

ORDINANCE NO. 13-02

CITY OF SPRING PARK  
HENNEPIN COUNTY, MINNESOTA

AN ORDINANCE AMENDING THE SPRING PARK CITY CODE,  
CHAPTER 42 – ZONING/SHORELAND ORDINANCE, TO ESTABLISH  
ALTERNATIVE ENERGY SYSTEM REGULATIONS

THE CITY COUNCIL OF THE CITY OF SPRING PARK ORDAINS:

**Section 1.** Article 1, Division 2 of the Spring Park Zoning/Shoreland Ordinance (Definitions) is hereby amended to add the following:

**Alternative Energy System.** A ground source heat pump, wind or solar energy system.

**Ground Source Heat Pump System Related:**

**Closed Loop Ground Source Heat Pump System.** A system that circulates a heat transfer fluid, typically food-grade antifreeze, through pipes or coils buried beneath the land surface or anchored to the bottom in a body of water.

**Ground Source Heat Pump System.** A system that uses the relatively constant temperature of the earth or a body of water to provide heating in the winter and cooling in the summer. System components include open or closed loops of pipe, coils or plates; a fluid that absorbs and transfers heat; and a heat pump unit that processes heat for use or disperses heat for cooling; and an air distribution system.

**Horizontal Ground Source Heat Pump System.** A closed loop ground source heat pump system where the loops or coils are installed horizontally in a trench or series of trenches no more than twenty (20) feet below the land surface.

**Heat Transfer Fluid.** A non-toxic and food grade fluid such as potable water or aqueous solutions commonly used as coolants..

**Open Loop Ground Source Heat Pump System.** A system that uses groundwater as a heat transfer fluid by drawing groundwater from a well to a heat pump and then discharging the water over land, directly in a water body or into an injection well.

**Vertical Ground Source Heat Pump System.** A closed loop ground source heat pump system where the loops or coils are installed vertically in one or more borings below the land surface.

**Solar Energy System Related:**

**Building-integrated Solar Energy System.** A solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building including, but not limited to, photovoltaic or hot water solar systems contained within roofing materials, windows, skylights and awnings.

**Flush-mounted Solar Energy System.** A roof-mounted system mounted directly abutting the roof. The pitch of the solar collector may exceed the pitch of the roof up to five (5) percent but shall not be higher than ten (10) inches above the roof.

**Passive Solar Energy System.** A system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.

**Photovoltaic System.** A solar energy system that converts solar energy directly into electricity.

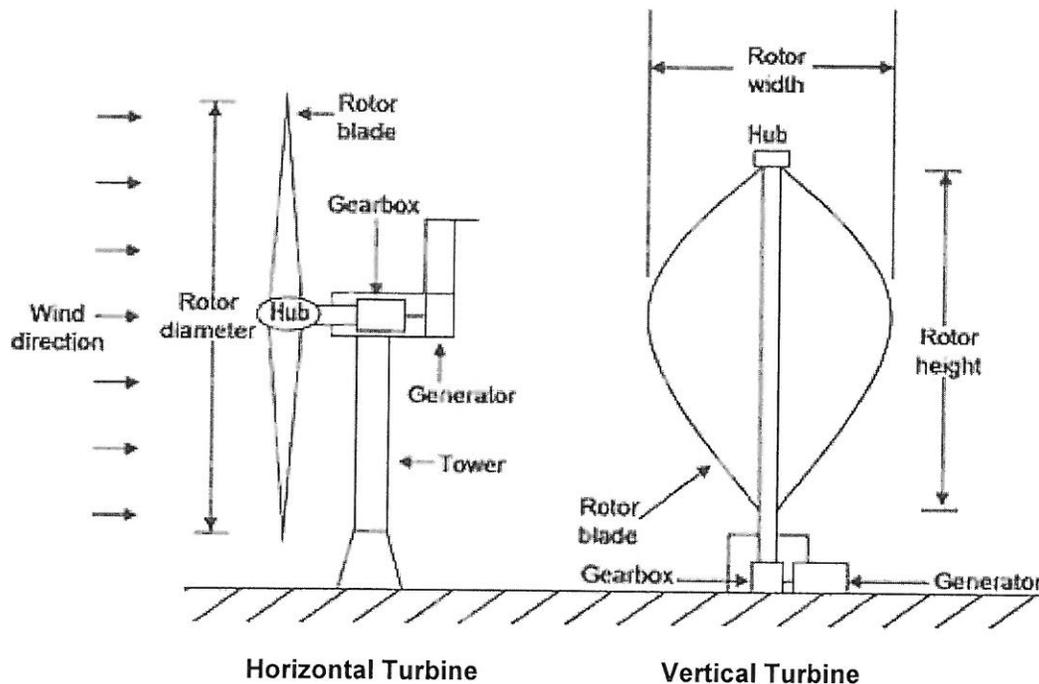
**Solar Energy System.** A device or structural design feature, a substantial purpose of which is to provide daylight for interior lighting or provide for the collection, storage and distribution of solar energy for space heating or cooling, electricity generation or water heating.

**Wind Energy System Related:**

**Horizontal Axis Wind Turbine.** A wind turbine design in which the rotor shaft is parallel to the ground and the blades are perpendicular to the ground.

**Hub.** The center of a wind generator rotor, which holds the blades in place and is attached to the shaft.

## Wind Turbine Configurations



**Hub Height.** The distance measured from natural grade to the center of the turbine hub.

**Monopole Tower.** A tower constructed of tapered tubes that fit together symmetrically and are stacked one section on top of another and bolted to a concrete foundation without support cables.

**Small Wind Turbine.** A wind turbine of 100 kW nameplate generating capacity or less.

**Total Wind Turbine Height.** The highest point above natural grade reached by a rotor tip or any other part of a wind turbine.

**Tower.** A vertical structure that supports a wind turbine.

**Utility Wind Turbine.** A wind turbine of more than 100 kW nameplate generating capacity.

**Vertical Axis Wind Turbine.** A type of wind turbine where the main rotor shaft runs vertically.

**Wind Energy System.** An electrical generating facility that consists of a wind turbine, feeder line(s), associated controls and may include a tower.

**Wind Turbine.** Any piece of electrical generating equipment that converts the kinetic energy of blowing wind into electrical energy through the use of airfoils or similar devices to capture the wind.

**Section 2.** Article 2 of the Spring Park Zoning/Shoreland Ordinance (General Provisions) is hereby amended to add Section 42-76 to read as follows:

### **Section 42-76 - Alternative Energy Systems**

- (a) **Purpose and Intent.** The purpose of this Section is to:
- (1) Accommodate alternative energy sources by removing regulatory barriers and creating a clear regulatory path for approving alternative energy systems.
  - (2) Create a livable community where development incorporates sustainable design elements such as resource and energy conservation and use of renewable energy.
  - (3) Protect and enhance air quality and decrease use of fossil fuels.
  - (4) Accommodate alternative energy development in locations where the technology is viable and environmental, economic and social impacts can be mitigated.
- (b) **Ground Source Heat Pump Systems.**
- (1) Zoning District Allowance. Ground source heat pump systems in accordance with the standards in this Section are allowed as a permitted accessory use in all zoning districts.
  - (2) Standards.
    - a. System Requirements.
      1. Only closed loop ground source heat pump systems utilizing heat transfer fluids as defined in Article 1, Division 2 are permitted. Open loop ground source heat pump systems are prohibited.
      2. Ground source heat pump systems located within public waters are prohibited
    - b. Setbacks.
      1. Except as otherwise allowed for systems within public waters (by conditional use permit), all components of ground source heat pump systems including pumps, borings and loops shall be set

back at least ten (10) feet from all lines and twenty five (25) feet from the ordinary high water level of any public water body.

2. Above-ground equipment associated with ground source heat pumps shall not be installed in the streetside yard of any lot and shall meet all required principal building setbacks for the applicable zoning district.
  - c. Easements. Ground source heat pump systems shall not encroach on public drainage, utility, roadway or trail easements.
  - d. Noise. Audible noise from ground source heat pump systems shall not exceed fifty-five (55) dB(A) when measured from the outside of the nearest residence, business, school, hospital, religious institution, or other inhabited structure. All equipment must be maintained to prevent infrequent, disruptive, excessive or unusual noise such as grating, grinding, screeching, rattling or other noise. Noise and/or nuisance related issues resulting from the operation of a ground source heat pump system shall be subject to the requirements of Chapter 18, Article III of the City Code.
  - e. Screening. Ground source heat pumps are considered mechanical equipment and subject to the screening requirements of Section 42-64(j) of this Chapter.
  - f. Safety. Ground source heat pumps shall be certified by Underwriters Laboratories, Inc. and meet the requirements of the State Building Code.
- (3) Abandonment. If a ground source heat pump system remains nonfunctional or inoperative for a continuous period of one (1) year, the system shall be deemed to be abandoned and shall constitute a public nuisance. The property owner shall remove the abandoned system and restore vegetation upon the site at his/her expense after a demolition permit has been obtained in accordance with the following:
  - a. The heat pump and any external mechanical equipment shall be removed.
  - b. Pipes or coils below the land surface shall be filled with grout to displace the heat transfer fluid. The heat transfer fluid shall be captured and disposed of in accordance with applicable regulations. The top of the pipe, coil or boring (where it connects to mechanical equipment) shall be capped in a secure manner.
- (4) Permits.
  - a. A building permit shall be obtained for any ground source heat pump system prior to installation.

- b. Borings for vertical systems are subject to approval by the Minnesota Department of Public Health.
- c. Ground source heat pump systems shall be subject to inspection by the City's Building Official every three (3) years and at the property owner's expense in accordance with the City's fee schedule.

**(c) Wind Energy Systems.**

(1) Zoning District Allowance. Small wind turbine systems in accordance with the standards in this Chapter are allowed as a permitted accessory use in all zoning districts.

(2) General Standards. The following standards shall be applicable to small wind turbine systems in all zoning districts:

- a. Setbacks. The base of the wind turbine tower shall be set back from all property lines a distance equal to the highest possible extension of the system apparatus. In no case shall the tower encroach upon required principal structure setbacks.
- b. Mounting. Subject to the requirements of this Chapter, wind energy systems may either be roof-mounted or ground-mounted. Roof-mounted wind turbines shall be certified by a registered architect or engineer and shall be permitted only when a determination is made by the City Building Official that the underlying roof structure will support such system and all applicable building standards are satisfied.
- c. Rotor Clearance. No part of a ground-mounted rotor blade shall be located within twenty (20) feet of the ground, the nearest tree canopy, structure or above-ground utility facility.
- d. Noise. Audible noise from wind energy systems shall not exceed forty-five (45) dB(A) when measured from the outside of the nearest residence, business, school, hospital, religious institution, or other inhabited structure. All equipment must be maintained to prevent infrequent, disruptive, excessive or unusual noise such as grating, grinding, screeching, rattling or other noise. Noise and/or nuisance related issues resulting from the operation of a wind energy system shall be subject to the requirements of Chapter 18, Article III of the City Code.
- e. Screening. Wind energy systems are exempt from the screening requirements of Section 42-64(j) of this Chapter.
- f. Aesthetics. All portions of the wind energy system shall be a non-reflective, non-obtrusive color, subject to the approval of the Zoning Administrator. The appearance of the turbine, tower and any other related

components shall be maintained throughout the life of the wind energy system pursuant to industry standards. Systems shall not be used for displaying any advertising. Systems shall not be illuminated.

- g. Feeder lines. The electrical collection system shall be placed underground within the interior of each parcel. The collection system may be placed overhead near substations or points of interconnection to the electric grid.
- h. Safety.
  - 1. Wind energy systems shall meet minimum standards such as International Electrotechnical Commission (IEC) 61400-2 or the American Wind Energy Association's (AWEA) Small Wind Turbine Performance and Safety Standard or other standards as determined by the City Building Official.
  - 2. Wind energy systems shall be certified by Underwriters Laboratories, Inc. and the National Renewable Energy Laboratory, the Small Wind Certification Council or other body as determined by the City. The City reserves the right to deny a building permit for proposed wind energy systems deemed to have inadequate certification or testing for operation in a severe winter climate.
  - 3. Wind energy systems shall be maintained under an agreement or contract by the manufacturer or other qualified entity.
  - 4. All grid connected systems shall have an agreement with the local utility prior to the issuance of a building permit. A visible external disconnect shall be provided if required by the utility.
- i. Abandonment. If a wind energy system remains nonfunctional or inoperative for a continuous period of one (1) year, the system shall be deemed to be abandoned and shall constitute a public nuisance. The property owner shall remove the abandoned system and restore vegetation upon the site at his/her expense after a demolition permit has been obtained. Removal includes the entire structure including foundations to below natural grade and transmission equipment.
- j. Permits.
  - 1. A building permit shall be obtained for any wind energy system prior to installation.
  - 2. Wind energy systems shall be subject to inspection by the City's Building Official every three (3) years and at the property owner's expense in accordance with the City's fee schedule.

(3) Residential District Standards:

- a. Number. No more than one (1) wind energy system is permitted per parcel.
- b. Height.
  - 1. Ground-mounted wind energy systems shall conform to the maximum height requirements of the applicable residential zoning district.
  - 2. Roof-mounted wind energy systems shall not extend more than eight (8) feet above the highest point of the roof.
- c. Boat Lifts. Wind energy systems integrated into the design of boat lifts are permitted as accessory uses in all residential zoning districts subject to the following:
  - 1. Applicable rules and regulations of the Lake Minnetonka Conservation District and the applicable residential zoning district shall be satisfied for residential docks.
  - 2. The wind energy system shall not exceed twenty (20) feet in height.
  - 3. The length of system rotor blades shall not exceed three (3) feet in diameter.

(4) Commercial, Manufacturing and Public/Semi-Public District Standards:

- a. Number. One (1) wind energy system is permitted per one hundred (100) feet of public street frontage.
- b. Height.
  - 1. Ground-mounted wind energy systems shall conform to the maximum height requirements of the applicable commercial, manufacturing or public/semi-public zoning district.
  - 2. Roof-mounted wind energy systems shall not extend more than fifteen (15) feet above the highest point of the roof.
- c. Ground-Mounted Systems.
  - 1. Ground-mounted wind energy systems shall not be installed in the streetside yard of any lot.
  - 2. Only monopole towers are permitted.

3. System height shall be measured from the base of the tower to the highest possible extension of the system apparatus.
4. Ground-located wind energy systems shall not encroach on public drainage, utility roadway or trail easements.

**(d) Solar Energy Systems.**

- (1) Zoning District Allowance. Solar energy systems in accordance with the standards in this Chapter are allowed as a permitted accessory use in all zoning districts.
- (2) Standards.
  - a. Exemption. Passive or building-integrated solar energy systems are exempt from the requirements of this Section and shall be regulated as any other building element.
  - b. Height. Roof-mounted solar energy systems shall comply with the maximum height requirements in the applicable zoning district. Ground-mounted solar energy systems shall not exceed six (6) in height.
  - c. Setbacks. Ground-mounted solar energy systems shall comply with all principal structure setbacks of the applicable zoning district. Roof-mounted systems shall comply with all building setbacks in the applicable zoning district and shall not extend beyond the exterior perimeter of the building on which the system is mounted.
  - d. Roof Mounting. Roof-mounted solar collectors may be flush-mounted or bracket-mounted. Bracket-mounted collectors shall be certified by a registered architect or engineer and shall be permitted only when a determination is made by the City Building Official that the underlying roof structure will support apparatus, wind, and snow loads and all applicable building standards are satisfied.
  - e. Easements. Solar energy systems shall not encroach on public drainage, utility roadway or trail easements.
  - f. Screening. Ground mounted solar energy systems shall be screened from view to the extent possible without impacting their function.
  - g. Maximum Area. Ground-mounted solar energy systems shall be limited in size to the maximum area requirement allowed for accessory structures or no more than twenty-five (25) percent of the rear yard, whichever is less.

- h. Aesthetics. All solar energy systems shall minimize glare towards vehicular traffic and adjacent properties.
- i. Feeder lines. The electrical collection system shall be placed underground within the interior of each parcel. The collection system may be placed overhead near substations or points of interconnection to the electric grid.
- J. Boat Lifts. Solar energy systems integrated into the design of boat lifts are permitted as accessory uses in all residential zoning districts subject to the following:
  - 1. Applicable rules and regulations of the Lake Minnetonka Conservation District and the applicable residential zoning district shall be satisfied.
  - 2. The solar energy system shall not exceed four (4) square feet in area and six (6) feet in height.

(3). Safety.

- a. Standards. Solar energy systems shall meet the minimum standards outlined by the International Electrotechnical Commission (IEC), the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE), ASTM International, British Standards Institution (BSI), International Electrotechnical Commission (IEC), International Organization for Standardization (ISO), Underwriter's Laboratory (UL), the Solar Rating and Certification Corporation (SRCC) or other standards as determined by the City Building Official.
- b. Certification. Solar energy systems shall be certified by Underwriters Laboratories, Inc. and the National Renewable Energy Laboratory, the Solar Rating and Certification Corporation or other body as determined by the Community Development Director. The City reserves the right to deny a building permit for proposed solar energy systems deemed to have inadequate certification.
- c. Utility Connection. All grid connected systems shall have an agreement with the local utility prior to the issuance of a building permit. A visible external disconnect shall be provided if required by the utility.

- (4) Abandonment. If a solar energy system remains nonfunctional or inoperative for a continuous period of one (1) year, the system shall be deemed to be abandoned and shall constitute a public nuisance. The property owner shall remove the abandoned system and restore vegetation upon the site at his/her expense after a demolition permit has been obtained. Removal includes the entire structure including transmission equipment.

- (5) Permits.
  - a. A building permit shall be obtained for any solar energy system prior to installation.
  - b. Solar energy systems shall be subject to inspection by the City's Building Official every three (3) years and at the property owner's expense in accordance with the City's fee schedule.

**Section 3.** Article 8, Division 2, Section 42-277 of the Spring Park Zoning/Shoreland Ordinance (R-1, Single and Two Family Residential District Accessory Uses) is hereby amended to add the following:

- (8) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (9) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (10) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 4.** Article 8, Division 3, Section 42-302 of the Spring Park Zoning/Shoreland Ordinance (R-2, Medium Density Residential District Accessory Uses) is hereby amended to add the following:

- (8) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (9) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (10) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 5.** Article 8, Division 4, Section 42-327 of the Spring Park Zoning/Shoreland Ordinance (R-3, High Density Residential District Accessory Uses) is hereby amended to add the following:

- (3) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (4) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (5) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 6.** Article 8, Division 5, Section 42-452 of the Spring Park Zoning/Shoreland Ordinance (C-1, General Commercial District Accessory Uses) is hereby amended to add the following:

- (5) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (6) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (7) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 7.** Article 8, Division 6, Section 42-378 of the Spring Park Zoning/Shoreland Ordinance (C-2, Shopping Center District Accessory Uses) is hereby amended to add the following:

- (5) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (6) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (7) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 8.** Article 8, Division 7, Section 42-402 of the Spring Park Zoning/Shoreland Ordinance (C-3, Health Care Facility District Accessory Uses) is hereby amended to add the following:

- (7) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (8) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (9) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 9.** Article 8, Division 8, Section 42-427 of the Spring Park Zoning/Shoreland Ordinance (C-4, Office Commercial District Accessory Uses) is hereby amended to add the following:

- (4) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (5) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (6) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 10.** Article 8, Division 9, Section 42-453 of the Spring Park Zoning/Shoreland Ordinance (M, Manufacturing District Accessory Uses) is hereby amended to add the following:

- (4) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (5) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (6) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 11.** Article 8, Division 10, Section 42-477 of the Spring Park Zoning/Shoreland Ordinance (P, Public/Semi-Public District Accessory Uses) is hereby amended to add the following:

- (8) Ground source heat pump systems as regulated by Section 42-76 of this Ordinance.
- (9) Wind energy systems as regulated by Section 42-76 of this Ordinance.
- (10) Solar energy systems as regulated by Section 42-76 of this Ordinance.

**Section 12. Effective Date.** This ordinance amending the Spring Park Zoning/Shoreland Ordinance shall be in full force and effect immediately upon its passage and publication.

ADOPTED by the City of Spring Park this 16th day of September, 2013.

CITY OF SPRING PARK

By: \_\_\_\_\_  
Sarah Reinhardt, Mayor

ATTEST:

By: \_\_\_\_\_  
Wendy Lewin, City Clerk