Columbia County Solar Ordinance Case Study

September 2026

Extension
UNIVERSITY OF WISCONSIN–MADISON

Developed by UW-Madison Division of Extension's RESET Program

Purpose

This case study is intended to provide local governments with an example of how one county, Columbia County, adopted zoning measures for solar energy projects less than 100 megawatts (MW) in size. It is important to note that while many of the concerns raised about renewable energy siting are shared across many Wisconsin communities, local context remains important, so this case study is meant to serve as a learning tool rather than a template.

Wisconsin's Regulatory Landscape For Large-Scale Renewable Energy

Under Wisconsin state law, renewable energy projects with a nameplate capacity of 100 MW or greater fall under the siting jurisdiction of the Public Service Commission of Wisconsin (PSC). Projects below this threshold are regulated by local governments within limits set by state law. Read UW-Madison Extension's Solar Guidance Memo to learn more about what is allowed under Wisconsin statute.

Based largely on Columbia County's work, UW-Madison Extension has developed a guide Model Solar Zoning Ordinance that local governments can use as a starting point to develop a zoning ordinance that complies with Wisconsin regulations.

Designing the Columbia County ordinance

After the High Noon solar project was proposed in Columbia County in July of 2022, the County Board of Supervisors realized they needed a zoning ordinance that addresses the scale, complexity, and community impacts of proposed projects in a way that complies with state law.

On January 3, 2023, the planning and zoning committee documented a list of 27 community concerns, based both on input from the public and on comments from staff. These concerns became a foundation for revising its solar energy ordinance for utility-scale projects. The Columbia County Small Solar Energy Generating Facility ordinance was adopted in June of 2024. The ordinance uses a Conditional Use Permit process to address the community's concerns with potential solar projects.

Structure of the Ordinance

What Solar Energy Systems the Ordinance Covers

The ordinance defines the types of solar energy systems subject to county review. Columbia County applies application requirements to projects the ordinance classifies as "Small Solar Energy Generating Facilities," which are utility-scale projects less than 100 MW. The ordinance excludes accessory systems, ensuring that the ordinance specifically applies to utility-scale development and not to residential and commercial solar projects intended for on-site electricity use.

In the Model Solar Ordinance, utility scale projects under 100 MW are called "Locally Permitted" Solar Energy Systems rather than "Small" facilities, and projects 100 MW or greater are called

"CPCN-Permitted" Solar Energy Generating Systems (which are permitted by PSC). Although local governments do not have siting authority for projects 100 MW or larger, both the Columbia County Ordinance and the Model Solar Ordinance include information requirements for CPCN-permitted projects.

Application Requirements

The Columbia County ordinance outlines 17 application requirements for Conditional Use Permits (CUP) for an application to be considered complete. These requirements span environmental, technical, and operational considerations, and allow the county to assess risk, anticipate impacts, and outline accountability measures. See the table of concerns below for more details.

Application Review Criteria

In addition to specifying what must be submitted in the application requirements section, the ordinance established 22 application review criteria. Many of the review criteria build directly on the application requirements and address community concerns by specifying how submitted information will be assessed.

Additional Resource Links

- Columbia County Zoning Ordinance Ch.12 Subchapter 100
- Model Solar Ordinance, UW-Madison Extension
- Solar Guidance Memo for Counties, Cities, Villages, and Towns, UW-Madison Extension
- Guide to Local Regulation, Wisconsin Land+Water
- Zoning Ordinance Handbook, Center for Land Use and Education (CLUE)

Columbia County Community Concerns Tracker

This table maps each community concern that was addressed by the ordinance for projects under 100 MW to its ordinance citation. Application requirements define what a developer must submit; review criteria define how the county evaluates that submission.

Page references are to the Columbia County Zoning Ordinance Chapter 12 Subchapter 100.

Category	Concern or Topic	Application Requirement	Review Criteria
Framing	Definitions (p.59 #3)	–	–
	Purpose & scope (p.59 #1)	–	–
Administrative	As-built filing	p.64 #9 (Zoning)	
	Operator change notice	p.64 #7 (Zoning)	
Economics and Financials	Permit fee	p.63 #5c (Zoning)	
	Bonds (construction + decommissioning)	p.60 #4c5	p.63 #4d18-19
	Drain tiles	p.60 #4c4	p.62 #4d14
	Shared revenue / utility payments	p.60 #4c6	p.63 #4d17
	Property value impacts	–	p.63 #4d22
	Road maintenance	p.60 #4c7	p.62 #4d13
Environmental	Construction Best Management Practices	p.60 #4c10	–
	Dust mitigation	–	p.62 #4d7
	Sensitive species / wildlife corridors	p.60 #4c11	p.62 #4d5
	Groundwater testing	p.61 #4c13	–
	Water / runoff (including construction)	p.60 #4c4, p.61 #4c13	p.62 #4d9, P.62 #4d15
	Pollinators	–	p.61 #4d4a
Land Use	Aesthetics / vegetative screening	p.60 #4c3	p.61 #4d3
	Agrivoltaics	–	p.61 #4d4

	Cultural & archaeological resources	p.60 #4c11	p.62 #4d8
	Setbacks (participating / non-participating)		p.61 #4d1, p.64 #10a
	Snowmobile / trail routes	p.60 #4c2	–
Health and Safety	Battery storage (BESS) setbacks	p.64 #10a	–
	Battery lifecycle management	–	p.65 #10c3
	Emergency management	–	p.63 #4d16
	Hazardous material containment		p.63 #4d16, p.64 #10b,
	Maintenance log	p.61 #4c14	–
	Noise	p.61 #4c17	p.62 #4d11
	Stray voltage	p.61 #4c16	p.61 #4d2
	Storm damage / panel cleanup	p.61 #4c15	–
Decommissioning	Cleanup & decommissioning plan	p.60 #4c5	p.63 #4d19
	Land productivity at decommissioning	p.60 #4c5	–
Laws and Planning	Project transparency	p.60 #4c7	–
	Early notice to neighbors	p.61 #4c12	–
	Zoning / site plan	p.60 #4c2	–

Authors

Tiana Snyder, The Nature Conservancy
Jessy Bradish, UW-Madison Extension
Diane Mayerfeld, UW-Madison Extension
Darby Martinez, Renewable Energy Intern
Rylee McDaniel, Renewable Energy Intern
Logan Roessler, Renewable Energy Intern

This work was informed by Kurt Calkins of Columbia County and Wisconsin Land + Water.

For more information, visit go.wisc.edu/reset or contact RESET at reset@extension.wisc.edu.

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