's transformation is being implemented as part of the County's efforts to transition to zero emissions vehicles and reduce greenhouse gas emissions.

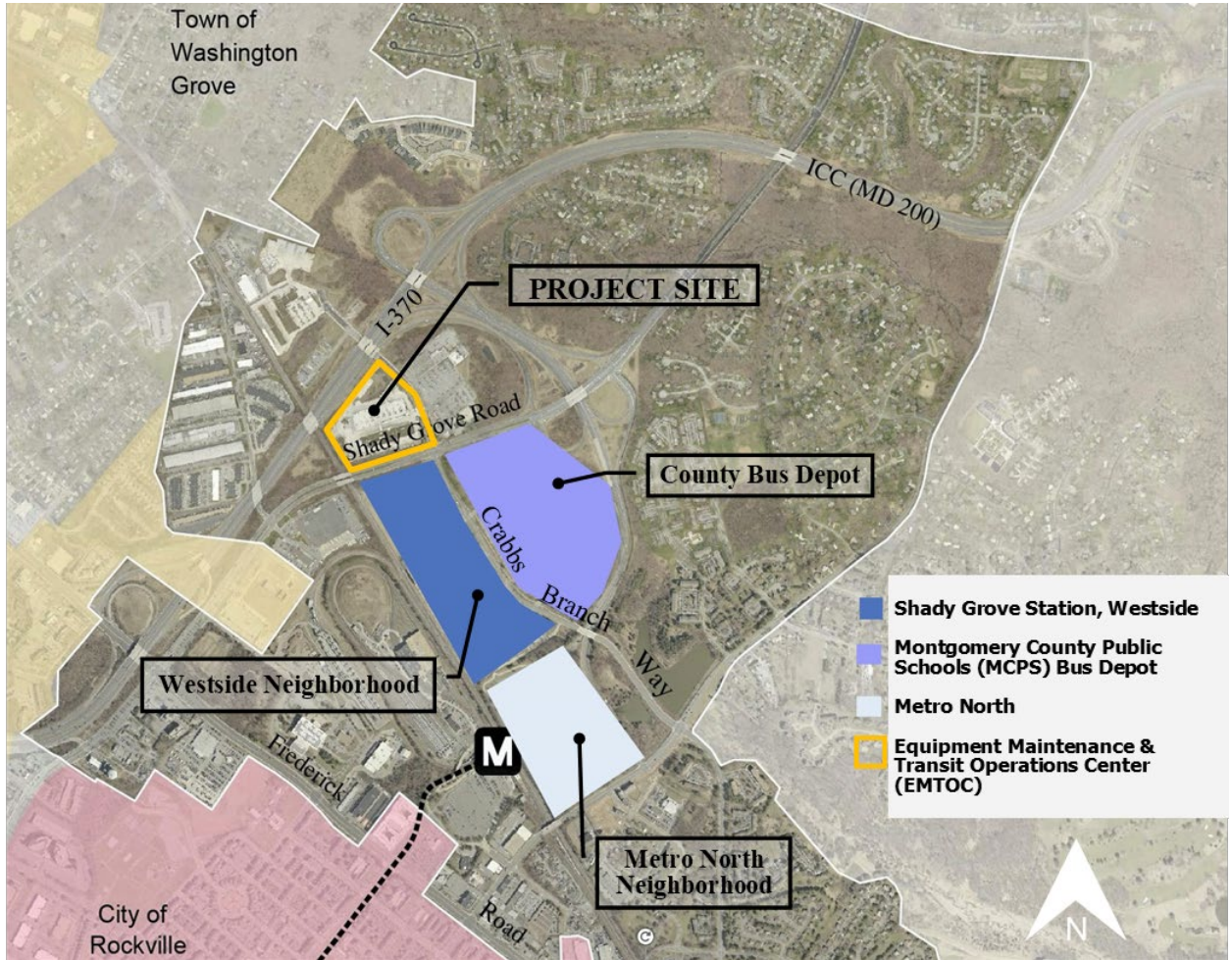


Figure 1: Vicinity Map (Site outlined in orange)

### Site Description

The county-owned Site is known as the Equipment Maintenance and Transit Operations Center (EMTOC) Depot which is located at 16700 Crabbs Branch Way, Rockville, MD 20855. The Site is zoned as Employment Office (EOF-0.75, H-60). The Bus Depot is responsible for the maintenance, servicing, and parking of over 156 County Ride On buses.

There are three access points onto the Property from Crabbs Branch Way – one for maintenance vehicles, one for employees and visitors, and one access point for the ingress and egress of public transit buses. There are four existing buildings on the Property. The Site is comprised of covered bus parking for 187 buses, a fleet/heavy equipment maintenance building, a fare collections building, a fueling and washing building, and a compressed natural gas fueling yard and associated parking for heavy equipment.



Figure 2: Existing Property

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### Project Description

Montgomery County plans to procure electric and fuel cell electric buses over the next few years. The County has contracted a power purchase agreement with AlphaStruxure to fund the project. This Project will install a renewable based microgrid system<sup>1</sup> to support the power requirements for the County's first 14 fuel cell electric buses and additional electric buses that will be added to the fleet over the next few years, replacing existing diesel buses.

The Project will also incorporate electric vehicle charging along with several clean energy production technologies that will enable the County to provide a sustainable, resilient, and reliable energy supply for fuel cell electric fueling and electric bus charging and site operations.

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<sup>1</sup> Microgrid systems are local energy systems with sources of generation, storage, and advanced automation and control. These microgrids able to function independently from the grid and provide energy cost certainty and optimization, enhanced resilience and reliability, and accelerated emissions reductions.

More specifically, the EMTOC Project will include the following:

1. 5.65 MWDC of solar photovoltaic canopies that will provide electrical power to the buses and to the battery storage systems;
2. Two (2) MW / 6.9 MWh of battery energy storage;
3. Tie in two (2) existing 725kW back-up Cummins natural gas generators to the microgrid;
4. 2.2 MW Charging Capacity;
  - a. Ten (10) 180kW & (1) 360kW DC Fast Chargers
    - Twenty-seven (27) Charger reels & plug-in dispensers
    - Four (4) Pantograph Dispensers
  - b. Five (5) 7.2 kW Level-2 Chargers
    - Ten (10) Plug-in dispensers
  - c. Microgrid controller; and
  - d. Infrastructure to support future green hydrogen electrolyzer.

Existing site circulation is designed for a 60-foot articulated bus vehicle. No changes are proposed for existing bus bays, vehicular, or non-motorized circulation. While canopy lighting is proposed, there are no proposed improvements related to open space, the building facades or architecture, or pedestrian or bicycle facilities. Frontage improvements are not proposed or required. Implementation of the Project is expected to occur in a single construction phase.

The lighting fixtures surface mounted under the solar panel structures are proposed to have variable heights with a maximum of up to 17.5 feet above grade. Solar panels are proposed to be 18 feet above grade. There is a small area north of Building No. 3 that is proposed to have an enclosed area for the electrical vault, switchgears, and transformers.



*Figure 3: Existing Site Conditions & Proposed Location for Solar Canopy  
(looking east towards Crabbs Branch Way)*



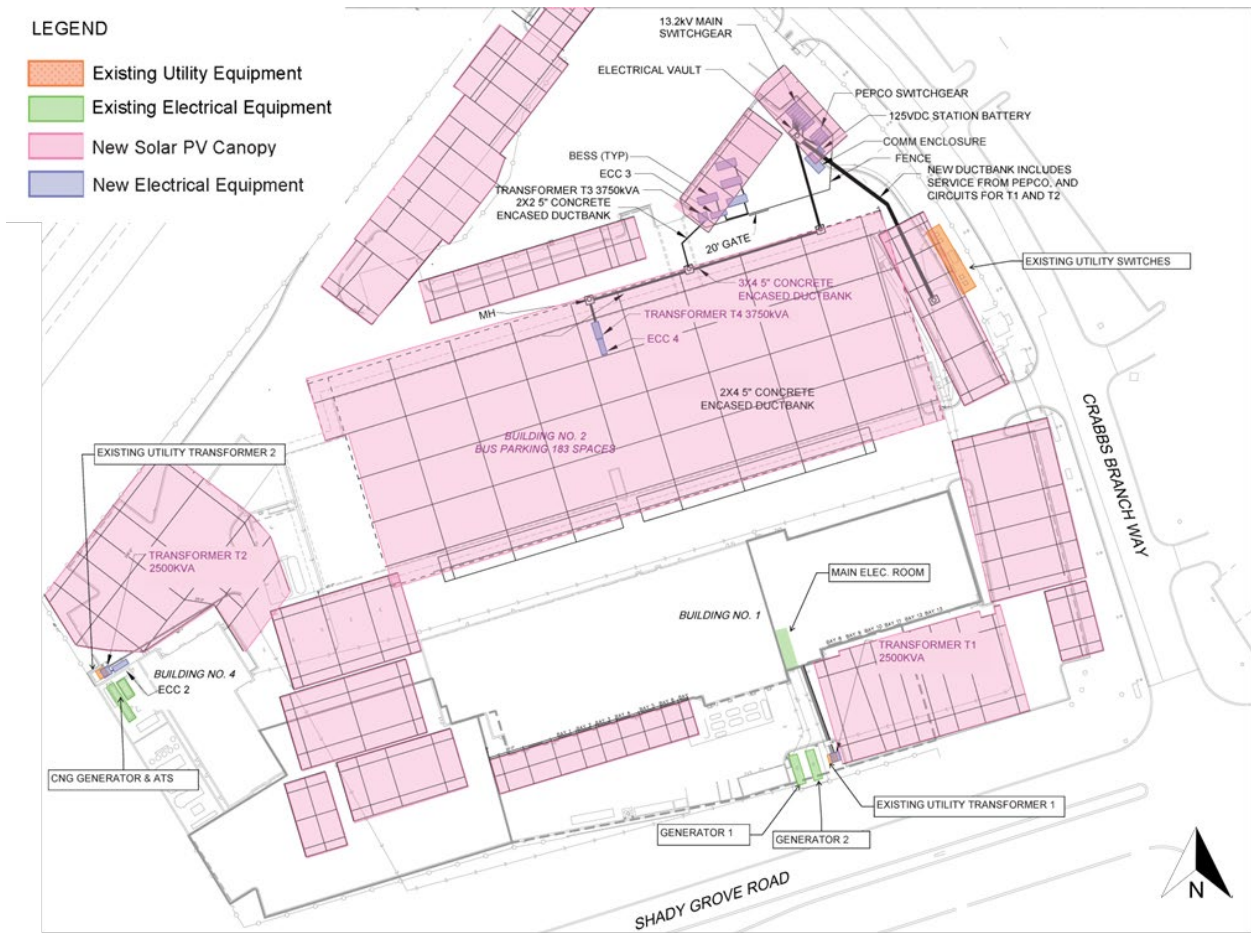


Figure 4: Proposed Solar Canopies and Electric Equipment

## SECTION 4 – MANDATORY REFERRAL ANALYSIS

Mandatory Referral review is guided by the Montgomery Planning Mandatory Referral Review Uniform Standards (December 2022), and the authority granted through the Maryland Land Use Article, Section 20-301, et.seq. As set forth in Sections 20-301 and -302, the Montgomery County Planning Board has jurisdiction over mandatory referral projects presented by Montgomery County government and Montgomery County Board of Education/Montgomery County Public Schools, for (i) acquiring or selling land; (ii) locating, constructing or authorizing a road, park, public way or ground, public building or structure, or public utility; or (iii) changing the use of or widening, narrowing, extending, relocating, vacating or abandoning any of the previously mentioned facilities. The Planning Board must review such projects and transmit comments on the proposed location, character, grade and extent of the activity.

As described in the Uniform Standards, the Planning Board considers all relevant land use and planning aspects of the proposal including, but not limited to, the following:

- 1. whether the proposal is consistent with the County’s General Plan, functional plans such as the master plan of highways, environmental guidelines, the approved and adopted area master plan or sector plan, and other public plans, guidance documents, or programs for the area;***

The Mandatory Referral application advances several of the sustainability recommendations in the 2021 *Shady Grove Sector Plan Amendment*. This Sector Plan envisions “new development that showcases the best in sustainable design, including building orientation, architecture, ventilation systems, and operating systems that conserve energy, and incorporating new and developing technologies for generating renewable energy on-site” (p.79). The proposed solar array will contribute to further the County’s commitment to generate local and sustainable energy sources.

The Proposal also implements the County’s 2009 *Climate Action Plan*, Climate Emergency Resolution No. 18-974, and the *Thrive Montgomery 2050* General Plan. The Climate Action Plan is a strategic plan to cut countywide greenhouse gas emissions by 100% by 2035. The Climate Emergency Resolution adopted in 2017 declared a climate emergency and set a major reduction goal of 80% by 2027 and 100% by 2035. The Thrive Montgomery General Plan has environmental sustainability goals to reduce sprawl, decrease greenhouse gas emissions, improve air quality, and upgrade the environmental performance of buildings and sites. The Proposal is consistent with the above noted climate related plans because it is a major public investment that will advance the County’s sustainability goals and the microgrid will enable the future conversion and expansion of the public transit bus fleet.

**2. whether the proposal is consistent with the intent and the requirements of the zone in which it is located;**

The Subject Property is within the Employment Office zone (EOF-0.75, H-60) which is intended for office and employment activity combined with limited residential and neighborhood commercial uses. The EOF zone allows flexibility in building, circulation, and parking lot layout. The EMTOC is a permitted use within the EOF zone. The Site was previously assessed for compliance with the dimensional requirements for the EOF zone as specified in the Zoning Ordinance, in relation to density, lot coverage, height, and setbacks. There are no changes proposed to the building footprints or intensity of development.

Per Section 59.3.7.2 of the Zoning Ordinance, a Solar Collection System (categorized as a miscellaneous use) is a limited use within the EOF zone and must follow additional standards. Per Section 59.3.7.2.B.1.b.i, structures for systems producing less than 120% of on-site energy use may be an accessory use under the following standards: (a) the system produces a maximum of 120% of on-site energy use; (b) solar panels may encroach into a setback as allowed under Section 4.1.7.B.5.C<sup>2</sup>; and (c) the panels may exceed the maximum height allowed under 4.1.7.C.3.b<sup>3</sup>. The Mandatory Referral is proposing to maintain a solar collection system that will produce less than 120% of on-site energy. The proposed solar array structures will have a height of less than 20 feet and will be set back at least 50 feet from the property line. The power triangle which houses the switchgears and electrical vault will be enclosed by a 6-foot-tall fence.

Therefore, the proposed Solar Collection System meets the intent and requirements of the use and the EOF zone.

**3. whether the nature of the proposed site and development, including its size, shape, scale, height, arrangement, design of structure, massing, setback(s), site layout, and location(s) of parking is compatible with the surrounding neighborhood and properties;**

The Subject Property is particularly suited for the solar collection system expansion with respect to the physical attributes of the site and the surrounding setting. The Mandatory Referral application does not include an expansion of the principal use which aids in preserving some of the existing character of the site and neighborhood. The EMTOC is not expanding the maintenance facilities nor is it increasing the number of buses parked on the

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<sup>2</sup> A solar panel may project a maximum of 3 feet into any side setback, or any side street setback of less than 25 feet and may project a maximum of 9 feet into any front setback, rear setback, or any side street setback where the side street setback is a minimum of 25 feet.

<sup>3</sup> The maximum height does not apply to solar panels and any roof structure listed in Section 4.1.7.C.3.a, except that in the TLD, TMD, THD, and R-30 zones, an air conditioning unit or similar structure or mechanical appurtenance may exceed the established height limit by a maximum of 8 feet.

site. No excessive lighting or noise will be generated from the improvements that would impact the broader community. The Property is on a corner lot primarily surrounded by commercial land uses and major roads. The properties to the east are zoned EOF, similar to the bus depot, and Commercial Residential (CR). The solar arrays that will be installed are set back at least 50 feet from the Property line. Many of the commercial buildings are also setback substantially from the shopping center property line creating substantial distance between the solar arrays and other uses. Due to the existing dense green buffer along the southern edge of the Property, the proposed solar arrays will not be visible to residential uses that are located south of Shady Grove Road. West of the Subject Property is the B&O Railroad and vacant land that runs parallel to I-370. Overall, the impact of the portion of the solar collection system visible from Crabbs Branch Way will be minimal to the neighboring properties.

**4. *whether the locations of buildings and structures, the open spaces, the landscaping, recreation facilities, and the pedestrian and vehicular circulation systems are adequate, safe, and efficient;***

There are four (4) existing buildings on the Property, one which has a rooftop one-level parking garage (Building No. 2). While the Proposal includes the addition of solar arrays, transformers, and other electric equipment, the building locations and footprints will not change. Therefore, the Project is proposing to efficiently use space by placing solar arrays throughout an existing transit facility in an already developed area. No changes are proposed to open space, landscaping, or circulation. The Proposal is adequate considering how the improvements maximum available space on the Site, and vehicular and pedestrian circulation remains safe and efficient. There are no trees internal to the Site so the proposed solar panels would receive optimal sun exposure.

**5. *whether the proposal has an approved NRI/FSD and a preliminary SWM concept plan, and meets the requirements of the Forest Conservation Law (Chapter 22A of the County Code). Forest Conservation Plan, if applicable, must be approved by the Planning Board, either before or at the time of the Board's mandatory referral review and action on the project. Unlike the mandatory referral review by the Board, the conditions of the Forest Conservation Plan are binding on all county projects and require a Resolution of Approval.***

The Proposal is subject to the Montgomery County Forest Conservation Law (Chapter 22A of the County Code). There is a previous Mandatory Referral (MR2010709) with an approved Natural Resource Inventory (NRI) and Final Forest Conservation Plan from when the bus depot

was initially constructed. The current proposal has no new disturbance; therefore, it complies with Chapter 22A.

The Subject Property has a previously approved stormwater management concept plan. There are no changes proposed with this Application.

- 6. whether a Preliminary or a Final Water Quality Plan has been reviewed by the Planning Board if the project is located in a Special Protection Area. In addition, for a Water Quality Plan for a project on public property, the Board must determine if the plan meets the standards of Article V. WATER QUALITY REVIEW IN SPECIAL PROTECTION AREAS, of the County Code (pursuant to Section 19-65(d)(4));**

The Proposal is not located in a special protection area and is not subject to a water quality plan.

- 7. whether or not the site would be needed for park use if the proposal is for disposition of a surplus school.**

This is not a disposition of a surplus school site and therefore this requirement is not applicable.

- 8. whether alternatives or mitigation measures have been considered for the project if the proposal is inconsistent with the General Plan or other plans and policies for the area, or has discernible negative impacts on the surrounding properties or neighborhood, the transportation network, the environment, historic resources (including burial sites) or other resources.**

The proposed addition of solar panels, transformers, and other electrical equipment to create a smart energy facility (microgrid system) at an existing transit depot is considered an inherently beneficial improvement due to its positive environmental impact. The Applicant is not expanding the existing principal use. The Project does not propose any off-site improvements that would directly impact the public right-of-way along the Property's two frontages. Further, the transit depot does not abut or confront<sup>4</sup> any lower intensity land uses such as residential. Further, the solar panels will not have a discernible impact to the residential townhome community to the south due to the separation created by Shady Grove Road and substantial tree buffer on both sides of the road right-of-way.

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<sup>4</sup> Shady Grove Road exceeds an 80-foot right-of-way.

Solar panels, both flush-mounted and with tilted panels, are standard designs. The mounted solar panels and standalone array structures will not have a discernible impact on the property to the west across Crabbs Branch Way due to the proposed orientation and the height of the structures. Further, the 17-acre Grove Shopping Center to the east has comparable acreage to the Subject Property (15 acres) which makes the size and character of both non-residential developments complementary. Additionally, the retail suites within the shopping center are substantially setback from Crabbs Branch Way and the bus depot.

The Project does not impact neighboring properties, transportation routes, or protected historic resource sites. Considering the Project's compatibility with various climate conscious County policies and the above description of impacts on the surrounding area, mitigation measures are not deemed necessary and have not been recommended by Planning Staff.

#### TRANSPORTATION VEHICULAR ACCESS

As previously noted, there are no changes proposed to existing access points, circulation, bus bays or drive aisles on the Property.

#### LOCAL AREA TRANSPORTATION REVIEW

The Proposal does not generate additional person trips and is not subject to Local Area Transportation Review (LATR).

#### PEDESTRIAN AND BICYCLE FACILITIES

The Property has existing pedestrian facilities along the Crabbs Branch Way and Shady Grove Road frontages. There are no proposed improvements to pedestrian or bicycle facilities.

#### PUBLIC TRANSIT SERVICE

The Subject Property is an active bus depot and maintenance facility and does not have public transit service stops along its two frontages. The closest offsite transit stops are located on the east side of Crabbs Branch Way (westbound Shady Grove Road) and on the opposite side of Shady Grove Road (eastbound Shady Grove Road). There are no changes to public transit services.

#### PARKING

The existing one-level surface parking lot elevated over Building No. 2, with solar powered lighting, for employees and visitors will remain unchanged. The remainder of existing parking is for the fleet of maintenance vehicles and layover bus parking. No new parking spaces are proposed on the Subject Property.

## ENVIRONMENTAL GUIDELINES

The prior approval of Mandatory Referral No. MR2010709 for the Subject Property was found to comply with Montgomery County Planning Board's Environmental Guidelines. No new disturbance is proposed.

## FOREST CONSERVATION

No changes are proposed to the previously approved Forest Conservation Plan associated with Mandatory Referral No. MR2010709.

## STORMWATER MANAGEMENT

No changes are proposed to existing stormwater management facilities; therefore, the Proposal does not require the approval of a new stormwater management concept plan by the Department of Permitting Services.

## SUSTAINABILITY

The Proposal will transform an existing public transit bus depot and maintenance center into a smart energy facility by converting its diesel buses to an electric fleet, the addition of electric vehicle charging, and other clean energy production technologies. These improvements will create a sustainable energy supply for operations on the Site.

## SECTION 5 - COMMUNITY OUTREACH

After staff accepted the Mandatory Referral for review, Montgomery Planning notified local civic and homeowners' associations and other interested parties of this Proposal. Further, Montgomery County held a virtual Community Meeting on May 9, 2024. As of the date of this report, no correspondence on the Proposal has been received.

## SECTION 6 - CONCLUSION

Staff recommends approval and the transmittal of comments to Montgomery County Department of General Services.

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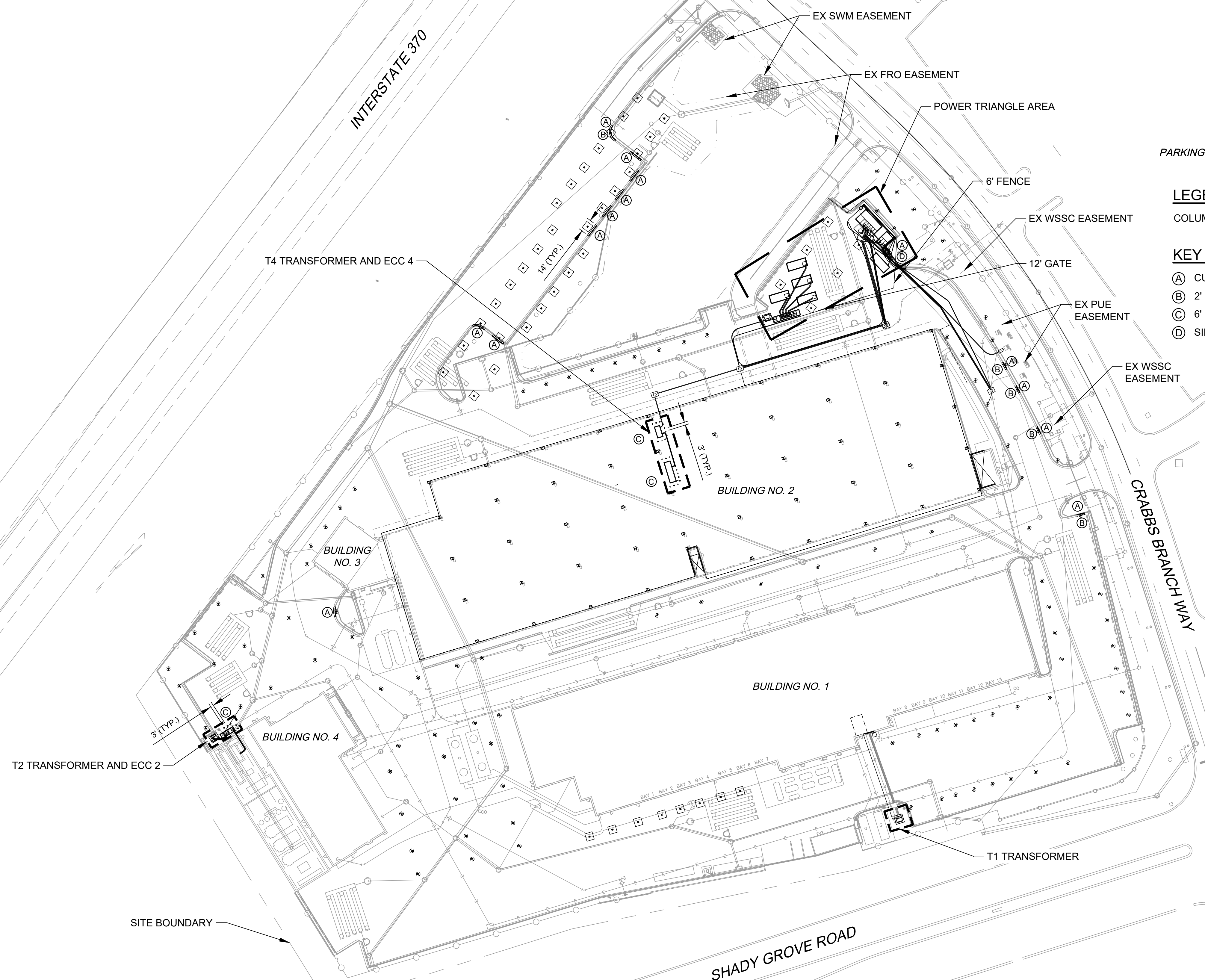
### Attachments

*Attachment A: Mandatory Referral Site Plan*

*Attachment B: MCDOT Agency Letter*




# ATTACHMENT A



PARKING


**LEGEND:**

COLUMN  

**KEY NOTES:**

- (A) CURB AND GUTTER DEMO AND REPLACEMENT, SEE DWG C-501 DETAIL 1
- (B) 2' NOSE DOWN CURB
- (C) 6' BOLLARD, SEE DWG C-501 DETAIL 4
- (D) SIDEWALK DEMO AND REPLACEMENT, SEE DWG C-502 DETAIL 5

SEAL & SIGNATURE

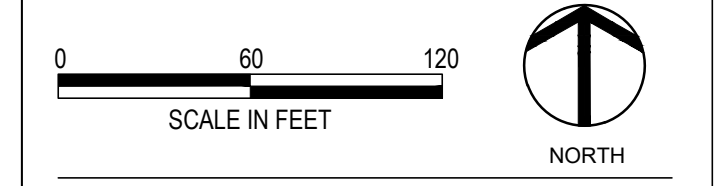


I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER: 21917, EXPIRATION DATE: 10-16-2024.

MANDATORY REFERRAL SUBMISSION  
#MR2024012

ISSUE	DATE	PERMIT SET DESCRIPTION
A	02/16/24	PERMIT SET

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Job Title  
MONTGOMERY COUNTY  
EQUIPMENT MAINTENANCE AND  
TRANSIT OPERATIONS CENTER  
(EMTOC) MICROGRID  
16700 CRABBS BRANCH WAY  
ROCKVILLE, MD 20855

Drawing Title  
PLAN DRAWING

Scale	1" = 60'	Date	04/12/24
Drawing Status			
MANDATORY REFERRAL			
Job Number	Drawing Number	Issue	
22149003	MR-03	A	
Sheet			

# ATTACHMENT B



## DEPARTMENT OF TRANSPORTATION

Marc Elrich  
*County Executive*

Christopher R. Conklin  
*Director*

May 1, 2024

Ms. Tamika Graham, Planner III  
Midcounty Planning Division  
The Maryland-National Capital  
Park & Planning Commission (M-NCPPC)  
2425 Reedie Drive  
Wheaton, Maryland 20902

RE: Mandatory Referral No. MR2024012  
Montgomery County EMTOC Microgrid Project

Dear Ms. Graham:

We have completed our review of the Mandatory Referral Plan uploaded in eplans dated April 10, 2024. The project has no impact on the public right-of-way; therefore, we do not have any comments.

If you have any questions or comments regarding this letter, please contact Mr. Deepak Somarajan, our Development Review Team Engineer for this project at [deepak.somarajan@montgomerycountymd.gov](mailto:deepak.somarajan@montgomerycountymd.gov) or at (240)-777-2194.

Sincerely,

*Deepak Somarajan*

Deepak Somarajan, Engineer III  
Development Review  
Office of Transportation Policy

SharePoint\teams\DOT\Director's Office\Development Review\Deepak\Mandatory Referral\ MR2024012-Montgomery County EMTOC Microgrid Project\ Letter\ MR2024012-Montgomery County EMTOC Microgrid Project ltr

cc: Sharepoint Correspondence folder FY' 24

cce:	Michael Yambrach	MCDGS
	Maeve Lawniczak	AlphaStruxure
	Atiq Panjshiri	MCDPS RWPR
	Sam Farhadi	MCDPS RWPR
	Rebecca Torma	MCDOT OTP

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### Office of the Director

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*Located one block west of the Rockville Metro Station*