



To: Zoning Administrator and Chairman of County Board of Commissioners;
York County, Nebraska

From: John C. Shepard, AICP; Senior Planner, Marvin Planning Consultants, Inc.

Date: June 7, 2024

Re: Zoning Regulations for Solar Energy and the Comprehensive Plan

Thank you for the opportunity to work with York County on updating the York County Comprehensive Plan and Zoning Regulations. As we begin this project, we understand the County is completing review of proposed Solar Regulations as an amendment to the York County Zoning Regulations, "Article 15 – Solar Energy Conversion System Regulations" with a Public Hearing on June 17th.

At this time, the proposal would need to be consistent with the existing Comprehensive Plan and according to the procedures in Article 11 of the current Zoning Resolution. The proposed amendment would need to meet state and federal statutory standards and requirements of case law, in particular for Constitutional equal protection under the law. As a practical matter, the proposed text appears to be overly broad, and may be overly burdensome on individual property owners.

DISCUSSION

Solar energy generation is fairly new in Nebraska. The first utility-scale solar project in the state only came online in 2016, according to the Center for Rural Affairs (CRA), which is based in Nebraska. During the review and update of the Comprehensive Plan, we will fully cover the Energy Element which is required by state statute, including both demand and generating capacity for renewable energy. Primary benefits of solar generation include lease payments to landowners and nameplate capacity tax revenue to the County. On the other hand, many counties have found their residents and property owners to be concerned about impacts on adjacent property and conversion of prime farmland. It is important to engage in a transparent community engagement process when considering land use policy and regulations, such as York County is currently doing.

SMALL SCALE SOLAR

It may be helpful to consider Solar similarly to how York County currently regulates Wind Energy Conversion Systems. Section 611 of the current Zoning Resolution includes regulations for Small Wind Energy Systems (611.01 et seq.), which are typically Net Metering installations (eligible to sell electricity back to the utility) and up to 100kw generating capacity. The proposed Solar regulations start with CLASS 1 Individual/Acreage Solar Energy Conversion System (SECS) up to 100kw as well.

NEIGHBORHOOD-SCALE SOLAR

Although not yet common in Nebraska, neighborhood-scale solar generation facilities service a specific area—between Small-Scale and full Utility-Scale. This is mostly analogous to the CLASS 2 Small Commercial Solar Energy Conversion System (CSECS) in the proposal.



UTILITY-SCALE SOLAR

A utility-scale Commercial Solar Conversion System (CSCS) applies above the 100kw facility, when energy is sold into the wholesale market instead of directly to end-use customers, generally into the electric grid. These are the projects which tend to generate the most controversy over off-site impacts. The proposed Solar regulations include both a CLASS 3 Medium Scale Commercial Solar Energy Conversion System (CSECS) for one to five megawatt systems, and a CLASS 4 Large Scale CSECS for rated capacity greater than five megawatts.

BATTERY ENERGY STORAGE SYSTEMS

A Battery Energy Storage System (BESS) is a device capable of storing energy capacity greater than a car battery and may use one or more system technology or chemistry. A small BESS may be located in a garage to smooth charging of an electric vehicle. Increasingly, utility-scale wind and solar facilities are feeding power to BESS installations while they generate, allowing the BESS to firm power supply to the grid on a 24/7 basis. The proposed regulations do not appear to consider the need for this technology.

DIMENSIONAL STANDARDS

The CRA has surveyed zoning regulations across the United States, and recommends:

- Setbacks from Property Lines: 50 to 200 feet
- Setbacks from Non-Participating Dwellings 100 to 300 feet
- Setbacks from Right-of-Way 100 to 150 feet
- Support for voluntary waiver provisions
- Height as allowed in underlying zoning district, to allow for multiple use such as Agrivoltaics

In recent projects, Marvin Planning Consultants has been recommending setbacks of 50' from a residential zoning district, and height and other setbacks generally to match accessory structures in the underlying zoning district. We have received feedback concerning solar arrays acting as a snow fence along roads, supporting a greater right-of-way setback.

Setbacks must have what the Courts call a “rational nexus”—standards must be based on a demonstrable impact, rather than on subjective criteria. For example, setback from a right-of-way may be based on the possibility solar panels may act as a snow fence. However, if a County allows a barn to be built 50 feet from a property line, it is difficult to defend requiring other structures any further back.

PRIME FARMLAND AND AGRIVOLTAICS

Generally, land use policy favors the highest and best use of land as determined by the governing body. It is generally acknowledged that prime farmland should remain farmland. However, this policy decision should be based on the express written intent of the Comprehensive Plan as well as the specific standard of the Zoning Resolution.

There have been recent demonstration projects across the country for “Agrivoltaics”—building solar projects so agriculture can continue on the same parcel. This may be growing crops adapted to shady environments or which attract pollinators. This may be raising panels high enough to allow sheep to graze. This is fairly new ground and standards will be evolving.

NOISE, SCREENING, AND GLARE

Solar electric equipment can produce sound when the array is producing energy. Panels also may produce glare or reflected light. However, neither is typically more impactful than other structures typically allowed in rural areas. Marvin Planning



Consultants has generally recommended 50 dBA for all non-residential uses, at any given time rather than requiring expensive time series measurements.

Many jurisdictions also require solid or vegetative screening (sometimes along with a height restriction) to reduce visual impacts. However, it is often impractical to care for and water landscape vegetation in remote areas. This may also be difficult to defend as arbitrary if other non-residential uses are not required to do the same, as a violation of Equal Protection.

OPERATIONS AND MAINTENANCE

It is common to require applicants for a Utility-scale renewable energy project to submit a complete operations and maintenance plan. This should cover short-term and long-term site needs, including soil erosion and sediment control, stormwater management, ground cover and buffer areas, cleaning chemicals and solvents, and maintenance and repair schedules. Re-powering plans would typically be considered beyond operations and maintenance and may require a permit renewal.

INFRASTRUCTURE AND ROAD USE AGREEMENTS

It is common to require applicants to negotiate a use agreement with the County for assessing and repairing infrastructure before construction begins, similar as with wind energy projects even if impacts are typically less. This process should lean heavily on the County Road Superintendent's knowledge of local roads and drainage.

DECOMMISSIONING AND SITE RESTORATION

While it is typical to require a Decommissioning Plan with approval, many project developers prefer to leave that process to the State. As more larger projects come into place, Counties may want to enhance their expectations for Decommissioning Plans. One the one side, this may mean requiring security for Gross Decommissioning Cost, without considering potential resale or recycling value. Yet on the other side, a bond to be reviewed every 5 years or so should be sufficient security for the County.

APPLICATION REQUIREMENTS

The amount of detail required for a renewable energy project permit review can vary. However, the County should require sufficient detail to make an informed decision. For Utility-scale projects, this may include:

- Standard application form, with proof of signature authority of the applicant if not the property owner of record (or for multiple landowners)
- Detailed project description, including number of modules, manufacturer, mounting type, system height, system capacity, total land area under cover, and information on connections to the grid.
- Detailed site plan with measured setbacks, signed and sealed by a land surveyor or Professional Engineer.
- May require common engineering reports, such as geotechnical, environmental, air permit determinations, water sourcing and wastewater treatment, energy offtake agreements, or detailed facility design.

A lack of detailed information across many aspects of the project—site plans, engineering, project interconnection--may be insufficient for the County to approve and application. However, much less detail should be required for individual applications, such as agricultural operations or roof-top solar.



ZONING REGULATION PROPOSAL

Nebraska Revised Statutes §23-114.03 requires zoning regulations to be “consistent with the adopted comprehensive development plan, and designed for the purpose of promoting the health, safety, morals, convenience, order, prosperity, and welfare of the present and future inhabitants of Nebraska...”

Section 1501: Intent. This section lays out the justification for the regulation.

Section 1502: This section classifies solar conversion systems into four types as discussed previously. This seems overly complicated for a jurisdiction the size of York County.

Section 1503: Definitions are important, and it will help they are in the front of the section.

Section 1504: Class 1 Individual/Acreage SSECS. The requirements for individual solar systems seem overly burdensome for individual property owners as well as County zoning administration. For example, if a homeowner has a legal lot less than two acres in size, why wouldn't they be permitted to add solar power? This may be an arbitrary restriction. Also, while Off-Grid Solar systems are defined, there is not clear exemption so these requirements would also apply to agricultural use (such as stock pumps). The front yard setback of 108 feet seems excessive, even though at the median of the CRA recommendations, depending on Accessory Structure setbacks in each district—subsection A.3 and A.12 conflict as to allowed setbacks. The application requirements also seem excessive for an individual property owner. Revising requirements to be more similar to Small Wind Energy installations in Section 611 may be more fitting to York County.

Section 1505: Class 2 Commercial CSECS. This category is proposed to be permitted only as an Accessory Use, therefore could not be placed on a parcel without a Principal Use, which may be as intended.

(There is a numbering error, where A.2 is repeated and the rest should be renumbered.) Conflicts between setback requirements cascade forward as noted in previous section. As currently number A.3 and much continuing are repeated through each of the next sessions, which adds pages of unnecessary red tape. The Zoning Administrator would have to regularly inspect and enforce visual screening requirements, adding to the County staff workload.

Fewer categories may reduce the regulatory burden on the developer, property owners, and County staff.

Section 1506 and 1507: Class 3 and Class 4 CSECS. Performance standards should be combined where the same for ease of administration. The proposed format is unnecessarily complex.

Section 1508: Application Requirements for Class 3 and Class 4. Use as model to combine performance standards. The survey map should be completed by a registered land surveyor or Professional Engineer. Section 1508.J seems rather subjective—reliance on this narrative pro or con may be arbitrary. Also, under L. “Critical habitat” is undefined, and “An avian study based on the US Fish and Wildlife Service” seems to be missing the rest of the sentence—the USFWS what? Standards? Data? The requirement is unclear and vague.

The escrow requirements under 1508.P and 1508.Q are typical of much larger Cities which have accounting and financial staff to manage and track these transactions. Utility-scale applicants typically have experience with these types of requirements; however, this may be a regulatory burden on York County staff and elected officials, introducing difficulties in meeting State and Federal auditing standards not to mention day-to-day time. This is a big city solution to a rural County problem.



Section 1509: Construction and Operations. This is a good section.

Section 1510: Safety Measures. This is mostly standard operating procedure.

Section 1511: Discontinuation and Decommissioning. This is mostly a good section. We are seeing more jurisdictions addressing Repowering (replacing equipment) in this section, as specifically not discontinuation OR specifically requiring a new permit (1511.B). Expectations are changing for decommissioning plans and security.

Section 1512: Noise. This section should include some reference for rational basis of requirements which do not generally apply throughout a zoning district. If solar can only be 37 dBA, what about irrigation well pumps? That may be an Equal Protection question.

Section 1513: Indemnification. This should be covered in your general Zoning Resolution administrative text.

The untitled matrix at the end of the Article is useful, and could remain and replace much of the individual text throughout the proposed document.

RECOMMENDATIONS

In general, the following items are recommended for consideration should the amendment be adopted, or returned to Planning Commission for further review.

1. Any Resolution of Adoption should specifically reference the Energy Element of the Adopted York County Comprehensive Plan, and the rational basis of standards in the proposed Zoning regulations. These written findings will be essential if the amendment is challenged in court.
2. Simplify the Class 1 Individual/Acreage SSECS to either exempt agricultural/off-grid and net-metering installations or align more closely with Small Scale Wind Energy system requirements.
3. Resolve conflicts in setback requirements for all classes of solar projects.
4. Consider consolidation of Class 2-3-4 categories into one or two categories which would be more clear for zoning administration.
5. Consider consolidation of common performance standards for Class 2-3-4 Commercial projects.
6. Reconsider vegetative buffer standards given burden of enforcement.
7. Remove specific references to fees and add to the Official Fee Schedule adopted and periodically updated by the County Board of Commissioners (currently on last page of the Zoning Resolution).
8. Add requirement stating: Any modifications to an approved Site Plan must be approved by the Zoning Administrator for consistency with County approval, prior to construction.
9. We can add standards for Battery Energy Storage Systems (BESS) and do some reformatting as part of the overall Zoning Regulation review implementing the Comprehensive Plan update.

Note: These recommendations are only the opinions of MPC. The Planning Commission and Board of County Commissioners should only adopt regulations which they are comfortable enforcing. In addition, these recommendations do not imply MPC's opinion the proposed regulations are complete or in conformance with the Comprehensive Plan, and are only provided for consideration as critical items of interest. The Board could also choose not to approve said proposal on its own merits.