

List of New Ordinances Under Review for Adoption By The Village of Cottage Grove

1st Ordinance for Consideration

Solar Energy Collection System(s)

Solar Collector: a device, structure or a part of a device/structure with the primary purpose of transforming solar energy (direct radiant energy received from the sun) into thermal, mechanical, chemical or electrical energy.

1. A Placement Plan shall be submitted at the time of application for a building permit. The Plan shall show the proposed location of the solar energy system on the lot, the design of the solar energy system, the location of improvements on adjoining lots, as well as landscaping on the lot and adjoining lots that impacts the location of the solar energy system. Additional materials may be required.
2. The Placement Plan shall be approved by the Building Inspector prior to installation of the energy system. Any conditions or restrictions placed on the energy system shall be limited to those that serve to preserve or protect the public health and safety, or do not significantly increase the cost, or decrease the efficiency of the system. Conditions or restrictions that allow for an alternative system of comparable cost and efficiency may also be imposed. Some development that includes solar energy systems may require additional approval, such as development in urban design districts, historic districts, development involving demolitions, and planned development districts.
3. Any conditions or restrictions placed on the energy system shall be limited to those that serve to preserve or protect the public health and safety, or do not significantly increase the cost, or decrease the efficiency of the system.

Question: should a building permit be required or a separate type of permit? Building permit is common. Plus site plan for larger systems; canopy and solar farm. **Does installation require a Building Inspector?** Typically only for the larger systems to ensure site plan is being followed and setbacks met.

Ground Mounted, Solar Energy Collection Systems

Definition: collection system associated with mounting hardware that is affixed to or placed upon the ground including but not limited to fixed, passive or active tracking racking systems.

- 1) Collection systems are permitted by right in all zoning districts.
- 2) Collection systems shall be permitted in the rear yard only.
- 3) An unlimited quantity of solar panels is permitted on all zoning lots with the exception of any residential zoning lot thirty-thousand (30,000) square feet or less in size which shall be limited to a total of one hundred (100) square feet in area of solar panels.
- 4) Maximum height of any ground mounted solar energy collection system shall be fifteen (15) feet in high, measured from the grade at the base of the pole to the highest edge of the system.
- 5) The minimum clearance between the lowest point of the system and the surface on which the system is mounted in twelve (12) inches.
- 6) All parts of the freestanding system shall be set back ten (10) feet from the side and rear lot lines and shall not be located in any type of public easement

Roof Mounted, Solar Energy Collection Systems

Definition: collection system structurally mounted to the roof of a building or other permitted structure including limited accessory equipment associated with a system which may be ground mounted. Normally installed parallel to the roof with a few inches gap.

1. Collection systems are permitted by right in all zoning districts.
2. At the time of permitting, resident must supply an engineer's report stating that the roof in question is structurally sound enough to hold the solar units.
3. Collection systems may be located on any roof face of principal or accessory buildings. Systems should be flush mounted when possible.
4. Systems on residential & nonresidential structures shall not extend beyond the roof surface of a pitched roof or flat roof. Systems on all structures shall not extend above the highest peak of a pitched roof.
5. Height is measured from the roof surface on which the system is mounted to the highest edge of the system.

Canopy, Solar Energy Collection Systems

Definition: collection system consisting of elevated solar panels installed above parking lots, carports and other paved areas.

1. Collection system permitted by right in the suburban commercial, suburban office, suburban industrial and urban industrial zoning districts.
2. Canopy solar energy collection systems may exceed the applicable maximum accessory structure height if they cover an impervious surface parking area.
3. The height of canopy solar energy collection systems shall not exceed the height of the primary building that the parking area serves.
4. The minimum height of solar energy collection systems, if placed over a roadway, shall allow clearance for emergency and service vehicles with signage indicating height clearance (a minimum height of 12ft is recommended).

Farm, Solar Energy Collection Systems

Definition: site on which the primary land use is an array of multiple solar collectors on ground-mounted racks or poles

1. Collection system permitted by right in the rural agriculture zoning district and industrial districts.
2. No solar farm shall be erected on any lot less than four (4) acres in size.
3. A certified professional engineer shall certify that the foundation and design on the solar panels are within accepted professional standards, given local soil and climate conditions.
4. Power and communication lines running between banks of solar panels and to electric substations or interconnections with buildings shall be buried underground.
5. Systems, equipment, and structures shall not exceed thirty feet (30) in height when ground mounted.
6. Ground mounted solar energy collection systems as part of a solar farm shall have a minimum setback for all equipment, excluding fences, of: a. Front and Corner Yards: one hundred (100) feet b. Side and Rear Yards: fifty (50) feet from nonresidential property lines and one-hundred (100) feet from residential property lines.
7. Systems equipment and structures shall be fully enclosed and secured by a fence or wall with a height of eight (8) feet. Knox boxes and keys shall be provided at locked entrances for emergency personnel access.
8. An appropriate warning sign shall be provided at the entrance to the facility and along the perimeter of the solar farm. The sign at the entrance to the facility shall include the facilities 911 address and a twenty-four (24) hour emergency contact number.

2nd Ordinance for Consideration in Subdivision Ordinance or Comprehensive Plan

Lot/Parcel Organization

Street patterns and lot lines generally determine building orientation. To facilitate solar access, streets shall be oriented in an east-west direction to the maximum extent possible or to within 20 degrees of such orientation. Solar access is generally the greatest when the buildings' longest axis is east to west and southerly building exposures are maximized. The installation of street trees shall consider solar access objectives in the selection of tree species and planting location so as to minimize future shading of the most southerly side of contemplated building locations. This requirement shall not apply to preliminary plats approved prior to the effective date of this ordinance, provided the final plat of the preliminary plat is submitted within six (6) months, or to final plats submitted within six (6) months of preliminary plat approval or to portions of the subdivision where the applicant demonstrates that:

1. There are other means of assuring solar access to lots in question, including but not limited to cluster development on large parcels or through the use of building setback or solar access easements.
2. Topographic conditions on or surrounding the land being subdivided make such orientation unreasonable.
3. The shape and size of the property being subdivided make such orientation unreasonable.
4. Adopted storm water management plans or policies indicate a different street orientation.
5. Existing or approved future development contiguous to the subject property precludes adequate solar access to the portion in question.
6. Existing street patterns contiguous to the subject property make such orientation unreasonable.
7. Specific adverse environmental impacts would occur on the site if such orientation were achieved.
8. Desirable street circulation patterns require some streets to be in a more north-south direction.
9. The final platting of only a portion of an approved preliminary plat precludes changes in remaining portions of the preliminary plat which are necessary to provide adequate solar access to the portion in question.
10. **New or upgraded light village owned light fixtures (i.e. street fixtures) will use LED light bulbs**

3rd Ordinance For Consideration

“Electrification” of New Buildings

Residential Development Requirements

1. Ordinance will be enforced on all developments in residential zoning districts. This requirement shall not apply to residential developments approved prior to the effective date of this ordinance.
2. Developments shall prioritize the use of:
 - a. all electric appliances including but not limited to; furnace, water heater and range.
 - b. High-efficiency water softeners
 - c. 240V electric lines leading to the most likely location for vehicle parking
3. These requirements remain active unless the contractor can show proof that:
 - a. the price of the electric appliance in question is \geq 15% higher in cost
 - b. the village board approves an exemption at the developer's request

Commercial, Industrial and Agricultural Developments

1. Developments in suburban commercial, suburban office, suburban industrial, urban industrial and rural agricultural zoning districts are at this time exempt from this ordinance.

Parking Facilities

1. Requirements will be enforced for both new and existing parking facilities undergoing extensive reconstruction.
2. Surface parking facilities greater than or equal to fifty (50) parking spaces must have a minimum of two (2) electric vehicles charging stations (level 2 or greater) installed for every fifty (50) parking spaces or a fraction thereof.
3. Structured parking facilities must contain a minimum of four (4) parking spaces with electric vehicle charging stations (level 2 charger or greater) installed plus one (1) additional parking space with an electric vehicle charging station for every fifty (50) parking spaces.

Resources:

Gas vs Electric Water Heater

- <https://www.fixr.com/comparisons/gas-vs-electric-water-heater#cQ>
- <https://americanhomewater.com/gas-water-heater-vs-electric-whats-better-for-your-home/>

Gas vs Electric Furnace

- <https://www.fixr.com/comparisons/gas-vs-electric-furnace#cQ>
- <https://www.pickhvac.com/faq/gas-furnace-vs-electric-furnace-6-main-factors-comparison/>

Cost of a Level 2 EV Charger is ~\$400-\$600.

Inquiry about Biodiesel Plows

Mahanth Joishy – Superintendent, City of Madison Fleet

Hi Nicholas,

We run biodiesel on ALL of our trucks at City of Madison, and no conversion or any change in activity is ever needed. We run B5 in winter, B20 in spring through fall, and regular diesel if temperatures are below freezing, and if you follow this protocol you should have no problems on any type of truck.

I hope it works out for your fleet.

Nick Hess

Thanks Mahanth,

I thought a conversion was needed so that is great to know! How about availability? Is B5 and B20 readily available in the area or are there only a few select sites? Also, I wasn't sure if the County was making/using their own biodiesel from the landfill for their trucks. Is that true?

Thanks again for the quick response!

Mahanth Joishy

Hi, we get B5 and B20 biodiesel easily here through our contract deliveries to our own fuel stations. The County is making CNG from landfill methane conversion which is a neat project as well.

Kathy Kuntz – Director of the Dane county Office of Energy & Climate Change

Yes, the County gets CNG (we call it Renewable Natural Gas or RNG) from the landfill – we don't get biodiesel from the landfill. About half of our snowplows run on RNG at this point.