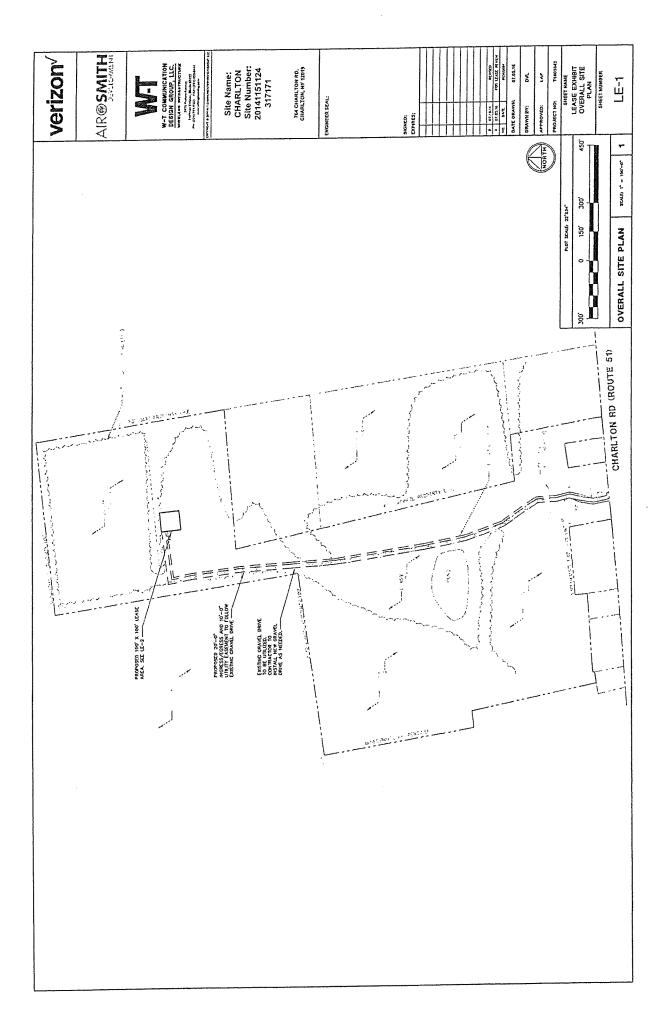
Exhibit "A"

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(Sketch of Premises within Property)

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# TAB 3

## DOCUMENTATION OF PUBLIC UTILITY STATUS and OVERVIEW OF ROSENBERG DECISION

In *Cellular Tel. Co. v. Rosenberg*, 82 N.Y.2d 364 (1993), the New York Court of Appeals determined that cellular telephone companies are public utilities. The Court held that proposed cellular telephone installations are to be reviewed by zoning boards pursuant to the traditional standard afforded to public utilities, rather than the standards generally required for the necessary approvals:

It has long been held that a zoning board may not exclude a utility from a community where the utility has shown a need for its facilities. There can be no question of [the carrier's] need to erect the cell site to eliminate service gaps in its cellular telephone service area. The proposed cell site will also improve the transmission and reception of existing service. Application of our holding in Matter of Consolidated Edison to sitings of cellular telephone companies, such as [the applicant], permits those companies to construct structures necessary for their operation which are prohibited because of existing zoning laws and to provide the desired services to the surrounding community. . . . Moreover, the record supports the conclusion that [the applicant] sustained its burden of proving the requisite public necessity. [The applicant] established that the erection of the cell site would enable it to remedy gaps in its service area that currently prevent it from providing adequate service to its customers in the . . . area.

Rosenberg, 82 N.Y.2d at 372-74 (citing Consolidated Edison Co. v. Hoffman, 43 N.Y.2d 598 (1978)).

This special treatment of a public utility stems from the essential nature of its service, and the fact that a public utility transmitting facility must be located in a particular area in order to provide service. For instance, water towers, electric switching stations, water pumping stations and telephone poles must be in particular locations (including within residential districts) in order to provide the utility to a specific area: [Public] utility services are needed in all districts; the service can be provided only if certain facilities (for example, substations) can be located in commercial and even in residential districts. To exclude such use would result in an impairment of an essential service.

Anderson, New York Zoning Law Practice, 3d ed., p. 411 (1984) (hereafter "Anderson"). See also, *Cellular Tel. Co. v. Rosenberg*, 82 N.Y.2d 364 (1993); *Payne v. Taylor*, 178 A.D.2d 979 (4th Dep't 1991).

Accordingly, the law in New York is that a municipality may not prohibit facilities, including towers, necessary for the transmission of a public utility. In *Rosenberg*, 82 N.Y.2d at 371, the court found that "the construction of an antenna tower... to facilitate the supply of cellular telephone service is a 'public utility building' within the meaning of a zoning ordinance." See also *Long Island Lighting Co. v. Griffin*, 272 A.D. 551 (2d Dep't 1947) (a municipal corporation may not prohibit the expansion of a public utility where such expansion is necessary to the maintenance of essential services).

In the present case, Verizon Wireless does not have reliable service coverage in areas of the Town of Charlton. The communications facility proposed is necessary to remedy this service problem and to provide adequate and reliable wireless telecommunications service coverage to this area. Therefore, Verizon Wireless satisfies the requisite showing of need for the facility under applicable New York law.

# TAB 4

# DOCUMENTATION OF PERSONAL WIRELESS SERVICE FACILITY STATUS and FEDERAL TELECOMMUNICATIONS ACT OF 1996

In addition to being considered a public utility under New York decisional law, Verizon Wireless is classified as a provider of "personal wireless services" under the federal Telecommunications Act of 1996 (the "TCA").

As stated in the long title of the Act, the goal of the TCA is to "promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." *Telecommunications Act of 1996, Pub. LA. No. 104-104, 110 Stat. 56 (1996).* 

The TCA mandates a process designed to achieve competitive telecommunications markets. In keeping with the central goals of the TCA, the authors specify in Section 253(a) that "[n]o State or local statute or regulation...may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service." *TCA Section* 253(a), emphasis added.

Section 332(c) of the TCA preserves the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction and modification of personal wireless service facilities, subject to several important limitations:

- the "regulation of the placement...of personal wireless service facilities by any State or local government or instrumentality thereof shall not unreasonably discriminate among providers of functionally equivalent services" (*TCA* \$332(c)(7)(B)(i)(I));
- the "regulation of the placement...of personal wireless service facilities by any State or local government or instrumentality thereof shall not prohibit or have the effect of prohibiting the provision of personal wireless services" (*TCA* \$332(c)(7)(B)(i)(II));
- Applications must be processed within a reasonable period of time, and any decision to deny a request for placement of personal wireless service facilities must be in writing and supported by substantial evidence contained in a written record  $(TCA \ \$\$332(c)(7)(B)(ii) \ and \ (iii));$  and
- regulations based upon the perceived environmental effects of radio frequency emissions are prohibited, so long as the proposed personal wireless service facility complies with FCC regulations concerning such emissions (*TCA* \$332(c)(7)(B)(iv)).

A reference copy of the Telecommunications Act of 1996 is included herewith.

HOUSE OF REPRESENTATIVES

REPORT 104-458

#### **TELECOMMUNICATIONS ACT OF 1996**

JANUARY 31, 1996. Ordered to be printed

Mr. BLILEY, from the committee of conference, submitted the following

#### CONFERENCE REPORT

#### [To accompany S. 652]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the House to the bill (S. 652), to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its disagreement to the amendment of the House to the text of the bill and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the House amendment, insert the following:

#### SECTION 1. SHORT TITLE; REFERENCES.

(a) SHORT TITLE.—This Act may be cited as the "Telecommunications Act of 1996".

(b) REFERENCES.—Except as otherwise expressly provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Communications Act of 1934 (47 U.S.C. 151 et seq.).

#### SEC. 2. TABLE OF CONTENTS.

The table of contents for this Act is as follows:

Sec. 1. Short title; references.

Sec. 2. Table of contents. Sec. 3. Definitions.

22-327

# Federal Communications Communications Library

tity that has obtained an attachment to such conduit or right-of-way so that such entity may have a reasonable oper stantly to add to or modify its existing attachment. Any stary that adds to or modifies its existing attachment of receiving such notification shall bear a proportionate share of the costs incurred by the owner in making such a low act, conduit, or right-of-way accessible.

right-of-way shall not be required to bear any of the story rearranging or replacing its attachment if the rearrangement or replacement is required and result of an additional attachment or the modification of an existing attachment sought by any other entity

#### SEC. 704. FACILITIES SITING; RADIO FREQUENCY EMISSION STAND-ARDS.

(a) NATIONAL WIRELESS TELECOMMUNICATIONS SITING POL-ICY.—Section 332(c) (47 U.S.C. 332(c)) is amended by adding at the end the following new paragraph:

"(7) PRESERVATION OF LOCAL ZONING AUTHORITY.—

"(A) GENERAL AUTHORITY.—Except as provided in this paragraph, nothing in this Act shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities. "(B) LIMITATIONS.—

"(i) The regulation of the placement, construction, and modification of personal wireless service facilities by any State or local government or instrumentality thereof—

"(I) shall not unreasonably discriminate among providers of functionally equivalent services; and

"(II) shall not prohibit or have the effect of prohibiting the provision of personal wireless services.

"(ii) A State or local government or instrumentality thereof shall act on any request for authorization to place, construct, or modify personal wireless service facilities within a reasonable period of time after the request is duly filed with such government or instrumentality, taking into account the nature and scope of such request.

"(iii) Any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.

"(iv) No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions. "(v) Any person adversely affected by any final action or failure to act by a State or local government or any instrumentality thereof that is inconsistent with this subparagraph may, within 30 days after such action or failure to act, commence an action in any court of competent jurisdiction. The court shall hear and decide such action on an expedited basis. Any person adversely affected by an act or failure to act by a State or local government or any instrumentality thereof that is inconsistent with clause (iv) may petition the Commission for relief.

"(C) DEFINITIONS.—For purposes of this paragraph—

"(i) the term 'personal wireless services' means commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services;

"(ii) the term 'personal wireless service facilities' means facilities for the provision of personal wireless services; and

"(iii) the term 'unlicensed wireless service' means the offering of telecommunications services using duly authorized devices which do not require individual licenses, but does not mean the provision of direct-to-

home satellite services (as defined in section 303(v)).". (b) RADIO FREQUENCY EMISSIONS.—Within 180 days after the enactment of this Act, the Commission shall complete action in ET Docket 93-62 to prescribe and make effective rules regarding the environmental effects of radio frequency emissions. (c) AVAILABILITY OF PROPERTY.—Within 180 days of the enact-

ment of this Act, the President or his designee shall prescribe procedures by which Federal departments and agencies may make available on a fair, reasonable, and nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services that are dependent, in whole or in part, upon the utilization of Federal spectrum rights for the transmission or reception of such services. These procedures may establish a presumption that requests for the use of property, rightsof way, and easements by duly authorized providers should be granted absent unavoidable direct conflict with the department or agency's mission, or the current or planned use of the property, rights-of-way, and easements in question. Reasonable fees may be charged to providers of such telecommunications services for use of property, rights-of-way, and easements. The Commission shall provide technical support to States to encourage them to make property, rights-of-way, and easements under their jurisdiction available for such purposes.

# RIERS.

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Section 332(c) (47 U.S.C. 332(c)) is amended by adding at the end the following new paragraph:

"(8) MOBILE SERVICES ACCESS.—A person engaged in the provision of mamercial mobile services, insofar as such person ic to engaged, shall not be required to provide equal access to portionate share of the costs incurred by the owner in making such conduit or right-of-way accessible.

#### Conference agreement

The conference agreement adopts the Senate provision with modifications. The conference agreement amends section 224 of the Communications Act by adding new subsection (e)(1) to allow parties to negotiate the rates, terms, and conditions for attaching to poles, ducts, conduits, and rights-of-way owned or controlled by utilities. New subsection 224(e)(2) establishes a new rate formula charged to telecommunications carriers for the non-useable space of each pole. Such rate shall be based upon the number of attaching entities. The conferees also agree to three additional provisions from the House amendment. First, subsection (g) requires utilities that engage in the provision of telecommunications services or cable services to impute to its costs of providing such service an equal amount to the pole attachment rate for which such company would be liable under section 224. Second, new subsection 224(h) requires utilities to provide written notification to attaching entities of any plans to modify or alter its poles, ducts, conduit, or rights-of-way. New subsection 224(h) also requires any attaching entity that takes advantage of such opportunity to modify its own attachments shall bear a proportionate share of the costs of such alterations. Third, new subsection 224(i) prevents a utility from imposing the cost of rearrangements to other attaching entities if done solely for the benefit of the utility.

#### SECTION 704—FACILITIES SITING; RADIO FREQUENCY EMISSION STANDARDS

#### Senate bill

#### No provision.

#### House amendment

Section 108 of the House amendment required the Commission to issue regulations within 180 days of enactment for siting of CMS. A negotiated rulemaking committee comprised of State and local governments, public safety agencies and the affected industries were to have attempted to develop a uniform policy to propose to the Commission for the siting of wireless tower sites.

The House amendment also required the Commission to complete its pending Radio Frequency (RF) emission exposure standards within 180 days of enactment. The siting of facilities could not be denied on the basis of RF emission levels for facilities that were in compliance with the Commission standard.

The House amendment also required that to the greatest extent possible the Federal government make available to use of Federal property, rights-of-way, easements and any other physical instruments in the siting of wireless telecommunications facilities.

#### Conference agreement

The conference agreement creates a new section 704 which prevents Commission preemption of local and State land use decisions and preserves the authority of State and local governments over zoning and land use matters except in the limited circumstances set forth in the conference agreement. The conference agreement also provides a mechanism for judicial relief from zoning decisions that fail to comply with the provisions of this section. It is the intent of the conferees that other than under section 332(c)(7)(B)(iv)of the Communications Act of 1934 as amended by this Act and section 704 of the Telecommunications Act of 1996 the courts shall have exclusive jurisdiction over all other disputes arising under this section. Any pending Commission rulemaking concerning the preemption of local zoning authority over the placement, construction or modification of CMS facilities should be terminated.

When utilizing the term "functionally equivalent services" the conferees are referring only to personal wireless services as defined in this section that directly compete against one another. The intent of the conferees is to ensure that a State or local government does not in making a decision regarding the placement, construction and modification of facilities of personal wireless services described in this section unreasonably favor one competitor over another. The conferees also intend that the phrase "unreasonably discriminate among providers of functionally equivalent services" will provide localities with the flexibility to treat facilities that create different visual, aesthetic, or safety concerns differently to the extent permitted under generally applicable zoning requirements even if those facilities provide functionally equivalent services. For example, the conferees do not intend that if a State or local government grants a permit in a commercial district, it must also grant a permit for a competitor's 50-foot tower in a residential district.

Actions taken by State or local governments shall not prohibit or have the effect of prohibiting the placement, construction or modification of personal wireless services. It is the intent of this section that bans or policies that have the effect of banning personal wireless services or facilities not be allowed and that decisions be made on a case-by-case basis.

Under subsection (c)(7)(B)(ii), decisions are to be rendered in a reasonable period of time, taking into account the nature and scope of each request. If a request for placement of a personal wireless service facility involves a zoning variance or a public hearing or comment process, the time period for rendering a decision will be the usual period under such circumstances. It is not the intent of this provision to give preferential treatment to the personal wireless service industry in the processing of requests, or to subject their requests to any but the generally applicable time frames for zoning decision.

The phrase "substantial evidence contained in a written record" is the traditional standard used for judicial review of agency actions.

The conferees intend section 332(c)(7)(B)(iv) to prevent a State or local government or its instrumentalities from basing the regulation of the placement, construction or modification of CMS facilities directly or indirectly on the environmental effects of radio frequency emissions if those facilities comply with the Commission's regulations adopted pursuant to section 704(b) concerning such emissions. The limitations on the role and powers of the Commission under this subparagraph relate to local land use regulations and are not intended to limit or affect the Commission's general authority over radio telecommunications, including the authority to regulate the construction, modification and operation of radio facilities.

The conferees intend that the court to which a party appeals a decision under section 332(c)(7)(B)(v) may be the Federal district court in which the facilities are located or a State court of competent jurisdiction, at the option of the party making the appeal, and that the courts act expeditiously in deciding such cases. The term "final action" of that new subparagraph means final administrative action at the State or local government level so that a party can commence action under the subparagraph rather than waiting for the exhaustion of any independent State court remedy otherwise required.

With respect to the availability of Federal property for the use of wireless telecommunications infrastructure sites under section 704(c), the conferees generally adopt the House provisions, but substitute the President or his designee for the Commission.

It should be noted that the provisions relating to telecommunications facilities are not limited to commercial mobile radio licensees, but also will include other Commission licensed wireless common carriers such as point to point microwave in the extremely high frequency portion of the electromagnetic spectrum which rely on line of sight for transmitting communication services.

# CARRIERS

#### Senate bill

Subsection (b) of section 221 of the Senate bill, as passed, states that notwithstanding the MFJ or any other consent decree, no CMS provider will be required by court order or otherwise to provide long distance equal access. The Commission may only order equal access if a CMS provider is subject to the interconnection obligations of section 251 and if the Commission finds that such a requirement is in the public interest. CMS providers shall ensure that its subscribers can obtain unblocked access to the interexchange carrier of their choice through the use of interexchange carrier identification codes, except that the unblocking requirement shall pot apply to mobile satellite services unless the Commission finds this in the public interest.

#### House amendment

Under section 109 of the House amendment, the Commission shall require providers of two-way switched voice CMS to allow their subscribers to access the telephone toll services provider of their choice through the use of carrier identification codes. The Commission rules will supersede the equal access, balloting and prescription requirements imposed by the MFJ and the AT&T-McCar consent decree. The Commission may exempt carriers or classes of carriers from the requirements of this section if it is contistent with the public interest, convenience, and necessity, and the

# TAB 5

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| Location Latitude Longi  | tude  |   | round Elev<br>neters)                                   | ation                            |  | icture Hg<br>ters)                         | -   | Antenna St<br>Registratio             |                                     |
| 243-08-54.3 N073-4Address: SARATOGA: KINGS STATCity: GREENFIELDCounty: SAR   |   | 21  | .5.0  | ruction                          |  |  | 1   | Cegisti atto                          | ан 1 <b>чо.</b>                     |
| Antenna: 1 Azimuth (from true north)   | 0   | 45  | 90  | 135                              |  | 180  | 225                                       | 270                                   | 315                                 |
| Antenna Height AAT (meters)<br>Transmitting ERP (watts)  | 41.400<br>100.000                                       | 174.700<br>57.540                                     | 188.400<br>7.760  | 175.60<br>0.630                  |  | 172.800<br>0.160                           | 110.000<br>0.630                          | -41.500<br>7.760                      | -71.300<br>57.540                   |
| Antenna: 2 Azimuth (from true north)   | 0   | 45  | 90  | 135                              |  | 180  | 225                                       | 270                                   | 315                                 |
| Antenna Height AAT (meters)  | 41.500  | 174.700   | 188.400   | 175.60                           | 00                                       | 172.800                                    | 110.000                                   | -41.500                               | -71.000                             |
| Transmitting ERP (watts)   | 1.450   | 19.500  | 79.430  | 95.500                           | 0  | 36.310                                     | 3.240                                     | 0.160                                 | 0.160                               |
| Antenna: 3 Azimuth (from true north)   | 0   | 45  | 90  | 135                              |  | 180  | 225                                       | 270                                   | 315                                 |
| Antenna Height AAT (meters)  | 41.500  | 174.700   | 188.400   | 175.60                           |  | 172.800                                    | 110.000                                   | -41.500                               | -71.300                             |
| Transmitting ERP (watts)   | 1.450   | 0.160   | 0.160   | 3.240                            |  | 36.310                                     | 95.500                                    | 79.430                                | 19.500                              |
|  |   |   |   |                                  |  |  |   | $\mathbf{D}$                          |                                     |
| <b>Conditions:</b><br>Pursuant to §309(h) of the Communication following conditions: This license shaft frequencies designated in the license belicense nor the right granted thereunder 1934, as amended. See 47 U.S.C. § 31 the Communications Act of 1934, as a | ll not vest<br>eyond the<br>r shall be a<br>.0(d). This | in the licenterm there<br>assigned on<br>a license is | nsee any rig<br>of nor in ar<br>otherwise<br>subject in | ght to op<br>y other<br>transfer | perate<br>man<br>red i                   | e the statio<br>ner than au<br>n violation | n nor any r<br>athorized he<br>of the Con | ight in the perein. Neith nmunication | use of the<br>her the<br>ons Act of |

### Licensee Name: CELLCO PARTNERSHIP

| Call Sign: KNKA246   | File  | Number:   | 00066723   | 53  | P   | rint Date:   | 04-14-2015  |   |
|--|---|---|--|---|---|--|---|---|
| Location Latitude Longit   |   | ( <b>m</b>  | ound Elev<br>eters)  | (1  | Structure Hg<br>meters)   | t to Tip   | Antenna St<br>Registratio   |   |
| <sup>3</sup> 42-37-39.4 N 074-00<br>Address: THACHER PARK: 5 MILES   | -37.4 W   |   | 4.7<br>CAMP DI   |   | 6.3<br>ROAD   |  |   |   |
| City: New Scotland County: ALBA  |   |   | Construct  |   |   |  |   |   |
| Antenna: 1 Azimuth (from true north)   |   | 45  | 90   | 135   | 180   | 225  | 270   | 315   |
| Antenna Height AAT (meters)  | 479.100   | <b>40</b> 506.400   | 512.200  | 439.300   |   | 133.200  | 261.500   | 223.800   |
| Transmitting ERP (watts)   | 75.080  | 2.650   | 1.000  | 1.000   | 1.000   | 7.850  | 122.830   | 257.550   |
| Antenna: 2 Azimuth (from true north)   | 0   | 45  | 90   | 135   | 180   | 225  | 270   | 315   |
| Antenna Height AAT (meters)  | 479.100   | 506.400   | 512.200  | 439.300   |   | 133.200  | 261.500   | 223.800   |
| Transmitting ERP (watts)   | 37.050  | 79.470  | 71.390   | 28.640  | 1.470   | 0.930  | 0.930   | 1.810   |
| Antenna: 3 Azimuth (from true north)   | 0   | 45  | 90   | 135   | 180   | 225  | 270   | 315   |
| Antonno Hotoht AAT (motons)  | 170 100   | 505 100   | 512 200  | 439.300   | ) 211.900   | 133.200  | 261.500   | 223.800   |
| Antenna Height AAT (meters)  | 479.100   | 506.400   | 512.200  | 437.300   | / 211.900   | 155.200  | 201.300   | 225.000   |
| Antenna Height AAT (meters)<br>Transmitting ERP (watts)  | 479.100<br>1.000  | 1.000   | 6.450  | 439.300<br>98.460   | 230.900   | 140.000  | 15.040  | 1.000   |
| Transmitting ERP (watts) Location Latitude Longit  | 1.000<br>ude<br>0-08.6 W<br>NING RO   | 1.000<br>Gr<br>(m<br>23   | 6.450<br>round Elev<br>eters)<br>9.9<br>fille NOR  | 98.460<br>vation S<br>(1<br>5<br>TH OF R  | 230.900<br>Structure Hg<br>meters)<br>58.9  | 140.000  |   | 1.000   |
| Transmitting ERP (watts)Location LatitudeLongit442-54-41.3 N074-29Address: PALATINE BRIDGE: MORCity: PALATINECounty: MONTO   | 1.000<br>ude<br>-08.6 W<br>NING RO<br>GOMERY  | 1.000<br>Gr<br>(m<br>23<br>DAD, 1.1 M<br>State: N   | 6.450<br>round Elev<br>eters)<br>9.9<br>fille NOR<br>VY Cons   | 98.460<br>vation S<br>(1<br>5<br>TH OF R<br>struction   | 230.900<br>Structure Hg<br>meters)<br>(8.9<br>OUTE 90<br>Deadline:  | 140.000<br>t <b>to Tip</b>                                     | 15.040<br>Antenna St<br>Registratio   | 1.000<br>ructure<br>n No.   |
| Location       Latitude       Longit         4       42-54-41.3 N       074-29         Address:       PALATINE BRIDGE: MOR   | 1.000<br>ude<br>-08.6 W<br>NING RO<br>GOMERY  | 1.000<br>Gr<br>(m<br>23<br>DAD, 1.1 M   | 6.450<br>round Elev<br>eters)<br>9.9<br>fille NOR  | 98.460<br>vation S<br>(1<br>5<br>TH OF R  | 230.900<br>Structure Hg<br>meters)<br>58.9<br>OUTE 90<br>Deadline:<br>180                                   | 140.000  | 15.040<br>Antenna St  | 1.000   |
| International Latitude       Longit         4       42-54-41.3 N       074-29         Address:       PALATINE BRIDGE: MOR         City:       PALATINE       County: MONTG         Antenna:       1 Azimuth (from true north)         Antenna Height AAT (meters)  | 1.000<br>ude<br>-08.6 W<br>NING RO<br>OMERY<br>0<br>1.800                           | 1.000<br>Gr<br>(m<br>23<br>DAD, 1.1 M<br>State: N<br>45<br>113.800                            | 6.450<br>cound Elevent<br>eters)<br>9.9<br>fille NOR<br>VY Cons<br>90<br>153.300                         | 98.460<br>vation S<br>(1<br>5<br>TH OF R(<br>struction 2<br>135<br>-16.900                            | 230.900<br>Structure Hgt<br>meters)<br>8.9<br>OUTE 90<br>Deadline:<br>180<br>9.400                          | 140.000<br>t to Tip<br>225<br>64.300                           | 15.040<br>Antenna St<br>Registratio<br>270<br>128.700                             | 1.000<br>ructure<br>n No.<br>315<br>51.600                            |
| Transmitting ERP (watts)Location LatitudeLongit442-54-41.3 N074-29Address: PALATINE BRIDGE: MORCity: PALATINECounty: MONTGCity: PALATINECounty: MONTGAntenna: 1 Azimuth (from true north)Antenna Height AAT (meters)Transmitting ERP (watts)Antenna: 2 Azimuth (from true north)   | 1.000<br>ude<br>-08.6 W<br>NING RO<br>GOMERY<br>0<br>1.800<br>79.850                | 1.000<br>Gr<br>(m<br>23<br>DAD, 1.1 M<br>State: N<br>45<br>113.800<br>41.860                  | 6.450<br>cound Elevent<br>eters)<br>9.9<br>MILE NOR'<br>NY Cons<br>90<br>153.300<br>4.450                | 98.460<br>vation S<br>(1<br>5<br>TH OF R(<br>struction 1<br>135<br>-16.900<br>0.990                   | 230.900<br>Structure Hgt<br>meters)<br>8.9<br>OUTE 90<br>Deadline:<br>180<br>9.400<br>0.990<br>180          | 140.000<br>t to Tip<br>225<br>64.300<br>0.990                  | 15.040<br>Antenna St<br>Registratio<br>270<br>128.700<br>24.680                   | 1.000<br>ructure<br>n No.<br>315<br>51.600<br>85.260                  |
| Transmitting ERP (watts)LocationLatitudeLongit442-54-41.3 N074-29Address:PALATINE BRIDGE: MORCity:PALATINECounty: MONTGAntenna:1 Azimuth (from true north)Antenna Height AAT (meters)Transmitting ERP (watts)  | 1.000<br>ude<br>-08.6 W<br>NING RO<br>OMERY<br>0<br>1.800<br>79.850<br>0            | 1.000<br>Gr<br>(m<br>23<br>DAD, 1.1 M<br>State: N<br>45<br>113.800<br>41.860<br>45            | 6.450<br>cound Elev<br>eters)<br>9.9<br>fille NOR<br>VY Cons<br>90<br>153.300<br>4.450<br>90             | 98.460<br>vation S<br>(1<br>5<br>TH OF R<br>struction 2<br>135<br>-16.900<br>0.990<br>135             | 230.900<br>Structure Hgt<br>meters)<br>8.9<br>OUTE 90<br>Deadline:<br>180<br>9.400<br>0.990<br>180<br>9.400 | 140.000<br>t to Tip<br>225<br>64.300<br>0.990<br>225           | 15.040<br>Antenna St<br>Registratio<br>270<br>128.700<br>24.680<br>270            | 1.000<br>ructure<br>n No.<br>315<br>51.600<br>85.260<br>315           |
| Transmitting ERP (watts)LocationLatitudeLongit442-54-41.3 N074-29Address:PALATINE BRIDGE: MORCity:PALATINECounty: MONTGCity:PALATINECounty: MONTGAntenna:1 Azimuth (from true north)Antenna Height AAT (meters)Transmitting ERP (watts)Antenna:2 Azimuth (from true north)Antenna:2 Azimuth (from true north)Antenna Height AAT (meters) | 1.000<br>ude<br>-08.6 W<br>NING RO<br>GOMER Y<br>0<br>1.800<br>79.850<br>0<br>1.800 | 1.000<br>Gr<br>(m<br>23<br>DAD, 1.1 M<br>State: N<br>45<br>113.800<br>41.860<br>45<br>113.800 | 6.450<br>round Elev<br>eters)<br>9.9<br>fille NOR'<br>NY Cons<br>90<br>153.300<br>4.450<br>90<br>153.300 | 98.460<br>ration S<br>(1<br>5<br>TH OF R(<br>struction 1<br>135<br>-16.900<br>0.990<br>135<br>-16.900 | 230.900<br>Structure Hgt<br>meters)<br>8.9<br>OUTE 90<br>Deadline:<br>180<br>9.400<br>0.990<br>180<br>9.400 | 140.000<br>t to Tip<br>225<br>64.300<br>0.990<br>225<br>64.300 | 15.040<br>Antenna St<br>Registratio<br>270<br>128.700<br>24.680<br>270<br>128.700 | 1.000<br>ructure<br>n No.<br>315<br>51.600<br>85.260<br>315<br>51.600 |



# Licensee Name: CELLCO PARTNERSHIP

| Call Sign: KNKA246   | File  | e Number:                 | 00066723                                  | 53                             | P                               | rint Date: | : 04-14-2015              |         |
|--|---|---------------------------|---|--------------------------------|---------------------------------|------------|---------------------------|---------|
| Location Latitude  | Longitude                                   | ( <b>m</b>                | round Elev<br>neters)<br>59.7             |                                | ucture Hg<br>eters)             | to Tip     | Antenna St<br>Registratio |         |
| 5 43-10-40.3 N<br>Address: ALPINE: LOCATE  | 073-55-44.5 W                               |                           | 9.7                                       |                                |                                 |            |                           |         |
|  | nty: SARATOGA                               | State: N                  | Y Const                                   | ruction Dea                    | adline:                         |            |                           |         |
|  |   |                           |   |                                |                                 |            |                           |         |
| Antenna: 1 Azimuth (from tr  |   | 45                        | 90  | 135                            | 180                             | 225        | 270                       | 315     |
| Antenna Height AAT (meter  |   | 242.900                   | 307.900                                   | 353.300                        | 310.900                         | 80.200     | 60.700                    | 59.100  |
| Transmitting ERP (watts)   | 100.000                                     | 100.000                   | 100.000                                   | 100.000                        | 100.000                         | 100.000    | 100.000                   | 100.000 |
| Location Latitude  | Longitude                                   |                           | round Elev<br>neters)                     |                                | ucture Hg<br>eters)             | to Tip     | Antenna St<br>Registratio |         |
| 7 42-36-20.3 N   | 073-27-36.4 W                               |                           |   |                                |                                 |            | 0                         |         |
| Address: Fire Tower Road   |   |                           |   |                                |                                 |            |                           |         |
| City: Stephentown County   | RENSSELAER                                  | State: N                  | Y Const                                   | ruction Dea                    | adline:                         |            |                           |         |
| Antenna: 1 Azimuth (from tr  | ue north) <b>0</b>                          | 45                        | 90  | 135                            | 180                             | 225        | 270                       | 315     |
| Antenna Height AAT (mete   | rs) 87.100                                  | 103.400                   | 86.700                                    | 194.400                        | 253.100                         | 332.400    | 345.400                   | 279.800 |
| <b>Fransmitting ERP (watts)</b>  | 44.000                                      | 75.960                    | 35.390                                    | 2.610                          | 0.290                           | 12.190     | 72.680                    | 58.030  |
| Location Latitude<br>8 42-58-16.3 N<br>Address: MINDEN: 0.41 MI<br>ROAD BEARING 4                        | Longitude<br>074-40-50.5 W<br>ILES FROM THE | (m<br>35                  | round Elev<br>neters)<br>52.4<br>CTION OF | (me                            | ucture Hgt<br>eters)<br>AND SAN | _          | Antenna St<br>Registratio |         |
|  | IONTGOMERY                                  | State: NY                 | Constr                                    | uction Dea                     | dline:                          |            |                           |         |
| Antenna: 1 Azimuth (from tr  | ue north) <b>0</b>                          | 45                        | 90  | 135                            | 180                             | 225        | 270                       | 315     |
| Antenna Height AAT (meter  |   | -53.300                   | 88.400                                    | 168.300                        | 75.300                          | -3.700     | 45.400                    | 124.100 |
| <b>Fransmitting ERP (watts)</b>  | 100.000                                     |                           | 100.000                                   | 100.000                        | 100.000                         | 100.000    | 100.000                   | 100.000 |
|  |   |                           |   |                                |                                 |            |                           |         |
|  |   |                           |   |                                |                                 |            |                           |         |
| Location Latitude<br>9 42-51-27.9 N<br>Address: Le Barron Hill Rd.                                       | <b>Longitude</b><br>073-23-22.8 W           | ( <b>m</b>                | round Elev<br>neters)<br>58.2             | ation Str<br>(m<br>93.         | eters)                          | to Tip     | Antenna St<br>Registratio |         |
| 9 42-51-27.9 N<br>Address: Le Barron Hill Rd.  | 073-23-22.8 W                               | (m<br>36                  | <b>neters)</b><br>58.2                    | ( <b>m</b>                     | eters)<br>9                     | t to Tip   |                           |         |
| 9 42-51-27.9 N<br>Address: Le Barron Hill Rd.<br>City: Hoosick County: RE                                | 073-23-22.8 W                               | (m<br>36<br>ate: NY       | neters)<br>58.2<br>Constructi             | (m<br>93.<br>on Deadlin        | eters)<br>9<br>e:               |            | Registratio               | n No.   |
| 9 42-51-27.9 N<br>Address: Le Barron Hill Rd.<br>City: Hoosick County: RE<br>Antenna: 1 Azimuth (from tr | 073-23-22.8 W<br>ENSSELAER Statue north) 0  | (m<br>36<br>ate: NY<br>45 | ieters)<br>58.2<br>Constructi<br>90       | (m<br>93.<br>on Deadlin<br>135 | eters)<br>9<br>e:<br>180        | 225        | Registratio               | n No.   |
| 9 42-51-27.9 N<br>Address: Le Barron Hill Rd.  | 073-23-22.8 W<br>ENSSELAER Sta              | (m<br>36<br>ate: NY<br>45 | neters)<br>58.2<br>Constructi             | (m<br>93.<br>on Deadlin        | eters)<br>9<br>e:               |            | Registratio               | n No.   |

### Licensee Name: CELLCO PARTNERSHIP

| File Number: 0006672353   |   |   | <b>Print Date:</b> 04-14-2015  |   |  |   |   |  |
|---|---|---|--|---|--|---|---|--|
| tude  |   |   | ation  |   |  | t to Tip  |   |  |
| odge  | -   |   | eadlin   |   |  |   | 8   |  |
| <b>0</b><br>310.800<br>116.240  | <b>45</b><br>465.300<br>92.730  | <b>90</b><br>318.700<br>14.970  |  | 00  | 255.100  | <b>225</b><br>310.100<br>0.620  | <b>270</b><br>350.200<br>16.420   | <b>315</b><br>327.100<br>99.360  |
| 310.800   | <b>45</b><br>465.300<br>39.870  | <b>90</b><br>318.700<br>112.180   |  | 00  | <b>180</b><br>255.100<br>66.580  | <b>225</b><br>310.100<br>4.670  | <b>270</b><br>350.200<br>0.620  | <b>315</b><br>327.100<br>0.620   |
|   | <b>45</b><br>465.300<br>0.620   | <b>90</b><br>318.700<br>0.620   |  | 00  | <b>180</b><br>255.100<br>70.940  |   |   | <b>315</b><br>327.100<br>35.530  |
| Transmitting ERP (watts)       0.780       0.620       0.620       4.890       70.940       115.560       109.620       35.530         Control Points:       Control Pt. No. 1         Address: 500 W Dove Rd       City: Southlake       County: TARRANT       State: TX       Telephone Number: (800)264-6620 |   |   |  |   |  |   |   |  |
|   | itude<br>15-53.9 W<br>Lodge<br>State: N<br>0<br>310.800<br>116.240<br>0<br>310.800<br>0.800<br>0<br>0<br>310.800<br>0.800<br>0<br>0<br>310.800<br>0.780 | itude (m<br>15-53.9 W 91<br>Lodge<br>State: NY Cons<br>0 45<br>310.800 465.300<br>116.240 92.730<br>0 45<br>310.800 465.300<br>0.800 39.870<br>0 45<br>310.800 465.300<br>0.780 0.620 | itude     Ground Elev<br>(meters)       15-53.9 W     911.7       Lodge     State: NY       State: NY     Construction D       0     45       90     310.800       16.240     92.730       14.970       0     45       310.800     465.300       310.800     465.300       310.800     465.300       310.800     465.300       310.800     465.300       310.800     465.300       310.800     465.300       310.800     465.300       310.800     465.300 | itude       Ground Elevation (meters)         15-53.9 W       911.7         Lodge       State: NY       Construction Deadlin $\bullet$ <b>5 90 135</b> 310.800       465.300       318.700       266.9         116.240       92.730       14.970       0.620 $\bullet$ <b>45 90 135</b> 310.800       465.300       318.700       266.9         0.800       39.870       112.180       115.1 $\bullet$ <b>45 90 135</b> 310.800       465.300       318.700       266.9         0.800       39.870       112.180       115.1 $\bullet$ <b>45 90 135</b> 310.800       465.300       318.700       266.9         0.780       0.620       0.620       4.890 | itude     Ground Elevation (meters)     Strue (meters)       15-53.9 W     911.7     34.8       15-310.800     455     90     135       310.800     465.300     318.700     266.900       0     45     90     135       310.800     465.300     318.700     266.900       0.800     39.870     112.180     115.180       1     0     45     90     135       310.800     465.300     318.700     266.900       0.780     0.620     0.620     4.890 | itude       Ground Elevation (meters) (meters)         15-53.9 W       911.7       34.8         .odge       .odge       .odge         .state: NY       Construction Deadline: 10-27-2009         0       45       90       135       180         .16.240       92.730       14.970       0.620       0.620         0       45       90       135       180         310.800       465.300       318.700       266.900       255.100         0       45       90       135       180         310.800       465.300       318.700       266.900       255.100         0.800       39.870       112.180       115.180       66.580         0       45       90       135       180         310.800       465.300       318.700       266.900       255.100         0.780       0.620       0.620       4.890       70.940 | itude       Ground Elevation (meters)       Structure Hgt to Tip (meters)         15-53.9 W       911.7       34.8         .odge       State: NY       Construction Deadline: 10-27-2009         0       45       90       135       180       225         310.800       465.300       318.700       266.900       255.100       310.100         116.240       92.730       14.970       0.620       0.620       0.620         0       45       90       135       180       225         310.800       465.300       318.700       266.900       255.100       310.100         0.800       39.870       112.180       115.180       66.580       4.670         0       45       90       135       180       225         310.800       465.300       318.700       266.900       255.100       310.100         0.800       39.870       112.180       115.180       66.580       4.670         1       0.620       0.620       4.890       70.940       115.560 | itude         Ground Elevation<br>(meters)         Structure Hgt to Tip<br>(meters)         Antenna St<br>Registration           15-53.9 W         911.7         34.8           codge         State: NY         Construction Deadline: 10-27-2009           0         45         90         135         180         225         270           310.800         465.300         318.700         266.900         255.100         310.100         350.200           16.240         92.730         14.970         0.620         0.620         0.620         16.420           0         45         90         135         180         225         270           310.800         465.300         318.700         266.900         255.100         310.100         350.200           0         45         90         135         180         225         270           310.800         465.300         318.700         266.900         255.100         310.100         350.200           0.800         39.870         112.180         115.180         66.580         4.670         0.620           0.620         0.620         0.620         4.890         70.940         115.560         109.620 |

#### Waivers/Conditions:

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.

| F  | ederal Communica<br>Wireless Telecommu         |                                   |                |                                 |
|--|--|-----------------------------------|----------------|---------------------------------|
| COMMISSION.  | RADIO STATION A                                | UTHORIZATIO                       | Ν              |                                 |
| LICENSEE: CELLCO PA                                      | ARTNERSHIP                                     |                                   |                |                                 |
| ATTN. DECUL ATODX  |  |                                   | Call Sign      | File Number                     |
| ATTN: REGULATORY<br>CELLCO PARTNERSHIF                   |  |                                   | WQCS418        | 0006668604                      |
| 1120 SANCTUARY PKW<br>ALPHARETTA, GA 3000                | Y, #150 GASA5REG                               |                                   |                | <b>5 Service</b><br>5 Broadband |
| CC Registration Number (FRN<br>Grant Date<br>04-23-2015  | T): 0003290673<br>Effective Date<br>04-23-2015 | <b>Expiration D</b><br>05-13-202: |                | <b>Print Date</b> 04-24-2015    |
| Market Number<br>BTA007                                  | Channe   | el Block                          | Sub-Ma         | arket Designator<br>6           |
|  | Market<br>Albany-Schen                         |                                   |                |                                 |
| <b>1st Build-out Date</b><br>05-13-2010                  | 2nd Build-out Date                             | 3rd Build-out I                   | Date 4         | th Build-out Date               |
| Vaivers/Conditions:<br>License renewal granted on a conc | litional basis, subject to the outc            | ome of FCC proceedi               | ng WT Docket N | o. 10-112 (see FCC              |

10-86, paras. 113 and 126).

#### **Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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| STATES OF THE ST | Federal Communica<br>Wireless Telecomm |   | ssion                               |                               |  |  |  |
|--|--|---|-------------------------------------|-------------------------------|--|--|--|
| COMMISSION *   | <b>RADIO STATION A</b>                 | UTHORIZATION  | J                                   |                               |  |  |  |
| LICENSEE: CELLCO F   | PARTNERSHIP                            |   |                                     |                               |  |  |  |
| ATTN: REGULATORY   |  |   | Call Sign<br>VQEM928                | <b>File Number</b> 0007057132 |  |  |  |
| CELLCO PARTNERSH<br>1120 SANCTUARY PK<br>ALPHARETTA, GA 300  | WY, #150 GASA5REG                      |   | Radio Service<br>CW - PCS Broadband |                               |  |  |  |
| FCC Registration Number (FR  | N): 0003290673                         |   |                                     |                               |  |  |  |
| <b>Grant Date</b> 03-11-2016   | <b>Effective Date</b> 03-11-2016       | <b>Expiration Da</b><br>03-08-2026                      | ite                                 | <b>Print Date</b> 03-12-2016  |  |  |  |
| Market Number<br>BTA007  | Chann                                  | el Block<br>C   | Sub-Ma                              | nrket Designator<br>5         |  |  |  |
|  | Market<br>Albany-Scher                 |   |                                     |                               |  |  |  |
| <b>1st Build-out Date</b><br>03-08-2011  | 2nd Build-out Date                     | 2nd Build-out Date   3rd Build-out Date   4th Build-out |                                     |                               |  |  |  |
| Waivers/Conditions:  |  |   |                                     |                               |  |  |  |
| Grant of the request to update lic 1.948); if an assignment or transf  |  |   |                                     |                               |  |  |  |

licensed under the prior name.

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

#### **Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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| I COMMUNIC   | Federal Communic<br>Wireless Telecomm   |                       |  |                         |  |
|--|---|-----------------------|--|-------------------------|--|
| COMMISSION +   | RADIO STATION A                         | UTHORIZATI            | ON   |                         |  |
| LICENSEE: CELLCO P   | ARTNERSHIP                              |                       |  |                         |  |
| ATTN: REGULATORY   |   | Γ                     | <b>Call Sign</b><br>WQJQ689                        | File Number             |  |
| CELLCO PARTNERSHI<br>1120 SANCTUARY PKV<br>ALPHARETTA, GA 3000 | VY, #150 GASA5REG                       |                       | Radio Service<br>WU - 700 MHz Upper Band (Block C) |                         |  |
| CC Registration Number (FR)<br>Grant Date                      | N): 0003290673<br>Effective Date        | Expiration            | Date   | Print Date              |  |
| 11-26-2008   | 03-26-2013                              | 06-13-20              |  |                         |  |
| Market Number<br>REA001  | Chann                                   | nel Block<br>C        | Sub  | -Market Designator<br>0 |  |
|  | Market<br>North                         |                       |  |                         |  |
| <b>1st Build-out Date</b><br>06-13-2013                        | <b>2nd Build-out Date</b><br>06-13-2019 | 3rd Build-ou          | t Date   | 4th Build-out Date      |  |
| Vaivers/Conditions:  | are used to provide broadcast op        | berations, whether ex | clusively or in a                                  | combination with other  |  |

services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

#### **Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.

| COMMUNICATION DE LA COMUNICATION DE LA COMUNICATION DE LA COMUNICATION DE LA COMUNICAT | Federal Communic<br>Wireless Telecomm                               |                |                      |   |
|--|---|----------------|----------------------|---|
| COMMISSION +   | RADIO STATION A   | UTHORIZATI     | ON                   |   |
| LICENSEE: CELLCO F   | PARTNERSHIP   | _              |                      |   |
| ATTN: REGULATORY   |   |                | Call Sign<br>WQGA715 | <b>File Number</b> 0006015570                           |
| CELLCO PARTNERSH<br>1120 SANCTUARY PK<br>ALPHARETTA, GA 300  | WY, #150 GASA5REG   |                | F                    | <b>Radio Service</b><br>710-1755/2110-2155 MHz<br>bands |
| C Registration Number (FR<br>Grant Date  | N): 0003290673<br>Effective Date                                    | Expiration     | Date                 | Print Date  |
| 11-29-2006   | 03-12-2014  | 11-29-20       |                      | 05-09-2014  |
| Market Number<br>REA001  | Chann   | nel Block<br>F | Sul                  | D-Market Designator                                     |
|  | Market<br>North   |                |                      |   |
| 1st Build-out Date   | 2nd Build-out Date  | 3rd Build-ou   | t Date               | 4th Build-out Date                                      |
| ivers/Conditions:  | upon the licenses prior to initia                                   |                | any bace or f        | rad station molting                                     |
|  | upon the licensee, prior to initia<br>requency usage with known co- |                |                      |   |

reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

AWS operations must not cause harmful interference across the Canadian or Mexican Border. The authority granted herein is subject to future international agreements with Canada or Mexico, as applicable.

#### **Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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| AND COMMUNICATION   | Federal Communic<br>Wireless Telecomm   |  |  |   |
|---|---|--|--|---|
| COMMISSION  | RADIO STATION A   | AUTHORIZATIO                                   | DN   |   |
| LICENSEE: CELLCO  | PARTNERSHIP   |  |  |   |
| ATTN: REGULATORY  |   | Γ  | <b>Call Sign</b><br>WQGA902                                      | <b>File Number</b> 0006150136               |
| CELLCO PARTNERSHIP<br>1120 SANCTUARY PKWY, #150 GASA5REG<br>ALPHARETTA, GA 30009-7630 |   |  | <b>Radio Service</b><br>AW - AWS (1710-1755 MI<br>2110-2155 MHz) |   |
| CC Registration Number (FF  | <b>RN</b> ): 0003290673   |  |  |   |
| <b>Grant Date</b> 11-29-2006  | <b>Effective Date</b><br>12-28-2013   | <b>Expiration</b> 1<br>11-29-202               |  | <b>Print Date</b> 02-14-2014                |
| Market Number<br>BEA005   |   | nel Block<br>B                                 | Sub-N  | Aarket Designator<br>5                      |
|   | Market<br>Albany-Schened  |  |  |   |
| 1st Build-out Date  | 2nd Build-out Date  | 3rd Build-out                                  | Date   | 4th Build-out Date                          |
| aivers/Conditions:  |   |  |  |   |
| asonable efforts to coordinate erating in the 1710-1755 MHz                           | d upon the licensee, prior to initia<br>frequency usage with known co-<br>z band whose facilities could be a<br>1710-1755 MHz Band, Public No | channel and adjacent of affected by the propos | channel incumbe<br>ed operations. Se                             | ent federal users<br>ee, e.g., FCC and NTIA |

2006. AWS operations must not cause harmful interference across the Canadian or Mexican Border. The authority granted herein is

subject to future international agreements with Canada or Mexico, as applicable.

#### **Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

# TAB 6



# Network Engineering Group 225 Jordan Road Troy, New York 12180

### CHARLTON CENTER COMMUNICATIONS FACILITY PROPERTY N/F OF DAVID HUNT AND ELIZABETH A. HUNT 764 CHARLTON ROAD, TOWN OF CHARLTON, NEW YORK

Cellco Partnership d/b/a Verizon Wireless ("Verizon Wireless" or the "Applicant") is proposing to install and operate a new public utility / personal wireless service facility (the "communications facility") including associated antennas, equipment platform and related appurtenances, on a new 120 ft. (124 ft. including a 4 ft. lightning rod) monopole tower located at 764 Charlton Road in the Town of Charlton, Saratoga County, New York (known internally as "**Charlton Center**"). The proposed facility is located in the Town's Residential Agriculture District.

The purpose of this project is to improve wireless coverage and capacity in the Town of Charlton, and add new 700 MHz Upper Band (Block C) and Advanced Wireless Services (AWS) frequencies to Verizon Wireless' existing regional wireless network. Verizon Wireless is using these frequencies for commercial activation of its fourth generation (4G) communication services.

This project is a necessary and critical upgrade of the Verizon Wireless communications network in the Town of Charlton. Upon completion, new, advanced emergency and non-emergency 4G Verizon Wireless communication services will be provided across the south and central portions of town, in a matter consistent with all applicable technological and land use requirements.

### Long Term Evolution (LTE) Technology

The technology used by Verizon Wireless for migration to 4G network functionality is known as LTE (Long Term Evolution). LTE is an advanced high-performance air interface standard that is designed to increase mobile telecommunications network coverage and capacity, offering throughput speeds that range from 12 to 20 times faster than Verizon Wireless' existing 3G technology, known as EVDO (Evolution Data Optimized). It is important to note however that 4G LTE technology operates at lower power levels than 3G, and as a result spacing between new 4G facilities is generally less than spacing between legacy 3G (as well as earlier analog and 2G) facilities. In the foreseeable future, the LTE standard will be backward-compatible with Verizon Wireless' existing voice and data services, so customers using LTE devices in areas where LTE service may not exist will seamlessly access and use the legacy 3G network.

As compared to Verizon Wireless' existing 3rd generation CDMA network, LTE technology uses different signaling schemes (i.e., frequency division multiplexing similar to that of modern-day Wi-Fi and WiMAX versus Verizon Wireless' existing 3rd generation CDMA, or Code Division Multiple Access, technology), operating frequencies and power levels. Having said this, the basic wireless network design principles are similar and will apply to this technology, and the ability to control and minimize interference is critical to the overall performance and reliability of the network. For these reasons, the LTE deployment focuses on achieving acceptable levels of network performance by carefully minimizing interfering signals from neighboring and distant sites while maximizing coverage within each site's target coverage area. This objective is pursued by installing high performance LTE antennas at each new and existing facility, with each LTE antenna selected based on its inherent operational characteristics (antenna pattern, gain) and

adjusted (via antenna orientation, downtilt, etc.) to contain coverage within only a well-defined target area (thus reducing interference with neighboring and distant sites).

To achieve acceptable data speeds and performance in LTE, a mobile device must operate in a relatively low interference environment (i.e., where spillover coverage from surrounding and distant facilities is minimized) while receiving sufficiently strong signals from its intended serving cell. As with CDMA where a pilot or reference signal is used to determine cell coverage, LTE coverage and performance is also determined by the strength and quality of the reference signal generated by a nearby serving site. In LTE terms, the signal strength of this reference signal is referred to as the Reference Signal Received Power level, or RSRP. An LTE mobile device must be able to receive and decode the reference signal in order to successfully connect and maintain reliable connection to the wireless network. The reference signal power level used by Verizon Wireless to ensure reliable LTE coverage, service and performance in areas like the Town of Charlton is -105 dBm.

#### **Charlton Center Communications Facility**

As mentioned previously, the purpose of the Charlton Center communications facility is to provide an adequate and safe level of emergency and non-emergency Verizon Wireless communications services to the south and central portions of the Town of Charlton. More specifically, the facility will offer significant improvements in both capacity (ability for the network to adequately satisfy the demand for high speed wireless services) and in-building coverage to the homes, businesses and communities along County Route 51 (CR-51 / Charlton Rd), County Route 52 (CR-52 / Jockey St & Swaggertown Rd), and into the Hamlet of Charlton. Additionally, the proposed facility will fill in existing coverage gaps in the 4G network and along several local thoroughfares and community roads (e.g., Stage Rd, Maple Ave, Peaceable St, etc.) across the target coverage area.

Existing 4G/LTE service in the area is limited and originates from several existing Verizon Wireless communications facilities within the Town of Charlton and in the neighboring Towns of Ballston and Glenville. Verizon Wireless' surrounding facilities include its "Charlton" site (3.5 miles north on the self-support tower off Jockey St in the Town of Charlton), "Ballston" site (3.8 miles east on the self-support tower off NY State Route 50 in the Town of Ballston), "Glenville" (3.7 miles southeast on a monopole tower off NY-50), "Rotterdam Junction" (4.5 miles south on a monopole tower off Rector Rd), and "Pattersonville" (4.5 miles south on a monopole tower off Waters Rd) sites. Although these facilities are successful in providing coverage within their intended localized areas, they do not provide sufficient 4G/LTE coverage to the targeted area in southern and central Charlton.

To demonstrate the current (and inadequate) level of 4G/LTE service in Charlton, a propagation analysis using Verizon Wireless' -105 dBm RSRP design standard signal level threshold is provided at **Figure 1** below<sup>1</sup>. When viewing the coverage map in **Figure 1**, areas of Blue indicate reliable coverage from existing facilities; whereas areas of White indicate a lack of sufficient 4G coverage.

As displayed in **Figure 1** and as indicated by the large areas of white background, coverage is currently deficient in the southern and central portions of town. In particular, several linear miles along main, secondary and local travel routes (e.g., CR-51/Charlton Rd, CR-52/Jockey St, Stage Rd, Maple Ave, Peaceable St, etc., etc.) lack adequate 4G wireless service, as well as the homes, businesses and communities across the target coverage improvement area. As a result, deployment of a new wireless facility in the central portion of the Town of Charlton is required.

<sup>&</sup>lt;sup>1</sup> All propagation studies in this report were developed using a Verizon Wireless in-house radio frequency propagation prediction tool called "Geoplan".

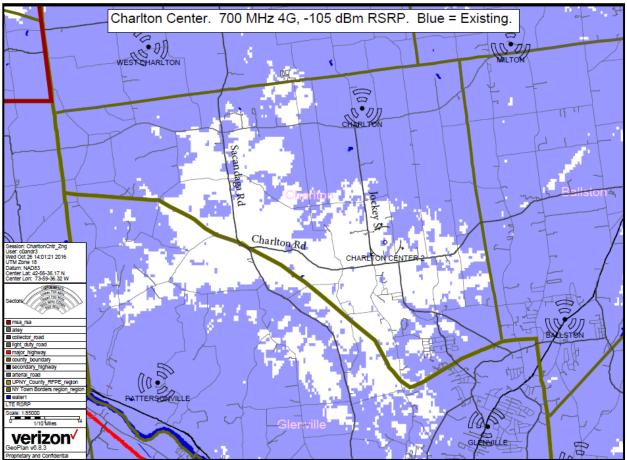


Figure 1. Existing Reliable Verizon Wireless 4G Coverage in the Charlton Area.

Once Verizon Wireless determines that a particular geographic area cannot be adequately served by the existing communications facilities in the surrounding network (i.e., coverage is deficient and/or calling capacity provided by the existing facilities is reaching upper limits), a new wireless facility "search area" is developed. The "search area" is created by a qualified in-house Radio Frequency (RF) engineer and is a definitive geographic area where a cell site needs to be located in order to satisfy a site's coverage and/or capacity objectives.

With the search area identified, Verizon Wireless looks for a site within the search area that is both technically appropriate and sensible from a zoning and land use perspective. Subject to technical limitations, collocation on an existing tower or other tall structure is generally preferred by municipalities and wireless carriers alike, as collocation typically results in a cheaper and expedited solution to bring new and or improved service to a currently under-served area.

When considering its options for a new wireless facility in the central Charlton area, Verizon Wireless was aware of and analyzed the Town's water tank off Cherry Lane as a potential collocation opportunity to resolve its localized coverage deficiencies. Since the water tank is at a suitable location and offers sufficient height from which Verizon Wireless' antennas would provide the desired level of 4G coverage improvements across central and southern Charlton, Verizon Wireless pursued entering into a lease with the Town to collocate on its water tank.

As the Town Board is aware, and following many negative comments regarding the proposed water tank collocation expressed at informational meetings with residents of Charlton living in and around the Cherry Lane water tank area, the Town Board requested that Verizon Wireless pursue a raw land tower within a reasonable distance of and at similar ground elevation as the targeted water tank facility. As a result, Verizon Wireless, with input from the Town, pursued feasible raw land candidates in areas capable of providing comparable coverage as the originally-proposed Cherry Lane water tank collocation while also satisfying the Town's local zoning and tower siting laws to the fullest extent possible.

Areas to the east and south of the Cherry Lane water tank were discounted as a new tower facility in these areas would provide excessive overlapping coverage with existing Verizon Wireless facilities. Four properties were considered to the north and west that exhibited the potential to replace the anticipated coverage from the water tank collocation from a new tower facility of similar height (compared to the proposed water tank 150 $\pm$  collocation). Of the four properties identified, Verizon Wireless received affirmative interest from the Hunt family and was able to secure lease rights to construct a telecommunications facility on their property at a location agreeable to both parties. (Note that none of the other property owners contacted expressed interest in hosting the proposed Verizon Wireless facility). Ultimately the Hunt property at 764 Charlton Road is well suited for new tower development based on its large size, the ability to place the tower facility nearly  $\frac{1}{2}$  mile off Charlton Rd in an area where it has minimal aesthetic impact to the surrounding area, and is located where coverage from the originally-proposed water tank collocation.

A propagation analysis showing the new emergency and non-emergency coverage and calling capacity that will be provided by the proposed Charlton Center communications facility (shown as the Green layer) is included at **Exhibit 2** below.

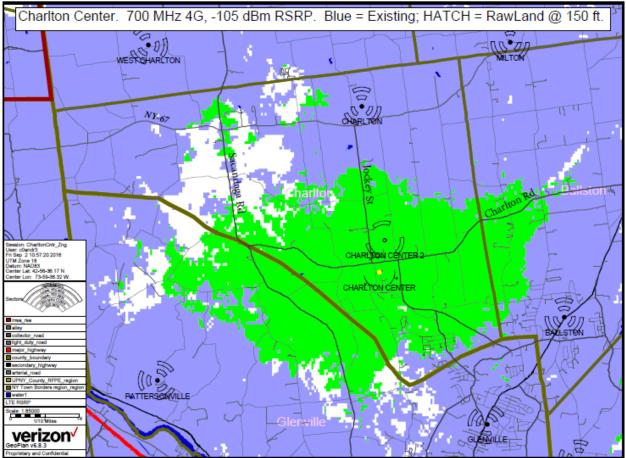


Figure 2. Proposed New VZW 4G Coverage in the Moreau Area (from the Fernwood Site).

As the results in **Figure 2** demonstrate, once complete Verizon Wireless' Charlton Center site will provide the desired level of new and improved 4G service across the southern and central portions of the Town of Charlton. (Note that the remaining coverage gaps along Sacandaga Rd in western Charlton are terrainblocked from realizing appreciable coverage improvements from the proposed Charlton Center site; these remaining gaps will be addressed as future need arises).

#### **Technical Information**

#### Frequency / Modulation / Type of Service

The frequency, modulation and class of service of Verizon Wireless' radio equipment will be:

| Frequencies:      | <u>Cellular (B Band)</u><br>Tx 880.020 – 889.98 and 891.51 - 893.970 MHz<br>Rx 835.020 – 844.98 and 846.51 - 848.970 MHz |
|-------------------|--|
|                   | <u>Personal Communications Service (PCS)</u><br>Tx 1975.00 – 1990.00 MHz<br>Rx 1895.00 – 1910.00 MHz                     |
|                   | <u>WU 700 MHz Upper Band (Block C)</u><br>Tx 746.00 – 757.00 MHz<br>Rx 776.00 – 787.00 MHz                               |
|                   | <u>Advanced Wireless Services (AWS-1) (Block F)</u><br>Tx 2145.00 – 2155.00 MHz<br>Rx 1745.00 – 1755.00 MHz              |
| Modulation:       | Long Term Evolution (LTE)  |
| Class of Service: | Handheld Mobile Communications   |

#### Categorical Exclusion / Maximum Permitted Exposure (MPE)

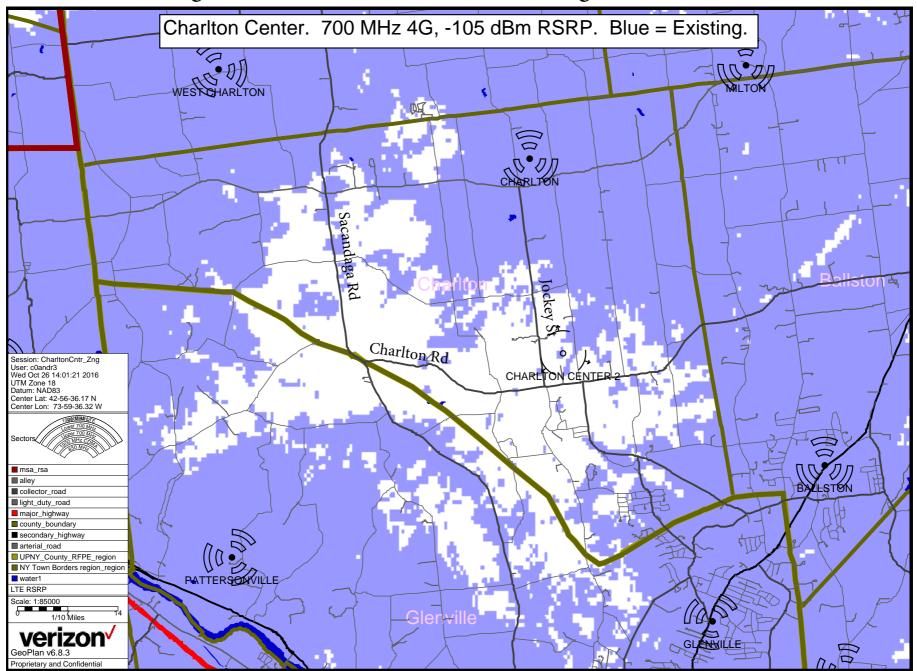
A completed report entitled "RF Safety FCC Compliance of Proposed Communications Facility Modifications" prepared by Millennium Engineering, P.C. is included at **Tab 7**, to document that the proposed modifications will be: (a) in full compliance with the current FCC RF emissions guidelines (NIER); and (b) categorically excluded from local regulation under applicable federal law.

Respectfully submitted by:

G.l.

Rick Andras Radio Frequency (RF) Design Engineer Cellco Partnership d/b/a Verizon Wireless

Date: October 27, 2016



# Exhibit 1. Existing Reliable Verizon Wireless 4G Coverage in the Charlton Area

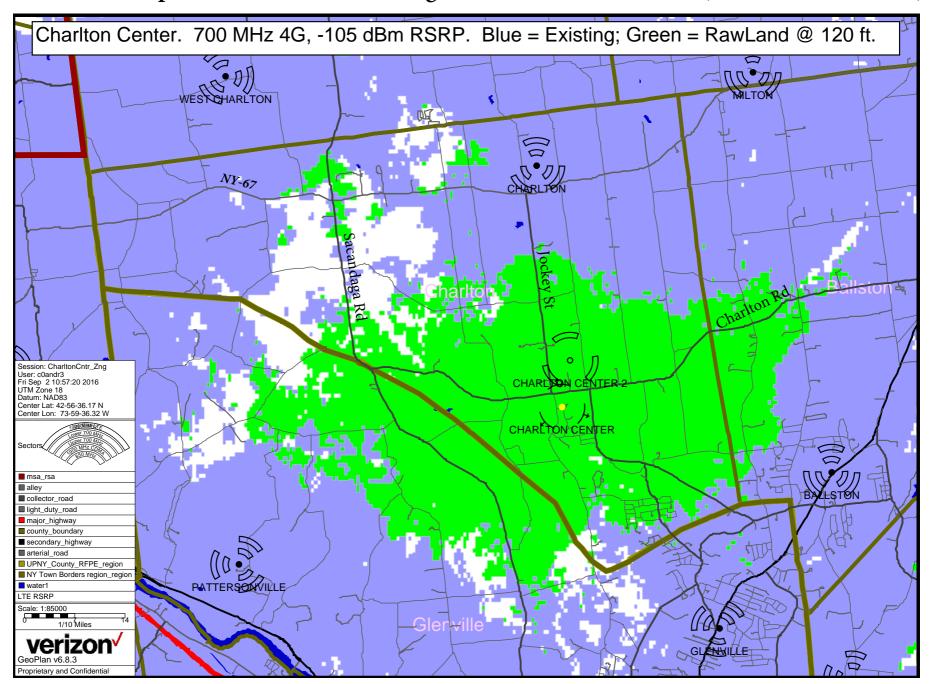


Exhibit 2. Proposed New 4G LTE Coverage in the Town of Charlton (New Tower @ 120 ft.)



Network Engineering 225 Jordan Road Troy, New York 12180

September 10, 2019

Mr. Alan Grattidge, Supervisor Town of Charlton Town Hall 758 Charlton Rd Charlton, NY 12019

RE: Verizon Wireless Telecommunications Facility Application for its proposed "Charlton Center" site at 764 Charlton Rd. Response to RF-related comment in the TDE letter dated January 5, 2017 (VZ 5-year build out plan).

Dear Supervisor Grattidge:

The information contained in this letter is provided in response to the RF-related comment raised in the January 5, 2017 report from the Environmental Design Partnership, LLP (EDP) to Charlton Supervisor Grattidge in connection with Verizon Wireless' proposed "Charlton Center" wireless facility. This response letter specifically addresses the comment in item number 2 in the <u>Application Materials</u> Section at the bottom of page 1 of the EDP report, which states "As required by 3(a)(v)(8) of the ordinance, the applicant should inform the Board of any plans to supplement their current proposal over the next five years and how service to the Sacandaga Road corridor might otherwise be improved."

To address this question, it is important to note that Verizon Wireless engineers monitor network performance and assess areas in need of improved wireless service (both capacity and coverage) on a regular basis. New solutions are planned and developed based on priority and budget, and in general follow a rolling 2-year schedule (meaning new solutions funded and released for RF Engineering and Real Estate to begin working on in 2019 are projected for 2020 or 2021 commercial activation). Since the start-to-finish new site development process typically follows a 2-year cycle, it is very difficult to predict which sites or solutions may be needed 3 or more years in the future.

The 4G coverage map at **Figure 1** below (pg. 2) is a copy of the proposed coverage map for a new 120 ft. tower at 764 Charlton Rd. This map was provided in Verizon Wireless' zoning application package, where the Blue coverage layer represents reliable wireless 4G coverage in the Town of Charlton, the Green layer is proposed new 4G coverage, and areas of White indicate portions of the town where future wireless coverage improvements will be required. As the map at **Figure 1** demonstrates, poor and unreliable Verizon Wireless 4G coverage will remain in the western portions of Town after the deployment of the Charlton Center facility, and specifically along and surrounding Sacandaga Rd and near the Sacandaga Rd / NY-67 intersection.

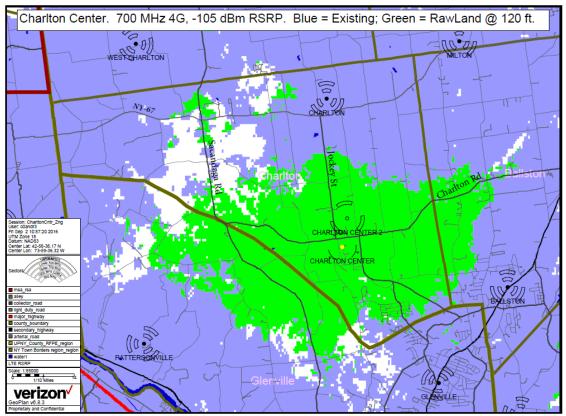


Figure 1. Map of Proposed New 4G Wireless Coverage in the Town of Charlton

Despite the need for further coverage improvements in the western portion of town, unfortunately at this time there are no plans for additional wireless facilities in the Town of Charlton for the foreseeable future. Recognizing that plans, priorities and corporate network performance directives change periodically as dictated by advances in technology and equipment, and keeping in mind that it is nearly impossible to predict how plans may change 3-to-5 years in the future, current priorities and forecasts indicate that no new Verizon Wireless facilities will be developed in Charlton in the next 5 years.

Based on the information in this letter, other than the in-process Charlton Center facility, it is unlikely that any other new wireless facilities will be developed in the Town of Charlton over the next 5 years.

Very truly yours,

h ala

Rick Andras Radio Frequency (RF) Design Engineer Cellco Partnership d/b/a Verizon Wireless

# TAB 7

October 27, 2016

Attn: Rick Andras, RF Design Engineer Verizon Wireless 225 Jordan Road Troy, NY 12180

## Re: RF Safety FCC Compliance of Proposed Communications Facility Site Name: Charlton Center, Proposed 120' Monopole (124' Overall Height) 764 Charlton Road, Charlton, NY 12019 (Town of Charlton, Saratoga County)

Dear Mr. Andras,

I have performed an analysis to provide an independent determination and certification that the proposed Verizon Wireless communications facility at the above referenced property will comply with Federal Communications Commission (FCC) exposure limits and guidelines for human exposure to radiofrequency electromagnetic fields (Code of Federal Regulation 47 CFR 1.1307 and 1.1310). As a registered professional engineer I am under the jurisdiction of the State Registration Boards in which I am licensed to hold paramount the safety, health, and welfare of the public and to issue all public statements in an objective and truthful manner.

The proposed communications facility consists of a proposed 120' monopole (124' overall height – top of lightning rod). The proposed Verizon Wireless antenna configuration from the information furnished to me consists of (1) 700 MHz (LTE) antenna (A/G: JMA X7C-865-VR0, B: JMA X7C-FRO-860-VR0, or equivalent), (1) 850 MHz (LTE) antenna (A/G: JMA X7C-865-VR0, B: JMA X7C-FRO-860-VR0, or equivalent), (1) 1900 MHz (LTE) antenna (CommScope SBNHH-1D65C or equivalent) and (1) 2100 MHz (LTE) antenna (CommScope SBNHH-1D65C or equivalent) and (1) 2100 MHz (LTE) antenna (CommScope SBNHH-1D65C or equivalent) on each of three faces (total of 12 antennas) spaced with azimuths of 10/130/250 degrees on the horizontal plane with a centerline of 116' above ground level and no mechanical downtilt. Transmitting from these antennas initially will be (1) 700 MHz LTE wideband channel and up to (2) 2100 MHz LTE wideband channels per face. The 850 MHz and 1900 MHz antennas will not be initially activated.

The following assumptions are made for reasonable upper limit radiofrequency operating parameters for the proposed facility due to Verizon Wireless antennas alone to accommodate all licensed frequency bands:

- (1) 700 MHz (LTE) transmit antenna per face at 0-10 degrees mechanical downtilt
- (1) 850 MHz (LTE) transmit antenna per face at 0-10 degrees mechanical downtilt
- (1) 1900 MHz (LTE) transmit antenna per face at 0-10 degrees mechanical downtilt
- (1) 2100 MHz (LTE) transmit antenna per face at 0-10 degrees mechanical downtilt
- (1) 700 MHz LTE wideband channel/face at 2x60W max power/face before cable loss/antenna gain
- (1) 850 MHz LTE wideband channel/face at 2x60W max power/face before cable loss/antenna gain
- (2) 1900 MHz LTE wideband channels/face at 4x30W max power/face before cable loss/antenna gain
- (2) 2100 MHz LTE wideband channels/face at 4x45W max power/face before cable loss/antenna gain
- The facility would be at or near full capacity during busy hour

Using the far-field power density equations from FCC Bulletin OET 65, the power density at any given distance from the antennas is equal to  $0.360(\text{ERP})/\text{R}^2$  where R is the distance to the point at which the exposure is being calculated. The given equation is a conversion of the OET 65 power density equation for calculating power density given the distance in feet and the result in metric units (mW/cm<sup>2</sup>). This calculated power density assumes the location is in the main beam of the vertical pattern of the antenna. After making an adjustment for the reduction in power density due to the vertical pattern of the transmit antenna, the calculated ground level power density is below 1  $\mu$ W/cm<sup>2</sup> at any distance from the antenna system of Verizon Wireless.

The 700 MHz "Upper C Block" transmit frequencies (746-757 MHz), which Verizon Wireless is licensed by the FCC to operate, have an uncontrolled/general population maximum permissible exposure (MPE) FCC limit of 497  $\mu$ W/cm<sup>2</sup>. The 850 MHz (cellular) "B Band" transmit frequencies (880-894 MHz), which Verizon Wireless is also licensed by the FCC to operate, have an uncontrolled/general population MPE FCC limit of 587  $\mu$ W/cm<sup>2</sup>. The 1900 MHz (PCS) "C4 Block" transmit frequencies (1980-1985 MHz), which Verizon Wireless is also licensed by the FCC to operate, have an uncontrolled/general population MPE FCC limit of 1000  $\mu$ W/cm<sup>2</sup> or 1 mW/cm<sup>2</sup>. The 2100 MHz (AWS) "E Block", "F Block", "G Block" and "J Block" transmit frequencies (2140-2145, 2145-2155, 2155-2160, 2170-2180 MHz), which Verizon Wireless is also licensed by the FCC to operate, have an uncontrolled/general population MPE FCC limit of the FCC to operate, have an uncontrolled/general work" or 1 mW/cm<sup>2</sup>. The 2100 MHz (AWS) "E Block", "F Block", "G Block" and "J Block" transmit frequencies (2140-2145, 2145-2155, 2155-2160, 2170-2180 MHz), which Verizon Wireless is also licensed by the FCC to operate, have an uncontrolled/general population MPE FCC limit of 1000  $\mu$ W/cm<sup>2</sup> or 1 mW/cm<sup>2</sup>. Therefore, the exposure at ground level at any distance from the structure would be substantially below 1 % of the FCC exposure limits due to Verizon Wireless antennas alone. The extremely low ground exposure levels are due to the elevated positions of the antennas on the structure and the low power which these systems operate. See Figures 1 and 2 in back of this report which discuss the relationship between height, proximity or distance, and orientation to level of electromagnetic field exposure.

From the standpoint of RF exposure, the presence of Verizon Wireless would not preclude the future addition of other tenants or licensees including emergency or other municipal services which benefit the public from collocation on this structure. There is a substantial margin of safety to allow for the addition of transmit antennas of other communications services. Keep in mind that continuous exposure at 100 % of standard is considered by the scientific community as just as safe as 1 % of standard since the exposure limits themselves contain a large margin of safety.

In summary, the proposed communications facility will comply with all applicable exposure limits and guidelines adopted by the FCC governing human exposure to radiofrequency electromagnetic fields (FCC Bulletin OET 65). Federal law (FCC Rule Title 47 CFR 1.1307 and 1.1310) sets the national standard for compliance with electromagnetic field safety. The FCC exposure limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI). Thus, there is full compliance with the standards of the IRPA, FCC, IEEE, ANSI, and NCRP.

## **General Information on Electromagnetic Field Safety**

Verizon Wireless facilities transmit and receive low power electromagnetic fields (EMF) between base station antennas and handheld portable cell phones. The radiofrequency energy from these facilities and devices is nonionizing electromagnetic energy. Non-ionizing, unlike X-Rays or other forms of potentially harmful energy in the microwave region, is not cumulative over time nor can the energy change the chemical makeup of atoms (e.g. strip electrons from ions). "Non-ionizing" simply means that the energy is not strong enough to break ionic bonds.

Safe levels of electromagnetic fields were determined by numerous worldwide organizations, such the International Committee for Non-Ionizing Radiation Protection, a worldwide multi-disciplinary team of researchers and scientists studying the effects of non-ionizing radiofrequency energy such as that emitted by base stations or cell phones. The FCC did not arbitrarily establish their own standards, but adopted the recommendations of all leading organizations that set standards and research the subject such as the Institute of Electrical and Electronics Engineers (IEEE), American National Standards Institute (ANSI), and National Council on Radiation Protection and Measurements (NCRP).

When Verizon Wireless is located on an antenna structure such as a self-supporting lattice type tower, lattice tower, guyed tower, watertank, etc. the antennas are typically 10 meters or more above ground level (10 meters = 32.81 feet). With the relatively low power and elevated positions of the antennas on the structure with respect to ground level, the maximum ground level exposure can rarely approach 1 % of the applicable FCC exposure limit regardless of how many sets of antennas are collocated on the structure. For this reason, the FCC considers the facilities "categorically excluded" from routine evaluation at antenna heights above 10 meters (or above 32.81 feet). Categorical exclusion exempts a site from routine on-site evaluation. However, the facility is not excluded from compliance with the federal exposure limits and guidelines. The types of facilities used by Verizon Wireless typically elevated on antenna structures (away from access to close proximity, i.e. greater than 10 meters or 32.81 feet) simply cannot generate ground level exposure levels that approach the limits under any circumstances.

From a regulatory perspective, the FCC has sole jurisdiction over the regulation of electromagnetic fields from all facilities and devices. The FCC has established guidelines and limits over emissions and exposure to protect the general public. The FCC also has certain criteria that trigger when an environmental evaluation must be performed. The criteria are based on distance from the antennas (accessibility) and transmit power levels.

# **CONCLUSIONS**:

1) The proposed communications facility will comply with electromagnetic field safety standards by a substantial margin (well below 1 %) in all publicly accessible areas. This includes the base of the proposed structure and any areas in proximity to the proposed structure.

2) Verizon Wireless takes appropriate measures to ensure that all telecommunications facilities (including this proposed facility) comply with applicable exposure limits and guidelines adopted by the FCC governing human exposure to radiofrequency electromagnetic fields (FCC Bulletin OET 65).

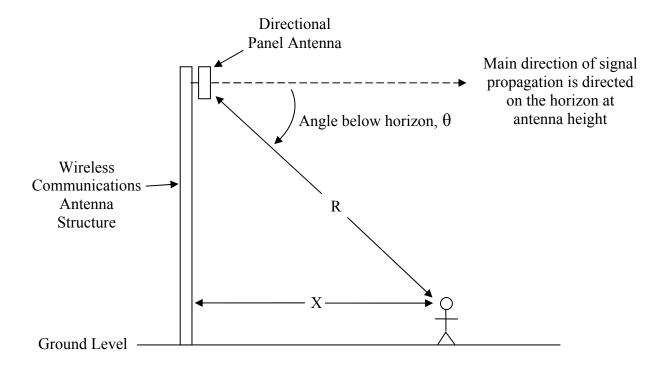
3) In cases where such compliance exists, the subject of electromagnetic field safety is preempted. The Telecommunications Act of 1996 states that: "No state or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the [FCC's] regulations concerning such emissions." Telecommunications Act of 1996, § 332[c][7][B][iv].

Respectfully,

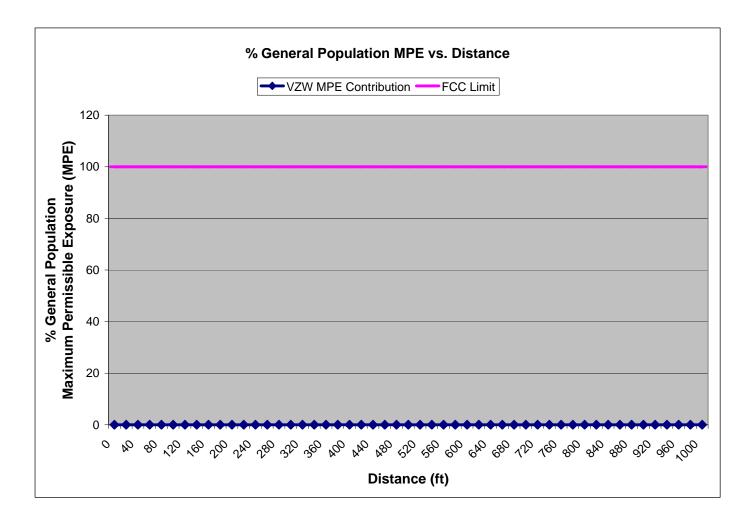
Paul Dugan, P.E. Registered Professional Engineer New York License Number 79144



# FIGURE 1: Diagram of Electromagnetic Field Strength as a Function of Distance and Antenna Orientation



The above diagram illustrates the conceptual relationship of distance and orientation to directional panel antennas used in wireless communications. At the base of the structure (x = 0), the distance R is a minimum when the angle of the direction of propagation  $\theta$  is a maximum. As one moves away from the antenna structure, the horizontal distance X increases as well as the distance R to the antennas while the angle below the horizon decreases. For this reason, electromagnetic fields from these facilities remain fairly uniform up to a few hundred feet and continue to taper off with distance. As noted in the report, the electromagnetic fields from these types of facilities are hundreds of times below safety standards at any distance from the antenna structure, making them essentially indistinguishable relative to other sources of electromagnetic fields in the environment due to the elevated heights of the antennas and the relatively low power at which these systems operate.



# FIGURE 2: Graph of MPE Contribution vs. Distance

The above graph represents the contribution of Verizon Wireless to the composite electromagnetic field exposure level at any distance from the base of the structure. The contribution of Verizon Wireless will remain well under 1% of the FCC general population maximum permissible exposure (MPE) at any distance as shown.

# DECLARATION OF ENGINEER

Paul Dugan, P.E., declares and states that he is a graduate telecommunications consulting engineer (BSE/ME Widener University 1984/1988), whose qualifications are a matter of record with the Federal Communications Commission (FCC). His firm, Millennium Engineering, P.C., has been retained by Verizon Wireless to perform power density measurements or calculations for an existing or proposed communications facility and analyze the data for compliance with FCC exposure limits and guidelines for human exposure to radiofrequency electromagnetic fields.

Mr. Dugan also states that the calculations or measurements made in the evaluation were made by himself or his technical associates under his direct supervision, and the summary letter certification of FCC compliance associated with the foregoing document was made or prepared by him personally. Mr. Dugan is a registered professional engineer in the Jurisdictions of Pennsylvania, New Jersey, Delaware, Maryland, Virginia, New York, Connecticut, District of Columbia, West Virginia and Puerto Rico with over 30 years of engineering experience. Mr. Dugan is also an active member of the Association of Federal Communications Consulting Engineers, the National Council of Examiners for Engineering, the National Society of Professionals Engineers, the Pennsylvania Society of Professional Engineers, and the Radio Club of America. Mr. Dugan further states that all facts and statements contained herein are true and accurate to the best of his own knowledge, except where stated to be in information or belief, and, as to those facts, he believes them to be true. He believes under penalty of perjury the foregoing is true and correct.

Paul Dugan, P.E.

Executed this the 27<sup>th</sup> day of October, 2016.

### PAUL DUGAN, P.E. 132 Jaffrey Road Malvern, Pennsylvania 19355

### Cell: 610-220-3820 Fax: 610-644-4355 Email: pauldugan@comcast.net Web Page: www.millenniumengineering.net

| EDUCATION:                    | <u>Widener University</u> , Chester, Pennsylvania<br>Master of Business Administration, July 1991<br>Master of Science, Electrical Engineering, December 1988<br>Bachelor of Science, Electrical Engineering, May 1984  |
|-------------------------------|---|
| PROFESSIONAL<br>ASSOCIATIONS: | Registered Professional Engineer in the following jurisdictions:<br>Pennsylvania, License Number PE-045711-E<br>New Jersey, License Number GE41731<br>Maryland, License Number 24211<br>Delaware, License Number 11797<br>Virginia, License Number 36239<br>Connecticut, License Number 22566<br>New York, License Number 079144<br>District of Columbia, License Number PE-900355<br>West Virginia, License Number 20258<br>Puerto Rico, License Number 18946  |
|                               | <ul> <li>Full member of The Association of Federal Communications Consulting Engineers (www.afcce.org) January 1999 to Present</li> <li>Elected to serve on the Board of Directors for 2006-2007</li> <li>Full member of The National Society of Professional Engineers (www.nspe.org) and the Pennsylvania Society of Professional Engineers (www.pspe.org) June 2003 to Present</li> <li>Currently serving on the Board of Directors of the Valley Forge Chapter and the South East Region Vice-Chair for the "Professional Engineers in Private Practice" Executive Committee</li> </ul> |
|                               | Actively participate in Chester County ARES/RACES (CCAR <u>www.w3eoc.org</u> ) which prepares and<br>provides emergency backup communications for Chester County Department of Emergency Services,<br>March 2005 to Present<br>Full member of The National Council of Examiners for Engineering<br>(www.ncees.org) May 2001 to Present<br>Full Member of The Radio Club of America<br>(www.radio-club-of-america.org) December 2003 to present  |
| PROFESSIONAL<br>EXPERIENCE:   | Millennium Engineering, P.C., Malvern, Pennsylvania         Position: President, August 1999 to Present (www.millenniumengineering.net)         Verizon Wireless, Plymouth Meeting, Pennsylvania         Position: Cellular RF System Design/Performance Engineer, April 1990 to August 1999         Communications Test Design, Inc., West Chester, Pennsylvania         Position: Electrical Engineer, May 1984 to April 1990   |

# TAB 8



September 10, 2019

Town of Charlton Town Board 758 Charlton Road Charlton, New York 12019

RE: <u>Application for Site Plan Review and Exceptional Use Permit</u> - Application of Cellco Partnership d/b/a Verizon Wireless (Proposed Communications Tower located at 764 Charlton Road (246.-2-26.1))

Ladies and Gentlemen:

With respect to the above application, and in accordance with applicable federal provisions, Cellco Partnership d/b/a Verizon Wireless ("Verizon Wireless") operates a telecommunications network authorized by the Federal Communications Commission (FCC) to provide state of the art digital and/or cellular wireless communications in many parts of the nation, including upstate New York. Verizon Wireless' operations and network are licensed and regulated by the FCC.

Verizon Wireless' radio equipment is designed to transmit frequencies only within the allocated frequency bands and each transmitter is carefully adjusted to comply with FCC regulations for power output and frequency. These procedures prevent interference with other radio services, public safety communications, airport navigation, cordless phones, computers and other community office or residential household appliances.

The incidence of these transmissions causing interference with other radio service is rare. All other radio communication services, including broadcast radio and television, are assigned to specific frequency bands, separate and distinct from cellular and other frequencies. For instance AM Radio operates between 0.5 -1.5 MHz and VHF Television operates between 54 - 215 MHz. In addition, receivers for other services are similarly designed to prevent interference from out of band service. In the unlikely event that malfunctioning equipment or improper settings are shown to cause interference with an existing service, Verizon Wireless would be required, under the conditions of its FCC license, to take immediate steps to correct any problems.

Thank you for considering this application.

Very truly yours,

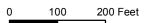
R.L. G.D. -

Richard Andras Radio Frequency (RF) Design Engineer

# TAB 9



CE# 6008 5/9/2019

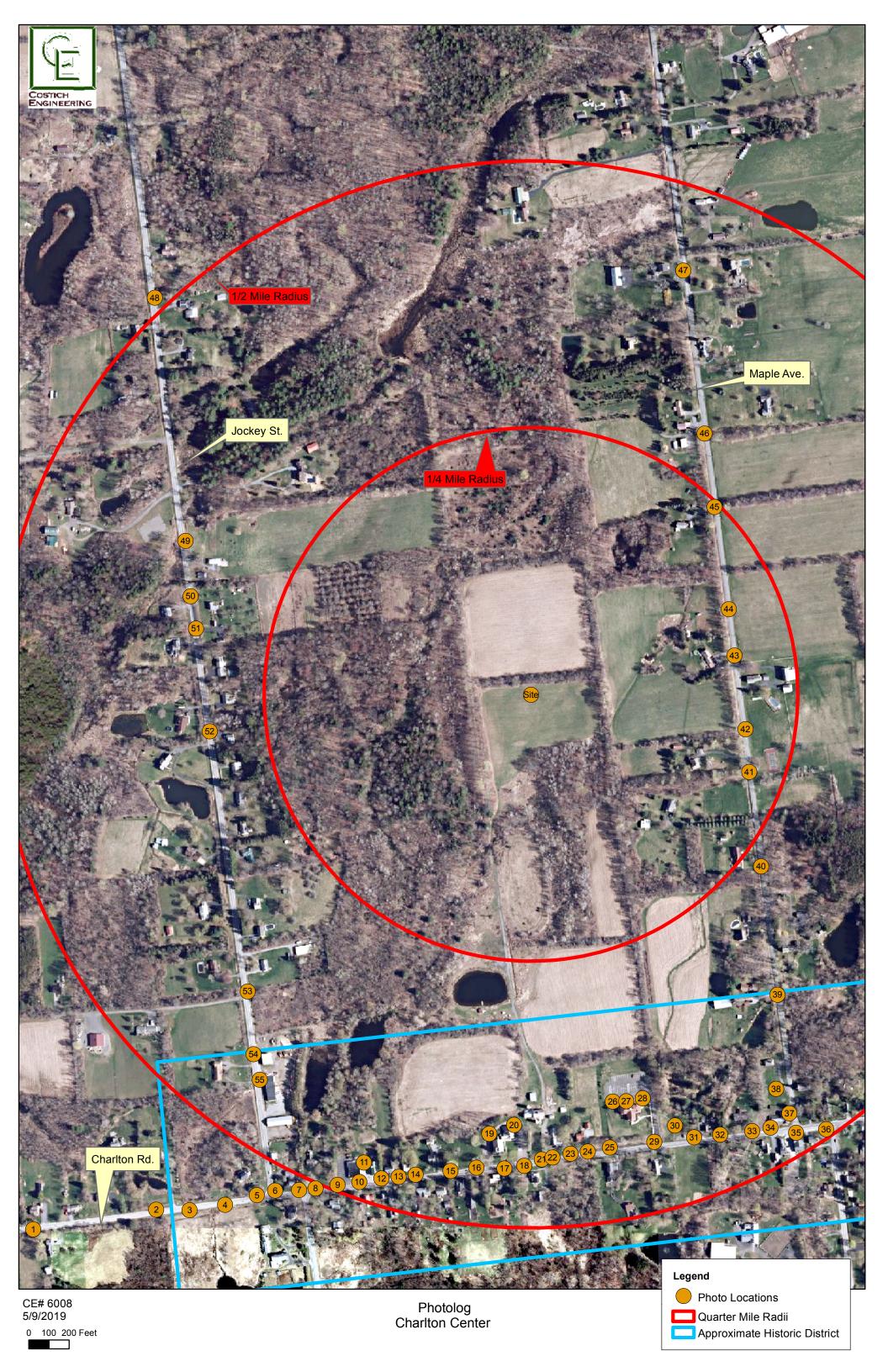


# Legend



Photo Locations

- Approximate Historic District





| $(\mathbf{n} \in \mathbf{I})$ | Costich Engineering<br>Land Surveying     | Charlton Center   | PHOTO DESCRIPTION<br>View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|-------------------------------|---|---|--|--|
|                               | Landscape Architecture<br>217 LAKE AVENUE | Photo 1   | PHOTO LOCATION<br>View NE from Charlton Rd.  | 6008                                   |
|                               | ROCHESTER, NY 14608<br>(585) 458-3020     | PHOTO COORDINATES<br>42° 55' 59.0736" N, 73° 58' 27.3504" W | 3614' from site  | VZW JOB#<br>20191924042                |



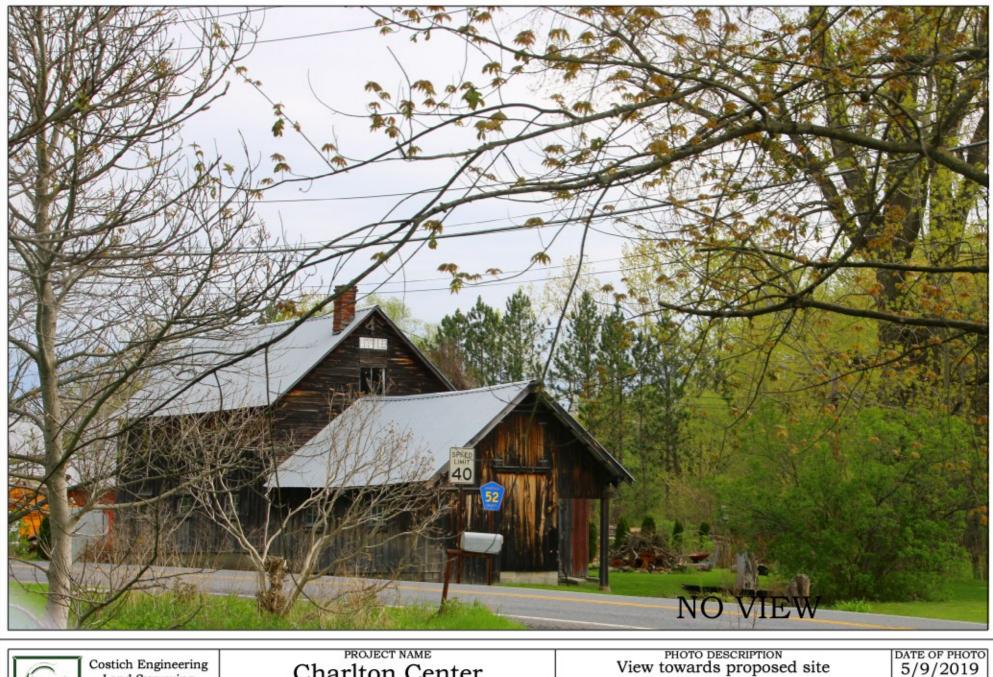
| G                                     | Costich Engineering<br>Land Surveying                       | Charlton Center                              | PHOTO DESCRIPTION<br>View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019 |
|---------------------------------------|---|--|--|---------------------------|
|                                       | Landscape Architecture<br>217 LAKE AVENUE                   | Photo 2                                      | PHOTO LOCATION   | C.E. JOB#<br>6008         |
| COSTICH<br>ENGINEERING (585) 458-3020 | Photo coordinates<br>42° 55' 59.9556" N, 73° 58' 19.1568" W | View NE from Charlton Rd.<br>3152' from site | VZW JOB#<br>20191924042  |                           |



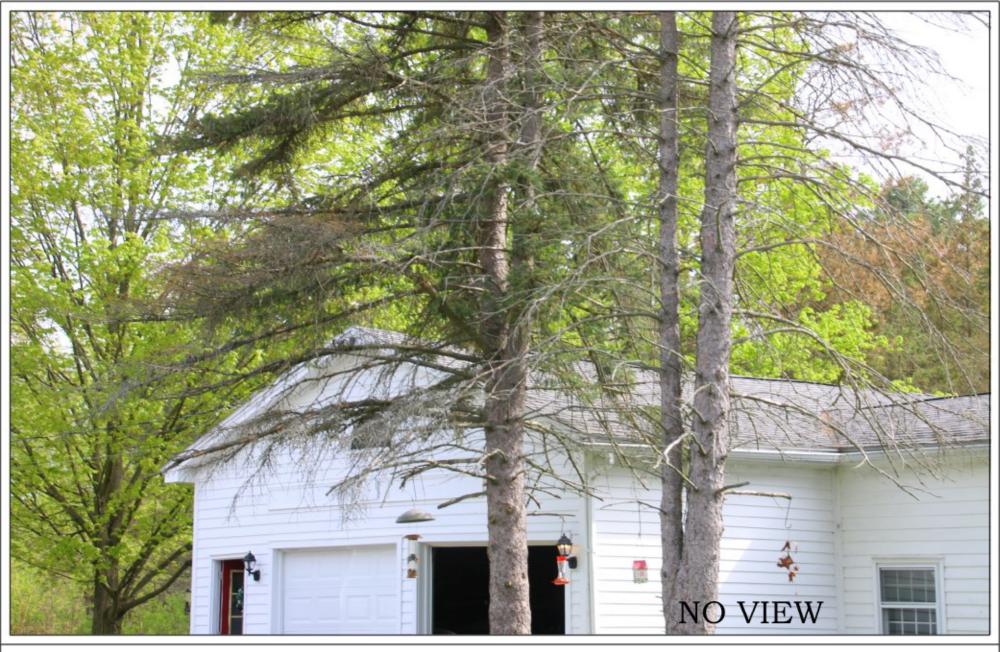
| G                      | Costich Engineering<br>Land Surveying     | Charlton Center   | PHOTO DESCRIPTION<br>View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|------------------------|---|---|--|--|
|                        | Landscape Architecture<br>217 LAKE AVENUE | Photo 3   | PHOTO LOCATION   | 6008                                   |
| COSTICH<br>ENGINEERING | ROCHESTER, NY 14608                       | PHOTO COORDINATES<br>42° 55' 59.9196" N, 73° 58' 16.9248" W | View NE from Charton Rd.<br>3058' from site  | VZW JOB#<br>20191924042                |

# NO VIEW

| G                      | Costich Engineering<br>Land Surveying     | Charlton Center   | PHOTO DESCRIPTION<br>View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|------------------------|---|---|--|--|
|                        | Landscape Architecture<br>217 LAKE AVENUE | Photo 4   | PHOTO LOCATION   | 6008                                   |
| COSTICH<br>ENGINEERING | TICH ROCHESTER, NY 14608                  | Photo coordinates<br>42° 56' 00.1536" N, 73° 58' 14.5560" W | View NE from Charton Rd.<br>2943' from site  | VZW JOB#<br>20191924042                |



| G                      | Costich Engineering<br>Land Surveying     | Charlton Center   | View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|------------------------|---|---|---|--|
|                        | Landscape Architecture<br>217 LAKE AVENUE | Photo 5   | PHOTO LOCATION  | 6008                                   |
| Costich<br>Engineering | ROCHESTER, NY 14608                       | Photo coordinates<br>42° 56' 00.6144" N, 73° 58' 12.4428" W | View NE from Charton Rd.<br>2822' from site                   | VZW JOB#<br>20191924042                |



|             | stich Engineering<br>and Surveying | Charlton Center   | View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|-------------|------------------------------------|---|---|--|
|             | dscape Architecture                | Photo 6   | PHOTO LOCATION  | 6008                                   |
| COSTICH ROC | ROCHESTER, NY 14608                | PHOTO COORDINATES<br>42° 56' 00.8232" N, 73° 58' 11.2188" W | View NE from Charton Rd. and Jockey St.<br>2761' from site    | VZW JOB#<br>20191924042                |



| Costich Engineering<br>Land Surveying  | Charlton Center  | View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|--|--|---|--|
| Landscape Architecture<br>217 LAKE AVENUE<br>COSTICH<br>ENGINEERING (585) 458-3020 | Photo 7<br>PHOTO COORDINATES<br>42° 56' 00.8376" N, 73° 58' 09.6240" W | PHOTO LOCATION<br>View NE from Charton Rd.<br>2705' from site | 6008<br>VZW JOB#<br>20191924042        |



 Landscape Architecture
 Photo 8

 217 LAKE AVENUE
 PHOTO COORDINATES

 ROCHESTER, NY 14608
 9HOTO COORDINATES

 (585) 458-3020
 42° 56' 00.9132" N, 73° 58' 08.5332" W

COSTICH

PHOTO LOCATION View NE from Charton Rd. 2664' from site

VZW JOB#

20191924042



| G                      | Costich Engineering<br>Land Surveying     | Charlton Center   | View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|------------------------|---|---|---|--|
|                        | Landscape Architecture<br>217 LAKE AVENUE | Photo 9   | PHOTO LOCATION  | 6008                                   |
| COSTICH<br>ENGINEERING | H ROCHESTER, NY 14608                     | PHOTO COORDINATES<br>42° 56' 01.0716" N, 73° 58' 07.0536" W | View NE from Charton Rd.<br>2606' from site                   | VZW JOB#<br>20191924042                |



| Costich Engineering<br>Land Surveying                        | Chariton Center   | PHOTO DESCRIPTION<br>View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|--|---|--|--|
| Landscape Architecture<br>217 LAKE AVENUE                    | Photo 10  | PHOTO LOCATION<br>View NE from Charton Rd.   | 6008                                   |
| COSTICH<br>ENGINEERING ROCHESTER, NY 14608<br>(585) 458-3020 | PHOTO COORDINATES<br>42° 56' 01.2012" N, 73° 58' 05.6100" W | 2555' from site  | VZW JOB#<br>20191924042                |





| Costich Engineering<br>Land Surveying | Chariton Center   | PHOTO DESCRIPTION<br>View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|---------------------------------------|---|--|--|
| Landscape Architecture                | Photo 12  | PHOTO LOCATION   | 6008                                   |
| Costich<br>ENGINEERING (585) 458-3020 | PHOTO COORDINATES<br>42° 56' 01.3560" N, 73° 58' 04.1556" W | View NE from Charton Rd.<br>2505' from site  | VZW JOB#<br>20191924042                |



| G                      | Costich Engineering<br>Land Surveying     | Charlton Center   | View towards proposed site<br>Balloons at 120', 140' and 160' | DATE OF PHOTO<br>5/9/2019<br>C.E. JOB# |
|------------------------|---|---|---|--|
|                        | Landscape Architecture<br>217 LAKE AVENUE | Photo 13  | PHOTO LOCATION  | - 6008                                 |
| COSTICH<br>ENGINEERING | ROCHESTER, NY 14608                       | Photo coordinates<br>42° 56' 01.4280" N, 73° 58' 03.0036" W | View NE from Charton Rd.<br>2473' from site                   | VZW JOB#<br>20191924042                |



