

(10/13/10) **3-3 WIND ENERGY SYSTEMS AND COMMUNICATIONS TOWER AND ANTENNA REGULATIONS****3-3.01 Purpose**

- A. Protect the health and safety of the residents of Calvert County by: (1) prohibiting the interference or degradation of the County's wireless communication systems which include, but are not limited to public safety, administrative and school wireless systems; (2) ensuring that wind energy systems and communications towers and antennas comply with all State and Federal safety regulations; and (3) avoiding potential damage to adjacent properties from communications tower failure through engineering and careful siting of communications tower structures.
- B. Minimize the total number of communications towers throughout Calvert County by encouraging co-location of antennas on existing communications towers and other structures such as buildings, water tanks, etc.
- C. Protect residential areas and land uses from potential adverse impacts of communications towers and antennas by encouraging the location of communications towers in non-residential areas and in areas where the adverse impact on the community is minimal.
- D. Encourage users of communications towers and antennas to configure them in a way that minimizes the adverse visual impact and provides protection of historic, natural, and cultural features through careful design, siting, screening, and innovative camouflaging techniques.
- E. Enhance the ability of the providers of telecommunications services to provide such services to the community quickly, effectively, and efficiently by streamlining the process.
- F. Encourage the use of wind energy systems in appropriate locations as alternative energy sources.

3-3.02 General Requirements

- A. Antennas and communications towers may be considered either principal or accessory uses. A different use on the same lot shall not preclude the installation of an antenna or communications tower on such lot. A wind energy system shall be located on the same property with the residence, business, or public building for which it generates power.
- B. The height of communications towers shall be measured from ground level to the highest point of the communications tower, including all attached antennas and appurtenances. The height of wind energy systems shall be measured from ground level to the tip of a blade when the blade is at its highest point.
- C. The owner of any commercial communications tower approved after adoption of these regulations (December 4, 2001) shall submit a report to the Department of Planning and Zoning upon construction of the communications tower and every two years thereafter indicating the name(s) and addresses of all carriers with equipment located on the communications tower and a description of such equipment.
- D. Upon installation of any new antennas on pre-existing commercial communications towers after adoption of these regulations (December 4, 2001), and every two years thereafter, the owner of the communications tower shall submit a report to the Department of Planning and Zoning indicating the name(s) and addresses of all carriers with equipment located on the communications tower and a description of such equipment.
- E. A communications tower inspection report prepared by a licensed engineer in compliance with current American National Standards Institute (ANSI) standards shall be submitted upon construction, and every two years following construction, of any new commercial communications tower approved after adoption of these

3-3.02 General Requirements

regulations (December 4, 2001). Pre-existing communications towers shall be subject to similar reporting requirements upon installation of any new antennas installed after adoption of these regulations and every two years thereafter.

- F. All obsolete or unused facilities related to communications towers and antennas and wind energy systems shall be removed within 12 months of cessation of operations.
- G. Communications towers, antennas and wind energy systems are permitted in accordance with the following land use chart:

USE		ZONING DISTRICTS										
		FFD	RCD	RD	WL	APD	HD	I-1	RC	MC	TC	EC
COMMUNICATIONS TOWERS:												
A.	Communications Tower, Commercial/Governmental on Government Property	C	C	C				C	C	C	C	C
B.	Communications Tower, Commercial on Private Property (no height restriction)	SC	SC			SC		SC			SC	SC
C.	Communications Tower, Commercial on Private Property, less than 75 feet	SC	SC	SC		SC		C	C	C	C	C
D.	Communications Tower, Private/Not-for-Profit, less than 75 feet	C	C	C		C		C	C	C	C	C
E.	Communications Tower, Private/Not-for-Profit, greater than 75 feet	SC	SC	SC		SC		SC	SC	SC	SC	SC
COMMUNICATIONS ANTENNAS:												
F.	Antenna, Commercial/Governmental on Government Property	C	C	C				C	C	C	C	C
G.	Antenna, Commercial on Private Property	C	C	C		C		C	C	C	C	C
H.	Satellite Dish Antenna; Ground Mounted, greater than three feet in Diameter	C	C	C		C		C	C	C	C	C
I.	Satellite Dish Antenna; Roof Mounted, greater three feet in Diameter	SC	SC	SC		SC		C	SC	SC	SC	SC
J.	Satellite Dish Antenna; Ground or Roof-Mounted, less than three feet in Diameter	P	P	P		P		P	P	P	P	P
K.	Antenna, Private/Not-For-Profit	P	P	P		P		P	P	P	P	P
WIND ENERGY SYSTEMS:												
L.	Wind Energy System, Ground Mounted	C	C	C		C	C	C	C	C	C	C
M.	Wind Energy System, Roof Mounted	C	C	C		C	C	C	C	C	C	C
KEY: C = Must comply with conditions of Section 3-3.03; SC = Requires special exception from Board of Appeals and must also comply with conditions of Section 3-3.03; P = Permitted; Blank = Not Permitted.												

3-3.03 Conditions for Wind Energy Systems, Communications Towers, and Antennas

- A. Tower, Commercial/Governmental on Government Property, (no height restriction) provided that:
 - 1. The property is government-owned or leased; and
 - 2. The tower shall be constructed so as to provide capacity for future co-location of other commercial and/or government operated antennas; and
 - 3. The tower shall be constructed and operated in compliance with all current Federal Communications Commission (FCC), Federal Aviation Administration (FAA) And Maryland Aviation Administration (MAA) requirements.
- B. Tower, Commercial on Private Property (no height restriction) provided that:
 - 1. Tower System.
 - a. The application submitted by the applicant to the Board of Appeals shall include: (a) a system design plan that shall include, at a minimum, radio frequency parameters, tower height, number and location of all antennas on the tower (proposed by the applicant and future co-locations), radio frequency output, effective radiated power and azimuth antenna type; (b) coverage map of the area to be served by the proposed tower; (c) coverage map showing coverage available under existing towers and other appropriate structures; and (d) an evaluation of the tower's relationship to the following: other antenna sites, existing buildings taller than 50 feet, and communication towers and water tanks within one mile of the proposed tower; and
 - b. The applicant for a new communications tower shall demonstrate to the Board of Appeals that co-location on existing towers or other appropriate structures is not feasible and that the proposed tower is the only feasible location for the antennas. Physical constraints and economic feasibility may be considered. Co-location shall be deemed not possible if:
 - i. planned equipment would exceed the structural capacity of existing and approved towers, considering existing and planned use of those towers, and such towers cannot be reinforced to accommodate planned or equivalent equipment at a reasonable cost;
 - ii. planned equipment will cause interference with other existing or planned equipment for that tower, and the interference cannot be prevented at a reasonable cost;
 - iii. existing or approved towers do not have space on which planned equipment can be placed so as to function effectively; or
 - iv. existing or approved towers will not provide effective signal coverage sought by the applicant; and
 - c. The applicant demonstrates that the tower is needed to introduce personal wireless service to an area that is without such service. The applicant shall submit a master plan for its proposed communications network for the entire county. The Department of Planning & Zoning shall adopt a policy outlining the submittal requirements for such a master plan; and

- d. The applicant demonstrates that the proposed tower will not degrade or cause interference to the County's wireless communication systems which include, but are not limited to public safety, administrative and school wireless systems; and
 - e. The applicant shall certify that the proposed tower meets Federal Communication Commission, Federal Aviation Administration and Maryland Aviation Administration requirements.
2. Tower Construction.
- a. The applicant shall submit a certification by a Professional Engineer Licensed in the State of Maryland that the tower foundation is adequately designed to support the tower and appurtenances, the design of the proposed tower is structurally sound and that the tower will be adequate to accommodate the initial antenna loading as well as anticipated future loading; and
 - b. The tower shall be constructed so as to provide capacity for future co-location of other commercial and/or government-operated antennas, unless the applicant demonstrates that such design is not economically or physically feasible. The system design plan shall delineate an area near the base of the tower to be used for the placement of additional equipment shelters or space for other users; and
 - c. All towers shall be of monopole construction and shall be screened or camouflaged to reduce visual obtrusiveness, including but not limited to the use of compatible building materials and colors, screening, landscaping, and placement within trees. Lattice towers may be permitted if the applicant demonstrates that it is not feasible to construct a monopole tower to a height that will provide adequate space for future co-locations and/or that a monopole could not provide the structural support necessary for the antennas proposed.
3. Tower Site.
- a. The tower shall be set back a distance equal to the height of the tower from all property lines except for adjacent properties under common ownership. Guy wires and accessory buildings must comply with the minimum setback requirements for the Zoning District within which the tower is located. The Board of Appeals may reduce this requirement if the goals of this Section would be better served thereby; and
 - b. If the tower is not camouflaged or screened from adjacent properties and the road by existing vegetation, buildings or structures, it shall be surrounded by a minimum 40-foot wide buffer of dense tree growth and understory in all directions to create an effective year round visual buffer. Trees and vegetation may be existing on the subject property or installed as part of the proposed facility or a combination of both. Existing mature tree growth and natural contours of the site shall be preserved to the maximum extent possible. The vegetated buffer shall be of sufficient height and depth to effectively screen the base of the tower and all equipment and equipment shelters. The Department of Planning and Zoning shall determine the types of trees and plant materials based on site conditions; and
 - c. The tower shall be constructed to minimize interference with the view of or from any public park or any Historic District; and

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- d. All new towers shall be surrounded by a locked, security fence or wall that seals the area at the base of the tower from unauthorized entry or trespass; and
 - e. Towers shall not be artificially lighted, unless required by the FAA, MAA, or other regulating authority. If lighting is required, the lighting alternative and design that causes the least disturbance to the surrounding areas shall be utilized; and
 - f. No commercial advertising signs shall be allowed on the tower. Signs warning of any danger and identifying the owners of the tower and all antennas, with emergency contact information, shall be located on the fence or wall surrounding the tower.
4. Pre-existing Towers.
- a. Guyed towers, lattice towers, and monopoles in existence at the time of adoption of this amendment (December 4, 2001) that do not comply with the requirements of this amendment may be reconstructed, altered, extended or replaced on the same site by special exception, provided that the Board of Appeals finds that the proposed reconstruction, alteration, extension or replacement will create public benefits such as opportunities for co-location, improvements in public safety, and/or reduction in visual and environmental impacts.
 - b. Modifications to antenna systems on pre-existing towers, such as changing technology, frequencies, increasing power, or relocating or adding antennas in such a manner so as to significantly alter the original plans approved for the tower shall require approval by the Department of Planning and Zoning to assure that such modifications will not cause interference with or degradation to the County's wireless communication systems which include, but are not limited to public safety, administrative and school wireless systems.
5. Board of Appeals Authority.
- a. Before the Board of Appeals grants a special exception for the installation of a communications tower, it shall consider the following:
 - i. the height of the proposed tower,
 - ii. the proximity of the proposed tower to residential structures and residential district boundaries,
 - iii. the nature of uses on adjacent properties,
 - iv. surrounding topography,
 - v. surrounding tree coverage and foliage,
 - vi. design of the tower, with particular reference to design characteristics that have the effect of reducing or eliminating visual obtrusiveness,
 - vii. proposed ingress and egress to tower site,
 - viii. availability of suitable existing towers, structures or alternative technologies not requiring the use of towers.
 - b. In addition to the authority granted in Section 11-1.02 of this Ordinance, the Board of Appeals shall have the authority in granting a special exception for a communications tower under these regulations to reduce the required

screening and/or setbacks if it finds that a substantially better design will result from such reduction. In making such a finding, the Board of Appeals shall consider both the visual and safety impacts of the proposed reduction; and

- c. The Board of Appeals may require camouflaging and/or additional screening, buffering, fencing, and setbacks in order to protect significant natural, cultural, or historical features of the area surrounding the proposed tower, and/or to minimize any adverse effect of the proposed tower on adjoining properties.

- C. Tower, Commercial on Private Property (less than 75 feet in height) provided that:
 1. The tower be constructed to minimize interference with the view of or from any public park or any Historic District; and
 2. The minimum setback from all adjoining parcels shall be equal to the height of the tower measured from its base to the adjoining property line. Guy wires and accessory buildings must comply with the minimum setback requirements for the Zoning District within which the tower is located. The Board of Appeals may reduce the setback requirements if the goals stated in Section 3-3.01 would be better served thereby; and
 3. The height of a tower may be increased above 75 feet if the increase is used to facilitate the co-location of another communication provider. Such increase may be approved as a special exception by the Board of Appeals; and
 4. Only one tower is permitted per lot or parcel unless a special exception is obtained from the Board of Appeals, and
 5. The base of the tower shall be adequately screened from adjoining properties and the road so as to decrease the visual impact.
- D. Tower, Private/Not-for-Profit (Non-Commercial/Governmental) less than 75 feet in height provided that:
 1. The distance between the base of the tower and the nearest property line shall equal no less than 75 percent of the height of the tower; and
 2. Only one tower is permitted per lot or parcel unless a special exception is obtained from the Board of Appeals; and
 3. The base of the tower shall be adequately screened from adjoining properties and the road so as to decrease the visual impact.
- E. Tower, Private/Not-for-Profit (Non-Commercial/Governmental), greater than 75 feet in height provided that:
 1. The distance between the base of the tower and the nearest property line shall equal no less than 75 percent of the height of the tower; and
 2. Only one tower is permitted per lot or parcel unless a special exception is obtained from the Board of Appeals; and
 3. The base of the tower shall be adequately screened from adjoining properties and the road so as to decrease the visual impact; and
 4. The applicant demonstrates that the proposed tower will not degrade or cause interference to the County's wireless communication systems which include, but are not limited to public safety, administrative and school wireless systems.

F. Antenna, Commercial/Governmental on Government Property, provided that:

1. A building permit shall be obtained prior to installation of the antenna.
2. The antenna shall be attached to public buildings, water towers, or existing towers (including street lights and utility poles) located on government property; and
3. If an antenna is installed on a structure other than a tower, the antenna and supporting electrical and mechanical equipment shall be of a neutral color that is identical to or closely compatible with the color of the supporting structure so as to make the antenna and related equipment as visually unobtrusive as possible; and
4. The owner of the antenna shall submit a radiation safety analysis demonstrating that the antenna will not pose a health threat to individuals due to excessive radiation emissions and that the antenna is in compliance with current FCC guidelines for human exposure to radio frequency electromagnetic fields.

G. Antenna, Commercial on Private Property, provided that:

1. A building permit shall be obtained prior to installation of the antenna; and
2. The antenna shall be attached to public, commercial or industrial buildings or structures, steeples, smokestacks, water towers, or existing communications towers only; and
3. The radio signals emanating from the proposed antennas shall not interfere with the County's wireless communication systems which include, but are not limited to public safety, administrative and school wireless systems; and
4. The owner of the antenna shall submit a radiation safety analysis demonstrating that the antenna will not pose a health threat to individuals due to excessive radiation emissions and that the antenna is in compliance with current FCC guidelines for human exposure to radio frequency electromagnetic fields; and
5. If an antenna is installed on a structure other than a tower, the antenna and supporting electrical and mechanical equipment shall be of a neutral color that is identical to or closely compatible with the color of the supporting structure so as to make the antenna and related equipment as visually unobtrusive as possible; and
6. A commercial antenna may be approved as an accessory use to any commercial, industrial, or institutional structure, or to any existing approved tower provided that:
 - a. if attached to a building, the antenna shall not project above the roof line by more than ten (10) feet. If attached to an approved tower, the antenna shall not exceed the maximum height originally approved for the tower.
 - b. the antenna shall comply with the applicable FCC, MAA and FAA regulations, and the applicant shall submit verification of same.

H. Satellite Dish Antenna; Ground Mounted, greater than three feet in Diameter, provided that:

1. The antenna complies with all accessory use setbacks specified in the District; and
2. The antenna is located to prevent obstruction of the antenna's reception window from potential permitted development on adjoining properties; and

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3. If located within 200 feet of a residence, the antenna must be screened along the antenna's non-reception window with low level ornamental landscaping; and
 4. The antenna shall be no larger than 12 feet in diameter; and
 5. If located within 200 feet of a residence, the antenna shall, to the extent possible, be constructed of materials and colors that blend with the surroundings.
- I. Satellite Dish Antenna; Roof Mounted, greater than three feet in Diameter, provided that:
1. The antenna is located to prevent obstruction of the antenna's reception window from potential permitted development on adjoining properties; and
 2. The antenna is no larger than 12 feet in diameter; and
 3. If located within 200 feet of a residence, the antenna shall (to the extent possible) be constructed of materials and colors that blend with the surroundings.
- L. Wind Energy System, Ground Mounted, provided that:
1. Building and electrical permits shall be obtained prior to installation of the wind energy system and any accessory structures; and
 2. the applicant shall submit, with the building permit application, a certification by a Professional Engineer licensed in the State of Maryland that the foundation and support structure for the wind energy system is adequately designed to support the wind turbine and appurtenances; and
 3. approval of the building permit application shall be subject to a determination by the Dept. of the Navy, Naval Air Station at Patuxent River, Maryland, that the wind energy system will not cause interference with military activities; and
 4. if located on a lot or parcel containing less than one acre, the height of the wind turbine and support structure, as measured from the ground level to the tip of a blade when the blade is at its highest point, shall not exceed 85 feet; and
 5. if located on a lot or parcel containing one acre or more, the height of the wind turbine and support structure, as measured from the ground level to the tip of a blade when the blade is at its highest point, shall not exceed 150 feet; and
 6. the blade tip of any wind turbine shall, at its lowest point, have ground clearance of no less than 15 feet; and
 7. the support structure for the wind energy system shall not be climbable up to 12 feet above ground level; and
 8. the wind turbine and support structure shall be set back from all property lines and all above-ground utility lines a distance equal to its height. These setbacks may not be reduced; and
 9. guy wires and accessory structures shall comply with the minimum setback requirements for the Zoning District within which the wind energy system is located (See Section 5-1.10 of this Ordinance); and
 10. the wind turbine shall be a non-reflective, neutral color; and
 11. the noise generated by the wind energy system shall not exceed limits established by any State or County Noise Ordinance in effect; and
 12. the wind energy system shall not be artificially lighted unless required by the Federal Aviation Administration (FAA) or other authority; and

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13. no commercial advertising signs shall be permitted on the wind energy system. Signs warning of any danger and identifying the owners of the wind energy system, with emergency contact information, shall be displayed; and
14. small wind energy systems connected to the utility grid shall comply with the Maryland Net Metering Laws (Maryland Code, Utility Companies Article, Section 7-306); and
15. in the HD District, the requirements of Section 2-10.04 shall apply to Historic Districts.

M. Wind Energy System, Roof Mounted, provided that:

1. Building and electrical permits shall be obtained prior to installation of the wind energy system and any accessory structures; and
2. the applicant shall submit, with the building permit application, a certification by a Professional Engineer licensed in the State of Maryland that the support structure for the wind energy system is adequately designed to support the wind turbine and appurtenances; and
3. approval of the building permit application shall be subject to a determination by the Dept. of the Navy, Naval Air Station at Patuxent River, Maryland, that the wind energy system will not cause interference with military activities; and
4. if located on a lot or parcel containing less than one acre, the height of the wind turbine and support structure, as measured from the ground level to the tip of a blade when the blade is at its highest point, shall not exceed 85 feet; and
5. if located on a lot or parcel containing one acre or more, the height of the wind turbine and support structure, as measured from the ground level to the tip of a blade when the blade is at its highest point, shall not exceed 150 feet; and
6. the structure on which the wind turbine is mounted shall be located within the setbacks required for principal uses (e.g., residences or commercial buildings) for the Zoning District within which it is located; and
7. the wind turbine shall be positioned on the roof so that the minimum distance between it and all property lines and all above-ground utility lines is equal to or greater than its height; and
8. guy wires and accessory structures shall comply with the minimum setback requirements for the Zoning District within which the wind energy system is located; and
9. the wind turbine shall be a non-reflective, neutral color; and
10. the noise generated by the wind energy system shall not exceed limits established by any State or County Noise Ordinance in effect; and
11. the wind energy system shall not be artificially lighted unless required by the Federal Aviation Administration (FAA) or other authority; and
12. no commercial advertising signs shall be permitted on the wind energy system. Signs warning of any danger and identifying the owners of the wind energy system, with emergency contact information, shall be displayed; and
small wind energy systems connected to the utility grid shall comply with the Maryland Net Metering Laws (Maryland Code, Utility Companies Article, Section 7-306); and
13. In the HD District, the requirements of Section 2-10.04 shall apply to Historic Districts.

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