

DRAFT PRINCIPLES OF ZONING FOR CELL TOWERS

for

ACTON WIRELESS COMMUNICATIONS FACILITIES BYLAW COMMITTEE

August 22, 2007

Sidney Johnston

The following steps may insure that Acton is not subject to a finding that it “effectively prohibits” construction of cell towers in Acton.

Guiding Principle:

The purpose of legislation (zoning bylaws in the present context) is to protect me from my neighbors; and to protect my neighbors from me.

Derivative principles for Acton zoning bylaws for cell towers:

1. Prohibit cell towers in residentially zoned districts.
2. Un-protect commercial village areas, South Acton Village, Kelly’s Corner, East Acton Village, North Acton Village.
3. Place a permanent moratorium on filing conservation restrictions for present ARC land with the Middlesex Recorder of Deeds.
(The amount of land which this moratorium will provide for cell tower construction is not known, and so launch a detailed study of ARC zoned land to answer this question.)
4. Regulate appearance, monitoring, tracking, etc., and other administrative matters concerning cell towers.

Additional suggested Cell Tower bylaws for Acton

Sidney Johnston

19 September 2007

1. The Acton Conservation Commission may improve, as set out in MGL Chapter 40 Section 8c, land which has been transferred, deeded, or otherwise assigned to the Acton Conservation Commission for management under MGL Chapter 40 Section 8c by agreeing through majority vote to the construction of a cell tower on such land, the Conservation Commission to receive any moneys accruing from construction of a cell tower on such land.

2. The zoning of the following Acton Village Areas permit cell towers to be constructed therein by Special Permit issued by the Planning Board:

2A. South Acton Village.

2B. East Acton Village.

2C. North Acton Village.

2D. Kellys Corner.

(The Table of Principal Uses and any other bylaw to be revised accordingly)

3. No cell tower shall be built on residentially zoned land.

(The Table of Principal Uses and any other bylaw to be revised accordingly)

4. The setback requirement for a cell tower along a property line in common with State Route 2 or in common with a railroad right of way shall be zero (0) feet.

The General Laws of Massachusetts

Downloaded from:

<http://www.mass.gov/legis/laws/mgl/> on 19 September 2007

PART I. ADMINISTRATION OF THE GOVERNMENT

TITLE VII. CITIES, TOWNS AND DISTRICTS

CHAPTER 40. POWERS AND DUTIES OF CITIES AND TOWNS

PURPOSES FOR WHICH TOWNS MAY APPROPRIATE MONEY

Chapter 40: Section 8C. Conservation commission; establishment; powers and duties

Section 8C. A city or town which accepts this section may establish a conservation commission, hereinafter called the commission, for the promotion and development of the natural resources and for the protection of watershed resources of said city or town. Such commission shall conduct researches into its local land areas and shall seek to coordinate the activities of unofficial bodies organized for similar purposes, and may advertise, prepare, print and distribute books, maps, charts, plans and pamphlets which in its judgment it deems necessary for its work. Among such plans may be a conservation and passive outdoor recreation plan which shall be, as far as possible, consistent with the town master plan and with any regional plans relating to the area. The commission may, from time to time, amend such plan. Such plan shall show open areas including marsh land, swamps and other wetlands, and shall show which areas are subject to restrictions or wetland zoning provisions and any other matters which may be shown on a plat index under section thirty-three of chapter one hundred and eighty-four. Acquisitions of interests in land under this section and other municipal open lands shall be shown thereon as well as lands owned by other entities kept open through any legal requirement. Such plan shall show other areas which public necessity requires to be retained for conservation and passive recreation use. It shall keep accurate records of its meetings and actions and shall file an annual report which shall be printed in the case of towns in the annual town report. The commission may appoint a director, clerks, consultants and other employees, and may contract for materials and services within available funds insofar as the same are not supplied by other departments. The commission shall consist of not less than three nor more than seven members. In cities the members shall be appointed by the mayor, subject to the provisions of the city charter, except that in cities having or operating under a Plan D or Plan E form of city charter, said appointments shall be by the city manager, subject to the provisions of the charter; and in towns they shall be appointed by the selectmen, excepting towns having a manager form of government, in which towns appointments shall be made by the town manager, subject to the approval of the selectmen. When a commission is first established, the terms of the members shall be for one, two or three years, and so arranged that the terms of approximately one third of the members will expire each year, and their successors shall be appointed for terms of three years each. Any member of a commission so appointed may, after a public hearing,

if requested, be removed for cause by the appointing authority. A vacancy occurring otherwise than by expiration of a term shall in a city or town be filled for the unexpired term in the same manner as an original appointment. Said commission may receive gifts, bequests or devises of personal property or interests in real property of the kinds mentioned below in the name of the city or town, subject to the approval of the city council in a city or of the selectmen in a town. It may purchase interests in such land with sums available to it. If insufficient funds are available or other reasons so require, a city council or a town meeting may raise or transfer funds so that the commission may acquire in the name of the city or town by option, purchase, lease or otherwise the fee in such land or water rights, conservation restrictions, easements or other contractual rights including conveyances on conditions or with limitations or reversions, as may be necessary to acquire, maintain, **improve**, protect, limit the future use of or otherwise conserve and properly utilize open spaces in land and water areas within its city or town, and it shall manage and control the same. For the purposes of this section a city or town may, upon the written request of the commission, take by eminent domain under chapter seventy-nine, the fee or any lesser interest in any land or waters located in such city or town, provided such taking has first been approved by a two-thirds vote of the city council or a two-thirds vote of an annual or special town meeting, which land and waters shall thereupon be under the jurisdiction and control of the commission. Upon a like vote, a city or town may expend monies in the fund, if any, established under the provisions of this section for the purpose of paying, in whole or in part, any damages for which such city or town may be liable by reason of any such taking. The commission may adopt rules and regulations governing the use of land and waters under its control, and prescribe penalties, not exceeding a fine of one hundred dollars, for any violation thereof. No action taken under this section shall affect the powers and duties of the state reclamation board or any mosquito control or other project operating under or authorized by chapter two hundred and fifty-two, or restrict any established public access. Lands used for farming or agriculture, as defined in section one A of chapter one hundred and twenty-eight, shall not be taken by eminent domain under the authority of this section.

A city or town may appropriate money in any year to a conservation fund of which the treasurer shall be the custodian. Prior to the adoption of any rule or regulation which seeks to further regulate matters established by section forty of chapter one hundred and thirty-one or regulations authorized thereunder relative to agricultural or aquacultural practice, the commission shall, no later than seven days prior to the commission's public hearing on the adoption of said rules and regulations, give notice of the said proposed rules and regulations to the farmland advisory board established pursuant to section forty of chapter one hundred and thirty-one. He may deposit or invest the proceeds of said fund in savings banks, trust companies incorporated under the laws of the commonwealth, banking companies incorporated under the laws of the commonwealth which are members of the Federal Deposit Insurance Corporation, or national banks, or invest it in paid up shares and accounts of and in co-operative banks or in shares of savings and loan associations or in shares of federal savings and loan associations doing business in the commonwealth, and any income therefrom shall be credited to the fund. Money in said fund may be expended by said commission for any purpose authorized by this section;

provided, however, that no expenditure for a taking by eminent domain shall be made unless such expenditure has been approved in accordance with this section.

Proposed Zoning Bylaws for Acton

Proposed Zoning Bylaws for Acton , submitted by A. Sidney Johnston for consideration by the Cell Tower Committee, and for adoption at a future Acton Town Meeting

DEFINITIONS:

A personal wireless service facility, as used in 47 U.S.C. Sec 332 (7), has at least the following parts:

1. A cell tower which is a structure upon which Radio Frequency (hereinafter RF) antennas are attached;
2. Ground equipment which is needed for operation of the RF antennas; and
3. A perimeter, the perimeter encloses the facility, and the perimeter is marked by either a fence or the outside of a building, and the ground equipment is located within the fence or inside the building.
4. A Radio Frequency Antenna for use with cell telephones and mounted within a structure of a building such as a cupola or church steeple is referred to as an “integral building mounted cell antenna”.

“Permit Granting Authority” is the Acton Zoning Board of Appeals.

“Special Permit Granting Authority” is the Acton Planning Board and/or the Acton Board of Selectmen.

The Federal Communications Commission is referred to as the FCC.

The Federal Environmental Protection Agency is referred to as the Federal EPA

1. Residential

NOTE: Two versions (I and II) of Proposed Bylaw # 1 are set out below. A first order of business of the Committee shall be to prepare an accurate series of maps which show:

- A. Possible location of cell towers with the zoning bylaws in effect before the April 2007 Regular Town Meeting.
- B. A map showing changes in cell tower siting made by passage of Bylaws during the April 2007 Regular Town Meeting.
- C. A map showing the changes made by each major Zoning Bylaw provision set out herein below.

These maps are essential in judging the effect of each major provision set out in the proposed Bylaws hereinbelow.

I. No Cell Tower shall be built in a residentially zoned area.

II. Any cell tower built in a residentially zoned area must meet the following requirements:

1a. the base of the tower must be located in a building, and the building must resemble a New England home or barn, and the tower must exit through a roof of the building;

1b. all ground equipment associated with the cell tower must be located within the building or be located in an underground vault;

1c. any fence around the site of the cell tower must be in a form which resembles a New England fence, must be artistically designed to resemble a traditional New England structure, and must minimally degrade the aesthetic features of the surroundings in the residential district in which the cell tower is located.

2. Pre Application Conference

A Public Pre-Application Conference shall be held in order to foster preliminary discussion regarding planning, design, and siting of any proposed personal wireless service facility among the proposed Applicant(s), the Acton Planning Board, and the residents of the Town of Acton; and the residents of the Town of Acton have standing to make oral and written comments on the proposal to build a personal wireless service facility both at the Pre Application Conference and during the Application hearing process.

[Alternative: Notice by Certified mail, return receipt requested]

3. False or Misleading Statements made in an Application for a Permit

Any false or misleading statements presented by any Applicant for a Permit to build a personal wireless service facility shall be grounds to deny grant of the Permit.

4. Security of a Personal Wireless Service Facility

A personal wireless service facility shall be built to be secure from trespass or vandalism.

5. Disputes Between Landowners and Owner of a Personal Wireless Service Facility

All disputes between a Landowner of a site of a personal wireless service facility and an owner of the personal wireless service facility shall be subject to binding arbitration by the Planning Board, with Appeal to the Zoning Board of Appeals, and without recourse to any Court except for the issues of abuse of discretion and arbitrary and capricious misuse of power.

6. Periodic Surveys of Cell Towers

6a. Periodic surveys shall be conducted to determine whether or not the radio frequency emissions from the cell towers located in the Town of Acton meet FCC and Federal EPA requirements as set forth in 47 U.S.C. Sec. 332 (7)(B)(iv), and the radio frequency signal strength is to be reported in units of milli-Watts per square centimeter, and the surveys are to be made by or under the supervision of an expert in radio frequency field strength measurement, and the surveys must be certified by the expert as accurate with the uncertainty (for example uncertainty may be expressed as standard deviations of a sequence of actual measurements, instrumental error, etc.) in milli-Watts per square centimeter, and the surveys must be performed at least quarterly (see *A Local Government Official's Guide to Transmitting Antenna RF Emission Safety: Rules, Procedures, and Practical Guidance*, June 2000, <http://wireless.fcc.gov/siting/rfsafety.html>), and the radio frequency signal strength may be measured and reported in volts per meter so long as a conversion is provided to milli-Watts per square centimeter, and the expert must certify that in his professional opinion that measurements show that the cell towers in Acton are either operating within the requirements of the FCC, or that one or more cell antennas are operating outside of the requirements of the FCC, and in his professional opinion, which, if any, cell antennas are operating outside of the requirements of the FCC;

6b. Each cell tower sited in the Town of Acton shall be inspected at least yearly by, or under the control of, a Certified Civil Engineer, and the Certified Civil Engineer shall make a certification that in his professional opinion the cell tower is mechanically sound, and the certification shall include a current registration number of the civil engineer.

6c. All cell towers located in Acton must pay a yearly license fee, and the moneys collected from the license fees are to be applied to the periodic surveys and inspections of all cell towers located in Acton.

7. General Public Exposure Limit

The limit of exposure to the general public, referred to as the General Population/Uncontrolled Exposure limit, of radio frequency field strength due to emissions from all cell towers combined in Acton is adopted as the present standard (June 2007) promulgated by the FCC and the Federal EPA of 1.0 milli-Watt per square centimeter (see *A Local Government Official's Guide to Transmitting Antenna RF Emission Safety: Rules, Procedures, and Practical Guidance*, June 2000, <http://wireless.fcc.gov/siting/rfsafety.html>) .

8. Contents of Application

An application to build a personal wireless service facility in Acton must comply with the following requirements:

8a. the total radio frequency power emitted by all antennas located, or can be located, on the cell tower must be stated, in units of Watts;

8b. the application must state the radio frequency field strength required by a typical cell telephone to properly operate, and the radio frequency field strength required by a cell telephone for which the cell tower is designed to interoperate, and the radio frequency field strength must be stated in milli-Watts per square centimeter, except that units of Volts per meter may be used so long as a conversion to milli-Watts per square centimeter is given;

8c. the application must state the maximum distance from a cell tower at which a cell telephone is expected to properly interoperate with the cell tower;

8d. the expected radio frequency field strength at the following distances from the base of the proposed cell tower must be stated: 100 meters (3 feet may be substituted for a meter); 1,000 meters; 10,000 meters; and the maximum distance from the cell tower at which a cell telephone is expected to properly interoperate with the cell tower. A map with contours drawn thereon showing the radio frequency power levels anticipated from the cell tower at each stated distance must be included in the application;

8e. the application must show analysis of a minimum of five (5) alternate sites for the proposed cell tower, with contours of the expected radio frequency field strength at the following distances from the base of a cell tower at the alternate sites: 100 meters (3 feet may be substituted for a meter); 1,000 meters; 10,000 meters; and the maximum distance from the cell tower at which a cell telephone is expected to properly interoperate with the cell tower; a map with contours drawn thereon showing the radio frequency field strength anticipated from the cell tower at each stated distance from each alternate site must be included in the application; and the presentation of the required six sites does not imply that any one of the six sites will be approved; and

8f. in the event that an applicant submits a map with decibel contours used to indicate ratios of radio frequency field strength (for example a minus 85 decibel contour), then the following provisions apply: the decibel value must be defined as 10 times the logarithm to base 10 of a ratio of two power levels or radio frequency field strengths, a power level at a base contour and at a second contour shown on the map; the location of the base contour must be shown on the map; the radio frequency field strength expressed in milli-Watts per square centimeter at the base contour must be stated for typical operation of the cell tower; and the radio frequency field strength at the second contour must be stated

in units of milli-Watts per square centimeter for typical operation of the cell tower.

8g. An Applicant for a permit to construct a personal wireless service facility shall provide a plan of the Applicant's future program of construction of wireless telephone cells, cell towers, and coverage issues both in the Town of Acton and in adjacent towns, as they are known at a time of filing the Application for a permit, and the Applicant is obligated to update these plans during consideration of the application.

8h. Other matters not mentioned above may be required by the Acton Planning Board to be in an Application for a Permit to construct a personal wireless service facility.

9. Public School Land

9a. All cell towers must be more than 1,000 feet from a public school building and from a public school playground.

9b. No cell tower may be built on land held by a public school district or the Town of Acton for the purpose of future construction of a public school.

10. Minimum Distance from Residence on land having common ownership with a site of Cell Tower

A cell tower must be setback more than twice the allowable height of a cell tower from any residential building on land having common ownership with the land on which the cell tower is constructed.

11. Child Care Facility

All cell towers must be more than 1,000 feet from a child care facility.

12. Siting in ARC Land

A cell tower may be sited in ARC zoned land if consistent with the Table of Principal Uses.

13. Bonding

13a. An owner of a personal wireless service facility must post a bond in sufficient amount to pay for removal of the personal wireless service facility in the event that it is abandoned, becomes obsolete, or for any other reason becomes unused for a time interval of one year as a personal wireless service facility; and

13b. An owner of a personal wireless service facility must post a bond in sufficient amount to pay for repair or maintenance of the personal wireless service facility.

14. Visual Impact of a Cell tower

All new cell towers built and all old cell towers that are refurbished in the Town of Acton shall be constructed so as to make a negligible adverse visual impact on the neighborhood in which they are sited.

15. Visibility Test

Before a permit to construct a new cell tower in the Town of Acton is issued, a visibility test shall be conducted by raising a structure (such as a crane) to the maximum height to which a cell tower may be constructed at the planned site, and a public meeting to discuss the results of viewing the structure shall be held, with adequate notice to put the general public on notice that the viewing will be held, and that the public meeting will be held.

[Alternative: Notice by Certified mail, return receipt requested]

16. Contract between Landowner and Cell Tower Owner

A firm contract between a landowner and an applicant to build a cell tower shall be filed with the Clerk of the Town of Acton and shall be available for inspection by the public, and copies sold by the Town of Acton to the public. The firm contract shall include the financial arrangement between the landowner and the applicant. The contract shall include easement provisions providing any cell tower owner full rights to inspect, service, repair, replace parts of the cell tower and any equipment installed for operation of the cell tower, and also other cell tower providers the same rights if the other cell tower providers are granted a permit to co-locate an antenna or antennas on the cell tower; and any such provisions absent from such a contract shall be read into the contract by action of this Bylaw.

17. Co-location of Multiple Cell Telephone Service Providers

17a. Location of multiple cell telephone providers of their cell tower equipment on a cell tower and as ground equipment is permitted, and is encouraged.

17b. Location of multiple cell towers within a single personal wireless service facility, or in adjacent personal wireless service facilities, is permitted and is encouraged.

18. Setbacks

Setback distances shall be measured from the perimeter of a personal wireless service facility.

19. Districts zoned other than Residential

Any cell tower built in an area not zoned RESIDENTIAL may be required by the Permit Granting Authority or the Special Permit Granting Authority, at their discretion, and in order to minimize the visual impact of a cell tower, to meet the following provisions:

19a. the base of the tower may be located in a building, and the building must resemble a New England home or barn, and the tower must exit through a roof of the building;

19b. all ground equipment associated with the cell tower may be located within the building or be located in an underground vault;

19c. any fence around the site of the cell tower may be in a form which resembles a New England fence such as a stone wall, a wooden plank fence, etc., may be artistically designed to resemble a traditional New England structure, and may minimally degrade the aesthetic features of the surroundings in the district in which the cell tower is located;

19d. trees, shrubbery, or other plant growth may be used to ameliorate any visual impact of the wireless communication facility on any neighborhood surrounding the facility.

20. Integral Building Mounted Cell Antenna

A cell antenna may be mounted within a structure which is an integral part of a building, where the structure may be a cupola, church steeple, etc. Detailed requirements of any permit which is granted are at the discretion of the special permit granting authority or permit granting authority.