

# **SITING AND DESIGN GUIDELINES FOR WIRELESS COMMUNICATIONS FACILITIES CITY OF PITTSFIELD**

The guidelines contained in this manual are a component of existing zoning regulations for Wireless Communications Facilities for the City of Pittsfield. Standard zoning regulations do not typically address the quality or appearance of a wireless communications facility; they merely regulate the types and locations of land uses along with health, safety, and welfare issues. It is evident, however, that the development and design of Wireless Communications Facilities are directly related to economic stability, managed growth, and improved quality of life for the citizens of Pittsfield, and thus these guidelines should be read in conjunction with Section 4.322 of the Pittsfield Zoning Ordinance in order to address appropriate requirements and processes for siting of wireless communication antennas, facility infrastructure and towers to minimize visual impacts to surrounding areas.

## **1. Intent and Purpose:**

The Planning Board and Board of Appeals (hereafter, collectively, the “Board”) finds that it is necessary and beneficial for the health, safety and welfare of the community to develop these guidelines for development of Wireless Communications Facilities (“Facilities”) in the City in order to:

- promote the health, safety, and welfare of the public and minimize impacts of Facilities on surrounding land uses;
- establish standards for location, structural integrity, and compatibility;
- encourage the location and co-location of equipment on existing structures in order to reduce the need for new Towers, thereby minimizing visual clutter, public safety impacts, and effects upon the natural environment and wildlife;
- accommodate the growing need and demand for Telecommunications Services while protecting the character of the City and its neighborhoods;
- encourage the availability of affordable, high-speed internet and cellular telephone access for businesses and residents, acknowledging that a growing number of businesses are conducted in whole or in part from homes and/or on-the-go, that increasingly education incorporates on-line learning necessitating good home internet connections for students and faculty, and that government participation and emergency services to the general public are enhanced by fast and reliable cellular and home internet connectivity;
- encourage coordination between suppliers and providers of Telecommunications Services to maximize use of existing Facilities and structures;
- establish predictable and balanced regulations within the authority reserved for local land use determination;
- respond to the mandates of the Telecommunications Act of 1996, the Middle Class Tax Relief and Job Creation Act of 2012, and other applicable federal and state laws limiting local discretion to regulate location of Personal Wireless Service Facilities (PWSF);

- ensure that applications are reviewed and acted upon promptly, without unreasonable discrimination between providers of functionally equivalent personal Wireless Services, and so as not to prohibit or have the effect of prohibiting personal Wireless Services;
- encourage Concealed technologies and the use of public lands, buildings, and structures as locations for Facilities;
- encourage affordable access to advanced technology and information, including but not limited to Broadband Facilities, which are critical to commerce, education, economic development, public safety and competitive participation in the global economy;

**2. Definitions – the following definitions apply to these guidelines as well as Section 4.322 of the Pittsfield Zoning Ordinance:**

Alternative Structure - A structure that is not primarily constructed for the purpose of holding Antennas but on which one or more Antennas may be mounted, such as buildings, water tanks, church steeples, and electric power transmission towers.

Amateur Radio Tower - A tower used for non-commercial amateur radio transmissions consistent with the “Complete FCC U.S. Amateur Part 97 Rules and Regulations” for amateur radio towers.

Ancillary Structure - For the purposes of this Section, any form of development associated with a Wireless Communications Facility, including foundations, concrete slabs on grade, guy anchors, generators, and transmission cable supports, but excluding Equipment Cabinets.

Antenna - Any apparatus designed for the transmitting and/or receiving of electromagnetic waves, including telephonic, radio or television communications. Types of elements include omni-directional (whip) antennas, sectionalized (panel) antennas, multi or single bay (FM & TV), yagi, or parabolic (dish) antennas.

Antenna Array - A single or group of antenna elements and associated mounting hardware, transmission lines, or other appurtenances which share a common attachment device such as a mounting frame or mounting support structure for the sole purpose of transmitting or receiving electromagnetic waves.

Antenna Element - Any Antenna or Antenna Array.

ASR – The Antenna Structure Registration number required by the FCC and FAA.

Base Station - Equipment and non-tower supporting structure at a fixed location that enable wireless telecommunications between user equipment and a communications network. Examples include transmission equipment mounted on a rooftop, water tank, silo or other above ground structure other than a Tower. The term does not encompass a Tower as defined herein or any equipment associated with a Tower. “Base Station” includes, but is not limited to:

equipment associated with wireless telecommunications services such as private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul;

radio transceivers, antennas, coaxial or fiber optic cable, regular and backup power supplies, and comparable equipment, regardless of technological configuration (including Distributed Antenna Systems and Small-Cell Networks);

any structure other than a Tower that, at the time the application is filed under this Section, supports or houses equipment described in this definition that has been reviewed and approved under the applicable zoning or siting process, or under another City regulatory review process, even if the structure was not built for the sole or primary purpose of providing such support.

“Base Station” does not include any structure that, at the time the application is filed under this Section, does not support or house wireless communication equipment.

Breakpoint Design Technology - The engineering design of a monopole, or any applicable Support Structure, wherein a specified point on the monopole is designed to have stresses concentrated so that the point is at least five percent (5%) more susceptible to failure than any other point along the monopole so that in the event of a structural failure of the monopole, the failure will occur at the breakpoint rather than at the base plate, anchor bolts, or any other point on the monopole.

Broadband Facility - any infrastructure used to deliver Broadband Services or for the provision of Broadband Service.

Broadband Service - any technology identified by the US Secretary of Agriculture as having the capability to transmit data to enable a subscriber to the service to originate and receive high-quality voice, data, graphics, and video. Broadband Service includes:

*Cable Service* - the one-way transmission to subscribers of video programming or other programming services and subscriber interaction required for the selection or use of such video programming or other programming service.

*Telecommunications Service* - The offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.

*Wireless Service* - data and telecommunications services, including commercial mobile services, commercial mobile data services, unlicensed wireless service and common carrier wireless exchange access services, as all of these terms are defined by federal law and regulations.

Co-location - The mounting or installation of transmission equipment on an Eligible Support Structure for the purposes of transmitting and/or receiving radio frequency signals for communications purposes so that installation of a new Support Structure will not be required.

Combined Antenna – An Antenna or an Antenna Array designed and utilized to provide services for more than one (1) wireless provider, or a single wireless provider utilizing more than one (1) frequency band or spectrum, for the same or similar type of services.

Concealed - A Tower, Ancillary Structure, or Equipment Compound that is not readily identifiable as a Wireless Communications Facility and that is designed to be aesthetically compatible with existing and proposed building(s) and uses on a site or in the neighborhood or area.

There are two types of Concealed facilities: 1) Antenna Attachments, including painted antenna and feed lines to match the color of a building or structure, faux windows, dormers or other architectural features that blend with an existing or proposed building or structure and 2) A freestanding concealed tower which looks like something else that is common in the geographic region such as a church steeple, windmill, bell tower, clock tower, light standard, flagpole with a flag that is proportional in size to the height and girth of the tower, or tree that grows naturally or is commonly found in the area.

DAS – Distributed Antenna System – A system consisting of: (1) a number of remote communications nodes deployed throughout the desired coverage area, each including at least one Antenna for transmission and reception; (2) a high capacity signal transport medium (typically fiber optic cable) connecting each node to a central communications hub site; and (3) radio transceivers located at the hub site (rather than at each individual node as is the case for small wireless facilities) to process or control the communications signals transmitted and received through the Antennas.

DAS Hub - Ancillary equipment usually contained in a shelter or other enclosure which does not have any wireless transmission or receive equipment contained therein but is utilized in the deployment and operation of wireless DAS receive/transmit infrastructure that is located elsewhere.

Development Area - The area occupied by a Wireless Communications Facility including areas inside or under an antenna-support structure's framework, Equipment Cabinets, Ancillary Structures, and/or access ways.

Dual Purpose Facility – A banner pole, light stanchion, support tower for overhead electric lines, or other similar utility structure onto which one or more Antenna(s) are or can be mounted or attached.

Eligible Facilities Request - Any request for modification of an existing Tower or Base Station involving co-location of new transmission equipment; removal of transmission equipment; or replacement of transmission equipment that does not Substantially Change the physical dimensions of such Tower or Base Station.

Eligible Facility - Existing wireless Tower or Base Station that has been approved through a local government land use review process prescribed for the Tower or Base Station.

Eligible Support Structure - Any Tower or Base Station existing at the time the application is filed with the City.

Equipment Cabinet- Any structure above the base flood elevation used exclusively to contain equipment necessary for the transmission or reception of communication signals.

Equipment Compound- The fenced-in area surrounding, inside or under a ground-based wireless communication facility containing Ancillary Structures and equipment (such as cabinets, shelters, and pedestals) necessary to operate an Antenna that is above the base flood elevation.

Equipment Shelter – A self-contained building housing ancillary electronic equipment typically including a generator.

Existing - A constructed Tower or Base Station is “existing” for purposes of this Section if it has been reviewed and approved under an applicable City land use review process. “Existing” also includes a Tower that was lawfully constructed but not reviewed because it was not in a zoned area when it was built.

Facilities – See Wireless Communications Facility(ies)

Feed Lines- Cables or fiber optic lines used as the interconnecting media between the Base Station and the Antenna.

Flush-Mounted- Antenna or Antenna Array attached to the face of a Support Structure or building such that no portion of the Antenna(s) extend(s) above the height of the Support Structure or building. The maximum flush-mounting distance, if prescribed, shall be measured from the outside edge of the Support Structure or building to the inside edge of the Antenna.

Geographic Search Area- An area designated by a wireless provider or operator for a new Base Station, produced in accordance with generally accepted principles of wireless engineering.

Neutral Host Antenna – Wireless receive and transmit antenna designed and operated to include all known and proposed frequencies to be used for personal wireless telecommunications services and capable of use by multiple wireless providers.

Non-concealed- A Telecommunication Facility that is readily identifiable as such (whether freestanding or attached).

OTARD – Over the air reception devices which are limited to either a "dish" antenna one meter (39.37 inches) or less in diameter designed to receive direct broadcast satellite service, including direct-to-home satellite service, or to receive or transmit fixed wireless signals via satellite, or an antenna that is one meter or less in diameter and is designed to receive video programming services via broadband radio service (wireless cable), or to receive or transmit fixed wireless signals other than via satellite or an antenna that is designed to receive local television broadcast signals.

Personal Wireless Service Facility (“PWSF”)- Any staffed or unstaffed location for the transmission and/or reception of radio frequency signals or other personal wireless communications, including commercial mobile services, unlicensed wireless services, wireless broadband services, and common carrier wireless exchange access services as defined in the Telecommunications Act of 1996, and usually consisting of an Antenna or group of Antennas, transmission cables, feed lines, Equipment Cabinets or Shelters, and may include a Tower. Facilities may include new, Replacement, or existing Towers, Replacement Towers, co-location on existing towers, Base Station attached Concealed and Non-concealed Antenna, dual purpose facilities, Concealed Towers, and Non-concealed Towers (monopoles, lattice and guyed), so long as those facilities are used in the provision of personal wireless services as that term is defined in the Telecommunications Act.

Qualified Co-location Request – co-location of PWSF on a Tower or Base Station that creates a Substantial Change in the facility but is entitled to processing within 90 days under 47 U.S.C. §332(c)(7).

Radio Frequency Emissions- Any electromagnetic radiation or other communications signal emitted from an Antenna or antenna-related equipment.

Radio Frequency Propagation Analysis- Computer modeling to show the level of signal saturation in a given geographical area.

Replacement- A modification of an existing Tower to increase the height, or to improve its integrity, by replacing or removing one (1) or several Tower(s) located in proximity to a proposed new Tower in order to encourage compliance with this Section, or improve aesthetics or functionality of the overall wireless network.

Satellite Earth Station- A single or group of parabolic or dish antennas mounted to a support device that may be a pole or truss assembly attached to a foundation in the ground, or in some other configuration, including the associated separate Equipment Cabinets necessary for the transmission or reception of wireless communications signals with satellites.

Site - For Towers other than Towers in the public rights-of-way, the boundaries of the leased or owned property on which the Facilities are or are proposed to be situated.

Small Wireless Facility - means a Wireless Service Facility that meets both of the following qualifications:

1. Each Antenna is located inside an enclosure of no more than three (3) cubic feet in volume or, in the case of an Antenna that has exposed elements, the Antenna and all of its exposed elements could fit within an enclosure of no more than three (3) cubic feet;
2. Primary equipment enclosures are no larger than twenty-eight (28) cubic feet in volume. The following associated equipment may be located outside of the primary equipment enclosure and, if so located, is not included in the calculation

of equipment volume: Electric meter, concealment, telecommunications demarcation box, ground-based enclosures, back-up power systems, grounding equipment, power transfer switch, and cut-off switch.

1. Are mounted (i) on structures 50 feet or less in height including their antennas as defined herein, or (ii) are mounted on structures no more than 10 percent taller than other adjacent structures, or (iii) do not extend existing structures on which they are located to a height of more than 50 feet or by more than 10 percent, whichever is greater;

Small Wireless Network - a collection of interrelated Small Wireless Facilities designed to deliver Wireless Service.

Stanchion - A vertical Support Structure generally utilized to support exterior lighting elements.

Streamlined Processing- Expedited review process for co-locations required by the federal government (Congress and/or the FCC) for PWSF.

Substantial Change - A modification or co-location constitutes a “substantial change” of an Eligible Support Structure if it meets any of the following criteria:

1. A PWSF co-location or modification of an existing antenna-supporting structure not in a public right of way increases the overall height of the antenna-supporting structure, Antenna and/or Antenna Array more than 10% or 20 feet, whichever is greater. A PWSF co-location on an existing antenna-supporting structure within a public right of way increases the overall height of the antenna-supporting structure, Antenna and/or Antenna Array more than 10% or 10 feet, whichever is greater.
2. A PWSF co-location for Towers not in a public right of way protrudes from the antenna-supporting structure more than 20 feet or the width of the structure at the elevation of the co-location, and for Towers within a public right of way, protrudes from the antenna-supporting structure more than 6 feet.
3. A PWSF co-location on an existing antenna-supporting structure fails to meet current building code requirements (including windloading).
4. A PWSF co-location adds more than 4 additional Equipment Cabinets or 1 additional Equipment Shelter.
5. A PWSF co-location requires excavation outside of existing leased or owned parcel or existing easements.
6. A PWSF co-location defeats any existing concealment elements of the antenna-supporting structure.
7. A PWSF co-location fails to comply with all conditions associated with the prior approval of the antenna-supporting structure except for modification of parameters as permitted in this section.

Support Structure - Anything constructed or erected, the use of which requires permanent location on the ground, or attachment to something having a permanent location on the ground. This includes, but is not limited to, a Tower, a Dual Purpose Facility, or a Base Station.

Temporary PWSF – A temporary Tower or other structure that provides interim short-term telecommunications needed to meet an immediate demand for service in the event of an emergency or a public event where a permanent wireless network is unavailable or insufficient to satisfy the temporary increase in demand or when permanent PWSF equipment is temporarily unavailable or offline.

Tower- Any Support Structure built for the primary purpose of supporting any Antennas and associated facilities for commercial, private, broadcast, microwave, public, public safety, licensed or unlicensed, and/or fixed or Wireless Services. A tower may be Concealed or Non-concealed. Non-concealed towers include:

Guyed - A style of tower consisting of a single truss assembly composed of sections with bracing incorporated. The sections are attached to each other, and the assembly is attached to a foundation and supported by a series of wires that are connected to anchors placed in the ground or on a building.

Lattice - A self-supporting tapered style of tower that consists of vertical and horizontal supports with multiple legs and cross bracing, and metal crossed strips or bars to support antennas.

Monopole - A style of freestanding tower consisting of a single shaft usually composed of two (2) or more hollow sections that are in turn attached to a foundation. This type of tower is designed to support itself without the use of guy wires or other stabilization devices. These facilities are mounted to a foundation that rests on or in the ground or on a building's roof. All feed lines shall be installed within the shaft of the structure.

Tower Base- The foundation, usually concrete, on which the Tower and other support equipment are situated. For measurement calculations, the tower base is that point on the foundation reached by dropping a perpendicular from the geometric center of the tower.

Tower Height- The vertical distance measured from the grade line to the highest point of the Tower, including any Antenna, lighting or other equipment affixed thereto.

Tower Site- The land area that contains, or will contain, a proposed Tower, Equipment Compound, Support Structures and other related buildings and improvements

Transmission Equipment- Equipment that facilitates transmission of communication service (whether commercial, private, broadcast, microwave, public, public safety, licensed or unlicensed, fixed or wireless), such as radio transceivers, antennas, coaxial or fiber-optic cable, and regular and backup power supply.



Wireless Communications Facility(ies) – At a specific physical location, one or more Antenna, Tower, Base Station, mechanical and/or electronic equipment, conduit, cable, and associated structures, enclosures, assemblages, devices and supporting elements that generate or transmit nonionizing electromagnetic radiation or light operating to produce a signal used for communication, including but not limited to all types of communication facilities defined further herein.

### **3. Siting of Wireless Communications Facilities.**

- a. Compliance with Siting Preferences. For every application for siting of new Wireless Communications Facilities on or above ground level (except temporary PWSF and co-locations), the applicant must submit an affidavit by a radio frequency engineer demonstrating compliance with the Siting Preferences of Section 4.322. Where a lower ranking alternative is proposed, the affidavit must address why each of the higher ranked options are not technically feasible, practical, and/or justified.
- b. Where the application is for siting of PWSF, whether for a new facility, modification of Existing facility, Replacement facility or co-location, and whether the permit is administrative or a SR or SP Use, the following additional decision-making requirements apply:
  - (i) If the application is denied, the decision maker shall issue the decision in writing, including the bases for the denial, which must be supported by substantial evidence contained in a written record. The written bases for the decision must be issued contemporaneously with the decision.
  - (ii) The application cannot be denied, nor can conditions be applied or required, based upon considerations of radio frequency (RF) emissions safety, other than to require the applicant to demonstrate that all applicable FCC rules are satisfied.

### **4. Streamlined processing for co-location of PWSF.**

- a. If the applicant believes its Co-location application is an Eligible Facilities Request or a Qualified Co-location Request, the applicant must submit:
  - (i) A complete Co-location application specifically requesting streamlined processing and stating the applicable permitting time-frame (e.g., 60 days for Eligible Facilities Request/Small Wireless Facility collocation or 90 days for Qualified Co-Location Request/new Small Wireless Facility);
  - (ii) Documentation evidencing that any structure proposed to be replaced or modified has previously been subject to zoning/development approval by the City;
  - (iii) Documentation evidencing the replacement/modification does not create a Substantial Change in the underlying support structure or Tower, or a statement that it does create a Substantial Change;

- (iv) Documentation that the proposed modifications will be used to provide personal Wireless Services.
- b. The Building Inspector shall review and decide applications for co-location of PWSF.
- c. The Building Inspector will notify the applicant within thirty (30) days of submission (or within some other mutually agreed upon timeframe) if the submission is incomplete, identifying the specific deficiencies in the application which, if cured, would make the application complete.
- d. Upon notice of deficiency, the timeline for a decision shall be tolled until the applicant re-submits to correct such deficiency. The Building Inspector shall, within ten (10) days of re-submission, notify the applicant of continuing deficiencies or the application will be deemed complete. The timeline for a decision shall be likewise tolled during the additional re-submission deficiency period until the 2<sup>nd</sup> resubmission. Upon resubmitting of the revised application the Building Inspector shall follow the process identified in this Section, until all deficiencies identified are deemed cured.

If the Building Inspector fails to provide such notification, the application will be deemed complete.

The Building Inspector decision shall be in writing and shall be postmarked to the applicant within 60 days after the initial submission, excluding any tolling period, for an Eligible Facilities Request, or, for a Qualified Co-location, within 90 days after the initial submission, excluding any tolling period, or within some other mutually agreed upon timeframe.

If the City does not respond in writing to an Eligible Facilities Request within the specified timeframe, the application shall be deemed approved. If the City does not respond in writing to a request for a Qualified Co-location within the specified timeframe, the applicant may pursue its remedies established by federal or state law.

#### **5. Timing for Review of New PWSF Tower Applications.**

A new PWSF Tower, whether Concealed or Non-concealed, shall be reviewed and a decision rendered within one hundred and fifty (150) days of receipt of the application, subject to any applicable tolling for application deficiencies and resubmissions as described in subsection (d) above, so long as the applicant demonstrates that the facilities will be used, immediately upon completion of construction, to provide personal Wireless Services, or within such other mutually agreed upon time. (“Spec” towers are not entitled to review and decision within 150 days, or to any of the other protections of the Telecommunications Act.)

Construction permits issued for new PWSF Towers shall be valid for a term of eighteen (18) months and shall lapse and be void if construction of the contemplated PWSF structure is not completed within that time.

#### **6. Application and Fees.**

- a. Application materials required for Wireless Communications Facilities shall be in accordance with these Guidelines and Section 4.322. The application form and requirements are specific to the type of Wireless Communications Facility.
- b. The City of Pittsfield shall establish fees to cover or offset the processing cost of all permits under Section 4.322 which will be included in the development fee schedule. Every application for a Wireless Communications Facility shall be accompanied by the full payment of the fee established for the type of facility requested. Payment of fees is required in order for an application to be considered complete. The fee shall not be, in whole or in part, deferred or waived.
- c. The City of Pittsfield reserves the right to require, in its sole discretion, a supplemental review by experts for any application for a Wireless Communication facility where the complexity of the analysis requires technical expertise, and/or for any request to vary any standard articulated under Section 4.322 or these Guidelines, and all the costs of such review shall be borne by the applicant, in addition to scheduled fees.
- d. Based on the results of the supplemental review, the Building Inspector may require changes to or supplementation of the applicant's submittal(s).
- e. The supplemental review may address any or all of the following:
  - i. The accuracy and completeness of the application and any accompanying documentation.
  - ii. The applicability of analysis techniques and methodologies.
  - iii. The validity of conclusions reached.
  - iv. Whether the proposed Wireless Communications Facility complies with the applicable approval criteria and standards of the Zoning Regulations and other applicable law.

## **7. Abandonment / Discontinued Use.**

All Wireless Communication Facility structures, equipment, fencing and devices shall be removed from the property and the site returned to its natural state and topography and vegetated consistent with the natural surroundings or current surrounding land uses at the property owner's and/or service provider's expense within 180 days of cessation of use, or within 90 days of cessation of use if the abandonment is associated with a Replacement Facility. The City may extend the time for removal and site restoration up to 60 additional days if the owner or service provider so requests and shows good and unique cause for the extension. If removal and/or site restoration is not accomplished within the prescribed time, the City may initiate removal and restoration within 30 days following written notice to the property owner, and the property owner and service provider shall be jointly and severally responsible for all costs associated with the removal and restoration. Fiber optic conduit and cable, whether below or above

ground, that is or has been abandoned or the use of which is discontinued for one year shall become the property of the City of Pittsfield. Easements for the maintenance of such conduit/cable shall also become the property of the City of Pittsfield, which shall have all the benefit and interest of the original easement holder with respect to installation, maintenance and repair of conduit/cable.