



**NAPERVILLE PLAN COMMISSION**  
COUNCIL CHAMBERS – MUNICIPAL CENTER

**DRAFT AGENDA**  
**10/06/2010**

7:00 p.m.

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**CALL TO ORDER:**

**A. Roll Call**

**B. Approve Minutes**

1. Approve the minutes of the September 15, 2010 Plan Commission meeting.

**C. Old Business**

**D. Public Hearings**

1. PC Case # PC 10-1-113 Small Wind and Solar Renewable Energy Text Amendment  
Petitioner: City of Naperville

Request: Continue the public hearing and recommend City Council approve the ordinance amending Title 6 (Zoning Regulations) of the Municipal Code to establish zoning regulations pertaining to small wind and solar renewable energy.

Official Notice: Published in the Naperville Sun on August 23, 26 & 29, 2010

**E. Reports and Recommendations**

**F. Correspondence**

**G. New Business**

**H. Adjournment**

**Any individual with a disability requesting a reasonable accommodation in order to participate in a public meeting should contact the Accessibility Coordinator at least 48 hours in advance of the scheduled meeting. The Accessibility Coordinator can be reached in person at 400 S. Eagle Street, Naperville, IL., via telephone at 630-420-6725 or 630-305-5205 (TDD) or via e-mail at [manningm@naperville.il.us](mailto:manningm@naperville.il.us). Every effort will be made to allow for meeting participation.**



**NAPERVILLE PLAN COMMISSION  
DRAFT MINUTES OF SEPTEMBER 15, 2010**

**Call to Order**

**7:00 p.m.**

**A. Roll Call**

Present: Bruno, Messer, Meyer, Sterlin, Trowbridge, Gustin, Herzog, Edmonds  
Absent: Meschino  
Student Members: Stancey  
Staff Present: Planning Team – Thorsen, Emery, Forystek, Zawila  
Department of Public Utilities -- Ritter

**B. Minutes**

Approve the minutes of the September 1, 2010 Plan Commission Meeting subject to modification on page 4 to reflect intent of location for ROLC.

Motion by: Gustin  
Second by: Meyer

Approved  
(8 to 0)

Chairman Edmonds moved consideration of Mayfair Resubdivision, PC#10-1-111 to the second item on the agenda.

**C. Old Business**

None

**D. Public Hearings**

**D1. PC 10-1-112  
School of Rock**

Conduct the public hearing and recommend that the City Council approve the Conditional Use for a training studio in the TU District at 220 N. Washington Street

Suzanne Thorsen, Planning Services Team, gave an overview of the request.

- Staff has reviewed the proposal and has no concerns with the use.
- Sound will be regulated by the city’s performance standards.

Plan Commission inquired about:

- Traffic circulation
- Noise
- How parking is shared with the adjoining property
- Whether the petitioner would commit to limiting the hours of operation

Denise Dills, 114 E. 6<sup>th</sup> Street, Hinsdale IL ( petitioner) responded to Plan Commission questions:

- Traffic may access parking located at the rear of the property from two

access and is primarily drop-off/pick-up in nature.

- At most, five to eight students would be on the site at a given time.
- Sound attenuation between the rooms will be provided in order to avoid conflicting noise. This will also minimize exterior noise impacts.
- A proposed attic dormer addition has been removed from the proposal.
- The petitioner would not object to limitations on Sunday or late Saturday evening music lessons but opposes any other restriction on hours of operation.

Plan Commission closed the public hearing.

**Plan Commission Discussion:**

- Bruno – Feels that a restriction on hours of operation is unnecessary as long as the business owner complies with the noise ordinance.
- Meyer – Agrees with Bruno and Herzog, but has concerns about left-hand turns to access the property during rush hour. Requested that staff look into traffic restrictions prior to Council consideration
- Herzog – If noise is not an issue then there should be no restriction on hours of operation.

Plan Commission moved to recommend approval of PC#10-112 a conditional use for a training studio in the TU District at 220 N. Washington Street.

Motion by: Meyer  
Seconded by: Herzog

Approved  
(8 to 0)

**E1. 10-1-111**  
Mayfair  
Resubdivision

Recommend that City Council approve the final plat of subdivision for Mayfair Resubdivision.

Jason Zawila, Planning Services Team, gave an overview of the proposed subdivision plat.

- The subdivision is requested to allow for fee-simple ownership in lieu of condominium ownership.
- No site or density modifications are proposed. Site and building configuration will remain consistent with what was approved for Mayfair.

Bob Meiborg of M/I Homes, the petitioner, responded to questions and clarified the request for the subdivision plat.

- The current mortgage environment precludes condominium ownership of the townhome units.
- Building modifications are very similar to the existing product and will comply with the city's masonry requirements. They will be considered a minor change.
- The townhome association will manage the property in cooperation with the condominium association.

Plan Commission inquired about:

- The nature of building elevations for new units
- Changes to the HOA responsibilities

Plan Commission moved to recommend approval of PC#10-1-111, Mayfair Resubdivision, all in accordance with staff's memorandum and presentation of September 15, 2010.

Motion by: Trowbridge  
Seconded by: Messer

Approved  
(8 to 0)

**D2. 10-1-113**  
Renewable Energy  
Text Amendment

Conduct the public hearing on the Small Wind and Solar Renewable Energy text amendment and continue to the meeting of October 6, 2010.

Suzanne Thorsen, Planning Services Team, gave an overview of the proposed Small Wind and Solar Renewable Energy zoning amendment.

- This amendment is initiated in accordance with the City of Naperville Environmental Sustainability Plan (2010) and associated work program.
- Scope of the ordinance is limited to wind and solar energy production.
- Overview of purpose, definitions, and regulations provided in the ordinance including illustrations for height, setback, and location. Proposed height limitations are consistent with the Telecommunications Ordinance.
- Additional language can be added similar to Accessory Structure Regulations in regards to the amount of area that the wind and solar technologies could occupy in a rear or interior side yard.
- Certain solar systems are exempt from the ordinance and building permits requirements as noted in the proposed ordinance. Staff will revise the language so that it is clearer.
- Shadow impacts were researched as part of this text amendment and data could not be found to substantiate concerns about smaller applications.
- Environmental impact studies are not proposed as a requirement with the text amendment and have not been required for telecommunication facilities.

Plan Commission inquired about:

- Limitations that the text amendment may create for residents that want to install wind energy technologies
- Where the technologies may be permitted by right or as a conditional use
- Clarification of conditional use versus variance process
- Coverage requirements in addition to the height requirements for freestanding solar energy systems
- A restriction on the number of building-mounted wind energy systems in residential areas
- Whether an environmental impact study should be required when reviewing these types of technologies

- Clarification of whether consumer-grade solar systems (e.g., solar – powered landscape lights) are exempt from the proposed ordinance.
- Net metering and requirements
- Impact to property values, shadow flicker
- How the text amendment could apply to future technologies
- Quantity of energy that wind and solar technologies can produce and the energy an average home needs
- Ordinances in comparable communities
- How the ordinance would affect a property such as Brighton Car Wash that was previously considered by the City Council

**Public Testimony:**

Barbra Brady, PO BOX 499, Naperville IL 60566:

- Building Inspector for twenty years with a master's degree in construction technology and has worked for the past 30 years with the electrical industry in development of National Electric Code and International Green Construction Code.
- Supportive of the proposed ordinance. Naperville is on the leading edge of this issue.
- On August 17, 2010 Governor Quinn signed two bills supporting energy independence.
- Homeowners associations cannot prohibit installation of solar panels.
- Suggested that the ordinance be titled "Renewable Power Energy Systems" to get away from individual solar lights.
- Believes the setback should be 1.5 times the tip height as opposed to the 1.1 setback, as the current setback gives clearance but does not account for the depth of the base.
- Rooftop setbacks in International Green Construction Code are two times the tip height.

Jonathan Nieuwsma, 1508 Dempster Street Evanston IL, spoke on behalf of the Small Wind Committee of the Illinois Wind Energy Association:

- Net metering applies only to small systems but the rate at which this occurs depends on numerous factors.
- Shadow flicker is an issue for utility scale turbines that spin at 20-30 RPM but smaller turbines spin more rapidly and there is more blur. Shadow flicker is not an issue for small systems.
- Wind speed – power of system increases with cube of wind speed. There is not a direct relationship between height and power generation. Taller towers access higher wind speeds where there are fewer obstructions.
- Location of turbine is site-specific and important as it depends on location of obstructions and the prevailing wind direction.
- Setback is of concern as there is state law that limits setback to 1.1 times the total system height. The Naperville ordinance

reflects the state law.

- A setback for building-mounted turbines would be reasonable.
- A homeowner will not profit from these types of systems but may be able to offset a fraction of their energy bill. However, for a commercial or industrial customer there is an opportunity to make a greater offset in energy consumption.

Michelle Hickey, 1360 W. Jefferson Avenue, Naperville IL, spoke on behalf of Illinois Solar Energy Association and as the manager of the City of Naperville's Renewable Energy Program.

- Setbacks – trees also can impose structural or property impacts due to branches or falling.
- Multiple systems would be cost prohibitive to install on a home. Net metering also creates additional limitations because there is no revenue to be generated.
- Solar systems are pitched towards the sun. For most systems, solar panels would not come far off the roof either due to solar access or wind shear. Building codes typically limit mounting at a rate that would not exceed 5'.

Plan Commission inquired about:

- The proposed setback of 1.1 times the height of freestanding wind energy systems and whether a similar requirement should be in place for roof-mounted wind energy systems
- How many communities have code for this type of technology
- State law that limits setbacks to 1.1 times the total system height
- The cost of installation and return of investment for wind energy systems

**Plan Commission Discussion:**

- Bruno – proposed to divide the ordinance into two components - one for wind, one for solar - for the purposes of voting. Believes that the main issue is how wind systems affect the individuals who live around them (noise, visual). Does not support wind applications in residential areas and expressed concern about setbacks for freestanding solar energy systems in residential areas.
- Messer – does not have many issues with what is proposed and believes that the ordinance does not restrict potential future technology. The setbacks are going to prevent a freestanding turbine on the great majority of residential lots. Building-mounted turbine restrictions are not unlike the television antenna restrictions. Net metering also effectively imposes limits on the size and capability of a turbine, in addition to the financial constraints of the technology. Agrees that there should be a lot coverage limit for solar panels.
- Gustin – agrees with Commissioner Messer. Believes that property owners will also express a right to install systems and the city's role is to ensure that they are safe, sound and within the character of the community, and this should be expressed in the intent.

- Herzog – requested that staff evaluate setbacks for building-mounted wind energy systems. Expressed concern about design standards for different types of systems and requested more information – ex, ridge-mounted turbine vs. a pole with blades mounted to the side of a home.
- Edmonds – believes the topics of wind and solar are distinct within the ordinance. Staff should look at coverage limitations for solar renewable energy to parallel the Accessory Structure Regulations. Agrees with Herzog regarding setbacks for building-mounted turbines.

Plan Commission continued consideration of this case to October 6, 2010.

**D3. 10-1-114**  
*Naperville*  
*Downtown2030*

Conduct the public hearing and recommend approval of Section 3: Land Use, the Land Use Action Agenda, and the Downtown Building Design Standards of *Naperville Downtown2030: Planning the Downtown Experience*.

Amy Emery, Planning Services Team, gave an overview of *Naperville Downtown2030: Planning the Downtown Experience*.

- The Planning Services Team is presenting the Land Use Section (including the Action Agenda) and Building Design Standards for the public hearing. Other sections of the draft plan are being reviewed by other boards and commissions.
- The city has worked in partnership with the Downtown Advisory Commission over a two year period to draft the plan as it stands today. This process included extensive outreach and public input.
- The future land use plan was updated to recognize the impact of institutional uses on the downtown, inclusion of an urban park and the North Downtown Special Planning Area.
- North Downtown Special Planning Area ensures that any future development has a positive impact on downtown. Key recommendations contained on page 28 of the Land Use Section were highlighted.
- Height recommendations are proposed within the plan using a total height recommendation rather than the number of stories. The Zoning Ordinance imposes a floor area restriction but does not limit the total building height. *Downtown2030* recommends FAR as the tool to limit height with additional guidance contained in the plan and recommended in the Action Agenda.
- The Downtown Advisory Commission will provide the final recommendation on *Downtown2030* to City Council in November.

**Public Testimony:**

Thomas Higgins, 725 N. Ellsworth Street, Naperville, IL:

- North Downtown Special Planning Area, expressed concern about land use as it impacts Washington Junior High School and an area that is currently used for parking by the school.
- Washington Junior High School is impacted by proximity to the train station and proximity to Washington Street. The potential of a new multi-level parking deck or building to intensify the area presents safety considerations.
- Illustrations of Transitional Use buildings do not reflect the realities of what the district allows in terms of bulk, size and height (e.g., recent approval of condominium structure). Representations to the public should represent full reality of what may occur in a given area.
- The North Downtown Area should account for bulk of buildings as they relate to the FAR exemption for parking decks.

Plan Commission inquired about:

- FAR as it relates to the additional height restriction and the ability to address bulk concerns
- Whether the height limitation will apply to parking structures
- The Transportation Advisory Board's recommendations on the Transportation Section
- The intent of Action Item 5, which refers to the ability of the Zoning Ordinance to anticipate new land uses
- Clarification of Action Items 11 and 12, referring to restaurant/bar mix in the downtown and mobile vending carts and Action Items 7 (urban park) and 8 (ground floor retail for parking decks)
- What future land use is intended in the vicinity of Naper School taking into consideration the Future Land Use Map and plan text regarding uses along Jefferson Avenue extending to Eagle Street (p.29 of Land Use Section)
- Methodology for how the city would evaluate a "stepped back" story

**Plan Commission Discussion:**

- Meyer – the spotlight box for the North Downtown Special Planning Area should reflect transportation impacts of future development. The language for ATM's should be included under discussion of financial institutions. Page 6 of the Downtown Building Design Standards should reference the height limitations proposed in the plan. An action item regarding rooftop surfaces as usable space for impact on square footage, parking, noise, lighting (reference p.35 of Land Use) should be added.
- Gustin – requested a copy of the Transportation Section.
- Herzog – a 60' height limitation may preclude innovative design on consolidated developments. Commended staff on the plan and building standards.

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- Edmonds – agrees with Herzog regarding the quality of the plan document and building standards.

Plan Commission continued consideration of this case to October 20, 2010.  
Written comments may be provided to staff via email through October 6, 2010.

**F. Correspondence**      None

**G. New Business**      None

**H. Adjournment**

10:33 p.m.



# Naperville

## PLAN COMMISSION AGENDA ITEM

**PC CASE:** 10-1-113 **AGENDA DATE:** 10/6/2010  
**SUBJECT:** Small Wind and Solar Renewable Energy Text Amendment  
 Petitioner: City of Naperville

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**LOCATION:** N/A

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Correspondence      New Business      Old Business      Public Hearing

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**SYNOPSIS:**  
 This is a request to amend Title 6 (Zoning Ordinance) of the Municipal Code to establish zoning regulations pertaining to small wind and solar renewable energy.

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**PLAN COMMISSION ACTION PREVIOUSLY TAKEN:**

Date	Item	Action
9/15	D2	Opened the public hearing and continued to October 6

**ACTION REQUESTED/RECOMMENDED THIS MEETING:**  
 Conduct the public hearing and recommend approval of the Small Wind and Solar Renewable Energy Ordinance.

**PREPARED BY:** Suzanne Thorsen, AICP, Project Manager

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**BACKGROUND**

The Small Wind and Solar Renewable Energy ordinance is proposed pursuant to the city's Environmental Sustainability Plan (ESP), which includes an implementation strategy to identify existing Municipal Code impediments to best practices for building, energy or site improvements.

The proposed zoning amendment would create a new chapter within Title 6 (Zoning Ordinance) of the Municipal Code to establish zoning regulations for small wind and solar renewable energy. The ordinance has been drafted to provide guidance that will appropriately direct the installation of small wind and solar technology in the city while recognizing that these technologies are continuously evolving. Currently, wind and solar renewable energy installations are governed by the Accessory Structures regulations contained in Section 6-2-10 of the Municipal Code. This ordinance does not adequately address the physical requirements and related considerations associated with these uses.

*Plan Commission Meeting of September 15, 2010*

The Plan Commission opened the public hearing for this matter on September 15, 2010. Three people provided testimony in support of the amendment during the public hearing. The Plan Commission discussed setbacks, aesthetic concerns for roof-mounted wind turbines, technical considerations and locations where renewable energy systems should be permitted. Following public testimony the Plan Commission requested that staff consider setbacks for building-mounted turbines; provide more aesthetic information about building-mounted turbines; evaluate lower height restrictions for freestanding solar energy systems; consider lot coverage restrictions for freestanding solar energy systems; and clarify language that would exempt consumer-grade solar technology (e.g., landscape applications).

Following the Plan Commission's September 15 public hearing, staff conducted additional research regarding building-mounted wind turbines and freestanding (ground-mounted) solar systems, including feedback from industry and design professionals on the requirements and limitations of these systems.

**DISCUSSION:**

Staff has revised the proposed Small Wind and Solar Renewable Energy Ordinance based upon feedback obtained during the public hearing and additional information gained since that time. Additional grammatical and formatting changes have been made. The discussion below summarizes key changes to the ordinance; a "tracked changes" version of the document is provided as Attachment 1 for further reference.

*Clarification of Terms*

The term "Freestanding" has been modified to "Ground-Mounted" for both wind and solar applications to better articulate the use and reflect common terminology. The term "Building-Mounted Small Wind Energy System" has been changed to "Roof-Mounted Small Wind Energy System" to articulate the acceptable mounting applications of this technology. The definition has correspondingly been modified to prevent pole mounting of wind energy systems to building facades.

*Consumer-Grade Solar Technology*

During the September 15 public hearing the Plan Commission inquired about limited-scale solar installations, for example those that use a solar cell to power landscape lighting. Staff clarified that the ordinance is not intended to apply to those small scale applications, which are self-contained and exist throughout the community. The definition of "Solar Energy System" has been revised to reflect only those systems that distribute power to principal or accessory structures. Further, Section 6-15-3 (General Requirements) has been modified to provide an exemption for any Renewable Energy System that does not require a permit.

*Roof-Mounted Small Wind Energy Systems*

Upon further review of the structural and technological considerations for roof-mounted wind turbines, and following consultation with industry experts who indicate that residential application of such systems is limited and unlikely to present substantial renewable energy benefits in the foreseeable future, staff has eliminated the allowance for roof-mounted small wind energy systems in residential districts. The following regulations pertaining to rooftop applications of wind turbines are proposed:

Table 1: Roof-Mounted Small Wind Energy Systems

	Industrial & Commercial Use	Institutional, Non-Residential Residential District	Utilities, in Residential Use
<b>Authorization</b>	Permitted Use	Conditional Use	Not Permitted
<b>Placement</b>	Shall be affixed to the roof deck of a flat roof or to the ridge or slope of a pitched roof.  May not be affixed to the parapet or chimney of any structure.		
<b>Setback</b>	Must be located at least 5' from the edge or eave of the roof.		
<b>Height</b>	Not to exceed 10' above peak roof height or maximum permitted height of zoning district, <i>whichever is less.</i>		

No substantive modifications to the ordinance provisions that pertain to ground-mounted wind turbines are proposed.

*Ground-Mounted Solar Energy Systems*

Following the September 15 public hearing, staff further evaluated ground-mounted solar energy systems to understand the common applications and standard height requirements. These systems represent a small proportion of all solar installations and are most commonly applied to non-residential uses. The benefit of ground-mounted solar arrays is that they are relatively easy to install and provide flexibility in tracking the sun. Land constraints limit urban and suburban applications of ground-mounted solar systems.

The Illinois Solar Energy Association submitted written feedback on the topic of ground-mounted solar systems indicating that such installations can be accommodated at a lower height restriction of 6' and further that residential uses should not be zoned for such installations. Staff additionally evaluated lot coverage restrictions for ground-mounted solar systems and found that due to the non-residential application and existing land and development constraints (e.g., parking, landscaping, stormwater, building requirements), an additional lot coverage requirement is not necessary. Therefore, staff proposes the following regulations pertaining to ground-mounted solar installations:

Table 2: Ground-Mounted Solar Energy Systems

	Industrial & Commercial Use	Institutional, Non-Residential Residential District	Utilities, in Residential Use
<b>Authorization</b>	Permitted Use	Conditional Use	Not Permitted
<b>Setback</b>	Not permitted in front or corner side yard.  Minimum setback of 5' from rear and interior side property lines.		
<b>Height</b>	Maximum height of 6'		

No substantive modifications to the ordinance provisions that pertain to roof-mounted solar applications are proposed.

*Public Feedback*

Following the September 15 public hearing, staff received written feedback from the Illinois Solar Energy Association (ISEA), Naperville for Clean Energy and Conservation (NCEC) and Naperville Area Homeowners Confederation. Commissioner Bruno additionally submitted written comments on the proposed ordinance. All written public feedback received following the September 15 meeting is included as Attachment 3.

Small wind and solar energy systems require access to the elements in order to function properly. This fundamental characteristic necessitates the acceptance of some aesthetic impact; however, these impacts can be managed through zoning to limit the location, scale and conditions under which systems are permitted. Requests to eliminate size and height restrictions are inconsistent with the stated intent of the ordinance to preserve community aesthetics and guide installation of renewable energy systems. Elimination of color or signage restrictions on renewable energy systems would impose potential aesthetic impacts without furthering the efficiency of renewable energy. Conversely, overly-restrictive restrictions on the placement, height or visibility of solar or small wind systems would render practical application of such uses infeasible and undermine the intent of the ordinance to support sustainable energy production.

**SUMMARY:**

Solar and small wind renewable energy systems hold the promise of providing increased energy options to property owners and local businesses and reducing the overall environmental impact of energy production. Communities will see increased requests for permitting as the technology evolves and cost barriers are reduced. Appropriately regulating these systems is in line with the city's vision for sustainability and the Environmental Sustainability Plan.

The proposed ordinance achieves a balance of competing interests that is based solidly upon technological requirements, existing precedent in the Municipal Code, and the appropriate placement of various energy applications throughout the city from a land use perspective. Community and professional feedback has been thoughtfully considered and integrated as appropriate in the final version of the ordinance that is presented for Plan Commission consideration. Staff therefore requests that the Plan Commission recommend approval of the proposed Small Wind and Solar Renewable Energy Ordinance.

**ATTACHMENTS:**

1. Proposed Small Wind and Solar Renewable Energy Ordinance (tracked changes) – PC 10-1-113
2. Proposed Small Wind and Solar Renewable Energy Ordinance (clean copy) – PC 10-1-113
3. Public Correspondence – PC 10-1-113

## Chapter 15 SMALL WIND AND SOLAR RENEWABLE ENERGY SYSTEMS

SECTION:

- 6-15-1: Purposes
- 6-15-2: Definitions
- 6-15-3: General Requirements
- 6-15-4: Small Wind Energy Systems
- 6-15-5: Solar Energy Systems
- 6-15-6: Conditional Uses
- 6-15-7: Maintenance
- 6-15-8: Severability
- 6-15-9: Conflicts Resolved

6-15-1: **PURPOSES:** The purposes of this chapter are to:

1. Provide zoning regulations to guide the installation and operation of Small Wind and Solar Renewable Energy Systems in City of Naperville.
2. Accommodate sustainable energy production from renewable energy sources.
3. Preserve the aesthetics of the zoning districts in the interest of property values, public health, and welfare.

6-15-2: **DEFINITIONS:** As used in this chapter, the following terms shall have the meanings indicated:

~~NET METERING: An arrangement by which excess energy generated by a Renewable Energy System is distributed back to the electrical utility grid.~~

~~RENEWABLE ENERGY SYSTEM: A system that generates energy from natural resources such as sunlight, wind, and geothermal heat. As used herein, the term "Renewable Energy System" refers to Small Wind Energy Systems and Solar Energy Systems only.~~

~~SMALL WIND ENERGY SYSTEM: A wind energy conversion system consisting of a wind turbine, a tower or mounting, and associated control or conversion electronics, which is intended primarily to reduce on-site consumption of utility power.~~

LARGE WIND ENERGY SYSTEM: A wind energy conversion system consisting of a wind turbine, a tower or mounting, and associated control or conversion electronics, which is intended primarily to generate utility power at a commercial scale.

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NET METERING: An arrangement by which excess energy generated by a Renewable Energy System is distributed back to the electrical utility grid.

RENEWABLE ENERGY SYSTEM: A system that generates energy from natural resources such as sunlight, wind, and geothermal heat. As used herein, the term "Renewable Energy System" refers to Small Wind Energy Systems and Solar Energy Systems only.

SMALL WIND ENERGY SYSTEM: A wind energy conversion system consisting of a wind turbine, a tower or mounting, and associated control or conversion electronics, which is intended primarily to reduce on-site consumption of utility power.

SMALL WIND ENERGY SYSTEM, GROUND-MOUNTED: A Small Wind Energy System that is not attached to another structure and is affixed to the ground, or that is attached to an antenna, light pole or other utility facility.

SMALL WIND ENERGY SYSTEM, BUILDINGROOF-MOUNTED: A Small Wind Energy System ~~mounted~~ on affixed to the roof of a principal structure.

~~SMALL WIND ENERGY SYSTEM, FREESTANDING: A Small Wind Energy System that is not attached to another structure and is ground mounted, or which is attached to an antenna, light pole or other utility facility.~~

SOLAR ENERGY SYSTEM: A system that uses the power of the sun to capture, distribute and/or store energy for on-site consumption of utility power within a principal or accessory structure.

SOLAR ENERGY SYSTEM, BUILDING-MOUNTED: A Solar Energy System ~~mounted on~~ affixed to either the principal or accessory structure.

SOLAR ENERGY SYSTEM, ~~FREESTANDING~~ GROUND-MOUNTED: A Solar Energy System that is not attached to another structure and is ~~ground mounted~~ affixed to the ground, or that is attached to an antenna, light pole or other utility facility.

TOTAL SYSTEM HEIGHT: The total height of the tower and the wind turbine of a Small Wind Energy System, as measured from the average grade at the base of the system to the top of the blade or rotor.

6-15-3: **GENERAL REQUIREMENTS:** The requirements set forth in this Section shall govern the ~~location, construction,~~ and or installation of all Renewable Energy Systems governed by this Chapter.

1. Applicability: The provisions of this ordinance are intended to establish zoning parameters by which Solar and Small Wind Energy Systems may be installed in the City of Naperville. Large Wind Energy Systems are not permitted. Additional ~~forms of~~ renewable energy installations not addressed explicitly herein may be authorized subject to compliance with the applicable codes and standards of the City of Naperville.
2. Use: Except as authorized by the City Council for public utility purposes, a Renewable Energy System shall be accessory to the principal permitted use of a site.

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3. Approvals: No approval granted for a Renewable Energy System under the provisions of this ordinance shall be construed to prevent ordinary or permitted building, landscaping or other accessory improvements on adjacent properties.

4. Permitting and Installation:

4.1 Unless otherwise exempted by the Director of Transportation, Engineering and Development, a City of Naperville building permit is required prior to the installation of any Renewable Energy System.

4.14.2 Renewable Energy Systems that do not require a building permit in accordance with Section 6-15-3:4.1 shall not be subject to the requirements of this Chapter.

4.24.3 The owner of ~~the a~~ Renewable Energy System shall ensure that it is installed and maintained in compliance with applicable building and safety codes adopted by the City and any other state or Federal agency of competent jurisdiction.

4.34.4 All Small Wind Energy Systems shall be equipped with manual and/or automatic controls to limit rotation of blades to a speed below the manufacturers designed limits.

4.44.5 All wiring associated with a Renewable Energy System shall be underground or contained within a raceway that complements the building materials of the principal structure.

5. Interconnection with Department of Public Utilities – Electric:

5.1. Energy produced by a Renewable Energy System shall be utilized on-site, except for Net Metering as authorized by the Department of Public Utilities and other appropriate regulatory agencies required by law.

5.2. The interconnection of any Renewable Energy System to the City of Naperville Department of Public Utilities – Electric distribution grid shall be in accordance with the Department’s Service Rules and Policies, including standard practices as may be amended from time to time.

6. Illumination of a Renewable Energy System shall be prohibited, except to accommodate co-installation of parking lot lighting luminaires in accordance with the provisions of Section 6-14 (Performance Standards) of this Title or as required by the Federal Aviation Administration (FAA) or other state or Federal agency of competent jurisdiction.

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7. Signage: No commercial signage or attention-getting device is permitted on any Renewable Energy System

7.1. A sign of a plain white background with black lettering not exceeding four (4) square feet in size shall be provided on each Small Wind Energy System which indicates the emergency contact information of the property owner or operator.

8. Screening: There shall be no required mechanical screening for Renewable Energy Systems.

9. Historic Structure: ~~A Building-Mounted Renewable Energy System shall comply located on the roof slope of a primary structure that faces the public right-of-way within a locally-designated historic district or affixed to a locally-designated landmark structure shall require approval of a Certificate of Appropriateness in accordance~~ with Chapter 6-11 (Historic Preservation) of this Title.

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6-15-4: **SMALL WIND ENERGY SYSTEMS**

1. Authorization of Use

1.1. ~~BuildingRoof~~-Mounted Small Wind Energy System: ~~A BuildingRoof~~-Mounted Small Wind Energy Systems shall be permitted in all ~~Business and Industrial zoning~~ districts in accordance with the requirements of this Title and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

1.2. ~~Freestanding Ground-Mounted~~ Small Wind Energy System:

1.2.1. Permitted Use: ~~A Freestanding Ground-Mounted~~ Small Wind Energy Systems may be authorized administratively in the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts in accordance with the requirements of this Chapter and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

~~1.2.2.~~ Conditional Use: ~~Freestanding A Ground-Mounted~~ Small Wind Energy Systems ~~may be authorized as a conditional use in all any districts Business District except the the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) District or in any Residence District s shall require approval of a conditional use~~ in accordance with the procedures established in Section 6-3-8 (Conditional Use) of this Title and the provisions of Section 6-15-6 of this Chapter.

~~1.2.2.—~~

2. Height:

2.1 ~~BuildingRoof~~-Mounted Small Wind Energy System: The total height of a ~~BuildingRoof~~-Mounted Small Wind Energy System shall not exceed ten feet (10') above the ~~height of the~~ peak roof height or ten feet (10') above the maximum permitted height of the ~~zoning~~ district, whichever is less.

2.2 ~~Freestanding Ground-Mounted~~ Small Wind Energy System:

2.2.1 In all districts except the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts, ~~Freestanding Ground-Mounted~~ Small Wind Energy Systems shall be limited to a maximum Total System Height of sixty feet (60').

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2.2.2 In the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts, ~~Freestanding-Ground-Mounted~~ Small Wind Energy Systems shall be limited to a maximum Total System Height of one-hundred fifty feet (150').

2.2.3 In all zoning districts, the minimum clearance between the lowest tip of the rotor or blade and the ground shall be fifteen feet (15').

2.2.4 Any Small Wind Energy System ~~which-that~~ exceeds the height limitations defined in this ~~section-Section~~ shall be required to obtain approval of a zoning variance in accordance with ~~the provisions of~~ Section 6-3-5 (~~Variances~~) of this Title.

3. Location:

~~3.1. BuildingRoof~~-Mounted Small Wind Energy Systems:

~~3.1.1. There shall be no required yard for BuildingRoof~~-Mounted Small Wind Energy Systems ~~shall be affixed to the roof deck of a flat roof or to the ridge or slope of a pitched roof and may not be affixed to the parapet or chimney of any structure.~~

~~3.1.3.1.2. Such systems, except that such systems must be securely mounted to the roof of a principal structure and must be set back a minimum of five feet (5') from the edge or eave of the roof. located at least two feet (2') from a public sidewalk.~~

3.2. ~~Freestanding-Ground-Mounted~~ Small Wind Energy Systems:

3.2.1. ~~A Freestanding-Ground-Mounted~~ Small Wind Energy Systems, including all appurtenances and anchoring equipment, shall not be located within the required front yard or corner side yard or in any utility, water, sewer, or other type of public easement.

3.2.2. ~~A Freestanding-Ground-Mounted~~ Small Wind Energy Systems shall be set back a distance equal to 1.1 times the system height, from the base to all property lines, third party transmission lines, ~~freestanding-Ground-Mounted Small wind-Wind energy-Energy systemsSystems~~, overhead electric distribution systems and communication towers.

4. Noise: Sound levels for any ~~Small wWind eEnergy sSystem~~ shall not exceed the maximum decibels established in Chapter 14 (Performance Standards) of this Title. The city may, at its discretion, require a professional sound measurement by a third party expert at the expense of

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the property owner, to confirm performance of the wind energy system, in accordance with the ~~Performance Standards~~, as measured from the ground level at the nearest property line.

- 5. Color: Small Wind Energy Systems shall be monochromatic in color, finished with a neutral and non-reflective coating, such as white or light grey. Ground equipment, such as cabinets, ~~and~~ associated facilities, shall be factory finished to match or complement the color of other structures on the lot.
- 6. Unauthorized Access: ~~Freestanding-Ground-Mounted Small Wind Energy Systems~~ and all components thereof shall be protected against unauthorized access by the public. No climbing ladder, foot pegs or rungs shall be permanently attached below a height of twelve feet (12') above grade.

6-15-5: **SOLAR ENERGY SYSTEMS**

1. Authorization of Use:

1.1. Permitted Use:

1.1.1. ~~A Building-Mounted Solar Energy Systems~~ may be authorized administratively in all zoning districts in accordance with the requirements of this Chapter and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

1.1.2. ~~A Freestanding-Ground-Mounted Solar Energy Systems~~ may be authorized administratively in the ~~Industrial and Business Districts (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts~~ in accordance with the requirements of this Chapter and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

1.2. Conditional Use: ~~A In all zoning districts except the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts, a Freestanding Solar Energy System may be authorized as a conditional use in accordance with the procedures established in Section 6-3-8 (Conditional Use) of the Naperville Municipal Code and the conditions established in Section (TBD) of this Chapter. Ground-Mounted Small Wind Energy System that is accessory to a principal institutional, utilities or non-residential use may be authorized as a conditional use in any Residence District in accordance with the procedures established in Section 6-3-8 (Conditional Use) of this Title and the provisions of Section 6-15-6 of this Chapter.~~

2. Height:

2.1. Building-Mounted Solar Energy System: A Building-Mounted Solar Energy System may have a maximum height of ten feet (10') as measured from the roof surface on which the system is mounted to the highest edge of the system provided, however, that the system shall not exceed five feet (5') above the peak roof height or five feet (5') above the maximum permitted height of the district, whichever is less.

2.2. ~~Freestanding-Ground-Mounted~~ Solar Energy System: The maximum height of a ~~Freestanding-Ground-Mounted~~ Solar Energy System shall be ~~twelve-six~~ feet (~~12'6'~~) as measured from the average grade at the base of the pole to the highest edge of the system.

3. Location:

3.1. ~~Freestanding-Ground-Mounted~~ Solar Energy Systems:

3.1.1. ~~A Freestanding-Ground-Mounted~~ Solar Energy Systems shall not be located within the required front yard or corner side yard or in any utility, water, sewer, or other type of public easement.

~~3.2.~~ All parts of any ~~Freestanding-Ground-Mounted~~ Solar Energy System shall be set back at least five feet (5') from the interior side and rear property lines.

~~4.~~

6-15-6: **CONDITIONAL USES**

1. Application: A petition for a conditional use permit for a Renewable Energy System shall be initiated by application in accordance with the provisions of this Section, and may be issued in accordance with this Section.

2. Issuance: The City Council may issue or deny a conditional use permit pursuant to this Chapter and the procedures described in Section 6-3-~~X~~8 of this Title.

3. Standards for Granting a Conditional Use:

3.1. The City Council shall determine that the application has met all of the general requirements of this Chapter, except those for which a variance has been specifically granted or sought; and

3.2. The proposed energy system shall provide demonstrable benefits in furthering the intent of this Chapter and providing renewable energy to the property on which it is proposed; and

3.3. The proposed Renewable Energy System is located in such a manner as to minimize intrusions on adjacent residential uses through siting on the lot, selection of appropriate equipment, and other applicable means; and

3.4. The proposed Renewable Energy System complies with the service rules and policies of City of Naperville's Department of Public Utilities – Electric as may be amended from time to time; and

3.5. The establishment of the proposed Renewable Energy System will not prevent the normal and orderly use, development or improvement of the adjacent property for uses permitted in the district.

6-15-7: **MAINTENANCE AND REMOVAL OF RENEWABLE ENERGY SYSTEMS**

1. Renewable Energy Systems must be maintained in good repair and operable condition at all times, including compliance with all standards in applicable building and technical codes to ensure structural and technical integrity of such facilities, except for maintenance and repair outages. If a system becomes inoperable or damaged, operations must cease and be promptly remedied.
2. If the City determines that a Renewable Energy System fails to comply with the applicable provisions of this Code, the City shall provide written notification to the property owner. The property owner shall have a period of 120 days from the date of notification to either restore the Renewable Energy System to operation or remove the system.
3. In the event such Renewable Energy System is not brought into compliance with this Code within the specified time period, the City may remove or cause the removal of said facility at the property owner's expense.
4. The City may pursue any and all available legal remedies to ensure that a Renewable Energy System which fails to comply with this Code or which constitutes a danger to persons or property is brought into compliance or removed.
5. Any delay by the City in taking enforcement action against the owner of a Renewable Energy System and the owner of the property if such owner is different from the owner of such facility, shall not waive the City's right to take any action at a later time.
6. The City may seek to have the Renewable Energy System removed regardless of the owner's or operator's intent to said facility, and regardless of any permits that may have been issued or granted.
7. After the Small Wind Energy System is removed, the owner of the Subject Property shall promptly restore the Subject Property to a condition consistent with the property's condition prior to the installation of the system.

6-15-8: **SEVERABILITY:** If any section, subsection, sentence, clause, phrase or portion of this Chapter is held invalid or unconstitutional for any reason by a court of competent jurisdiction, such

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portion shall be deemed a separate, distinct and independent provision and such judgment shall not affect the validity of the remaining portions hereof.

6-15-9:           **CONFLICTS RESOLVED:** This Chapter supersedes all chapters or parts of ordinances adopted prior hereto which are in conflict herewith, to the extent of such conflict.

## Chapter 15 SMALL WIND AND SOLAR RENEWABLE ENERGY SYSTEMS

SECTION:

- 6-15-1: Purposes
- 6-15-2: Definitions
- 6-15-3: General Requirements
- 6-15-4: Small Wind Energy Systems
- 6-15-5: Solar Energy Systems
- 6-15-6: Conditional Uses
- 6-15-7: Maintenance
- 6-15-8: Severability
- 6-15-9: Conflicts Resolved

6-15-1:       **PURPOSES:** The purposes of this chapter are to:

1. Provide zoning regulations to guide the installation and operation of Small Wind and Solar Renewable Energy Systems in City of Naperville.
2. Accommodate sustainable energy production from renewable energy sources.
3. Preserve the aesthetics of the zoning districts in the interest of property values, public health, and welfare.

6-15-2:       **DEFINITIONS:** As used in this chapter, the following terms shall have the meanings indicated:

**LARGE WIND ENERGY SYSTEM:** A wind energy conversion system consisting of a wind turbine, a tower or mounting, and associated control or conversion electronics, which is intended primarily to generate utility power at a commercial scale.

**NET METERING:** An arrangement by which excess energy generated by a Renewable Energy System is distributed back to the electrical utility grid.

**RENEWABLE ENERGY SYSTEM:** A system that generates energy from natural resources such as sunlight, wind, and geothermal heat. As used herein, the term “Renewable Energy System” refers to Small Wind Energy Systems and Solar Energy Systems only.

**SMALL WIND ENERGY SYSTEM:** A wind energy conversion system consisting of a wind turbine, a tower or mounting, and associated control or conversion electronics, which is intended primarily to reduce on-site consumption of utility power.

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**SMALL WIND ENERGY SYSTEM, GROUND-MOUNTED:** A Small Wind Energy System that is not attached to another structure and is affixed to the ground, or that is attached to an antenna, light pole or other utility facility.

**SMALL WIND ENERGY SYSTEM, ROOF-MOUNTED:** A Small Wind Energy System affixed to the roof of a principal structure.

**SOLAR ENERGY SYSTEM:** A system that uses the power of the sun to capture, distribute and/or store energy for on-site consumption of utility power within a principal or accessory structure.

**SOLAR ENERGY SYSTEM, BUILDING-MOUNTED:** A Solar Energy System affixed to either the principal or accessory structure.

**SOLAR ENERGY SYSTEM, GROUND-MOUNTED:** A Solar Energy System that is not attached to another structure and is affixed to the ground, or that is attached to an antenna, light pole or other utility facility.

**TOTAL SYSTEM HEIGHT:** The total height of the tower and the wind turbine of a Small Wind Energy System, as measured from the average grade at the base of the system to the top of the blade or rotor.

6-15-3: **GENERAL REQUIREMENTS:** The requirements set forth in this Section shall govern the construction and/or installation of all Renewable Energy Systems governed by this Chapter.

1. **Applicability:** The provisions of this ordinance are intended to establish zoning parameters by which Solar and Small Wind Energy Systems may be installed in the City of Naperville. Large Wind Energy Systems are not permitted. Additional renewable energy installations not addressed explicitly herein may be authorized subject to compliance with the applicable codes and standards of the City of Naperville.
2. **Use:** Except as authorized by the City Council for public utility purposes, a Renewable Energy System shall be accessory to the principal permitted use of a site.
3. **Approvals:** No approval granted for a Renewable Energy System under the provisions of this ordinance shall be construed to prevent ordinary or permitted building, landscaping or other accessory improvements on adjacent properties.
4. **Permitting and Installation:**
  - 4.1 Unless otherwise exempted by the Director of Transportation, Engineering and Development, a City of Naperville building permit is required prior to the installation of any Renewable Energy System.
  - 4.2 Renewable Energy Systems that do not require a building permit in accordance with Section 6-15-3:4.1 shall not be subject to the requirements of this Chapter.

- 4.3 The owner of a Renewable Energy System shall ensure that it is installed and maintained in compliance with applicable building and safety codes adopted by the City and any other state or Federal agency of competent jurisdiction.
- 4.4 All Small Wind Energy Systems shall be equipped with manual and/or automatic controls to limit rotation of blades to a speed below the manufacturers designed limits.
- 4.5 All wiring associated with a Renewable Energy System shall be underground or contained within a raceway that complements the building materials of the principal structure.
5. Interconnection with Department of Public Utilities – Electric:
  - 5.1. Energy produced by a Renewable Energy System shall be utilized on-site, except for Net Metering as authorized by the Department of Public Utilities and other appropriate regulatory agencies required by law.
  - 5.2. The interconnection of any Renewable Energy System to the City of Naperville Department of Public Utilities – Electric distribution grid shall be in accordance with the Department’s Service Rules and Policies, including standard practices as may be amended from time to time.
6. Illumination of a Renewable Energy System shall be prohibited, except to accommodate co-installation of parking lot lighting luminaires in accordance with the provisions of Section 6-14 (Performance Standards) of this Title or as required by the Federal Aviation Administration (FAA) or other state or Federal agency of competent jurisdiction.
7. Signage: No commercial signage or attention-getting device is permitted on any Renewable Energy System
  - 7.1. A sign of a plain white background with black lettering not exceeding four (4) square feet in size shall be provided on each Small Wind Energy System which indicates the emergency contact information of the property owner or operator.
8. Screening: There shall be no required mechanical screening for Renewable Energy Systems.
9. Historic Structure: Building-Mounted Renewable Energy Systems shall comply with Chapter 6-11 (Historic Preservation) of this Title.

6-15-4: **SMALL WIND ENERGY SYSTEMS**

1. Authorization of Use

1.1. Roof-Mounted Small Wind Energy System: Roof-Mounted Small Wind Energy Systems shall be permitted in all Business and Industrial Districts in accordance with the requirements of this Title and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

1.2. Ground-Mounted Small Wind Energy System:

1.2.1. Permitted Use: Ground-Mounted Small Wind Energy Systems may be authorized administratively in the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts in accordance with the requirements of this Chapter and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

1.2.2. Conditional Use: A Ground-Mounted Small Wind Energy System may be authorized as a conditional use in any Business District except the BP (Business Park) District or in any Residence District in accordance with the procedures established in Section 6-3-8 (Conditional Use) of this Title and the provisions of Section 6-15-6 of this Chapter.

2. Height:

2.1 Roof-Mounted Small Wind Energy System: The total height of a Roof-Mounted Small Wind Energy System shall not exceed ten feet (10') above the peak roof height or ten feet (10') above the maximum permitted height of the zoning district, whichever is less.

2.2 Ground-Mounted Small Wind Energy System:

2.2.1 In all districts except the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts, Ground-Mounted Small Wind Energy Systems shall be limited to a maximum Total System Height of sixty feet (60').

2.2.2 In the I (Industrial), ORI (Office, Research and Light Industrial), RD (Research and Development) and BP (Business Park) Districts, Ground-Mounted Small Wind Energy Systems shall be limited to a maximum Total System Height of one-hundred fifty feet (150').

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- 2.2.3 In all zoning districts, the minimum clearance between the lowest tip of the rotor or blade and the ground shall be fifteen feet (15').
  - 2.2.4 Any Small Wind Energy System that exceeds the height limitations defined in this Section shall be required to obtain approval of a zoning variance in accordance with Section 6-3-5 (Variances) of this Title.
3. Location:
- 3.1. Roof-Mounted Small Wind Energy Systems:
    - 3.1.1. Roof-Mounted Small Wind Energy Systems shall be affixed to the roof deck of a flat roof or to the ridge or slope of a pitched roof and may not be affixed to the parapet or chimney of any structure.
    - 3.1.2. Such systems must be set back a minimum of five feet (5') from the edge or eave of the roof.
  - 3.2. Ground-Mounted Small Wind Energy Systems:
    - 3.2.1. Ground-Mounted Small Wind Energy Systems, including all appurtenances and anchoring equipment, shall not be located within the required front yard or corner side yard or in any utility, water, sewer, or other type of public easement.
    - 3.2.2. Ground-Mounted Small Wind Energy Systems shall be set back a distance equal to 1.1 times the system height, from the base to all property lines, third party transmission lines, Ground-Mounted Small Wind Energy Systems, overhead electric distribution systems and communication towers.
4. Noise: Sound levels for any Small Wind Energy System shall not exceed the maximum decibels established in Chapter 14 (Performance Standards) of this Title. The city may, at its discretion, require a professional sound measurement by a third party expert at the expense of the property owner, to confirm performance of the wind energy system, in accordance with the Performance Standards, as measured from the ground level at the nearest property line.
5. Color: Small Wind Energy Systems shall be monochromatic in color, finished with a neutral and non-reflective coating, such as white or light grey. Ground equipment, such as cabinets and associated facilities, shall be factory finished to match or complement the color of other structures on the lot.

6. Unauthorized Access: Ground-Mounted Small Wind Energy Systems and all components thereof shall be protected against unauthorized access by the public. No climbing ladder, foot pegs or rungs shall be permanently attached below a height of twelve feet (12') above grade.

6-15-5: **SOLAR ENERGY SYSTEMS**

1. Authorization of Use:

- 1.1. Permitted Use:

- 1.1.1. Building-Mounted Solar Energy Systems may be authorized administratively in all zoning districts in accordance with the requirements of this Chapter and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

- 1.1.2. Ground-Mounted Solar Energy Systems may be authorized administratively in the Industrial and Business Districts in accordance with the requirements of this Chapter and subject to approval by the Director of Public Utilities and the Director of Transportation, Engineering and Development, or their designees.

- 1.2. Conditional Use: A Ground-Mounted Small Wind Energy System that is accessory to a principal institutional, utilities or non-residential use may be authorized as a conditional use in any Residence District in accordance with the procedures established in Section 6-3-8 (Conditional Use) of this Title and the provisions of Section 6-15-6 of this Chapter.

2. Height:

- 2.1. Building-Mounted Solar Energy System: A Building-Mounted Solar Energy System may have a maximum height of ten feet (10') as measured from the roof surface on which the system is mounted to the highest edge of the system provided, however, that the system shall not exceed five feet (5') above the peak roof height or five feet (5') above the maximum permitted height of the district, whichever is less.

- 2.2. Ground-Mounted Solar Energy System: The maximum height of a Ground-Mounted Solar Energy System shall be six feet (6') as measured from the average grade at the base of the pole to the highest edge of the system.

3. Location:

- 3.1. Ground-Mounted Solar Energy Systems:

- 3.1.1. Ground-Mounted Solar Energy Systems shall not be located within the required front yard or corner side yard or in any utility, water, sewer, or other type of public easement.

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- 3.2. All parts of any Ground-Mounted Solar Energy System shall be set back at least five feet (5') from the interior side and rear property lines.

6-15-6:           **CONDITIONAL USES**

1. Application: A petition for a conditional use permit for a Renewable Energy System shall be initiated by application in accordance with the provisions of this Section, and may be issued in accordance with this Section.
2. Issuance: The City Council may issue or deny a conditional use permit pursuant to this Chapter and the procedures described in Section 6-3-8 of this Title.
3. Standards for Granting a Conditional Use:
  - 3.1. The City Council shall determine that the application has met all of the general requirements of this Chapter, except those for which a variance has been specifically granted or sought; and
  - 3.2. The proposed energy system shall provide demonstrable benefits in furthering the intent of this Chapter and providing renewable energy to the property on which it is proposed; and
  - 3.3. The proposed Renewable Energy System is located in such a manner as to minimize intrusions on adjacent residential uses through siting on the lot, selection of appropriate equipment, and other applicable means; and
  - 3.4. The proposed Renewable Energy System complies with the service rules and policies of City of Naperville's Department of Public Utilities – Electric as may be amended from time to time; and
  - 3.5. The establishment of the proposed Renewable Energy System will not prevent the normal and orderly use, development or improvement of the adjacent property for uses permitted in the district.

6-15-7:           **MAINTENANCE AND REMOVAL OF RENEWABLE ENERGY SYSTEMS**

1. Renewable Energy Systems must be maintained in good repair and operable condition at all times, including compliance with all standards in applicable building and technical codes to ensure structural and technical integrity of such facilities, except for maintenance and repair outages. If a system becomes inoperable or damaged, operations must cease and be promptly remedied.

2. If the City determines that a Renewable Energy System fails to comply with the applicable provisions of this Code, the City shall provide written notification to the property owner. The property owner shall have a period of 120 days from the date of notification to either restore the Renewable Energy System to operation or remove the system.
3. In the event such Renewable Energy System is not brought into compliance with this Code within the specified time period, the City may remove or cause the removal of said facility at the property owner's expense.
4. The City may pursue any and all available legal remedies to ensure that a Renewable Energy System which fails to comply with this Code or which constitutes a danger to persons or property is brought into compliance or removed.
5. Any delay by the City in taking enforcement action against the owner of a Renewable Energy System and the owner of the property if such owner is different from the owner of such facility, shall not waive the City's right to take any action at a later time.
6. The City may seek to have the Renewable Energy System removed regardless of the owner's or operator's intent to said facility, and regardless of any permits that may have been issued or granted.
7. After the Small Wind Energy System is removed, the owner of the Subject Property shall promptly restore the Subject Property to a condition consistent with the property's condition prior to the installation of the system.

6-15-8:           **SEVERABILITY:** If any section, subsection, sentence, clause, phrase or portion of this Chapter is held invalid or unconstitutional for any reason by a court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision and such judgment shall not affect the validity of the remaining portions hereof.

6-15-9:           **CONFLICTS RESOLVED:** This Chapter supersedes all chapters or parts of ordinances adopted prior hereto which are in conflict herewith, to the extent of such conflict.

**From:** ac5371@aol.com [mailto:ac5371@aol.com]  
**Sent:** Thursday, September 16, 2010 4:45 PM  
**To:** Thorsen, Suzanne (TED)  
**Subject:** Small Wind/Solar Renewable Energy Systems (D2 09.15.10)

09/16/10 (PC 10-1-113)

Plan Commissioners and Staff:

Thank you for creating, presenting and discussing the Renewable Energy Ordinance at the September 15, 2010 plan commission meeting.

I am contacting you to express my support for the separation of the small wind and solar renewable energy systems. While I do not necessarily agree with the reason that prompted the Commissioner to suggest this separation; I do see the future benefits to a chapter for each of these renewable energy systems.

Not too long ago, the introduction of satellite dishes to our community was in the form of rather large disks (that required space and owner maintenance); today, we commonly find satellite dishes mounted on homes. Who would have thought that technology would have altered the system so much so that these are common and far less unsightly? This example, in conjunction with the statement made by the city representative (I was unable to hear his name) about in the creation of this ordinance more renewable energy systems have come to the city's attention.

As technology is changing on a daily basis I believe that the city should separate these two systems in the code book; separation of these today in the code, may result in a code that is easier to understand, adopt and amended in the future. The wording and content of two separate chapters (one for solar and one for wind) may appear to be repetitive today, but in the (near) future the separation of energy systems may just be a benefit to the city's processing and application of the codes.

Thank you for your consideration,

Anissa Olley

**From:** [G.B](#)  
**To:** [Thorsen, Suzanne \(TED\)](#)  
**Subject:** Small Wind and Solar  
**Date:** Sunday, September 19, 2010 10:14:20 PM  
**Attachments:** [Wind and solar code changes.doc](#)

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Hi Suzanne,

I hope the session with the Homeowners association went well for you on Saturday.

Attached to this email is a word document that outlines the changes I would propose to the Renewable Energy text.

The suggestions are the result of research on my part and informal input from local residents.

As you know this ordinance will impact every piece of property in Naperville. There are extensive permitted uses and I believe that a new ordinance affecting so many properties should not be too permissive.

I wanted to send a copy of the proposed changes to Chairperson Edmonds for her review but don't have the email address.

Would you kindly forward a copy of this email to her?

Thank you.

I am open to any questions you may have about the conclusions reached.

Regards,  
Greg Bruno

The Small Wind and Solar Renewable Energy Systems chapter affects **every lot and structure in Naperville**. As such it extremely impactful and needs to be carefully constructed to protect the citizens of Naperville from unintended and unknown consequences. I am concerned that the initial drafts are allowing far too much as a permitted use in the area of renewable energy systems.

The logic used to produce these suggestions is based on a take it slow approach. These systems are very expensive. No resident or business would be expected to remove a system once installed. We need to take a gradual approach in allowing these systems to be installed.

The comments below would apply to residential homes only, not institutional buildings located in residential districts. They are meant as suggestions to improve proposed code. I am concerned that the code as written is way too liberal as a first step in allowing these systems. I am assuming 40,000 watts as maximum power that can be produced.

### **Solar Systems**

*Solar system height in residential districts for building mounted systems.*

Low profile systems only. These are systems that are around 6 to 12 inches off the roof. No system may exceed the roofline on which it is mounted. (Meaning the system cannot protrude over the top of the roof.)

No system can be mounted a roof facing the street.

Low profile systems are the most common and are esthetically pleasing. This may not optimize the systems use but it does make the system more pleasing to neighbors.

If the roof positioning is not optimal for a roof-mounted system then a freestanding system can be used as an alternative.

*Free Standing Solar Systems.*

Industry standard panel sizes are 59" by 39" or roughly 5x3. Set the height limitation for free standing systems to match code for fences. This will reduce the overall height in residential subdivisions to 6 feet. A 10-foot setback would be required unless there is a fence. If a fence were present a 5-foot set back would be allowed.

Some limit on the amount of surface square footage of a Free Standing System needs to be established. For example, a solar system of 150 surface square feet can produce a max rate of 5000 watts. If a home can produce up to 40,000 watts then 10.7 two car garage door sized systems are allowed on the property (*a two car garage door is 16 x 7 or 112 square feet*). 10.7 garage door sized panels is clearly unacceptable on a residential lot. I would propose that a % of the lots total square footage be established as a maximum.

That way larger lots can have larger systems, smaller lots smaller systems. This would have ground based system size be proportional to lot dimensions. I would venture 3% of total lot square footage as a possible number. A 150 X 70 foot lot could have 315 square feet of system. 315 feet is the equivalent of 2.8 two-car garage door sized structures on a 70 X 150 foot lot. This may be too much. Point is we need a size restriction on allowable square footage for Free Standing Solar Systems.

Conditional use: Any system that would rise higher off a roof, need to face a road, or need to be higher than 6 feet for a freestanding system.

**Institutions in Residential Zoning districts, Industrial and BP districts permitted use:**

Building mounted systems: Permitted no higher than parapet on flat roofs and no higher than top of roofline on the roof it is mounted on for pitched roofs. Low profile only on pitched roofs.

**Conditional Use**

Any Freestanding System: Same as code for fencing for height. Set back must be some large number from a residence if property is not fenced.

Surface area of freestanding solar systems is limited to 3% of lot size.

**Small Wind Systems**

**No small wind systems as a permitted use in residential districts.**

**All small wind systems as a conditional use in Commercial districts.**

**Industrial and BP Districts Permitted Use**

Building Mounted: Same as proposed.

Freestanding: All freestanding systems are a conditional use. 60' maximum height. Under no circumstances should anyone be able to put up a 150' tower as a permitted use.

**From:** [NCEC](#)  
**To:** [Thorsen, Suzanne \(TED\)](#)  
**Subject:** Proposed Renewable Energy Zoning Ordinance  
**Date:** Tuesday, September 21, 2010 11:15:22 AM  
**Attachments:** [ncec draft rezo feedback 9.21.10.pdf](#)

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Suzanne,

Attached please find NCEC's comments on the draft ordinance.

The only issue that also came up, which I only offer as food for thought, is how will the city react when the property owner of an adjacent property creates either a built or natural shadow which interferes with an established permitted solar system?

Please let me know if you have any questions.

Thank you for all you've done to get this going and done!

Stephanie Hastings



September 20, 2010

City of Naperville  
Department of Transportation, Engineering and Development &  
Plan Commission  
400 S. Eagle Street  
Naperville, IL 60540

Dear Project Manager Suzanne Thorsen and Commissioners,

Naperville for Clean Energy and Conservation (NCEC) supports the City's effort to create and implement a renewable energy zoning ordinance. Much credit should be given to our community leaders and city staff members for having the foresight to be prepared for an increase in demand for renewable energy systems. Renewable energy, both decentralized small systems and centralized mass production, is the wave of the future.

The very first renewable energy projects implemented in our community will influence the rate at which the demand for these systems grows. NCEC, like many involved in this effort thus far, wants to ensure the success and safety of every renewable energy project and wants these projects to leave a good taste in people's mouths in order to maximize the growth rate of this demand. As Naperville residents, we understand the importance of setting and maintaining strict visual standards in our community but also look forward to the day renewable energy systems are seamlessly integrated into the visionscape of Naperville, similar to how most of us share the attitude the look of a fireplace chimney is charming and not an eyesore, or other noise-making mechanical devices are commonplace (air conditioner units, television antennas, satellite dishes) for everyday function and comfort.

Our current position and recommendations for the new zoning ordinance are primarily strategic in nature. Therefore, please recall two key Work Plan Recommendations from the city of Naperville ***Plan for Environmental Sustainability:***

***1. "Investigate alternative energy technology in support of economic development."***

As people adopt renewable energy systems, a financial investment is necessary. This investment benefits both the end users and our local economy. Stimulating the local economy is a high priority and should not be limited. Current limitations for stimulating the local economy within the current plan draft are as follows:

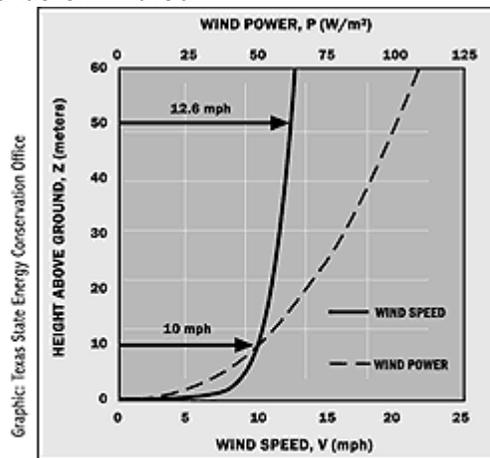
- a) Size & Height restrictions – the taller/larger a system, the more costly and the more our local economy will be stimulated. Let the free market dictate size/height.
- b) Color restrictions – this limits the number of manufacturers/installers who will be attracted to bring their business to Naperville.
- c) Signage restrictions – completely preventing signage, will limit the amount of potential revenue from future renewable energy projects. For example, renewable energy system brands could become household brand names and could fairly compete with other energy providers such as Nicor, ComEd, Blue Rhino, Mobil and BP (BP is one of the largest solar providers globally). If signage will be allowable adjacent to a system in commercial districts (subject to all other zoning ordinances), then the ordinance should clarify this allowance.

- d) Overall flexibility – Naperville already promotes the fact that our electrical rates track below ComEd. There is a great opportunity to stimulate the local housing market and to attract new businesses to Naperville by making Naperville a community in which electricity is not only affordable, but can easily be generated and net metered. ComEd is openly against net metering due to the fact they are a for-profit-corporation. As energy rates continue to increase, as they always have, Naperville can increase the margin at which it beats ComEd’s prices (by not having to negotiate pricing on the open market) and can increase the energy cost savings to individuals and/or businesses willing to invest in renewables as a result of net metering.
- e) Property Values – According to the American Wind Energy Association, there is no evidence of detrimental effects upon property values. According to the research our members conducted, renewable energy systems tend to increase the value of the property upon which they are implemented, and tend to have no effect upon surrounding properties. Making it as easy as possible for Naperville citizens to increase their property values is beneficial to our community.

**2. “Identify existing Code impediments to implementation of best practices for building, energy or site improvements.”**

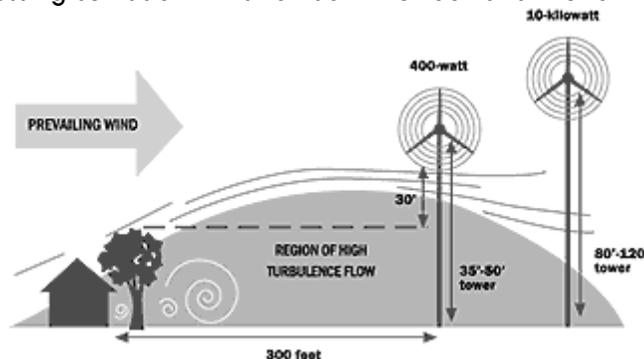
Code “impediments to implementation of best practices” currently exist in the draft ordinance. The best practices which have been impeded upon are as follows:

- a) The higher a wind system is installed, the more effective it becomes. We believe all height restrictions should be eliminated.



Typical Wind Shear Profile – Speed and power available in the wind increases with increasing elevation. The relationship is commonly referred to as the one seventh power law ( $\alpha=1/7$ ).

- b) The further a wind system is installed from built and natural features on the ground, the less the wind flow is interrupted. Therefore, special consideration and leniency should be given when addressing set-back limits for both the roof and the lot.



- c) Stand alone solar applications make the most sense for electric vehicle charging stations. The city fleet manager has plans to incorporate electric vehicles into the city of Naperville fleet as a way to bring additional cost savings to our community in the form of a reduction in petroleum needs. Therefore, the height limitation for these applications should be no less than 13'6", the state standard for vehicle clearances.

Additionally, because our city is locked into a 24 year contract with the IMEA which will predominantly provide fossil fuel (coal) generated electricity our electric utility does not have much flexibility for sourcing renewable energy on behalf of its residents. Therefore, our city leaders should provide as much opportunity as possible for residents to generate their own clean, renewable energy. [http://www.suburbanchicagonews.com/napervillesun/news/2724364,6\\_1\\_NA19\\_COAL\\_S1-100919.article](http://www.suburbanchicagonews.com/napervillesun/news/2724364,6_1_NA19_COAL_S1-100919.article)

Finally, it is the opinion of NCEC, the city of Naperville ordinance should generally be as flexible as reasonably possible. This umbrella zoning ordinance will be a general starting point for all projects. Various residential neighborhoods with unique characteristics can address their need for stricter limitations within their own home owner associations, architectural review boards, bylaws and/or covenants. Our Governor recently signed into law Public Act 096-1436 (HB5429) which requires home owner associations to address their own solar energy guidelines. Therefore, home owner associations can customize all renewable energy systems, in addition to solar systems, to best suit the needs of their neighborhood.

Thank you very much for this opportunity to participate in this public hearing.

Sincerely,



Stephanie Hastings, NCEC President  
On behalf of NCEC's Board of Directors  
[ncec.email@yahoo.com](mailto:ncec.email@yahoo.com)  
630-428-1004 home  
312-523-4347 cell

**From:** [Michelle Hickey](#)  
**To:** [Thorsen, Suzanne \(TED\)](#)  
**Subject:** Re: Freestanding Solar  
**Date:** Tuesday, September 21, 2010 8:31:35 AM  
**Attachments:** [follow\\_bird-c.png](#)

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Suzanne,

The ISEA recommends that you change the word "freestanding" to "ground mounted" solar systems, since that is the common term to refer to a ground roof mount (like the one at the Fort Hill substation) and a pole-mounted system. Homeowners really shouldn't be zoned for a pole-mounted system. To avoid the problem with churches and schools, you can recommend a variance. If you want to restrict height, then 6' should be adequate. Anyone wanting a system above 6' would have to request a variance. A typical pole-mounted system would be set at a minimum of 10'.

With regard to setbacks, most turbines should actually be installed close to the edge of the building for adequate performance. Did IWEA provide any guidance regarding setbacks?

Definitely add the restriction for only 25% of space can be utilized for renewable energy installations.

Any other questions?

Michelle Hickey

Program Coordinator

[Illinois Solar Energy Association](#)

O: 312.376.8245

C: 630.281.0184

[Illinois Solar Tour](#)

Saturday, October 2, 2010

10 am - 3 pm

*Join us for the largest grassroots SOLAR event in the World!*



On Sep 16, 2010, at 4:40 PM, Thorsen, Suzanne (TED) wrote:

Hi Michelle,

Following up on last night's Plan Commission meeting – can you please give me a sense of the typical height for a freestanding (ground-mounted) solar system? I'm not having any luck finding information on the web. Santa Barbara, CA limits the height to 6'. Schaumburg limits the height to 15'.

I'm probably going to be revising this ordinance in the next day or so. We will be sending out the PC packet (which will include ordinance revisions) next Thursday so if you can get back to me by say Monday that would be super-helpful.

Also if there's any other information you think I need to know, please pass it my way.

Thank you!

Suzanne

Suzanne Thorsen, Project Manager | p: 630.420.6080 | f: 630.420-6657 | [thorsensu@naperville.il.us](mailto:thorsensu@naperville.il.us) | 400 S. Eagle Street  
Naperville, IL 60540

**From:** [Thorsen, Suzanne \(TED\)](#)  
**To:** [Thorsen, Suzanne \(TED\)](#)  
**Subject:** RE: Revised Ordinance comments  
**Date:** Tuesday, September 28, 2010 8:42:05 AM  
**Attachments:** [SWC Zoning Ordinance List As of August 29 2010.xls](#)

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**From:** Jonathan Nieuwsma [mailto:[jonathan@windforillinois.org](mailto:jonathan@windforillinois.org)]  
**Sent:** Monday, September 27, 2010 11:09 AM  
**To:** Thorsen, Suzanne (TED); 'Matt Overeem'  
**Cc:** Forystek, Katie  
**Subject:** RE: Revised Ordinance comments

Hi Suzanne,

Thanks for passing the APA document along; that will be helpful. I saw the article in which you were quoted in the Trib yesterday--good for you!

Also, another reference for you: I've attached a list of jurisdictions with small wind zoning ordinances--not guaranteed to include everyone, but at least those that have crossed our radar. One of the commissioners had asked how many other communities are working on this, so feel free to include in the packet for 10/6. Also, if you'd like to include our "Small Wind 101" presentation in the packet I'll get you an up to date copy.

Jonathan

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Jonathan Nieuwsma  
Illinois Wind Energy Association  
Chairman, Small Wind Committee

312.546.4899 office  
773.255.0716 mobile  
[jonathan@windforillinois.org](mailto:jonathan@windforillinois.org)  
[www.windforillinois.org](http://www.windforillinois.org)

Jurisdiction	Weblink	Section	Notes
<b>Municipality</b>			
Aurora	<a href="http://www.aurora-il.org/documents/planning/ordinance/appendix_a_zoning.pdf">http://www.aurora-il.org/documents/planning/ordinance/appendix_a_zoning.pdf</a>	20	No specific language-went f
Batavia	<a href="http://www.cityofbatavia.net/Content/templates/?a=1988">http://www.cityofbatavia.net/Content/templates/?a=1988</a>	4.1	
Buffalo Grove	<a href="http://library7.municode.com:80/default-test/template.htm?view=browse&amp;doc_action=setdoc&amp;doc_keytype=tocid&amp;doc_key=979a10f7974b733cd091cf64e01df978&amp;infobase=16229">http://library7.municode.com:80/default-test/template.htm?view=browse&amp;doc_action=setdoc&amp;doc_keytype=tocid&amp;doc_key=979a10f7974b733cd091cf64e01df978&amp;infobase=16229</a>	030	
Chicago	<a href="http://www.amlegal.com/nxt/gateway.dll/Illinois/chicagozoning/chicagozoningordinanceandlanduseordinanc?f=templates\$fn=default.htm\$3.0\$vid=amlegal:chicagozoning_il">http://www.amlegal.com/nxt/gateway.dll/Illinois/chicagozoning/chicagozoningordinanceandlanduseordinanc?f=templates\$fn=default.htm\$3.0\$vid=amlegal:chicagozoning_il</a>	17.17.0311.B(4)	Building mounted only. Allo
Decatur	<a href="http://www.ci.decatuor.il.us/citydocuments/zoning%20ordinance.pdf">http://www.ci.decatuor.il.us/citydocuments/zoning%20ordinance.pdf</a>	35	
Des Plaines	<a href="http://www.desplaines.org/Services/CommunityDevelopment/DesignDesPlaines/DraftUnifiedDevelopmentOrdinance.pdf">http://www.desplaines.org/Services/CommunityDevelopment/DesignDesPlaines/DraftUnifiedDevelopmentOrdinance.pdf</a>	2.3-30.E(7)	Being considered by city co
Lake in the Hills	<a href="http://www.lith.org/MunicipalCode.html#Zoning_Ordinance">http://www.lith.org/MunicipalCode.html#Zoning_Ordinance</a>	27	
Libertyville	<a href="http://www.libertyville.com/DocumentView.aspx?DID=901">http://www.libertyville.com/DocumentView.aspx?DID=901</a>	6-3.4	
Lincolnshire	<a href="http://www.village.lincolnshire.il.us/code/code0617.pdf">http://www.village.lincolnshire.il.us/code/code0617.pdf</a>	6.17.5	
New Lenox	<a href="http://www.newlenox.net/pdf_planning/Wind_Solar.pdf">http://www.newlenox.net/pdf_planning/Wind_Solar.pdf</a>	37	
Oswego	<a href="http://www.oswego.il.org/community-development/zoning-ordinance.pdf">http://www.oswego.il.org/community-development/zoning-ordinance.pdf</a>	7.01.B(16)	
Schaumburg	<a href="http://www.sterlingcodifiers.com/codebook/index.php?book_id=365">http://www.sterlingcodifiers.com/codebook/index.php?book_id=365</a>	154.90.02	
Sugar Grove	<a href="http://www.sugar-grove.il.us/2010Agendas/06012010/RenwblEnrgyOrd.pdf">http://www.sugar-grove.il.us/2010Agendas/06012010/RenwblEnrgyOrd.pdf</a>	11.4.20	
<b>County</b>			
Champaign	<a href="http://www.ccrpc.org/LRMP/PDF/LRMP_Final/FINAL_FORMAT_Volume1/8_v1_Chapter6.pdf">http://www.ccrpc.org/LRMP/PDF/LRMP_Final/FINAL_FORMAT_Volume1/8_v1_Chapter6.pdf</a>	Chapter 6	No specific language
Ford	<a href="http://www.fordcountycourthouse.com/zoning/documents/AppendixB.pdf">http://www.fordcountycourthouse.com/zoning/documents/AppendixB.pdf</a>	Appendix B	
Henry	<a href="http://www.henrycty.com/codepartments/zoning/Forms/windzoningordinance.pdf">http://www.henrycty.com/codepartments/zoning/Forms/windzoningordinance.pdf</a>	2.06.C	Small wind defined as 50kW or less
Iroquois	<a href="http://www.co.iroquois.il.us/wp-content/uploads/2009/08/privatewindordinance1109.pdf">http://www.co.iroquois.il.us/wp-content/uploads/2009/08/privatewindordinance1109.pdf</a>	N/A	
Jo Daviess	<a href="http://www.sterlingcodifiers.com/codebook/index.php?book_id=655">http://www.sterlingcodifiers.com/codebook/index.php?book_id=655</a>	8.5B-50	
Kane	<a href="http://www.co.kane.il.us/development/szpdf/zoning_ordinance.pdf">http://www.co.kane.il.us/development/szpdf/zoning_ordinance.pdf</a>	5.4.6	
Kendall	<a href="http://www.co.kendall.il.us/zoning/zoning_ordinance/Section_04.pdf">http://www.co.kendall.il.us/zoning/zoning_ordinance/Section_04.pdf</a>	4.18	Small wind allowed as a conditional
Lake	<a href="http://www.lakecountyil.gov/Planning/ZoningandDevelopmentServices/Documents/Proposed%20UDO%20Text%20Amendments/Wind_Energy_Facilities.pdf">http://www.lakecountyil.gov/Planning/ZoningandDevelopmentServices/Documents/Proposed%20UDO%20Text%20Amendments/Wind_Energy_Facilities.pdf</a>	6.4.13	!!! This ordinance is not up-to-date.
Lasalle	<a href="http://www.lasallecounty.org/np/flctybrd/zoord.htm">http://www.lasallecounty.org/np/flctybrd/zoord.htm</a>	7.1.DD	
Lee	<a href="http://sterling.webiness.com/codebook/index.php?book_id=334">http://sterling.webiness.com/codebook/index.php?book_id=334</a>	10.9.2	
Macon	<a href="http://www.co.logan.il.us/zoning/ordinance/section_3.pdf">http://www.co.logan.il.us/zoning/ordinance/section_3.pdf</a>	3.41-3(G)	
McClean	<a href="http://www.mcleancountyil.gov/build/pdf/Zoning_ordinance.pdf">http://www.mcleancountyil.gov/build/pdf/Zoning_ordinance.pdf</a>	40.6.50	
Ogle	<a href="http://www.oglecounty.org/zoning/Zoning%20Ordinance/Division%205.pdf">http://www.oglecounty.org/zoning/Zoning%20Ordinance/Division%205.pdf</a>		Accesory in AG, Special use in R
Peoria	<a href="http://library3.municode.com/default-test/home.htm?infobase=11309&amp;doc_action=whatsnew">http://library3.municode.com/default-test/home.htm?infobase=11309&amp;doc_action=whatsnew</a>	24-4-2.C2	
Rock Island	<a href="http://www.rockislandcounty.org/uploadedFiles/ZB/ZoningOrdinance.pdf">http://www.rockislandcounty.org/uploadedFiles/ZB/ZoningOrdinance.pdf</a>	3.2.40	
Sangamon	<a href="http://www.co.sangamon.il.us/Departments/RegionalPlanning/PDFs/Ordinance-February-2009.pdf">http://www.co.sangamon.il.us/Departments/RegionalPlanning/PDFs/Ordinance-February-2009.pdf</a>	17.49.030	
Shelby	<a href="http://www.shelbycounty-il.com/ZoningAdministration.htm">http://www.shelbycounty-il.com/ZoningAdministration.htm</a>	2.16	
Tazewell	<a href="http://www.tricityrprc.org/sites/tcrpc.netplatform.net/files/uploads/189_Tazewell%20adopted%20small%20wind%20energy%20ordinance.pdf">http://www.tricityrprc.org/sites/tcrpc.netplatform.net/files/uploads/189_Tazewell%20adopted%20small%20wind%20energy%20ordinance.pdf</a>	7.4	
Whiteside	<a href="http://www.whiteside.org/index.php?option=com_docman&amp;task=cat_view&amp;gid=41&amp;Itemid=40">http://www.whiteside.org/index.php?option=com_docman&amp;task=cat_view&amp;gid=41&amp;Itemid=40</a>	19-5812.12	
Will	<a href="http://willcountylanduse.com/DevReviewDiv/Current/Documents/ZoningOrd/Section08_090625.Current/Documents/ZoningOrd/Section08_090625.pdf">http://willcountylanduse.com/DevReviewDiv/Current/Documents/ZoningOrd/Section08_090625.Current/Documents/ZoningOrd/Section08_090625.pdf</a>	8.27	
Woodford	<a href="http://woodford-county.org/index.php?section=30#mod_842">http://woodford-county.org/index.php?section=30#mod_842</a>	27	

From: [Matt Overeem](#)  
To: [Thorsen, Suzanne \(TED\)](#)  
Cc: [jonathan@windforillinois.org](mailto:jonathan@windforillinois.org)  
Subject: Revised Ordinance comments  
Date: Saturday, September 25, 2010 9:53:45 AM

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Hello Suzanne,

Thank you for revising the ordinance to reflect the comments received. I believe you have done a good job in your presentation. Yes, people actually do watch those re-runs.

The concerns about roof top are off-tangent and I would suggest that your ordinance provide less language or remain mute so that these types of installations would need closer staff review. The commissioner was indeed correct that there are a lot of non-typical installations out there. The pole mounted turbine idea is far-reaching but I have heard it before. I have seen small turbines mounted to garages or sheds to provide power. I believe the urban roof mounted or building mounted turbine is still a proof-of-concept idea, someday the technology may be beneficial. Right now, I believe there are more issues to the roof or building mounted. Without even considering the aesthetic issue, these turbines are more decorative or for making a statement.

You could also differentiate between roof mounted and building mounted in your definitions to highlight the commissioner's concerns. Building mounted could have those side yard or property line or to any adjacent structure distances considered.

I have several pictures of streetlight pole mounted turbines, parking lot light pole turbines and of small turbines mounted on roofs but I would refer you to Mick Sagrillo's columns on the issue or to Paul Gipe's Windworks webpage on the issue. I can get you in contact with these two gentlemen where you can get a national perspective. I caution you that Jonathan was very kind to urban turbines – Mick and Paul will not be so kind.

The 60' limit in residential is still a concern. While there are urban turbines being sold on 60' towers these are the exception and their power output is showing this as a poor decision. To include this height limit in your ordinance lessens the positive impact your ordinance will have. The 1.1 times regulation will place more restrictions based on lot size. I recommend that you drop the 60' height wording in favor of the 1.1 times regulation. Thus your 1.1 rule in the ordinance would allow a taller turbine on larger lots, for example that residential lot which houses the high school. To limit to 60' is essentially dooming that turbines output and life expectancy due to poorer winds, wind shear and ground turbulence issues. Again, this would be a case where a parcel on a huge lot would be allowed taller turbine heights while for the smaller 50-100' urban lot, it would basically be impossible to site a turbine due to the 1.1 bulk regulation. Please reconsider this as I believe that Naperville has the base for a national model ordinance.

Also, the whole discussion on tower failure is incorrect...towers buckle or bend. I know of only one tower on a commercial/industrial turbine that ever fell over completely on its side. I know of no small wind tower that has done this. Most buckle in the mid or top section. The blades then hit the tower and aim directly to ground. They do not arch through the sky like a cannon ball. While I disagree with the 1.1 requirement, I believe it is the best compromise as it allows for taller towers on larger lots. As Jonathan N. pointed out an engineered tower is designed not to fail. I would point out that is what insurance and manufacturer's liability is for if it does. Restrict home built, non-engineered towers.

The discussion of system height is off track. The discussion should be about how high above the ground you want rotating blades. Based on the discussion, I could install a 20 foot rotor on a 30 foot pole and be quite a hazard and nuisance. I would lighten the language about height calculations and focus on eliminating the attractive nuisance and truly the noise issue. Keep the bottom of the rotor at least 15 feet 5 meters off the ground and the rotational dimension so many feet away from other structures or public ways. If this does not make sense, let me know and we can talk.

Also, as more of a background, if you could use the graphs from AWEA regarding small wind – the one commissioner who was thinking that these are cost prohibitive does not understand the explosive growth small wind has seen and is seeing. Using the small wind sales over the last decade shows a trend – they are coming and they are being installed. Unfortunately, there is no chart or table on installed locations – urban versus rural, large lot vs. small, etc.

SO as a recap for the wind –

- differentiate in your definitions between roof and building mounted,
- eliminate the 60' height restriction in residential in favor of the more restrictive 1.1. rule,
- restrict home built or non-engineered tower assemblies, not tower height
- show the commissioners that the trend for small wind is exponentially growing – while they may not be all around YET they are coming, and
- keep the blades so far off the ground or away from other structures, ways

In the discussion on solar – don't forget the x-y trackers that are out there. Also, there is a company that sells ground reflectors to focus solar radiation on to arrays or into north facing windows – picture a series of mirror planted around the yard to re-direct sunlight. Hey there are a lot on entrepreneurs out there working on the solution.

Concentrating solar with an accessory column for the boiler is also possible. Think about a down-sized, home scale concentrating tower array like they have in the desert. Yes these are on the horizon for homes, businesses, laundries, pools.

As a favor, I would ask if you could scan and send me the APA brief on small or large wind. I would greatly appreciate the information.

I appreciate the opportunity to assist you with my comments.

Thanks,  
Matt Overeem

[mattovereem@thewindway.com](mailto:mattovereem@thewindway.com)

**From:** [Thorsen, Suzanne \(TED\)](#)  
**To:** [Thorsen, Suzanne \(TED\)](#)  
**Subject:** FW: Wind Turbine follow-up  
**Date:** Tuesday, September 28, 2010 9:04:11 AM  
**Attachments:** [small wind turbines.doc](#)

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-----Original Message-----

From: d.metcalfe [<mailto:dmetcalfe@pobox.com>]  
Sent: Friday, September 24, 2010 4:14 PM  
To: Thorsen, Suzanne (TED)  
Subject: RE: Wind Turbine follow-up

Hi Suzanne:

Attached is a Word doc with a variety of small wind turbines. As you can see by their variety, there are many different designs. As of today, there are over 526 small wind turbines from over 190 manufactures. Some of the newer thinking for homes/buildings are roof ridge designs, as the windward side of the roof funnels wind right to the turbine.

If you want some comments on the wind ordinance, let me know.

doug metcalfe  
email: [dmetcalfe@pobox.com](mailto:dmetcalfe@pobox.com)  
c: 630-204-6664

Suzanne:

As of 9/24/10, there are over 526 small wind turbines from over 190 manufactures. Here is a sample of different designs. Hope this helps with the development of the ordinance  
Doug Metcalfe



MW 1100  
Mag Wind  
VAWT



WS-2B  
Windside  
VAWT



O'Connor Wind Energy  
HAWT



Windspire  
Mariah Power  
VAWT



Helix Wind  
VAWT



Four Seasons Windpower  
VAWT



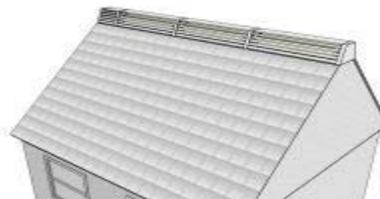
Seahawk  
Pac Wind Inc.  
VAWT



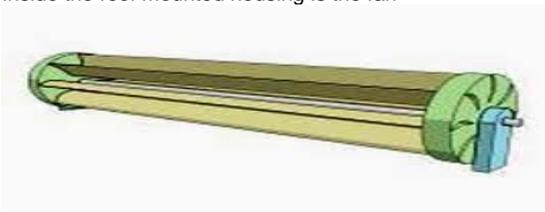
Energie PGE  
HAWT



JETPRO TECHNOLOGY, INC. HAWT 1000



Inside the roof mounted housing is the fan



Ridgeblade [Power Collective Ltd](#)

