

City of Salem

In the year two thousand and nine

An Ordinance to amend an Ordinance relative to Zoning

Be it ordained by the City Council of the City of Salem, as follows:

Section 1. Section 5-3, Special Permit Uses of Article V, Use Regulations of the City's Zoning Ordinance is hereby amended by inserting the following new Special Permit use:

“(n) Land-based Wind Energy Facilities

(1) Purpose and Intent

The purpose of this section is to accommodate wind energy facilities in appropriate locations, while minimizing any adverse visual, safety, and environmental impacts of the facilities.

(2) Definitions

- a. **Wind Energy Facility:** All equipment, machinery and structures utilized in connection with the conversion of wind to electricity. This includes, but is not limited to, all transmission, storage, collection and supply equipment, substations, transformers, site access, services roads and machinery associated with the use. A wind energy facility may consist of one or more wind turbines.
 - i. **Residential Scale Wind Energy Facilities** shall be considered those with a rated nameplate capacity less than or equal to 60 kilowatts per turbine, and a height up to 150 feet.
 - ii. **Commercial Scale Wind Energy Facilities** shall be considered those with a rated nameplate capacity greater than 60 kilowatts per turbine and/or a blade-tip height greater than 150 feet.
 - iii. **Distributed generation facilities** are those which are primarily designed to provide electrical output, or the value thereof, for the use of adjacent structures.
- b. **Rated Nameplate Capacity:** The maximum rated output of electric power production equipment
- c. **Height:** The height of the turbine measured from the natural grade to the tip of the blade at its highest point.
- d. **Clear area:** Area surrounding a wind turbine to be kept free of habitable structures.
- e. **Nacelle:** The frame and housing at the top of the tower that encloses the gearbox and generator and protects them from the weather.
- f. **Rotor:** The blades and hub of the wind turbine that rotate during turbine operation.
- g. **Wind Monitoring or Meteorological (“test”) Towers:** A temporary tower equipped with devices to measure wind speeds and direction, and used to determine how much wind power a site can be expected to generate.

(3) Applicability

A Land-based Wind Energy Facility may not be issued a building permit unless or until a special permit has been issued by the Planning Board, irrespective of whether the use is a principal or accessory use. The Planning Board shall approve, or approve with conditions, if the petitioner can fulfill the requirements of this section.

- a. Wind monitoring or meteorological towers shall be exempt from height and other dimensional regulations of the Zoning Ordinance and shall follow the setback requirements of this section. Wind monitoring or meteorological towers over a height of 200 feet shall require a Special Permit from the Planning Board. Wind monitoring or meteorological towers equal to or less than 200 feet in height shall be allowed as a matter of right subject to the issuance of a building permit for a temporary structure.
- b. This section specifies where Wind Energy Facilities shall be permitted by Special Permit (SP) and where Wind Energy Facilities are (N) not allowed. Additionally:
 - i. Wind Energy Facilities shall be allowed on all land owned by the City of Salem.
 - ii. Wind Energy Facilities shall not be permitted on lots less than 40,000 square feet.

	RC	R1	R2	R3	B1	B2	B4	B5	I	BPD	NRCC
Residential Scale	SP	SP	SP	SP	SP	SP	SP	N	SP	SP	SP
Commercial Scale	N	N	N	SP	N	N	N	N	SP	SP	N

- c. All wind energy facilities shall be constructed and operated in locations that minimize any adverse visual, safety, and environmental impacts. No special permit shall be granted unless the Planning Board finds:
 - i. the specific site is an appropriate location for such use;
 - ii. the use will not adversely affect the neighborhood;
 - iii. there will be no serious hazard to people or vehicles from the use;
 - iv. no nuisance will be created by the use; and
 - v. adequate and appropriate facilities will be provided for the proper operation of the use.

(4) Site Control

The applicant shall submit documentation of the legal right to install and use the proposed facility at the time of application for a Special Permit. Documentation should also include proof of control over the setback area. Control shall mean legal authority to prevent the use of any structure within the setback area for human habitation or other use permitting human occupancy.

(5) Proof of Liability Insurance

Prior to the issuance of a building permit, the applicant shall be required to provide evidence of liability insurance and documentation that said amount is sufficient to cover loss or damage to persons and structures occasioned by the failure of the facility.

(6) Special Permit Regulations

Proposed wind energy conversion facilities shall be consistent with all applicable local, state and federal requirements, including but not limited to all applicable electrical, construction, noise, safety, and environmental and communications requirements. All wind energy conversion facilities shall comply with the requirements set forth in this section, unless waived by the Planning Board.



a. Height

Commercial Scale Wind Energy Facilities shall be no higher than 400 feet; Residential Scale Wind Energy Facilities shall be no higher than 150 ft. The height shall be measured from the natural grade to the highest point reached by the rotor blades. The Planning Board may allow this height to be exceeded as part of the special permit process if the project proponent can demonstrate that

the additional height is needed and that the additional benefits of the higher tower outweigh any increased adverse impacts.

b. Monopole Towers

Monopole towers are the preferred type of support for wind turbines.

c. Setback or Clear Area

The following setbacks shall be observed:

- i. The minimum distance from the base of any wind turbine tower to any property line shall be equal to 75% of the height of the structure or the setback provisions of the zoning district, whichever is greater;
- ii. The minimum distance from the base of any wind turbine to any dwelling, business or institutional use shall be equal to the total height of the structure.
- iii. The purpose of the setbacks is to provide a clear area, to be kept free of habitable structures. The clear area does not need to be cleared of trees and vegetation; to the extent possible, existing on-site trees and vegetation shall be preserved. Wetland buffer areas may be within the clear area.
- iv. The Planning Board may reduce the setbacks as appropriate based on site specific considerations.

d. Visual Impact

The proponent shall demonstrate through project siting and proposed mitigation that the wind energy conversion facility minimizes any impact on the visual character of surrounding neighborhoods and the community. This may include, but not be limited to, information regarding site selection, turbine design, buffering, lighting and cable layout.

e. Color

Wind energy conversion facilities shall be painted a non-reflective color that blends with the sky and clouds.

f. Equipment Shelters

All equipment necessary for monitoring and operation of wind energy facilities should preferably be contained within the turbine tower. If this is not feasible, ancillary equipment may be located outside the tower. Whenever reasonable, structures should be joined or clustered and contained either within an underground vault, enclosed within a separate structure, or shielded from view either by year-round landscaping or vegetated buffers to avoid adverse visual impacts.

g. Lighting and Signage

- i. Wind turbines shall be lighted only if required by the Federal Aviation Administration (FAA). The proponent shall provide a copy of the FAA's determination to establish the required markings and/or lights for the structure.
- ii. Lighting of equipment, structures and any other facilities on site shall be shielded from abutting properties.
- iii. Signs on the facility shall comply with the City of Salem's sign regulations and be limited to those needed to identify the property and the owner and warn of any danger, and educational signs providing information on the technology and renewable energy usage.

h. Utility Connections

All utility connections from the commercial wind facility site shall be underground unless the applicant demonstrates by substantial evidence that the construction of such underground facilities would be

unreasonable owing to circumstances relating to the solid conditions, shape or topography of such a site, or if the utility provider requires the connections to be above ground.

i. Land Clear/Open Space/Rare Species

Wind energy facilities shall be designed to minimize land clearing and fragmentation of open space areas and shall avoid permanently protected open space when feasible. Wind turbines should be sited to make use of previously developed areas wherever possible. Wind energy facilities shall also be located in a manner that does not have significant negative impacts on rare species, including avian species in the vicinity.

j. Noise

The wind energy facility and associated equipment shall conform to Massachusetts noise regulations (310 CMR 7.10). An analysis, prepared by a qualified engineer, shall be presented to demonstrate compliance with these noise standards and be consistent with the Massachusetts Department of Environmental Protection guidance for noise measurement.

k. Shadowing/Flickering

Wind energy conversion facilities shall be sited in a manner that does not result in significant shadowing or flicker impacts. The proponent has the burden of proving that this effect does not have significant adverse impact on neighboring adjacent uses either through siting or mitigation.

l. Safety Standards

- i. No hazardous materials or waste shall be discharged on the site of any wind energy facility. If any hazardous materials are to be used on site, there shall be provisions for full containment of such materials or waste. An enclosed containment area, designed to contain at least 110 percent of the volume of the hazardous materials or waste stored or used on the site may be required to meet this requirement. The wind energy conversion towers shall also be designed to prevent unauthorized use.
- ii. A Wind Energy Facility, regardless of height above the ground, shall be equipped with a site-specific fire detection and fire suppression system of a type which has been listed by the Underwriters Laboratory (UL) and/or approved by Factory Mutual (FM). The site-specific fire detection and fire suppression system and components shall be approved by the Fire Marshal.
- iii. Access to the site must be clear and maintained to a level of acceptance by the Fire Marshall.
- iv. Warning signs indicating voltage must be placed at the base of all ground/base mounted electrical equipment.
- v. Electrical equipment shall be locked or fenced to prevent entry.
- vi. While monopole construction is preferable in the event guy wires are used, then visible reflective colored objects such as flags, reflectors, or tape shall be placed on all guy wires up to a height of ten feet above the ground or surface where the wind energy equipment is mounted.
- vii. Annual reports to the Fire Department detailing the year's operations, including but not limited to, number of days of operations, energy production, and maintenance items/issues.
- viii. Hazardous materials are limited to lube oil or coolants used for routine maintenance and may be stored in limited quantities in their original packaging. Waste oils or coolants shall not be stored on site.
- ix. Unauthorized access- no ladders, step bolts, or other climbing means shall be readily accessible to the public for a minimum of fifteen feet above the ground or surface where the wind energy equipment is mounted.
- x. The owner of a proposed wind project shall provide a project summary, electrical schematic, and site plan to the Salem Fire Department with a proposed emergency response plan prior to issuance of a special permit.

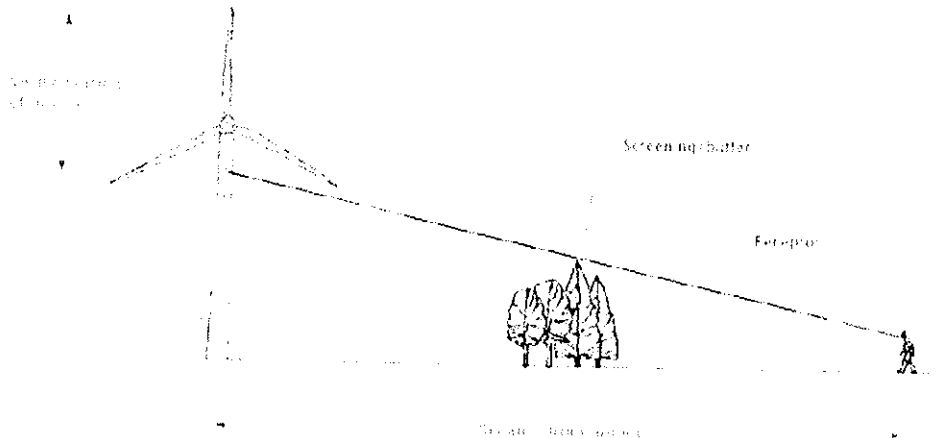
(7) Submission Requirements

Fifteen (15) collated sets of application materials shall be submitted with any application for a Wind Energy Facility Special Permit. Application materials shall include all plans and materials required in this section:

- a. Documentation
Applications must include: documentation of the legal right to install and use the proposed facility and proof of control over the setback or clear areas, proof of financial surety, proof of liability insurance, certification of lighting requirements from the FAA, certification of attainment for Federal Communications Commission (47 CFR Part 15) relating to interference with radio or television reception, and a statement that satisfies noise requirements
- b. Site Plan Requirements
 - i. A one-inch-equals-200 feet vicinity plan, signed and sealed by a Registered Professional Engineer or Licensed Surveyor must be submitted showing:
 - ii. Property lines, buildings (including accessory structures), public and private roads within 300 feet of the subject property.
 - iii. Proposed location of wind energy conversion facility, including all turbines, fencing, associated ground equipment, transmission infrastructure, access roads, parking area and any other construction or development attendant to the wind energy conversion facility.
 - iv. Distances, at grade, from the proposed wind energy conversion facility to each building on the vicinity plan shall be shown.
 - v. The proposed changes to the existing property including grading and vegetation removal.
 - vi. A landscape plan showing existing trees and shrubs, as well as those proposed to be added, identified by size and species
 - vii. Tree cover and average height of trees on the subject property and adjacent properties within 300 feet.
 - viii. Contours at each two feet Above Mean Sea Level for the subject property and adjacent properties within 300 feet.
 - ix. Zoning district designation for the subject parcel
- c. Elevations
Elevations shall be either at a 1/4' or 1/8' inch scale showing views at-grade from the north, south, east and west for a 50-foot radius around the proposed wind energy facility. Elevations shall show all equipment, security barriers, structures, existing and proposed trees and shrubs, and grade changes.
- d. Photographs and Sight-line Diagrams
 - i. Color photographs of the current view shall be submitted from at least two locations to show the existing conditions.

- ii. Each of the existing condition photographs shall have the proposed wind energy facility superimposed on it to accurately simulate the proposed wind energy facility.
- iii. Color photographs of the existing conditions at the base of the proposed turbine site shall be submitted. These photographs shall serve as the documentation of the natural condition of the site.
- iv. Sight-line diagrams from at least two locations, such as a public roadway or the closest habitable structure, shall be depicted in profile drawings at a scale of one inch equals 40 feet. The diagrams shall show the lowest point of the turbine visible from each location and all intervening trees and buildings.

Figure 1: Example Site-line Diagram



- e. **Materials & Colors**
Specifications for the proposed wind energy facility shall be provided for all equipment and attendant facilities.
- f. **Balloon or Crane Test**
Prior to, or at the time of filing an application for a Special Permit, the applicant shall arrange for a balloon or crane test at the proposed site to illustrate the height of the proposed facility. The date, time, and location of such test shall be advertised in a newspaper of general circulation at least 14 days, but not more than 21 days prior to the test. In addition, notice shall be provided to 300 ft abutters and abutting municipalities. Notice of the Balloon test may be combined with the notice of the public hearing.

(8) Professional Fees

The City may retain a technical expert/consultant to verify information presented by the applicant at the cost of the applicant.

(9) Utility Notification

No residential scale wind energy system shall be installed until evidence has been given that the utility company has been informed of the customer's intent to install an interconnected customer owned generator. Off grid systems shall be exempt from this requirement.

(10) Use by Telecommunications Carriers

Wind energy conversion facilities may be used to locate telecommunications antennas, subject to applicable regulations governing such uses, and subject to the following requirements:

- a. all ground mounted telecommunications equipment shall be located in either a shelter within the turbine tower or otherwise screened from view year-round; and
- b. antennas should be flush-mounted to be keeping in the design of the wind turbine tower; and
- c. all cabling associated with the personal wireless facility shall be contained within the tower structure or enclosed within a conduit painted to match the turbine mount.

(11) Term of Special Permit.

A Special Permit issued for any wind energy conversion facility shall be valid for 25 years. At the end of that time period, the wind energy conversion facility shall be removed by the applicant unless a renewal or extension of the Special Permit is granted by the Planning Board. Upon request, the Planning Board may extend, renew, or modify the Special Permit if the operation of the facility is satisfactory.

(12) Monitoring and Maintenance

- a. After the wind energy conversion facility is operational, the owner shall submit to the City at annual intervals from the date of issuance of the Special Permit, a report detailing operating data for the facility.
- b. Notice shall be provided to the City of any change of ownership.
- c. The owner shall maintain the wind energy conversion facility in good condition. Such maintenance shall include, but not be limited to, painting, structural integrity of the foundation, the support structure, the security barrier (if applicable) and maintenance of the buffer areas and landscaping if present.

(13) Abandonment or Discontinuation of Use

- a. At such time that a wind energy conversion facility is scheduled to be abandoned or discontinued, the applicant will notify the City of Salem by certified U.S. mail of the proposed date of abandonment or discontinuation of operations. In the event that an applicant fails to give such notice, a wind energy facility will be considered to be abandoned if it is not operated continuously for a period of one year, or if it is designated as a safety hazard by the building commissioner.
- b. Upon abandonment or discontinuation of use, the owner shall physically remove the wind energy conversion facility within 90 days, unless an extension is granted by the Planning Board. "Physically remove" shall mean removal of all equipment and restoration of the location to its natural condition as shown in the baseline documentation photos except that, new landscaping and grading done as part of the turbine installation may remain.
- c. If the applicant fails to remove a wind energy conversion facility in accordance with this section, the City shall have the authority to enter the subject property and physically remove the facility. The applicant may be required to provide a form of surety at the time of construction to cover the costs of the removal in the event the City must remove the

facility. The applicant shall submit a fully inclusive estimate of costs associated with removal, prepared by a qualified engineer. The amount of the surety should be for 150% of the cost at the time. The amount shall include a mechanism for a Cost of Living Adjustment after 10 and 15 years.”

Section II. This Ordinance shall take effect as provided by City Charter.

In City Council September 25, 2008
Referred to the Planning Board to schedule a joint public hearing with the Planning Board and invite the Renewable Energy Task Force to the public hearing. Public Hearing held on November 12, 2008 and advertised in the Salem News on October 29, 2008 and November 5, 2008
Referred to the Planning Board for their recommendation
In City Council December 11, 2008
Planning Board recommendation recieved and referred to the Committee on Administration and Finance
In City Council January 22, 2009
Adopted for first passage as amended by unanimous roll call vote of 11 yeas, 0 nays, 0 absent and referred to the Committee on Ordinances, Licenses and Legal Affairs and schedule a Special Meeting to adopt for second passage.
A motion for immediate reconsideration in the hopes it would not prevail was denied.

ATTEST:

CHERYL A. LAPOINTE
CITY CLERK