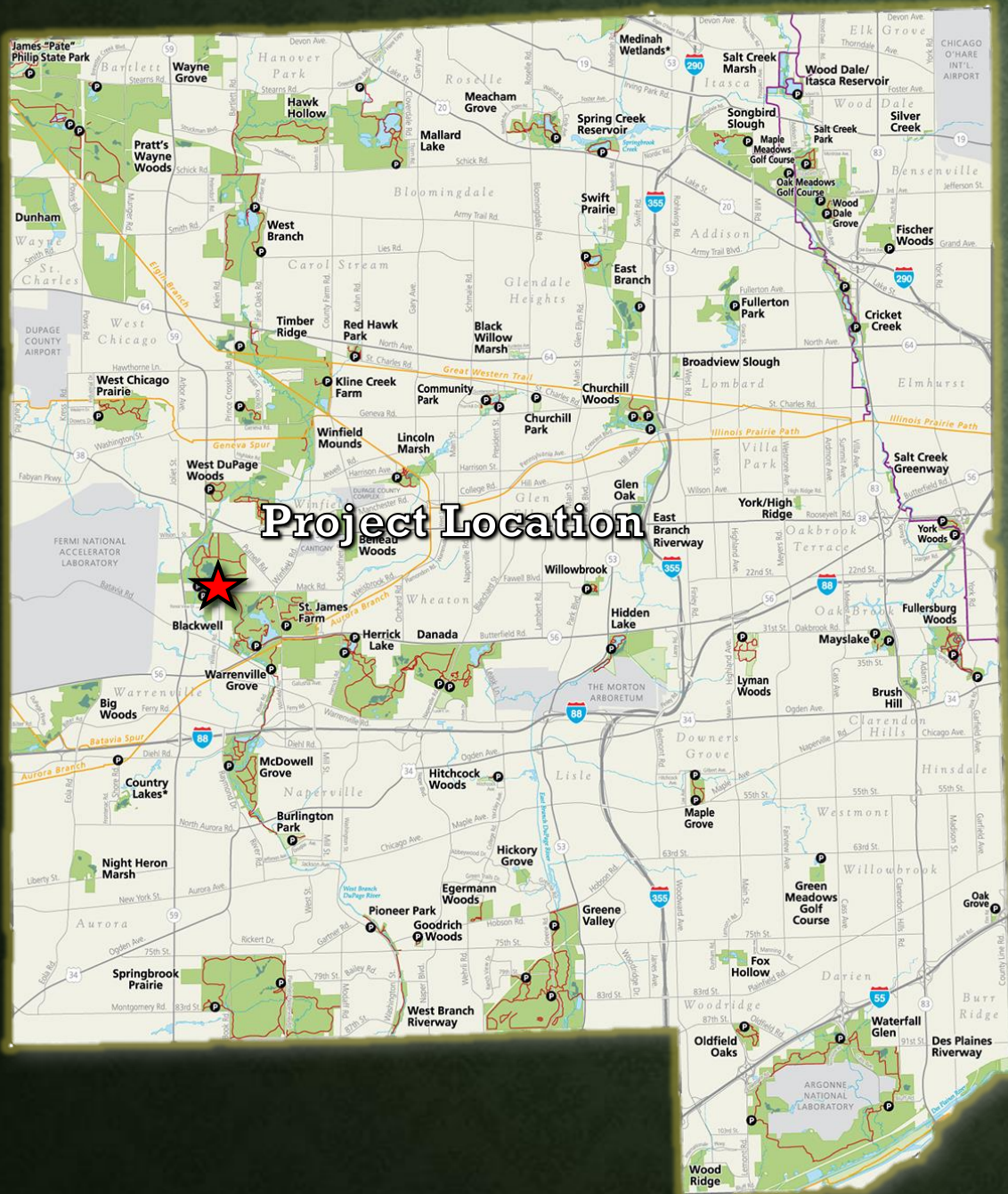


BLACKWELL SOLAR STUDY AND DESIGN PROPOSAL FEBRUARY 23, 2021



LOCATION MAP

- Blackwell Forest Preserve
29W222 and 29W400 Mack Rd
West Chicago, IL 60185



Project Location





2019 MASTERPLAN GREEN ENERGY STUDY

- To further strategic plan priorities to increase energy efficiencies and reduce the agency's carbon footprint, the Forest Preserve District should study ways to use solar and other renewable or sustainable energy sources. .
- Steps to reduce pollution and improve the environment benefit all living things.
- Restricted donation opportunity.

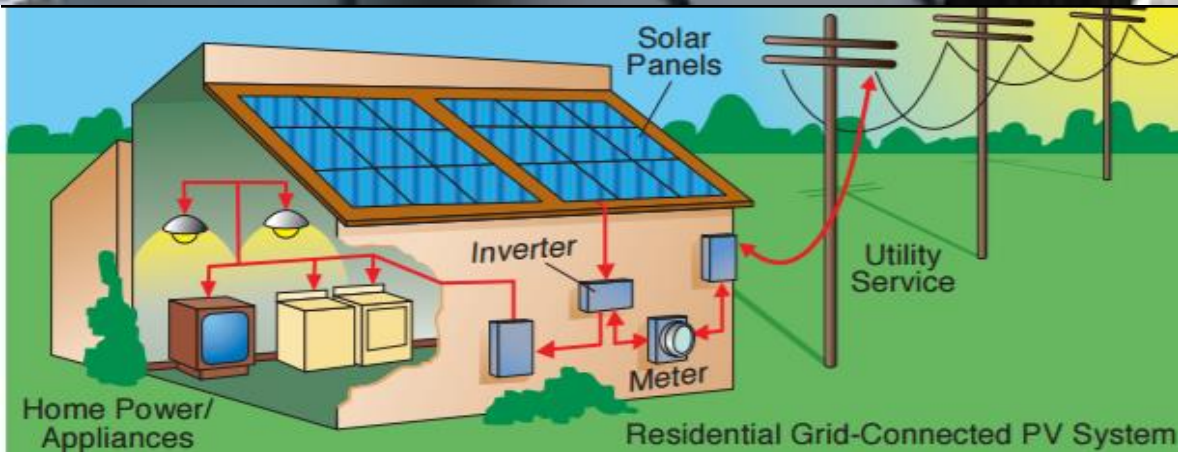
**BLACKWELL SOLAR STUDY
WHY ARE WE PRESENTING THIS?**





SITE EVALUATION CRITERIA

- Facility energy demand and costs.
- Building orientation.
- Roof construction type.
- Age of facility.
- Shading concerns.
- Potential obstructions or conflicts.
- Ability to access for maintenance.
- Visibility/awareness.



BLACKWELL SOLAR STUDY WHY FLEET AND FACILITIES?



Building Constructed
in 2018 - Steel Truss
and Insulated Metal
Panel Roof

Good Orientation East to West
Few Obstructions with Large
Continuous Low Angle Planes

Adequate Space for
Inverters and Panels

Existing Building
Shading Concerns

Existing Obstruction
Concerns

Some Visibility
From Mack Rd

BLACKWELL SOLAR STUDY FLEET CONSIDERATIONS



Existing Shading
Concerns

Ideal Orientation
South to Southwest with Limited
Obstructions and Large Continuous Low
Angle Planes

Building Constructed
in 1991 with Steel
Truss and
Metal Panel Roof

Future Shading
Concerns

Good Visibility
From Mack Rd

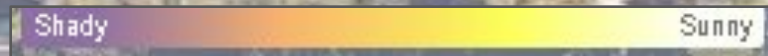
Adequate Space for
Inverters and Panels

BLACKWELL SOLAR STUDY FACILITIES CONSIDERATIONS



FLEET MANAGEMENT BUILDING

- \$32,300 is Current Annual Energy Cost
- Over \$807,500 is Est. Total Cost in 25 Years
- 23,000 SF of Roof Available for Solar Panels
- 1505 Hours of Sunlight Yearly / 96% Solar Access
- 352 kW Maximum Array Possible
- 282 kW is Needed to Offset 100% Demand
- Probable Est. of Cost to Construct is \$735,000



BLACKWELL SOLAR STUDY FLEET SOLAR OPPORTUNITIES





FACILITIES MANAGEMENT BUILDING

- \$14,900 is Current Annual Energy Cost
- Over \$372,500 is Est. Total Cost in 25 Years
- 12,000 SF of Roof Available for Solar Panel
- 1485 Hours of Sunlight Yearly / 94.5% Solar Access
- 196 kW Maximum Array Possible
- 110 kW Needed to Offset 100% Energy Demand
- Probable Est of Cost to Construct \$290,000

Shady

Sunny

BLACKWELL SOLAR STUDY FACILITIES SOLAR OPPORTUNITIES





TASKS PHASE I-III

- Photovoltaic design for up to 23,000 SF Roof
- Preliminary design report with conceptual layout, building condition assessment and recommendation for most cost effective system.
- Construction documents, specifications, permitting, and utility interconnection.
- Prepare final cost estimate.
- Provide bid assistance with RFI's and bid evaluation and recommendation.
- Assist with construction administration.

BLACKWELL SOLAR DESIGN PROPOSAL SITE 1 - FLEET MANAGEMENT BUILDING





TASKS PHASE I-III

- Photovoltaic design for up to 12,000 SF Roof
- Preliminary design report with conceptual layout, building condition assessment and recommendation for most cost effective system.
- Construction documents, specifications, permitting, and utility interconnection.
- Prepare final cost estimate.
- Provide bid assistance with RFI's and bid evaluation and recommendation.
- Assist with construction administration.

BLACKWELL SOLAR DESIGN PROPOSAL SITE 2 - FACILITIES MANAGEMENT BUILDING



ITEM DESCRIPTION	COST
Site 1 - Fleet Management Building	
Phase I Task (Preliminary Feasibility Report)	\$ 14,000.00
Phase II Task (Construction Documents, Permitting, Bidding)	\$ 16,595.00
Phase III Task (Construction Administration Assistance)	\$ 4,390.00
Fleet Management Solar Design Cost	\$ 34,985.00
Site 2 - Facilities Management Building	
Phase I Task (Preliminary Feasibility Report)	\$ 14,240.00
Phase II Task (Construction Documents, Permitting, Bidding)	\$ 16,135.00
Phase III Task (Construction Administration Assistance)	\$ 4,000.00
Facilities Management Solar Design Cost	\$ 34,375.00
Combined Sites Total Cost	\$ 69,360.00

BLACKWELL SOLAR STUDY DESIGN PROPOSAL COST





Willowbrook Wildlife Center
Solar Array - October 2020

NEXT STEPS

- Preliminary design report for Board to consider costs and options with analysis for projected ROI and funding opportunities. (May 2021)
- Award design contract, pending Board approval. (June 2021)
- Propose installation costs (as confirmed by consultant review) for Board approval to be included in CY22 Budget. (Dec. 2021)
- If approved, permit & bid project and present bids for Board approval (Feb. 2022)

BLACKWELL SOLAR STUDY ANTICIPATED SCHEDULE



An aerial photograph of a golf course. In the foreground, a large brick building with a grey roof is covered with a dense array of dark solar panels. The building has several skylights. To the left of the building is a parking lot with a white trailer. The golf course is lush green with several sand traps and is surrounded by a thick line of trees. In the far distance, a city skyline is visible under a clear blue sky.

QUESTIONS?

Cart Barn Solar Array - May 2020
The Preserve @ Oak Meadows

