

An aerial photograph of a solar farm with rows of blue solar panels on a green field. A white, semi-transparent geometric overlay is on the left side of the image.

# Montgomery County EMTOC Depot Project

Located at the Montgomery County EMTOC  
Facility at 16700 Crabbs Branch Way

**May 9, 2024**

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# Introduction

The **Office of Energy and Sustainability (OES)** oversees the overall greening of government operations across all County departments.

OES coordinates green government initiatives, including:

- Strategic Energy Planning
- Low/No Cost Energy Efficiency Projects
- Energy Projects
- Energy Purchasing
- Utility Bill Processing

**AlphaStruxure** designs, builds, owns, operates, and maintains tailored energy infrastructure. Unlike other Energy as a Service providers, AlphaStruxure owns its clients' systems for their lifecycle, so it holds a long-term interest in their success.

Montgomery County's Department of General Services, Office of Energy and Sustainability in conjunction with AlphaStruxure, a Schneider Electric/Carlyle company, will be jointly developing this microgrid project.

The Office of Energy and Sustainability has worked with AlphaStruxure previously in developing the Brookville Transit Depot, which has been in operation since October 2022.



# David F. Bone Equipment Maintenance and Transit Operations Center (EMTOC)

- EMTOC is one of three transit fleet bus depots for MC's RideOn network.
- EMTOC facility was built in 2013 for 30', 40' and 60' CNG and clean diesel buses (156 total buses – with parking for 200)
- The County's *RideOn Fleet Transition Plan* includes both Battery Electric and Fuel-Cell Electric buses in the future – requiring both DC fast charging and hydrogen fueling infrastructure built in a phased approach



The EMTOC site is both strategic and critical to Montgomery County's efforts to reach 100% GHG reduction by 2035

# What is a Microgrid?



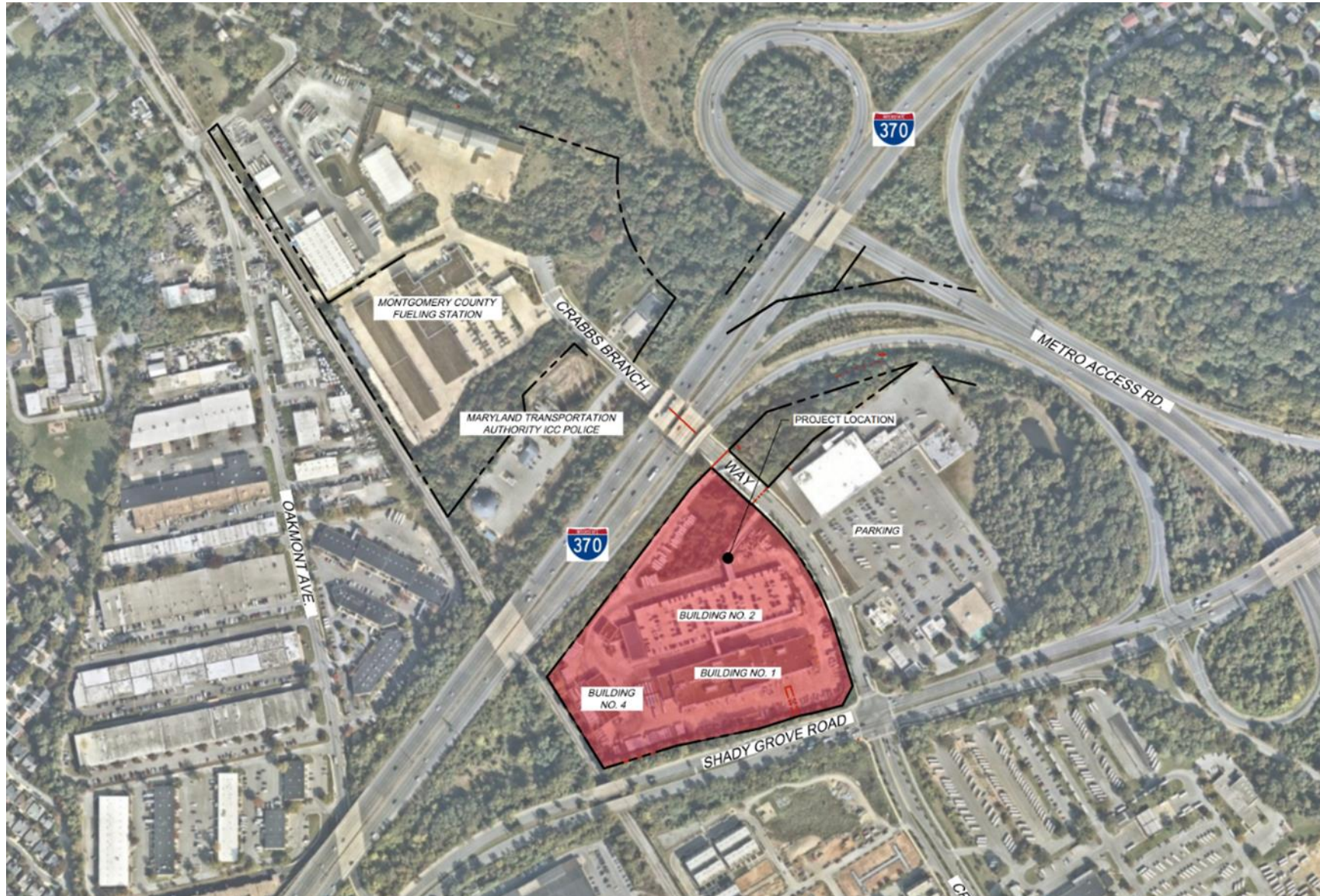
- Microgrids enable facilities to separate from the grid and provide continuous power during extended electric grid outages. The microgrid at EMTOC will consist of solar arrays, battery energy storage, and backup generators.
- In addition, this microgrid design with significant solar arrays and battery storage allows the County to reduce the use of fossil fuels for the onsite facilities and the bus fleet.

# EMTOC Microgrid Project Goals

The EMTOC Project will accelerate the County's mission to improve the sustainability, equity, and resilience of the community

- Under the County's Climate Action Plan, **facility resilience is a priority** to help keep government services operational during events where grid power is lost
- Support the County's **mandates to achieve zero green house gas (GHG) emissions by 2035**
- Supports the County's move to **zero emission RideOn bus fleet**
- Will eliminate **diesel and natural gas buses** transitioning to battery electric buses (BEBs) and Hydrogen fuel cell electric (HFCE) buses.

# Site Context



# Site

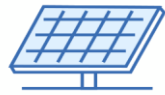




# Project

Electric bus charging, incorporating clean energy production technologies will enable the County to provide sustainable, resilient, and reliable energy supply for zero emission RideOn bus charging and fueling, and site operations.

The project will include the following:



Solar PV: 5.5 MW<sub>DC</sub> (4.9 MW<sub>AC</sub>)



BESS: 2 MW / 6.9 MWh



(10) 180 kW Chargers, (1) 360 kW Charger



Mix of Plug-in and Pantograph Dispensers

# Site Plan – Equipment Layout



1. 5.5 MW Solar PV Canopy



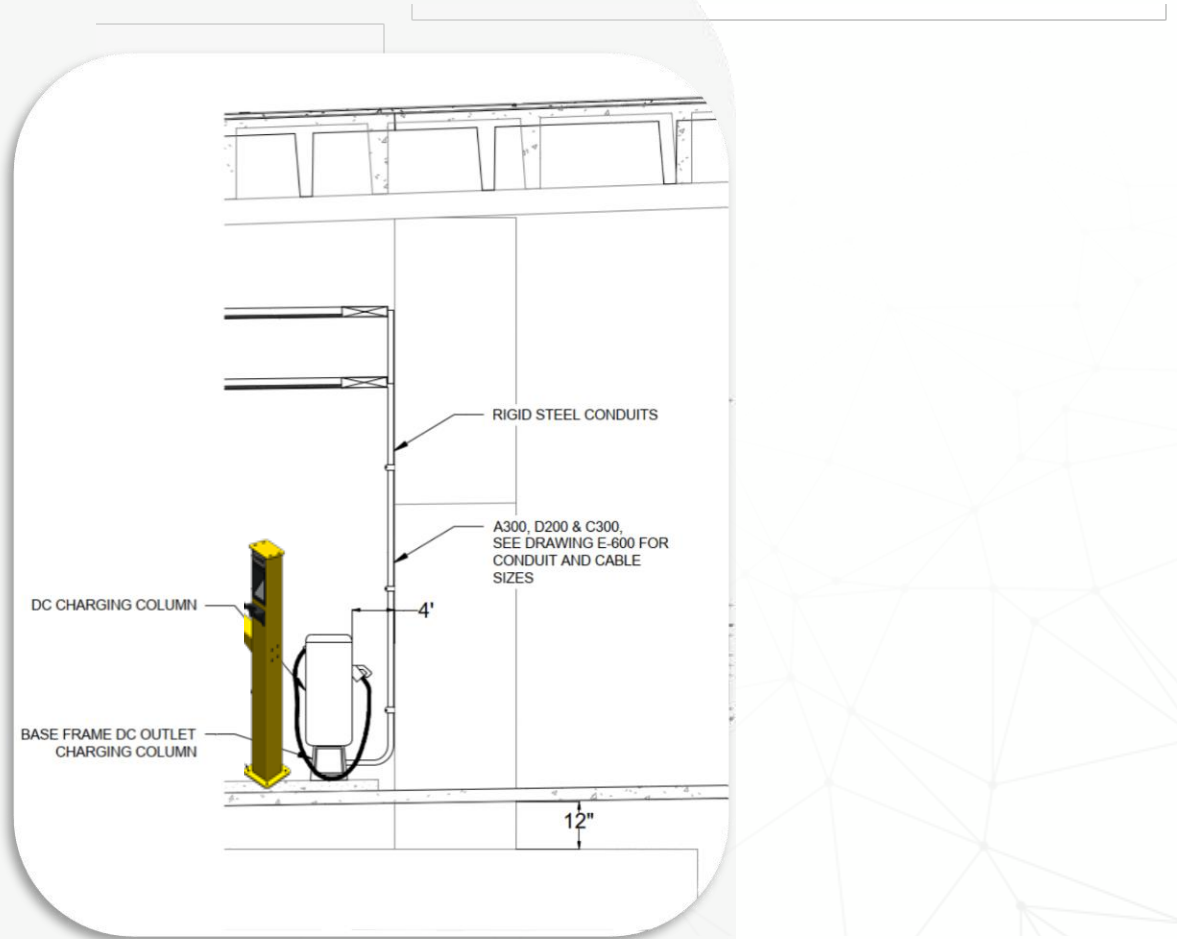
2. 2 MW / 6.88 MWh BESS



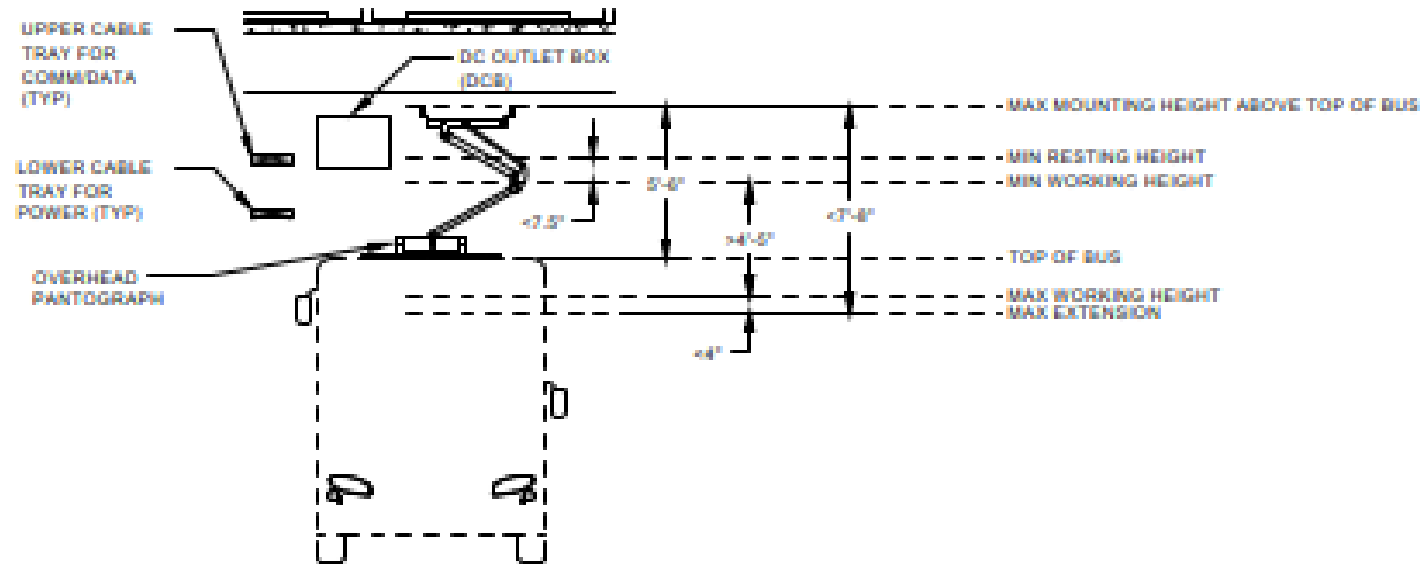
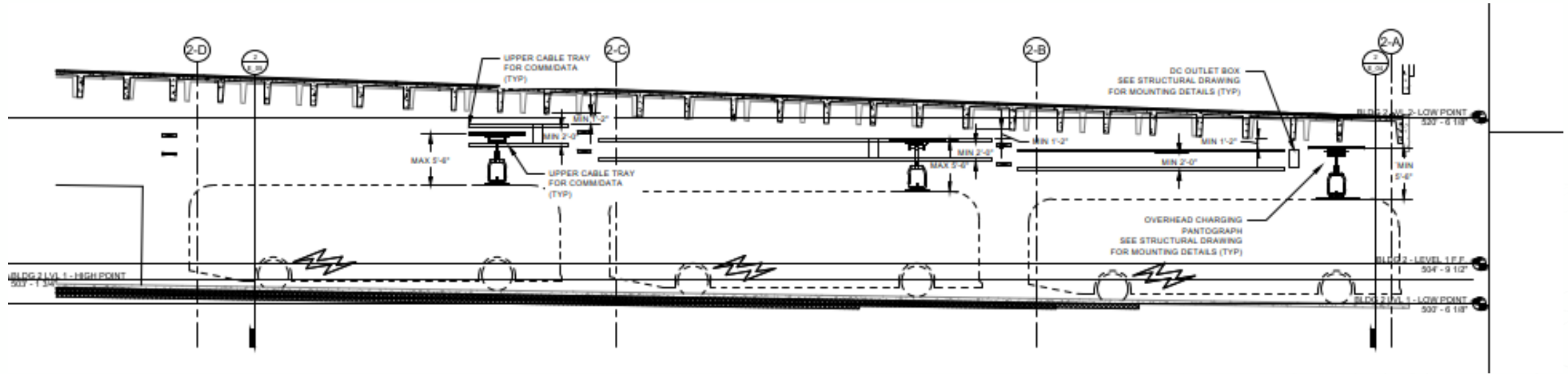
3. (10) 180 kW, (1) 360 kW  
BEB Chargers  
(5) 15 kW EV Chargers



# Dispenser Configuration



# Pantograph Chargers



# Electric Bus and Vehicle Chargers



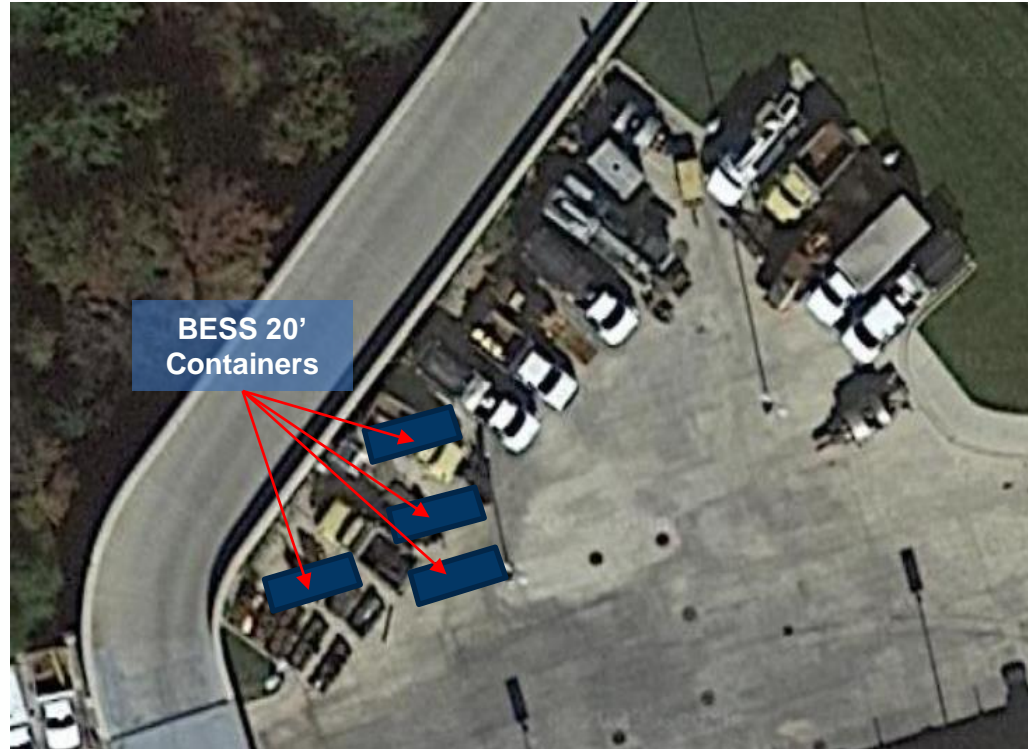
Dual pedestal  
w/ retractor



# Battery Energy Storage System



2 MW / 6.9 MWh



- (4) 20' Containers each with 500 kW / 1.73 MWh
- Lithium Iron Phosphate (LFP)

# Schedule

- Construction to commence: Summer 2024
  - Installation of electrical infrastructure, all solar canopies, battery energy storage system, and ev chargers with dispensers



**Questions?**





# OES Contact Information

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**Thank you!**

