

## **CASE NO. 162-S-25**

*SUPPLEMENTAL MEMORANDUM #1*

*May 22, 2025*

**Petitioners:** Mahomet IL Solar 1, LLC, c/o Summit Ridge Energy LLC, via agent Moira Cronin, Senior Manager, Project Development, and participating landowners Paul Nurmi Trustee, and Greater Heritage Farms LLC

**Request:** Authorize a Community PV Solar Farm with a total nameplate capacity of 4.99 megawatts (MW), including access roads and wiring, in the AG-2 Zoning District, and including the following waivers of standard conditions:

**Part A:** A waiver for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.5 G.(1)

**Part B:** A waiver for locating the PV Solar Farm less than one and one-half miles from an incorporated municipality per Section 6.1.5 B.(2)a.

**Part C:** A waiver for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line, per Section 6.1.5 D.(3)a.

**Part D:** A waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.

**Other waivers may be necessary.**

**Location:** Approximately 36 acres on two tracts of land with PIN's 15-13-17-100-012 (52.66 acres) and 15-13-17-200-010 (43.17 acres), totaling 95.83 acres on the South side of US Highway 150, in the West Half of the Northeast Quarter and the East Half of the Northwest Quarter of Section 17 Township 20 North, Range 7 East of the Third Principal Meridian, in Mahomet Township, commonly known as farmland owned by Greater Heritage Farms LLC and Paul Nurmi Trustee.

**Site Area:** Approximately 36 acres on two tracts of land totaling 95.83 acres

**Time Schedule for Development:** As soon as possible

**Prepared by:** **Charlie Campo**  
Senior Planner  
**John Hall**  
Zoning Administrator  
**Trevor Partin**  
Associate Planner

---

## **BACKGROUND**

The petitioner applied for a Special Use Permit to construct a 4.99 (MW) Community Photovoltaic (PV) Solar Farm on a 36 area site on the south side of US-150 in Mahomet Township. The petitioners

request waivers from standard conditions for the Special Use Permits. A PV Solar Farm requires approval by the County Board after recommendations are made by the ZBA and Environment and Land Use Committee

## REQUESTED WAIVERS

Waiver Part A is for not entering into a Roadway Upgrade and Maintenance Agreement with the relevant local highway authority prior to consideration of the Special Use Permit by the ZBA, per Section 6.1.5 G. The petitioner has coordinated with the Mahomet Township Highway Commissioner; however, a Roadway Upgrade and Maintenance Agreement has not been completed. A Special Condition has been added and states that a Roadway Upgrade and Maintenance Agreement signed by relevant County, township, and/or municipal authorities and approved by the Environment and Land Use Committee, shall be submitted at the time of application for a Zoning Use Permit.

Waiver Part B is for locating the PV Solar Farm less than one and one-half miles from an incorporated municipality per 6.1.5 B.(2)a. The subject property is within the one and one-half mile extraterritorial jurisdiction of the Village of Mahomet, a municipality with zoning. Zoned municipalities do not have protest rights in Special Use Permit cases. Notice was sent by the Department to the Village of Mahomet. A copy of the Special Use permit application was provided to the Village of Mahomet. A public hearing for a PV Solar Farm within one and one-half miles of a municipality with zoning shall occur at a minimum of two Board meetings no less than 28 days apart unless the requirement is waived by the relevant municipality.

Waiver Part C is for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line, per Section 6.1.5 D.(3)a. The subject property is adjacent to the Norfolk Southern rail line which is located between US-150 and the Subject Property. The rail line right-of way is broken up into parcels that are less than 10 acres in area. The solar farm fencing is 65 feet from the rail line right-of-way property line. The petitioner is requesting a setback of 65 feet in lieu of the required 240 feet. If the rail line was mapped as a right-of-way and not individual parcels the maximum required separation would be 60 feet.

Waiver Part D is for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit. The Department has requested review of the petitioner's request for providing financial assurance in the form of a surety bond from the States Attorney's Office and hopes to have a recommendation by the time of the Public Hearing. Staff does not recommend approval of the waiver without the recommendation of the States Attorney's Office.

## FUNDAMENTAL CONSIDERATIONS

The application includes numerous details and reports that create an overall picture for the proposed solar farm. P&Z Staff provide a short summary below, and additional information can be found in the petitioner's submittals.

### Separation distances

The solar farm meets or exceeds all required separation distances except for the instances for which the petitioner has requested waivers. The proposed solar farm is approximately .55 miles from the

Village of Mahomet. The fencing is proposed to be 65 feet from the property line of the railroad to the north.

Noise results

Noise levels from the 40 proposed solar inverters are a primary concern. The inverters are centrally located within the project site. A sound study prepared by RWDI and received with the application on January 3, 2025, states that based on the measured background sound levels, the Project is expected to be inaudible during the daytime and nighttime hours, with US HWY 150 being the dominant noise source at all dwellings.

Landscaped Screening

The revised Site Plan received May 19, 2025, shows the location of the proposed landscape screening. Screening is proposed along the south and west sides of the project site. The north and east sides of the project site will be screened by existing vegetation. A Vegetative Maintenance Plan and Weed Control Plan was also submitted. The proposed landscape buffer appears to comply with screening requirements.

Drainage & tile

The petitioners submitted an “Existing Subsurface Agricultural Drain Tile Investigation Report” by Huddleston McBride Land Drainage, received January 3, 2025, which shows the location of existing drain tiles on project site. There is one mutual drain tile that enters the property from the north and exits the property to the east. The Petitioner has stated in an email received May 19, 2025, that all drain tiles will be re-routed accordingly to avoid driven piles from the array.

Most requirements regarding drainage would occur during the construction permitting process, and a special condition has been added to ensure compliance with the requirements.

Decommissioning plan

A Decommissioning Plan for the proposed solar farm was received with the application on January 3, 2025. The applicant has acknowledged all ordinance requirements regarding the Decommissioning Plan. A special condition has been added to require a signed Decommissioning and Site Reclamation Plan that has been approved by the Environment and Land Use Committee at the time of application for a Zoning Use Permit that complies with Section 6.1.1 A. and Section 6.1.5 Q. of the Zoning Ordinance, including a decommissioning cost estimate prepared by an Illinois Professional Engineer. A waiver has been requested to provide financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit.

Disturbance to Best Prime Farmland

The Petitioner has submitted a seeding plan identifying the seed mix of native grass species to be used on the site that will serve as a secondary habitat for local wildlife.

**PUBLIC COMMENTS**

P&Z Staff has received the following comments from the public prior to the Public Hearing on February 27, 2025, which were provided as a handout to the Board at the meeting:

- A Email from Karen Hansen received 2/20/25
- B Two Emails from Karen Boulanger received 2/20/25 and 2/23/25

- C Two Emails from Alexis Godbee received 2/20/25 and 2/24/25
- D Email from Diana Harmon received 2/21/25
- E Email from Nicholas Burd received 2/22/25
- F Email from Linda Hambleton received 2/22/25
- G Email from Ryan Kutil received 2/22/25
- H Email from Alana Harris received 2/23/25
- I Email and photos from Debra Bunch received 2/24/25
- J Emails from Cheryl and David Sproul received 2/26/25
- K Call from Jim Gunther received 2/27/25
- L Email from Teresa D'Urso received 2/27/25
- M Email from Lisa Peithmann received 2/27/25
- N Email from Sara Vrona received 2/27/25
- O Email from Lara Schwaiger received 02/27/25

The following testimony was received at the February 27, 2025, Public Hearing:

- A Mike Murphy, 1507 W. North Shore Dr., Spring Lake Homeowners Association President, noted that the Homeowners Association is currently engaged in a multi-year project to remove silt from Spring Lake. The HOA is concerned with any erosion from the project that will impact Spring Lake and hopes they can remain involved with the permitting process for this development.
- B Brian Hartman, 403 S. North Shore Dr. stated that he is in support of solar development but would prefer that the remaining area of the parcel be developed as a natural space and not continued to be farmed in order to reduce chemical runoff to Spring Lake.
- C Karen Boulanger, 404 S. North Shore Dr. stated that she has concerns regarding the establishment of the new trees used for screening without being regularly watered.
- D Linda Hambleton, 406 S. Bryarfield Ct. requested that the developer abide by the 1.5-mile separation to municipal limits.
- E Ted Hartke, 1183 CR 2300E, Sidney, stated that neighbors should be able to enjoy all of their property with neighboring noise levels below the minimum noise levels allowed by the Illinois Pollution Control Board. Mr. Hartke read a quote from the Illinois Pollution Control Board Noise Ordinance regarding the problems caused by excessive noise. Mr. Hartke asked the Board to impose a 39 dbA limit for noise at the property line of adjacent properties. Mr. Hartke also discussed the number of power poles at a different solar development and requested that power poles at solar farms be located away from the road and closer to the project site. Mr. Hartke also discussed the inefficiency of renewable energy and requested that no waivers be granted for the development. Mr. Hartke proposed moving the project away from the eastern property line so no trees will need to be removed.

## **PROPOSED SPECIAL CONDITIONS**

The following special conditions, combined with the requested waivers, would ensure that the proposed solar farm is in compliance with the Zoning Ordinance.

- A. **The approved site plan consists of the following documents:**
- **Sheet C01 of the revised Site Plan received May 19, 2025.**

The special condition stated above is required to ensure the following:

**The constructed PV SOLAR FARM is consistent with the special use permit approval.**

- B. **The Zoning Administrator shall not authorize a Zoning Use Permit Application or issue a Zoning Compliance Certificate on the subject property until the lighting specifications in Paragraph 6.1.2.A. of the Zoning Ordinance have been met.**

The special condition stated above is required to ensure the following:

**That exterior lighting for the proposed Special Use meets the requirements established for Special Uses in the Zoning Ordinance.**

- C. **The Zoning Administrator shall not issue a Zoning Compliance Certificate for the proposed PV SOLAR FARM until the petitioner has demonstrated that the proposed Special Use complies with the Illinois Accessibility Code, if necessary.**

The special condition stated above is required to ensure the following:

**That the proposed Special Use meets applicable state requirements for accessibility.**

- D. **A signed Decommissioning and Site Reclamation Plan that has been approved by Environment and Land Use Committee is required at the time of application for a Zoning Use Permit that complies with Section 6.1.1 A. and Section 6.1.5 Q. of the Zoning Ordinance, including a decommissioning cost estimate prepared by an Illinois Professional Engineer.**

The special condition stated above is required to ensure the following:

**That the Special Use Permit complies with Ordinance requirements and as authorized by waiver.**

- E. **Roadway Upgrade and Maintenance Agreements signed by the County Highway Engineer Sidney Township Highway Commissioner and any other relevant highway jurisdiction, and approved by the Environment and Land Use Committee, or a waiver therefrom, shall be submitted at the time of application for a Zoning Use Permit.**

The special condition stated above is required to ensure the following:

**To ensure full compliance with the intent of the Zoning Ordinance in a timely manner that meets the needs of the applicant.**

- F. **Underground drainage tile shall be investigated and identified with any necessary changes made to the solar array as follows:**
1. **A qualified Drain Tile Contractor with experience in Illinois shall be employed to investigate, repair, and install any underground drain tile.**

2. **Desktop mapping and field reconnaissance shall identify all areas where drain tiles are expected to be located based on soils, topographic elevations, ground surface channels and/or depressions, wetlands, natural drainage ingress and egress locations, and knowledge of current owners and/or current farmers.**
3. **Slit trenching shall be used to investigate the presence of mutual drainage tiles that serve upland areas under different ownership. All existing drain tiles encountered shall be logged on field mapping and repaired to the original state according to Illinois Department of Agriculture Impact Mitigation Agreement (AIMA) standards.**
4. **Drain tile routes shall be located by surface probing or electronic detection and field staked at 20 feet intervals.**
5. **All existing drain tile that are found shall be located in the field using GPS location systems and recorded on as-built plans. Record mapping shall be completed according to typical civil engineering mapping and AIMA standards.**
6. **Any tile found shall be protected from disturbance or repaired and/or relocated in a manner consistent with AIMA and the Zoning Ordinance.**
7. **All mutual drain tiles shall be protected from construction disturbance and a 40-foot wide no construction area shall be centered on all mutual drain tiles.**
8. **A Drain Tile Investigation Survey including a map of all identified drain tile and a revised site plan to reflect any changes to the layout of the solar array shall be submitted to the Zoning Administrator prior to Zoning Use Permit Approval.**
9. **Future access shall be guaranteed for maintenance of all mutual drain tiles.**

The special condition stated above is required to ensure the following:

**The identification and protection of existing underground drainage tile and to allow ongoing maintenance of mutual drain tiles.**

- G. **The following submittals are required prior to the approval of any Zoning Use Permit for a PV SOLAR FARM:**
1. **Documentation of the solar module's unlimited 10-year warranty and the 25-year limited power warranty.**
  2. **An irrevocable letter of credit (or surety bond, if a waiver is received) to be drawn upon a federally insured financial institution with a minimum acceptable long term corporate debt (credit) rating of the proposed financial institution shall be a rating of "A" by S&P or a rating of "A2" by Moody's within 200 miles of Urbana or reasonable anticipated travel costs shall be added to the amount of the letter of credit.**

3. **A permanent soil erosion and sedimentation plan for the PV SOLAR FARM including any access road that conforms to the relevant Natural Resources Conservation Service guidelines and that is prepared by an Illinois Licensed Professional Engineer.**
4. **Documentation regarding the seed to be used for the pollinator planting, per 6.1.5 F.(9).**
5. **A Transportation Impact Analysis provided by the applicant that is mutually acceptable to the Applicant and the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, as required by 6.1.5 G. 2.**
6. **The telephone number for the complaint hotline required by 6.1.5 S.**
7. **Any updates to the approved Site Plan from Case 162-S-25 per the Site Plan requirements provided in Section 6.1.5 U.1.c.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed consistent with the Special Use Permit approval and in compliance with the Ordinance requirements.**

- H. **A Zoning Compliance Certificate shall be required for the PV SOLAR FARM prior to going into commercial production of energy. Approval of a Zoning Compliance Certificate shall require the following:**
1. **An as-built site plan of the PV SOLAR FARM including structures, property lines (including identification of adjoining properties), as-built separations, public access road and turnout locations, substation(s), electrical cabling from the PV SOLAR FARM to the substations(s), and layout of all structures within the geographical boundaries of any applicable setback.**
  2. **As-built documentation of all permanent soil erosion and sedimentation improvements for all PV SOLAR FARM including any access road prepared by an Illinois Licensed Professional Engineer.**
  3. **An executed interconnection agreement with the appropriate electric utility as required by Section 6.1.5 B.(3)b.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed consistent with the special use permit approval and in compliance with the Ordinance requirements.**

- I. **The Applicant or Owner or Operator of the PV SOLAR FARM shall comply with the following specific requirements that apply even after the PV SOLAR FARM goes into commercial operation:**
1. **Maintain the pollinator plantings in perpetuity.**

2. **Cooperate with local Fire Protection District to develop the District's emergency response plan as required by 6.1.5 H.(2).**
3. **Cooperate fully with Champaign County and in resolving any noise complaints including reimbursing Champaign County any costs for the services of a qualified noise consultant pursuant to any proven violation of the I.P.C.B. noise regulations as required by 6.1.5 I.(4).**
4. **Maintain a current general liability policy as required by 6.1.5 O.**
5. **Submit annual summary of operation and maintenance reports to the Environment and Land Use Committee as required by 6.1.5 P.(1)a.**
6. **Maintain compliance with the approved Decommissioning and Site Reclamation Plan including financial assurances.**
7. **Submit to the Zoning Administrator copies of all complaints to the telephone hotline on a monthly basis and take all necessary actions to resolve all legitimate complaints as required by 6.1.5 S.**

The special condition stated above is required to ensure the following:

**Future requirements are clearly identified for all successors of title, lessees, any operator and/or owner of the PV SOLAR FARM.**

- J. **The PV SOLAR FARM COUNTY Board SPECIAL USE Permit designation shall expire in 10 years if no Zoning Use Permit is granted.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed in compliance with the Ordinance requirements.**

- K. **The owners of the subject property hereby recognize and provide for the right of agricultural activities to continue on adjacent land consistent with the Right to Farm Resolution 3425.**

The special condition stated above is required to ensure the following:

**Conformance with Policy 4.2.3 of the Land Resource Management Plan.**

- L. **The terms of approval are the requirements of the current Section 6.1.5 of the Zoning Ordinance as amended February 23, 2023.**

The special condition stated above is required to ensure the following:

**That the current version of the Zoning Ordinance has been referenced.**

## ATTACHMENTS

- A Legal Advertisement

- B Revised Site Plan received May 19, 2025
- C Specification Sheets for Solar Panels, Racking and Inverters received May 19, 2025
- D Pollinator Seed Mix received May 19, 2025
- E Weed Control Plan received May 19, 2025
- F Information from the Zoning Administrator Regarding Letters of Credit
  1. Norton Rose Fulbright Article regarding Surety Bonds Compared to Letters of Credit.
  2. Baldwin Group Article, Surety Bonds vs. Letters of Credit
  3. Excerpt from ELUC Minutes Regarding Financial Assurances for Wind Farms
- G Article Regarding Property Values Near Utility Scale Solar Projects received February 26, 2025
- H Summit Ridge Energy Public Hearing Presentation received February 19, 2025
- I Summary of Evidence, Finding of Fact and Final Determination for Case 162-S-25 dated May 29, 2025

**NOTICE OF PUBLIC HEARING IN REGARD TO A SPECIAL USE PERMIT WITH WAIVERS UNDER THE PROVISIONS OF THE CHAMPAIGN COUNTY ZONING ORDINANCE.**

CASE: 162-S-25

Mahomet IL Solar 1, LLC, c/o Summit Ridge Energy LLC, 1000 Wilson Boulevard, #2400, Arlington VA 22209, via agent Moira Cronin, Senior Manager, Project Development, for Summit Ridge Energy LLC, and participating landowners Paul Nurmi Trustee, 609 W. Hickory Street Mahomet IL, 61853 and Greater Heritage Farms LLC, 609 W. Hickory Street Mahomet IL, 61853, have filed a petition for a Special Use Permit with Waivers under the provisions of the Champaign County Zoning Ordinance on property in unincorporated Champaign County. The petition is on file in the office of the Champaign County Department of Planning and Zoning, 1776 E. Washington Street, Urbana, IL.

A public hearing will be held **Thursday, February 27, 2025, at 6:30 p.m.** prevailing time in the Shields-Carter Meeting Room, Brookens Administrative Center, 1776 East Washington Street, Urbana, at which time and place the Champaign County Zoning Board of Appeals will consider a petition for the following:

Authorize a Community PV Solar Farm with a total nameplate capacity of 4.99 megawatts (MW), including access roads and wiring, in the AG-2 Agriculture Zoning District, and including the following waivers of standard conditions:

- Part A: A waiver for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.5 G.(1)
- Part B: A waiver for locating the PV Solar Farm less than one and one-half miles from an incorporated municipality per Section 6.1.5 B.(2)a.
- Part C: A waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.

Other waivers may be necessary.

On the following subject property:

Approximately 36 acres on two tracts of land with PIN's 15-13-17-100-012 and 15-13-17-200-010, totaling 95.83 acres on the South side of US Highway 150, in the West Half of the Northeast Quarter and the East Half of the Northwest Quarter of Section 17 Township 20 North, Range 7 East of the Third Principal Meridian, in Mahomet Township, commonly known as farmland owned by Greater Heritage Farms LLC and Paul Nurmi Trustee.

All persons interested are invited to attend said hearing and be heard. If you would like to submit comments or questions before the meeting, please call the P&Z Department at 217-384-3708 or email [zoningdept@co.champaign.il.us](mailto:zoningdept@co.champaign.il.us) no later than 4:30 pm the day of the meeting. The hearing may be continued and reconvened at a later time.

Ryan Elwell, Chair

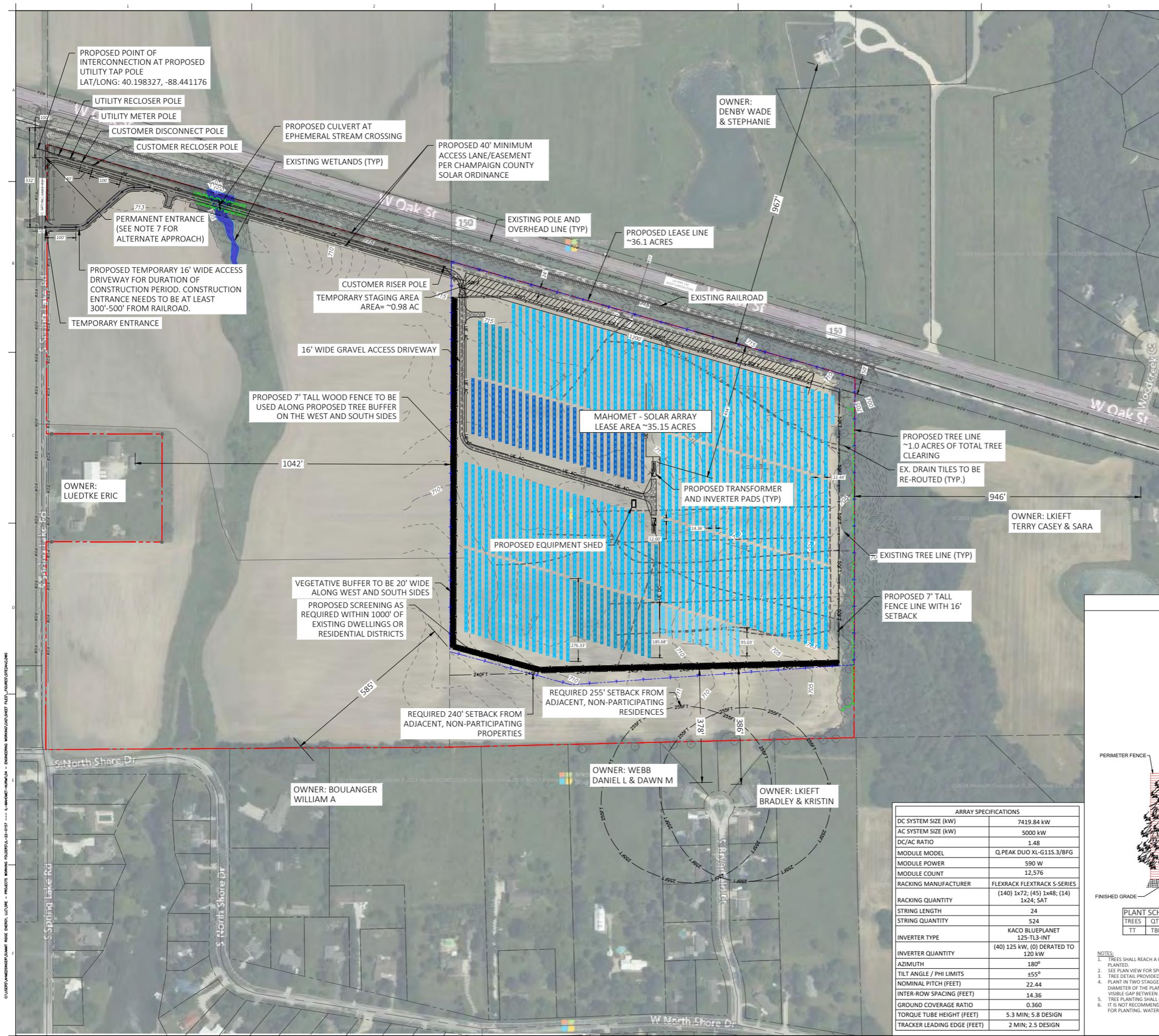
Champaign County Zoning Board of Appeals

**TO BE PUBLISHED: WEDNESDAY, FEBRUARY 12, 2025 ONLY**

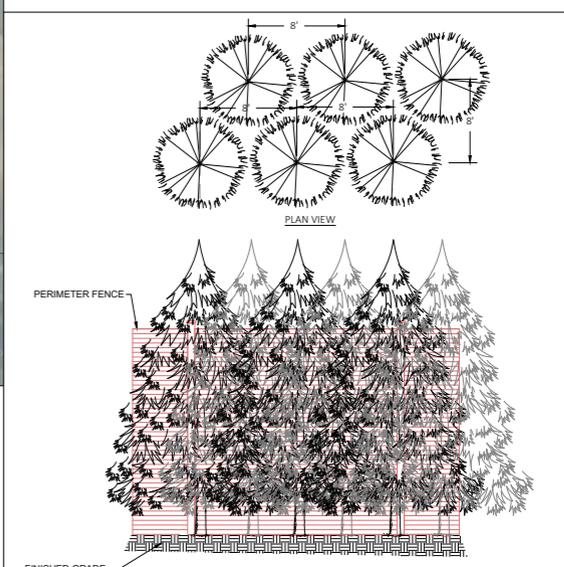
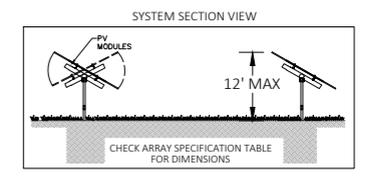
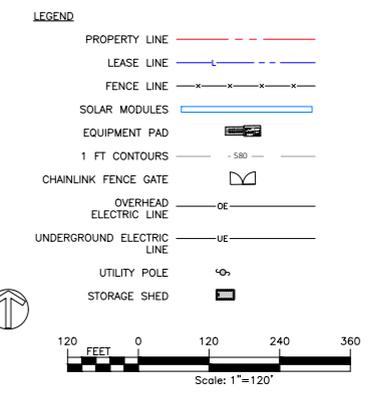
Send bill and one copy to:   Champaign County Planning and Zoning Dept.  
  Brookens Administrative Center  
  1776 E. Washington Street  
  Urbana, IL 61802

Phone: 384-3708

Our News Gazette account number is 99225860.



- NOTES:**
1. THE PROPOSED SITE PLAN IS CONCEPTUAL. FINAL EQUIPMENT SELECTION MAY CHANGE DEPENDING ON ITS AVAILABILITY. SOME MINOR DEVIATIONS IN THE SITE LAYOUT SHOULD BE ANTICIPATED.
  2. PARCEL BOUNDARY LINE IS BASED ON GIS DATA AND SHOULD BE CONSIDERED APPROXIMATE AND IS BEING SHOWN FOR REFERENCE PURPOSES ONLY.
  3. WETLAND DELINEATION HAVE BEEN REFERENCED FROM THE NATIONAL WETLANDS INVENTORY AND IS BEING SHOWN FOR REFERENCE PURPOSES.
  4. POINT OF INTERCONNECTION LOCATION IS APPROXIMATE AND WILL BE DETERMINED FOLLOWING A SITE SURVEY BY THE ELECTRICAL UTILITY. POINT OF INTERCONNECTION POLE SERIES TO BE DESIGNED IN ACCORDANCE WITH ELECTRICAL UTILITY STANDARDS.
  5. TOPOGRAPHICAL INFORMATION IS SOURCED FROM THE NOAA LIDAR DATASET DATED 2019-2020.
  6. LOCATIONS OF WIRING WITHIN THE SOLAR ARRAY FOR REFERENCE PURPOSES ONLY. ACTUAL ROUTINGS TO BE DETERMINED IN DESIGN DEVELOPMENT STAGE.
  7. ALTERNATE APPROACH FOR ENTRANCE IS TO PROVIDE 150' FROM RAILROAD AS A SINGLE PERMANENT ACCESS POINT, ELIMINATING THE NEED FOR A SEPARATE TEMPORARY ACCESS POINT.
  8. THE PROJECT SYSTEM SIZE IS ANTICIPATED TO BE 7.49 MW DC AND 5.00 MW AC. SOME SLIGHT VARIATIONS FROM THE DC SIZE MAY OCCUR AS THE RESULT OF MODULE AVAILABILITY.
  9. PROJECT TO BE IN ACCORDANCE WITH THE CHAMPAIGN COUNTY ZONING CODE, LATEST EDITION, SPECIFICALLY WITH REGARDS TO LANDSCAPE SCREENING, PERIMETER FENCE REQUIREMENTS, AND SYSTEM HEIGHTS.



**PLANT SCHEDULE**

TREES	QTY	BOTANICAL / COMMON NAME	SIZE <sup>1</sup>	SIZE <sup>2</sup>	ROOT
TT	TBD	THUJA OCCIDENTALIS / TECHNY ARBORVITAE	5' HT	12-15'	B&B

**NOTES:**

1. TREES SHALL REACH A HEIGHT OF SIX (6) FEET OR GREATER IN THREE (3) YEARS, AND SHALL BE FIVE (5) FEET IN HEIGHT WHEN PLANTED.
2. SEE PLAN VIEW FOR SPECIES TYPE AND PLANTING COUNT.
3. TREE DETAIL PROVIDED FOR REFERENCE PURPOSES ONLY. EXACT SPECIES TO BE VERIFIED DURING DETAIL DESIGN.
4. PLANT IN TWO STAGGERED ROWS AND SPACE SO THAT THE MATURE SPREAD THE SPACING SHOULD BE BASED ON THE AVERAGE DIAMETER OF THE PLANTS AT MATURITY. EACH SUCCESSIVE ROW IS OFFSET OR STAGGERED SO THAT THE PLANT FILLS THE VISIBLE GAP BETWEEN EACH OF THE PLANTS IN THE PREVIOUS ROW.
5. TREE PLANTING SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT WAS PRE-DUG IN THE NURSERY.
6. IT IS NOT RECOMMENDED TO AMEND THE EXISTING SOIL BEFORE BACKFILLING THE HOLE UNLESS SOIL CONDITIONS ARE POOR FOR PLANTING. WATER THOROUGHLY TO HELP ENSURE THE REMOVAL OF AIR POCKETS AND PROPERLY SET THE TREE.

**ARRAY SPECIFICATIONS**

DC SYSTEM SIZE (kW)	7419.84 kW
AC SYSTEM SIZE (kW)	5000 kW
DC/AC RATIO	1.48
MODULE MODEL	Q.PEAK DUO XL-G11S.3/BFG
MODULE POWER	590 W
MODULE COUNT	12,576
RACKING MANUFACTURER	FLEXTRACK FLEXTRACK S-SERIES
RACKING QUANTITY	(140) 1x72; (45) 1x48; (14) 1x24; SAT
STRING LENGTH	24
STRING QUANTITY	524
INVERTER TYPE	KACO BLUEPLANET 125-TL3-INT
INVERTER QUANTITY	(40) 125 kW, (0) DERATED TO 120 kW
AZIMUTH	180°
TILT ANGLE / PHI LIMITS	±55°
NOMINAL PITCH (FEET)	22.44
INTER-ROW SPACING (FEET)	14.36
GROUND COVERAGE RATIO	0.360
TORQUE TUBE HEIGHT (FEET)	5.3 MIN; 5.8 DESIGN
TRACKER LEADING EDGE (FEET)	2 MIN; 2.5 DESIGN

**REVISIONS**

REV	BY	DATE	DESCRIPTION
0	AVS	03/07/2024	SITE PLAN
1	AVS	03/05/2024	RACKING & LEASE UPDATES
2	DEJ	03/07/2024	ADDED SYSTEM SIZE NOTE
3	DEJ	11/27/2024	NOTE UPDATES
4	AVS	11/26/2024	PROJECT NAME AND DETAILS UPDATES
5	AVS	04/18/2025	ADDRESSING SUP COMMENTS

**DRAWING TITLE:** CONCEPTUAL SITE PLAN

**PROJECT:** MAHOMET SOLAR, COUNTY RD 125 E, MAHOMET, IL 61853, LAT/LONG: 40.194906, -88.434093

**OWNER:** DENBY WADE & STEPHANIE, LKIEFT TERRY CASEY & SARA, WEBB DANIEL L & DAWN M, BOULANGER WILLIAM A, LUEDTKE ERIC

**SCALE:** 1"=120'

**DATE:** 04/18/2025

**SCALE:** NTS

**PROJECT NO.:** C-01

## FLEXRACK SERIES

# FlexTrack - S Series

## Tough, Reliable Tracker & Team of Experts at Your Service

Single row, central slew drive balanced system

Engineered for long term durability and reliability

Low cost to maintain

Flexible to accommodate and optimize all your project design and generation needs

Superior land density with no gaps at the bearings

Available in Self-Powered and Grid-Powered options

Designed with intuitive constructability which translates to superior installation times and lower project costs

Over 500 projects successfully deployed throughout the USA and Canada

Bankable Product and Team. Successfully completed stringent third party bankability review for use on utility, C&I, and DG projects.



## Professional engineering & superior quality products

Let us be your hands-on comprehensive partner. FLEXRACK by QCells has the most flexible product offering, customizable to your project needs.

### Distributed Drive Reduces Operations And Maintenance Costs

FlexTrack Trackers have no mechanical components between rows, allowing easy access for mowers, cleaning services and other project maintenance.

### Smart Backtracking Maximizes Energy Production

FlexTrack trackers can be programmed based on the terrain, to optimize MWh production. Trackers on east-facing slopes get more early-morning sun, and trackers on west-facing slopes get more in the late afternoon, increasing overall yield.

### Complete Service Offering Reduces Project Costs And Risks

A tracker solution that comes with all the critical associated services – and an unmatched team of experts – will dramatically reduce your total cost. Project management is simplified, redundancies are eliminated, and we will assist you with optimizing your solar projects



## CONTROL SYSTEM

Data Feed	Ethernet to Network Control Unit
Power Consumption	Grid-Powered: 31kWh per tracker per year
Tracker Controller	1 Controller to DC motor per tracker
Size	230 x 100 x 150 mm
Battery (self-powered)	Rechargeable LiFePO4 (Lithium Iron Phosphate) 3Ah (standard operating temperatures), 6Ah for low temperature conditions
Battery Charging (self-powered)	Optimum charging through CC/CV algorithm for LiFePO4 Chemistries which contributes to extended battery life
SoC Monitoring (self-powered)	SoC achieved through OCV and Coulomb counting algorithms
Operating Temperatures	Grid Powered:-20C to 60C Self Powered (Standard): -10C to 50C Self Powered (Low Temp): -30C to 40C
Interface	HMI (includes enclosure mounted keypad LED visual interface)
Communication	Zigbee Wireless
PV Module (self-powered)	Standard: 38W Monocrystalline Low Temp: 76W Monocrystalline

## SERVICES

Geotechnical Services	Configuration of Tracker Controls
Structural Analysis	Project Management
Layout and Design Services	PE Stamp
Foundation Design Services	On-site Training
Post Driving	Commissioning of Tracker System
Pull Testing	Tracking System Installation

## UL COMPLIANCE

All FLEXRACK by Qcell systems have gone through UL testing. Each component-connection point within the system conforms to NEC codes for electrically bonded and conductive systems. Testing is performed by Solar PTL in accordance with UL 3703.

Certification covers both United States and Canada.

## TRACKING

Tracking Method	Single-axis horizontal, distributed drive
Backtracking	Smart backtracking - 3D backtracking technology available to reduce row shading and optimize energy production on challenging terrain. Overcast feature intelligently positions trackers to optimize energy yields for diffused light conditions and bifacial modules
Tracking Range	Up to 110° (± 55°)
Ground Coverage Ratio (GCR)	No limitation. Configurable based on site conditions.
Tracking Accuracy	2°
Stow Features	Stow Strategy is customized to meet project specifications to protect system from extreme weather events including wind, snow, hail, and flooding

## ARRAY CONFIGURATION

Panels per Tracker	Up to 90 (72 Cell Modules)
Trackers per Controller	1
String Voltage	Up to 1,500 volts
Posts per Tracker	Dependant on tracker size and site conditions, approximately 15 posts for 90 panels
Panel Configurations*	1 in portrait (crystalline) 2 in landscape (crystalline) 4 in landscape (thin film)
Drive Type	Slew 24 Volts DC

## OPERATIONS AND MAINTENANCE

Scheduled Maintenance	None
Warranty	10 Years: Structural 5 Years: Drives and Electrical
Certifications	UL 3703
Dynamic Load Management	Integrated frictional dampening and limited progressive dampening technology

## INSTALLATION TOLERANCES

North-south Slope Tolerance	Up to 7%
North-south Post Spacing	± 1.5 inches (.038 meter)
East-west Post Alignment	+/- 0.75 inches
Post Height	± 1 inch (0.025 meter)
Post Plumb	± 1°

## CONSTRUCTION

Structural Materials	Galvanized Steel. Multiple coatings available.
Bearings	UV-rated engineering plastic, no lubrication needed
Mechanical Connections	Bolted - no welding, drilling or cutting required

## ENVIRONMENTAL

Wind (IBC-2012/ASCE 7-10)	Up to 130 mph (Trackers can be customized to higher wind speeds upon request) 35 mph stow position
Snow Load	30 psf (Trackers can be customized to higher snow loads upon request)

## TESTING

Rain, wind, sleet, snow, heat – every day and everywhere, our products are battling the elements. We perform ongoing extensive testing in these key areas: wind tunnel, structural load, electrical bonding, and life cycle. FLEXRACK by Qcell trackers also undergo wind tunnel testing performed by RWDI and CPP, per American Society of Civil Engineers Standard ASCE 7.

\*Adaptable to all module sizes

**50 YEARS & OVER  
4 GIGAWATTS**

FLEXRACK by Qcells is an integrated solar company that offers custom-designed, fixed tilt ground mount and single-axis solar tracking systems in the commercial and utility-scale solar mounting industries. FLEXRACK also offers full services, including engineering, geotechnical, pullout testing, field, and layout design services to address the actual site conditions of a project site. FLEXRACK has completed over 4 GW of solar racking installations in over 40 U.S. states and across the globe.

# Q.PEAK DUO XL-G11S SERIES



580-595 Wp | 156 Cells  
21.3% Maximum Module Efficiency

MODEL Q.PEAK DUO XL-G11S.3/BFG



## Bifacial energy yield gain of up to 21%

Bifacial Q.ANTUM solar cells make efficient use of light shining on the module rear-side for radically improved LCOE.



## Low electricity generation costs

Q.ANTUM DUO technology with optimized module layout to boost module power and improve LCOE.



## A reliable investment

Double glass module design enables extended lifetime with 12-year product warranty and improved 30-year performance warranty<sup>1</sup>.



## Enduring high performance

Long-term yield security with Anti LID and Anti PID Technology<sup>2</sup>, Hot-Spot Protect.



## Frame for versatile mounting options

High-tech aluminum alloy frame protects from damage, enables use of a wide range of mounting structures and is certified regarding IEC for high snow (5400 Pa) and wind loads (2400 Pa).



## Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

<sup>1</sup> See data sheet on rear for further information.

<sup>2</sup> APT test conditions according to IEC/TS 62804-1:2015 method B (-1500V, 168 h) including post treatment according to IEC 61215-1-1 Ed. 2.0 (CD)

The ideal solution for:



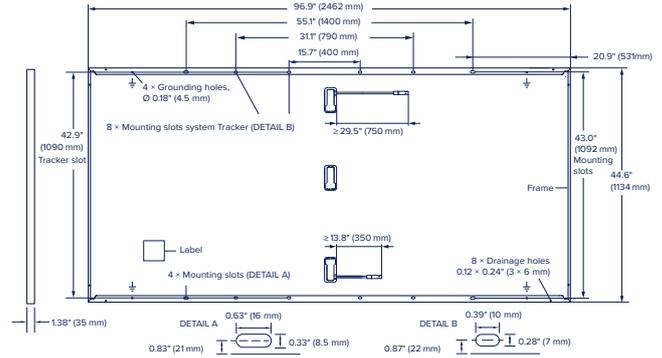
Ground-mounted  
solar power plants



# Q.PEAK DUO XL-G11S SERIES

## Mechanical Specification

Format	96.9 in × 44.6 in × 1.38 in (including frame) (2462 mm × 1134 mm × 35 mm)
Weight	76.9 lbs (34.9 kg)
Front Cover	0.08 in (2.0 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	0.08 in (2.0 mm) semi-tempered glass
Frame	Anodised aluminium
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 × 1.26-2.36 × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm <sup>2</sup> Solar cable; (+) ≥ 29.5 in (750 mm), (-) ≥ 13.8 in (350 mm)
Connector	Stäubli MC4; Stäubli MC4-Evo2; - IP68



## Electrical Characteristics

POWER CLASS			580	585	590	595
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC <sup>1</sup> (POWER TOLERANCE +5 W/-0 W)						
Minimum	Power at MPP <sup>1</sup>	P <sub>MPP</sub> [W]	580	585	590	595
	Short Circuit Current <sup>1</sup>	I <sub>SC</sub> [A]	13.69	13.72	13.74	13.77
	Open Circuit Voltage <sup>1</sup>	V <sub>OC</sub> [V]	53.55	53.57	53.60	53.63
	Current at MPP	I <sub>MPP</sub> [A]	13.03	13.07	13.12	13.17
	Voltage at MPP	V <sub>MPP</sub> [V]	44.53	44.75	44.96	45.18
	Efficiency <sup>1</sup>	η [%]	≥ 20.8	≥ 21.0	≥ 21.1	≥ 21.3

Bifaciality of P<sub>MPP</sub> and I<sub>SC</sub> 70% ± 5% • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2

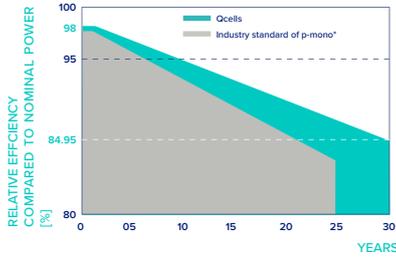
<sup>1</sup> Measurement tolerances P<sub>MPP</sub> ± 3%; I<sub>SC</sub>, V<sub>OC</sub> ± 5% at STC: 1000 W/m<sup>2</sup>; \*at BSTC: 1000 W/m<sup>2</sup> + φ × 135 W/m<sup>2</sup>, φ = 70% ± 5%, 25 ± 2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT<sup>2</sup>

Minimum	Power at MPP	P <sub>MPP</sub> [W]	436.7	440.5	444.2	448.0
	Short Circuit Current	I <sub>SC</sub> [A]	11.03	11.05	11.07	11.09
	Open Circuit Voltage	V <sub>OC</sub> [V]	50.64	50.67	50.69	50.72
	Current at MPP	I <sub>MPP</sub> [A]	10.25	10.30	10.34	10.38
	Voltage at MPP	V <sub>MPP</sub> [V]	42.60	42.79	42.97	43.15

<sup>1</sup> Measurement tolerances P<sub>MPP</sub> ± 3%; I<sub>SC</sub>, V<sub>OC</sub> ± 5% at STC: 1000 W/m<sup>2</sup>, 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • <sup>2</sup> 800 W/m<sup>2</sup>, NMOT, spectrum AM 1.5

## Qcells PERFORMANCE WARRANTY

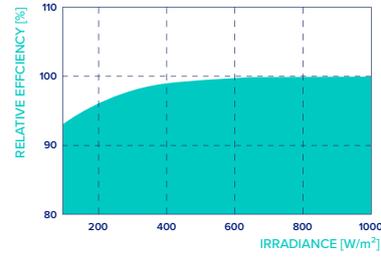


At least 98% of nominal power during first year. Thereafter max. 0.45% degradation per year. At least 93.95% of nominal power up to 10 years. At least 84.95% of nominal power up to 30 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

<sup>\*</sup> Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

## PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m<sup>2</sup>).

## TEMPERATURE COEFFICIENTS

Temperature Coefficient of I <sub>SC</sub>	α [%/K]	+0.04	Temperature Coefficient of V <sub>OC</sub>	β [%/K]	-0.27
Temperature Coefficient of P <sub>MPP</sub>	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°F]	108 ± 5.4 (42 ± 3 °C)

## Properties for System Design

Maximum System Voltage	V <sub>sys</sub> [V]	1500	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	25	Fire Rating based on ANSI/UL 61730	TYPE 29 <sup>4</sup>
Max. Design Load, Push/Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ] / [Pa]	75 (3600 Pa)/33 (1600 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push/Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ] / [Pa]	113 (5400 Pa)/50 (2400 Pa)		

<sup>3</sup> See Installation Manual

<sup>4</sup> New Type is similar to Type 3 but with metallic frame

## Qualifications and Certificates

UL 61730, CE-compliant,  
IEC 61215:2016,  
IEC 61730:2016,  
U.S. Patent No. 9,893,215  
(solar cells)



Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.

Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

qcells

## blueplanet 125 - 150 TL3

String inverters for utility-scale solar power plants  
up to multi-megawatt solar parks.



### Decentrally into new dimensions.

Superior efficiencies and  
overload capacity through silicon  
carbide technology

Special properties for extreme  
environmental conditions

Decentralised design or 'Virtual  
Central' concept possible

Overvoltage protection AC/  
DC and for communication  
interfaces available

Lean commissioning and updates  
via remote services



## Technical Data

DC input data	125 TL3	137 TL3
Max. recommended PV generator power	187 500 W	205 500 W
MPP range	875 – 1 300 V	875 – 1 300 V
Operating range	875 – 1 450 V	875 – 1 450 V
Rated DC voltage / start voltage	900 V / 1 000 V	900 V / 1 000 V
Max. no-load voltage	1 500 V	1 500 V
Max. input current	160 A	160 A
Max. short circuit current $I_{sc,max}$	300 A	300 A
Number of MPP tracker	1	1
Connection per tracker	1 - 2	1 - 2
AC output data		
Rated output	125 000 VA	137 000 VA
Max. power	137 500 VA	137 500 VA
Line voltage	600 V (3P+PE)	600 V (3P+PE)
Voltage range (Ph-Ph)	480 – 690 V	480 – 690 V
Rated frequency (range)	50 Hz / 60 Hz (45 – 65 Hz)	50 Hz / 60 Hz (45 – 65 Hz)
Rated current	3 x 120.3 A	3 x 132.3 A
Max. current	3 x 132.3 A	3 x 132.3 A
Reactive power / cos phi	0 – 100 % Snom / 0,30 ind. – 0,30 cap.	
Max. total harmonic distortion (THD)	≤ 3 %	≤ 3 %
Number of grid phases	3	3
General data		
Max. efficiency	99.2 %	99.2 %
Europ. efficiency	99.0 %	99.0 %
CEC efficiency	98.9 %	98.9 %
Standby consumption	< 10 W	< 10 W
Circuitry topology	transformerless	transformerless
Mechanical data		
Display	LEDs	LEDs
Control units	webserver, supports mobile devices	
Interfaces	Ethernet (Modbus TCP, Sunspec), RS485 (KACO-protocol) USB, optional: 4-DI	
Fault signalling relay	potential-free NOC max. 30 V / 1 A	potential-free NOC max. 30 V / 1 A
DC connection	cable lug, max. 240 mm <sup>2</sup> (0.372 in <sup>2</sup> ) Cu or Al	
AC connection	cable lug, max. 240 mm <sup>2</sup> (0.372 in <sup>2</sup> ) Cu or Al	
Ambient temperature	-25 °C – +60 °C <sup>1)</sup>	-25 °C – +60 °C <sup>1)</sup>
Humidity	0 – 100 %	0 – 100 %
Max. installation elevation (above MSL)	3 000 m	3 000 m
Min. distance from coast	500 m	500 m
Cooling	temperature controlled fan	temperature controlled fan
Protection class	IP66 / NEMA 4X	IP66 / NEMA 4X
Noise emission	59.2 db (A)	59.2 db (A)
H x W x D	719 x 699 x 460 mm	719 x 699 x 460 mm
Weight	78.2 kg	78.2 kg
Certifications	IEC 62109-1/-2, EN 61000-6-1/-2/-4, EN 61000-3-11/-12, EN 55011 group 1, class A EN 62920 Emission class A/Immunity class A UL62109-1, UL1741, CSA-C22.2 No.107.1 CSA-C22.2 No.62109-1, CSA-C22.2 No.62109-2	
Safety	overview see homepage / download area	
Grid connection rule	overview see homepage / download area	

<sup>1)</sup> Power derating at high ambient temperatures

Versions	S	XL
Number of DC inputs	1 - 2	1 - 2
DC switch	-	✓
DC SPD	Type 1 + 2	Type 1 + 2
AC SPD	○	○
RS485 interface SPD	○	○
Ethernet interface SPD	○	○
PID Set	○	○

standard = ✓ upgradeable = ○

## Technical Data

DC input data		150 TL3
Max. recommended PV generator power		225 000 W
MPP range		960 – 1 300 V
Operating range		960 – 1 450 V
Rated DC voltage / start voltage		1 000 V / 1 100 V
Max. no-load voltage		1 500 V
Max. input current		160 A
Max. short circuit current $I_{sc\ max}$		300 A
Number of MPP tracker		1
Connection per tracker		1 - 2
AC output data		
Rated output		150 000 VA
Max. power		150 000 VA
Line voltage		660 V (3P+PE)
Voltage range (Ph-Ph)		480 – 760 V
Rated frequency (range)		50 Hz / 60 Hz (45 – 65 Hz)
Rated current		3 x 131.2 A
Max. current		3 x 132.3 A
Reactive power / cos phi		0 – 100 % Snom / 0.30 ind. – 0.30 cap.
Max. total harmonic distortion (THD)		≤ 3 %
Number of grid phases		3
General data		
Max. efficiency		99.2 %
Europ. efficiency		99.0 %
CEC efficiency		99.0 %
Standby consumption		< 10 W
Circuitry topology		transformerless
Mechanical data		
Display		LEDs
Control units		webserver, supports mobile devices
Interfaces		Ethernet (Modbus TCP, Sunspec), RS485 (KACO-protocol) USB, optional: 4-DI
Fault signalling relay		potential-free NOC max. 30 V / 1 A
DC connection		cable lug, max. 240 mm <sup>2</sup> (0.372 in <sup>2</sup> ) Cu or Al
AC connection		cable lug, max. 240 mm <sup>2</sup> (0.372 in <sup>2</sup> ) Cu or Al
Ambient temperature		-25 °C – +60 °C <sup>1)</sup>
Humidity		0 – 100 %
Max. installation elevation (above MSL)		3 000 m
Min. distance from coast		500 m
Cooling		temperature controlled fan
Protection class		IP66 / NEMA 4X
Noise emission		59.2 db (A)
H x W x D		719 x 699 x 460 mm
Weight		78.2 kg
Certifications		
Safety		IEC 62109-1/-2, EN 61000-6-1/-2/-4, EN 61000-3-11/-12, EN 55011 group 1, class A EN 62920 Emission class A/Immunity class A UL62109-1, UL1741, CSA-C22.2 No.107.1 CSA-C22.2 No.62109-1, CSA-C22.2 No.62109-2
Grid connection rule		overview see homepage / download area

<sup>1)</sup> Power derating at high ambient temperatures

Versions	S	XL
Number of DC inputs	1 - 2	1 - 2
DC switch	-	✓
DC SPD	Type 1 + 2	Type 1 + 2
AC SPD	○	○
RS485 interface SPD	○	○
Ethernet interface SPD	○	○
PID Set	○	○

standard = ✓ upgradeable = ○





Description: IL CP42 Mesic Pollinator Mix

Seeding Rate: 1.55 lb/acre (20 seeds/square foot)

Notes: This mix was developed using the IL NRCS Calculator from September 30, 2019.

Common Name	Scientific Name	% of Mix	Seeds/ft <sup>2</sup>	Total
<b>Grasses</b>				
Sideoats Grama	Bouteloua curtipendula	38.71%	2.6	0.600 PLS lb
Little Bluestem	Schizachyrium scoparium	25.81%	2.3	0.400 PLS lb
<b>Forbs</b>				
Common Milkweed	Asclepias syriaca	0.65%	0.0	0.010 PLS lb
Smooth Blue Aster	Aster laevis	0.32%	0.1	0.005 PLS lb
Canada Milk Vetch	Astragalus canadensis	1.29%	0.1	0.020 PLS lb
White Prairie Clover	Dalea candidum	0.65%	0.1	0.010 PLS lb
Purple Prairie Clover	Dalea purpurea	9.68%	0.9	0.150 PLS lb
Ox-eye Sunflower	Heliopsis helianthoides	1.61%	0.1	0.025 PLS lb
Prairie Alumroot	Heuchera richardsonii	0.13%	0.5	0.002 PLS lb
Wild Bergamot	Monarda fistulosa	3.55%	1.5	0.055 PLS lb
Foxglove Beardtongue	Penstemon digitalis	1.81%	1.3	0.028 PLS lb
Slender Mountain Mint	Pycnanthemum tenuifolium	1.29%	2.8	0.020 PLS lb
Yellow Coneflower	Ratibida pinnata	1.29%	0.3	0.020 PLS lb
Black-eyed Susan	Rudbeckia hirta	5.16%	2.8	0.080 PLS lb
Brown-eyed Susan	Rudbeckia triloba	0.65%	0.1	0.010 PLS lb
Gray Goldenrod	Solidago nemoralis	0.65%	1.1	0.010 PLS lb
Stiff Goldenrod	Solidago rigida	0.32%	0.1	0.005 PLS lb
Hoary Vervain	Verbena stricta	1.29%	0.2	0.020 PLS lb
Culver's Root	Veronicastrum virginicum	0.65%	2.8	0.010 PLS lb
Golden Alexanders	Zizia aurea	4.52%	0.3	0.070 PLS lb

Request a price quote for this mix by contacting [natives@naturalcommunities.net](mailto:natives@naturalcommunities.net). Substitutions may be necessary based on availability at the time of order.



April 16, 2025

# **WEED/GRASS CONTROL PLAN**

**IL - SRE - MAHOMET IL SOLAR 1, LLC  
County Rd 125E  
Mahomet, IL 61853  
Champaign County**

**Prepared by: Summit Ridge Energy**

---

1000 Wilson Boulevard, Suite 2400  
Arlington, VA 22209 | 202.558.2340  
[srenergy.com](http://srenergy.com)

## 1. Objective

This Weed/Grass Control Plan outlines the management practices for controlling vegetation growth on and around the community solar site. The objective is to ensure compliance with local regulations, maintain the solar farm's operational efficiency, minimize fire hazards, and keep the property in a neat and orderly condition.

The applicant and any successors will adhere to this plan for the duration of the solar farm's operation.

## 2. Site Description

- **Location:** Mahomet, IL
- **Total Area:** ~35.15 AC
- **Fenced Area:** 31.32 AC (Includes the solar array and associated equipment)
- **Outside Fenced Area:** 3.83 AC (Includes the remaining leased area)

## 3. Weed/Grass Control Goals

1. Prevent the establishment and spread of invasive and noxious weeds.
2. Maintain vegetation at a manageable height (typically 6–12 inches) to reduce fire risk and maintain accessibility.
3. Use cost-effective, practical vegetation management practices tailored to site conditions.

## 4. Management Practices

### 4.1 Vegetation Control Methods

#### 1. *Mowing:*

- **Inside the Fenced Area:** Vegetation will be mowed regularly to maintain a height of 6–12 inches. Mowing frequency will be adjusted seasonally based on growth rates.
- **Outside the Fenced Area:** Mowing will occur as needed to maintain a neat appearance and comply with local ordinances.

#### 2. *Herbicide Application:*

- Herbicides will be applied as necessary to control weeds and invasive plants.
- Only EPA-approved herbicides will be used, and application will be performed by licensed professionals to ensure safety and compliance.

### *3. Seeding with Durable Grass Species:*

- Where bare soil exists or where reseeding is needed, a cost-effective grass seed mix will be used.
- The mix will prioritize low-maintenance, non-invasive species that establish quickly and provide effective ground cover.

### *4. Manual and Mechanical Weed Removal:*

- For hard-to-reach areas or specific weed infestations, hand-pulling or mechanical removal will be conducted.

#### 4.2 Inspecting and Monitoring

- Inspections will be conducted during the growing season (May–October) once per quarter to identify areas requiring weed or grass control.
- Monitoring will focus on compliance with local ordinances, the prevention of weed proliferation, and fire safety.
- Inspection findings will be documented in a maintenance log, if available.

# Tag or Topic: Norton Rose Fulbright

 [Subscribe to Norton Rose Fulbright](#)

## California update

**James M. Berger**

August 19, 2020

A California Public Utilities Commission decision this summer should lead to wider adoption of micro-grids in the state, at least in the service territories of the three large investor-owned utilities.

**[Read More](#)**

Posted in [Power](#), [Infrastructure](#), [Publication](#)

 Share this

## Surety bonds compared to LCs

**Paul Weber**

August 19, 2020

Parties to project finance transactions are sometimes asked to accept surety bonds as security in place of letters of credit. There are key differences between the two instruments.

**[Read More](#)**

Posted in [Power](#), [Infrastructure](#), [Publication](#)

 Share this

## Floating solar

**Marissa Alcalá**

August 19, 2020

Floating solar – also known as floatovoltaics – is a small but growing segment in the solar energy industry.

 **[More](#)**

Posted in [Power](#), [Infrastructure](#), [Publication](#), [Solar](#), [Renewable energy](#)

 Share this

## Environmental update

**Andrew Skroback**

August 19, 2020

The US Supreme Court reinstated a nationwide permit that allows pipeline and utility trenching and construction activity in, or adjacent to, wetlands and other waters regulated under the Clean Water Act.

### **Read More**

Posted in [Power](#), [Infrastructure](#), [Publication](#), [Renewable energy](#), [Oil and gas](#), [Solar](#), [Wind](#)

 Share this

Pages:    1    2    3

## Surety bonds compared to LCs

August 19, 2020 | By [Paul Weber](#) in New York, [Connie Gao](#) in Los Angeles, and [Rob Marsh](#) in London

Parties to project finance transactions are sometimes asked to accept surety bonds as security in place of letters of credit. There are key differences between the two instruments.

A letter of credit is a promise by a bank to advance up to a certain amount of money to one deal party if the other party defaults.

A surety bond is a guarantee in which a third party — often an insurance company — agrees to assume a defaulting party's financial obligations.

Although letters of credit and surety bonds are similar in function, there are legal differences that could affect a beneficiary's ability to obtain full and prompt payment on its claim.

Parties to commercial transactions have for years argued over the forms of security providing credit support to their deals. Beneficiaries, known as "obligees," prefer letters of credit over surety bonds because letters of credit generally are easier to collect upon, usually merely by presentation of certain documentation. Payment under surety bonds is usually a more drawn-out process and involves a greater risk of litigation on the underlying commercial transaction and any other defenses that may be available to the surety company.

The key distinctions between letters of credit and surety bonds arise from the business concepts and legal principles underpinning these forms of security.

### Letters of Credit

A letter of credit is a written instrument that is traditionally issued by a bank. It authorizes a party to draw up to a certain amount of money under terms outlined by the instrument.

Three main parties are involved in a letter of credit transaction, namely, the issuer (bank), the customer of the issuer (applicant) and the beneficiary (obligee).

Usually, the letter of credit is accompanied by a promissory note from the applicant to the beneficiary and the applicant's agreement to reimburse the issuer upon its payment to the beneficiary. Parties select either the Uniform Commercial Code of the relevant jurisdiction, or "UCC," or the Uniform Customs and Practice for Documentary Credits, or "UCP," issued by the International Chamber of Commerce to govern their letter of credit.

Two types of letters of credit are frequently used in commercial transactions: documentary letters of credit and standby letters of credit. A documentary letter of credit, which is usually governed by the UCC, is one in which the beneficiary must present specified documents to the issuer in order to draw funds from the letter of credit. Documentary letters of credit are primarily used as direct payment devices to facilitate sales-of-goods transactions. The typical documents that a seller of goods (the beneficiary) must produce in order to draw from the letter of credit include a bill of lading, commercial invoice, certificate of insurance covering transport or import-export documentation.

In a standby letter of credit, the issuer must honor the letter of credit after it receives a statement (usually in the form of a properly completed draw certificate) from the beneficiary that the other party to the underlying contract is in default under the terms of the contract or that the conditions to a draw have otherwise been satisfied. Standby letters of credit are the prevalent security instruments supporting obligations under construction contracts for thinly-capitalized construction companies, special-purpose

project companies or owners, power offtakers with shaky credit ratings or any other entity that may need some credit support for its obligations.

## Surety Bonds

Surety bonds are forms of guarantees. Under a surety or guaranty, a third party becomes liable upon the default of the principal, who is the debtor or guaranteed party.

Surety bonds can be payment bonds or performance bonds and involve the following three parties: a surety (the entity that assures payment or performance of the contract between the principal and the beneficiary), a principal (the entity who has the obligation to pay or perform) and an obligee (the beneficiary, or entity that is owed the obligation).

A suretyship is different from more common forms of insurance because sureties can seek repayment from principals, but insurers normally cannot seek reimbursement from those they insure and, instead, rely on payment of premiums across a portfolio of surety bonds for reimbursement coverage.

## Key Distinctions

All letters of credit operate under the doctrine of independent contracts, which says that the issuing bank's obligation to honor or pay upon a properly presented draft is independent of the underlying contract or commercial relationship between the account party and the beneficiary presenting the draft.

Accordingly, the issuer is required to pay on the letter of credit regardless of whether the underlying contract has been properly performed by the account party or whether the account party has defenses to due performance. However, the issuer need not honor a draft under a documentary letter of credit if the documents or the transaction itself are fraudulent.

Because letters of credit are independent from the underlying transactions, they are often more attractive to beneficiaries because there is no need to prove a breach of the underlying contract or the extent to which the beneficiary suffered damages. Further, traditional defenses and claims in contract law do not apply to letter-of-credit transactions because a letter of credit is governed by its own set of legal principles. Thus, from the point of view of a beneficiary, letters of credit are enforceable against an issuer regardless of the bankruptcy of the applicant.

Unlike a letter of credit, a surety bond attaches to the underlying contract and thus must be interpreted consistently with the underlying contract. The surety bond operates like a guaranty where a guarantor's obligation is secondary. This means that the surety's obligation does not mature until the principal obligor defaults on the underlying contract. In contrast, the obligation of an issuer in a letter-of-credit transaction is primary.

An obligee may see surety bonds as less desirable because they are not demand instruments like letters of credit. They involve a "claim adjustment process" in which the surety investigates the underlying default. This slows down the reimbursement process. Sureties will deny claims they believe are without merit.

At the same time, surety bonds, like other financial guarantees, are attractive to principals because they do not appear on a corporation's balance sheet, and their use does not diminish a company's line of credit. In addition, surety bonds are generally cheaper to procure and maintain and may not require posting of collateral to the surety by the principal obligor.

## Making Sureties Work Like LCs

Because of these advantages, some sponsors are pressing certain obligees, including offtakers under power purchase agreements and virtual PPAs and interconnection agreement counterparties, to accept a surety bond over a letter of credit in

order to facilitate a particular transaction.

The key to successfully persuading these counterparties to accept a surety bond is to craft the surety bond to minimize the disadvantages of a surety bond compared to a letter of credit.

One way to minimize the disadvantages of surety bonds is to draft the terms of the surety bond so that they provide protections to the beneficiary that are similar to those contained in a letter of credit. Since a traditional surety bond is subject to the surety's defense that no default of the underlying agreement has occurred, the obligee could change the payment trigger on the bond from one relating to the occurrence of an event of default to simply one triggered by the due presentation of a proper notice of default, notice of payment or other agreed-upon documentation.

Further, because the surety enjoys many of the same defenses that are available to a principal, the obligee should negotiate for language in the surety bond that waives the surety's ability to assert these defenses. Typical provisions should state that the surety's obligations are absolute and unconditional irrespective of any circumstance whatsoever that might constitute a legal or equitable discharge or defense of a surety and include an express waiver by the surety of such defenses. Courts have generally held that these broad waivers are enforceable.

## Transactions Governed by English Law

Standby letters of credit were first developed in the United States because US banks were prohibited from issuing guarantees.

Outside of the US, it is common to use an on-demand instrument, in similar circumstances, as a form of quasi-security to secure the obligations of a party to a contract. In practice, these English law-governed quasi-security instruments are labelled as a "bond" or "guarantee."

Irrespective of the title of the document, the instrument should be clear whether it creates primary ("autonomous") or secondary ("accessory") obligations. Disputes over whether these documents create primary or secondary obligations frequently lead to litigation or arbitration.

In general, security instruments that impose autonomous obligations are often labelled on-demand bonds or guarantees, first-demand bonds or guarantees, demand bonds or guarantees or standby letters of credit.

Security instruments that impose accessory obligations tend to be called simply guarantees, default bonds or surety bonds.

An on-demand bond or guarantee will usually stipulate what documents have to be presented to the issuer in order to receive payment. The beneficiary need only issue a demand in accordance with the terms of the instrument and present the required documents. Unlike a conditional bond, there is no requirement to establish breach and quantum of loss. An on-demand bond operates independently of performance or non-performance of the underlying contract terms (hence, it is "autonomous"). These instruments operate like standby letters of credit by creating an autonomous payment obligation essentially in the nature of a standby letter of credit rather than a guarantee of a third party's performance.

Under a classic (as opposed to an on-demand) guarantee, the guarantor guarantees the performance of another party under an underlying contract and is a secondary obligor that has available to it all the defenses available to the primary obligor. In addition, the classic guarantor can often rely on modifications made to the underlying agreement after issuance of the guarantee to refuse payment on the basis that the risk it initially agreed to take has been changed. Also, the guarantor may require that the primary obligor's default be proven by the guaranteed party.

On-demand instruments often provide that they are payable upon presentation of a written demand and certain documents in a specified form. The instrument must state that the bank's undertaking to pay is irrevocable, unconditional and is a primary obligation. The bank must expressly waive all defenses related to the transaction in connection with which the bond is given or against the party against whose default the bond is meant to offer protection.

Despite the name, English-law standby letters of credit have more in common with on-demand instruments than with letters of credit. They enable the beneficiary to obtain payment from the issuer of the standby credit when the other contracting party has failed or is alleged to have failed to perform the contract.

In view of the apparent near equivalence of the two instruments, what determines the choice of one instrument over the other in an English law transaction?

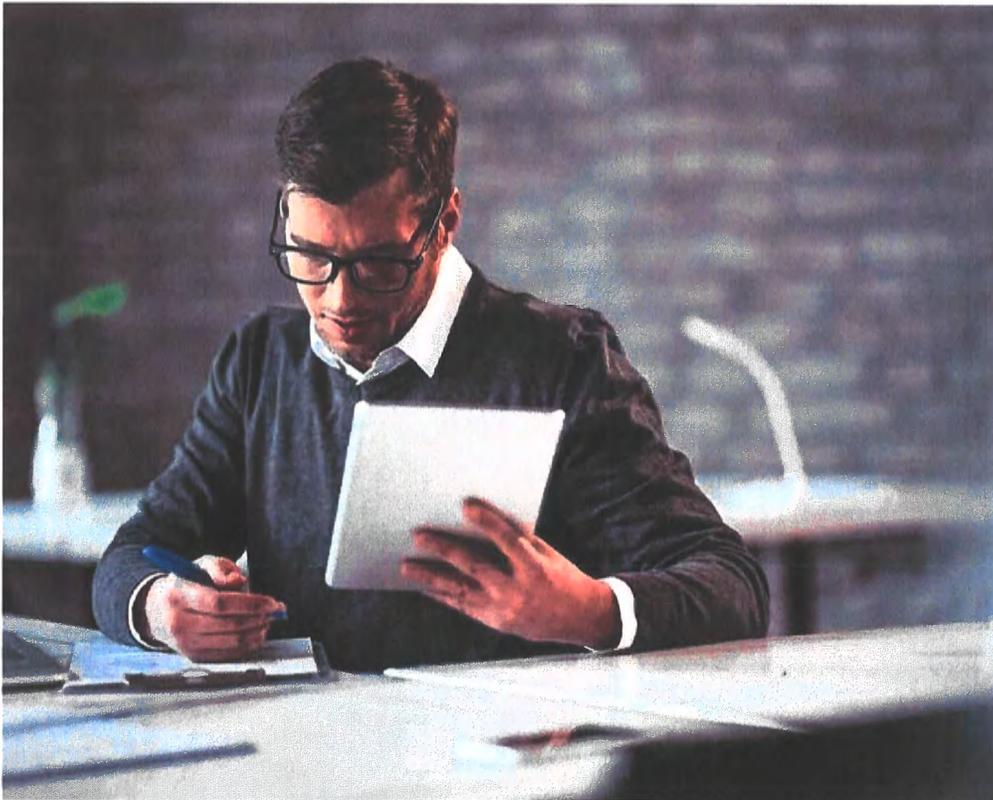
The two key factors seem to be practice and location. The fact that US banks may only issue letters of credit has clearly led to the prevalence of standby letters of credit in international transactions involving American banks and in sectors where their use is the norm. In addition, standby letters of credit tend to be more widely used in connection with long-term contracts, such as project finance loans, and projects involving multilateral agencies. They are also found in oil and gas projects in the Middle East. On the other hand, in UK domestic construction and infrastructure projects, bonds and guarantees prevail.

There is a third factor. Calling on a bond should result in swift payment and receipt by the beneficiary. However, English courts in recent years have seen a number of cases concerning the proper interpretation of these security instruments. The attention given by the English courts to bonds and guarantees in recent years may also steer parties toward a standby letter of credit over an on-demand instrument.

Of paramount importance are clarity and certainty — and caution. Whatever instrument is chosen, the wording proposed may well have been used previously and, therefore, be regarded as "tried and tested." A precedent form is only tried and tested to the extent it has been analyzed by a court and not found to be wanting. It is important to understand its provisions fully. The key question to ask is whether the wording clearly describes the obligations of the parties and prescribes the desired outcomes for all of the relevant fact patterns.

# Surety Bonds vs. Letters of Credit: Which is Better?

The Baldwin Group | Updated: March 28, 2025 | 6 minute read



**Leverage surety bonds over letters of credit**

The economy is in a continual state of flux, with interest rates, inflation, employment trends, consumer behaviors, government policies, and global markets shaping its health and trajectory. As organizations respond to evolving economic conditions, embracing innovative solutions and strategies can help them optimize cash flow and safeguard against financial risks, especially during times of economic uncertainty.

Companies that need to guarantee a variety of financial and performance obligations may be considering [surety bonds](#) or letters of credit. Though these aren't novel financial instruments, more companies are now utilizing surety bonds over letters of credit. Additionally, because of the economic instability of recent years and several notable bank failures, surety bonds are more often being accepted in lieu of letters of credit.

While both a surety bond and a letter of credit offer sound financial protection, surety bonds have many key financial advantages over letters of credit, as we detail below.

## How are surety bonds and letters of credit similar?

A surety bond and letter of credit act as a promissory note that guarantees payment to a third party, and they're used in business transactions to build trust and protect parties from losses.

Both serve as an agreement between three different parties:

### **Surety bond**

- Surety – the bond provider guaranteeing the principal's performance
- Principal – the entity with an obligation to perform
- Obligee – the beneficiary of the bond

### **Letter of credit**

- Issuing bank – the financial institution that issues the letter of credit
- Applicant – the entity that requests the letter of credit
- Beneficiary – the entity that receives payment

## What are key differences between a surety bond and letter of credit?

There are several important differences between surety bonds and letters of credit that you should consider as you're weighing your options.

<b>Key difference</b>	<b>Surety bonds</b>	<b>Letters of credit</b>
<b>Purpose</b>	Guarantees performance or compliance with contractual obligations	Guarantees payment to the beneficiary upon demand or compliance with terms
<b>Credit impact</b>	Does not affect the company's bank credit lines, providing greater liquidity and financial flexibility	Ties up credit capacity since they're issued against the company's available credit line, reducing borrowing power
<b>Cost</b>	Typically lower premiums, tied to credit quality and obligation type.	Higher costs, including issuance, commitment, and utilization fees.
<b>Collateral requirements</b>	Rarely requires full collateral, but requires the principal demonstrate financial stability; often unsecured with no UCC filings	Often requires 100% collateral, such as cash or assets, encumbering liquidity; typically perfected with UCC filing
<b>Covenants</b>	Generally no restrictive covenants or financial ratio requirements.	May impose restrictive covenants, such as maintaining specific financial metrics.
<b>Claims process</b>	Surety investigates claims to validate default before paying bond, offering defenses for the principal	Pays funds out to beneficiaries immediately on demand, without investigating default
<b>Speed of payment</b>	Beneficiary must prove default before payment is made	Immediate payout upon compliant documentation
<b>Sector stability</b>	Backed by the insurance/surety sector,	Subject to unpredictability of the banking sector

Key difference	Surety bonds	Letters of credit
	which is typically more stable	
<b>Flexibility</b>	Provides flexibility by preserving liquidity and working capital	Restricts flexibility due to tied-up collateral and reduced credit capacity
<b>Acceptance</b>	Ideal for performance and compliance obligations; growing acceptance across industries.	Preferred for payment guarantees and immediate access to funds; standard in international transactions
<b>Indemnity risk</b>	Principal indemnifies the surety for losses incurred on claims	No indemnity risk for the applicant, as the bank honors the beneficiary's draw request unconditionally

## When is a letter of credit a better option?

Depending on the specific requirements of the transaction, the parties involved, and the nature of the risk being guaranteed, in some instances, letters of credit might be more adequate.

Letters of credit are a viable option in the following situations:

- Guarantee payment certainty
- Ensure immediate access to funds
- Meet beneficiary requirements
- Fulfill specific regulatory obligations
- Businesses with high cash reserves
- Creating more personalized terms
- International trade and foreign transactions

However, for most situations, there are significantly more [benefits to using a surety bond](#).

## Why is a surety bond more beneficial?

For businesses, surety bonds are often more beneficial than letters of credit. The shift toward surety bonds reflects several key advantages:

- **Credit capacity** – Letters of credit tie up the company's credit capacity, thus reducing financial flexibility. Bonds do not encumber credit lines or require full collateral, preserving working capital for other uses.
- **Covenants** – Letters of credit often include restrictive covenants imposed by the issuing bank, such as requirements to maintain minimum liquidity, net worth, or debt-to-equity ratios, potentially limiting a company's other operations. Surety companies typically impose fewer or no restrictive covenants. Their primary concern is the financial stability and performance history of the company at the time of underwriting.
- **Security** – Letters of credit are usually fully secured by cash collateral or other assets and are perfected through public UCC filings. This means the issuing bank holds a priority claim on the company's assets. Sureties are generally unsecured creditors, and UCC filings are rarely made.
- **Default defenses** – Letters of credit are demand instruments that may be drawn down at any time, without proving the company has defaulted, leaving the company with no recourse to dispute the claim before funds are withdrawn. With surety bonds, surety carriers have dedicated claim staffs and require proof of default to determine claim validity and work to identify defenses for the company prior to bond proceeds being paid.
- **Rates** – Letters of credit may include a commitment fee or utilization fee, as well as issuance fees, in addition to a stated rate. Surety bond rates tend to be more stable and are directly tied to the credit quality of the company and to the types of obligations bonded. For well-qualified businesses, bond premiums are often lower than letter of credit fees, making them a more cost-effective solution in the long run.
- **Stability** – The insurance and surety sectors are perceived as more stable than the banking sector, increasing confidence in bonds as a reliable financial instrument.

These advantages make surety bonds especially appealing in industries requiring performance guarantees, compliance with regulations, or protection against contractual risks.

## Surety bond use cases

We're seeing many organizations leverage surety bonds for obligations including, but not limited to:

- **High deductible self-insured insurance programs** – For self-insured programs like workers' compensation, general liability, or auto liability, bonds are increasingly used to secure high deductible obligations. Insurers and regulators often require financial guarantees to ensure claims are paid, even if the insured party faces financial difficulties.
- **Court decisions (security for appeals)** – When appealing court decisions, litigants may need to post a bond or letter of credit to secure the judgment amount and demonstrate their ability to pay if the appeal is unsuccessful. Surety appeal bonds are now becoming a preferred option.
- **Performance and financial obligations (leases, utility deposits, etc.)** – In these cases, a bond guarantees the fulfillment of contractual terms, with landlords and utility providers becoming more open to bonds as they recognize their reliability and cost-efficiency.
- **International performance and financial obligations** – In international markets, letters of credit have traditionally been used to secure performance and financial obligations, often requiring 10 percent of the contract value to be held in reserve. However, the growing acceptance of bonds in these scenarios is driven by their ability to provide the same guarantee without requiring upfront collateral.

As bonds gain broader acceptance across industries and international markets, they provide businesses with a versatile and cost-effective [alternative to letters of credit](#) for securing financial and performance obligations.

## Embrace the benefits of surety bonds

If you're interested in exploring the benefits of surety bonds for your organization, The Baldwin Group's Surety Center of Excellence can determine which solutions align with your business needs, providing you guidance and education to help you make informed decisions aligned with your goals.

[Connect with us](#) for solutions that help protect your projects.

## For more information

We're ready to help when you are. Get in touch and one of our experienced Baldwin advisors will reach out to have a conversation about your business or individual needs and goals, then make a plan to map your path to the possible.



This document is intended for general information purposes only and should not be construed as advice or opinions on any specific facts or circumstances. The content of this document is made available on an “as is” basis, without warranty of any kind. The Baldwin Insurance Group Holdings, LLC (“The Baldwin Group”), its affiliates, and subsidiaries do not guarantee that this information is, or can be relied on for, compliance with any law or regulation, assurance against preventable losses, or freedom from legal liability. This publication is not intended to be legal, underwriting, or any other type of professional advice. The Baldwin Group does not guarantee any particular outcome and makes no commitment to update any information herein or remove any items that are no longer accurate or complete. Furthermore, The Baldwin Group does not assume any liability to any person or organization for loss or damage caused by or resulting from any reliance placed on that content. Persons requiring advice should always consult an independent adviser.

### RELATED INSIGHTS

## Stay in the know

Our experts monitor your industry and global events to provide meaningful insights and help break down what you need to know, potential impacts, and how you should respond.

CONSTRUCTION

## Higher Tariffs and Project Profitability

How construction companies can respond The Roman poet Horace once wrote, "adversity has the effect of...

[Read More](#) →

LIFE

## Can Life Insurance Help Cover Medical Bills?

Many Americans today are facing the reality of rising medical expenses — despite having health insurance....

[Read More](#) →

AU'

## 25 Disasters

Sav to b pler

[Rea](#)



Let's make it possible

---

## ABOUT

---

## EXPLORE

---

## CONTACT US

---

[Transparency & Disclosure](#) | [Privacy Policy](#)

[Accessibility Statement](#) | [Terms of Use](#)

[License](#)

© 2025 The Baldwin Group

1 Mr. Langenheim asked Mr. Moser if Subparagraph 6.1.4.E.5(b) read as follows: Unless specifically provided  
2 for otherwise in the wind farm lease, the applicant shall mitigate soil compaction and rutting for all areas of  
3 farmland that were traversed with vehicles and construction equipment or where topsoil is replaced in open  
4 trenches and leave that up to negotiation with the landowners. He said that Items (1), (2) and (3) could be  
5 deleted.

6  
7 Mr. Moser stated that he would not have a problem with Mr. Langenheim’s substitute language for  
8 Subparagraph 6.1.4.E.5(b).

9  
10 Mr. Doenitz agreed.

11  
12 Mr. Hall stated that as the Champaign County Administrator he would urge the Committee not to place  
13 statements that do not establish clear requirements in the *Ordinance*. He said that substitute motion does not  
14 establish any requirement on anyone and it does not belong in the *Ordinance*.

15  
16 Mr. Moser stated that he will agree with Mr. Hall and recommended that all of Subparagraph 6.1.4.E.5 be  
17 deleted.

18  
19 Mr. Doenitz agreed.

20  
21 Ms. Wysocki restated the motion as follows: **Unless specifically provided for otherwise in the wind farm  
22 lease, the applicant shall mitigate soil compaction and rutting for all areas of farmland that were  
23 traversed with vehicles and construction equipment or where topsoil is replaced in open trenches and  
24 delete Items (1), (2) and (3).**

25  
26 Ms. Wysocki requested that the clerk call the roll.

27  
28 The roll was called:

29	<b>Anderson-no</b>	<b>Doenitz-yes</b>	<b>Ammons-no</b>
30	<b>Jones-yes</b>	<b>Langenheim-yes</b>	<b>Kurtz-yes</b>
31	<b>Moser-yes</b>	<b>Schroeder-no</b>	<b>Wysocki-no</b>

32  
33  
34 **The motion carried.**

35  
36 **Mr. Langenheim moved to reinstitute the wind farm overlay district.**

37  
38 **The motion failed by the lack of a second.**

39  
40 Mr. Doenitz asked Mr. Hall to indicate where decommissioning is addressed.

41  
42 Mr. Hall stated that 6.1.4.Q. (Page 90 of the mailing packet) addresses decommissioning. He said that the

1 real meat of decommissioning is included in the *Zoning Ordinance* under the Reclamation Agreement  
2 therefore not very much needed to be added in regards to wind farms.

3  
4 Mr. Nudo stated that he is concerned about the funding of the decommissioning. He said that in today's  
5 world an Irrevocable Letter of Credit isn't worth as much as it was a long time ago. He said that Mr. Uken,  
6 Manager for the Champaign County Farm Bureau, has provided information about other counties that funded  
7 the decommissioning either up front or partially along the way as opposed to an Irrevocable Letter of Credit.

8 He said that we could have an Irrevocable Letter of Credit over a 12 year period for the amount and 1/12<sup>th</sup> of  
9 the amount be taken in cash and then reduce the Irrevocable Letter of Credit each year until finally after year  
10 12 it is satisfied. He said that his concern is if we are sure that we have the funding at the point and time  
11 when the decommissioning is necessary so that we do not have an obsolete piece of equipment that is no  
12 longer efficient in what it should be doing. He said that Mr. Uken provided the ZBA examples of how the  
13 decommissioning is processed in other counties. He said that he is confused about the arbitrary number of  
14 150% because it does not take into consideration of inflation of the 25 years and decommissioning could be  
15 300% at that time. He said that he believes that more assistance is needed from the developers and some  
16 creative financing to assure that the County has the money in hand at the point and time that it is required.

17  
18 Mr. Kurtz asked if this issue could be addressed separately rather than within this ordinance.

19  
20 Mr. Hall stated that it will need to be addressed before there is a wind farm application submitted.

21  
22 Mr. Nudo asked Mr. Kurtz why the County would want to delay this issue.

23  
24 Mr. Moser stated that he spoke with the wind farm developer in Ford County and he asked him who would  
25 pay for the decommissioning and he indicated that in 25 years they will probably tear down the old towers  
26 and use the same base for a more efficient system. He said that these turbines are not going to be here for 25  
27 years and then go away.

28  
29 Ms. Wysocki asked the two developers if their companies had been involved in any decommissioning to  
30 date.

31  
32 Mr. Doster stated no but they will normally have a certified engineering firm calculate a cost estimate of  
33 what the decommissioning would be at the present time and down the road.

34  
35 Ms. Wysocki asked Mr. Doster if his company, assuming that it is still solvent in 25 years, will pay for the  
36 full decommissioning.

37  
38 Mr. Doster stated that his company will make sure that the funds are available for the full decommissioning.

39  
40 Mr. Polz stated that the owner of the company is the responsible owner of the lease agreement, if they are  
41 solvent, to decommission the project with their own funds therefore if someone owns and operates a facility  
42 the decommissioning plan must guide how they must do the decommissioning but the funding of it would be

1 done by the owner of the facility, unless they are not solvent. He said that most of the decommissioning  
2 plans and reclamation agreements that they have done have been based on a Letter of Credit but if the  
3 County wants to leave its options open then they could say a security could be posted by a mutually  
4 acceptable agreement between the applicant and the County.

5  
6 Mr. Nudo stated that Mr. Polz indicated twice if the wind company is solvent therefore that is where the  
7 Irrevocable Letter of Credit means less than the paper it is printed on.

8  
9 Mr. Polz stated that this is what the Irrevocable Letter of Credit is in place for therefore the Letter Of Credit  
10 is in the County's hands with a financial institution. He said that the Letter of Credit will still be around  
11 even if the company is not. He said that in a lot of the decommissioning plans that they have done the county  
12 has the ability on either a yearly basis or some other time frame to switch financial institutions.

13  
14 Mr. Nudo stated that today he actually had a conversation with a financial person from Chicago and he  
15 indicated that in light of the financial times a Letter of Credit must be backed by collateral at a bank held in  
16 escrow. He said that it isn't just the wind company that the County has to be concerned with being solvent  
17 in 25 years but the financial institution that holds the Letter of Credit in escrow.

18  
19 Mr. Polz stated that he agrees with Mr. Nudo but most of the Reclamation Agreements and Letters of Credit  
20 are set up so that they are renewed annually and some are renewed more frequently. He said that if the  
21 financial institution is in trouble the County can step in and basically require the Letter of Credit be posted  
22 with a different financial institution.

23  
24 Mr. Nudo stated that this issue is beyond the scope of expertise of the people in this room and expert  
25 financial advice is needed. He said that the arbitrary number of 150% is a number that he is not sure is valid.  
26 He said that he has a cell phone that is two years old and is already obsolete and this energy technology will  
27 also become obsolete in time and then there will be a 500 foot turbine on someone's property. He said that if  
28 Mr. Moser's source is correct then a more efficient turbine will replace the obsolete version but if his source  
29 is wrong the County will have a plan in place to remove the structures. He suggested that the County have  
30 an Irrevocable Letter of Credit with a cash substitution for the first 12 years over a 12 year period, which is  
31 one-half the life of the term of the lease, and replace one-twelfth of the Irrevocable Letter of Credit over the  
32 12 years. He said that he has a level of confidence that the technology will stay before the 25 year lease  
33 expires and then each year the Letter of Credit could be reduced by the amount paid in cash placed into  
34 escrow. He said that he is not sure what the amount should be required for the Irrevocable Letter of Credit  
35 but if engineers could come up with a number with inflation then that is the way to do it.

36  
37 Mr. Schroeder stated that he shares Mr. Nudo's concerns and would like to see the engineer's cost estimate  
38 in writing.

39  
40 Mr. Kurtz stated that he also shares Mr. Nudo's concerns and wondered if there was a way to approve this  
41 part of the *Ordinance*, since this has to be held at ELUC for 30 days to allow municipal protest, and have an  
42 engineer submit those numbers at the May ELUC meeting for review and recommendation. He said that this

1 will allow time for the Committee to consider Mr. Nudo's recommendation and make a decision whether to  
2 add it to the *Ordinance* in May.

3  
4 Mr. Hall stated that the Committee could amend the Reclamation Agreement requirements that are in the  
5 *Ordinance* already with a stiffer set as indicated in 6.1.4.Q. He said that he is not clear as to what engineer  
6 the County would get to provide such information.

7  
8 Mr. Kurtz stated that if someone has that type of expertise that could tell the County what it is going to cost  
9 in 25 years what it is going to cost to decommission one of these turbines.

10  
11 Ms. Wysocki asked Mr. Kurtz where someone would get such expertise.

12  
13 Mr. Kurtz stated that there are some wind farms in California that have already started replacement or  
14 decommissioning.

15  
16 Mr. Hall stated that perhaps every year or every two years the value of the Irrevocable Letter of Credit should  
17 be renewed and updated pegged to some cost index because no one is going to be able to tell the County  
18 what it is going to cost in 25 years but everyone could tell you what it costs every two years to update it. He  
19 said that some ordinances do require this route and he has not added this route because it is a burden that the  
20 County will have to do every two years.

21  
22 Mr. Moser asked if Mr. Uken could explain where he obtained his numbers.

23  
24 Mr. Uken, Manager for the Champaign County Farm Bureau, stated that the information that he submitted to  
25 Mr. Nudo is from Bureau County which is where Invenergy is developing a project. He said that he spoke  
26 with Ms. Kris Donarski, Bureau County Zoning Administrator, and she indicated that they negotiated a  
27 figure with the wind company up-front, prior to the development, prior to the issuing of the building permit,  
28 a set number. Ms. Donarski stated that they had an engineer which talks about the cost of decommissioning,  
29 the cost of removing the underground cables, concrete, etc, and taking down the towers. She said that the  
30 figures are agreed upon in advance and in some cases that money was put into an escrow account as cash, no  
31 line of credit, put into an account with an amount that was agreed upon with the wind company. Mr. Uken  
32 stated that he asked Ms. Donarski if she had ever had a wind company turn down and walk away from  
33 development in Bureau County due to the requirement of the decommissioning agreement and she indicated  
34 no. Mr. Uken stated that perhaps with Mr. Polz's company, in certain instances, it was different as to what  
35 they did with their company.

36  
37 Mr. Moser asked Mr. Uken if he could obtain a copy of the Bureau County's report so that Champaign  
38 County does not have to pay someone else to duplicate it.

39  
40 Mr. Uken stated that he does have the name of the engineering firm that completed the cost estimate and a  
41 sample of what they have done and the rough calculations that were used for removing underground cables,  
42 concrete, etc. He said that he does not have this information with him tonight but he could provide it to

1 staff.

2  
3 Mr. Kurtz asked Mr. Hall if up-front negotiations for decommissioning, prior to the issuance of a Special  
4 Use Permit, could be inserted into the *Ordinance*.

5  
6 Mr. Weibel stated that a motion could be made to have the information prepared but it cannot be placed into  
7 the *Ordinance* at tonight's meeting.

8  
9 Mr. Moser stated that if there is going to be a Irrevocable Letter of Credit with someone then why can't it be  
10 between the landowner and the wind company and leave the County out of it.

11  
12 Mr. Hall stated that the County is the beneficiary of the Letter of Credit.

13  
14 Mr. Moser stated that he has a farm that he rents from the University of Illinois and he has to give them a  
15 Letter of Credit which indicates that the bank will guarantee the other half of that check if he can't write it  
16 for cash rent. He said that this is an individual agreement for anyone who farms for the University of  
17 Illinois.

18  
19 Mr. Hall stated that in this instance the County wants to be in control of the Letter of Credit if there needs to  
20 be reclamation. He said that staff can come back at the next meeting with the changes that are based on what  
21 was done in Bureau County but it is still not clear how Bureau County makes sure that they have adequate  
22 funds in 25 years.

23  
24 Mr. Knott stated that the internet indicates that Bureau County Board unanimously passed a 1.7 million  
25 dollar decommissioning plan with Big Sky wind developers which breaks down to approximately \$31,000  
26 per turbine.

27  
28 Mr. Polz stated that his company has built projects in Bureau County with a total of four permitted in that  
29 county. He said that the first project that they completed, the Crescent Ridge Project, in 2000 was initially  
30 required to post security in the form of cash escrow but the County later relented because it was a huge  
31 sticking point with their equity partner and they decided to allow an Irrevocable Letter of Credit. He said  
32 that every project that they have done since have all included Irrevocable Letters of Credit. He said that  
33 there was a decommissioning plan negotiated with the county which had engineering estimates for a per  
34 turbine basis. He said that in other counties the decommissioning agreement and the amount of security that  
35 is posted and the method by which it is posted are negotiated between the county and the developer prior to  
36 the issuance of a building permit. He said that it is done either two ways, either as a requirement of the  
37 Special Use Permit; or a stipulation to the Special Use Permit therefore requiring that it has to be negotiated  
38 and security posted in a form that is mutually acceptable by the county and the developer prior to the  
39 issuance of the building permit. He said that why the latter approach tends to be better for everyone is  
40 because the project is much further along in its development at that point and there are fewer variables at that  
41 point and the engineers can give a more accurate estimate of what it will cost to decommission. He  
42 suggested that the Committee structure the *Ordinance* in such a way that the decommissioning plan can be

1 negotiated between the county and developer prior to the issuance of a building permit and whatever form of  
2 security that the county will require from the developer will be decided at that point.

3  
4 Mr. Kurtz asked if this needs to be stipulated in the *Ordinance* or as part of the Special Use Permit.

5  
6 Mr. Hall stated that his advice is that the dollar amount and the formal agreement must be done at the public  
7 hearing but the County does not need the actual Letter of Credit until there is a request for a building permit.  
8 He said that these things cannot be negotiated outside of a public hearing.

9  
10 Mr. Hall stated that he has been reviewing the fee section, included on Page 96 of the mailing packet, and he  
11 believes that staff has overlooked something in its presentation to the ZBA. He requested that when the  
12 Committee considers the fee for a County Board Wind Farm Special Use Permit that they establish a  
13 minimum amount of \$10-\$20,000 for small wind farms, ten wind turbines, in which would give \$4400  
14 dollars which would not begin to touch the cost of reviewing that small wind farm. He said that Livingston  
15 County has a minimum of \$20,000 and adds \$1,000 per turbine which would be fantastic but might be seen  
16 as excessive for very small wind farms. He said that Subparagraph 6.1.4.9.3.3.B.6 should be revised to  
17 indicate "not less than ....XX dollars".

18  
19 Mr. Kurtz asked Mr. Hall if he is referring to private turbines.

20  
21 Mr. Hall stated no he is referring to a wind farm. He said that the minimum fee for a Wind Farm County  
22 Board Special Use Permit, if it is a very small number of turbines, requires more than \$440 per turbine. He  
23 said that with more than 50 turbines he is comfortable with the \$440 per turbine.

24  
25 **Ms. Ammons moved, seconded by Mr. Langenheim to amend Subparagraph 6.1.4.9.3.3B.6 to indicate**  
26 **a fee of \$440 dollars per wind turbine for a wind farm consisting of more than 50 wind farm turbine**  
27 **towers but not less than \$20,000 for a wind farm consisting of 50 or less wind farm turbine towers.**  
28

29 Ms. Busey suggested that it would be easier to state the motion as follows: **The County Board Wind Farm**  
30 **Special Use Permit is \$20,000 per farm or \$440 per wind turbine tower, whichever is greater.**

31  
32 Ms. Ammons and Mr. Langenheim agreed to Ms. Busey's recommendation.

33  
34 **The amended motion carried by voice vote.**

35  
36 **Mr. Schroeder moved, seconded by Mr. Doenitz to eliminate Paragraph 6.1.4.N. (Pages 88-89 of the**  
37 **mailing packet) which is in regard to Standard Conditions for Visual Impact Assessment.**  
38

39 Mr. Schroeder stated that there is always something being built therefore the landscape of the Midwest is  
40 changing and this is just part of it. He said that he has a real problem with trying to determine the visual  
41 impact assessment and believes that it will be very hard to accomplish. He said that he just came from  
42 Wisconsin and he saw wind turbines all of the way down but it got to the point where he didn't even notice



# Assessing property value impacts near utility-scale solar in the Midwestern United States

Simeng Hao, Gilbert Michaud\*

School of Environmental Sustainability, Loyola University Chicago, Chicago, IL, USA

## ARTICLE INFO

### Keywords:

Solar energy  
Property values  
Energy development  
Midwest  
Quantitative research

## ABSTRACT

Utility-scale solar energy project proposals have been accelerating exponentially in the United States (U.S.) as the energy transition from fossil fuels to renewables continues to unfold. While the emissions and economic related benefits of deploying large-scale solar photovoltaics (PV) for electricity generation are well documented, relatively less is known about their impact on nearby property values. This paper investigates the location of utility-scale solar facilities in the U.S. Midwest, the average home value in each relevant zip code, and whether the presence of a utility-scale solar project affects nearby property values in any manner. Our study includes 70 utility-scale solar facilities built in the Midwest from 2009 to 2022 using data from the Lawrence Berkeley National Laboratory. Alongside housing value data from Zillow (i.e., Zestimate), we incorporate additional data, including solar project size in installed capacity, rurality, and state. Using the difference-in-differences method, our results indicate that utility-scale solar projects increase nearby property values by roughly 0.5–2.0 %. Moreover, our results show that smaller projects have more of a positive impact on nearby property values than projects that are 20 megawatts or larger. Ultimately, having a better understanding of how these larger-scale solar projects impact property values is essential for a variety of stakeholders – especially local officials and property owners – as they are increasingly faced with making decisions about whether to permit the construction of these facilities in their communities.

## 1. Introduction

Addressing escalating climate change concerns while promoting sustainable development is one of the foremost challenges of our time. While climate change is caused by several factors, such as inefficient energy infrastructure and increasing energy demand [57], specifically using fossil fuels to generate electricity is a key element that spurs greenhouse gas (GHG) emissions. According to the United Nations [52] and the United States [54] Energy Information Administration (EIA) (2021), burning fossil fuels currently accounts for 75 % (globally) and 73 % (in the U.S.) of GHG emissions, respectively. In response, governments around the world, including the current Biden Administration in the U.S., views the transition from fossil fuels to renewable energy as a top priority. In the U.S., the Bipartisan Infrastructure Law paves the way for renewable energy development by upgrading existing energy storage systems [34], which will be able to accommodate new renewable energy infrastructure such as wind and solar. Further, the Build Back Better plan incentivizes additional solar installations by increasing the investment tax credit (ITC) back to 30 % for qualifying technologies for the next 10

years [47]. While renewable energy only currently accounts for about 20 % of total U.S. electricity generation [59], the growth of large-scale renewable energy projects in recent years can increase this percentage significantly. For solar energy in particular, the installed capacity is expected to triple by 2034, amounting to nearly 700 additional gigawatts (GW), or enough to power >100 million homes [7].

Compared to biomass, hydropower, and wind, which are the three most abundant renewable energy generation sources in the U.S., solar energy accounts for only about 1.8 % of total electricity generation, yet it is also one of the fastest growing energy sources in the country [55], and also globally [46]. In the U.S., around 72 % of the total solar energy capacity is in the form of utility-scale solar photovoltaics (PV), ground mounted solar generation greater than 5 megawatts (MW), and utility-scale PV has been growing at a rate of 42 % annually since 2010 [10]. In fact, the U.S. installed 20.2 GW of solar PV capacity in 2022, which increases the cumulative total to well over 1000 GW of total installed capacity [48].

While the benefits and costs of traditional forms of distributed solar PV, such as rooftop systems, are well documented (e.g., [43,56]),

\* Corresponding author.

E-mail address: [gmichaud@luc.edu](mailto:gmichaud@luc.edu) (G. Michaud).

relatively less is known about the impacts of large, utility-scale projects, which are often built in rural or suburban communities. Compared to rooftop solar, utility-scale projects are usually located in strategic areas near substations and major transmission lines with more direct sun exposure. The first large-scale solar project can trace back to the 1990s, but the development of utility-scale solar has been growing at a historic rate only during the past decade or so [50]. The installed cost per watt of solar has also dropped about 85 % during the past decade due to technological innovations [58], which has further accelerated the energy transition. Utility-scale solar is being built all over the U.S., but a few regions are developing projects at a much faster pace than others. The South Atlantic region (e.g., the Carolinas, Georgia, etc.) has installed more utility-scale solar than any other region in the U.S., and California has the second highest utility-scale solar capacity by region [33]. Compared to these two regions, the Midwest, which has around 127 million acres of flat agricultural land, only started to see utility-scale solar development in the past 5–10 years [14]. While the Midwest offers less solar radiation compared to other regions like the Southwest, the agricultural land it has is great for solar development as most of the areas are flat with very few environmental constraints. Developers do not need as many environmental approvals for developing solar projects on agricultural land compared to developing on other areas, such as brownfields [2]. Moreover, several metropolitan areas in the Midwest, such as Chicago, Cincinnati, Columbus, and Minneapolis, have ambitious renewable energy goals for the near future [25], and Fortune 500 companies are also helping contribute to the demand. While most projects are still in the approval phase or currently under construction, it is expected that, just in the Midwest region, about 6.6 GW of utility-scale solar energy will be added to the grid by the end of 2024 [17].

While prior reports and papers have indicated that utility-scale solar can bring jobs and long-term economic benefits to rural communities [18,29,31,37], other studies have shown that these projects could possibly negatively impact local wildlife, food security, and nearby property values [51]. Among other concerns, the potential negative impacts to nearby home and land values are often brought up as a key factor for those parties opposing large solar energy projects. While there is a small, but growing, body of literature specifically investigating this

topic, the results to date have been largely inconclusive. To briefly illustrate, property value impact studies done in both the United Kingdom (UK) and Massachusetts, where the solar projects under investigation were in more urban or suburban settings, suggested that there is a 1.7 % property value decline [19,30]. However, a different study looking at 956 unique solar projects across the U.S. concluded that there is no conclusive relationship between nearby solar projects and property values [1]. In addition, no prior studies have investigated these potential impacts across the entire Midwestern region of the U.S., an area that has millions of acres of flat agricultural land which can potentially be converted to utility-scale solar facilities, or partially converted via agrivoltaics.

Against this unique background, our paper first reviews the existing literature on the property value impacts of utility-scale solar. After a detailed discussion of our data and methods, we display the results of our various average property value models in the Midwestern states (see Fig. 1), and conclude with a final discussion that offers the novelty and significance of this study, including implications for future utility-scale solar development.

### 1.1. Prior literature

In general, property values are determined by several factors, including the size of a property, its orientation, number of bedrooms/bathrooms, air conditioning, distance to nearby cities, and many others. Among these, the features that increase property values are considered amenities, whereas disamenities do the opposite [13]. Amenities and disamenities not only include features within each property, but also features surrounding each property. There are hundreds of existing property value impact studies investigating if one specific feature outside of a property is amenity or disamenity; for example, according to several studies, open green space and rivers are amenities to nearby properties [13,23]. In most cases, proximity to nature is considered an amenity, while facilities that produce pollution are considered a disamenity. To illustrate, chemical plants, coal-fired power plants, and landfills all are examples of disamenities to property values [3,39,44].

While it is unclear whether utility-scale solar projects are considered

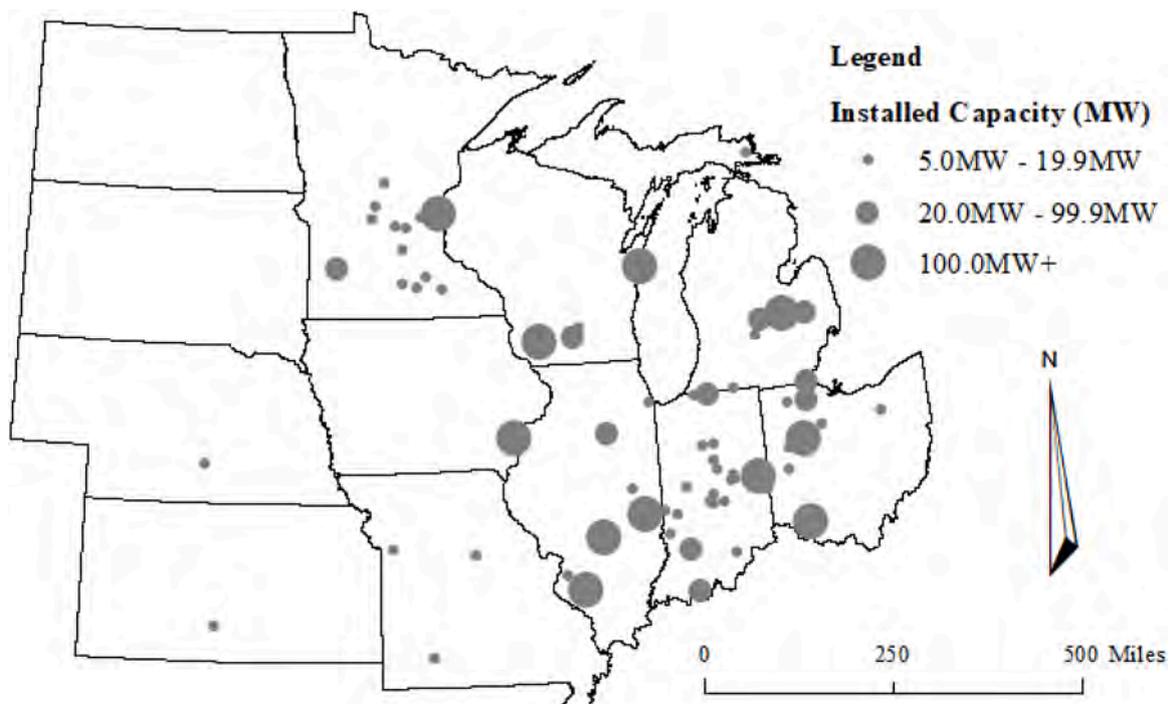


Fig. 1. Operational utility-scale solar facilities across the Midwest.

as an amenity or disamenity, public perceptions of these large solar projects can play an important role in determining property values. One study showed that about 70 % of Americans believed that utility-scale renewables were critical for the future of our energy supply, but the overall number of people who think that the energy transition and climate change should be a priority has been declining since 2019 [42]. The decline in overall awareness is largely due to the problem being relatively distant or remote from people's everyday lives, and, in recent years, appraisers have tended to associate utility-scale renewable installations with negative impacts to nearby properties [45]. Public perceptions, especially risk perceptions, can significantly affect housing values, and the effect can change when more assessments are completed [12].

### 1.1.1. Property value studies for utility-scale solar

While there is a small, but growing, body of literature investigating the property value impacts of utility-scale solar projects, the results have been largely inconclusive. Outside of the U.S., property value impact studies near large-scale solar projects done in South Korea and United Kingdom concluded that such solar projects could cause nearby property value declines of 5.0 % and 5.4 %, respectively [26,30]. In the U.S., studies done in the states of Massachusetts and Rhode Island used difference-in-differences (DID) methods and a hedonic pricing model that included environmental, neighborhood, and structural factors, and found that there is a 1.7 % housing value decline when there is a solar installation nearby [19,30]. To mitigate such impacts, a different study done in Portugal found that residents hoped to receive between \$12.93–\$56.64 per month for living close to utility-scale solar projects. This study investigated only three solar projects and created a questionnaire assuming that residents viewed utility-scale solar projects as disamenity [5]. Another study looking at 956 solar projects in the U.S. concluded that there is no real association between property values and nearby solar projects [1]. One of the most recent studies done by the Lawrence Berkeley National Laboratory showed that property values declined about 1 % depending on proximity to nearby solar projects, after investigating over 1.5 million housing transactions among 2000 solar projects in California, Connecticut, Massachusetts, Minnesota, North Carolina, and New Jersey [16]. Though there are no current studies, to the best of our knowledge, that show that having utility-scale solar nearby is a strong amenity per se, one study showed that 80 % of the residents in the U.S. support utility-scale solar projects in the country and specifically within their counties [10]. While some studies found negative associations between utility-scale solar and nearby property values, and some found no statistical significance, none of the prior studies have investigated the Midwest including all of the 12 states, an area that has millions of acres of flat agricultural land which potentially

can be converted to utility-scale solar facilities.

In addition to the literature mentioned below and in Table 1, most large-scale solar projects have some kind of property value impact study done by the development companies or consultants prior to construction approval. There are two issues with these kinds of individual project studies. The first issue is that these studies are done only for their targeted areas, which are too specific and small to imply any regional trend. The second issue is that there can be a selection bias, as utility-scale solar development companies have a rational interest to avoid showing that their projects have a negative impact on these communities. Thus, only papers from academic institutions and studies that cover multiple projects from development companies were included in this section. In Table 1, in reverse chronological order, we show the key findings from five reputable studies that examine more than one solar project, all of which were done by academics or similar organizations.

### 1.1.2. Property value studies for other renewable energy sources

Though minimal research has been done regarding the property value impacts of utility-scale solar projects, similar questions have been well investigated for other renewable energy sources, such as residential solar PV and utility-scale wind. For residential solar, several studies have shown that buyers across various states, housing markets, and home types would consistently pay more for properties that have rooftop solar PV. In fact, in one paper, which examines 54 prior studies on renewable energy's impact on property values, rooftop solar is the only renewable source that creates consistent positive results [6].

On-shore wind energy is the most common renewable energy source in the U.S. [54], and it has a much longer history of development compared to utility-scale solar. Similar to utility-scale solar projects, most on-shore wind projects also tend to be in rural areas and occupy hundreds of acres of land [8]. A sufficient number of studies have been conducted regarding the property value impacts of being near wind projects, and a large majority of the results have showed no significance between property value and these wind projects (e.g., [21,60,61]). However, the property value impact of having wind turbines nearby can be different than utility-scale solar due to the difference in project acreage, as well as zoning regulations of wind energy development.

Though some existing research has indicated that large-scale solar projects might be a factor that causes nearby property value declines, some key research areas are still yet to be explored. To illustrate, most of the existing studies considered solar projects that are 1 MW or larger of installed capacity as "large-scale solar projects," but many projects larger than 1 MW can be set up as community solar projects instead of traditional utility-scale solar projects [36]. Distributed projects, including residential solar, community solar, and microgrid storage, are very different from utility-scale solar projects, and the property value

**Table 1**  
Similar studies on the property value impacts of utility-scale solar.

Report/Paper Name (Year)	Author(s)	Publication/ Venue	Geography Investigated	Number of Projects Examined	Key Findings
Shedding Light on Large-Scale Solar Impacts: An Analysis of Property Values and Proximity to Photovoltaics Across Six U.S. States (2023)	Elmallah et al. [16]	<i>Energy Policy</i>	California, Connecticut, Massachusetts, Minnesota, North Carolina, and New Jersey	2000	Negative property value impact between $-1.54\%$ to $-0.82\%$ ; depends on proximity to solar projects
Property Value Impact Study (2021)	Lines & McGarr[28]	Cohn Reznick, LLP	Michigan, Minnesota, Illinois, Indiana	6	No consistent negative impacts to nearby properties
Property Value Impact of Commercial-Scale Solar Energy in Massachusetts and Rhode Island (2020)	Gaur & Lang [19]	University of Rhode Island	Massachusetts and Rhode Island	284	1.7 % property value decline; property owners willing to pay \$278 per year to avoid solar installation nearby
Solar Installations and Property Values (2019)	Marin[32]	University of Minnesota	Minnesota	32	Insignificant results on the relationship between solar installations and parcel values
An Exploration of Property-Value Impact Near Utility-Scale Solar Installations (2018)	Al-Hamoodah et al.[1]	University of Texas at Austin	Surveyed all 50 states in the U.S.	956	Mixed survey response, results showed that proximity to solar installation has no significant impact on home values

impacts of these kinds of solar projects can be specifically different due to ownership structure and related factors. Our study addresses the question of property value impacts of utility-scale solar projects by specifically only including projects that are 5 MW in installed capacity or larger (instead of 1 MW). Moreover, we explore the impact of *all* utility-scale solar projects in the Midwest, and no property value impact study of utility-scale solar projects has included all 12 states in this region before. Taken as a whole, our study fills an important research gap by more comprehensively investigating the relationship between property value and utility-scale solar projects in the Midwest, a region that experienced exponential growth in utility-scale solar project proposals and installations in the past handful of years.

## 2. Material and methods

Utility-scale solar project data and housing value data are two critical datasets that were utilized in this study. The utility-scale solar project data was gathered from the Utility-Scale Solar 2022 Edition Data File from the Lawrence Berkeley National Laboratory [4], a center that is part of the U.S. Department of Energy. The data file includes 1147 individual completed utility-scale solar projects that all are 5 MW in installed capacity or larger, and the projects come from 44 different states. For each individual project, the data file includes key information including installed capacity (in MW), longitude and latitude of the project (and, thus, zip code), the state which the project is located in, and the commercial operation date of the project. According to the U.S. Census Bureau [53], the Midwestern states include (in alphabetical order): Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; for this study, only projects from those Midwestern states were selected. With 10 Midwestern states selected (other than North Dakota and South Dakota, which did not have any utility-scale solar projects in the data file), there were 83 utility-scale solar projects built from January 2009 to January 2022. The 83 individual projects included those that were under the same name but have different construction dates, and projects that had a different name but were located in the same longitude and latitude. It was important to exclude those projects because they were not unique to

one specific area at a certain time period. After excluding those repetitive projects, 70 total projects were identified, and, thus, included in this study. The location of each project is shown as a gray circle in Fig. 1, and the difference in the size of the circle represents the amount of installed capacity. Based on the map, the number of projects by state was unevenly distributed, and there were more projects that are smaller than 20 MW in installed capacity than ones which were larger. Moreover, the timeline of newly operational projects was also unevenly distributed. As Fig. 2 shows, over 20 projects started operation in 2021, and about two-thirds of the 70 projects were built in the last five years.

Average housing value (AHV) data was gathered from Zestimate, a home value estimator database by Zillow. While collecting real transaction data would generate more accurate results, there were thousands of transactions happening each year near each utility-scale solar project site, which would make it extremely time consuming and costly to collect. Therefore, Zestimate was the best available dataset, and included information on home characteristics, listing price, prior sales, and market trends. The Zestimate dataset included AHV in almost any given month from January 2000 to June 2022 in every zip code. Zestimate differentiated property types, and because 3-bedroom houses were the most popular property types [20], this study only included the AHV of 3-bedroom houses. Additionally, since the number of bedrooms could affect housing value [22], only investigating 3-bedroom houses kept the dataset more specific and uniform. Finally, to merge the project location data and housing value data, the project location data, which was in longitude and latitude, was changed to the form of zip code.

As our study tracked AHV changes for each project over a long period of time, it was critical to account for inflation and extreme economic events such as COVID-19 and the 2008 housing crisis. For instance, it would be unfair to compare the AHV in March 2015 at zip code 55,056 to the AHV in April 2019 at the same zip code without including the effect of inflation and housing market fluctuation. Thus, the Case Schiller (CS) Index was included in this study to normalize the AHV. The CS Index is measured using data on repeated sales of single family homes over time, and this index had housing value by month from January 2000 [11] The CS Index has been used in several prior studies to better understand property values and housing market trends (e.g., [9,15,41]).

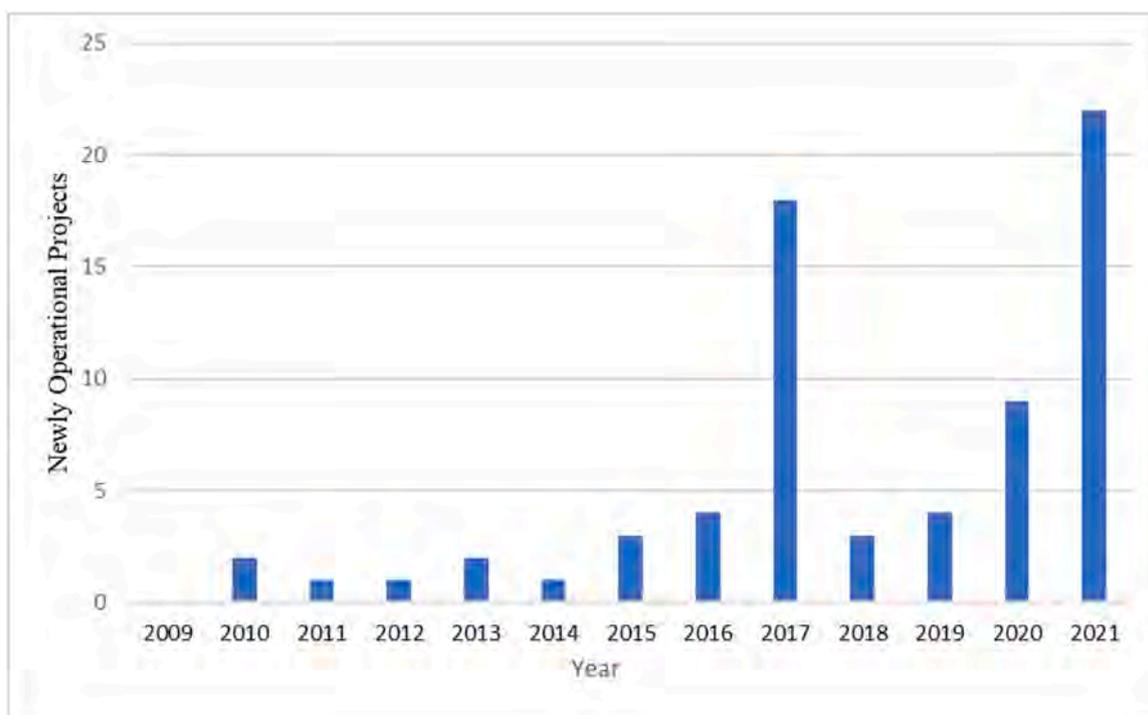


Fig. 2. Installation timeline of utility-scale solar projects in the Midwest.

As demonstrated in Fig. 3, in general, while AHV increased over time, it decreased from 2009 to 2012 following the 2008 economic crisis. While the CS adjusted value seemed to have a downward trend, it remained mostly constant from 2013 to 2019, which excluded the 2008 economic crisis and COVID-19. Thus, part of the study included CS adjusted AHV from 2013 to 2019, which is explained in later sections of this paper.

Rurality may be another significant factor that could affect housing value, and, according to the U.S. Department of Agriculture (USDA), each zip code in the U.S. has a rating between 1 and 10, with 1 being metropolitan and 10 being rural areas [24]. The rating classifications were primarily based on the size and distance of commuting flows, and to simplify the ratings and for ease of analysis, this study categorized ratings between 1 and 5 as metro, and 6–10 as non-metro, or “rural.” To transfer this rating into binary variables, all metro areas were listed as “0,” and all non-metro areas were listed as “1.” The rurality ratings of each project are listed in Appendix A.

With project data, housing data, CS data, and rurality data all being collected, our next step was to arrange them into one spreadsheet. For each utility-scale solar project, monthly AHV was tracked from March 2009 to June 2022, so given 160 months, 70 unique utility-scale solar projects, and the treatment and control groups (see Section 3.1), 22,400 unique data entries were collected. However, because Zestimate missed some AHV data for some zip codes, only 20,815 data entries had actual AHV values. For the CS-adjusted data, since only the AHV between January 2013 to December 2019 were included (excluding the COVID-19 years and 2008 housing market recovery years), only 35 projects out of 70 projects were counted, which left 5778 usable zip code-year combinations with actual AHV values.

### 2.1. Treatment and control group definitions

To examine the relationship between utility-scale solar projects and nearby property values, we set up each solar project to have a treatment group and a control group. The treatment group for each project included the zip code which has a utility-scale solar project, and the control group for that project included a randomly selected zip code which geographically touched the treatment zip code. The control zip code did not have a utility-scale solar project and was in the same state

as the treatment zip code. In binary variable terms, the treatment zip code was marked as “1,” and the control zip code was marked as “0.”

With the treatment group and control group established, the next group of variables were pre- and post-operation. Based on the hypothesis, it was expected that the change in AHV in the treatment group after the project started operating would be different than the change in AHV before the project operational date. For example, if the operational date of a project was March 2012, all months from March 2009 to February 2012 would be considered as pre-operation, and, in binary variable terms, it was marked as “0.” Any month from March 2012 to June 2022 for that project would be considered as post-operation, and, in binary variable terms, it was marked as “1.” The binary variable was labeled as “Post.” For the control group, Post would be 1 when the project in the treatment group started operation. Though “Post” would be a required variable in a standard DID method, “Post” was not included as an individual variable because it was absorbed by the “Year” fixed effect as they are similar chronological variables.

Under the hypothesis that there was an association between housing value and nearby utility-scale solar projects, the AHV in the treatment group after operation would be statistically significantly different compared to other groups, including the control group after operation or treatment group before operation. Therefore, the statistical significance of AHV differences in the treatment group after operation indicated if utility-scale solar projects had some impact on nearby property value. Since the new variable, treatment group after operation, was based on the treatment group and post-operation variables, the new variable is shown as “Treated\*Post” in the formula. The variable “Treated\*Post” is also a binary variable, treatment group after operation is 1, and 0 otherwise.

“Treated” and “Treated\*Post” were the required variables to determine the association between housing value and nearby utility-scale solar projects. However, other factors such as rurality, state, project size, and operational date might also affect property values, and adding those variables would increase the accuracy of the results. State was included as a categorical variable, and each data entry had one state which the project located in Next, project size in installed capacity was organized into a binary form, in which 1 indicates projects that were smaller than 20 MW, and 0 otherwise. There are many definitions of



Fig. 3. Housing value trend timeline (normal and case schiller adjusted).

what the minimum size of a utility-scale solar project is, and the most popular figures are 5 MW and 20 MW [38]. So then, our size variable not only showed results from two definitions, but also determined if project size was a statistically significant factor for nearby property values. We also included year as a categorical variable, which could account for economic recessions, housing market fluctuations, and inflation, and this variable was only applicable for non-CS adjusted values as CS accounted for some of those factors. Finally, county and zip code were included as categorical variables, which could determine the differences of AHV between different areas (Table 2).

### 2.2. Equations and difference-in-differences method

After obtaining the data and developing these variables, our next step was to use a statistical method to analyze the data entries and determine the association. As shown in Appendix B, because the data was not perfectly randomized on an individual level, and there were many repeated cross-sectional data, it was best to use the DID method. While the property value study done in Rhode Island and Massachusetts [19] also utilized a DID analysis, the dataset and variables were rather different. Due to the amount of data entries, and the variety of variables that were available in this study, three different models were created to test the hypothesis. All three models included Treated, Treated\*Post, Rurality, Size, Year, Constant (C), yet State, County, and Zip Code were not used in all models. All three models were run twice, once with normal unadjusted AHV, and once with CS-adjusted AHV. All three models were tested via Stata using confidence intervals of 90 %, 95 %, and 99 %, which is standard for studies of this variety.

All three models had the exact same variables other than the fixed effects. For the first model, the fixed effect was “State,” for the second model it was “County,” and for the third model it was “Zip Code.” The change in fixed effects can help determine the consistency of the overall results. By adding the richness of the variables from State to Zip Code, the results in Model 3 would have the highest adjusted R<sup>2</sup> value, which would give the results more validity. With the unadjusted AHV, each model contained 20,815 data entries and accounted for all 70 utility-scale solar projects in our sample. For the CS-adjusted AHV, each model included 35 out of 70 total projects, which represented 5778 unique data entries. Because each model was run twice, there were six results. The equation of property (location x) sale price (P) at time (t) is:

Model 1: State Model

$$P_{xt} = \beta_1 * Treated_{xt} + \beta_2 * (Treated_{xt} * Post_{xt}) + \beta_3 * Rurality_{xt} + \beta_4 * Size_{xt} + \beta_5 * Year_{xt} + \delta_{st} + C + E$$

Model 2: County Model

$$P_{xt} = \beta_1 * Treated_{xt} + \beta_2 * (Treated_{xt} * Post_{xt}) + \beta_3 * Rurality_{xt} + \beta_4 * Size_{xt} + \beta_5 * Year_{xt} + \delta_{ct} + C + E$$

Model 3: Zip Code Model

**Table 2**  
Definitions of variables included in this study.

Variable	Definition
$P_{xt}$	Housing pricing at zip code x at time t
$Treated_{xt}$	Binary variable, 1 for the treatment group, 0 for the control group
$Post_{xt}$	Binary variable, 1 for after operation, 0 for before operation
$Rurality_{xt}$	Binary variable, 1 for non-metro zip codes, 0 for metro zip codes
$Size_{xt}$	Binary variable, 1 for projects with an installed capacity between 5 and 20 MW, 0 for projects with an installed capacity larger than 20 MW
$Year_{xt}$	Categorical variable, each year is in its own category
$\delta_{st}$	State fixed effect
$\delta_{ct}$	County fixed effect
$\delta_{xt}$	Zip code fixed effect
$C$	Constant
$E$	Standard Error

$$P_{xt} = \beta_1 * Treated_{xt} + \beta_2 * (Treated_{xt} * Post_{xt}) + \beta_3 * Rurality_{xt} + \beta_4 * Size_{xt} + \beta_5 * Year_{xt} + \delta_{xt} + C + E$$

Again, the fixed effects are different between the three models. There are 12 states in the state variable, 60 unique counties in the county variable, and 70 unique zip codes in the zip code variable. The increase in the richness of the fixed effects increased the accuracy of the results, and the consistency of the results were shown when comparing all three models.

## 3. Results

### 3.1. AHV comparison with different variables

Comparing the AHV of each group was the simplest and the most direct way to visualize the differences. Table 3 uses the unadjusted AHV of the 70 projects in the Midwest from January 2009 to June 2022, and it included most of the variants used for all three models under the “Variant” column. “Mean Housing Price” presented the statistical average of the AHV of each variant, and all of the mean housing prices were compared to the overall mean housing price. The table also includes the minimum, maximum, and standard deviation of each mean housing price.

As Table 3 indicates, the overall mean was \$145,317, and the treatment group and control group were relatively close to this overall mean. Other than the treatment group and the control group, all other variants had relatively significant differences when compared to the overall mean. AHV near projects that were between 5 and 20 MW in installed capacity were higher than the ones that were not. For projects that were located in metro areas, the AHV was \$4694 greater than the overall mean, which indicated that the AHV in metro areas was higher than the AHV in rural areas.

The AHV of post-operation was also compared to the overall mean. Since housing prices traditionally increase over time, it was expected that housing price after operation, such as in 2020, would be higher than before operation, such as in 2013. Table 3 shows that “Overall Post,” which included all housing prices after operation, was \$23,216 higher than the overall mean. Similarly, “Control Post” and “Treated Post” both had higher AHV than the overall mean.

Since this study also involved models which included CS-adjusted housing values, Fig. 4, an AHV comparison graph, demonstrates the

**Table 3**  
Summary statistics.

Variant	Mean Housing Price	Minimum	Maximum	Standard Deviation	Comparison to Overall Mean
Treatment Group	\$145,327	\$32,137	\$504,682	\$56,648	10\$
Control Group	\$145,307	\$51,743	\$426,922	\$55,268	-10\$
5 MW-20 MW Projects	\$150,011	\$32,137	\$504,682	\$57,701	\$4694
>20 MW Projects	\$134,059	\$63,290	\$408,221	\$49,735	-\$11,258
Metro Projects	\$150,001	\$32,137	\$504,682	\$58,650	\$4684
Non-Metro Projects	\$127,236	\$63,290	\$320,201	\$39,043	-\$18,081
Control Post	\$170,511	\$58,540	\$426,922	\$63,237	\$25,194
Treated Post	\$166,558	\$35,051	\$504,682	\$63,051	\$21,241
Overall Post	\$168,533	\$35,051	\$504,682	\$63,171	\$23,216
Overall Mean	\$145,317	\$32,137	\$504,682	\$55,949	\$0



Fig. 4. AHV comparison graph.

difference between CS-adjusted housing value and normal housing value. For the unadjusted AHV, both treated and control groups saw an increase in AHV, which was expected because AHV increases over time. For the CS-adjusted AHV, both control and treated groups have similar AHV values throughout. Overall, the CS-adjusted AHV had much higher values than the unadjusted numbers because the CS-adjusted AHV were adjusted to December 2019 AHV. Based on the graph, there was not a clear association between utility-scale solar projects and nearby property value. Thus, our DID models offer more detailed results.

3.2. Difference-in-differences results

Below, Tables 4 and 5 include the three DID models, and the statistical significance is marked with an asterisk (\*) sign after the coefficient. The different number of asterisks represent different statistical significance levels. For the “State,” “County,” and “Zip Code” fixed effects, the coefficients were significant at 99 % confidence level, and because the fixed effects were different in the three models, the coefficients of those fixed effects were not listed in Tables 4 and 5.

Each model in Table 5 included 20,815 total observations including all 70 projects from March 2009 to June 2022, and in Table 4, there were

Table 4 DID property value impact CS adjusted AHV analysis.

Variables/Models	Model 1: State	Model 2: County	Model 3: Zip Code
Treated VS Controlled ( $\beta_1$ )	-1458	-3338***	Unidentified
Property Value Impact ( $\beta_2$ )	-662	2640**	700***
Rurality ( $\beta_3$ )	-25,563***	-22,166***	Unidentified
Project Between 5–20 MW Installed Capacity ( $\beta_4$ )	13,620***	50,206***	23,200***
Constant (C)	177,335***	158,793***	143,235***
Numbers of Observations (n)	5778	5778	5778
Standard Error (E)	12,472	2670	2443
R <sup>2</sup>	0.5642	0.8209	0.9897
Adjusted R <sup>2</sup>	0.5629	0.8197	0.9895

\*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table 5 DID property value impact CS normal AHV analysis.

Variables/Models	Model 1: State	Model 2: County	Model 3: Zip Code
Treated VS Controlled ( $\beta_1$ )	-2921***	-2976***	Unidentified
Property Value Impact ( $\beta_2$ )	2004**	1310**	3199***
Rurality ( $\beta_3$ )	-21,910***	-10,425***	Unidentified
Project Between 5–20 MW Installed Capacity ( $\beta_4$ )	19,492***	779	8357***
Constant (C)	94,369***	185,827***	143,235***
Numbers of Observation (n)	20,815	20,815	20,815
Standard Error (E)	9985	21,281	18,388
R <sup>2</sup>	0.5880	0.8158	0.9483
Adjusted R <sup>2</sup>	0.5875	0.8151	0.9479

\*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

5778 observations for each model because only 35 projects from January 2013 to December 2019 were included. The R<sup>2</sup> indicates how much variance is explained in the model. Model 3 for both normal AHV and CS-adjusted AHV explained over 94 % of the overall AHV outcome, and Model 3 is generally considered the most robust and reliable model. The high adjusted R<sup>2</sup> was due to the large number of unique zip codes in Model 3. Model 2, the County model, explained over 80 % of the overall AHV outcome, and Model 1, the State model, explained over 55 % of the overall AHV outcome.

Despite all three models not having the same fixed effects, the first five variables existed in all three models.  $\beta_1$  represented the AHV difference between treatment group and control group before any solar project was introduced. A negative coefficient indicated that the treatment zip code had an overall lower AHV compared to the control zip code before any utility-scale solar installation. Since the “Treated” variable was measured on a zip code level, Model 3 counted the zip code variable twice, as it had a zip code variable as a fixed effect. Since DID cannot identify the zip code-specific effect in a model with zip code fixed effect,  $\beta_1$  in Model 3 was unidentified. Among Model 1 and Model 2, three out of the four  $\beta_1$  showed statistical significance. The results from Model 1 and Model 2 indicated that before utility-scale solar projects

were developed, the treatment areas had relatively lower AHV compared to the controlled areas. This difference in AHV can be as large as \$3338, depending on the models.

The coefficient  $\beta_2$  demonstrated the impact of utility-scale solar projects on nearby property values by comparing the treatment group after operation to other variable combinations. Other than the normal AHV Model 1, all other models in both normal AHV and CS-adjusted AHV showed positive statistical associations. Based on Tables 4 and 5, there was a positive association between utility-scale solar projects and nearby property value, from \$700 to \$3199, depending on the model. This coefficient equates to a 0.5–2.0 % property value increase with utility-scale solar nearby, and the consistency between results in all models further strengthens this outcome.

Rurality was yet another factor that could potentially affect property values, and the coefficient of  $\beta_3$  indicated this relationship. A negative coefficient showed that properties in non-metro areas had lower AHV than properties in metro areas. The coefficients of rurality in Model 3 were unidentified because the rurality variable, which was measured at the zip code level, was not independent to the zip code fixed effect. Results from Model 1 and Model 2 indicated that properties in rural areas had significantly lower AHV than properties in metro areas. Based on the coefficient, rurality was the most impactful variable other than the “Year” variable.  $\beta_4$  differentiated the AHV between properties that were near smaller projects (5–20 MW of installed capacity) and properties that were near larger utility-scale solar projects (greater than 20 MW of installed capacity). Five out of the six results here showed statistical significance. Thus, our results indicate that properties near smaller projects had a higher AHV than properties near larger projects.

#### 4. Discussion

Overall, our work aimed to better discern if large solar projects had any sort of impact on property values as part of broader discussion of how and where to build such projects. Among other factors, distance to interconnection points to the grid, solar radiation, and local zoning ordinances are some of the reasons that solar developers choose certain geographies to build a project. As our models suggested, there was a negative statistical association between the treatment group and the control group, and these results indicate that the sites that developers selected had lower property values (i.e., costs) than the areas they did not select. However, the magnitude of the effect was relatively minimal, as the treatment group only had between 2.0–3.1 % lower AHV than the control group. While stakeholders such as local officials and landowners would simply think that developers would choose a site due to the low cost of the land, there are several additional factors that can influence the site selection process [37,49]. Assuming solar resources being equal, lower AHV in most cases is equal to lower land value, and it would be logical that developers would choose areas that had slightly cheaper land to develop projects compared to the surrounding areas.

Though the magnitude of effect of utility-scale solar and property value impacts were somewhat small, the associations were still statistically significant. Five out of our six models showed positive associations at the 95 % confidence level or higher, with the coefficient between \$700 to \$3199. The only model that did not show any statistical significance was the State model, which had the lowest adjusted  $R^2$  value among all six. These coefficient values translate to a 0.5–2.0 % increase in AHV when there is a utility-scale solar project nearby. Both normal AHV and CS-adjusted AHV indicated similar results, further strengthening our finding of this directional relationship between property values and utility-scale solar projects. The positive correlation between utility-scale solar projects and nearby property values could be due to the new tax revenues, which are often used to support local schools and other public services, as well as the local employment opportunities that utility-scale solar projects can provide. Many utility-scale solar developers also engage with local communities by hosting landowner meetings and supporting other events such as county fairs, and those

benefits to the local communities could perhaps increase the AHV as well. It is also worth noting that our results were different from many prior studies, as several indicated that there would be slight negative association between utility-scale solar projects and nearby property values.

It was expected that rural property values would be less than metro property values, which was shown in both Models 1 and 2. Rurality is one of the most impactful factors for property value impacts, and our coefficient were between -\$10,425 to -\$25,563. Moreover, AHV near projects that were between 5 and 20 MW of installed capacity were higher than the AHV of those near larger projects. Smaller projects, especially projects that were around 5 MW in installed capacity, could be easily hidden with vegetative buffers, and stakeholders are less likely to physically see these projects [10].

While the statistical findings of our study were different from several prior papers, most of the studies showed that the magnitude of impact which utility-scale solar projects had on nearby property values were relatively minimal. Both the Massachusetts and Rhode Island study and the Lawrence Berkeley National Laboratory study indicated that the negative impact was <2 %. Those two studies also indicated that other factors, such as number of bedrooms and location of the property, were much more impactful than the influence of utility-scale solar projects. Similarly, in this study, other factors such as rurality and state affected property values at a much higher magnitude than having a utility-scale solar project nearby. Put another way, many prior studies showed that utility-scale solar projects are not the main driving factor for the change or differences in property values, and our study showed the same.

A novel contribution of our study is that no prior study has investigated over 70 projects in one geographical region within the U.S. (i.e., the Midwest). Instead, most of the property value impact studies target specific projects and specific audiences, such as local or state government officials. However, as the results of zip code, county, states, and other variables showed in this study, the impact of each project can be drastically different from one another. Most of the prior property value studies, which only investigate one or two solar projects, cannot represent the broader impact of all utility-scale solar projects. This is further important as project proposals seemingly emerge weekly in this region.

Understanding the property value impacts of utility-scale solar projects in the Midwest not only helps stakeholders such as landowners and local officials better comprehend the overall costs and benefits of utility-scale solar projects, but it also generates ideas for potential policy change in the future, should they be achievable in complex regulatory environments [35]. For instance, many counties in the Midwest still require utility-scale solar projects to be at least 500 feet away from the nearest property (i.e., the setback rule), and this has been one of the toughest obstacles for the development process [27]. As our study showed, the effect of utility-scale solar projects on nearby property values was actually positive in both rural and metro areas, and, thus, local officials could perhaps relax the regulations on how far these projects need to be away from nearest residence. In addition, as most studies have found that the magnitude of impact which utility-scale solar projects had on nearby property values were relatively small, and in our case were positive, local and state officials could create pathways for projects to get approved easier (e.g., with less impact studies required) in order to meet Renewable Portfolio Standards and other renewable energy and decarbonization goals as part of a broader energy roadmapping effort [40].

There are some limitations to our study, both in the data collection process and methods, which are worth noting. For instance, using data from Zestimate and categorizing projects by zip code may be less accurate than using real transaction data and sight lines or radii for geographic bounds. Nevertheless, the benefit of using Zestimate in this study was to ensure that there would be a value for every zip code at every month. Further, using zip codes for housing locations is less accurate than coordinates, and not every solar project is located directly in

the center of each zip code area, impacting the accuracy. Finally, using binary variables in several places, while easier to interpret, may not always be detailed enough, such as in how the property value impact of a 200 MW solar project may be very different than a project that is 20 MW. Similarly, many suburban areas under the binary framework were considered as “Metro,” and less than one-third of all projects were considered as “non-Metro.”

Finally, a few ideas for future research emerged from this study. First, instead of using zip code as a unit, future studies could include a parameter for each project via GIS (such as miles or kilometers away), ensuring that a project is always at the center of the parameter, therefore increasing the accuracy of the results. Further, to determine the property value impacts of utility-scale solar projects across the entire U.S., studies could randomly select projects from each geographical region to generate results that are applicable to all projects. Moreover, while we have speculated that one of the reasons that we are seeing an increase in property values is from the new economic activity in these areas via tax revenues that are being fed into communities, future studies should attempt to move beyond correlations and attempt to pinpoint the exact driver(s) of “why” property values are changing.

**Appendix A. Utility-Scale Solar Projects in the Midwest with Key Data**

Project	Operation Date	State	Solar Capacity (MW-DC)	Zip Code	Non-Metro (Rurality)
Riverstart Solar Park	12/31/2021	IN	268.00	47,358	1
Hillcrest Solar	7/30/2021	OH	260.00	45,154	0
Prairie Wolf Solar	11/30/2021	IL	255.00	61,938	0
Two Creeks Solar	11/30/2020	WI	213.00	54,241	0
Hardin Solar Energy (Hardin I)	2/28/2021	OH	199.30	45,812	0
Badger Hollow I	11/30/2021	WI	191.60	53,569	1
Assembly Solar II	12/31/2021	MI	161.00	48,449	0
North Star Solar Project	10/20/2016	MN	138.00	55,056	0
Dressor Plains Solar	9/30/2021	IL	135.40	62,080	1
Prairie State Solar Project	7/30/2021	IL	132.30	62,237	1
Wapello Solar	3/31/2021	IA	127.50	52,653	1
Marshall Solar Project	1/9/2017	MN	93.16	56,258	0
Assembly Solar I	12/31/2020	MI	72.30	48,817	0
Troy Solar	4/30/2021	IN	64.70	47,588	1
Lapeer Solar Project I (Demille Array)	5/1/2017	MI	34.57	48,446	0
Temperance Solar	12/31/2020	MI	29.60	48,133	0
Bingham Solar	12/31/2020	MI	29.40	48,879	0
Bowling Green Solar	1/19/2017	OH	28.70	43,402	0
St. Joseph Solar	3/31/2021	IN	25.40	46,530	0
NSA Crane Solar Project	2/27/2017	IN	24.30	47,553	1
O’Brien Solar Fields	5/31/2021	WI	24.13	53,711	0
Grand Ridge Solar Plant	7/27/2012	IL	22.76	61,364	0
Delta Solar Power II (DSP-II A + B, Delta Solar Power Project)	7/30/2018	MI	19.40	48,837	0
Logansport Solar	9/30/2021	IN	19.30	46,947	0
Electric City Solar	12/31/2020	MI	18.90	49,091	0
Wapakoneta-Pratt	11/30/2021	OH	17.30	45,895	0
Aurora Waseca Solar	6/30/2017	MN	15.92	56,093	1
Aurora Paynesville Solar	6/30/2017	MN	15.24	56,362	1
Aurora Albany Solar	6/30/2017	MN	15.24	56,307	0
Truman Solar	6/30/2021	MO	14.00	65,201	0
Indy Solar I	12/16/2013	IN	13.90	46,259	0
AES Belleville Solar LLC	9/30/2021	IL	13.30	62,220	0
IMPA Crawfordsville 5 Solar Park	9/30/2020	IN	13.24	47,933	0
DG AMP Solar Piqua Manier	7/30/2019	OH	13.20	45,356	0
IND Airport Solar Farm Phase 2 (INDY II + III)	9/30/2015	IN	13.20	46,241	0
Camp Ripley Solar	1/31/2017	MN	13.10	56,345	1
IMPA Peru 2 Solar Park	4/30/2021	IN	12.60	46,970	0
Northern Cardinal Solar SCS IL 1, LLC (Solar Farm 2.0)	2/28/2021	IL	12.30	61,822	0
Aurora West Waconia Solar	6/30/2017	MN	12.25	55,397	0
PSEG Wyandot Solar Facility	3/15/2010	OH	12.02	43,351	1
Indy Solar III	12/16/2013	IN	11.90	46,221	0
IMPA Richmond 5 Solar Park	6/30/2021	IN	11.90	47,374	0
Dane County Airport Solar	12/31/2020	WI	11.40	53,704	0
IMPA Anderson 3 Solar Project	12/31/2021	IN	11.34	46,013	0
Indianapolis Motor Speedway (IMS) Solar Farm	7/31/2014	IN	11.20	46,222	0
Nixa Solar Farm	11/14/2017	MO	11.09	65,714	0
Aurora Lake Pulaski Solar	6/30/2017	MN	10.92	55,313	0

(continued on next page)

**CRedit authorship contribution statement**

**Simeng Hao:** Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Gilbert Michaud:** Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Resources, Project administration, Investigation, Conceptualization.

**Declaration of interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

**Acknowledgements**

The authors would like to thank Lopa Chakraborti, Richard (Max) Melstrom, and Bo Zhang for their assistance with this study.

(continued)

Project	Operation Date	State	Solar Capacity (MW-DC)	Zip Code	Non-Metro (Rurality)
Independence II Solar Farm (IPL2, Bundschu)	6/30/2018	MO	10.87	64,056	0
IMPA Anderson 2 Solar Project	12/30/2017	IN	10.20	46,011	0
Exelon City Solar (West Pullman Industrial Redevelopment Area)	7/1/2010	IL	10.00	60,643	0
Aurora Dodge Center Solar	6/30/2017	MN	9.90	55,927	0
BNB Napoleon Solar Phase 1	12/23/2011	OH	9.79	43,545	1
IMPA Scottsburg Solar Park	10/31/2020	IN	9.75	47,170	0
Aurora Annandale Solar	6/30/2017	MN	9.12	55,302	0
Athens MN CONX (Ventyx: Connexus Energy (Athens))	12/31/2018	MN	8.84	55,040	0
DG AMP Wadsworth 1048	12/31/2019	OH	8.60	44,281	0
Aurora Eastwood Solar	6/30/2017	MN	8.23	56,001	0
Aurora West Faribault Solar	6/30/2017	MN	7.89	55,021	0
City of Pratt Solar (Pratt Solar Farm)	3/31/2019	KS	7.67	67,124	1
Pickford Solar	2/28/2021	MI	7.60	49,774	0
Connexus Solar Stanford 1STF (Sunflower)	5/31/2021	MN	7.30	55,070	0
Kearney NPPD Solar Project	12/11/2017	NE	7.25	68,847	0
Kokomo Solar Park (Kokomo Solar 1)	12/29/2016	IN	7.15	46,902	0
McDonald Solar Farm	12/26/2015	IN	7.14	47,885	0
Sullivan Solar	9/1/2016	IN	7.00	47,882	1
Pastime Farm	12/26/2015	IN	6.93	47,834	0
Olive Solar Power Project	9/1/2016	IN	6.47	46,552	0
Tipton Solar Park	7/30/2019	IN	6.30	46,072	1
Middleton Municipal Airport Solar (Morey Field)	7/30/2020	WI	6.30	53,562	0
IMPA Anderson 1 Solar Project	1/23/2017	IN	6.20	46,001	0

**Appendix B. Utility-Scale Solar Overview by State, Project Size, and Rurality**

State/Project Size & Rurality	100 MW+	20 MW–100 MW	5 MW–20 MW	Total	Non-Metro	Metro
Iowa	1	0	0	1	1	0
Illinois	3	1	3	7	2	5
Indiana	1	3	18	22	5	17
Kansas	0	0	1	1	1	0
Michigan	1	4	3	8	0	8
Minnesota	1	1	12	14	3	11
Missouri	0	0	3	3	0	3
Nebraska	0	0	1	1	0	1
Ohio	2	1	5	8	2	6
Wisconsin	2	1	2	5	1	4
<b>Total</b>	<b>11</b>	<b>11</b>	<b>48</b>	<b>70</b>	<b>15</b>	<b>55</b>

**References**

[1] Al-Hamoodah, L., Koppa, K., Schieve, E., Reeves, C., Hoen, B., Seel, J., & Rai, V. (2018). *An exploration of property value impacts near utility-scale solar installations*. Policy Research Project (PRP), LBJ School of Public Affairs. Retrieved from <https://dis.puc.state.oh.us/ViewDocument.aspx?DocID=9496d117-2b8e-4af7-a6d-6b22e6b6e543&No=4>.

[2] Benson, H. (2019). *How early money and the right financial partner can smooth greenfield development*. Standard Solar. Retrieved from <https://standardsolar.com/blog/how-early-money-and-the-right-financial-partner-can-smooth-greenfield-development/>.

[3] G. Blomquist, The effect of electric utility power plant location on area property value, *Land. Econ.* 50 (1) (1974) 97–100, <https://doi.org/10.2307/3145233>.

[4] M. Bolinger, J. Seel, C. Warner, D. Robson, *Utility-Scale Solar, 2022 edition: Empirical Trends in Deployment, Technology, Cost, Performance, PPA Pricing, and Value in the United States*, U.S. Department of Energy Office of Scientific and Technical Information, 2022. Retrieved from, <https://escholarship.org/content/qt7496x1pc/qt7496x1pc>.

[5] A. Botelho, L. Lourenço-Gomes, L. Pinto, S. Sousa, M. Valente, Accounting for local impacts of photovoltaic farms: the application of two stated preferences approaches to a case-study in Portugal, *Energy Policy* 109 (2017) 191–198, <https://doi.org/10.1016/j.enpol.2017.06.065>.

[6] C. Brinkley, A. Leach, Energy next door: a meta-analysis of energy infrastructure impact on housing value, *Energy Res. Soc. Sci.* 50 (2019) 51–65, <https://doi.org/10.1016/j.erss.2018.11.014>.

[7] J. Bristol, M. Lyons, Solar Installations Skyrocket in 2023 in Record-Setting First Full Year of Inflation Reduction Act, March 6, Solar Energy Industries Association, 2024. Retrieved from, <https://www.seia.org/news/solar-installations-skyrocket-2023-record-setting-first-full-year-inflation-reduction-act>.

[8] M. Brower, *Wind Resource Assessment: A Practical Guide to Developing a Wind Project*, Wiley, 2012. ISBN: 11182498799781118249871.

[9] G. Canarella, S. Miller, S. Pollard, Unit roots and structural change, *Urban Stud.* 49 (4) (2011) 757–776, <https://doi.org/10.1177/0042098011404935>.

[10] J.E. Carlisle, D. Solan, S.L. Kane, J. Joe, Utility-scale solar and public attitudes toward siting: a critical examination of proximity, *Land. Use Policy* 58 (2016) 491–501, <https://doi.org/10.1016/j.landusepol.2016.08.006>.

[11] K.E. Case, R.J. Shiller, Is there a bubble in the housing market? *Brookings Pap. Econ. Act.* 2003 (2) (2003) 299–362, <https://doi.org/10.1353/eca.2004.0004>.

[12] K.S. Cheung, C.Y. Yiu, Public perception of flood hazards in the housing market: a revealed preference study of affect heuristics and availability heuristics, *Int. J. Disaster Risk Reduct.* 75 (2022) 102977, <https://doi.org/10.1016/j.ijdrr.2022.102977>.

[13] S. Cho, N.C. Poudyal, R.K. Roberts, Spatial analysis of the amenity value of green open space, *Ecol. Econ.* 66 (2–3) (2008) 403–416, <https://doi.org/10.1016/j.ecolecon.2007.10.012>.

[14] Dkruzman, D. (2022). *As utility-scale renewables expand, some Midwest farmers are pushing back*. Grist. Retrieved from <https://grist.org/energy/as-utility-scale-renewables-expand-some-midwest-farmers-are-pushing-back/>.

[15] J. Dokko, B.M. Doyle, M.T. Kiley, J. Kim, S. Sherlund, J. Sim, S Van Den Heuvel, Monetary policy and the global housing bubble, *Econ. Policy* 26 (66) (2011) 237–287, <https://doi.org/10.1111/j.1468-0327.2011.00262.x>.

[16] S. Elmallah, B. Hoen, K.S. Fujita, D. Robson, E. Brunner, Shedding light on large-scale solar impacts: an analysis of property values and proximity to photovoltaics across six U.S. states, *Energy Policy* 175 (2023) 113425, <https://doi.org/10.1016/j.enpol.2023.113425>.

[17] E. Fasching, S. Ray, Solar Power Will Account for Nearly Half of New U.S. Electric Generating Capacity in 2022, U.S. Energy Information Administration, 2022. Retrieved from, <https://www.eia.gov/todayinenergy/detail.php?id=50818>.

[18] D. Garrain, Y. Lechon, Sustainability assessments in solar energy projects: results of case studies, *Solar Compass* 6 (2023) 100039, <https://doi.org/10.1016/j.solcom.2023.100039>.

[19] V. Gaur, C. Lang, Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island, University of Rhode Island, 2020. Retrieved from, <https://www.uri.edu/news/wp-content/uploads/news/sites/16/2020/09/PropertyValueImpactsOfSolar.pdf>.

- [20] Z. Hall, Why Three-Bedroom Homes are the Most Popular Property Type, The Times & The Sunday Times, 2017. Retrieved from, <https://www.thetimes.co.uk/article/why-three-bedroom-homes-are-the-most-popular-property-type-l5jv1m0wq>.
- [21] M.D. Heintzelman, R.J. Vyn, S. Guth, Understanding the amenity impacts of wind development on an international border, *Ecol. Econ.* 137 (2017) 195–206, <https://doi.org/10.1016/j.ecolecon.2017.03.008>.
- [22] A. Hoak, 4 Renovations that Could Decrease your Home's Value, MarketWatch, 2016. Retrieved from, <https://www.marketwatch.com/story/renovations-that-decrease-a-homes-value-2015-11-16>.
- [23] T. Hoshino, K. Kuriyama, Measuring the benefits of neighborhood park amenities: application and comparison of spatial hedonic approaches, *Environ. Resour. Econ.* 45 (3) (2009) 429–444, <https://doi.org/10.1007/s10640-009-9321-5>.
- [24] C. Khalaf, G. Michaud, G.J. Jolley, Toward a new rural typology: mapping resources, opportunities, and challenges, *Econ. Dev. Q.* 36 (3) (2022) 276–293, <https://doi.org/10.1177/08912424211069122>.
- [25] R. Kelter, R. Lowy, Midwest Cities Drive Climate Change Solutions, October 20, Environmental Law & Policy Center, 2023. Retrieved from, <https://elpc.org/projects/midwest-cities-states-drive-climate-solutions/>.
- [26] J.-H. Kim, Y.-K. Kim, S.-H. Yoo, Does proximity to a power plant affect housing property values of a city in South Korea? An empirical investigation, *Energies* 16 (4) (2023) 1983, <https://doi.org/10.3390/en16041983>.
- [27] W. Lavey, Community Solar: Zoning Ordinances and Special Use Permits, University of Illinois Law Library, 2019. Retrieved from, <https://libguides.law.illinois.edu/c.php?g=795745&p=5729130#Carroll>.
- [28] A.R. Lines, P.L. McGarr, Property Value Impact Study, CohnReznick, LLP, 2021. Retrieved from, <https://www.nexteraenergyresources.com/content/dam/neer/us/en/pdf/CohnReznick%20Solar%20Impact%20Study.7.26.21.pdf>.
- [29] Loomis, D.G. (2021, June 1). *Economic impact of Red Maple Solar Project*. Retrieved from. <https://dekalbcounty.org/wp-content/uploads/2021/07/public-hearing-red-maple-exhibit-g.pdf>.
- [30] D. Maddison, R. Ogier, A. Beltrán, The disamenity impact of solar farms: a hedonic analysis, *Land. Econ.* 99 (1) (2022) 1–16, <https://doi.org/10.3368/le.071220-0105r>.
- [31] C. Mambwe, K.W. Schroder, L. Kugel, P. Jain, Benchmarking and comparing effectiveness of mini-grid encroachment regulations of 24 African countries: a guide for governments and energy regulators to develop effective grid encroachment regulations, *Solar Compass* 1 (2022) 100008, <https://doi.org/10.1016/j.solcom.2022.100008>.
- [32] B. Marin, Solar Installations and Property Values, University of Minnesota, 2019. Retrieved from, <https://conservancy.umn.edu/bitstream/handle/11299/208704/Solar%20Installations%20and%20Property%20Values.pdf?sequence=1>.
- [33] F. Mayes, Most New Utility-Scale Solar in the United States is Being Built in the South Atlantic, U.S. Energy Information Administration, 2020. Retrieved from, <https://www.eia.gov/todayinenergy/detail.php?id=43815>.
- [34] K. McLaughlin, L. Bird, Implementing the Clean Energy Investments in US Bipartisan Infrastructure Law, World Resources Institute, 2021. Retrieved from, <https://www.wri.org/insights/implementing-clean-energy-investments-us-bipartisan-infrastructure-law>.
- [35] G. Michaud, Punctuating the equilibrium: a lens to understand energy and environmental policy changes, *Int. J. Energy Res.* 43 (8) (2019) 3053–3057, <https://doi.org/10.1002/er.4464>.
- [36] G. Michaud, Perspectives on community solar policy adoption across the United States, *Renew. Energy Focus* 33 (2020) 1–15, <https://doi.org/10.1016/j.ref.2020.01.001>.
- [37] G. Michaud, C. Khalaf, D. Allwine, M. Trainer, An attainable site suitability index for utility-scale solar facilities, *Environ. Res.: Energy* 1 (2) (2024) 024004, <https://doi.org/10.1088/2753-3751/ad4972>.
- [38] National Renewable Energy Laboratory, Documenting a Decade of Cost Declines For PV Systems, National Renewable Energy Laboratory, 2021. Retrieved from, <https://www.nrel.gov/news/program/2021/documenting-a-decade-of-cost-declines-for-pv-systems.html>.
- [39] A. Nahman, Pricing landfill externalities: emissions and disamenity costs in Cape Town, South Africa, *Waste Manag.* 31 (9–10) (2011) 2046–2056, <https://doi.org/10.1016/j.wasman.2011.05.015>.
- [40] S. Nowak, L.L. Kazmerski, Note on solar roadmapping – a tool for accelerated deployment of solar technologies, *Solar Compass* 6 (2023) 100042, <https://doi.org/10.1016/j.solcom.2023.100042>.
- [41] B. Park, J.K. Bae, Using machine learning algorithms for housing price prediction: the case of Fairfax County, Virginia housing data, *Expert. Syst. Appl.* 42 (6) (2015) 2928–2934, <https://doi.org/10.1016/j.eswa.2014.11.040>.
- [42] J.D. Pinto, Fewer Americans See Climate Change as a Priority than they did a Year Ago, CBS News, 2022. Retrieved from, <https://www.cbsnews.com/news/fewer-americans-see-climate-change-as-priority-opinion-poll-2022-04-22/>.
- [43] D. Pitt, G. Michaud, Assessing the value of distributed solar energy generation, *Curr. Sustain./Renew. Energy Rep.* 2 (3) (2015) 105–113, <https://doi.org/10.1007/s40518-015-0030-0>.
- [44] N. Powe, K. Willis, Industrial location and residential disamenity: a case study of the chemical industry in Castleford, England, *J. Environ. Manage.* 53 (1) (1998) 17–29, <https://doi.org/10.1006/jema.1998.0193>.
- [45] L. Prevost, Homeowners Often Oppose Nearby Solar. But Do Projects Really Hurt Property Values? Energy News Network, 2020. Retrieved from, <https://energynews.us/2020/07/14/homeowners-often-oppose-nearby-solar-but-do-projects-really-hurt-property-values/>.
- [46] D.S. Renné, Progress, opportunities and challenges of achieving net-zero emissions and 100% renewables, *Solar Compass* 1 (2022) 100007, <https://doi.org/10.1016/j.solcom.2022.100007>.
- [47] Ryan, K. (2021). *Why the build back better plan will be a game-changer for green tech companies*. Retrieved from <https://www.inc.com/kevin-j-ryan/build-back-better-biden-budget-infrastructure-plan-green-tech-sustainability.html>.
- [48] Solar Energy Industries Association, Solar Market Insight Report: 2022 Year in Review, 2023. Retrieved from, <https://www.seia.org/research-resources/solar-market-insight-report-2022-year-review>.
- [49] J. Suh, J. Brownson, Solar farm suitability using geographic information system fuzzy sets and analytic hierarchy processes: case study of Ulleung Island, Korea, *Energies* 9 (8) (2016) 648, <https://doi.org/10.3390/en9080648>.
- [50] T. Sylvia, US Developers Added Nearly 10 GW of Utility-Scale PV in the First 10 Months of 2021, PV Magazine, 2022. Retrieved from, <https://www.pv-magazine.com/2022/01/06/us-developers-added-nearly-10-gw-of-utility-scale-pv-in-first-10-months-of-2021/>.
- [51] E. Uebelhor, O. Hintz, S.B. Mills, A. Randall, Utility-scale solar in the Great Lakes: analyzing community reactions to solar developments, *Sustainability* 13 (2021) 1677, <https://doi.org/10.3390/su13041677>.
- [52] United Nations, Causes and Effects of Climate Change, 2024. Retrieved from, <https://www.un.org/en/climatechange/science/causes-effects-climate-change>.
- [53] U.S. Census Bureau, Geographic Terms and Definitions, 2021. Retrieved from, <https://www.census.gov/programs-surveys/popest/about/glossary/geo-terms.html#:~:text=The%20Midwest%20region%20includes%20the,North%20Dakota%2C%20and%20South%20Dakota>.
- [54] U.S. Energy Information Administration, Independent Statistics and Analysis, 2021. Retrieved from, [https://www.eia.gov/energyexplained/energy-and-the-environment/where-greenhouse-gases-come-from.php#:~:text=Fossil%20fuel%20combustion%20\(burning\)%20for,U.S.%20anthropogenic%20CO2%20emissions](https://www.eia.gov/energyexplained/energy-and-the-environment/where-greenhouse-gases-come-from.php#:~:text=Fossil%20fuel%20combustion%20(burning)%20for,U.S.%20anthropogenic%20CO2%20emissions).
- [55] U.S. Energy Information Administration, Monthly Energy Review: Primary Energy Production by Source, 2023. Retrieved from, [https://www.eia.gov/totalenergy/data/monthly/pdf/sec1\\_5.pdf](https://www.eia.gov/totalenergy/data/monthly/pdf/sec1_5.pdf).
- [56] R. Valova, G. Brown, Distributed energy resource interconnection: an overview of challenges and opportunities in the United States, *Solar Compass* 2 (2022) 100021, <https://doi.org/10.1016/j.solcom.2022.100021>.
- [57] B.J. Van Ruijven, E. De Cian, I. Sue Wing, Amplification of future energy demand growth due to climate change, *Nat. Commun.* 10 (1) (2019), <https://doi.org/10.1038/s41467-019-10399-3>.
- [58] M. Victoria, N. Haegel, I.M. Peters, R. Sinton, A. Jäger-Waldau, C. del Cañizo, C. Breyer, M. Stocks, A. Blakers, I. Kaizuka, K. Komoto, A. Smets, Solar photovoltaics is ready to power a sustainable future, *Joule* 5 (5) (2021) 1041–1056, <https://doi.org/10.1016/j.joule.2021.03.005>.
- [59] D. Vine, Renewable Energy at-a-Glance, Center for Climate and Energy Solutions, 2021. Retrieved from, [https://www.c2es.org/content/renewable-energy/#:~:text=Renewables%20made%20up%20nearly%2020,wind%20power%20\(8.4%20percent\)](https://www.c2es.org/content/renewable-energy/#:~:text=Renewables%20made%20up%20nearly%2020,wind%20power%20(8.4%20percent)).
- [60] R.J. Vyn, Property value impacts of wind turbines and the influence of attitudes toward wind energy, *Land. Econ.* 94 (4) (2018) 496–516, <https://doi.org/10.3368/le.94.4.496>.
- [61] C. Walker, J. Baxter, S. Mason, I. Luginaah, D. Ouellette, Wind energy development and perceived real estate values in Ontario, Canada, *AIMS Energy* 2 (4) (2014) 424–442, <https://doi.org/10.3934/energy.2014.4.424>.



1



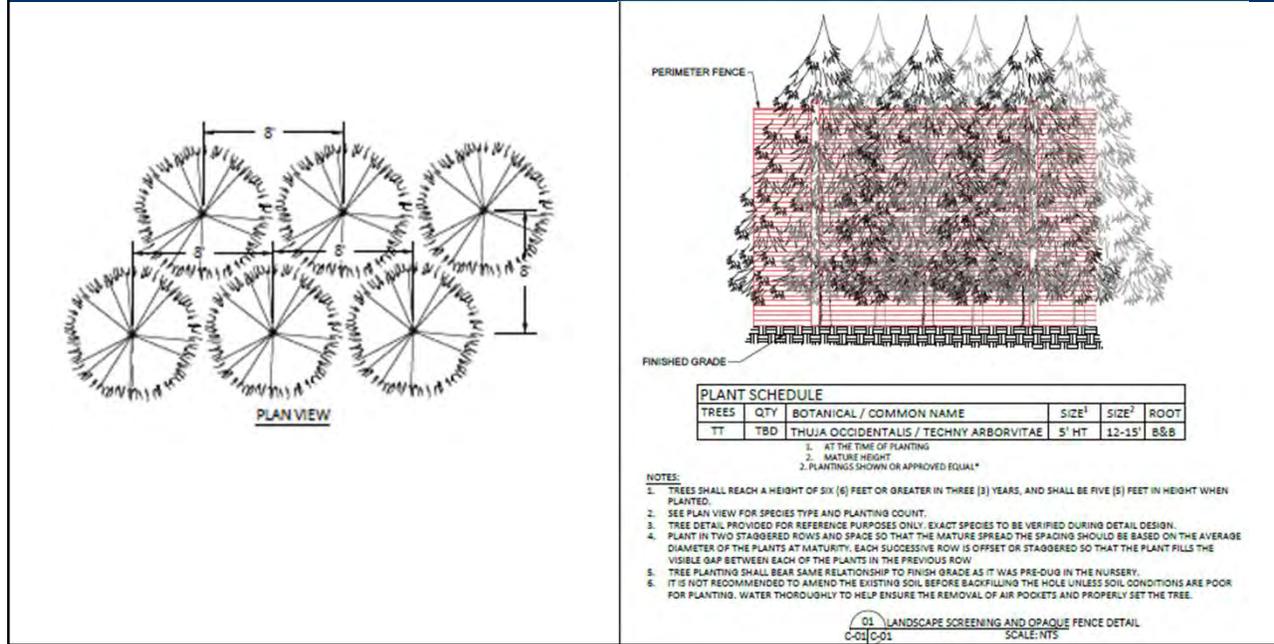
2

# Mahomet Solar - Site Plan



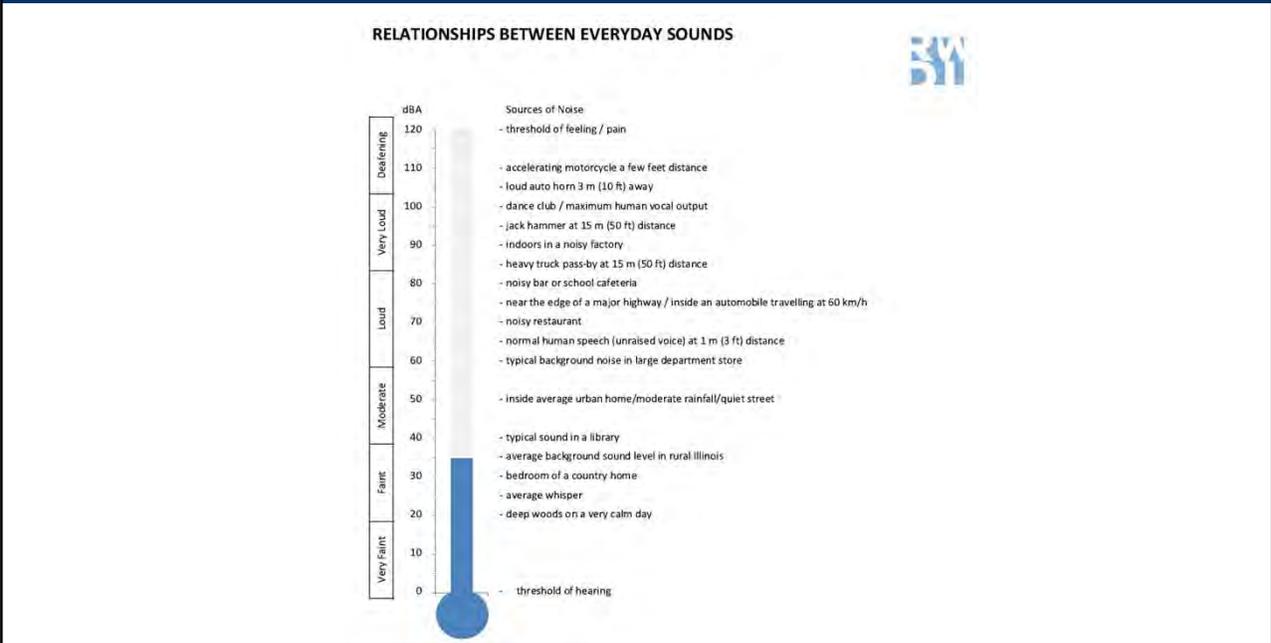
3

# Mahomet Solar - Landscape Plan



4

# RWDI decibel visual for our project's projected 35.8 dBA



5

## Thank you!



**Moira Cronin, Senior Manager, Development**  
 Summit Ridge Energy  
 (978) 505-3320 | mcronin@srenergy.com

6



# How Community Solar Works



**MANY CONSUMERS ARE INTERESTED IN SOLAR POWER, BUT CAN'T INSTALL PANELS ON THEIR HOME.** Maybe their house has too much shade, or they live in an apartment.

With community solar, you don't have to install panels. **YOU, YOUR NEIGHBORS AND BUSINESSES CAN SUBSCRIBE TO A PORTION OF A COMMUNITY SOLAR GARDEN.**

How you pay for it depends on the offer you sign, but your subscription helps the developer fund the garden. **IN RETURN, YOU GET A CREDIT ON YOUR ELECTRIC BILL** in proportion to your share of the electricity the solar garden produces.

**ELECTRIC BILL**

YOUR USAGE \$ \_\_\_\_\_  
**CREDIT!** \$ \_\_\_\_\_  
 TOTAL \$ \_\_\_\_\_

THE SMITH FAMILY  
 NEIGHBORHOOD SCHOOL  
 CORNER STORE  
 YOU

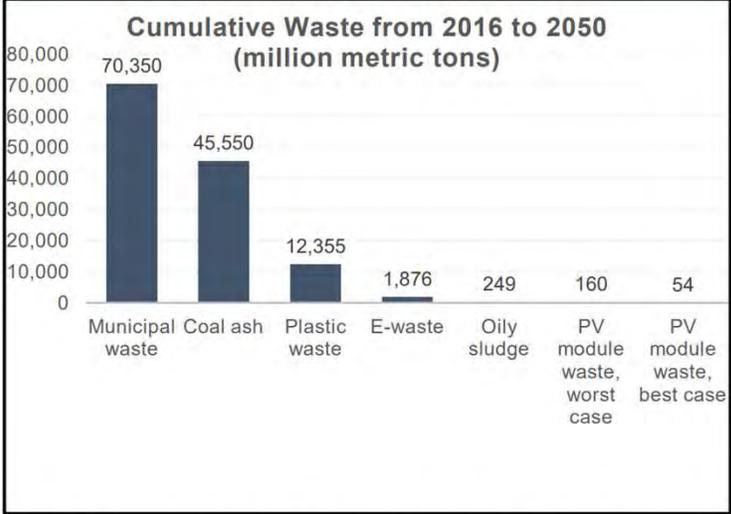
Designed by Citizens Utility Board 

9

# Solar Waste Concerns



## Cumulative Waste from 2016 to 2050 (million metric tons)



Waste Source	Cumulative Waste (million metric tons)
Municipal waste	70,350
Coal ash	45,550
Plastic waste	12,355
E-waste	1,876
Oily sludge	249
PV module waste, worst case	160
PV module waste, best case	54

*Figure 1: PV module waste from 2016-2050 compared to other sources of waste. Source: The Sabin Center for Climate Change Law (visualizing data from Heather Mirlletz et al.).<sup>57</sup>*

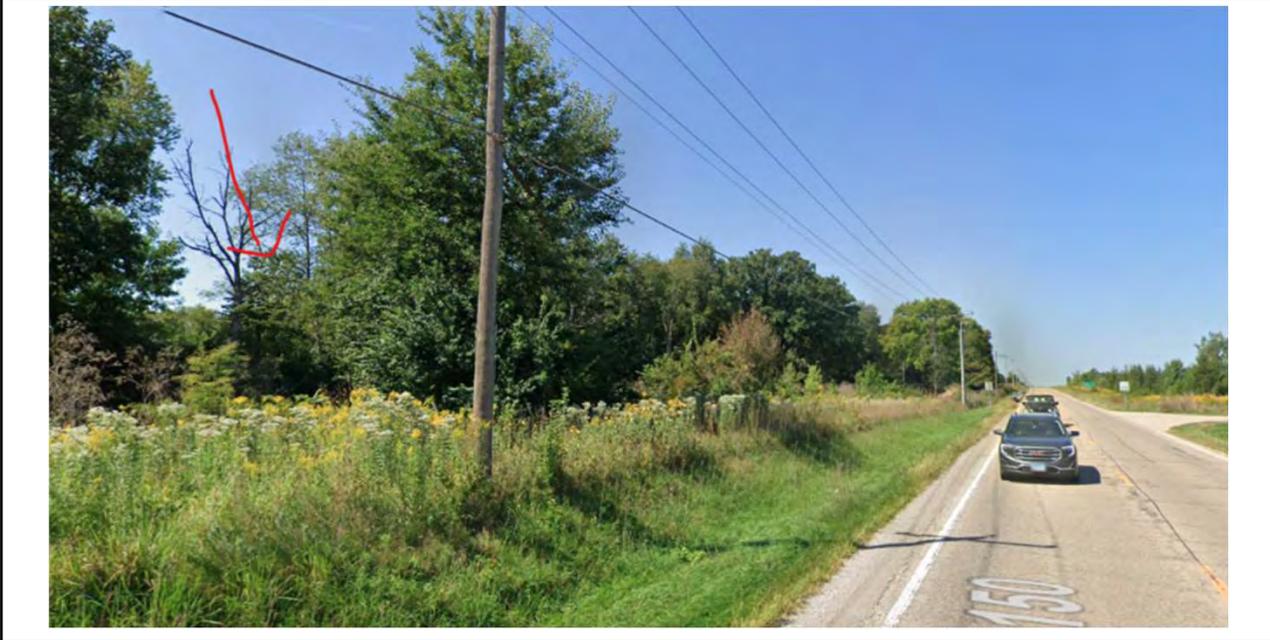
10

# Highway 150 – natural vegetation



11

# Highway 150 – natural vegetation



12

*PRELIMINARY DRAFT*

162-S-25

**SUMMARY OF EVIDENCE, FINDING OF FACT  
AND FINAL DETERMINATION**

**of  
Champaign County Zoning Board of Appeals**

---

Final Determination: *{RECOMMEND APPROVAL / RECOMMEND DENIAL}*

Date: *{May 29, 2025}*

Petitioners: **Mahomet IL Solar 1, LLC, c/o Summit Ridge Energy LLC, via agent Moira Cronin, Senior Manager, Project Development, and participating landowners Paul Nurmi Trustee, and Greater Heritage Farms LLC**

Request: **Authorize a Community PV Solar Farm with a total nameplate capacity of 4.99 megawatts (MW), including access roads and wiring, in the AG-2 Zoning District, and including the following waivers of standard conditions:**

**Part A: A waiver for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.5 G.(1)**

**Part B: A waiver for locating the PV Solar Farm less than one and one-half miles from an incorporated municipality per Section 6.1.5 B.(2)a.**

**Part C: A waiver for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line, per Section 6.1.5 D.(3)a.**

**Part D: A waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q**

**Other waivers may be necessary.**

---

**Table of Contents**

**General Application Information.....3 - 4**  
**Specific Ordinance Requirements.....4 - 10**  
**Special Use Evidence .....10 - 44**

<b>Documents of Record.....</b>	<b>44 - 46</b>
<b>Case 162-S-25 Finding of Fact .....</b>	<b>47 - 55</b>
<b>Case 162-S-25 Final Determination.....</b>	<b>56 - 60</b>

**SUMMARY OF EVIDENCE**

From the documents of record and the testimony and exhibits received at the public hearing conducted on **February 27, 2025, and May 29, 2025**, the Zoning Board of Appeals of Champaign County finds that:

1. **Mahomet IL Solar 1, LLC**, a subsidiary of **Summit Ridge Energy LLC**, 1000 Wilson Boulevard, #2400, Arlington VA 22209, via agent Moira Cronin, Senior Manager, Project Development, and participating landowners Paul Nurmi Trustee, and Greater Heritage Farms LLC, are the developers of the proposed PV Solar Farm.
2. The subject property is approximately 36 acres on two tracts of land with PIN's 15-13-17-100-012 (52.66 acres) and 15-13-17-200-010 (43.17 acres), totaling 95.83 acres on the South side of US Highway 150, in the West Half of the Northeast Quarter and the East Half of the Northwest Quarter of Section 17 Township 20 North, Range 7 East of the Third Principal Meridian, in Mahomet Township, commonly known as farmland owned by Greater Heritage Farms LLC and Paul Nurmi Trustee.
  - A. The proposed 4.99 MW Mahomet IL Solar 1 site would cover approximately 36 acres on the east side of the tract with an access drive from CR 125E crossing along the north side of the western parcel.
3. Regarding municipal extraterritorial jurisdiction and township planning jurisdiction:
  - A. The subject property is within the one and one-half mile extraterritorial jurisdiction of the Village of Mahomet, a municipality with zoning. Zoned municipalities do not have protest rights in Special Use Permit cases. Notice of the public hearing was sent to the Village.
    - (1) The Village of Mahomet Comprehensive Plan calls for "Rural Residential" development in this area.
  - B. The subject property is located within Mahomet Township, which has a Planning Commission. Townships with Planning Commissions are notified of Special Use Permit cases, but do not have protest rights in these cases.

***GENERALLY REGARDING LAND USE AND ZONING IN THE IMMEDIATE VICINITY***

4. Regarding land use and zoning on the subject property and in the vicinity of the subject property:
  - A. The subject property is zoned AG-2 Agriculture and are currently in agricultural production.
    - (1) The proposed PV SOLAR FARM would be located on approximately 36 acres on the south side of US-150, south of the Norfolk Southern rail line.
  - B. Land north of the subject property is zoned AG-2 Agriculture and is in use as residential and agriculture. It is separated from the subject property by the Norfolk Southern rail line and US-150.
  - C. Land to the east and west of the subject property is zoned AG-2 Agriculture and is in use as residential and agriculture.
  - D. Land to the south is zoned R-1 Single Family Residence and AG-2 Agriculture and is in use as residential and agriculture.

**PRELIMINARY DRAFT**

**GENERALLY REGARDING THE PROPOSED SPECIAL USE**

5. Regarding the revised Site plan for the proposed Special Use received May 19, 2025:
  - A. The Site Plan includes the following proposed features:
    - (1) One 4.99-megawatt community PV SOLAR FARM site on approximately 36 acres; and
    - (2) 7-foot tall perimeter fence with gated security entrance; and
    - (3) 7-foot tall wood fence and vegetative buffer on south and west sides of the array area; and
    - (4) One equipment pad; and
    - (5) A 16 ft. wide gravel access road extending approximately 1,400 feet east from County Road 125E; and
    - (6) The Point of Interconnection (POI) is proposed to connect to an existing power line on CR 125E; and
    - (7) The nearest residence is approximately 378 feet from the solar farm fenced area; and
    - (8) There is a separation of 180 feet between the PV SOLAR FARM perimeter fence and the street centerline of US-150.
  - C. There are no previous Zoning Use Permits for the subject property.
  - D. There are no previous Zoning Cases for the subject property.

**GENERALLY REGARDING SPECIFIC ORDINANCE REQUIREMENTS**

6. Regarding authorization for a “COMMUNITY PV SOLAR FARM” in the AG-2 Agriculture Zoning District in the *Zoning Ordinance*:
  - A. The County Board amended the Zoning Ordinance by adopting PV SOLAR FARM requirements when it adopted Ordinance No. 2018-4 on August 23, 2018.
    - (1) The County Board amended the Zoning Ordinance by amending PV SOLAR FARM requirements when it adopted Ordinance 2020-1 on February 24, 2020, Ordinance 2020-7 on May 22, 2020, and Ordinance 2020-8 on May 22, 2020.
  - B. The following definitions from the *Zoning Ordinance* are especially relevant to the requested Special Use Permit (capitalized words are defined in the Ordinance):
    - (1) “ACCESS” is the way MOTOR VEHICLES move between a STREET or ALLEY and the principal USE or STRUCTURE on a LOT abutting such STREET or ALLEY.
    - (2) “BEST PRIME FARMLAND” is Prime Farmland Soils identified in the Champaign County Land Evaluation and Site Assessment (LESA) System that under optimum management have 91% to 100% of the highest soil productivities in

Champaign County, on average, as reported in the *Bulletin 811 Optimum Crop Productivity Ratings for Illinois Soils*. Best Prime Farmland consists of the following:

- a. Soils identified as Agriculture Value Groups 1, 2, 3 and/or 4 in the Champaign County LESA system;
  - b. Soils that, in combination on a subject site, have an average LE of 91 or higher, as determined by the Champaign County LESA system;
  - c. Any development site that includes a significant amount (10% or more of the area proposed to be developed) of Agriculture Value Groups 1, 2, 3 and/or 4 soils as determined by the Champaign County LESA system.
- (3) “DWELLING OR PRINCIPAL BUILDING, PARTICIPATING” is a DWELLING on land that is leased to a WIND FARM or a PV SOLAR FARM.
  - (4) “DWELLING OR PRINCIPAL BUILDING, NON- PARTICIPATING” is a DWELLING on land that is not leased to a WIND FARM or a PV SOLAR FARM.
  - (5) “FRONTAGE” is that portion of a LOT abutting a STREET or ALLEY.
  - (6) “LOT” is a designated parcel, tract or area of land established by PLAT, SUBDIVISION or as otherwise permitted by law, to be used, developed or built upon as a unit.
  - (7) “LOT LINE, FRONT” is a line dividing a LOT from a STREET or easement of ACCESS. On a CORNER LOT or a LOT otherwise abutting more than one STREET or easement of ACCESS only one such LOT LINE shall be deemed the FRONT LOT LINE.
  - (8) “LOT LINE, REAR” is any LOT LINE which is generally opposite and parallel to the FRONT LOT LINE or to a tangent to the midpoint of the FRONT LOT LINE. In the case of a triangular or gore shaped LOT or where the LOT comes to a point opposite the FRONT LOT LINE it shall mean a line within the LOT 10 feet long and parallel to and at the maximum distance from the FRONT LOT LINE or said tangent.
  - (9) “LOT LINES” are the lines bounding a LOT.
  - (10) “NON-ADAPTABLE STRUCTURE” is any STRUCTURE or physical alteration to the land which requires a SPECIAL USE permit, and which is likely to become economically unfeasible to remove or put to an alternate USE allowable in the DISTRICT (by right or by SPECIAL USE).
  - (11) “NOXIOUS WEEDS” are any of several plants designated pursuant to the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.) and that are identified in 8 Illinois Administrative Code 220.
  - (12) “PHOTOVOLTAIC (PV)” is a type of solar energy system that produces electricity by the use of photovoltaic cells that generate electricity when struck by light.

*PRELIMINARY DRAFT*

- (13) “PV SOLAR FARM” is a unified development intended to convert sunlight into electricity by photovoltaic (PV) devices for the primary purpose of wholesale sales of generated electricity. A PV SOLAR FARM is under a common ownership and operating control even though parts of the PV SOLAR FARM may be located on land leased from different owners. A PV SOLAR FARM includes all necessary components including access driveways, solar devices, electrical inverter(s), electrical transformer(s), cabling, a common switching station, maintenance and management facilities, and waterwells. PV SOLAR FARM should be understood to include COMMUNITY PV SOLAR FARM unless specified otherwise in the relevant section or paragraph.
- (14) “PV SOLAR FARM, COMMUNITY” is a PV SOLAR FARM of not more than 2,000 kilowatt nameplate capacity that meets the requirements of 20 ILCS 3855/1-10 for a “community renewable generation project” and provided that two COMMUNITY PV SOLAR FARMS may be co-located on the same or contiguous parcels as either a) two 2-MW projects on one parcel, or b) one 2-MW project on each of two contiguous parcels, as authorized by the Illinois Commerce Commission in Final Order 17-0838 on April 3, 2018.
- (15) “PRIVATE ACCESSWAY” is a service way providing ACCESS to one or more LOTS which has not been dedicated to the public.
- (16) “PRIVATE WAIVER” is a written statement asserting that a landowner has agreed to waive a specific WIND FARM or PV SOLAR FARM standard condition and has knowingly agreed to accept the consequences of the waiver. A PRIVATE WAIVER must be signed by the landowner.
- (17) “RIGHT-OF-WAY” is the entire dedicated tract or strip of land that is to be used by the public for circulation and service.
- (18) “SCREEN” is a STRUCTURE or landscaping element of sufficient opaqueness or density and maintained such that it completely obscures from view throughout its height the PREMISES upon which the screen is located.
- (19) “SCREEN PLANTING” is a vegetative material of sufficient height and density to filter adequately from view, in adjoining DISTRICTS, STRUCTURES, and USES on the PREMISES upon which the SCREEN PLANTING is located.
- (20) “SETBACK LINE” is the BUILDING RESTRICTION LINE nearest the front of and across a LOT establishing the minimum distance to be provided between a line of a STRUCTURE located on said LOT and the nearest STREET RIGHT-OF-WAY line.
- (21) “SPECIAL CONDITION” is a condition for the establishment of a SPECIAL USE.
- (22) “SPECIAL USE” is a USE which may be permitted in a DISTRICT pursuant to, and in compliance with, procedures specified herein.

- (23) “STREET” is a thoroughfare dedicated to the public within a RIGHT-OF-WAY which affords the principal means of ACCESS to abutting PROPERTY. A STREET may be designated as an avenue, a boulevard, a drive, a highway, a lane, a parkway, a place, a road, a thoroughfare, or by other appropriate names. STREETS are identified on the Official Zoning Map according to type of USE, and generally as follows:
- (a) MAJOR STREET: Federal or State highways.
  - (b) COLLECTOR STREET: COUNTY highways and urban arterial STREETS.
  - (c) MINOR STREET: Township roads and other local roads.
- (24) WELL SUITED OVERALL: A discretionary review performance standard to describe the site on which a development is proposed. A site may be found to be WELL SUITED OVERALL if the site meets these criteria:
- a. The site is one on which the proposed development can be safely and soundly accommodated using simple engineering and common, easily maintained construction methods with no unacceptable negative effects on neighbors or the general public; and
  - b. The site is reasonably well-suited in all respects and has no major defects.
- C. Section 5.2 only authorizes a “PV SOLAR FARM” in the AG-1 or AG-2 Zoning Districts and requires a Special Use Permit authorized by the County Board.
- D. Paragraph 6.1.2 A. indicates that all Special Use Permits with exterior lighting shall be required to minimize glare on adjacent properties and roadways by the following means:
- (1) All exterior light fixtures shall be full-cutoff type lighting fixtures and shall be located and installed so as to minimize glare and light trespass. Full cutoff means that the lighting fixture emits no light above the horizontal plane.
  - (2) No lamp shall be greater than 250 watts and the Board may require smaller lamps when necessary.
  - (3) Locations and numbers of fixtures shall be indicated on the site plan (including floor plans and building elevations) approved by the Board.
  - (4) The Board may also require conditions regarding the hours of operation and other conditions for outdoor recreational uses and other large outdoor lighting installations.
  - (5) The Zoning Administrator shall not approve a Zoning Use Permit without the manufacturer’s documentation of the full-cutoff feature for all exterior light fixtures.
- E. Section 6.1.5 contains the standard conditions for any PV SOLAR FARM which are as follows (capitalized words are defined in the Ordinance):
- (1) Requirements for what must be included in the area of the PV SOLAR FARM are in 6.1.5 B.(1).
  - (2) Requirements for where a PV SOLAR FARM cannot be located are in 6.1.5 B.(2).

*PRELIMINARY DRAFT*

- (3) Paragraph 6.1.5 C. eliminates LOT AREA, AVERAGE LOT WIDTH, SETBACK, YARD, and maximum LOT COVERAGE requirements from applying to a PV SOLAR FARM.
- (4) Paragraph 6.1.5 D. contains minimum separations for PV SOLAR FARMS from adjacent USES and STRUCTURES.
- (5) Paragraph 6.1.5 E. contains standard conditions for the design and installation of PV SOLAR FARMS.
- (6) Paragraph 6.1.5 F. contains standard conditions to mitigate damage to farmland.
- (7) Paragraph 6.1.5 G. contains standard conditions for use of public streets.
- (8) Paragraph 6.1.5 H. contains standard conditions for coordination with local fire protection districts.
- (9) Paragraph 6.1.5 I. contains standard conditions for the allowable noise level.
- (10) Paragraph 6.1.5 J. contains standard conditions for endangered species consultation.
- (11) Paragraph 6.1.5 K. contains standard conditions for historic and archaeological resources review.
- (12) Paragraph 6.1.5 L. contains standard conditions for acceptable wildlife impacts from PV SOLAR FARM construction and ongoing operations.
- (13) Paragraph 6.1.5 M. contains standard conditions for screening and fencing of PV SOLAR FARMS.
- (14) Paragraph 6.1.5 N. contains standard conditions to minimize glare from PV SOLAR FARMS.
- (15) Paragraph 6.1.5 O. contains standard conditions for liability insurance.
- (16) Paragraph 6.1.5 P. contains other standard conditions for operation of PV SOLAR FARMS.
- (17) Paragraph 6.1.5 Q. contains standard conditions for a decommissioning plan and site reclamation agreement for PV SOLAR FARMS and modifies the basic site reclamation requirements in paragraph 6.1.1 A.
- (18) Paragraph 6.1.5 R. contains standard conditions for securing an Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.
- (19) Paragraph 6.1.5 S. contains standard conditions for a complaint hotline for complaints related to PV SOLAR FARM construction and ongoing operations.
- (20) Paragraph 6.1.5 T. contains the standard condition for expiration of the PV SOLAR FARM County Board Special Use Permit.

- (21) Paragraph 6.1.5 U. contains standard conditions establishing additional requirements for application for a PV SOLAR FARM County Board Special Use Permit that supplement the basic requirements for a special use permit application.
- F. Section 9.1.11 requires that a Special Use Permit shall not be granted by the Zoning Board of Appeals unless the public hearing record and written application demonstrate the following:
- (1) That the Special Use is necessary for the public convenience at that location;
  - (2) That the Special Use is so designed, located, and proposed as to be operated so that it will not be injurious to the DISTRICT in which it shall be located or otherwise detrimental to the public welfare except that in the CR, AG-1, and AG-2 DISTRICTS the following additional criteria shall apply:
    - a. The property is either BEST PRIME FARMLAND and the property with proposed improvements in WELL SUITED OVERALL or the property is not BEST PRIME FARMLAND and the property with proposed improvements is SUITED OVERALL.
    - b. The existing public services are available to support the proposed SPECIAL USE effectively and safely without undue public expense.
    - c. The existing public infrastructure together with proposed improvements is adequate to support the proposed development effectively and safely without undue public expense.
  - (3) That the Special Use conforms to the applicable regulations and standards of and preserves the essential character of the DISTRICT in which it shall be located, except where such regulations and standards are modified by Section 6.
  - (4) That the Special Use is in harmony with the general purpose and intent of this ordinance.
  - (5) That in the case of an existing NONCONFORMING USE, it will make such USE more compatible with its surroundings.
- G. Paragraph 9.1.11.D.1. states that a proposed Special Use that does not conform to the standard conditions requires only a waiver of that particular condition and does not require a variance. Regarding standard conditions:
- (1) The Ordinance requires that a waiver of a standard condition requires the following findings:
    - a. that the waiver is in accordance with the general purpose and intent of the ordinance; and
    - b. that the waiver will not be injurious to the neighborhood or to the public health, safety, and welfare.
  - (2) However, a waiver of a standard condition is the same thing as a variance and Illinois law (55ILCS/ 5-12009) requires that a variance can only be granted in

**PRELIMINARY DRAFT**

accordance with general or specific rules contained in the Zoning Ordinance and the VARIANCE criteria in paragraph 9.1.9 C. include the following in addition to criteria that are identical to those required for a waiver:

- a. Special conditions and circumstances exist which are peculiar to the land or structure involved, which are not applicable to other similarly situated land and structures elsewhere in the same district.
- b. Practical difficulties or hardships created by carrying out the strict letter of the regulations sought to be varied will prevent reasonable or otherwise permitted use of the land or structure or construction
- c. The special conditions, circumstances, hardships, or practical difficulties do not result from actions of the applicant.

- (3) Including findings based on all of the criteria that are required for a VARIANCE for any waiver of a standard condition will eliminate any concern related to the adequacy of the required findings for a waiver of a standard condition and will still provide the efficiency of not requiring a public hearing for a VARIANCE, which was the original reason for adding waivers of standard conditions to the Ordinance.

- H. Paragraph 9.1.11.D.2. states that in granting any SPECIAL USE permit, the BOARD may prescribe SPECIAL CONDITIONS as to appropriate conditions and safeguards in conformity with the Ordinance. Violation of such SPECIAL CONDITIONS when made a party of the terms under which the SPECIAL USE permit is granted, shall be deemed a violation of this Ordinance and punishable under this Ordinance.

**GENERALLY REGARDING WHETHER THE SPECIAL USE IS NECESSARY FOR THE PUBLIC CONVENIENCE AT THIS LOCATION**

7. Generally regarding the *Zoning Ordinance* requirement that the proposed Special Use is necessary for the public convenience at this location:
  - A. The Petitioner has testified on the application, **“A County Board Special Use Permit is required for a community solar farm in unincorporated Champaign County.”**
  - B. The State of Illinois has adopted a Renewable Portfolio Standard that established a goal of 25% of the State’s energy coming from renewable sources by the year 2025.
  - C. The Illinois Future Energy Jobs Act requires installation of 3,000 MW of new solar capacity by the year 2030.

**GENERALLY REGARDING WHETHER THE SPECIAL USE WILL BE INJURIOUS TO THE DISTRICT OR OTHERWISE INJURIOUS TO THE PUBLIC WELFARE**

8. Generally regarding the *Zoning Ordinance* requirement that the proposed Special Use be designed, located, and operated so that it will not be injurious to the District in which it shall be located, or otherwise detrimental to the public welfare:

- A. The Petitioner has testified on the application, **“Access was coordinated with Chris Doenitz, the Road Use Commissioner, and has a long access road to be offset from County Road 125E to reduce visibility from the road.”**
- B. Regarding surface drainage, the PV SOLAR FARM fenced area generally drains toward the east.
- C. Regarding traffic in the subject property area:
- (1) The proposed solar farm would have one permanent access point on CR 125E/ Spring Lake Rd. approximately 100 ft. south of the railroad tracks. Although the subject property also fronts US-150/W Oak St., there would be no access there.
  - (2) A temporary access point will be located along 125E approximately 332 ft. south of the railroad tracks for the duration of the construction period.
  - (2) CR 125E/ Spring Lake Rd is a Mahomet Township Minor Street. US-150/W Oak St. is a Federal Route and a Major Street.
  - (3) The Illinois Department of Transportation measures traffic on various roads throughout the County and determines the annual average 24-hour traffic volume for those roads and reports it as Average Daily Traffic (ADT). The most recent ADT data is from 2023 near the subject property. US-150/W Oak St. had an ADT of 2,600 and High CR 125E/Spring Lake Rd. had an ADT of 850 near the subject property.
  - (4) No significant increase in traffic is expected except during construction of the PV SOLAR FARM.
  - (5) The Village of Mahomet, IDOT, and the Mahomet Township Highway Commissioner have been notified of this case.
    - a. The Mahomet Township Highway Commissioner has expressed an objection to the petitioners request for a waiver for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals.
  - (6) The Zoning Ordinance does not require an agreement with IDOT.
- D. Regarding fire protection:
- (1) The subject property is approximately 2.4 road miles from the Cornbelt Fire Protection District station.
  - (2) The petitioners sent the Site Plan to the Cornbelt Fire Protection Chief via email on February 24, 2025. Chief John Koller requested additional information regarding the access point, road and turn around areas.
  - (3) The Cornbelt Fire Protection District was notified of this case and no comments have been received

*PRELIMINARY DRAFT*

- E. No part of the subject property is located within a Special Flood Hazard Area.
- F. The subject property is considered Best Prime Farmland. The Natural Resource Information Report received February 11, 2025, states that the soil on the subject property consists of 154A Flanagan silt loam, 171B Catlin silt Loam, 233B Birkbeck silt loam, Sabina silt loam, and Senachwine silt loam, and has an average Land Evaluation score of 90.7.
- G. Regarding outdoor lighting on the subject property, the application received January 3, 2025, does not indicate any proposed outdoor lighting.” A special condition has been added to ensure compliance for any future outdoor lighting installation.
- H. Regarding wastewater treatment and disposal on the subject property, there is no wastewater treatment and disposal required or planned for the proposed PV SOLAR FARM.
- I. Regarding neighborhood concerns:
  - (1) The following is a summary of testimony received for this zoning case:
    - a. Correspondence received prior to the February 27, 2025, public hearing:
      - (a) On February 20, 2025, an email was received from Karen Hansen, a nearby property owner in opposition of the project. The email was included in the meeting packet for the February 27, 2025, public hearing.
      - (b) On February 20 and February 23, 2025, emails were received from Karen Boulanger, a nearby property owner with questions regarding the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
      - (c) On February 20 and February 24, 2025, emails were received from Alexis Godbee, a nearby property owner in opposition to the project along with a list of questions for the developer. The email was included as a handout to the Board at the February 27, 2025, public hearing. The developer provided answers to the questions that were forwarded to Alexis Godbee.
      - (d) On February 21, 2025, an email was received from Diana Harmon in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
      - (e) On February 22, 2025, an email was received from Nicholas Burd, a nearby property owner in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
      - (f) On February 22, 2025, an email was received from Linda Hambleton, a nearby property owner in opposition of the project along with a list of questions for the developer. The email was included as a handout to the Board at the February 27, 2025, public hearing.

- (g) On February 22, 2025, an email was received from Ryan Kutil in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- (h) On February 23, 2025, an email was received from Alana Harris, a nearby property owner in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- (i) On February 24, 2025, an email was received from Debra Bunch, a nearby property owner in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- (j) On February 26, 2025, emails were received from Cheryl and David Sproul, nearby property owners, in opposition to the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- (k) On February 27, 2025, a phone call was received from Jim Gunther in opposition of the project. A record of the call was included as a handout to the Board at the February 27, 2025, public hearing.
- (l) On February 27, 2025, an email was received from Teresa D'Urso, a nearby property owner in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- (m) On February 27, 2025, an email was received from Lisa Peithmann in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- (n) On February 27, 2025, an email was received from Sarah Vrona in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- (o) On February 27, 2025, an email was received from Lara Schwaiger, a nearby property owner in opposition of the project. The email was included as a handout to the Board at the February 27, 2025, public hearing.
- b. At the February 27, 2025, ZBA public hearing, the following testimony was received:
  - (a) Mike Murphy, 1507 W. North Shore Dr., Spring Lake Homeowners Association President, noted that the Homeowners Association is currently engaged in a multi-year project to remove silt from Spring Lake. The HOA is concerned with any erosion from the project that

**PRELIMINARY DRAFT**

will impact Spring Lake and hopes they can remain involved with the permitting process for this development.

- (b) Brian Harman, 403 S. North Shore Dr. stated that he is in support of solar development but would prefer that the remaining area of the parcel be developed as a natural space and not continued to be farmed in order to reduce chemical runoff to Spring Lake.
- (c) Karen Boulanger, 404 S. North Shore Dr. stated that she has concerns regarding the establishment of the new trees used for screening without being regularly watered.
- (d) Linda Hambleton, 406 S. Bryarfield Ct. requested that the developer abide by the 1.5-mile separation to municipal limits.
- (e) Ted Hartke, 1183 CR 2300E, Sidney, stated that neighbors should be able to enjoy all of their property with neighboring noise levels below the minimum noise levels allowed by the Illinois Pollution Control Board. Mr. Hartke read a quote from the Illinois Pollution Control Board Noise Ordinance regarding the problems caused by excessive noise. Mr. Hartke asked the Board to impose a 39 dbA limit for noise at the property line of adjacent properties. Mr. Hartke also discussed the number of power poles at a different solar development and requested that power poles at solar farms be located away from the road and closer to the project site. Mr. Hartke also discussed the inefficiency of renewable energy and requested that no waivers be granted for the development. Mr. Hartke proposed moving the project away from the eastern property line so no trees will need to be removed.

J. Regarding parking, there is no required parking for the proposed PV SOLAR FARM.

K. Other than as reviewed elsewhere in this Summary of Evidence, there is no evidence to suggest that the proposed Special Use will generate either nuisance conditions such as odor, noise, vibration, glare, heat, dust, electromagnetic fields or public safety hazards such as fire, explosion, or toxic materials release, that are in excess of those lawfully permitted and customarily associated with other uses permitted in the zoning district.

**GENERALLY REGARDING WHETHER THE SPECIAL USE CONFORMS TO APPLICABLE REGULATIONS AND STANDARDS AND PRESERVES THE ESSENTIAL CHARACTER OF THE DISTRICT**

9. Generally regarding the *Zoning Ordinance* requirement that the proposed Special Use conforms to all applicable regulations and standards and preserves the essential character of the District in which it shall be located, except where such regulations and standards are modified by Section 6 of the Ordinance:

A. The Petitioner has testified on the application, **“In our opinion yes, it is not detrimental to the character of the District. Other solar projects have been approved and built in the County.”**

- B. Regarding compliance with the *Zoning Ordinance*, the following evidence was provided:
- (1) Section 5.2 authorizes a PV SOLAR FARM only by a County Board Special Use Permit in the AG-1 and AG-2 Agriculture Zoning Districts. It is not permitted by right in any district.
  - (2) There is no required parking.
  - (3) Requirements for what must be included in the area of the PV SOLAR FARM Special Use Permit are in subparagraph 6.1.5 B.(1).
    - a. The revised Site Plan received May 19, 2025, appears to conform to this requirement.
  - (4) Requirements which identify certain areas where a PV SOLAR FARM Special Use Permit shall not be located can be found in Subparagraph 6.1.5 B.(2).
    - a. Item 6.1.5 B.(2)a. requires a PV SOLAR FARM to be more than one and one half miles from an incorporated municipality with a zoning ordinance, unless the following is provided:
      - (a) No part of a PV SOLAR FARM shall be located within a contiguous urban growth area (CUGA) as indicated in the most recent update of the CUGA in the Champaign County Land Resource Management Plan, and there shall be a separation of one-half mile from a proposed PV SOLAR FARM to a municipal boundary at the time of application for the SPECIAL USE Permit, except for any power lines of 34.5 kVA or less and except for any proposed PV SOLAR FARM substation and related proposed connection to an existing substation.
        - i. The subject property is within 1.5 miles of the Village of Mahomet, a municipality with zoning. A waiver has been added.
        - ii. The subject property is not within the contiguous urban growth area of Mahomet.
      - (b) The PV SOLAR FARM SPECIAL USE permit application shall include documentation that the applicant has provided a complete copy of the SPECIAL USE permit application to any municipality within one-and-one-half miles of the proposed PV SOLAR FARM.
        - i. The petitioner sent an email to the Village of Mahomet on January 3, 2025, which included the Special Use Permit application. No comments have been received by the Village of Mahomet.
      - (c) The public hearing for any proposed PV SOLAR FARM that is located within one and one-half miles of a municipality that has a zoning ordinance shall occur at a minimum of two Board meetings that are not less than 28 days apart to provide time for municipal comments during the public hearing, unless the 28-day comment period is waived in writing by any relevant municipality.



- (8) Requirements regarding minimum separations for PV SOLAR FARMS from other STRUCTURES, BUILDINGS, and USES can be found in Subparagraph 6.1.5 D.
- a. The revised Site Plan received May 19, 2025, shows the separations between the solar farm fence and adjacent buildings and uses.
  - b. The proposed PV SOLAR FARM complies with all minimum separations in paragraph 6.1.5 D. in the following manner:
    - (a) Subparagraph 6.1.5 D.(1) requires PV SOLAR FARM fencing to be set back from the street centerline a minimum of 40 feet from a MINOR STREET and a minimum of 55 feet from a COLLECTOR STREET and a minimum of 60 feet from a MAJOR STREET unless a greater separation is required for screening pursuant to Section 6.1.5 M.(2)a., but in no case shall the perimeter fencing be less than 10 feet from the RIGHT OF WAY of any STREET.
      - i. The revised Site Plan received May 19, 2025, demonstrates compliance with the 55 feet setback from the centerline of CR 125E, which is a MINOR STREET. It also demonstrates compliance with the 60 feet setback from the centerline of US-150/W Oak St., which is a MAJOR STREET.
      - ii. Public Act 102-1123 requires a distance of 50 feet from the PV SOLAR FARM fence to the nearest edge of a public road RIGHT-OF-WAY.
        - (i) The proposed distance complies with the Zoning Ordinance. The Zoning Ordinance is less restrictive than Public Act 102-1123 in this requirement and therefore the proposed distance is acceptable.
    - (b) Subparagraph 6.1.5 D.(2) states that for properties participating in the solar farm, there is no required separation from any existing DWELLING or existing PRINCIPAL BUILDING except as required to ensure that a minimum zoning lot is provided for the existing DWELLING or PRINCIPAL BUILDING.
      - a. The subject properties meet minimum zoning lot requirements.
    - (c) Subparagraph 6.1.5 D.(3)a. states that for any adjacent LOT that is 10 acres or less in area (not including the STREET RIGHT OF WAY):
      - i. For any adjacent LOT that is bordered (directly abutting and/or across the STREET) on no more than two sides by the PV SOLAR FARM, the separation shall be no less than 240 feet from the property line.
        - (i) There are several lots along the south side of the subject property that are 10 acres or less in lot area. The revised Site Plan received May 19, 2025, shows compliance with the 240-foot required separation between the PV SOLAR FARM fence and those property lines.

**PRELIMINARY DRAFT**

- (ii) The property that contains the railroad right-of-way on the north side of the subject property is less than 10 acres. The solar farm fencing is 65 feet from the property line. The petitioner has requested a waiver to the 240-foot separation requirement in this location.
    - (iii) Public Act 102-1123 only requires a separation distance of 50 feet between the PV SOLAR FARM fence and the boundary lines of a NON-PARTICIPATING property. The revised Site Plan received May 19, 2025, demonstrates compliance with Public Act 102-1123.
  - ii. For any adjacent LOT that is bordered (directly abutting and/or across the STREET) on more than two sides by the PV SOLAR FARM, the separation shall exceed 240 feet as deemed necessary by the BOARD.
    - (i) There are no lots that are 10 acres or less in lot area adjacent to the subject property that are bordered on more than two sides by the PV SOLAR FARM.
    - (ii) Public Act 102-1123 requires a separation distance of 50 feet between the PV SOLAR FARM fence and the boundary lines of a NON-PARTICIPATING property. The Zoning Ordinance is less restrictive than Public Act 102-1123 in this requirement and therefore the proposed distance is acceptable.
- (d) Subparagraph 6.1.5 D.(3)b. states that for any adjacent LOT that is more than 10 acres in area (not including the STREET RIGHT OF WAY), the separation shall be no less than 255 feet from any existing DWELLING or existing PRINCIPAL BUILDING and otherwise the perimeter fencing shall be a minimum of 10 feet from a SIDE or REAR LOT LINE. This separation distance applies to properties that are adjacent to or across a STREET from a PV SOLAR FARM.
  - i. The perimeter fencing of the PV SOLAR FARM is at least 10 feet away from any SIDE or REAR LOT LINE of an adjacent LOT that is more than 10 acres in area.
  - ii. The perimeter fencing of the PV SOLAR FARM is at least 255 feet from any existing DWELLING or PRINCIPAL BUILDING.
  - ii. Public Act 102-1123 requires a separation distance of 50 feet between the PV SOLAR FARM fence and the boundary lines of a NON-PARTICIPATING property. The proposed distance complies with the Zoning Ordinance. The Zoning Ordinance

is less restrictive than Public Act 102-1123 in this requirement and therefore the proposed distance is acceptable.

- (e) Subparagraph 6.1.5 D.(3)c. states that additional separation may be required to ensure that the noise level required by 35 Ill. Admin. Code Parts 900, 901 and 910 is not exceeded or for other purposes deemed necessary by the BOARD.
  - i. There are no additional separations proposed at this time.
  
- (f) Subparagraph 6.1.5 D.(4) states that there must be a separation of at least 500 feet from specific types of airport and restricted landing area facilities unless the SPECIAL USE permit application includes results provided from an analysis using the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, Federal Aviation Administration (FAA) Review of Solar Energy Projects on Federally Obligated Airports, or the most recent version adopted by the FAA, and the SGHAT results show no detrimental affect with less than a 500 feet separation.
  - i. There is no AIRPORT or RESTRICTED LANDING AREA within 500 feet of the subject property.
  
- (g) Subparagraph 6.1.5 D.(5) requires a separation of at least 500 feet between substations and transmission lines of greater than 34.5 kVA to adjacent dwellings and residential DISTRICTS.
  - i. There are no new substations or transmission lines of greater than 34.5 kVA within 500 feet of adjacent dwellings or residential DISTRICTS.
  
- (h) Subparagraph 6.1.5 D.(6) states that electrical inverters shall be located as far as possible from property lines and adjacent DWELLINGS consistent with good engineering practice. Inverter locations that are less than 275 feet from the perimeter fence shall require specific approval and may require special sound deadening construction and noise analysis.
  - i. The inverters shown on the revised Site Plan received May 19, 2025, are approximately 420 feet away from the nearest section of PV SOLAR FARM perimeter fence.
  
  - ii. Regarding the distance between the inverters and nearby lots with dwellings, based on the revised Site Plan received May 19, 2025:
    - (i) The inverters are located toward the center of the subject property. The distance between an inverter and the closest dwelling is 840 feet.
  
  - iii. Public Act 102-1123 does not have a separation requirement for inverters.

*PRELIMINARY DRAFT*

- (i) Subparagraph 6.1.5 D.(7) states that separation distances for any PV SOLAR FARM with solar equipment exceeding 8 feet in height, with the exception of transmission lines which may be taller, shall be determined by the BOARD on a case-by-case basis.
  - i. The application stated that the arrays will not exceed 12 feet in height at maximum tilt.
  - ii. Public Act 102-1123 states that solar equipment can extend up to 20 feet above ground. Should the ZBA decide that additional separations are needed due to height, it could create a compliance issue with Public Act 102-1123.
- (j) Subparagraph 6.1.5 D.(8) states that PV SOLAR FARM solar equipment other than inverters shall be no less than 26 feet from the property line of any lot more than 10 acres in area.
  - i. The revised Site Plan received May 19, 2025, shows that there is at least 26 feet of separation between the property line of any lot more than 10 acres in area and the PV SOLAR FARM equipment other than fencing.
- (9) Paragraph 6.1.5 E. contains standard conditions for the design and installation of PV SOLAR FARMS. Compliance with paragraph 6.1.5 E. can be summarized as follows:
  - a. Subparagraph 6.1.5 E.(1) requires certification by an Illinois Professional Engineer or Illinois Licensed Structural Engineer or other qualified professional that that the constructed building conforms to Public Act 96-704 regarding building code compliance and conforms to the Illinois Accessibility Code.
    - (a) The revised Site Plan received May 19, 2025, shows a small equipment shed, special condition has been added to ensure compliance.
  - b. Subparagraph 6.1.5 E.(2) establishes minimum requirements for electrical components.
    - (a) Part 6.1.5 E.(2)a. states that all electrical components of the PV SOLAR FARM shall conform to the National Electrical Code as amended and shall comply with Federal Communications Commission (FCC) requirements.
      - i. The petitioner stated in their application materials, “The components of the PV SOLAR FARM will comply with the current edition of the National Electric Code.”
    - (b) Part 6.1.5 E.(2)b. states that burying power and communication wiring underground shall be minimized consistent with best management practice regarding PV solar farm construction and minimizing impacts on agricultural drainage tile.



*PRELIMINARY DRAFT*

January 3, 2025, “Another benefit may include native pollinator-friendly plantings that improve water quality and biodiversity.”

- (a) A Vegetative Management Plan was received as part of the Special Use Permit Application on January 3, 2025.
  - (b) A Weed Control Plan was received May 19, 2025.
- d. Subparagraph 6.1.5 F.(1) establishes a minimum depth of 5 feet for underground wiring or cabling below grade or deeper if required to maintain a minimum one foot of clearance between the wire or cable and any agricultural drainage tile or a lesser depth if so authorized by the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.
- (a) The Special Use Permit application received January 3, 2025, includes an Agricultural Impact Mitigation Agreement that establishes the cable depths to be used.
- e. Subparagraph 6.1.5 F.(2) establishes requirements for protection of agricultural drainage tile.
- (a) The petitioner provided a preliminary potential drain tile map.
  - (b) The Special Use Permit application received January 3, 2025, includes an Agricultural Impact Mitigation Agreement that establishes rerouting and permanent repair of agricultural drainage tiles.
  - (c) The petitioner stated in an email dated May 19, 2025, in response to a question about the single mutual drain tile on the property that “Drain tiles will be re-routed accordingly to avoid driven piles from the array”
- f. Subparagraph 6.1.5 F.(3) requires restoration for any damage to soil conservation practices.
- (a) The revised Agricultural Impact Mitigation Agreement received February 4, 2025, states, “Consultation with the appropriate County SWCD by the Facility Owner shall be carried out to determine if there are soil conservation practices (such as terraces, grassed waterways, etc.) that will be damaged by the Construction and/or Deconstruction of the Facility. Those conservation practices shall be restored to their preconstruction condition as close as reasonably practicable following Deconstruction in accordance with USDA NRCS technical standards. All repair costs shall be the responsibility of the Facility Owner.”
- g. Subparagraph 6.1.5 F.(4) establishes requirements for topsoil replacement pursuant to any open trenching.
- (a) The revised Agricultural Impact Mitigation Agreement received February 4, 2025, details how topsoil is to be handled.

- h. Subparagraph 6.1.5 F.(5) establishes requirements for mitigation of soil compaction and rutting.
    - (a) The revised Agricultural Impact Mitigation Agreement received February 4, 2025, details how the facility owner must mitigate compaction and rutting.
  - i. Subparagraph 6.1.5 F.(6) establishes requirements for land leveling.
    - (a) The petitioner did not provide a response in the application materials.
  - j. Subparagraph 6.1.5 F.(7) establishes requirements for a permanent Erosion and Sedimentation Control Plan.
    - (a) The revised Agricultural Impact Mitigation Agreement received February 4, 2025, details how the facility owner must mitigate erosion and sedimentation.
  - k. Subparagraph 6.1.5 F.(8) establishes requirements for retention of all topsoil.
    - (a) The revised Agricultural Impact Mitigation Agreement received February 4, 2025, details how topsoil is to be handled.
  - l. Subparagraph 6.1.5 F.(9) establishes requirements for minimizing the disturbance to BEST PRIME FARMLAND by establishing a specific type of vegetative ground cover.
    - (a) A Vegetation Establishment and Management Plan was received as part of the Special Use Permit Application on January 3, 2025.
  - m. The petitioner confirmed in an email to staff on January 3, 2025, that the Existing Agricultural Drain Tile Investigation Plan is intended to be the “Farmland Drainage Plan” required by 55ILCS5/5-12020.
- (11) Paragraph 6.1.5 G. contains standard conditions for use of public streets.
- a. Paragraph 6.1.5 G.(1) requires the Applicant to enter into a signed Roadway Upgrade and Maintenance agreement approved by the County Engineer and State’s Attorney and/or any relevant Township Highway Commissioner prior to the close of the public hearing for the use of public streets, except for any COMMUNITY PV SOLAR FARM for which the relevant highway authority has agreed in writing to waive the requirements, and the signed and executed Roadway Upgrade and Maintenance agreements must provide for certain conditions.
    - (a) The petitioner did not provide information on a Roadway Upgrade and Maintenance Agreement in their application. A waiver has been added to require this at a later time, and a special condition has been added to ensure compliance.
  - b. Paragraph 6.1.5 G.(2) requires that the County Engineer and State’s Attorney, or Township Highway Commissioner, or municipality where relevant, has approved a Transportation Impact Analysis provided by the

**PRELIMINARY DRAFT**

Applicant and prepared by an independent engineer that is mutually acceptable to the Applicant and the County Engineer and State's Attorney, or Township Highway Commissioner, or municipality.

- (a) The petitioner did not provide information regarding a Transportation Impact Analysis in their application. A special condition has been added to ensure compliance.
- c. Paragraph 6.1.5 G.(3) requires the Applicant or its successors in interest to enter into a Roadway Use and Repair Agreement with the appropriate highway authority for decommissioning the PV SOLAR FARM.
  - (a) No information was required or submitted for the Special Use Permit application.
- (12) Paragraph 6.1.5 H. contains standard conditions for coordination with local fire protection districts.
  - a. The subject property is approximately 2.4 road miles from the Cornbelt Fire Protection District station.
  - b. The petitioners sent the Site Plan to the Cornbelt Fire Protection Chief via email on February 24, 2025. Chief John Koller requested additional information regarding the access point, road and turn around areas.
  - c. The Cornbelt Fire Protection District was notified of this case and no comments have been received.
- (13) Paragraph 6.1.5 I. contains standard conditions for the allowable noise level.
  - a. Subparagraph 6.1.5 I. (1) requires the noise level from each PV SOLAR FARM to be in compliance with the applicable Illinois Pollution Control Board (IPCB) regulations (35 *Illinois Administrative Code* Subtitle H: Noise Parts 900, 901, 910).
    - (a) The petitioner stated in their application, "A noise study was completed and found that Mahomet Solar will be inaudible when the inverters are operational."
  - b. Subparagraph 6.1.5 I.(3)a. requires that a SPECIAL USE Permit application for other than a COMMUNITY PV SOLAR FARM shall include a noise analysis.
    - (a) The project size is considered to be a COMMUNITY PV SOLAR FARM and therefore a noise analysis is not required unless the ZBA requires one.
- (14) Paragraph 6.1.5 J. contains standard conditions for endangered species consultation. Regarding compliance with 6.1.5 J.:
  - a. The petitioner stated in their application, "The Illinois Department of Natural Resources (IDNR) Ecological Compliance Assessment Tool (EcoCAT) found the Illinois Natural Heritage Database contains four State listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water

Reserves in the vicinity of the Subject Property. The Indiana Bat, Northern long-eared Bat, Whooping Crane, and Eastern Prairie Fringed Orchid. IDNR has concluded that adverse effects to protected species are unlikely.

- (15) Paragraph 6.1.5 K. contains standard conditions for historic and archaeological resources review. Regarding compliance with 6.1.5 K.:
- a. The petitioner stated in their application, “The Illinois State Historic Preservation Office (SHPO) found no known historic properties within the proposed Subject Property”
  - b. A letter from the Illinois State Historic Preservation Office (SHPO) was included with the Special Use Permit Application received January 3, 2025, and states that no historic, architectural or archaeological sites exist with the project area.
- (16) Paragraph 6.1.5 L. states: “The PV SOLAR FARM shall be located, designed, constructed, and operated so as to avoid and if necessary mitigate the impacts to wildlife to a sustainable level of mortality.”
- a. The petitioner stated in their application, “The Applicant implements best management practices that minimize and/or eliminate the impact of a solar site for the life of the project in accordance with all federal, state and local regulations.”
- (17) Paragraph 6.1.5 M. contains standard conditions for screening and fencing.
- a. Subparagraph 6.1.5 M.(1) requires the PV SOLAR FARM to have perimeter fencing that is at least 7 feet tall, with Knox boxes and keys provided at locked entrances, and a vegetation management plan included in the application to control NOXIOUS WEEDS.
    - (a) The petitioner stated in their application, “A chain link fence or agricultural-style fence will enclose all the panels and electrical equipment on site which will be accessed via a locked gate as shown in the Site Plan.”
    - (b) The petitioner noted on the Site Plan, “Project to be in accordance with the Champaign County Zoning Code, with regard to Landscape Screening, Perimeter Fencing requirements and system heights.”
    - (c) A Vegetation Establishment and Management Plan was received on January 3, 2025, which includes information regarding the control of noxious weeds.
    - (d) A weed control plan was received on May 19, 2025, which includes information regarding the control weeds and invasive plants.
  - b. Subparagraph 6.1.5 M.(2) requires a visual screen around the perimeter of the PV SOLAR FARM.

*PRELIMINARY DRAFT*

- (a) Subparagraph 6.1.5 M.(2)a.(a) requires that a visual screen be provided for any part of the PV SOLAR FARM that is visible to and located within 1,000 feet of an existing DWELLING or residential DISTRICT.
    - i. The revised Site Plan received May 19, 2025, shows vegetative screening along the south and west sides of the project site, the east side of the project site is screened by existing vegetation on the adjacent property.”
  
- (18) Paragraph 6.1.5 N. contains standard conditions to minimize glare from the PV SOLAR FARM. Subparagraph 6.1.5 N.(1) requires that the design and construction of the PV SOLAR FARM shall minimize glare that may affect adjacent properties and the application shall include an explanation of how glare will be minimized.
  - a. The petitioner stated in the application, “Hanwha Q Peak Duo XL-G12/BFG panels will be used which have an anti-glare finish...to minimize glare from the PV SOLAR FARM.”
  
- (19) Paragraph 6.1.5 O. contains standard conditions for the minimum liability insurance for the PV SOLAR FARM.
  - a. The petitioner provided insurance information as part of the Special Use Permit Application received January 3, 2025.
  
- (20) Paragraph 6.1.5 P. contains other standard conditions for operation of the PV SOLAR FARM.
  - a. Subparagraph 6.1.5 P.(1)c. states: “The Application shall explain methods and materials used to clean the PV SOLAR FARM equipment including an estimation of the daily and annual gallons of water used and the source of the water and the management of wastewater. The BOARD may request copies of well records from the Illinois State Water Survey and may require an estimate by a qualified hydrogeologist of the likely impact on adjacent waterwells.”
    - (a) The petitioner stated in the application: “The panels are cleaned by natural precipitation so no daily or annual gallons of water will be used to clean the panels.”
  
  - b. Subparagraph 6.1.5 P.(3) states: “The PV SOLAR FARM SPECIAL USE permit application shall include a weed control plan for the total area of the SPECIAL USE permit including areas both inside of and outside of the perimeter fencing. The weed control plan shall ensure the control and/or eradication of NOXIOUS WEEDS consistent with the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.). The weed control plan shall be explained in the application.
    - (a) The Special Use Permit application received January 3, 2025, includes a Vegetative Maintenance Plan which includes information on control of noxious weeds.



**PRELIMINARY DRAFT**

Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.

- (c) Subparagraph 6.1.1 A.3. of the Ordinance requires that separate cost estimates for Section 6.1.1 A.4.a., 6.1.1 A.4.b., and 6.1.1 A.4.c. shall be provided by an Illinois Licensed Professional Engineer and are subject to approval of the BOARD.
  - i. The petitioner included cost estimates prepared by an Illinois Licensed Professional Engineer with their Decommissioning and Site Reclamation Plan received January 3, 2025.
- (d) Subparagraph 6.1.1 A.4.d. of the Ordinance requires the Decommissioning and Site Reclamation Plan to provide for provision and maintenance of a letter of credit, as set forth in Section 6.1.1 A.5.
  - i. The Decommissioning and Site Reclamation Plan received January 3, 2025, includes reference to a surety bond.
  - ii. The Petitioner has requested a waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.
- (e) Subparagraph 6.1.1 A.5. of the Ordinance requires submission of an irrevocable letter of credit in the amount of 150% of the cost estimate required by 6.1.1 A.3 prior to issuance of a Zoning Use Permit.
  - i. The Petitioner's Decommissioning and Site Reclamation Plan received January 3, 2025, states, "We understand that the surety bond will be placed in an amount set at 125% of the estimate as required by the county ordinance."
  - ii. Public Act 102-1123 requires financial assurances for decommissioning to be limited to 100% of the estimated costs for decommissioning.
  - iii. The Petitioner has requested a waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.
- (f) Subparagraph 6.1.1 A.6. of the Ordinance establishes a time period prior to the expiration of the irrevocable letter of credit during which the Zoning Administrator shall contact the landowner regarding the intent to renew the letter of credit and the landowner shall reply within a certain amount of time.
  - i. No specifics were required or submitted for the Special Use Permit application regarding this requirement.

- (g) Subparagraph 6.1.1 A.7. of the Ordinance establishes 5 factors to be considered in determining if a NON-ADAPTABLE structure (PV SOLAR FARM in this instance) is abandoned in place and 6.1.1 A.9. of the Ordinance establishes 7 conditions when the Zoning Administrator may draw upon the letter of credit and jointly these 12 circumstances comprise when the Zoning Administrator may draw upon the letter of credit.
  - i. The Decommissioning Plan received January 3, 2025, did not reference these items.
  - ii. The Petitioner has requested a waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.
- (h) All other requirements in Paragraph 6.1.5 Q.(1) do not have to be submitted as part of the Special Use Permit application; rather, they will be required during construction, operations, and/or decommissioning phases of the project.
- b. Subparagraph 6.1.5 Q.(2) of the Ordinance requires that in addition to the costs listed in subparagraph 6.1.1 A.4. of the Ordinance, the decommissioning and site reclamation plan shall also include provisions for anticipated repairs to any public STREET used for the purpose of reclamation of the PV SOLAR FARM and all costs related to removal of access driveways.
  - (a) The Decommissioning Plan received January 3, 2025, includes removal of access roads should the landowner require. and includes provisions for repairing public streets.
  - (b) The Decommissioning Plan received January 3, 2025, did not reference provisions for repairs to any public STREET.
- c. Subparagraph 6.1.5 Q.(3) of the Ordinance requires the Decommissioning and Site Reclamation Plan to include additional information.
  - (a) The Decommissioning Plan received January 3, 2025, did not reference the requirements of 6.1.5 Q. (3).
- d. Subparagraph 6.1.5 Q.(4) of the Ordinance requires that the Applicant shall provide financial assurance in the form of an irrevocable letter of credit as required in paragraph 6.1.1 A.5. of the Ordinance. Regarding compliance with this subparagraph:
  - (a) The Letter of Credit must be supplied prior to receiving a Zoning Use Permit.
  - (b) The Petitioner has requested a waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.

*PRELIMINARY DRAFT*

- e. Subparagraph 6.1.5 Q.(5) of the Ordinance states that in addition to the conditions listed in subparagraph 6.1.1 A.9. the Zoning Administrator may also draw on the funds for a myriad of reasons.
    - (a) The Decommissioning Plan received January 3, 2024, did not reference the requirements of 6.1.5 Q. (5).
  - f. Subparagraph 6.1.5 Q.(6) of the Ordinance states that the Zoning Administrator may, but is not required to, deem the PV SOLAR FARM abandoned, or the standards set forth in Section 6.1.5 Q.(5) met, with respect to some, but not all, of the PV SOLAR FARM. In that event, the Zoning Administrator may draw upon the financial assurance to perform the reclamation work as to that portion of the PV SOLAR FARM only. Upon completion of that reclamation work, the salvage value and reclamation costs shall be recalculated as to the remaining PV SOLAR FARM.
    - (a) The Decommissioning Plan received January 3, 2024 did not reference the requirements of 6.1.5 Q. (6).
  - g. Subparagraph 6.1.5 Q.(7) of the Ordinance states that the Decommissioning and Site Reclamation Plan shall be included as a condition of approval by the BOARD and the signed and executed irrevocable letter of credit must be submitted to the Zoning Administrator prior to any Zoning Use Permit approval.
    - (a) A special condition has been added to ensure compliance.
- (22) Paragraph 6.1.5 R. contains standard conditions for securing an Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.
  - a. The petitioner submitted a signed revised AIMA on February 4, 2025. A special condition has been added to ensure compliance.
- (23) Paragraph 6.1.5 S. contains standard conditions for a complaint hotline for complaints related to PV SOLAR FARM construction and ongoing operations.
  - a. No information regarding this standard condition is required as part of the Special Use Permit application unless the Petitioner seeks a waiver of any part or all of this standard condition, and no waiver request has been received. A special condition has been added to ensure compliance.
- (24) Paragraph 6.1.5 T. contains a standard condition stating that the PV SOLAR FARM County Board SPECIAL USE Permit designation shall expire in 10 years if no Zoning Use Permit is granted.
  - a. A special condition has been added to ensure compliance.
- (25) Paragraph 6.1.5 U. contains standard conditions establishing additional requirements for application for a PV SOLAR FARM County Board Special Use Permit that supplement the basic requirements for a special use permit application.
  - a. Subparagraph 6.1.5 U.(1)a. requires a PV SOLAR FARM Project Summary.
    - (a) A Project Description was included with the application received January 3, 2025.

- b. Subparagraph 6.1.5 U.(1)b. requires the name(s), address(es), and phone number(s) of the Applicant(s), Owner and Operator, and all property owner(s) for the PV SOLAR FARM County Board SPECIAL USE permit.
  - (a) The application received January 3, 2025, demonstrates compliance with this requirement.
  
- c. Subparagraph 6.1.5 U.(1)c. requires a site plan for the SOLAR FARM which includes the following:
  - (a) The approximate planned location of all PV SOLAR FARM STRUCTURES, property lines (including identification of adjoining properties), required separations, public access roads and turnout locations, access driveways, solar devices, electrical inverter(s), electrical transformer(s), cabling, switching station, electrical cabling from the PV SOLAR FARM to the Substations(s), ancillary equipment, screening and fencing, third party transmission lines, meteorological station, maintenance and management facilities, and layout of all structures within the geographical boundaries of any applicable setback.
    - i. The revised Site Plan received May 19, 2025, appears to demonstrate compliance with this requirement.
  
  - (b) The site plan shall clearly indicate the area of the proposed PV SOLAR FARM County Board SPECIAL USE Permit as required by subparagraph 6.1.5 B.(1).
    - i. The revised Site Plan received May 19, 2025, appears to demonstrate compliance with this requirement.
  
  - (c) The location of all below-ground wiring.
    - i. The revised Site Plan received May 19, 2025, appears to demonstrate compliance with this requirement.
  
  - (d) The location, height, and appearance of all above-ground wiring and wiring structures.
    - i. The revised Site Plan received May 19, 2025, does not address this requirement.
  
  - (e) The separation of all PV SOLAR FARM structures from adjacent DWELLINGS and/or PRINCIPAL BUILDINGS or uses shall be dimensioned on the approved site plan and that dimension shall establish the effective minimum separation that shall be required for any Zoning Use Permit. Greater separation and somewhat different locations may be provided in the approved site plan for the Zoning Use Permit provided that that the greater separation does not increase the noise impacts and/or glare that were approved in the PV SOLAR FARM County Board SPECIAL USE Permit. PV SOLAR FARM structures includes substations, third party transmission lines,

*PRELIMINARY DRAFT*

maintenance and management facilities, or other significant structures.

- i. The revised Site Plan received May 19, 2025, appears to demonstrate compliance with this requirement.
- d. Subparagraph 6.1.5 U.(1)d. requires submittal of all other required studies, reports, certifications, and approvals demonstrating compliance with the provisions of this Ordinance.
  - (a) Compliance with this subparagraph has been shown in previous sections of this Summary of Evidence.
- e. Subparagraph 6.1.5 U.(1)e. requires that the PV SOLAR FARM SPECIAL USE permit application shall include documentation that the applicant has provided a complete copy of the SPECIAL USE permit application to any municipality within one-and-one-half miles of the proposed PV SOLAR FARM as required by Section 6.1.5 B.(2)a.(b).
  - (a) The Petitioner emailed a copy of the Special Use Permit application to the Village of Mahomet on January 3, 2025.
- f. Subparagraph 6.1.5 U.(1)f. requires that a municipal resolution regarding the PV SOLAR FARM by any municipality located within one-and-one-half miles of the PV SOLAR FARM must be submitted to the ZONING ADMINISTRATOR prior to the consideration of the PV SOLAR FARM SPECIAL USE permit by the Champaign County Board or, in the absence of such a resolution, the ZONING ADMINISTRATOR shall provide documentation to the County Board that any municipality within one-and-one-half miles of the PV SOLAR FARM was provided notice of the meeting dates for consideration of the proposed PV SOLAR FARM SPECIAL USE Permit for both the Environment and Land Use Committee and the County Board as required by Section 6.1.5 B.(2)a.(c).
  - (a) Notice of the February 27, 2025, public hearing was sent by P&Z Staff to the Village of Mahomet on February 12, 2025. Village of Mahomet staff were also notified of the receipt of the project application on January 3, 2025, by email.
  - (b) No resolution from the Village of Mahomet has been received as of February 20, 2025.
- g. Subparagraph 6.1.5 U.(1)g. requires that documentation of an executed interconnection agreement with the appropriate electric utility shall be provided prior to issuance of a Zoning Compliance Certificate to authorize operation of the PV SOLAR FARM as required by Section 6.1.5 B.(3)b.
  - (a) The petitioner included a signed interconnection agreement dated April 12, 2024, with their Special Use Permit application received January 3, 2025.
  - (b) A special condition has been added to ensure compliance.



**PRELIMINARY DRAFT**

**GENERALLY REGARDING WHETHER THE SPECIAL USE IS IN HARMONY WITH THE GENERAL PURPOSE AND INTENT OF THE ORDINANCE**

10. Regarding the *Zoning Ordinance* requirement that the proposed Special Use is in harmony with the general intent and purpose of the Ordinance:
  - A. A PV SOLAR FARM may be authorized by the County Board in the AG-1 or AG-2 Agriculture Zoning Districts as a Special Use provided all other zoning requirements and standard conditions are met or waived.
    - (1) A proposed Special Use that does not conform to the standard conditions requires only a waiver of that particular condition and does not require a variance. Waivers of standard conditions are subject to the following findings:
      - a. that the waiver is in accordance with the general purpose and intent of the ordinance; and
      - b. that the waiver will not be injurious to the neighborhood or to the public health, safety, and welfare.
  - B. See Section 15 for a summary of evidence regarding whether any requested waiver of standard conditions will be in harmony with the general intent and purpose of the Ordinance.
  - C. Regarding whether the proposed Special Use Permit is in harmony with the general intent of the Zoning Ordinance:
    - (1) Subsection 5.1.2 of the Ordinance states the general intent of the AG-2 District and states as follows (capitalized words are defined in the Ordinance):

The AG-2 Agriculture DISTRICT is intended to prevent scattered indiscriminate urban development and to preserve the AGRICULTURAL nature within areas which are predominately vacant, and which presently do not demonstrate any significant potential for development. This DISTRICT is intended generally for application to areas within one and one-half miles of existing communities in the COUNTY.
    - (2) The types of uses authorized in the AG-2 District are in fact the types of uses that have been determined to be acceptable in the AG-2 District. Uses authorized by Special Use Permit are acceptable uses in the districts provided that they are determined by the ZBA to meet the criteria for Special Use Permits established in paragraph 9.1.11 B. of the Ordinance.
    - (3) Paragraph 2.0(a) of the Ordinance states that one purpose of the Ordinance is securing adequate light, pure air, and safety from fire and other dangers.

These three purposes are directly related to the limits on building height and building coverage and the minimum setback and yard requirements in the Ordinance and the proposed site plan appears to be in compliance with those limits except for one instance where the petitioner has requested a waiver.

- (4) Paragraph 2.0(b) of the Ordinance states that one purpose of the Ordinance is conserving the value of land, BUILDINGS, and STRUCTURES throughout the COUNTY.
- a. Regarding the value of nearby properties, it is not clear whether the proposed Special Use will have any impact on the value of nearby properties without a formal real estate appraisal, which has not been requested nor provided, and so any discussion of values is necessarily general.
  - b. A Property Value Report was submitted with the Special Use Permit Application received January 3, 2025.
  - c. Regarding the value of the subject property, it also is not clear if the requested Special Use Permit would have any effect.
    - (a) If the petitioner is denied the special use permit, the property can still be used for agricultural production.
  - d. Section 6.1.5 Q. of the PV SOLAR FARM text amendment approved on August 23, 2018, includes a standard condition requiring a Decommissioning and Site Reclamation Plan that is intended to ensure there is adequate financial assurance for removal of a PV SOLAR FARM at the end of its useful life. Ensuring adequate site reclamation is one method of protecting surrounding property values.

- (5) Paragraph 2.0(c) of the Ordinance states that one purpose of the Ordinance is lessening and avoiding congestion in the public STREETS.

Other than additional traffic during construction and/or decommissioning of the PV SOLAR FARM, no significant increase in traffic is anticipated.

- (6) Paragraph 2.0(d) of the Ordinance states that one purpose of the Ordinance is lessening and avoiding the hazards to persons and damage to PROPERTY resulting from the accumulation of runoff from storm or flood waters.
- a. The requested Special Use Permit is not in a Special Flood Hazard Area.
  - b. The proposed Special Use is not exempt from the *Storm Water Management and Erosion Control Ordinance*. A Storm Water Drainage Plan and detention basin will be required if more than 16% of the subject property is impervious area, including gravel, buildings, and solar array rack posts.
- (7) Paragraph 2.0(e) of the Ordinance states that one purpose of the Ordinance is promoting the public health, safety, comfort, morals, and general welfare.
- a. In regard to public safety, this purpose is similar to the purpose established in paragraph 2.0 (a) and is in harmony to the same degree.
  - b. In regard to public comfort and general welfare, this purpose is similar to the purpose of conserving property values established in paragraph 2.0 (b) and is in harmony to the same degree.

*PRELIMINARY DRAFT*

c. public comments related to the proposed solar farm received during the public hearing are summarized in Item 8 of this summary of evidence.

- (8) Paragraph 2.0 (f) states that one purpose of the Ordinance is regulating and limiting the height and bulk of BUILDINGS and STRUCTURES hereafter to be erected; and paragraph 2.0 (g) states that one purpose is establishing, regulating, and limiting the BUILDING or SETBACK lines on or along any STREET, trafficway, drive or parkway; and paragraph 2.0 (h) states that one purpose is regulating and limiting the intensity of the USE of LOT AREAS, and regulating and determining the area of OPEN SPACES within and surrounding BUILDINGS and STRUCTURES.

These three purposes are directly related to the limits on building height and building coverage and the minimum setback and yard requirements in the Ordinance and the proposed site plan appears to be in compliance with those limits except for one instance where the petitioner has requested a waiver.

- (9) Paragraph 2.0(i) of the Ordinance states that one purpose of the Ordinance is classifying, regulating, and restricting the location of trades and industries and the location of BUILDINGS, STRUCTURES, and land designed for specified industrial, residential, and other land USES; and paragraph 2.0(j.) states that one purpose is dividing the entire COUNTY into DISTRICTS of such number, shape, area, and such different classes according to the USE of land, BUILDINGS, and STRUCTURES, intensity of the USE of LOT AREA, area of OPEN SPACES, and other classification as may be deemed best suited to carry out the purpose of the ordinance; and paragraph 2.0(k) states that one purpose is fixing regulations and standards to which BUILDINGS, STRUCTURES, or USES therein shall conform; and paragraph 2.0(l) states that one purpose is prohibiting USES, BUILDINGS, OR STRUCTURES incompatible with the character of such DISTRICT.

Harmony with these four purposes requires that the special conditions of approval sufficiently mitigate or minimize any incompatibilities between the proposed Special Use Permit and adjacent uses, and that the special conditions adequately mitigate nonconforming conditions.

- (10) Paragraph 2.0(m) of the Ordinance states that one purpose of the Ordinance is preventing additions to and alteration or remodeling of existing BUILDINGS, STRUCTURES, or USES in such a way as to avoid the restrictions and limitations lawfully imposed under this ordinance.

This purpose is not relevant to the proposed Special Use Permit because it relates to nonconforming buildings, structures, or uses that existed on the date of the adoption of the Ordinance and no structures exist on the subject property.

- (11) Paragraph 2.0(n) of the Ordinance states that one purpose of the Ordinance is protecting the most productive AGRICULTURAL lands from haphazard and unplanned intrusions of urban USES.

The subject property is located in the AG-2 Agriculture District and the proposed project is not an urban USE.

- (12) Paragraph 2.0(o) of the Ordinance states that one purpose of the Ordinance is protecting natural features such as forested areas and watercourses.

The petitioners requested a natural resource review from the Illinois Department of Natural Resources EcoCAT tool. The review identified protected resources that might be in the vicinity of the proposed PV Solar Farm and concluded that adverse effects are unlikely.

- (13) Paragraph 2.0(p) of the Ordinance states that one purpose of the Ordinance is encouraging the compact development of urban areas to minimize the cost of development of public utilities and public transportation facilities.

The subject property is located in the AG-2 Agriculture District and does not require additional public utilities or transportation facilities.

- (14) Paragraph 2.0(q) of the Ordinance states that one purpose of the Ordinance is encouraging the preservation of AGRICULTURAL belts surrounding urban areas, to retain the AGRICULTURAL nature of the COUNTY, and the individual character of existing communities.

The subject property is located in the AG-2 Agriculture District and a PV SOLAR FARM is typically located in a rural setting.

- (15) Paragraph 2.0(r) of the Ordinance states that one purpose of the Ordinance is to provide for the safe and efficient development of renewable energy sources in those parts of the COUNTY that are most suited to their development.

The entire project area is located in an Agriculture zoning district, which is the only zoning DISTRICT in which a PV SOLAR FARM is authorized.

***GENERALLY REGARDING WHETHER THE SPECIAL USE IS AN EXISTING NONCONFORMING USE***

11. The proposed Special Use is not an existing NONCONFORMING USE.

***RELATED TO THE WAIVERS, GENERALLY REGARDING SPECIAL CONDITIONS THAT MAY BE PRESENT***

12. Generally regarding the Zoning Ordinance requirement of a finding that special conditions and circumstances exist which are peculiar to the land or structure involved which are not applicable to other similarly situated land or structures elsewhere in the same district:
- A. Regarding Part A of the proposed waivers, for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals:
- (1) The petitioner is working with relevant jurisdictions to receive either an agreement or a waiver from this requirement.

**PRELIMINARY DRAFT**

- (2) A special condition has been added requiring the applicant to submit a Roadway Upgrade and Maintenance Agreement or waiver therefrom and approved by ELUC at the time of application for a Zoning Use Permit.
  
- B. Regarding Part B of the proposed waivers, for a separation distance of less than one-half mile from an incorporated municipality:
  - (1) The Village of Mahomet is aware of the proposed project and in an email received and has not submitted any comments in opposition to the project.
  
- C. Regarding Part C of the proposed waivers, for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line:
  - (1) The single adjacent lot less than 10 acres that is less than 240 feet from the solar farm fencing is the railroad right-of-way located on the north side of the project site.
  
- D. Regarding Part D of the proposed waivers, for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit:
  - (1) In the Special Use Permit Application Received January 3, 2025, the applicant included information regarding the advantages of a surety bond as the financial assurance for the decommissioning of the project.
  
  - (2) A special condition has been added requiring the applicant to submit a Decommissioning and Site Reclamation Plan approved by ELUC at the time of application for a Zoning Use Permit.

***RELATED TO THE WAIVERS, GENERALLY REGARDING ANY PRACTICAL DIFFICULTIES OR HARDSHIPS RELATED TO CARRYING OUT THE STRICT LETTER OF THE ORDINANCE***

- 13. Generally regarding the Zoning Ordinance requirement of a finding that practical difficulties or hardships related to carrying out the strict letter of the regulations sought to be varied prevent reasonable and otherwise permitted use of the land or structures or construction on the lot:
  - A. Without Part A of the proposed waivers for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals, the Special Use Permit process might have to be extended in order to have sufficient time to prepare these documents.
  
  - B. Without Part B of the proposed waivers for a separation distance of less than one-half mile from an incorporated municipality, the PV SOLAR FARM could not be located on the subject property.
  
  - C. Without Part C of the proposed waivers for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line the array area would have to be moved south 175 feet, which could affect the feasibility of the project.

- D. Without Part D of the proposed waivers for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit the petitioner would have to provide a different means of financial assurance that could be difficult for them to obtain.

***RELATED TO THE WAIVERS, GENERALLY PERTAINING TO WHETHER OR NOT THE PRACTICAL DIFFICULTIES OR HARDSHIPS RESULT FROM THE ACTIONS OF THE APPLICANT***

- 14. Generally regarding the Zoning Ordinance requirement for a finding that the special conditions, circumstances, hardships, or practical difficulties do not result from the actions of the Applicant:
  - A. Regarding Part A of the proposed waivers for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals:
    - (1) The petitioner is working with relevant jurisdictions to receive either an agreement or a waiver from this requirement.
  - B. Regarding Part B of the proposed waivers for a separation distance of less than one-half mile from an incorporated municipality:
    - (1) The petitioners were made aware of this separation requirement when they applied for the Special Use Permit.
  - C. Regarding Part C of the proposed waivers for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line:
    - (1) The petitioners were made aware of this requirement when they applied for the Special Use Permit.
    - (2) Because the railroad right-of-way is broken up into smaller individual lots the fact that it is an individual lot less than 10 acres may not have been obvious to the developer.
  - D. Regarding Part D of the proposed waivers for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit:
    - (1) The petitioners were made aware of this requirement when they applied for the Special Use Permit.

***GENERALLY PERTAINING TO WHETHER OR NOT THE WAIVERS ARE IN HARMONY WITH THE GENERAL PURPOSE AND INTENT OF THE ORDINANCE***

- 15. Regarding the *Zoning Ordinance* requirement that the waivers of standard conditions of the Special Use will be in harmony with the general purpose and intent of the ordinance:
  - A. Regarding Part A of the proposed waivers for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals: the requested waiver (variance) is 0% of the minimum required, for a variance of 100%.

**PRELIMINARY DRAFT**

- B. Regarding Part B of the proposed waivers for a separation distance of less than one-half mile from an incorporated municipality: the requested waiver (variance) is 0% of the minimum required, for a variance of 100%.
- C. Regarding Part C of the proposed waivers for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line: the requested waiver (variance) is 27% of the minimum required, for a variance of 73%.
- D. Regarding Part D of the proposed waivers for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit: the requested waiver (variance) is 0% of the minimum required, for a variance of 100%.

**RELATED TO THE WAIVERS, GENERALLY PERTAINING TO THE EFFECTS OF THE REQUESTED WAIVERS ON THE NEIGHBORHOOD AND THE PUBLIC HEALTH, SAFETY, AND WELFARE**

- 16. Regarding the Zoning Ordinance requirement for a finding that the granting of the waiver (variance) will not be injurious to the neighborhood, or otherwise detrimental to the public health, safety, or welfare:
  - A. The Village of Mahomet, IDOT, Mahomet Township, and the Mahomet Township Planning Commission have been notified of this case.
    - (1) The Mahomet Township Highway Commissioner contacted the Department of Planning and Zoning by phone and opposed the granting of a waiver for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals.
  - B. The Cornbelt Fire Protection District has been notified of this case, and no comments have been received.
    - (1) The Cornbelt Fire Protection District has requested additional information regarding the access point, road and turn around areas.
  - C. Considerations of public health, safety, and welfare for the proposed special use are discussed under Item 8 and are also applicable to the proposed waivers.

**GENERALLY REGARDING PROPOSED SPECIAL CONDITIONS OF APPROVAL**

- 17. Regarding proposed special conditions of approval:
  - A. **The approved site plan consists of the following documents:**
    - **Sheet C01 of the revised Site Plan received May 19, 2025.**

The special condition stated above is required to ensure the following:

**The constructed PV SOLAR FARM is consistent with the special use permit approval.**

- B. The Zoning Administrator shall not authorize a Zoning Use Permit Application or issue a Zoning Compliance Certificate on the subject property until the lighting specifications in Paragraph 6.1.2.A. of the Zoning Ordinance have been met.**

The special condition stated above is required to ensure the following:

**That exterior lighting for the proposed Special Use meets the requirements established for Special Uses in the Zoning Ordinance.**

- C. The Zoning Administrator shall not issue a Zoning Compliance Certificate for the proposed PV SOLAR FARM until the petitioner has demonstrated that the proposed Special Use complies with the Illinois Accessibility Code, if necessary.**

The special condition stated above is required to ensure the following:

**That the proposed Special Use meets applicable state requirements for accessibility.**

- D. A signed Decommissioning and Site Reclamation Plan that has been approved by Environment and Land Use Committee is required at the time of application for a Zoning Use Permit that complies with Section 6.1.1 A. and Section 6.1.5 Q. of the Zoning Ordinance, including a decommissioning cost estimate prepared by an Illinois Professional Engineer.**

The special condition stated above is required to ensure the following:

**That the Special Use Permit complies with Ordinance requirements and as authorized by waiver.**

- E. Roadway Upgrade and Maintenance Agreements signed by the County Highway Engineer Sidney Township Highway Commissioner and any other relevant highway jurisdiction, and approved by the Environment and Land Use Committee, or a waiver therefrom, shall be submitted at the time of application for a Zoning Use Permit.**

The special condition stated above is required to ensure the following:

**To ensure full compliance with the intent of the Zoning Ordinance in a timely manner that meets the needs of the applicant.**

- F. Underground drainage tile shall be investigated and identified with any necessary changes made to the solar array as follows:**
- 1. A qualified Drain Tile Contractor with experience in Illinois shall be employed to investigate, repair, and install any underground drain tile.**
  - 2. Desktop mapping and field reconnaissance shall identify all areas where drain tiles are expected to be located based on soils, topographic elevations, ground surface channels and/or depressions, wetlands, natural drainage ingress and egress locations, and knowledge of current owners and/or current farmers.**
  - 3. Slit trenching shall be used to investigate the presence of mutual drainage tiles that serve upland areas under different ownership. All existing drain tiles**

*PRELIMINARY DRAFT*

encountered shall be logged on field mapping and repaired to the original state according to Illinois Department of Agriculture Impact Mitigation Agreement (AIMA) standards.

4. **Drain tile routes shall be located by surface probing or electronic detection and field staked at 20 feet intervals.**
5. **All existing drain tile that are found shall be located in the field using GPS location systems and recorded on as-built plans. Record mapping shall be completed according to typical civil engineering mapping and AIMA standards.**
6. **Any tile found shall be protected from disturbance or repaired and/or relocated in a manner consistent with AIMA and the Zoning Ordinance.**
7. **All mutual drain tiles shall be protected from construction disturbance and a 40- foot wide no construction area shall be centered on all mutual drain tiles.**
8. **A Drain Tile Investigation Survey including a map of all identified drain tile and a revised site plan to reflect any changes to the layout of the solar array shall be submitted to the Zoning Administrator prior to Zoning Use Permit Approval.**
9. **Future access shall be guaranteed for maintenance of all mutual drain tiles.**

The special condition stated above is required to ensure the following:

**The identification and protection of existing underground drainage tile and to allow ongoing maintenance of mutual drain tiles.**

- G. **The following submittals are required prior to the approval of any Zoning Use Permit for a PV SOLAR FARM:**
1. **Documentation of the solar module's unlimited 10-year warranty and the 25-year limited power warranty.**
  2. **An irrevocable letter of credit (or surety bond, if a waiver is received) to be drawn upon a federally insured financial institution with a minimum acceptable long term corporate debt (credit) rating of the proposed financial institution shall be a rating of "A" by S&P or a rating of "A2" by Moody's within 200 miles of Urbana or reasonable anticipated travel costs shall be added to the amount of the letter of credit.**
  3. **A permanent soil erosion and sedimentation plan for the PV SOLAR FARM including any access road that conforms to the relevant Natural Resources Conservation Service guidelines and that is prepared by an Illinois Licensed Professional Engineer.**
  4. **Documentation regarding the seed to be used for the pollinator planting, per 6.1.5 F.(9).**

5. **A Transportation Impact Analysis provided by the applicant that is mutually acceptable to the Applicant and the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, as required by 6.1.5 G. 2.**
6. **The telephone number for the complaint hotline required by 6.1.5 S.**
7. **Any updates to the approved Site Plan from Case 162-S-25 per the Site Plan requirements provided in Section 6.1.5 U.1.c.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed consistent with the Special Use Permit approval and in compliance with the Ordinance requirements.**

- H. **A Zoning Compliance Certificate shall be required for the PV SOLAR FARM prior to going into commercial production of energy. Approval of a Zoning Compliance Certificate shall require the following:**
1. **An as-built site plan of the PV SOLAR FARM including structures, property lines (including identification of adjoining properties), as-built separations, public access road and turnout locations, substation(s), electrical cabling from the PV SOLAR FARM to the substations(s), and layout of all structures within the geographical boundaries of any applicable setback.**
  2. **As-built documentation of all permanent soil erosion and sedimentation improvements for all PV SOLAR FARM including any access road prepared by an Illinois Licensed Professional Engineer.**
  3. **An executed interconnection agreement with the appropriate electric utility as required by Section 6.1.5 B.(3)b.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed consistent with the special use permit approval and in compliance with the Ordinance requirements.**

- I. **The Applicant or Owner or Operator of the PV SOLAR FARM shall comply with the following specific requirements that apply even after the PV SOLAR FARM goes into commercial operation:**
1. **Maintain the pollinator plantings in perpetuity.**
  2. **Cooperate with local Fire Protection District to develop the District's emergency response plan as required by 6.1.5 H.(2).**
  3. **Cooperate fully with Champaign County and in resolving any noise complaints including reimbursing Champaign County any costs for the services of a qualified noise consultant pursuant to any proven violation of the I.P.C.B. noise regulations as required by 6.1.5 I.(4).**

*PRELIMINARY DRAFT*

4. **Maintain a current general liability policy as required by 6.1.5 O.**
5. **Submit annual summary of operation and maintenance reports to the Environment and Land Use Committee as required by 6.1.5 P.(1)a.**
6. **Maintain compliance with the approved Decommissioning and Site Reclamation Plan including financial assurances.**
7. **Submit to the Zoning Administrator copies of all complaints to the telephone hotline on a monthly basis and take all necessary actions to resolve all legitimate complaints as required by 6.1.5 S.**

The special condition stated above is required to ensure the following:

**Future requirements are clearly identified for all successors of title, lessees, any operator and/or owner of the PV SOLAR FARM.**

- J. **The PV SOLAR FARM COUNTY Board SPECIAL USE Permit designation shall expire in 10 years if no Zoning Use Permit is granted.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed in compliance with the Ordinance requirements.**

- K. **The owners of the subject property hereby recognize and provide for the right of agricultural activities to continue on adjacent land consistent with the Right to Farm Resolution 3425.**

The special condition stated above is required to ensure the following:

**Conformance with Policy 4.2.3 of the Land Resource Management Plan.**

- L. **The terms of approval are the requirements of the current Section 6.1.5 of the Zoning Ordinance as amended February 23, 2023.**

The special condition stated above is required to ensure the following:

**That the current version of the Zoning Ordinance has been referenced.**

**DOCUMENTS OF RECORD**

1. Special Use Permit Application received January 3, 2025, with attachments:
  - A Summit Ridge Financial Information
  - B Proposed Site Plan
  - C Threatened and Endangered Species Report
  - D Decommissioning Plan
  - E Agricultural Impact Mitigation Agreement (AIMA)
  - F Historic Preservation Study
  - G Vegetation Management Plan
  - H Interconnection Agreement
  - I Interconnection Agreement

- J Noise Study
- K Drainage Tile Survey
- L Certificate of Insurance
- M Exterior Fence Warning Signs
- N Federal Aviation Administration Determination
- O Notice to Village of Mahomet
- P Notice to the Fire Department
- Q Special Use Permit Application Form

2. Revised Agricultural Impact Mitigation Agreement (AIMA) received February 4, 2025
3. Natural Resource Report by the Champaign County Soil and Water Conservation District received February 11, 2025
4. Article from Loyola University Regarding Property Value Impacts Near Utility Scale Solar Projects received February 26, 2025.
5. Email from Moira Cronin received May 19, 2025, with attachments:
  - A Revised Special Use Permit Application
  - B Revised Site Plan
  - C Solar Panel Specification Sheets
  - D Inverter Specification Sheets
  - E Panel Rack Specification Sheets
  - F Weed Control Plan
  - G Pollinator Seed Mix
  - H Easement for Access to Subject Property
6. Comment from Chris Doenitz Mahomet Township Highway Commissioner rec'd 2/19/25
7. Preliminary Memorandum dated February 20, 2025, with attachments:
  - A Case Maps (Location Map, Land Use, and Zoning)
  - B Site Plan received January 3, 2025
  - C Select application exhibits received January 3, 2025
    - 1 Decommissioning Plan
    - 2 Agricultural Impact Mitigation Agreement
    - 3 Vegetation Management Plan
    - 4 Noise Study
    - 5 Drainage Tile Survey
  - D Comment from Chris Doenitz Mahomet Township Highway Commissioner rec'd 2/19/25
  - E Email from Karen Hansen received 2/20/25
  - F SUP Application (*separate bound copy for ZBA members (available on ZBA webpage) and upon request at P&Z Department*)
8. Public Comments
  - A Email from Karen Hansen received 2/20/25
  - B Two Emails from Karen Boulanger received 2/20/25 and 2/23/25
  - C Two Emails from Alexis Godbee received 2/20/25 and 2/24/25
  - D Email from Diana Harmon received 2/21/25

- E Email from Nicholas Burd received 2/22/25
- F Email from Linda Hambleton received 2/22/25
- G Email from Ryan Kutil received 2/22/25
- H Email from Alana Harris received 2/23/25
- I Email and photos from Debra Bunch received 2/24/25
- J Emails from Cheryl and David Sproul received 2/26/25
- K Call from Jim Gunther received 2/27/25
- L Email from Teresa D'Urso received 2/27/25
- M Email from Lisa Peithmann received 2/27/25
- N Email from Sara Vrona received 2/27/25
- O Email from Lara Schwaiger received 02/27/25

9. Supplemental Memorandum #1 dated May 22, 2025, with attachments:
- A Legal Advertisement
  - B Revised Site Plan received May 19, 2025
  - C Specification Sheets for Solar Panels, Racking and Inverters received May 19, 2025
  - D Pollinator Seed Mix received May 19, 2025
  - E Weed Control Plan received May 19, 2025
  - F Information from the Zoning Administrator Regarding Letters of Credit
    1. Norton Rose Fulbright Article regarding Surety Bonds Compared to Letters of Credit.
    2. Baldwin Group Article, Surety Bonds vs. Letters of Credit
    3. Excerpt from ELUC Minutes Regarding Financial Assurances for Wind Farms
  - G Article Regarding Property Values Near Utility Scale Solar Projects received February 26, 2025
  - H Summit Ridge Energy Public Hearing Presentation received February 19, 2025
  - I Summary of Evidence, Finding of Fact and Final Determination for Case 162-S-25 dated May 29, 2025

## FINDINGS OF FACT

From the documents of record and the testimony and exhibits received at the public hearing for zoning case 162-S-25 held on February 27, 2025, and May 29, 2025, the Zoning Board of Appeals of Champaign County finds that:

1. The requested Special Use Permit *{IS / IS NOT}* necessary for the public convenience at this location because:
  - a. *The State of Illinois has adopted a Renewable Portfolio Standard that established a goal of 25% of the State's energy coming from renewable sources by the year 2025.*
  - b. *The Illinois Future Energy Jobs Act requires installation of 3,000 MW of new solar capacity by the year 2030.*
  
2. The requested Special Use Permit *{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN}* is so designed, located, and proposed to be operated so that it *{WILL NOT / WILL}* be injurious to the district in which it shall be located or otherwise detrimental to the public health, safety, and welfare because:
  - a. The street has *{ADEQUATE / INADEQUATE}* traffic capacity and the entrance location has *{ADEQUATE / INADEQUATE}* visibility.
  - b. Emergency services availability is *{ADEQUATE / INADEQUATE} {because\*}*:
    - a. *The subject property is approximately 2.4 miles from the Cornbelt fire station.*
    - b. *The Cornbelt Fire Protection District was notified of this case and no comments have been received.*
  - c. The Special Use *{WILL / WILL NOT}* be compatible with adjacent uses *{because\*}*:
    - a. *The proposed project is surrounded by land in agricultural production to the west, a railroad line and US-150 to the north, a wooded area and land in agricultural production to the east and a residential development to the south.*
    - b. *The nearest residence is about 378 feet from the PV SOLAR FARM fenced area.*
  - d. Surface and subsurface drainage will be *{ADEQUATE / INADEQUATE} {because\*}*:
    - a. *No part of the subject property is in the Special Flood Hazard Area.*
    - b. *The proposed project must comply with the Storm Water Management and Erosion Control Ordinance.*
  - e. Public safety will be *{ADEQUATE / INADEQUATE} {because\*}*:
    - a. *Relevant jurisdictions were notified of this case, and no comments have been received.*
  - f. The provisions for parking will be *{ADEQUATE / INADEQUATE} {because\*}*:
    - a. *No parking is required for a PV SOLAR FARM.*
  - g. The property *{IS/IS NOT}* WELL SUITED OVERALL for the proposed improvements *{because\*}*:
    - a. *The site is reasonably well-suited in all respects and has no major defects.*

**PRELIMINARY DRAFT**

- h. Existing public services *{ARE/ARE NOT}* available to support the proposed SPECIAL USE without undue public expense *{because\*}*:
  - a. ***No additional public services are necessary for the proposed development.***
- i. Existing public infrastructure together with the proposed development *{IS/IS NOT}* adequate to support the proposed development effectively and safely without undue public expense *{because\*}*:
  - a. ***No new public infrastructure is required for the proposed development.***

*(Note the Board may include other relevant considerations as necessary or desirable in each case.)*

\*The Board may include additional justification if desired, but it is not required.

- 3a. The requested Special Use Permit *{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN} {DOES / DOES NOT}* conform to the applicable regulations and standards of the DISTRICT in which it is located, subject to approval of the requested waivers.
- 3b. The requested Special Use Permit *{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN} {DOES / DOES NOT}* preserve the essential character of the DISTRICT in which it is located because:
  - a. The Special Use will be designed to *{CONFORM / NOT CONFORM}* to all relevant County ordinances and codes.
  - b. The Special Use *{WILL / WILL NOT}* be compatible with adjacent uses.
  - c. Public safety will be *{ADEQUATE / INADEQUATE}*.
- 4. The requested Special Use Permit *{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN} {IS / IS NOT}* in harmony with the general purpose and intent of the Ordinance because:
  - a. The Special Use is authorized in the District.
  - b. The requested Special Use Permit *{IS/ IS NOT}* necessary for the public convenience at this location.
  - c. The requested Special Use Permit *{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN}* is so designed, located, and proposed to be operated so that it *{WILL / WILL NOT}* be injurious to the district in which it shall be located or otherwise detrimental to the public health, safety, and welfare.
  - d. The requested Special Use Permit *{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN} {DOES / DOES NOT}* preserve the essential character of the DISTRICT in which it is located.
- 5. The requested Special Use **IS NOT** an existing nonconforming use.
- 6. Regarding necessary waivers of standard conditions:

Per Section 7.15 of the Champaign County ZBA Bylaws, “waivers may be approved individually or *en masse* by the affirmative vote of a majority of those members voting on the issue, and shall be incorporated into the Findings of Fact with the reason for granting each waiver described.”

- A. Regarding Part A of the proposed waivers for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals:

- (1) The waiver *{IS/ IS NOT}* in accordance with the general purpose and intent of the Zoning Ordinance and *{WILL/ WILL NOT}* be injurious to the neighborhood or to the public health, safety, and welfare because:
    - a. *The requested waiver (variance) is 0% of the minimum required, for a variance of 100%.*
    - b. *A special condition has been added requiring this information prior to approval of a Zoning Use Permit.*
  - (2) Special conditions and circumstances *{DO / DO NOT}* exist which are peculiar to the land or structure involved, which are not applicable to other similarly situated land and structures elsewhere in the same district because:
    - a. *The petitioner is working with the Mahomet Township Highway Commissioner on either a waiver or a Roadway Upgrade and Maintenance Agreement.*
    - b. *A special condition has been added requiring this information prior to approval of a Zoning Use Permit.*
  - (3) Practical difficulties or hardships created by carrying out the strict letter of the regulations sought to be varied *{WILL / WILL NOT}* prevent reasonable or otherwise permitted use of the land or structure or construction because:
    - a. *Without the proposed waiver, the Special Use Permit process might have to be extended in order to have sufficient time to prepare this document.*
  - (4) The special conditions, circumstances, hardships, or practical difficulties *{DO / DO NOT}* result from actions of the applicant because:
    - a. *The petitioner is working with the Mahomet Township Highway Commissioner to receive either an agreement or a waiver from this requirement.*
  - (5) The requested waiver *{SUBJECT TO THE PROPOSED SPECIAL CONDITION} {IS / IS NOT}* the minimum variation that will make possible the reasonable use of the land/structure because:
    - a. *Roadway agreements take time to establish, and that timeframe is not entirely in the control of the petitioner.*
- B. Regarding Part B of the proposed waivers for a separation distance of less than one-half mile from an incorporated municipality:
- (1) The waiver *{IS/ IS NOT}* in accordance with the general purpose and intent of the Zoning Ordinance and *{WILL/ WILL NOT}* be injurious to the neighborhood or to the public health, safety, and welfare because:
    - a. *The requested waiver (variance) is 0% of the minimum required, for a variance of 100%.*
    - b. *Relevant jurisdictions have been notified of this case. The Village of Mahomet has not submitted any objection to this development.*
    - c. *Neighboring landowners have been notified of this case, some expressed concerns about noise, visual impacts, property values and siltation in the nearby lake.*

**PRELIMINARY DRAFT**

- (2) Special conditions and circumstances **{DO / DO NOT}** exist which are peculiar to the land or structure involved, which are not applicable to other similarly situated land and structures elsewhere in the same district because:
    - a. ***The Village of Mahomet is aware of the proposed project and has not submitted any objection.***
  - (3) Practical difficulties or hardships created by carrying out the strict letter of the regulations sought to be varied **{WILL / WILL NOT}** prevent reasonable or otherwise permitted use of the land or structure or construction because:
    - a. ***Without the proposed waiver, the PV SOLAR FARM could not be located on the subject property.***
  - (4) The special conditions, circumstances, hardships, or practical difficulties **{DO / DO NOT}** result from actions of the applicant because:
    - a. ***The petitioners were made aware of this separation requirement when they applied for the Special Use Permit.***
  - (5) The requested waiver **{SUBJECT TO THE PROPOSED SPECIAL CONDITION} {IS / IS NOT}** the minimum variation that will make possible the reasonable use of the land/structure because:
    - a. ***Without the proposed waiver, the PV SOLAR FARM could not be located on the subject property.***
- C. Regarding Part C of the proposed waivers for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line:
- (1) The waiver **{IS / IS NOT}** in accordance with the general purpose and intent of the Zoning Ordinance and **{WILL / WILL NOT}** be injurious to the neighborhood or to the public health, safety, and welfare because:
    - a. ***The requested waiver (variance) is 27% of the minimum required, for a variance of 73%.***
    - b. ***Relevant jurisdictions have been notified of this case, and no comments have been received.***
  - (2) Special conditions and circumstances **{DO / DO NOT}** exist which are peculiar to the land or structure involved, which are not applicable to other similarly situated land and structures elsewhere in the same district because:
    - a. ***The adjacent lot less than 10 acres is a railroad right-of-way on the north side of the development.***
  - (3) Practical difficulties or hardships created by carrying out the strict letter of the regulations sought to be varied **{WILL / WILL NOT}** prevent reasonable or otherwise permitted use of the land or structure or construction because:
    - a. ***The northernmost part of the PV SOLAR FARM would have to be moved south 175 feet, which could affect the feasibility of the project.***
  - (4) The special conditions, circumstances, hardships, or practical difficulties **{DO / DO NOT}** result from actions of the applicant because:

a. *The petitioners were made aware of this requirement when they applied for the Special Use Permit.*

(5) The requested waiver **{SUBJECT TO THE PROPOSED SPECIAL CONDITION} {IS / IS NOT}** the minimum variation that will make possible the reasonable use of the land/structure because:

a. *The northernmost part of the PV SOLAR FARM would have to be moved south 195 feet, which could affect the feasibility of the project.*

D. Regarding Part D of the proposed waivers for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit:

(1) The waiver **{IS/ IS NOT}** in accordance with the general purpose and intent of the Zoning Ordinance and **{WILL/ WILL NOT}** be injurious to the neighborhood or to the public health, safety, and welfare because:

a. *The requested waiver (variance) is 0% of the minimum required, for a variance of 100%.*

b. *The developer will provide financial assurance for decommissioning in the form of a surety bond.*

(2) Special conditions and circumstances **{DO / DO NOT}** exist which are peculiar to the land or structure involved, which are not applicable to other similarly situated land and structures elsewhere in the same district because:

(3) Practical difficulties or hardships created by carrying out the strict letter of the regulations sought to be varied **{WILL / WILL NOT}** prevent reasonable or otherwise permitted use of the land or structure or construction because:

a. *The developer will have to provide a different form of financial assurance for decommissioning that may be difficult to obtain.*

(4) The special conditions, circumstances, hardships, or practical difficulties **{DO / DO NOT}** result from actions of the applicant because:

a. *The petitioners were made aware of this requirement when they applied for the Special Use Permit.*

(5) The requested waiver **{SUBJECT TO THE PROPOSED SPECIAL CONDITION} {IS / IS NOT}** the minimum variation that will make possible the reasonable use of the land/structure because:

7. **{NO SPECIAL CONDITIONS ARE HEREBY IMPOSED / THE SPECIAL CONDITIONS IMPOSED HEREIN ARE REQUIRED TO ENSURE COMPLIANCE WITH THE CRITERIA FOR SPECIAL USE PERMITS AND FOR THE PARTICULAR PURPOSES DESCRIBED BELOW:**

A. The approved site plan consists of the following documents:

- Sheet C01 of the revised Site Plan received May 19, 2025.

The special condition stated above is required to ensure the following:

*PRELIMINARY DRAFT*

**The constructed PV SOLAR FARM is consistent with the special use permit approval.**

- B. The Zoning Administrator shall not authorize a Zoning Use Permit Application or issue a Zoning Compliance Certificate on the subject property until the lighting specifications in Paragraph 6.1.2.A. of the Zoning Ordinance have been met.**

The special condition stated above is required to ensure the following:

**That exterior lighting for the proposed Special Use meets the requirements established for Special Uses in the Zoning Ordinance.**

- C. The Zoning Administrator shall not issue a Zoning Compliance Certificate for the proposed PV SOLAR FARM until the petitioner has demonstrated that the proposed Special Use complies with the Illinois Accessibility Code, if necessary.**

The special condition stated above is required to ensure the following:

**That the proposed Special Use meets applicable state requirements for accessibility.**

- D. A signed Decommissioning and Site Reclamation Plan that has been approved by Environment and Land Use Committee is required at the time of application for a Zoning Use Permit that complies with Section 6.1.1 A. and Section 6.1.5 Q. of the Zoning Ordinance, including a decommissioning cost estimate prepared by an Illinois Professional Engineer.**

The special condition stated above is required to ensure the following:

**That the Special Use Permit complies with Ordinance requirements and as authorized by waiver.**

- E. Roadway Upgrade and Maintenance Agreements signed by the County Highway Engineer Sidney Township Highway Commissioner and any other relevant highway jurisdiction, and approved by the Environment and Land Use Committee, or a waiver therefrom, shall be submitted at the time of application for a Zoning Use Permit.**

The special condition stated above is required to ensure the following:

**To ensure full compliance with the intent of the Zoning Ordinance in a timely manner that meets the needs of the applicant.**

- F. Underground drainage tile shall be investigated and identified with any necessary changes made to the solar array as follows:**
- 1. A qualified Drain Tile Contractor with experience in Illinois shall be employed to investigate, repair, and install any underground drain tile.**
  - 2. Desktop mapping and field reconnaissance shall identify all areas where drain tiles are expected to be located based on soils, topographic elevations, ground surface channels and/or depressions, wetlands, natural drainage ingress and egress locations, and knowledge of current owners and/or current farmers.**

3. **Slit trenching shall be used to investigate the presence of mutual drainage tiles that serve upland areas under different ownership. All existing drain tiles encountered shall be logged on field mapping and repaired to the original state according to Illinois Department of Agriculture Impact Mitigation Agreement (AIMA) standards.**
4. **Drain tile routes shall be located by surface probing or electronic detection and field staked at 20 feet intervals.**
5. **All existing drain tile that are found shall be located in the field using GPS location systems and recorded on as-built plans. Record mapping shall be completed according to typical civil engineering mapping and AIMA standards.**
6. **Any tile found shall be protected from disturbance or repaired and/or relocated in a manner consistent with AIMA and the Zoning Ordinance.**
7. **All mutual drain tiles shall be protected from construction disturbance and a 40- foot wide no construction area shall be centered on all mutual drain tiles.**
8. **A Drain Tile Investigation Survey including a map of all identified drain tile and a revised site plan to reflect any changes to the layout of the solar array shall be submitted to the Zoning Administrator prior to Zoning Use Permit Approval.**
9. **Future access shall be guaranteed for maintenance of all mutual drain tiles.**

The special condition stated above is required to ensure the following:

**The identification and protection of existing underground drainage tile and to allow ongoing maintenance of mutual drain tiles.**

- G. The following submittals are required prior to the approval of any Zoning Use Permit for a PV SOLAR FARM:**
8. **Documentation of the solar module's unlimited 10-year warranty and the 25-year limited power warranty.**
  9. **An irrevocable letter of credit (or surety bond, if a waiver is received) to be drawn upon a federally insured financial institution with a minimum acceptable long term corporate debt (credit) rating of the proposed financial institution shall be a rating of "A" by S&P or a rating of "A2" by Moody's within 200 miles of Urbana or reasonable anticipated travel costs shall be added to the amount of the letter of credit.**
  10. **A permanent soil erosion and sedimentation plan for the PV SOLAR FARM including any access road that conforms to the relevant Natural Resources Conservation Service guidelines and that is prepared by an Illinois Licensed Professional Engineer.**

*PRELIMINARY DRAFT*

11. **Documentation regarding the seed to be used for the pollinator planting, per 6.1.5 F.(9).**
12. **A Transportation Impact Analysis provided by the applicant that is mutually acceptable to the Applicant and the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, as required by 6.1.5 G. 2.**
13. **The telephone number for the complaint hotline required by 6.1.5 S.**
14. **Any updates to the approved Site Plan from Case 162-S-25 per the Site Plan requirements provided in Section 6.1.5 U.1.c.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed consistent with the Special Use Permit approval and in compliance with the Ordinance requirements.**

- H. **A Zoning Compliance Certificate shall be required for the PV SOLAR FARM prior to going into commercial production of energy. Approval of a Zoning Compliance Certificate shall require the following:**
1. **An as-built site plan of the PV SOLAR FARM including structures, property lines (including identification of adjoining properties), as-built separations, public access road and turnout locations, substation(s), electrical cabling from the PV SOLAR FARM to the substations(s), and layout of all structures within the geographical boundaries of any applicable setback.**
  2. **As-built documentation of all permanent soil erosion and sedimentation improvements for all PV SOLAR FARM including any access road prepared by an Illinois Licensed Professional Engineer.**
  3. **An executed interconnection agreement with the appropriate electric utility as required by Section 6.1.5 B.(3)b.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed consistent with the special use permit approval and in compliance with the Ordinance requirements.**

- I. **The Applicant or Owner or Operator of the PV SOLAR FARM shall comply with the following specific requirements that apply even after the PV SOLAR FARM goes into commercial operation:**
8. **Maintain the pollinator plantings in perpetuity.**
  9. **Cooperate with local Fire Protection District to develop the District's emergency response plan as required by 6.1.5 H.(2).**
  10. **Cooperate fully with Champaign County and in resolving any noise complaints including reimbursing Champaign County any costs for the**

**services of a qualified noise consultant pursuant to any proven violation of the I.P.C.B. noise regulations as required by 6.1.5 I.(4).**

11. **Maintain a current general liability policy as required by 6.1.5 O.**
12. **Submit annual summary of operation and maintenance reports to the Environment and Land Use Committee as required by 6.1.5 P.(1)a.**
13. **Maintain compliance with the approved Decommissioning and Site Reclamation Plan including financial assurances.**
14. **Submit to the Zoning Administrator copies of all complaints to the telephone hotline on a monthly basis and take all necessary actions to resolve all legitimate complaints as required by 6.1.5 S.**

The special condition stated above is required to ensure the following:

**Future requirements are clearly identified for all successors of title, lessees, any operator and/or owner of the PV SOLAR FARM.**

- J. **The PV SOLAR FARM COUNTY Board SPECIAL USE Permit designation shall expire in 10 years if no Zoning Use Permit is granted.**

The special condition stated above is required to ensure the following:

**The PV SOLAR FARM is constructed in compliance with the Ordinance requirements.**

- K. **The owners of the subject property hereby recognize and provide for the right of agricultural activities to continue on adjacent land consistent with the Right to Farm Resolution 3425.**

The special condition stated above is required to ensure the following:

**Conformance with Policy 4.2.3 of the Land Resource Management Plan.**

- L. **The terms of approval are the requirements of the current Section 6.1.5 of the Zoning Ordinance as amended February 23, 2023.**

The special condition stated above is required to ensure the following:

**That the current version of the Zoning Ordinance has been referenced.**

**FINAL DETERMINATION**

The Champaign County Zoning Board of Appeals finds that, based upon the application, testimony, and other evidence received in this case, that the requirements for approval of Section 9.1.11B. **{HAVE / HAVE NOT}** been met, and pursuant to the authority granted by Section 9.1.6 B. of the Champaign County Zoning Ordinance, recommends that:

The Special Use requested in Case **162-S-25** is hereby **{GRANTED/ GRANTED WITH SPECIAL CONDITIONS / DENIED}** to the applicant, **Mahomet IL Solar 1, LLC, c/o Summit Ridge Energy LLC**, to authorize the following as a Special Use on land in the AG-2 Agriculture Zoning District:

**Authorize a Community PV Solar Farm with a total nameplate capacity of 4.99 megawatts (MW), including access roads and wiring, and**

***{SUBJECT TO THE FOLLOWING WAIVERS OF STANDARD CONDITIONS:}***

**Part A: A waiver for not entering into a Roadway Upgrade and Maintenance Agreement or waiver therefrom with the relevant local highway authority prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.5 G.(1).**

**Part B: A waiver for locating the PV Solar Farm less than one and one-half miles from an incorporated municipality per Section 6.1.5 B.(2)a.**

**Part C: A waiver for locating the PV Solar Farm 65 feet from a non-participating lot that is 10 acres or less in area in lieu of the minimum required separation of 240 feet between the solar farm fencing and the property line, per Section 6.1.5 D.(3)a.**

**Part D: A waiver for providing financial assurance for the Decommissioning and Site Reclamation Plan in the form of a surety bond, in-lieu of a letter of credit per Section 6.1.5 Q.**

***{ SUBJECT TO THE FOLLOWING SPECIAL CONDITIONS: }***

- A. The approved site plan consists of the following documents:
  - Sheet C01 of the revised Site Plan received May 19, 2025.**
- B. The Zoning Administrator shall not authorize a Zoning Use Permit Application or issue a Zoning Compliance Certificate on the subject property until the lighting specifications in Paragraph 6.1.2.A. of the Zoning Ordinance have been met.**
- C. The Zoning Administrator shall not issue a Zoning Compliance Certificate for the proposed PV SOLAR FARM until the petitioner has demonstrated that the proposed Special Use complies with the Illinois Accessibility Code, if necessary.**
- D. A signed Decommissioning and Site Reclamation Plan that has been approved by Environment and Land Use Committee is required at the time of application for a Zoning Use Permit that complies with Section 6.1.1 A. and Section 6.1.5 Q. of the**

**Zoning Ordinance, including a decommissioning cost estimate prepared by an Illinois Professional Engineer.**

- E. **Roadway Upgrade and Maintenance Agreements signed by the County Highway Engineer Sidney Township Highway Commissioner and any other relevant highway jurisdiction, and approved by the Environment and Land Use Committee, or a waiver therefrom, shall be submitted at the time of application for a Zoning Use Permit.**
- F. **Underground drainage tile shall be investigated and identified with any necessary changes made to the solar array as follows:**
1. **A qualified Drain Tile Contractor with experience in Illinois shall be employed to investigate, repair, and install any underground drain tile.**
  2. **Desktop mapping and field reconnaissance shall identify all areas where drain tiles are expected to be located based on soils, topographic elevations, ground surface channels and/or depressions, wetlands, natural drainage ingress and egress locations, and knowledge of current owners and/or current farmers.**
  3. **Slit trenching shall be used to investigate the presence of mutual drainage tiles that serve upland areas under different ownership. All existing drain tiles encountered shall be logged on field mapping and repaired to the original state according to Illinois Department of Agriculture Impact Mitigation Agreement (AIMA) standards.**
  4. **Drain tile routes shall be located by surface probing or electronic detection and field staked at 20 feet intervals.**
  5. **All existing drain tile that are found shall be located in the field using GPS location systems and recorded on as-built plans. Record mapping shall be completed according to typical civil engineering mapping and AIMA standards.**
  6. **Any tile found shall be protected from disturbance or repaired and/or relocated in a manner consistent with AIMA and the Zoning Ordinance.**
  7. **All mutual drain tiles shall be protected from construction disturbance and a 40- foot wide no construction area shall be centered on all mutual drain tiles.**
  8. **A Drain Tile Investigation Survey including a map of all identified drain tile and a revised site plan to reflect any changes to the layout of the solar array shall be submitted to the Zoning Administrator prior to Zoning Use Permit Approval.**
  9. **Future access shall be guaranteed for maintenance of all mutual drain tiles.**

*PRELIMINARY DRAFT*

- G. **The following submittals are required prior to the approval of any Zoning Use Permit for a PV SOLAR FARM:**
1. **Documentation of the solar module's unlimited 10-year warranty and the 25-year limited power warranty.**
  2. **An irrevocable letter of credit (or surety bond, if a waiver is received) to be drawn upon a federally insured financial institution with a minimum acceptable long term corporate debt (credit) rating of the proposed financial institution shall be a rating of "A" by S&P or a rating of "A2" by Moody's within 200 miles of Urbana or reasonable anticipated travel costs shall be added to the amount of the letter of credit.**
  3. **A permanent soil erosion and sedimentation plan for the PV SOLAR FARM including any access road that conforms to the relevant Natural Resources Conservation Service guidelines and that is prepared by an Illinois Licensed Professional Engineer.**
  4. **Documentation regarding the seed to be used for the pollinator planting, per 6.1.5 F.(9).**
  5. **A Transportation Impact Analysis provided by the applicant that is mutually acceptable to the Applicant and the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, as required by 6.1.5 G. 2.**
  6. **The telephone number for the complaint hotline required by 6.1.5 S.**
  7. **Any updates to the approved Site Plan from Case 162-S-25 per the Site Plan requirements provided in Section 6.1.5 U.1.c.**
- H. **A Zoning Compliance Certificate shall be required for the PV SOLAR FARM prior to going into commercial production of energy. Approval of a Zoning Compliance Certificate shall require the following:**
1. **An as-built site plan of the PV SOLAR FARM including structures, property lines (including identification of adjoining properties), as-built separations, public access road and turnout locations, substation(s), electrical cabling from the PV SOLAR FARM to the substations(s), and layout of all structures within the geographical boundaries of any applicable setback.**
  2. **As-built documentation of all permanent soil erosion and sedimentation improvements for all PV SOLAR FARM including any access road prepared by an Illinois Licensed Professional Engineer.**
  3. **An executed interconnection agreement with the appropriate electric utility as required by Section 6.1.5 B.(3)b.**

- I. **The Applicant or Owner or Operator of the PV SOLAR FARM shall comply with the following specific requirements that apply even after the PV SOLAR FARM goes into commercial operation:**
1. **Maintain the pollinator plantings in perpetuity.**
  2. **Cooperate with local Fire Protection District to develop the District's emergency response plan as required by 6.1.5 H.(2).**
  3. **Cooperate fully with Champaign County and in resolving any noise complaints including reimbursing Champaign County any costs for the services of a qualified noise consultant pursuant to any proven violation of the I.P.C.B. noise regulations as required by 6.1.5 I.(4).**
  4. **Maintain a current general liability policy as required by 6.1.5 O.**
  5. **Submit annual summary of operation and maintenance reports to the Environment and Land Use Committee as required by 6.1.5 P.(1)a.**
  6. **Maintain compliance with the approved Decommissioning and Site Reclamation Plan including financial assurances.**
  7. **Submit to the Zoning Administrator copies of all complaints to the telephone hotline on a monthly basis and take all necessary actions to resolve all legitimate complaints as required by 6.1.5 S.**
- J. **The PV SOLAR FARM COUNTY Board SPECIAL USE Permit designation shall expire in 10 years if no Zoning Use Permit is granted.**
- K. **The owners of the subject property hereby recognize and provide for the right of agricultural activities to continue on adjacent land consistent with the Right to Farm Resolution 3425.**
- L. **The terms of approval are the requirements of the current Section 6.1.5 of the Zoning Ordinance as amended February 23, 2023.**

The foregoing is an accurate and complete record of the Findings and Determination of the Zoning Board of Appeals of Champaign County.

SIGNED:

Ryan Elwell, Chair  
Champaign County Zoning Board of Appeals

ATTEST:

Secretary to the Zoning Board of Appeals

Date