Best Practices for Solar PV permitting 12/19/12

City of Madison Solar, Zoning, and City Process

Matt Tucker, Zoning Administrator
Department of Planning and Community and Economic
Development

Guiding Principles

- Communities should ensure that their local ordinances or zoning regulations are in accordance with their state's existing solar access laws, and make adjustments as needed
- Strong state solar access laws are useful in supporting City government's solar access laws. Other states and cities can consider using Wisconsin's Statute and Madison's Ordinance as models
- For communities drafting new or updating solar access laws, reviewing those being used around the country should be useful

Guiding Principles

- Many access laws permitted changes to solar systems if they do not increase the cost of the system or decreases its efficiency.
- Communities should consider developing guidelines for siting solar on historic or significant buildings or sites.
- Some communities may find a need to allow public comments in the approval process of a contentious system. It may be more difficult to define what a contentious system is and know what to do with the public comments.
- Solar access regulations should offer a clear and open process for developers, building owners, solar system installers, and the general public.

Ordinance Amendments

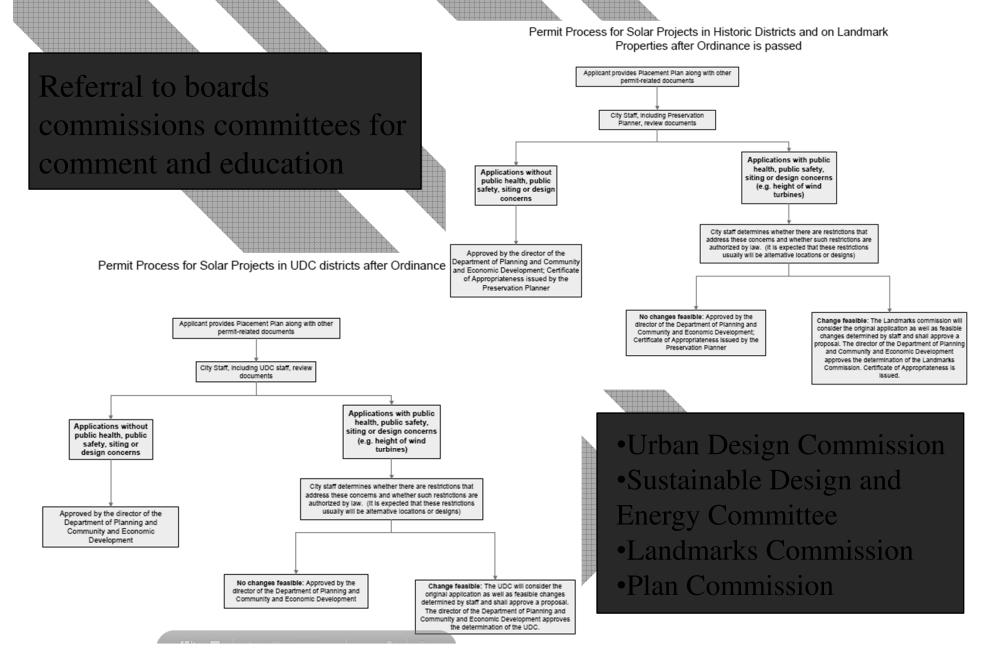
Wi. Stat. §66.0401 addresses the authority of municipalities to regulate solar and wind energy systems. It limits the usual reach of the City's authority to regulate for the health, safety, and public welfare by specifying three situations where regulation is allowed:

- 1. When the regulation is to preserve or protect public health or safety,
- 2. When it does not significantly impact the efficiency or cost of the solar energy system, or
- 3. When an alternative system of comparable cost and efficiency is available

Code Changes

- Treat solar energy systems as permitted accessory uses in all districts, subject to the approval of the Director
- An applicant will be asked to provide a placement plan for the system that shows the location of the building(s), the system design and other information that may be relevant to the Director's determination.
- In addition to this change to the general treatment of solar and wind energy systems in the Zoning Code, several provisions in the Landmarks ordinance that restrict such systems in some historic districts are proposed to be repealed.

Board, Committee, Commission Review



Sustainable Design and Energy Committee Comments

- Debated private (e.g., home association) restrictions on solar system should/should not be permitted
- Recommend a public approval process that deals with aesthetic, historic, and livability issues.
- Want more clarity on how it is determined if a project is approved administratively or by a City Commission
- Ordinance should include additional language to clarify that solar projects may face additional review

Urban Design Commission Comments

- Commission affirmed its support for solar/wind systems but noted the need to make a strong statement that the State statute and ordinance amendments as presently before it ignore important matters as to design and aesthetics.
- Concerns regarding how City staff approve, modify, or reject a solar energy project
- Statute § 66.0401 did not allow for a public approval process, statute is "wrong"
- That Alders, neighborhoods, commissions, committees and effected neighbors do not participate in the approval process
- Sit specific concerns:
 - Issues regarding general site aesthetics
 - The effect of solar systems (and wind turbines) on adjoining properties and neighborhoods,
 - The lack of consideration concerning the balance between urban design and solar energy systems

Landmarks Commission Comments

- The Landmark Commission briefly discussed the amendments and given that State Statute § 66.0401 is State Law, they felt there was little they could do
- Landmark Commission members noted that when the State passed State Statute § 66.0401 limiting municipalities' role in reviewing solar energy projects, "health" and "safety" were included in the wording, but "welfare" was deliberately not included. Landmark Commission members felt this made it clear that the state did not intend to permit the municipalities to use aesthetic concerns as a reason to deny such energy-saving measures. Another member of the Commission offered a opinion that it appears that the State law trumps historic concerns.

Ordinance adopted by Common Council, 10/28/2008

http://legistar.cityofmadison.com/mattersearch/index.aspx

Legislative Id No. 11077

Informational Brochure

Frequently Asked Questions

Do you need building permits?

Yes. Just like any addition or remodel you will need to obtain all necessary building permits. These may include building, electrical, heating and / or plumbing.

Who should obtain the permits?

Whoever is doing the work should obtain the permits. All contractors must be licensed in the City of Madison.

What do you need to obtain the necessary permits?

Follow the four steps outlined inside this brochure.

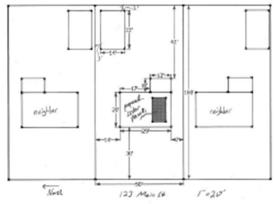
Frequently Requested Numbers

Building Permits	266-4551
Zoning	266-4551
Urban Design	267-8740
Preservation	
Building Inspections	266-4551

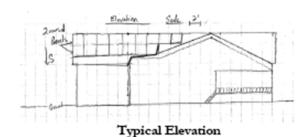
Where to Find Us

Madison Municipal Building 215 Martin Luther King Blvd., LL-110 Madison, WI 53703

Hours: 7:30am -4:30pm



Typical Site Plan



S Section (for sens share)

16 facts (for sens share)

18 facts (for sens s

Typical Cross-section

Permitting Process for Solar Panel Installations



Department of Planning and Development

Process Instructions, Staff Directions

Instructions for Processing Solar Panel Installations in Historic and Urban Design Districts

At this point, Mark Olinger must ultimately approve the installation of all solar panels. If the proposed location is a City Landmark, in a Historic District or in an Urban Design District it must first go through the appropriate staff (Rebecca Cnare, Al Martin) and, if deemed necessary, go to the respective Commission, before going to Mark.

Process:

- The permit is first set up at the building counter.
- Zoning then collects the information listed below, and gives it to Historic or Urban Design staff for initial review.
 - If Historic or UD staff determines that the proposal is acceptable they will sign off and then Zoning will present the material to Mark to get his approval.
 - If Mark is OK with the proposal, email him a PDF of the package and ask him to OK the proposal via email.
 - We can now sign off on the project in ACES and let the applicant know that they may come and pick up their building permit.
 - If Historic or UD staff determines that the project should go to commission, the applicant will need to coordinate with those staffpersons directly.
 - They will be asked to supply 11 or 14 collated copies (for Historic
 or UDC respectively) of the information listed below and may be
 asked to supply additional material. Additionally, Kay Schindel,
 one of the City's solar engineers, will evaluate the proposal and
 determine if alternate configurations can be accomplished at a
 reasonable cost and not significantly effect efficiency. The
 commission will consider the original application as well as
 feasible changes and shall approve a proposal.
 - · Zoning will present the material to Mark to get his approval.
 - If Mark is OK with the proposal, email him a PDF of the package and ask him to OK the proposal via email.
 - We can now sign off on the project in ACES and let the applicant know that they may come and pick up their building permit.

What we need at the Zoning counter:

- Complete site plan showing:
 - property lines
 - all buildings on the lot
 - the location of the panels
 - 4. significant vegetation that may affect placement of the panels

Instructions for Processing Solar Panel Installations in non-specialized Zoning Districts (not in Historic Districts, Urban Design Districts, PUD's or CUP's)

At this point, Mark Olinger must approve the installation of all solar panels. For installations not in special districts the process is as follows.

Process:

- The permit is first set up at the building counter.
- Zoning then collects the information listed below, organizes it so Mark can
 easily understand the project and give it to him for review. We should let the
 applicant know that this process may take a few days. (Mark can only impose
 conditions or restrictions to protect public health and safety, OR that do not
 significantly increase the cost, OR that do not significantly decrease
 efficiency, OR that allow for an alternative system of comparable cost and
 efficiency.)
- If Mark is OK with the proposal, email him a PDF of the package and ask him to OK the proposal via email.
- We can now sign off on the project in ACES and let the applicant know that they may come and pick up their building permit.

What we need at the Zoning counter:

- Complete site plan showing:
 - property lines
 - all buildings on the lot
 - 3. the location of the panels
 - 4. significant vegetation that may affect placement of the panels
 - 5. buildings and other improvements on adjacent lots
- Scaled elevation views of the panels and their supports (Use your judgment as
 to what is necessary; a rooftop installation that lays flat on the roof may
 simply require a side view and an aerial picture with the panels drawn in. A
 rooftop or ground installation that requires a support structure may require
 actual elevations from all visible sides use your judgment.)
- Contact information

NOTE: The above submittal requirements also apply to Minor Alterations to CU's and PUD's if they are not in Historic Districts or require UDC review. For Minor Alterations that require Historic or Urban Design Review see the submittal requirements pertaining to installations in those districts.

Process Instructions/Forms



Phone

Date Received Intake by Zoning District Special Conditions

Solar Panel Submittal Form

Project Address	
Contact Name and Company_	

Applications in non-Special Districts must include (additional information may be requested if there are design, health or safety concerns):

- Scaled site plan showing:

 - property lines
 all buildings on the lot
 - location of panels
 - building and other improvements on
 - significant vegetation that may effect placement
- Scaled elevation views of the panels showing the building and any supporting structures

Applications in Special Districts or requiring special approval (Urban Design, Historic, PUD, Conditional Use) must include:

- Scaled site plan showing:

 - property lines
 all buildings on the lot
 - location of panels
 - building and other improvements on adjacent
 - significant vegetation that may effect placement
- Scaled elevation views of the panels showing the building and any supporting structures
- Photos of the subject property, from the public rights of way, showing the building on the whole and the location(s) where panels are proposed
- Photos of adjacent structures
- Data on the expected power generation of each panel
- Brief text explaining the project to staff and Commission members and any additional information that may be useful in evaluation
- Minor Alteration (to CU or PUD) Application with appropriate signatures, if applicable

42" 100' nε 30' 1"=2 123 Main St.

Zoning Administrator's Comments

Review Process

City staff review application, determines whether there are restrictions that address concerns and whether such restrictions are authorized by law. (It is expected that these restrictions usually will be alternative locations or designs)

No changes feasible:

■ Approved by the director of the Department of Planning and Community and Economic Development; Certificate of Appropriateness issued by the Preservation Planner

Change feasible:

■ The Landmarks Commission / UDC will consider the original application as well as feasible changes determined by staff and shall approve a proposal. The Director of the Department approves the determination of the Landmarks Commission or UDC. Certificate of Appropriateness is issued / UDC approval granted.

Case Study, Historic District Installation

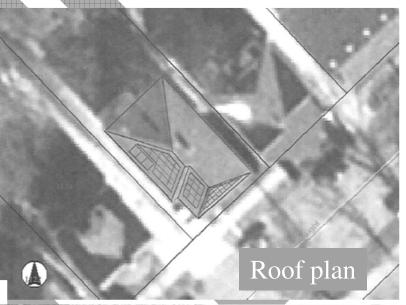




		SOUTH	HEAST		
Station Identification			Re	sults	
City:	Madison	Month	Solar Radiation	AC Energy	Energy
State:	WI		(kWh/m²/day)	(kWh)	(\$)
Latitude:	43.13° N	1	2.60	148	13.47
Longitude:	89.33° W	2	3.71	191	17.38
Elevation:	262 m	3	4.17	230	20.93
PV System Sp		4	4.66	237	21.57
DC Rating:	2.3 kW	5	5.80	296	26.94
DC to AC Derate Factor:	0.77	6	6.05	290	26.39
AC Rating:	1.8 kW	7	6.00	291	26.48
Array Type:	Fixed Tilt	8	5.84	287	26.12
Array Tilt:	33.0°	9	4.50	221	20.11
Array Azimuth:	135.0°	10	3.59	185	16.84
Energy Specifi	cations	11	2.47	127	11.56
Cost of Electricity:	9.1 ¢/kWh	12	2.34	130	11.83
		Year	4.31	2631	239.42

Station Id	entification	Results					
City:	Madison	Month	Solar Radiation	AC Energy	Ener		
State:	W		(kWh/m²/day)	(kWh)	(\$)		
Latitude:	43.13° N	1	0.95	35	- 1		
Longitude:	89.33° W	2	1.63	69	- 6		
Elevation:	262 m	3	2.50	128	11		
PV System Sp	ecifications	4	3.43	169	15		
DC Rating:	2.3 kW	5	4.93	251	22		
DC to AC Derate Factor:	0.77	6	5.43	261	23		
AC Rating:	1.8 kW	7	5.25	254	23		
Array Type:	Fixed Tilt	8	4.35	209	19		
Array Tilt:	33.0°	9	2.87	132	12		
Array Azimuth:	315.0°	10	1.81	80	7		
Energy Specific	cations	-11	0.98	34	3		
Electricity:	9.1 ¢/kWh				2		

NORTHWEST





Case Study, Historic District Installation

Installation



Landmarks Commission approves, Director/Staff to administratively approve future projects of similar characteristics.

How has this worked?

Generally speaking, solar approvals have been relatively streamlined, with some exceptions.

Some of the challenges:

- The directions for submitting material needed for (zoning) staff review are not generally being followed.
- Different installers do not necessarily provide same/consistent materials, for a variety of reasons.
- Staff is left to perform research to get projects to permit issuance.

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