

## **INTRODUCTION**

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Growth in the wireless telecommunications industry has resulted in increased applications to municipalities for installation of transmission facilities. As consumer demand increases, so does the need for the industry to expand the number of antennas transmitting signals due to the fact that each antenna can transmit only a finite number of calls. Since more than one antenna can be collocated on a tower structure, communities should encourage collocation whenever feasible, thereby reducing the amount of new towers being constructed on the landscape. However, structural changes may be necessary if antennas are to be collocated--increased height or lattice-type towers may be needed. It is also possible to locate an antenna on an existing tall structure such as a church steeple, radio/television tower or ball field light pole.

Although recent regulatory actions (ie, the Telecommunications Act of 1996) prevent local governments from prohibiting the provision of wireless telecommunications services, they have been reserved the right to regulate the number and placement of telecommunications facilities through local zoning. These zoning provisions may not unreasonably discriminate among providers of equivalent services. Municipalities need to address the requests for facility placement within a reasonable period of time, similar to the review processes of other comparable applications. Any decision by the municipality to deny a request to place, construct, or modify a wireless telecommunications facility shall be in writing and supported by substantial evidence contained in a written record. Local governments are prohibited from regulating radio frequency emission levels and therefore cannot deny a request based on concerns associated with these emissions and any health risks posed by them. The Federal Communications Commission is the only entity permitted to set the emission standards the facilities are required to meet.

In order to maintain a balance between a community's aesthetics and an industry trying to keep pace with consumer demand, a model ordinance follows which could be adapted and incorporated into a community's zoning code.

### **MODEL ORDINANCE**

*This ordinance is written in a general form for basic municipal zoning districts. It has been compiled following research of other ordinances throughout the United States and has incorporated input from local wireless carriers. Since land use districts, population densities and topographic considerations vary significantly among communities in Cuyahoga County, individual municipalities will need to adapt the suggested regulations to the format of their ordinances and particular district types.*

*This model suggests wireless facilities may be permitted in most districts as Conditional Uses, and in others, by right. The form the facility takes--as a new tower or as an antenna attached to an existing structure, for example--also determines the extent and type of application process.*

### **DEFINITIONS**

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*(to be added to the municipality's definition section of the ordinance)*

**Collocation:** The use of a wireless telecommunications facility by more than one wireless telecommunications provider.

**Lattice tower:** A support structure constructed of vertical metal struts and cross braces forming a triangular or square structure which often tapers from the foundation to the top.

**Monopole:** A support structure constructed of a single, self-supporting hollow metal tube securely anchored to a foundation.

**Open Space:** Land devoted to conservation or recreational purposes and/or land designated by a municipality to remain undeveloped (may be specified on a zoning map).

**Telecommunication:** The technology which enables information to be exchanged through the transmission of voice, video, or data signals by means of electrical or electromagnetic systems.

**Wireless telecommunications antenna:** The physical device through which electromagnetic, wireless telecommunications signals authorized by the Federal Communications Commission are transmitted or received. Antennas used by amateur radio operators are excluded from this definition.

**Wireless telecommunications equipment shelter:** The structure in which the electronic receiving and relay equipment for a wireless telecommunications facility is housed.

**Wireless telecommunications facility:** A facility consisting of the equipment and structures involved in receiving telecommunications or radio signals from a mobile radio communications source and transmitting those signals to a central switching computer which connects the mobile unit with the land-based telephone lines.

**Wireless telecommunications tower:** A structure intended to support equipment used to transmit and/or receive telecommunications signals including monopoles, guyed and lattice construction steel structures.

## **INTENT**

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Wireless telecommunications facilities are either permitted or conditional uses in a variety of zoning districts contingent upon a number of requirements being met. These criteria are in place in an attempt to minimize adverse health, safety, public welfare or visual impacts through buffering, siting, design and construction, and reduction of the need for new towers.

## **USE REGULATIONS**

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### *Use T-1: Wireless Telecommunications Facility*

Wireless telecommunications facilities are permitted under varying conditions dependent upon their form and the zoning district in which they are to be located. The following sections spell out these conditions.

#### ■ **Section 1: General**

The following requirements apply to all wireless telecommunications facilities regardless of the zoning district in which they are to be located. These general standards are to be supplemented with the specific regulations for nonresidential and residential districts as set forth in Sections 2 and 3 which follow.

- A. When the proposed wireless telecommunications facility is to include a new tower, a plot plan at a scale of not less than one inch is equal to 100 feet shall be submitted. This plot plan shall indicate all building uses within 300 feet of the proposed facility. Aerial photos and/or renderings may augment the plot plan.
- B. The location of the tower and equipment shelter shall comply with all natural resource protection standards established in the Zoning Code, including those for floodplain, wetlands and steep slopes.
- C. Security fencing eight feet in height shall surround the tower, equipment shelter and any guy wires, either completely or individually as determined by the Planning Commission.
- D. The following buffer plantings may be located around the perimeter of the security fence as deemed appropriate by the Planning Commission:
  - 1) An evergreen screen shall be planted that consists of either a hedge, planted three feet on center maximum, or a row of evergreen trees planted five feet on center maximum.
- E. Existing vegetation (trees and shrubs) shall be preserved to the maximum extent possible.
- F. Any applicant requesting permission to install a new tower shall provide evidence of written contact with all wireless service providers who supply service within a quarter mile of the proposed facility. The applicant shall inquire about potential collocation opportunities at all technically feasible locations. The contacted providers shall be requested to respond in writing to the inquiry within 30 days. The applicant's letter(s) as well as response(s) shall be presented to the Planning Commission as a means of demonstrating the need for a new tower.

- G. Any application to locate an antenna on a building or structure that is listed on an historic register, or is in an historic district shall be subject to review by the municipality's Architectural Review Board or Building Commissioner, if there is no such review board.
- H. The tower shall be painted a non-contrasting gray or similar color minimizing its visibility, unless otherwise required by the Federal Communications Commission (FCC) or Federal Aviation Administration (FAA).
- I. No advertising is permitted anywhere on the facility, with the exception of identification signage.
- J. All providers utilizing towers shall present a report to the Building Commissioner notifying them of any tower facility located in the municipality whose use will be discontinued and the date this use will cease. If at any time the use of the facility is discontinued for 180 days, a designated local official may declare the facility abandoned. (This excludes any dormancy period between construction and the initial use of the facility.) The facility's owner/operator will receive written notice from the Building Commissioner and instructed to either reactivate the facility's use within 180 days, or dismantle and remove the facility. If reactivation or dismantling does not occur, the municipality will remove or will contract to have removed the facility and assess the owner/operator the costs.
- K. No tower under 150 feet shall be artificially lighted except to assure safety or as required by the FAA. Any tower between 150 and 200 feet in height shall follow safety marking and obstruction lighting as prescribed by the FAA. Security lighting around the equipment shelter is permitted.
- L. "No Trespassing" signs shall be posted around the facility with a telephone number of who to contact in the event of an emergency.
- M. Applicants will provide evidence of legal access to the tower site thereby maintaining this access regardless of other developments that may take place on the site.
- N. A Conditional Use Permit must be approved by the City Planning Commission and/or City Council with a subsequent Building Permit issued by the Building Commissioner for construction of new towers in nonindustrial districts. Collocation of antennas on a single tower, antennas attached to existing structures/buildings, towers located in industrial districts, or replacement towers to be constructed at the site of a current tower are permitted uses and will not be subject to the Conditional use permitting process.
- O. Any decision to deny a request to place, construct or modify a wireless telecommunications antenna and/or tower shall be in writing and supported by evidence contained in a written record of the proceedings of the Planning Commission.
- P. Underground equipment shelters are encouraged, especially in nonindustrial districts, and may be requested by the Planning Commission.

■ **Section 2: Nonresidential Districts**

Wireless telecommunications facilities proposed for the following zoning districts--industrial, commercial and institutional (*as determined by the municipality*) are subject to the following conditions:

A. Sole use on a lot:

A wireless telecommunications facility is permitted as a sole use on a lot subject to the following:

- 1) Minimum lot size -  
(*include minimum lot size allowable for the district*)
- 2) Minimum yard requirements -  
Tower: the minimum distance to any single-family or two-family residential use or district lot line shall be 300 feet  
  
Equipment shelter: (*include the minimum setbacks/yard requirements for the district*)
- 3) Maximum height -  
Tower: 200 feet (includes antenna)  
Equipment shelter: (*insert maximum building height for the district*)
- 4) Maximum size of equipment shelter -  
300 square feet for a single shelter, or, if there is more than one, 750 total square feet

B. Combined with another use:

A wireless telecommunications facility is permitted on a property with an existing use subject to the following conditions:

- 1) The existing use on the property may be any permitted use in the district or any lawful nonconforming use, and need not be affiliated with the wireless telecommunications provider. The wireless telecommunications facility will not be considered an addition to the structure or value of a nonconforming use.
- 2) The wireless telecommunications facility shall be fully automated and unattended on a daily basis, and shall be visited only for periodic and necessary maintenance (except during construction or an emergency).
- 3) Minimum lot area -  
The minimum lot area shall be the area needed to accommodate the tower (and guy wires, if used), the equipment shelter, security fencing and buffer planting.
- 4) Minimum yard requirements -  
Tower: the minimum distance to any single-family or two-family residential use or district lot line shall be 300 feet  
  
Equipment shelter: shall comply with the minimum setback requirements for the primary lot.

- 5) Access - The service access to the equipment shelter shall, whenever feasible, be provided along the circulation driveways of the existing use.
- 6) Maximum height -  
Tower: 200 feet (includes antenna)  
  
Equipment shelter: *(include the maximum building height for the district)*
- 7) Maximum size of equipment shelter -  
300 square feet for a single shelter, or, if there is more than one, 750 square feet

C. Combined with an existing structure:

Where possible an antenna for a wireless telecommunications facility shall be attached to an existing structure or building subject to the following conditions:

- 1) Maximum height -  
20 feet or 20% of the building height above the existing building or structure, whichever is greater.
- 2) If the applicant proposes to locate the telecommunications equipment in a separate shelter (not located on, or attached to, the building), the shelter shall comply with the following:
  - a) The minimum setback requirements for the subject zoning district.
  - b) A buffer yard may be planted in accordance with section 1D.
  - c) Vehicular access to the shelter shall not interfere with the parking or vehicular circulation on the site for the principle use.
  - d) The maximum size of the equipment shelter shall not exceed 300 square feet, or, if there is more than one, 750 total square feet.

■ **Section 3: Residential Districts**

Wireless telecommunications facilities that include towers are not permitted in single-family or two-family residential districts with the exception of placement on any property with an institutional use (e.g., church, park, library, municipal/government, hospital, school, utility) located in either of these two districts. However, antennas attached to existing buildings or structures are permitted. In applying for a permit in any residential district, the applicant must present substantial evidence as to why it is not technically feasible to locate in a more appropriate nonresidential zone. Once those efforts have been exhausted, a wireless telecommunications facility may be located in a residential district subject to the following conditions:

A. General:

The wireless telecommunications facility shall be fully automated and unattended on a daily basis, and shall be visited only for periodic and necessary maintenance. This shall apply to B, C, D and E below.

B. Combined with a nonresidential use:

An antenna may be attached to a nonresidential building or a structure that is a permitted use in the district; including, but not limited to, a church, a municipal or governmental building or facility, agricultural building, and a building or structure owned by a utility. The following conditions shall be met:

- 1) Maximum height, 20 feet above the existing building or structure
- 2) If the applicant proposes to locate the telecommunications equipment in a separate shelter, the shelter shall comply with the following:
  - a) The shelter shall comply with the minimum setback requirements for the subject zoning district.
  - b) The maximum size of the equipment shelter shall not exceed 300 square feet, or, if there is more than one, 750 total square feet.
  - c) A buffer yard shall be planted in accordance with section 1D.
  - d) Vehicular access to the shelter shall not interfere with the parking or vehicular circulation on the site for the principal use.

C. Located on a nonresidential-use property:

A tower to support an antenna may be constructed on a property with a nonresidential use that is a permitted use within the district, including but not limited to a church, hospital, school, municipal or government building, facility or structure, agricultural use and a utility use, subject to the following conditions:

- 1) The tower shall be set back from any property line abutting a single-family or two-family residential lot by 300 feet.
- 2) Maximum height -  
Tower: 200 feet (includes antenna)  
Equipment shelter: *(include the maximum building height for the district)*
- 3) The maximum size of the equipment shelter shall not exceed 300 square feet, or, if there is more than one, 750 total square feet.
- 4) Vehicular access to the tower and equipment shelter shall, whenever feasible, be provided along the circulation driveways of the existing use.
- 5) In order to locate a telecommunications facility on a property that is vacant or with an agricultural use the tract shall be at least 2.5 acres.

D. Located on a residential building:

An antenna for a wireless telecommunications facility may be attached to a mid-rise or high-rise apartment building subject to the following conditions:

- 1) Maximum height, 20 feet above the existing building.

- 2) If the applicant proposes to locate the telecommunications equipment in a separate shelter (not located in, or attached to, the building), the shelter shall comply with the following:
  - a) The shelter shall comply with the maximum setback requirements for the subject zoning district.
  - b) The maximum size of the equipment shelter shall not exceed 300 square feet, or, if there is more than one, 750 total square feet.
  - c) A buffer yard shall be planted in accordance with section 1D.
  - d) Vehicular access to the shelter shall, if at all possible, use the existing circulation system.

E. Located in open space:

A wireless telecommunications facility is permitted on land that has been established as permanent open space, or a park subject to the following conditions:

- 1) The open space shall be owned by the municipality, county or state government, a homeowners association, charitable organization, or a private, non-profit conservation organization.
- 2) Maximum height -  
 Tower: 200 feet (includes antenna)  
 Equipment shelter: *(include the maximum building height for the district)*
- 3) The maximum size of the equipment shelter shall not exceed 300 square feet, or, if there is more than one, 750 total square feet.
- 4) The tower shall be set back from any single-family or two-family property line 300 feet.

■ **Section 4: Criteria for a Conditional Use**

*This section should be inserted into the ordinance establishing the application and review processes for Conditional Uses. Municipalities should establish and identify the specific zoning districts in which wireless telecommunications facilities may be considered for location and any in which they are prohibited.*

**Use T-1: Wireless Telecommunications Facility**

A wireless telecommunications facility which includes a tower may be permitted as a conditional use in a multi-family residential, institutional or commercial district, or located on an institutionally-used property in any residential district. In order to be considered for review, the applicant must prove that a newly-constructed tower is necessary in that opportunities for collocation on an existing tower is not feasible. The following steps must also be taken for the application to be considered for review in this category:

- A. The applicant shall present a landscaping plan that indicates how the wireless telecommunications facility will be screened from adjoining uses.

- B. The applicant shall demonstrate that the telecommunications tower must be located where it is proposed in order to service the applicant's service area. There shall be an explanation of why a tower and this proposed site is technically necessary.
- C. Where the telecommunications facility is located on a property with another principal use, the applicant shall present documentation that the owner of the property has granted an easement or entered into a lease for the proposed facility and that the vehicular access is provided to the facility.
- D. Any applicant requesting permission to install a new tower shall provide evidence of written contact with all wireless service providers who supply service within a quarter mile of the proposed facility. The applicant shall inquire about potential collocation opportunities at all technically feasible locations. The contacted providers shall be requested to respond in writing to the inquiry within 30 days. The applicant's letter(s) as well as response(s) shall be presented to the Planning Commission as a means of demonstrating the need for a new tower.

## **BIBLIOGRAPHY**

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The following documents were used in the writing this Model Ordinance:

Anne Arundel County, MD, *Bill No. 69-95, Ordinance Concerning Zoning--Commercial Telecommunication Facilities*, 1995.

Boston Redevelopment Authority, Boston, MA, *Boston Zoning Code, Article 86, Wireless Communications Equipment*, 1995.

Bucks County Planning Commission (Doylestown, PA), *Model Cellular Telecommunications Facility Ordinance*, 1995.

Cincinnati, OH, *Ordinance No. 211-1996* (amendments to the Cincinnati Municipal Code regarding wireless communications towers and antennas), 1996

Fairfax County, VA, *Telecommunication Issues*, 1995.

Gastonia, NC, *Gastonia Zoning Code, Section 17-34.2 Communication Towers*, 1995.

Harrison, NY, *Public Notice (re: amendment of Town of Harrison Zoning Ordinance to include Cellular Telephone Facilities)*, 1995.

National League of Cities, *The Telecommunications Act of 1996: What It Means to Local Governments*, 1996

Orange County, FL, *The Orange County Communications Tower Ordinance: An Overview*, 1995.

Phoenix, AZ, *Ordinance G3833 (relating to communication towers)*, 1995.

Solon, OH, *Wireless Communications Antennas and Towers*, Chapter 1286, City of Solon Zoning Ordinance, 1996.

**WIRELESS TELECOMMUNICATIONS FACILITIES**  
**Items to Incorporate into the Municipality's Building Code**

Items to submit for review of Building Permit application:

- A. A report prepared by a licensed professional engineer shall be included with the submitted application and shall contain the height, design and proof of compliance with nationally-accepted structural standards published by the American National Standards Institute/Electronic Industry Association section 222-F, as amended.
- B. A soil report complying with the standards of ANSI/EIA 222-F (Annex I: Geotechnical Investigations for Towers), as amended, shall be submitted to the Building Department to document and verify the design specifications of the foundation for the tower, and anchors for the guy wires, if used.
- C. Wireless telecommunications towers and antennae shall be designed to withstand sustained winds of at least 80 miles per hour.
- D. The ANSI/EIA section 222-F (Annex H: Commentary on Ice Design Criteria for Communications Structures) shall be consulted for ice load specifications.
- E. Elevations of existing and proposed structures showing width, depth, and height of the telecommunications facility as well as the specifications of the antenna and support structure shall be presented.
- F. The applicant shall present documentation that the tower is designed in accordance with the standards established in the Use Regulations section of the Wireless Telecommunications Facilities section of the Zoning Code.
- G. The applicant shall demonstrate that the proposed tower complies with all Federal Aviation Administration regulations concerning safety.
- H. The applicant shall demonstrate that the proposed tower complies with all Federal Communications Commission regulations addressing radio frequency emissions standards.
- I. When the proposed facility is to include a new tower, a plot plan, including all building uses within 300 feet, shall be required at a scale not less than one inch equal to 100 feet. Aerial photos and/or renderings may augment the plot plan.
- J. All applicants shall be required to construct or locate on a base tower structure and structure foundation that is designed to be buildable up to 200 feet above the finished grade. Although the initial capacity may be for one antenna, the structure shall be designed to serve as a base for a reconstructed tower with the capacity for three (3) providers when constructed to the maximum allowable height.
- K. Underground equipment shelters are encouraged, especially in nonindustrial areas, and may be requested by the Building Commissioner.

**Amendment**

**Wireless Telecommunications Facilities Model Ordinance  
Prepared by Cuyahoga County Planning Commission**

**May 6, 1998**

*Wireless Telecommunications Facilities Model Ordinance*  
"Use Regulations"  
"Section I: General"  
Item K

Please replace the following language:

- K. *No tower under 150 feet shall be artificially lighted except to assure safety or as required by the FAA. Any tower between 150 and 200 feet in height shall follow safety marking and obstruction lighting as prescribed by the FAA. Security lighting around the equipment shelter is permitted.*

with the revised language:

- K. *All towers above 100 feet shall be artificially lighted. In addition, all FAA regulations addressing safety marking and obstruction lighting shall be followed when necessary. Security lighting around the equipment shelter is permitted.*