

Sustainability Committee

Regular Meeting Notice and Agenda

Village of Cross Plains
2417 Brewery Road, Cross Plains, WI 53528
(608) 798-3241

Monday, October 12, 2020
6:00 pm

Due to COVID-19, this will be a virtual meeting. Interested parties may participate by logging into the conference room or teleconference line. The log in information is as follows:

Join Zoom Meeting Link:

<https://us02web.zoom.us/j/83824326133>

Phone Number:

1-312-626-6799

Meeting ID:

838 2432 6133

I. Call to Order, Roll Call, and Agenda Review

II. Public Comment – This is an opportunity for anyone to address the Sustainability Committee. *Please observe the time limit of 3 minutes.* While the Sustainability Committee encourages input from residents, it may not discuss or act on any issue that is not duly noticed on the agenda.

III. General Business

1. Committee Member Report Outs and Updates.
2. Discussion and Possible Approval of the September 14, 2020 Sustainability Committee Minutes.
3. Discussion of Sustainability Plan Development: Public Input Process.
4. Discussion and Possible Action Regarding Rooftop Solar for the Public Library.
5. Discussion and Possible Action on Draft Solar Ordinance.
6. Discussion of Village Sustainability Webpage Content.

7. Wrap up and Next Steps

IV. Adjournment

This meeting notice constitutes an official meeting of the above referenced group and was posted in accordance with all applicable laws related Open Meetings Law. It is possible that members of and possibly a quorum of members of other governmental bodies of the municipality may be in attendance at the above stated meeting to gather information. No action will be taken by any governmental body at the above stated meeting other than the governmental body specifically referred to above in this notice. Upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals. For additional information or to request this service, contact the Village Hall at (608) 798-3241 or bchang@cross-plains.wi.us.

Sustainability Committee

Meeting Minutes

Village of Cross Plains
2417 Brewery Road, PO Box 97
Cross Plains, WI 53528
(608) 798-3241

Monday, September 14, 2020
6:00 pm

This meeting was conducted virtually.

I. Call to Order and Roll Call

The meeting of the Cross Plains Sustainability Committee was called to order at 6:03 pm.

Present: Committee members Melissa Gavin, Steve Douglas, John Burandt, Kevin Thusius and Michael Pomykalski.

Absent: None

Also present: Village Administrator/Clerk Bill Chang.

II. Public Comment – This is an opportunity for anyone to address the Sustainability Committee. *Please observe the time limit of 3 minutes.* While the Sustainability Committee encourages input from residents, it may not discuss or act on any issue that is not duly noticed on the agenda.

There were no public comments.

III. General Business

1. Committee Member Report Outs.

Thusius reported that John Burandt did a great job reporting to the Village Board regarding the Sustainability Committee Annual Review.

Pomykalski reported that the Police Department recommended, and the Village Board approved a gas squad vehicle replacement instead of an electric vehicle.

2. Discussion and Possible Approval of the August 10, 2020 Sustainability Committee Minutes. *A motion was made by Burandt, seconded by Pomykalski, and unanimously carried by the Sustainability Committee, to approve the August 10, 2020 Sustainability Committee Minutes.*

3. Discussion of the Sustainability Plan Development: Public Input Process. *A public meeting to collect additional public input for the Sustainability Plan was scheduled for November 14th at 10:00 am. The committee will discuss specific parameters at the its next meeting.*

4. Discussion of Properties for a Solar Farm.

A motion was made by Thusius, second by Douglas, and unanimously carried, by the Sustainability Committee, to support the Village Administrator to negotiate with landowners to site a solar farm on their property.

5. Discussion and Possible Action Regarding Rooftop Solar for the Public Library.

Pomykalski reported that he has not yet received proper responses from his contacts. An update will be provided at the next meeting.

6. Discussion of Platform for External Communications: Webpage Development

Chang provided an overview of the sustainability section to the Village's website. The committee instructed Chang to go live with the page and continue to build it from there.

7. Wrap up and Next Steps

- *Sustainability Plan Process – gathering information and meetings*
- *Rooftop solar on the public library*
- *Website*

IV. Adjournment

A motion was made by Thusius, seconded by Burandt, and unanimously carried by the Sustainability Committee, to adjourn. Meeting ended at 7:55 pm.

Pursuant to law, written notice of this meeting was given to the public and posted on the public bulletin boards in accordance with the Open Meetings Law.

Respectfully submitted,

Bill Chang
Village Administrator/Clerk



Staff/Department: Bill Chang, Village Administrator
Subject Matter: Small Solar Energy System Ordinance Amendment
Meeting Date: October 12, 2020
Referral History: PC – 08.31.2020

Executive Summary:

This ordinance amends sections to the Village's Zoning Ordinance to streamline the permitting process for small solar systems (residential solar).

Project Background:

Within the past year, the Village has seen an increased interest in residential solar. The Sustainability Committee and Village Board has also expressed interest in streamlining the approval process.

The Village is in the process of obtaining certification to become a SolSmart Community® The revised amendment language reflects most permissive language recommended by Sol Smart.

Code/Policy Review:

[Chapter 84](#) of the Village Municipal Code regulates Zoning and solar developments.

Fiscal Impact:

None

Recommendation:

The Plan Commission recommend approval of these ordinances to the Village Board.

Appendices:

An Ordinance to Amend Certain Provisions of Section 84.65(X) Concerning Small Solar Energy Systems and To Amend Sections 84.25 – 84.40 of the Village Code of Ordinances to Allow Small Solar Energy Systems as Permitted in All Zoning Districts as an Accessory Use and Structure; Recommendation Letter from SolSmart.

VILLAGE OF CROSS PLAINS

ORDINANCE NO. _____

**AN ORDINANCE TO AMEND CERTAIN PROVISIONS OF SECTION 84.65(x)
CONCERNING SMALL SOLAR ENERGY SYSTEMS AND TO AMEND
SECTIONS 84.25 – 84.40 OF THE VILLAGE CODE OF ORDINANCES TO ALLOW
SMALL SOLAR ENERGY SYSTEMS AS PERMITTED IN ALL ZONING
DISTRICTS AS AN ACCESSORY USE AND STRUCTURE**

The Village Board of the Village of Cross Plains, Dane County, Wisconsin does hereby ordain as follows:

1. Section 84.65(x)(1) of the Village Code of Ordinances is repealed in its entirety and recreated to now read as follows:
 - (1) Roof mounted, building mounted and ground mounted solar energy systems are permitted in all zoning district as an accessory use and structure to a permitted principal use subject to the standards for accessory structures in the applicable zoning district, and the specific criteria set forth in this section.
2. Section 84.65(x)(2) of the Village Code of Ordinances is repealed in its entirety and recreated to now read as follows:
 - (2) Except as provided for in this paragraph, solar energy systems shall comply with the height limits and setback requirements for accessory structures in the zoning district in which the solar energy system is located. For a roof-mounted system installed on a flat roof, the highest point of the system shall be permitted to exceed the district's height limit by up to 15 feet above the rooftop to which it is attached. Ground-mounted solar energy systems are prohibited in the front yard of a residential zoned district.
3. Section 84.65(x)(7) is created to now read as follows:
 - (7) Solar energy systems are exempt from any and all screening requirements as set forth in this chapter or any other chapter of the Village Code.
4. Section 84.65(x)(8) is created to now read as follows:
 - (8) Definitions.

- a. Ground Mounted. A solar energy system mounted on a rack or pole that rests or is attached to the ground.
 - b. Roof Mounted. A solar energy system mounted on a rack that is fastened to or ballasted on a building roof.
 - c. Solar Energy System. A solar energy system whose primary purpose is to harvest energy by transforming solar energy into another form of energy or transferring heat from a collector to another medium using mechanical, electrical or chemical means.
5. Section 84.25(d)(6) is created to add small solar energy system as an accessory use permitted by right. Section 84.25(e)(2) is deleted.
 6. Section 84.26(d)(18) is created to add small solar energy system as an accessory use permitted by right. Section 84.26(e)(4) is deleted.
 7. Section 84.27(d)(12) is created to add small solar energy system as an accessory use permitted by right. Section 84.27(e)(5) is deleted.
 8. Section 84.28(d)(13) is created to add small solar energy system as an accessory use permitted by right. Section 84.28(e)(5) is deleted.
 9. Section 84.29(d)(13) is created to add small solar energy system as an accessory use permitted by right. Section 84.29(e)(5) is deleted.
 10. Section 84.30(d)(13) is created to add small solar energy system as an accessory use permitted by right. Section 84.30(e)(4) is deleted.
 11. Section 84.31(d)(13) is created to add small solar energy system as an accessory use permitted by right. Section 84.31(e)(2) is deleted.
 12. Section 84.32(d)(13) is created to add small solar energy system as an accessory use permitted by right. Section 84.32(e)(2) is deleted.
 13. Section 84.33(d)(13) is created to add small solar energy system as an accessory use permitted by right. Section 84.33 (e)(2) is deleted.
 14. Section 84.34(d)(17) is created to add small solar energy system as an accessory use permitted by right. Section 84.34(e)(3) is deleted.
 15. Section 84.35(d)(17) is created to add small solar energy system as an accessory use permitted by right. Section 84.35(e)(3) is deleted.
 16. Section 84.36(d)(16) is created to add small solar energy system as an accessory use permitted by right. Section 84.36(e)(3) is deleted.

17. Section 84.37(d)(12) is created to add small solar energy system as an accessory use permitted by right. Section 84.37(e)(2) is deleted.
18. Section 84.38(d)(12) is created to add small solar energy system as an accessory use permitted by right. Section 84.38(e)(2) is deleted.
19. Section 84.39(d)(12) is created to add small solar energy system as an accessory use permitted by right. Section 84.39(e)(2) is deleted.
20. Section 84.40(d)(6) is created to add small solar energy system as an accessory use permitted by right. Section 84.40(e)(2) is deleted.
21. **Severability.** If any portion of this Ordinance or its application on any person or circumstances is held invalid, the validity of this Ordinance as a whole or any other provision herein or its application shall not be affected.
22. **Effective Date.** This Ordinance shall take effect immediately upon its passage and publication.

Adopted this ____ day of _____, 2020.

VILLAGE OF CROSS PLAINS

By: _____
Jay Lengfeld, President

By: _____
Bill Chang, Administrator/Clerk

PZD-1a: Review zoning requirements and identify restrictions that intentionally or unintentionally prohibit solar PV development. Compile findings in a memo. (Required for Bronze)

To assist your local government, the national solar experts at SolSmart have conducted a review of your community’s zoning and land use regulations to assess possible barriers (i.e. height restrictions, set-back requirements, etc.) and gaps related to solar PV development. Below, please find the outcome of the review. By reading the narrative, reviewing the example code language provided, and signing the statement at the bottom of the page, your community will satisfy the PZD-1a pre-requisite and be one step closer to achieving SolSmart designation.

Overview

The Village of Cross Plains [Zoning Ordinance](#) was accessed and reviewed during July 2020. The ordinance was accessed via the [Building Inspection and Zoning Information website](#).

- A search for “photovoltaic” yielded zero results.
- A search for “solar” yielded 60 results.

Positive Elements in Current Code

Section	Element	Description
Section 84.64 Energy Production Land Uses and Structures (b) Large Solar Energy System	Large-scale Solar	This section provides the requirements and regulations for large-scale solar energy development.
Review Comment		
Including guidance for large-scale solar development aligns with SolSmart best practices. This section provides helpful details about the process for large-scale solar energy development that is often missing from zoning ordinances. Key information provided includes the need for a building permit and additional information and plans required by the Building Code.		

Potential Barriers in Current Code

Section	Element	Description
Section 84.65 Accessory Land Uses and Structures (x) Small Solar Energy System	Accessory Use/By Right	Small Solar Energy Systems permitted as a conditional use.
Review Comment		
The zoning ordinance indicates small solar energy systems are permitted as a conditional use in all zoning districts. Depending on the complexity of the conditional use permit process, the time it takes to permit a small solar energy system may increase the cost of the project and therefore decrease the ability of all residents and business to be able to access and afford solar. Permitting solar energy		

systems as a permitted use in all zoning districts can improve equitable access to solar by reducing installation time and costs.

Examples

More permissive:

“Solar Energy Systems as described in this Article are permitted in all zoning districts as an accessory use to a permitted principal use subject to the standards for accessory uses in the applicable zoning district and the specific criteria set forth in this article.” ([Renewable Energy Ordinance Framework, DVRPC](#))

Less permissive:

“Solar Energy Systems shall be considered an accessory use and permitted by right if mounted to an existing structure and if any percentage of the energy is used for one or more of the principal uses on the same lot.” ([Renewable Energy Ordinance Framework, DVRPC](#))

Potential Gaps in Current Code

Element	Priority
Definition	Low. The definition forms the basis of understanding for any forthcoming solar ordinance.
Review Comment	
Solar energy systems are loosely defined in the zoning ordinance. Consider adding definitions with distinctions between roof-mounted and ground-mounted and small, medium, and large solar energy systems to provide clarity and a foundation on which to base levels of review and permits required.	
Examples	
See a list of possible definitions in the Wisconsin Solar Toolkit (page 18 of 35 in the PDF).	

Element	Priority
Height	Medium. Allowing the solar energy system to exceed the district’s maximum height limit is critical, especially to allow for solar energy systems to be installed where buildings may have already met the maximum building height. It is also important for system efficiency.
Review Comment	
It is a best practice to either exempt solar energy systems from height limits or permit solar energy systems to exceed the maximum building height in all applicable districts. For buildings that are already built to the maximum height limit – especially buildings with flat roofs - this may limit their ability to install solar. This is particularly critical on flat buildings, because solar installations on these structures are typically done at an angle to maximize system efficiency (generally at the same angle as the latitude at which the system is installed). Therefore, additional height is often necessary.	
Examples	
Most permissive option: “For a roof-mounted system installed on a flat roof, the highest point of the system shall be permitted to exceed the district’s height limit of up to fifteen (15) feet above the rooftop to which it is attached.” (Renewable Energy Ordinance Framework, DVRPC)	

Less permissive option: Municipalities can be more restrictive than this, though it is not recommended that they limit to less than six (6) feet above the rooftop surface.” ([Renewable Energy Ordinance Framework, DVRPC](#))

Element	Priority
Screening/Aesthetic Requirements	Medium. Screening requirements may increase installation costs and/or decrease system efficiency.
Review Comment	
It is a best practice to exempt solar energy systems from screening requirements and allow solar energy systems to be seen from public rights of way.	
Examples	
<p>Screening of Mechanical and Electrical Equipment: All exterior mechanical and electrical equipment shall be screened on all vertical sides at least to the height of the equipment it is screening and incorporated into the design of buildings to the maximum extent feasible. Equipment to be screened includes, but is not limited to, all roof-mounted equipment, air conditioners, heaters, utility meters, cable equipment, telephone entry boxes, backflow preventions, irrigation control valves, electrical transformers, pull boxes, and all ducting for air conditioning, heating, and blower systems. Screening materials may include landscaping or other materials that shall be consistent with the exterior colors and materials of the building. Solar energy systems are exempt from this screening requirement. (emphasis added) The Architectural Review Board or Landmarks Commission may reduce the height of the required screening based on the placement of the equipment on the roof, the existing height of the subject building and surrounding buildings, and the overall visibility of the equipment. (9.21.140 Screening, Santa Monica Zoning Code)</p>	

Element	Priority
Setbacks	Low. The village may want to consider reducing the setback requirements for solar energy systems and/or allow them to encroach reasonably into the setback so that they can receive adequate sunlight to make them efficient.
Review Comment	
It is a best practice to allow ground-mounted solar energy systems a modest encroachment into the setback.	
Examples	
<p>More permissive option: Small- and medium-scale ground-mounted solar energy systems accessory to principal use may be located no closer than [1/2 of the setback that would otherwise apply] from the front, side or rear lot line. All ground-mounted solar energy systems in residential districts shall be installed either in the side yard or rear yard to the extent practicable (Model Zoning for the Regulation of Solar Energy Systems, MA DOER)</p> <p>Less permissive option: Small- and medium-scale ground-mounted solar energy systems accessory to a principal use may be located no closer than [twenty (20) feet] from the front, side or rear lot line. All ground-mounted solar energy systems in residential districts shall be installed either in the side yard</p>	

or rear yard to the extent practicable. ([Model Zoning for the Regulation of Solar Energy Systems, MA DOER](#))

Element	Priority
Lot Coverage (Impervious Surface)	Medium. Counting solar energy systems as lot coverage could limit the implementation of solar systems, especially if many of the current lots at or are near the maximum lot coverage allowed under the code.
Review Comment	
It is a best practice to exempt ground-mounted solar energy systems from lot coverage calculations as long as the area beneath the system is pervious (e.g. grass).	
Examples	
<p>Most Permissive: “For purposes of determining compliance with building coverage standards of the applicable zoning district, the total horizontal projection area of all ground-mounted and free-standing solar collectors, including solar photovoltaic cells, panels, arrays, inverters, shall be considered pervious coverage so long as pervious conditions are maintained underneath the solar photovoltaic cells, panels, and arrays.” (Renewable Energy Ordinance Framework, DVRPC)</p> <p>Less Permissive: “For purposes of determining compliance with building coverage standards of the applicable zoning district, the total horizontal projection area of all ground-mounted and free-standing solar collectors, including solar photovoltaic cells, panels, arrays, inverters and solar hot air or water collector devices, shall be considered ___% impervious coverage. For example, if the total horizontal projection of a solar energy system is 100 square feet, XX square feet shall count towards the impervious coverage standard. For a tracking array or other moveable system, the horizontal projection area shall be calculated at a 33-degree tilt angle.” (Renewable Energy Ordinance Framework, DVRPC)</p>	

Additional Notes

ATTENTION: There are typos in two sections where wind energy system is referred instead of solar energy system. See Section 84.64 (b) Large Solar Energy System (10) a and Section 84.65 Accessory Land Uses and Structures (x) Small Solar Energy System (6) a.

Please see the document SolSmart Zoning Code Considerations for additional information about what can be included in a solar ordinance.

I, [full name] as [title] of [community], [state] have received the zoning review and read its findings.

Signature: _____

Date: _____

Please note that this review is not an endorsement or recommendation for changing and/or updating the zoning code/ordinance. This is an informational review only.

Solar Photovoltaics on the Rosemary Garfoot Library

October 8, 2020

A remote survey of the library was done by SunVest Solar and the southwest roof was the only area found where solar panels could be placed. The system would consist of 24 panels each of which could generate 395 watts for a total system output of 9.4 kW-DC. When converted to AC the system would generate 7.6 kW-AC and cost of about \$23,000.

Return on Investment

Being that this is a government building it does not qualify for tax credits nor accelerated depreciation. It does qualify for Focus on Energy incentives and other grants could possibly be obtained.

A copy of the library's MG&E bill was obtained and a rough analysis will be done as some line items charges are not easily understood. (A copy of the September 2020 bill is enclosed). An average cost per kilo-watt-hour (KWH) will be used in this analysis and fixed costs will not be considered in the cost analysis. The library also participate in MG&E's Green Power Tomorrow program which supports renewable energy. If this solar system would be built it is assumed the library would stop participating in this system and therefore this cost will be removed from average cost per KWH.

Total electrical cost using criteria above	-> 1281.68
Total KWH used	-> 8238
Cost per KWH	-> 0.1556

Rather than use a commercial software program that calculates annual energy savings, such as HelioScope, a representative from SunPeak mentioned an off-the-cuff approximation for solar power generation, "every kilo-watt of DC installed will generate 1250-1300 KWH-AC annually."

For this system this means:

$9.4 \text{ kW-DC} * 1275 \text{ KWH-AC annually (per 1 kW-DC)} \rightarrow 11985 \text{ KWH-AC annually}$

This results in an annual savings of about: $11985 \text{ KWH} * \$0.1556/\text{KWH} = \1864.86 .
And if we add the annual saving for not participating in the Green Power Tomorrow program the annual saving grows by \$720 to \$2584.86.

Focus on Energy would provide an incentive of \$1600 for a system of this size.

$\$23,000 - \$1,600 \text{ (Focus on Energy)} = \$21,400$

$\$21,500 / \$2,584.86 \text{ (annual savings)} = 8.2 \text{ years for a Return on Investment}$

Other considerations:

With this system installed the Maximum Demand from the Distribution Service and the Maximum On-Peak Demand from the Electricity Service (from the MG&E bill) would hopefully decrease. These maximums can be a significant factor on the MG&E bill and this system has the possibility of reducing these maximums thus resulting in additional savings.

Installation

Both representatives said that with a solar system of this size employing a residential solar installer would most likely be the best. Midwest Solar Power, Full Spectrum Solar, and Legacy Solar Co-op were mentioned.



PO Box 1231
Madison, WI 53701-1231

Customer Name : VILLAGE OF CROSS PLAINS
 Summary Bill Number : 40708463
 Summary Bill Date : 09/15/20
 Service Address : 2107 JULIUS ST LIBR, CROSS PLAINS

Summary of Meters Billed, Energy Used and New Charges:

Group : VILLAGE OF CROSS PLAINS
 Subgroup : GENERAL GOV
 Account No: 21798160

1	Gas Meter(s)	73 Therms	\$	54.98
1	Electric Meter(s)	8,238 kWh	\$	1,535.13
			\$	1,590.11

Date	Account Activity	Amount
	Previous Account Balance	\$ 1,780.94
08/24/20	PAYMENT RECEIVED - THANK YOU	\$ -1,780.94

09/14/20 **GAS: COMMERCIAL AND INDUSTRIAL SERVICES**

Meter	Read Dates	Days	Readings	Constant	Therm CCF	Factor	Therms
G213971	08/11/20 - 09/10/20	30	65384 - 65444	1.120	67	1.092	73

Commercial & Industrial Distribution Service (GSD-1)

System Connection and							
Customer Service Charge	30 DAYS		at \$	0.80000	\$	24.00	
Distribution Service	73 THERMS		at \$	0.15630	\$	11.41	
Gas Supply Service (FS-1)							
Administrative Charge	73 THERMS		at \$	0.01440	\$	1.05	
Natural Gas Service	73 THERMS		at \$	0.25370	\$	18.52	
(Heating Degree Days = 44)							
			Subtotal		\$	54.98	

09/14/20 **ELECTRIC: COMM & IND TIME-OF-USE (CG-4A)**

Meter	Read Dates	Days	Readings	Constant	KWH
E329578	08/11/20 - 09/10/20	30	0 - 8238	1.000	8238

Three-Phase Grid Connection and						
Customer Service Charge	30 DAYS		at \$	6.32048	\$	189.61
State Low-Income Asst Fee	30 DAYS		at \$	0.12328	\$	3.70
Distribution Service						
Customer Maximum Demand	47.3 KW/DAY		at \$	0.08480	\$	120.33
Distribution Charge	8238 KWH		at \$	0.01001	\$	82.46
Electricity Service						
Maximum On-Peak Demand	37.4 KW/DAY		at \$	0.42653	\$	478.57
Base Energy All KWH Chg	8238 KWH		at \$	0.04148	\$	341.71
On-Peak 1 (10AM-1PM)	1515 KWH		at \$	0.05545	\$	84.01
On-Peak 2 (1PM-6PM)	2249 KWH		at \$	0.06177	\$	138.92
On-Peak 3 (6PM-9PM)	705 KWH		at \$	0.05402	\$	38.08
Green Power Tomorrow	6014 KWH		at \$	0.01000	\$	60.14
Fuel Cost Credit	2224 KWH		at \$	-0.00108	\$	-2.40
			Subtotal		\$	1,535.13

Total Account Balance \$ 1,590.11

Due Date 10/01/20
 Amount Due \$ 1,590.11