

---

## APPENDIX 2 - TELECOMMUNICATIONS FACILITIES

---

### Telecommunications Facilities

(A) **Purpose.** The purpose of this section is to protect the public health, safety, general welfare and scenic character of the Town of Middlesex, while accommodating the communication needs of residents and businesses. The intent of these regulations is to:

- (1) Preserve the character and rural landscape of the Town of Middlesex while allowing adequate telecommunication services to be developed.
- (2) Minimize the impact of telecommunications facilities on the scenic, historic, environmental, and man-made resources and property values of the Town of Middlesex.
- (3) Provide standards and requirements for the siting, design, appearance, construction, monitoring, modification, and removal of telecommunications facilities.
- (4) Minimize tower and facility proliferation by requiring the sharing of existing communications facilities, towers and sites where possible and appropriate.
- (5) Ensure that new commercial uses are compatible with prevailing rural/residential land-use patterns as specified in the Middlesex Town Plan.
- (6) Encourage, through performance standards and incentives, the location of towers and facilities in non-residential areas and away from other sensitive areas such as schools, hospitals and childcare facilities.
- (7) Provide a procedural basis for action within a reasonable period of time for applications to place, construct, operate or modify telecommunications facilities.

(B) **Consistency With Federal Law.** In accordance with federal law, particularly the Telecommunications Act of 1996, these regulations shall not be interpreted in a manner that would:

- (1) Prohibit or have the effect of prohibiting the provision of wireless telecommunications services;
- (2) Unreasonably discriminate among providers of functionally equivalent services; or
- (3) Regulate wireless telecommunications services on the basis of the environmental effects of radio frequency emissions to the extent that the regulated services and facilities comply with the Federal Communications Commission (FCC) regulations concerning such emissions.

(C) **Applicability:** Telecommunications facilities shall include all facilities subject to licensing or regulation by the FCC, including towers, associated accessory structures, buildings and/or equipment, except as specifically exempted under subsection (D). New, modified or expanded telecommunication facilities, except as specified for small scale facilities under subsection (E), may be allowed in designated zoning districts as conditional uses subject to review under Section 5.5 and the requirements of this section. However:

- (1) A new tower shall not be permitted unless it is found by the Board of Adjustment that the equipment planned for the proposed tower cannot be accommodated on an existing approved tower, building or structure; and
- (2) No towers are allowed within the exclusion areas identified in subsection (I)

(D) **Exemptions.** The following are specifically exempted from the provisions of this section:

- (1) A single ground or building mounted radio or television antenna or satellite dish not exceeding 36 inches in diameter which is intended solely for residential use, and does not, as mounted, exceed 35 feet in height above the lowest grade at ground level.
- (2) Citizens band radio antennas operated by federally licensed amateur radio operators which do not exceed a height of 50 feet above the grade level, whether free standing or mounted, and which meet all setback requirements for the district in which they are located.
- (3) Replacement of telecommunications facilities operated by public (municipal, state or federal) or not-for-profit emergency service providers (e.g., fire, ambulance) in association with their duties.

(E) **Small Scale Facilities.** Notwithstanding other provisions under this Section or Article 5, the following may be permitted in any zoning district by the Zoning Administrator in accordance with Section 7.2 without conditional use approval:

- (1) Small scale wireless telecommunications equipment, including antennas, microcells or repeaters, which are to be installed on existing towers, utility poles, or other structures; or the installation of ground facilities less than 20 feet in height, provided that:
  - (a) such device is located a minimum of 50 feet of an existing residence;
  - (b) no changes are made to the height or appearance of such structure except as required for mounting;
  - (c) the height of the facility as mounted does not extend the total height of the structure by more than 10 feet;
  - (d) no panel antenna shall exceed 72 inches in height or 24 inches in width;
  - (e) no dish antenna shall exceed 3 feet in diameter; and
  - (f) any accompanying equipment shall be screened from view.
- (2) Wireless communications facilities designed for temporary use, provided that:
  - (a) the temporary facility is permitted for the duration of the intended use or event, as specified in the permit, which shall not exceed 60 days, and is removed immediately upon the expiration of the permit,
  - (b) the height of the facility does not exceed 50 feet from grade, and the facility complies with all other applicable provisions of these regulations.

(F) **Application Requirements.** In addition to application requirements under Section 5.3, applications for new towers shall also include the following:

- (1) the name and address of the applicant, landowners of record and agents, and contact information for the person(s) authorized to operate, maintain and ensure the safety of the facility;
- (2) information regarding existing coverage, the feasibility of using repeaters or microcells on existing structures to achieve desired coverage, the availability of other towers, buildings and structures located within 5 miles of the proposed site, and written documentation from other facility owners that no suitable sites are available;
- (3) a site plan showing the footprint of all proposed facilities, including towers and accessory structures, and proposed access roads, in relation to existing site features and adjoining properties;
- (4) a report from a qualified and licensed professional engineer which describes facility height, design, construction and capacity, including cross-sections, elevations, potential mounting locations, and fall zones;
- (5) a letter of intent committing the tower owner and his/her successors to allow shared use of the facility if an additional user agrees in writing to meet reasonable terms and conditions for shared use;
- (6) written documentation that the proposed tower shall comply with all requirements of the FCC and the Federal Aviation Administration (FAA); and

(7) any additional information as needed to determine compliance with the provisions of these regulations, including but not limited to visual impact assessments or independent evaluations of the proposed facility, to be paid for by the applicant.

(G) **Findings.** No tower or wireless telecommunications facility shall be erected, constructed or installed without first obtaining a conditional use approval from the Board of Adjustment. In approving an application for conditional use, the Board must determine that the proposed facility, or modification to an existing facility, is in compliance with the standards set forth in Section 5.5 and subsection (H), below. In addition, the Board shall, in consultation with independent consultant(s) if appropriate, make all of the following applicable findings before granting the conditional use approval:

- (1) the applicant is not already providing adequate coverage and/or adequate capacity to the Town of Middlesex;
- (2) the applicant is not able to use existing tower/facility sites either with or without the use of repeaters to provide adequate coverage and/or adequate capacity to the Town of Middlesex;
- (3) the applicant has endeavored to provide adequate coverage and adequate capacity to the Town of Middlesex with the least number of towers and antennas which is technically and economically feasible;
- (4) good faith efforts have been made to locate new towers adjacent to existing towers;
- (5) the applicant has agreed to rent or lease available space on the tower, under the terms of a fair-market lease, with reasonable conditions and without discrimination to other wireless telecommunications providers;
- (6) the proposed facility complies with rules as adopted in FCC 97-303 and procedures outlined in FCC Bulletin 65 regarding emissions and exposure from electromagnetic radiation and that the required monitoring program has been developed and shall be paid for by the applicant.

(H) **Telecommunication Facility Standards.** In addition to the required findings described under subsection (G), the Board of Adjustment shall ensure that all proposed telecommunications facilities comply with the following standards:

- (1) **Compliance with Federal Regulations.** Telecommunication facility construction and wiring shall meet all state and federal requirements, including but not limited to FCC requirements for transmissions, emissions and interference. No telecommunication facility shall be located or operated in such a manner that it poses a potential threat to public health or safety. Prior to the siting of new antennas at existing sites, a cumulative RFR emissions study shall be performed by the applicant to certify FCC compliance.
- (2) **Colocation Requirements.** New towers shall be designed to accommodate the collocation of both the applicant's antennas and comparable antennas for one or more additional users, depending on tower height. Towers must be designed to allow future rearrangement of antennas, and to accept antennas mounted at varying heights.
- (3) **Setbacks.** No wireless telecommunication facility shall be located within 500 feet of an existing residence. Towers shall be set back from all property lines and public rights-of-way for a distance equaling their total height, including attached antennas, unless otherwise permitted by the Board of Adjustment in accordance with the following:
  - a. if tower design and construction guarantees that it will collapse inwardly upon itself, and that no liability or risk to adjoining private or public property shall be assumed by the municipality; or

- b. to allow for the integration of a tower into an existing or proposed structure such as a church steeple, light standard, utility pole, or similar structure, to the extent that no hazard to public health, safety or welfare results.
- (4) **Access Roads and Utilities:** Access roads, and all accessory utility buildings and structures shall be designed to follow natural contours, aesthetically blend in with the surrounding environment, and meet all other minimum requirements for the zoning district in which they are located. Utility lines (e.g., power) serving telecommunications facilities shall follow access roads and not involve extensive clearing; the Board may require that such utilities be buried where they are likely to otherwise have an adverse visual impact.
- (5) **Landscaping/Screening** Ground-mounted equipment shall be screened from view. The Board may require increased setback, landscaping and screening as appropriate based on site conditions, to protect neighboring properties and uses.
- (6) **Fencing and Signs:** Towers shall be enclosed by security fencing at least 6 feet in height, but not greater than 12 feet in height, and shall be equipped with appropriate anti-climbing devices. The Board may require that appropriate landscaping materials be planted adjacent to the security fence to screen it from view of neighboring properties and public roads. The use of any portion of a tower for signs other than warning or equipment information signs is strictly prohibited.
- (7) **Building Design:** Communication equipment shelters and accessory buildings shall be designed to be architecturally similar and compatible with each other, and shall be no more than 12 feet high. Whenever possible, the buildings shall be joined or clustered so as to appear as one building.
- (8) **Tower Height and Visual Impacts.** New telecommunications facilities, including towers, shall be sited and designed to minimize their visibility and not result in an undue adverse impact on the town's scenic landscape. In no case shall a tower and all associated telecommunications facilities exceed a height of 180 feet, although the Board may impose conditions regarding the location, height and design of the structure, including a reduction of tower height, in accordance with the following:
- (a) The Board may require an assessment of potential visual impacts from specified vantage points. In determining whether a facility's impact on scenic resources would be undue and adverse, the Board will consider the period of time during which the proposed tower would be viewed by the traveling public on a public highway;
- i. the frequency of the view experienced by the traveling public;
  - ii. the degree to which the tower would be screened by existing vegetation, the topography of the land, and existing structures;
  - iii. background features in the line of sight to the proposed tower that obscure the facility or make it more conspicuous;
  - iv. the distance of the proposed tower from the vantage point and the proportion of the facility that is visible above the skyline;
  - v. the sensitivity or unique value of a particular view affected by the proposed tower, including scenic features or landscapes identified in the Middlesex Town Plan and/or through a site assessment; and
  - vi. the potential disruption to a viewshed that provides context to a historic or scenic resource.
- (b) Any tower designed to accommodate a single provider shall not exceed a maximum height of 100 feet. The Board may allow taller towers, in accordance with these standards, up to the maximum of 180 feet, to encourage collocation and discourage multiple facilities.
- (c) No tower shall be located on an unforested hilltop or ridgeline. Telecommunications facilities should be installed in forested settings wherever feasible. No tower, antenna and/or associated fixtures or equipment shall exceed a height of 20 feet greater than the average height of the canopy measured within a 200 foot radius of the facility. A management plan may be prepared and submitted to the Board to ensure that the adjoining tree cover will be maintained to create the visual impression of the tower and/or associated equipment emerging from a largely unbroken tree canopy and protruding no more than 20 feet above that canopy.

- (d) Telecommunications facilities shall not be illuminated by artificial means and shall not display strobe lights.
  - (e) Telecommunications facilities shall be designed to blend into the surrounding environment, to the greatest extent feasible, through the use of natural topography, existing vegetation, landscaping and screening, the use of compatible materials and colors, and/or other camouflaging techniques. Camouflaging techniques which may be required by the Board include designing the facility to mimic natural or architectural features, depending upon the context of the surrounding landscape and applicable zoning districts.
  - (9) **Use of Repeaters:** The use of repeaters to assure adequate coverage, or to fill holes within areas of otherwise adequate coverage, while minimizing the number of required facilities is encouraged. Applicants shall detail the number, location, power output and coverage of any proposed repeaters in their systems and provide engineering data to justify their use.
  - (10) **Coverage Area:** Not more than 50% of the primary coverage from the proposed facility may be located outside of Middlesex unless the applicant can demonstrate an inability to locate within the town(s) which is primarily receiving service from the proposed facility.
  - (11) **Alternative Sites:** The Board shall have the authority to impose conditions consistent with the purpose of this section in approving a proposed facility. Furthermore, the Board may designate an alternative location for the tower to be evaluated by the applicant if it is determined that the proposed location would result in undue adverse aesthetic impacts. In consideration of this, the applicant may revise its application to include such a site, assuming it is available to the applicant and reasonably technically feasible to meet the applicant's communication objectives.
- (I) **Prohibited Locations:** Telecommunication facilities are expressly prohibited within the Telecommunications Exclusion Area depicted on the Official Zoning Map. Exclusion areas include all land above an elevation of 1,400 feet on Dumpling Hill and all land above an elevation of 1,500 feet in the main range of the Worcester Mountains (west of Center Road and Bear Swamp Road).
- (J) **Documentation of Denial.** In accordance with federal regulations, any decision by the Board of Adjustment to deny an application for a conditional use under this section shall be written and supported by substantial evidence contained in a written record.
- (K) **Mandatory Conditions.** In addition to any other condition of approval to ensure compliance with this section, all permits granted under this section shall contain the following conditions:
- (1) The permittee shall demonstrate annually that he or she is in compliance with all FCC standards, regulations and requirements regarding Radio Frequency Radiation (RFR), and provide to the Board of Adjustment the basis for his or her representation. The permittee shall provide a list of the most recent RFR readings at the site, their distances from the tower/transmitter, dates of the readings, and the name of the person or company who took the readings.
  - (2) The owner of a facility shall annually, on January 15th, file a declaration with the Administrative Officer certifying the continuing safe operation of every facility installed subject to these regulations. Failure to file a declaration shall mean that the facility is no longer in use and considered abandoned. An owner who has failed to file an annual declaration with the Administrative Officer by January 15th may, by February 15th, file a declaration of use or intended use and may request the ability to continue the use of the facility/tower.
  - (3) Before testing or operating a new service or change in existing service, the telecommunications provider shall notify the municipality at least 10 calendar days in advance of the change and allow the municipality to monitor interference levels during that testing process.

(L) **Removal.** All abandoned, unused, obsolete, or noncompliant telecommunications facilities, including towers, accessory structures and/or equipment, shall be removed within 12 months of the cessation of operations at the site, and the site shall be restored to its original appearance. A copy of the relevant portions of any signed lease which requires the applicant to remove the tower and associated facilities shall be submitted at the time of application. A bond or other form of surety acceptable to the Selectboard may be required to ensure tower removal and site reclamation.