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August 6th, 2025

Victoria Potts
MVCOG Program Administrator
10 Civic Center Plaza
Mankato, MN 56001

Dear Ms Potts,

Please see the following explanations and attached documentation required for a Conditional Use Permit application for a *Large Solar Energy System* for the Blue Earth County Public Works Rooftop Solar array.

Project Description:

The Blue Earth County's new Public Works facility is currently under construction and is to be completed in late 2025. Simultaneously, McKinstry is working with Blue Earth County to construct a **453kW_{dc}; 360kW_{ac}** rooftop solar array. The array will cover all three rooftops on the building and will have setbacks of at least 10ft from the inside edge of the parapet wall. The goal of this array is to offset the buildings consumption, while also showcasing clean energy technology for the County and creating economic resiliency for municipal operations through significant cost savings long term. From this array, the County will avoid using 856,082 pounds of CO₂, which is equivalent to 52 homes' energy use for one year and 82 homes' electricity use for one year.

1. Pre-Application Meeting

- a) A virtual pre-application meeting was held on Wednesday, June 30th with Victoria Potts from the City of Mankato and Kate Pearson, Chris Sawyer, Carsten Schmidt, and Jared Mitchell from McKinstry. It was discussed that most items were only applicable to ground mount solar arrays, please find the responses to the application questions below and supplemental information as requested:
 - a. **Existing Conditions Site Plan** – per guidance from Ms. Potts, an aerial image of the current state of the building is acceptable. See attached image (*Attachment 1-Existing Conditions Site Plan Aerial Image*). Additionally, the site plan of the building under construction is included (*Attachment 2- Existing Site Plan*). Note: the building construction is not part of McKinstry's solar project.
 - b. **Proposed Conditions Site Plan** – see attached image of the proposed conditions site plan (*Attachment 3- Proposed Conditions Site Plan*) – this was reviewed with Ms. Potts as an acceptable document to submit showing the proposed conditions of the rooftop solar array.
 - c. **Written approval for road access from the applicable road authority** – Not applicable - This project is a rooftop solar array, which will not need any additional road access outside of the existing parking lot and roadways into the facility. The Public Works facility has already received approval for the road access that is currently being constructed.
 - d. **Proposed Grading Plan** – Not Applicable - There will not be any grading associated with this project. All work will be done on the rooftop.
 - e. **Stormwater Pollution Prevention Plan** – Not Applicable - A stormwater pollution prevention plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
 - f. **National Pollutant Discharge Elimination System Construction Stormwater Permit** Not Applicable - This permit is not applicable as this project will not disturb any ground area and is located on the roof of the building.



- g. **Operations and Maintenance Plans for All Permanent and Temporary Stormwater Control Measures** – Not Applicable - This plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
- h. **Vegetation and Seeding Plan for All Perennial Vegetation** - Not Applicable - This plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
- i. **Maintenance Plan for all Perennial Vegetation** - Not Applicable - This plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
- j. **Decommissioning Plan** – Not Applicable - A decommissioning plan is not applicable for this project as this array is to be in service indefinitely and is not to be decommissioned in the foreseeable future. If there are any equipment issues with the system such as inverter or module failures, these components will be individually replaced with new equipment by licensed professionals.
- k. **Proof of a Financial Surety Agreement to Guarantee Decommissioning, Payable to the Landowner** – Not Applicable - to this project as a decommissioning plan is not applicable.
- l. **A statement signed by the landowner acknowledging the County's ability to create a lien on the property and collect as a special assessment, any solid waste removal costs incurred by the County as a result of an inadequate financial surety** – Not Applicable - There will not be any solid waste removal associated with this project.

2. The manufacturer's engineer or a State of Minnesota, licensed professional engineer shall certify in writing that the foundation and design of the solar energy system is within accepted professional standards, given local soil and climate conditions, within 60 days of completion of construction.

Not Applicable - This array is a mix between a ballasted and mechanically attached rooftop solar array, which will not have any foundations in the ground nor disturb any soils. A ballasted rooftop system is comprised of a racking system that sits on top of the roof and has 32lb concrete blocks that sit in trays on the roof in order to weigh the array down due to any wind uplift. There are also 11 mechanical attachments on this array, which are anchored into the roof to also keep the system attached to the roof during high wind events. Not Applicable

3. All elements of the system shall be prohibited within shoreland as defined in section 14-4.

Not Applicable - This array will not be located near any shoreland and is located on the rooftop of a building.

4. Any system proposed within an area governed by an orderly annexation agreement shall have written approval from the municipality and township prior to the county accepting an application.

Not Applicable - This system is not located in an area governed by an orderly annexation agreement.

5. Property, wetlands and waterways down gradient from a proposed system shall be protected from flooding and erosion due to increases in the volume, velocity and peak water flow rate of stormwater runoff.

Not Applicable - This is a rooftop solar array and will not be exposed to any stormwater runoff.

6. Any project proposed on a grade of eight percent or greater shall be carefully reviewed to ensure adequate measures have been taken to prevent erosion or sedimentation from impacting down gradient properties, wetlands or waterways.

Not applicable - This project is located on a flat roof surface.

7. The conversion of existing wooded areas for the placement of systems is prohibited.



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Not applicable - This project is not located in a wooded area.

8. All elements of the system shall be prohibited within all floodplain districts.

Not Applicable - This project is not located in a floodplain district.

9. Stormwater runoff shall not be directed into any public rights-of-way.

Not Applicable - This project does not produce any stormwater runoff.

10. Sites which require permanent stormwater management facilities or best management practices shall be designed in accordance with the MPCA NPDES construction stormwater permit and Blue Earth County stormwater standards. Plans for permanent stormwater management facilities or best management practices shall be approved by Blue Earth County prior to making application for a land development permit that requires a public hearing.

Not Applicable - This is a rooftop solar array and will not require any permanent stormwater management or best management practices.

11. All elements shall be prohibited in areas with moderate to high biological significance as identified in the Minnesota Department of Natural Resources Biological Survey.

Not Applicable - The is a rooftop solar array and will not be located nor will disturb any areas with biological material.

12. The parking of any equipment, delivery vehicles, or employee vehicles within any area of public rights-of-way during the construction or maintenance phases of the proposed project, shall be prohibited.

Not Applicable - There will not be any equipment, delivery vehicles, or employee vehicles in any public rights-of-way during construction.

13. Large solar energy systems shall meet or exceed the prescribed setbacks

Not applicable – all setbacks are attributed to ground mount solar arrays. This project is a rooftop solar array does not trigger any required setbacks.

14. Density. New or expansion of existing large solar energy systems proposed within 2,500 feet of an existing or approved large solar energy system shall be reviewed by county staff for a determination of aggregate impact. Additional conditions may be added by the county to mitigate those impacts.

Not applicable – This array will not be located within 2500ft of an existing solar array.

15. Screening. All newly proposed large solar energy systems or proposed modifications to existing large solar energy systems may be subject to conditions requiring the development of a landscape plan, and installation and maintenance of screening placed outside of the fenced perimeter and consisting of suitable native shrubbery and/or trees.

Not applicable – This is a rooftop solar array system that will not require a landscaping plan.

16. Fences. All fencing shall meet the accessory structure setback requirements for the applicable zoning district. The required setbacks may be increased if deemed necessary by the zoning administrator. Fences shall consist of open fencing such as agricultural fence, chain link, or barbed wire security fence. Other fencing plans shall be approved by the affected road authority. Fences shall not exceed six feet in height, except security fences, which shall not exceed eight feet in height, including barbed wire toppings.

Not applicable – This is a rooftop solar array system that will not require a fence.



17. Application for large solar energy systems. Any person proposing to construct or erect a large solar energy system shall make a written land use development application to the zoning administrator. Application for such permit shall be made upon a form furnished by the county and shall not be complete unless it contains the following:

- a. **A site plan of existing conditions shall be prepared and submitted to the planning agency.**

Per guidance from Ms Potts, an aerial image of the current state of the building is acceptable. See attached image (*Attachment 1-Existing Conditions Site Plan Aerial Image*). Additionally, the site plan of the building currently under construction has been included as *Attachment 2 – Existing Site Plan*. This building construction is not a part of the McKinstry project.

- b. **A site plan of proposed conditions:**

See *Attachment 3-Proposed Conditions Site Plan*, which shows the following:

- **Location, size, and spacing of solar arrays on the site** - Included
- **Location and spacing of all power poles associated with the proposed project** - Not Applicable
- **Location and size of all roadways including roadways used for access and maintenance of the site.**
- **Planned location of all electric lines connecting the solar energy system to the building, substation or other electric load.** - Included
- **New electrical equipment other than at the existing building or substation that is the connection point for the solar energy system.** - Included
- **Proposed erosion and sediment control measures as required by section 24-304.** - Not Applicable
- **Computer generated rendering (profile view) of the project that accurately depicts the proposed solar energy system in relation to any structures or roads within 1,000 feet of the outermost edge of a proposed solar array. Changes in surface water drainage patterns.** - Not Applicable
- **Proposed permanent stormwater management facilities and best management practices, when required.** - Not Applicable
- **Proposed location of all employee parking areas.** - Included
- **Proposed location of all staging areas.** - Not Applicable
- **Proposed location of all temporary structures related to the construction of the project.** - Not Applicable
- **Proposed location of any temporary refueling stations.** - Not Applicable
- **Delineated wetland boundaries, approved by Blue Earth County, when applicable** - Not Applicable
- **A table showing the total amount of impervious surface being added to the site, including, but not limited to: inverter pads, access roads, solar panels, etc.** - Not Applicable

- c. **The proposed installed capacity, in kilowatts, for the site.**

The proposed rooftop solar pv system will be 453kWdc; 360kWac.

- d. **Proposed type of mounting and racking systems, and manufacturer's specifications or engineering designs for the type of mounting and racking, including a description of the type of foundation needed for the proposed system, if applicable.**

See *Attachment 4 – Racking Drawings* for the manufacturer's specifications and engineering designs. The racking for this array will be PanelClaw clawFRplus – 10 degree tilt. This array is a mix between a ballasted and mechanically attached rooftop solar array and will not have any foundations. The ballast blocks are 32 pound,



4"x8"x16" concrete blocks that will sit in the racking trays. Page 7 of *Attachment 4 – Racking Drawings* show how the ballast blocks will be positioned underneath of the panels in the racking trays. Additionally, here is a link that visually shows how the racking system is installed:

<https://www.youtube.com/watch?v=ONpOYb7Kj6w>

There are also 11 mechanical attachments on this array, which are anchored into the roof to also keep the system attached to the roof during high wind events. The mechanical attachments are detailed on Page 13 of *Attachment 3 – Racking Drawings* as well as in *Attachment 5 – Mechanical Attachments*.

e. **A description of the method of connecting the system to a building or substation.**

See *Attachment 6 – Electrical Interconnection*. This array will be interconnected into the Public Works facility in order to offset building consumption. The solar array panels will have conduit wiring routed to the inverters located on the north-facing wall at the highest roof edge – see Callout A on the drawings. From the inverters, the conduit is routed along the rooftop, through the parapet walls, to a PV junction box in the main electrical room. The conduit then goes out to a panelboard and PV utility ac disconnect where the array is interconnected into the utility metering cabinet. All of the equipment is located next to the existing utility transformer pad.

f. **A copy of the interconnection agreement with the local electric utility or a written explanation outlining why an interconnection agreement is not necessary.**

The proposed arrays interconnection application was started with Xcel Energy on May 2nd, 2025 and officially submitted on July 18th, 2025. A timeline of events between the initial start of the application to the official submission is below. Refer to *Attachment 7 – Xcel Interconnection Status* for documentation on the status of the application.

- 5/2/2025 – Began filling out the application but needed Xcel to approve the load analysis for approval as the Public Works facility is a new building
- 5/6/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/9/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/13/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/15/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/19/2025 – McKinstry follow up with Xcel on approval – response explaining how they need the load analysis submitted explaining what the anticipated electric consumption is for the new building to determine the solar array offset potential.
- 5/28/2025 – McKinstry submitted load analysis to Xcel. Xcel indicated they needed the load analysis stamped by an engineer.
- 6/12/2025 – McKinstry worked with the new buildings electrical contractor to get the load analysis and calculations stamped. McKinstry then submitted to Xcel.
- 6/17/2025 – McKinstry sent checks for Interconnection application to Xcel
- 6/18/2025 – McKinstry email follow up with Xcel on approval, no response.
- 6/27/2025 – Initial application was submitted and Xcel verified all signatures.
- 7/5/2025 – McKinstry follow up with Xcel if checks were received – Significant back and forth because Xcel could not find the checks. Xcel found the checks on 7/17/2025 and pushed the application forward. **Official submission with all documents was 7/18/2025.**
- 7/24/2025 – Xcel reviewed for application completeness and made comments on the single line diagram
- 7/29/2025 – McKinstry updated electrical drawings and resubmitted to Xcel



- 8/5/2025 – Xcel has until this date to continue application review. At this point, the application will then get pushed into their official engineering review. The engineering review will take 3 weeks to complete. If the engineering review does not trigger any additional studies, the interconnection agreements are sent out.

The interconnection process has a lengthy timeline and typically takes about 12-16 weeks after initial application submission to interconnection agreement documents. Although this project does not have the interconnection agreement with Xcel completed yet, the application is well underway. Additionally, this project was submitted to Xcel to complete a pre-application report. These reports give an initial indication if there are any capacity issues with the proposed project. From the results of this report, there were not any concerns with existing transmission capacity and the size of this proposed project. See *Attachment 8 – Xcel Pre Application Report* for the final report completed by Xcel on January 28th, 2025.

- g. **An itemized decommissioning plan with cost estimates for each item shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar energy systems must occur within 180 days of either the end of the system's serviceable life, or the system's discontinued use. If a system does not generate energy for a period of 12 consecutive months, it is deemed to be a discontinued use. All items associated with a discontinued use shall be defined as solid waste, in accordance with Section 24-3 of the Blue Earth County Code of Ordinances. The board shall require the posting of a bond, letter of credit or the establishment of an escrow account in the name of the landowner, to ensure proper decommissioning. Any cost incurred by the county for the decommissioning of a discontinued system, as a result of an inadequate financial surety, shall be assessed back to the landowner under Subd. 14 of Minnesota Statute 375.18, as amended.**

A decommissioning plan is not applicable for this project as this array is to be in service indefinitely and is not to be decommissioned in the foreseeable future. If there are any equipment issues with the system such as inverter or module failures, these components will be individually replaced with new equipment by licensed professionals.

- h. **Application fee as established by resolution of the county board of commissioners.** A fee of \$400 will be submitted for this application.

Additional Information

The height of the modules and racking system can also be shown on page 4 of *Attachment 4 – Racking Drawings*. From the base of the roof to the top of the module at a 10-degree tilt, the array is 11.53 inches in height, at the maximum height of the module. The height of the highest roof on the building is 35ft, shown in the red box in *Attachment 9 – Roof Heights*, with the parapet height being 1' $\frac{3}{4}$ ". *Attachment 10 – Roof Parapet Height* shows the detail in the red box on the parapet heights of the building. Therefore, the modules will be lower than the top parapet edge.