# EXHIBIT F

Inspector : **DEPARTMENT OF BUILDINGS** TOWN OF GREENBURGH, N.Y. This is to certify that Consolidated Clism. Co. Has Been Issued A Permit to Build phelter at base Counded photal 9 posel asternas on power fine + equipment Street Off Arbeley Rood Location teas Longo. Block 30000. lot Sheet Volume With the understanding that same will be in compliance with all laws, ordinances, codes, rules, and regulations of the Town of Greenburgh relating to such work. Dated at Greenburgh, N. Y. day of <u>angent</u>, 2000 ilding Inspector Permit No. 1182 Site 641

### TOWN OF GREENBURGH BUILDING DEPARTMENT 177 HILLSIDE AVENUE GREENBURGH NY 106071438

CERTIFICATE 0 F OCCUPANCY

### PERMANENT

Issue Date	12/20/02
Parcel Number	32 -43 -3000-0 -18
Property Address	OFF ARDSLEY RD
	SCARSDALE NY 10583
Subdivision Name	UNKNOWN
Legal Description	ALONG SPRAIN BROCK PKWY,
	ARDSLEY RD & SPRAIN RD
Property Zoning	R-20 ONE FAM RES DIST
Owner	CONSOLIDATED EDISON CO OF N Y
Contractor	CONTI COMMUNICATIONS INC.
	908 927-0939
Application number	02-00006237 000 000

Construction type . . . NOT APPLICABLE Occupancy type . . . NOT APPLICABLE Flood Zone . . . . Special conditions • •

Description of Work . . NON-RESIDENTIAL ANTENNA ADD/ALT (COMM.)

COMM. ADD. (REPLACE THREE PCS ANTENNAS ON TOWER K-24)

Tucilo

Approved

Building Official

VOID UNLESS SIGNED BY BUILDING OFFICIAL

03/26/04 15:32 FAX 718 948 1545

p.1

74

Joe Indelicato



### **TOWN of GREENBURGH**

P.O. Box 205, 320 Tarrytown Road, Elmsford, New York 10523

Paul J. Feiner Supervisor

### **ANTENNA REVIEW BOARD**

**INTER-OFFICE MEMORANDUM** 

July 25, 2000

To: John Lucido Building Inspector

From: Catherine Lederer-Plaskett Chair, Antenna Review Board

> Re: AT&T Wireless Services Application @ Consolidated Edison Tower K-34, Ardsley Road

We are pleased to inform you that the ARB has determined that the above captioned as-of-right application, as revised and resubmitted on July 7, 2000 is COMPLETE. This determination means that, in our opinion, the application contains responses for each of the report requirement provisions of 285-37A(16).

If you should have any questions please do not hesitate to contact the ARB. We look forward to reviewing additional applications as they are received. Thank you.

xci Anthony B. Gioffre III, Esq. (via fax 914-761-5372) ARB Members Councilwoman Eddie Mae Barnes, Liaison with the Town Board



**TOWN of GREENBURGH** 

P.O. Box 205, 320 Tarrytown Road, Elmsford, New York 10523

### **ANTENNA REVIEW BOARD**

July 25, 2000

Supervisor

Anthony B. Gioffre, Esq. (via fax 914-761-5372) Cuddy, Feder & Worby 90 Maple Avenue White Plains, New York 10601-5196

Re: AT&T Wireless Services Application @ Consolidated Edison Tower K-34, Ardsley Road

Dear Mr. Gioffre:

On July 24, 2000 the ARB determined that Benjamin Moore Paint2164-70 was an appropriate aesthetic color for the above referenced site and should be used on the antennas supporting members. This determination was made subsequent to ARB members visiting this site and others for aesthetic consideration.

Further, it is the opinion of the ARB that as the antennas shall be mounted in a fashion consistent with the plans submitted on July 7, 2000 and issued on 2/29/00, with Z-1 being revised on 6/26/00 and the equipment building will be built in a fashion consistent with the same plans no additional landscaping will be necessary. Of course the decision regarding this matter rests with the Commissioner of Planning and Development as stated in § 285-37(A)(19).

Please feel free to contact the ARB at any time with any questions or comments.

Sincerely yours,

Zo pts

Catherine Lederer-Plaskett Chair, Antenna Review Board

xc: ARB Members Councilwoman Eddie Mae Barnes, Liaison with the Town Board John Lucido, Building Inspector Spencer Salzberg, Acting Commissioner of Planning and Development

### RONALD E. GRAIFF. P.E. radio frequency consulting engineer 52 bogus hill road new fairfield. connecticut 06812 203 746 7600

### ENGINEERING STATEMENT

I have reviewed the information presented in the report prepared on behalf of AT&T Wireless Services in response to Section 285-37A of the Zoning Ordinance of the Town of Greenburgh for a cellular radio transmission and reception site #741, West Greenville, Consolidated Edison Tower K-34.

Based on that review, the statements contained therein are true of my own personal knowledge except those stated to be on information and belief, as to those statements, I believe them to be true and correct.

Ronald E. Graiff, P.E. NYS License # 050547



### O'Dea & Associates PC

Consulting Engineers • HVAC • Electrical • Plumbing • Fire Protection • Structural • Environmental



50 Broadway Hawthome, NY 10532 (914) 747-2800 (212) 425-8788 Fax (914) 747-0453 Email info@oda-engr.com

4230 LBJ Freeway Suite 625 Dallas, TX 75244 (972) 239-6100 Fax (972) 239-6102 Email info@oda-tx.com

Thomas J. O'Dea, P.E. Patrick F. Lynch, P.E.

Steven Abbattista, P.E. John F. Fay Jill Hurley, P.E. Alan M. Rosa, P.E.

AT&T West Greenville, Site 741 P.No.: NATT0049 **Re-Engineering Report** 

Dear Antenna Review Board:

Town of Greenburgh

RE:

Antenna Review Board

This is to inform the board that I have read the attached report and attest to the truthfulness and completeness of the following:

Question and Answer Section - 285-37A(16)(b), 285-37A(16)(c), 285-37A(16)(d), 285-37A(16)(e), 285-37A(16)(f), 285-37A(16)(g), 285-37A(16)(h), 285-37A(16)(I), 285-37A(13)(sub-section (a)), 285-37A(19), 285-37A(16)(j), 285-37A(16)(p), 285-37A(16)(q), 285-37A(16)(r), 285-37A(16)(t), 285-37A(16)(u), 285-37A(16)(v), 285-37A(16)(w).

As per Section 285-37A(16)(a), please note that I am a New York State Professional Engineer, License No. 73314, specializing in structural engineering currently employed by O'Dea & Associates, PC, 50 Broadway, Hawthome, NY 10532.

Sincerely,

April 20, 2000

Alan M. Rosa, P.E. Associate Engineer



AMR/amr cc: File K:\Projects\NATT0049\Docs\report.doc

Bell Labs Innovations for Lucent Technologies



An Analysis of the Radiofrequency Environment in the Vicinity of a Proposed Cellular Radio Base Station Site 741: Con Ed Electric Transmission Tower K-34 NW of Sprain Brook Parkway and Ardsley Road Town of Greenburgh, New York

I hereby attest to the truth and completeness of the information contained herein.

Prepared by Paul A. Testagrossa, RF Engineer

Wireless & Optical Technologies Safety Department Bell Laboratories

Murray Hill, New Jersey 07974-0636

Prepared for

AT&T Wireless Services 15 E. Midland Avenue Paramus, New Jersey 07652

March 9, 2000



Woody Peitzer - Sr. RF Engineer 15 East Midland Ave., Paramus, NJ 07652 (201) 291-8219 e-mail: woody.peitzer@attws.com

April 13, 2000

Anthony B. Gioffre III Cuddy & Feder & Worby LLP 90 Maple Ave. White Plains, NY 10601-5196

Ref. AT&T Wireless Building Permit Application to locate on the existing ConEd power distribution tower located on Dobbs Ferry Rd., Greenburgh, NY.

Dear Anthony:

Pursuant to your request for technical information, I am sending this letter as a senior member of the RF Engineering staff at AT&T Wireless Services (AWS). My qualifications are BS in Electrical Engineering from Syracuse University with continuing studies in the field of electronics and communications. I have nineteen years of engineering experience as a design and management engineer. My contact information is listed above on the letterhead.

This cell site design will consist of three sectors of antennas, with each sector containing three Allgon 7143.23 antennas. These antennas have a 60-degree azimuth beamwidth and 12 dBd of gain. Six of the antennas are used for the reception of cellular telephones in the 824 to 846.5 MHz frequency band. Three antennas (one per each sector) are for transmission from this site in the 869 to 894 MHz frequency band. Each sector will have one analog control channel (AMPS), one digital control channel (IS-136 TDMA), and possibly one packet data channel (CDPD). Additional channels are activated on an as-needed basis.

This site will not cause interference with existing communication devices. All equipment meets applicable FCC standards for emissions and spectral purity.

Table 1 contains a list of sites that AWS presently operates in and around the Town of Greenburgh. Figure 1 is a map showing the sites listed in Table 1 with their respective coverage areas.

Figure 2 is a map showing the coverage area of the proposed site. This proposal, to locate on the existing ConEd electric transmission tower (K-49 on Dobbs Ferry Road, should improve service (and capacity) along the Sprain Brook Parkway and surrounding areas. Table 2 provides the raw data generated by the predicted modeling software tool for the coverage area of the proposed site.

Table 3 provides a list of active search areas, in and around the Town of Greenburgh, that are part of AWS' build program. Figure 3 shows them graphically in a map.

AWS is focused on providing coverage along state, inter-state and major secondary roadways, as well as improving coverage in the local communities, and enhancing in-building penetration. As new and emerging technologies become available, AWS will focus its build program around the current and future needs of the consumer.

I certify that the information provided is true and complete.

Woody Peizer - St. RF Engineer AT&T Wireless Services

The following sets forth the information required pursuant to section 285-37(A) of the Greenburgh Zoning Ordinance for the installation of a personal wireless service facility by AT&T Wireless Services at the Con Edison Electrical Transmission Tower (Tower K34) on Ardsley Road in Greenburgh, New York.

§ 285-37(A)(16)(a): Name(s) address(es), and qualification of person(s) preparing the report, and his or her or their signature(s) attesting to the truth and completeness of the information contained herein.

This Report and the accompanying engineering drawings have been prepared in accordance with 285-37(A)(16) of the Town of Greenburgh Zoning Ordinance by the following authorized representatives of AT&T Wireless Services. Signatures of the authorized representatives with attestment to the truth and completeness of the information contained herein are annexed hereto as Exhibit A:

Paul A. Testagrossa Radio Frequency Engineer	Radiation Protection and Product Safety Dept. Bell Laboratories 600 Mountain Avenue Murray Hill, NJ 07974-0636		
Alan M. Rosa	O'Dea & Associates		
P.E. # 73314	50 Broadway		
	Hawthorne, NY 10532		
Ronald E. Graiff	Radio Frequency Consulting Engineer		
N.Y.P.E. # 050547	52 Bogus Hill Road		
	New Fairfield, CT 06812		
Haywood S. Peitzer	AT&T Wireless Services		
Radio Frequency Engineer	15 East Midland Avenue		
	Paramus, NJ 07652		
285-37(A)(16)(b): Name(s) and address(es) of the property owner, operator and applicant.			

Property Owner: Applicant/Operator: Consolidated Edison Company 4 Irving Place New York, NY 10003 AT&T Wireless Services 15 E. Midland Avenue

C&F&W: 255939.01

1

Paramus, NJ 07562

# 285-37(A)(16)(c): Postal Address and sheet, block, and lot or parcel number of the property.

The Postal address of the subject site is Con Edison Company, Ardsley Road, Greenburgh, New York. The Property is described as Sheet 43, Block 30,000, Lot 18 as indicated on the Town of Greenburgh's tax assessment maps.

### 285-37(A)(16)(d): Zoning District in which the property is situated.

The Property is situated within the R-20 (One-Family Residence) Zoning District.

285-37(A)(16)(e): A listing of required, existing and proposed setbacks, a listing of required, existing and proposed parking spaces unless roof-mounted, and the maximum height of a permitted principal use in the zoning district.

Zoning Specifications R-20 (One Family Residence) District			
Regulation	Required	Existing	Proposed
Lot Area	20,000 sq. ft min	20,000 sq. ft	unchanged
Lot Width	120 ft min	120 ft	unchanged
Side Yard Setback	16 ft min	57.0± ft (1)	46.0± ft (2)
Rear Yard Setback	16 ft min	34.0± ft (1)	$>16\pm$ ft (2)
Distance: Principal			
to Accessory Bldg.	10 ft min	N/A	$36.2\pm$ ft
Building Height	2 <sup>1</sup> / <sub>2</sub> stories		
	25 ft max	N/A	$10.3 \pm ft$ (2)
Antenna Height	(3)	(3)	85.5 ± (3)
Front Yard Setback	30 ft min	$209 \pm ft$ (1)	$140 \pm ft$ (2)
Parking Spaces	N/A	N/A	2

### Note(s)

- 1. Dimension for existing electric power transmission line.
- 2. Dimension for accessory building.
- 3. Pursuant to Section 285-37(A)(8)(f), antennas mounted directly on an existing electric power transmission line shall not exceed the height of the power line. The existing electric power transmission line is 125' in height. The antennas mount on said power line shall be at a height of 85.5'.

285-37(A)(16)(f): The owner, make, model, manufacturer, number and type of all existing antenna(s) located on the lot even if exempt from the provisions of this chapter.

There are no existing antennas located on the subject premises.

C&F&W: 255939. 01

285-37(A)(16)(g): If an Amateur Station, AM/FM Broadcast Station Facility, asof-right Personal Wireless Service Facility, or Special Permit Personal Wireless Service Facility, certification that the requirements and conditions set forth in \$285-37(A)(6), \$285-37(A)(7), \$285-37(A)(8), or \$285-37(A)(9), respectively, have been met.

§285-37(A)(8) "As-of Right Personal Wireless Service Facility Sites" is the applicable section to this application. This section states:

In order to address the increased need for Personal Wireless Services along major thoroughfares, Personal Wireless Service Facilities, not within three hundred fifty (350) feet from the nearest school, child day care center, camp, public park, or playground, as defined in this chapter, not requiring any zoning variance, and not mounted on a new or existing antenna tower, in compliance with §285-37(A)(10) if a monopole is required, not situated in a Critical Environmental Area and is not subject to Type I SEQRA review, providing coverage to an area of the unincorporated area of the Town, shall be permitted accessory or principal uses, subject to conditions imposed by the Antenna Review Board for aesthetic considerations stated §285-37(A)(20) and §285-37(A)(3)(i) and visual considerations stated in §285-37(A)(2):

> (f) On public utility right-of-ways containing tower-elevated highvoltage electric power transmission lines provided that antenna(s) is mounted directly on an existing electric power line tower and does not exceed the height of the power line tower, notwithstanding any height or setback restriction contained herein to the contrary.

The proposed Personal Wireless Facility does not require any zoning variances and is not situated in a Critical Environmental Area or subject to Type I SEQRA review. Further there are no schools, child day care centers, camps, public parks or playgrounds within 350 feet of the proposed Personal Wireless Facility as evidenced on the Vicinity Map. See sheet Z-2 of Site Plan drawings prepared by O'Dea & Associates PC. The proposed Personal Wireless Facility is mounted directly on an existing electric power transmission line on a public utility right-of-way containing tower-elevated high-voltage electric power transmission lines. The proposed antenna(s) will not exceed the height of the existing power lines as evidenced on the Tower Elevation Drawings. (See sheet Z-3 of the Site Plans).

285-37(A)(16)(h): If the installation is pursuant to a lease agreement, the duration and terms of renewal.

C&F&W: 255939. 01

The term of the lease is five years. The lease has three additional renewal terms of five years each. See lease acknowledgement annexed hereto as Exhibit B.

285-37(A)(16)(i): If a new or existing monopole or antenna tower is required to mount the antenna(s), certification that the requirements and conditions set forth in 285-37(A)(10) have been met.

A new or existing monopole or antenna tower will not be required to mount the proposed antennas. Said antennas will be mounted on an existing electric power transmission line, and as such, Section 285-37(A)(10) is not applicable.

§285-37(A)(13) "Security" provides:

Antenna(s) shall be located, fenced or otherwise secured in a manner which prevents unauthorized access by the general public. Specifically:

§ 285-37(A)(13)(a) All antenna towers, monopoles, and other supporting structures shall be made inaccessible to children and constructed or shielded in such a manner that they cannot be climbed; the fall zone of an antenna tower or monopole in case of collapse and proposed measures to safeguard the public shall be delineated by a professional engineer specializing in structural engineering. If a fence is provided, it shall be a minimum of eight (8) feet in height, exclusive of barbed wire, and shall be colored and camouflaged to blend with the surrounding areas as determined by the Antenna Review Board pursuant to §285-37(A)(20).

A new or existing monopole or antenna tower will not be required to mount the proposed antennas. Said antennas will be mounted on an existing electric power transmission line, and as such, the fall zone analysis portion of Section 285-37(A)(13)(a) is not applicable. A <u>new</u> eight (8) foot chain-link fence with <u>new</u> three (3) strand barb-wire at the top, will surround the accessory equipment shelter, making accessory structure inaccessible, the design of which is subject to ARB review and approval.

§ 285-37(A)(13)(b) Transmitters and control points, other than those used with in-building radiation systems, must be installed such that they are readily accessible only to persons authorized by the licensee to operate or service them.

The Site itself is fenced and secured and accessible only to persons authorized to make such changes. The transmitting and receiving frequencies can either be controlled at the proposed site or remotely by the Applicant's central switch located off site. § 285-37(A)(13)(c) Transmitters must be designed and installed such that any adjustments or controls that could cause the transmitter to deviate from its authorized operating parameters are readily accessible only to persons authorized by the licensee to make such adjustments.

The Site itself is fenced and secured and accessible only to persons authorized to make such changes. The transmitting and receiving frequencies can either be controlled at the proposed site or remotely by the Applicant's central switch located off site.

> § 285-37(A)(13)(d) Transmitters (other than hand-carried or packcarried mobile transmitters) and control points must be equipped with a means of indicating when the control circuitry has been put in a condition that should cause the transmitter to radiate.

The Transmitters indicate when the control circuitry is operating by visual means.

§ 285-37(A)13)(e) Transmitters must be designed such that they can be turned off independently of remote control circuits.

The transmitters may be turned off independently of remote control circuits.

§ 285-37(A)(13)(f) Transmitters used with in-building radiation systems must be installed such that, to the extent possible, they are readily accessible only to persons authorized by the licensee to access them.

Not applicable to this Application there are no in-building radiation systems proposed.

§ 285-37(A)(13)(f) Transmitters used with in-building radiation systems must be designed such that, in the event an unauthorized person does gain access, that person can not cause the transmitter to deviate from its authorized operating parameters in such a way as to cause interference to other stations.

Not applicable to this Application there are no in-building radiation systems proposed.

§285-37(A)(19) states:

All freestanding antennae installations shall provide landscaping acceptable to the Commissioner of Planning and Development as follows:

§ 285-37(A)(19)(a) The area surrounding the installation (other than the area necessary to maintain a clear line of site to the signal source) shall be landscaped and maintained with trees, shrubs, and ground cover to maximize screening. An existing natural vegetative buffer which meets or exceeds the above requirements may be substituted or enhanced for said requirements.

The proposed installation is on an existing electrical transmission tower that is in conformity with the requirements of this section. The site is bordered by the Spain Brook Parkway along which a natural vegetative buffer exists as indicated on Sheet Z-1 of the Site Plans prepared by O'Dea & Associates PC annexed hereto and no additional landscaping is proposed. A letter dated April 27, 2000 has been sent to the Commissioner of Community Development and Conservation (the "Commissioner") requesting comments on the proposed installation with regard to the acceptability of the existing natural landscaping, See Exhibit C annexed hereto. The applicant will abide by recommendations of the Commissioner.

§ 285-37(A)(19)(b) Any antenna facility requiring an antenna tower, monopole, or accessory building shall be screened with trees of a minimum height of fifteen (15) feet at planting and at a density that will, over time, reduce the visual impact from the structure.

The proposed installation is on an existing electrical transmission tower that is in conformity with the requirements of this section. The site is bordered by the Spain Brook Parkway along which a natural vegetative buffer exists as indicated on Sheet Z-1 of the Site Plans prepared by O'Dea & Associates PC submitted herewith no additional landscaping is proposed. A letter dated April 27, 2000 has been sent to the Commissioner of Community Development and Conservation (the "Commissioner") requesting comments on the proposed installation with regard to the acceptability of the existing natural landscaping, See Exhibit C annexed hereto. The applicant will abide by recommendations of the Commissioner.

§ 285-37(A)(19)(c) When a security fence is required under §285-37(A)(13), the outside of such fencing shall be screened with evergreen shrubs, trees or climbing evergreen material on the fencing.

The proposed installation is on an existing electrical transmission tower that is in conformity with the requirements of this section. A security fence shall be provided around the equipment shelter. However, the site is bordered by the Sprain Brook Parkway along which a natural vegetative buffer exists as indicated on Sheet Z-1 of the Site Plans prepared by O'Dea & Associates PC annexed hereto no additional landscaping is proposed. A letter dated April 27, 2000 has been sent to the Commissioner of Community Development and Conservation (the "Commissioner") requesting comments on the proposed installation with regard to the acceptability of the existing natural landscaping, See Exhibit C annexed hereto. The applicant will abide by recommendations of the Commissioner.

### 285-37(A)(16)(j): The make, model and manufacturer of the antenna(s).

The antennas are manufactured by Allgon Systems AB supplied by Swedcom Corporation, Model 7143.23 and are 35.4" in length, 11.8" in width and 5.1" in depth as indicated on drawing Z-4 of the Site Plans prepared by O'Dea & Associates PC submitted herewith.

### 285-37(A)(16)(k): The frequency, modulation and class of service of radioequipment.

The frequency is 869-894 million hertz (MHz), the modulation is Analog / TDMA and class of service of radio-equipment is Radio Common Carrier. See Exhibit D a report entitled "An Analysis of the Radiofrequency Environment in the Vicinity of a Proposed Cellular Radio Base Station Site 741: Con Ed Electric Transmission Tower K-34 NW of Sprain Brook Parkway and Ardsley Road Greenburgh, New York", prepared by the Wireless & Optical Technologies Safety Department, Bell Laboratories, Murray Hill, New Jersey, dated March 9, 2000 annexed hereto.

## 285-37(A)(16)(I): The number, type and design of antenna(s) proposed and the basis for calculations of capacity.

Three sectors of three antennas for a total of nine antennas. One antenna transmits in each sector with 15 channels per antenna, which forms the basis for the capacity of the site. All antennas are Allgon directional panel antennas model number 7143.23. See Sheet Z-4 of Site Plans prepared by O'Dea & Associates PC submitted herewith for further information and Table 1 of report entitled "An Analysis of the Radiofrequency Environment in the Vicinity of a Proposed Cellular Radio Base Station Site 741: Con Ed Electric Transmission Tower K-34 NW of Sprain Brook Parkway and Ardsley Road Greenburgh, New York", prepared by the Wireless & Optical Technologies Safety Department, Bell Laboratories, Murray Hill, New Jersey, dated March 9, 2000 annexed hereto as Exhibit D.

285-37(A)(16)(m): Certification that the NIER levels at the proposed site are within threshold levels adopted by the Federal Communications Commission and that the proposed site will not produce or contribute to the production of emission levels exceeding the thresholds listed in Table IV or any subsequent superseding emission standard adopted by the Federal Communications Commission, based on the maximum equipment output.

In all normally accessible areas surrounding the facilities, the maximum level of RF energy associated with *simultaneous and continuous operation of all proposed transmitters* will be less than 0.3% of the safety criteria adopted by the Federal

Communications Commission as mandated by the Telecommunications Act of 1996. The Telecommunications Act of 1996 is the applicable Federal Law with respect to consideration of environmental effects of RF emissions in the siting of personal wireless facilities. The maximum level of RF energy will also be less than 0.3% of the exposure limits of ANSI, IEEE, NCRP, the limits used by the State of New York Department of Health and the limits used by all states that regulate RF exposure. In actual operation, the cellular radio transmitters operate intermittently and, hence, the real time-averaged levels will be an even smaller percentage of the safety guidelines. See report entitled "An Analysis of the Radiofrequency Environment in the Vicinity of a Proposed Cellular Radio Base Station Site 741: Con Ed Electric Transmission Tower K-34 NW of Sprain Brook Parkway and Ardsley Road Greenburgh, New York", prepared by the Wireless & Optical Technologies Safety Department, Bell Laboratories, Murray Hill, New Jersey, dated March 9, 2000 annexed hereto as Exhibit D for certification and further information.

### Table 2

### as excerpted from annexed report

### Calculated Maximal Levels and the Levels as a Percentage of 1996 FCC MPEs\* for the Proposed Cellular Radio Antennas, Greenburgh, NY

	Power Density (W/cm <sup>2</sup> )	% of MPEs*		
Provider – Service	6ft AMGL† 16ft AMGL†	6ft AMGL† 16ft AMGL†		
AT&T-cellular radio	< 1.16   < 1.55	0.22% 0.29%		

• \*MPE: The FCC limits for maximum permissible exposure (same as 1986 NCRP limits at the frequencies of interest)

• *†AMGL:* above mean grade level

# 285-37(A)(16)(n): Certification that the proposed antenna(s) will not cause interference with the existing communications devices.

The proposed wireless communications facility will not cause interference with existing communication devices. All equipment meets applicable FCC standards for emissions and spectral purity. See RF Engineering Report prepared by AT&T Wireless Services annexed hereto as Exhibit E.

# 285-37(A)(16)(o): If co-location is not proposed, certification that co-location is not feasible using the criteria in \$285-37A(11).

Co-location is not feasible due to the absence of existing wireless facility installations in the area. However, AT&T was able to locate the proposed facility on an existing electric power transmission line, which location is permitted as-of-right.

285-37(A)(16)(p): Proposals for the coloring, camouflaging and/or shielding to be installed to blend the installation with the surrounding areas to the greatest extent possible without unreasonably inhibiting the effectiveness of the installation in

compliance with the aesthetic considerations in 285-37(A)(20). The applicant shall supply samples of materials and colors proposed to be utilized, as well as a description of the mitigation to be employed.

It is respectfully submitted that a significant number of existing mature trees and vegetation are of sufficient height and depth to screen the facility to the extent feasible...

285-37(A)(16)(q): A vicinity map showing the subject property as well as the appropriate location of and distance to each of the following if situated within fifteen hundred (1500) feet of the installation:

[1] residential structure

[2] occupiable structure; and

[3] child day care center, school, camp, public park and playground. For each of the above the property owner and address shall be listed.

As indicated on the vicinity map submitted herewith on Sheet Z-2 of the Site Plans prepared by O'Dea & Associates PC:

- The nearest residential structure is located within 200± feet at 644 Ardsley Road, Greenburgh, New York and is owned by C.S. Francoville.
- The nearest occupiable structure is located within 200± feet 644 Ardsley Road, Greenburgh, New York and is owned by C.S. Francoville.
- The nearest public park/playground is located within 1400+- feet at Ashford Road, in the Village of Ardsley and is owned by the Village of Ardsley, 507 Ashford Avenue, Ardsley, New York.

Section 285-37(A)(8) of the Greenburgh Zoning Ordinance regulates the placement of Personal Wireless Service Facilities, requiring that they be "...not within three hundred fifty (350) feet of a day care center, school, camp, public park or playground ... ". The existing electrical transmission tower is not within three hundred fifty (350) feet of a day care center, school, camp, public park or playground as evidenced above and on Sheet Z-2 of the Site Plans prepared by O'Dea & Associates PC submitted herewith.

285-37(A)(16)(r): An as-built survey of the subject property showing the size of the property and the location of all lot lines and setbacks as well as the location of all structures on the property which is the subject of the application.

See Sheet Z-1 of the Site Plans prepared by O'Dea & Associates PC submitted herewith and based upon the as-built drawing entitled "Site Plan" prepared by Insite Engineering P.C., dated November 1988 on file with the Town of Greenburgh.

285-37(A)(16)(s): A plan illustrating the approximate location, size, elevation and height of all proposed and existing antennas and all appurtenant structures. The

plan shall include a description of the antenna(s) and all related fixtures, structures, appurtenances and apparatus, including height above undisturbed grade, elevation above grade and sea level, materials, color, signage and lighting. The name of the owner and operator of each antenna shall be delineated on the plan.

See Sheets Z-1, Z-3 and Z-4 of the Site Plans prepared by O'Dea & Associates PC submitted herewith.

285-37(A)(16)(t): Transmission and maximum effective radiated power of the antenna(s) illustrated on the plan.

See Sheet Z-4 of the Site Plans prepared by O'Dea & Associates PC and submitted herewith.

285-37(A)(16)(u): Direction of maximum lobes and associated radiation of the antenna(s) illustrated on the plan.

See Sheet Z-4 of the Site Plans prepared by O'Dea & Associates PC and submitted herewith.

285-37(A)(16)(v): A plan illustrating the type, size, elevation and location of all proposed and existing mitigating landscaping.

See Sheet Z-1 of the Site Plans prepared by O'Dea & Associates PC submitted herewith.

285-37(A)(16)(w): Elevation drawings depicting the front, side and rear of the property, illustrating the proposed antenna, mounting device and structure, if any, on which the antenna(s) is mounted.

See Sheet Z-3 of the Site Plans prepared by O'Dea & Associates and submitted herewith.

285-37(A)(16)(x): A map depicting and listing (by address and property owner) all existing sites in the town and bordering communities containing transmitting antenna(s) used by the operator, owner or applicant. The map shall also show each antenna's coverage range. Overlapping areas of coverage shall be indicated by different colors or hatch lines. A transparency at the same scale showing that coverage would be provided with the proposed facility shall be provided along with a table of the raw data collected and used to create the proposed facility's coverage map overlay. The applicant shall also supply a written statement as to where and how the facility or antenna will provide coverage to an area of the unincorporated area of the Town.

See RF Engineering Report including Figures 1 and 2 annexed hereto as Exhibit E. As set forth in the written statement, the facility will provide coverage to an area of the unincorporated area of the Town.

285-37(A)(16)(y): A map depicting all proposed sites or areas needed to complete the applicant's coverage grid in the Town of Greenburgh and surrounding communities.

See RF Engineering Report Figure 3 annexed hereto as Exhibit E which sets forth AT&T's other proposed sites in and around the Town currently planned to provide coverage in the Town.

285-37(A)(16)(z): For monopoles and antenna towers, proof acceptable to the Town Attorney, committing the property owner and his/her successors in interest to a lien on the property for all costs related to removal should the Town be required to enforce § 285-37(A)(22). In the alternative, the applicant shall be permitted to post a bond, acceptable to the Town Attorney, for cost of such removal.

AT&T's proposed wireless facility consists of the addition of antennas and appurtenant equipment to an existing electrical transmission tower, the application is not for a new monopole or antenna tower therefore no bond or lien is required for AT&T's equipment. Further, the Consolidated Edison Company is not a taxable entity and cannot agree to a lien on the property. **Bell Labs** Innovations for Lucent Technologies **Lucent Technologies** 

An Analysis of the Radiofrequency Environment in the Vicinity of a Proposed Cellular Radio Base Station Site 741: Con Ed Electric Transmission Tower K-34 NW of Sprain Brook Parkway and Ardsley Road Town of Greenburgh, New York

I hereby attest to the truth and completeness of the information contained herein.

Prepared by Paul A. Testagrossa, RF Engineer

Wireless & Optical Technologies Safety Department **Bell Laboratories** Murray Hill, New Jersey 07974-0636

Prepared for

AT&T Wireless Services 15 E. Midland Avenue Paramus, New Jersey 07652

March 9, 2000

4

## Table of Contents

Su	nmary3
1.	Introduction4
2.	Technical Data4
3.	Environmental Levels of RF Energy4
4.	Comparison of Environmental Levels with RF Safety Criteria5
5.	Discussion of Safety Criteria5
6.	For Further Information7
7.	Conclusion8
8.	References9

An Analysis of the Radiofrequency Environment in the Vicinity of a Proposed Cellular Radio Base Station Site 741: Con Ed Electric Transmission Tower K-34 NW of Sprain Brook Parkway and Ardsley Road Town of Greenburgh, New York

#### Summary

This report is an analysis of the radiofrequency (RF) environment surrounding the AT&T Wireless Services cellular radio facility proposed for installation in the Town of Greenburgh, NY. The analysis utilizes engineering data provided by AT&T Wireless together with well-established analytical techniques for calculating the RF fields associated with cellular radio antennas. Worstcase assumptions were used to ensure safe-side estimates, i.e., the actual values will be significantly lower than the corresponding analytical values.

The results of this analysis indicate that the maximum level of RF energy to which the public may be exposed is below all applicable health and safety limits. Specifically, in all normally accessible areas surrounding the installation, the maximum level of RF energy associated with *simultaneous* and continuous operation of all proposed transmitters will be less than 0.3% of the safety criteria adopted by the Federal Communications Commission as mandated by the Telecommunications Act of 1996. The Telecommunications Act of 1996 is the applicable Federal law with respect to consideration of the environmental effects of RF emissions in the siting of personal wireless facilities.

The maximum level of RF energy will also be less than 0.3% of the exposure. limits of ANSI, IEEE, NCRP, the limits used by the State of New York Department of Health and the limits used by all states that regulate RF exposure. In actual operation, many of the cellular radio transmitters will operate intermittently and, hence, the real time-averaged levels will be an even small percentage of the safety guidelines.

### 1. Introduction

This report was prepared in response to a request from AT&T Wireless Services for an analysis of the radiofrequency (RF) environment in the vicinity of the proposed cellular radio facility, and an opinion regarding the concern for public health associated with long-term exposure in this environment.

The Telecommunications Act of 1996[1] is the applicable *Federal law* with respect to consideration of environmental effects of RF emissions in the siting of wireless facilities. Regarding personal wireless services, e.g., cellular radio, Section 704 of the Telecommunications Act of 1996 states the following:

"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."

Therefore, the purpose of this report is to ensure that the RF environment associated with this facility complies with Federal Communications Commission (FCC) guidelines as required by the Telecommunications Act of 1996, which are the same as the safety criteria used by the State of New York Department of Health.

### 2. Technical Data

The cellular radio antennas are to be mounted to Con Edison's electric transmission tower K-34 located just northwest of the Sprain Brook Parkway and Ardsley Road in the Town of Greenburgh, NY. These cellular radio antennas will transmit at frequencies between 869 and 894 million hertz (MHz). (The frequencies used for cellular radio were formerly used for UHF television broadcast.)

The actual RF power propagated from a cellular radio antenna is usually less than 10 watts per transmitter (channel) and the actual *total* RF power is usually less than 200 watts per sector (assuming the maximum number of transmitters are installed and operate *simultaneously and continuously*). This is an extremely low power system when compared with other familiar radio systems such as AM, FM, and television broadcast, which operate upwards of 50,000 watts. The attached figure, which depicts the electromagnetic spectrum, lists familiar uses of RF energy. Table 1 lists engineering specifications for the cellular radio system.

#### 3. Environmental Levels of RF Energy

The antennas used for cellular radio systems propagate most of the RF energy in a relatively narrow beam (in the vertical plane) directed toward the horizon. The small amount of energy that is directed along radials below the horizon results in an RF environment directly under the antennas that is not remarkably different from the environment at points more distant.

The methodology used to calculate the RF environment around the site follows that outlined by the FCC in OET Bulletin No. 65 [2]. For the case at hand, the maximal potential exposure levels associated with *simultaneous and continuous operation* of all proposed transmitters can be readily calculated at any point in a plane at any height above grade. Based on the information shown in Table 1, the maximum power density associated with the AT&T Wireless Services antennas, at any point in a horizontal plane 6 ft above grade will be less than 1.16 millionths of a

watt per centimeter squared (1.16  $\mu$ W/cm<sup>2</sup>) and will be less than 1.55  $\mu$ W/cm<sup>2</sup> at any point in a corresponding plane 16 ft above grade. The latter is representative of the maximum power density immediately outside the upper floor of nearby buildings (assuming level terrain). These levels are also shown in Table 2 as a percentage of the FCC's maximum permissible exposure (MPE) values found in the Telecommunications Act of 1996 (specifically, in the FCC *Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation* [3]).

The above values are the theoretical maxima that could occur and are not typical values. For example, the calculations include the effect of 100% field reinforcement from in-phase reflections. The assumption was also made that each transmitter operates continuously at maximum power. However, the intermittent nature of the transmission from cellular radio systems will result in time-weighted-average values that will be lower than those above. Experience has shown that the analytical technique used is extremely conservative. That is, actual power density levels have always been found to be smaller than the corresponding calculated levels even when extrapolated to maximum use conditions (all transmitters operating simultaneously at maximum power) [4]. Also, levels inside nearby homes and buildings will be lower than those immediately outside because of the high attenuation of common building materials at these frequencies and, hence, will not be significantly different from typical ambient levels.

### 4. Comparison of Environmental Levels with RF Safety Criteria

Table 2 shows the calculated maximal RF power density levels in the vicinity of the proposed installation; Table 3 shows federal, state and consensus exposure limits for human exposure to RF energy at cellular radio frequencies. The FCC MPE limits for cellular radio range from 550  $\mu$ W/cm<sup>2</sup> (public exposure) to 2,750  $\mu$ W/cm<sup>2</sup> (occupational exposure), while the corresponding maximal power density levels in the environment from operation of the proposed antennas are 1.16  $\mu$ W/cm<sup>2</sup> (at 6 ft above grade) and 1.55  $\mu$ W/cm<sup>2</sup> (at 16 ft above grade).

### 5. Discussion of Safety Criteria

Publicity given to speculation about possible associations between health effects and exposure to magnetic fields from electric-power distribution lines, electric shavers and from the use of handheld cellular telephones has heightened concern among some members of the public about the possibility that health effects may be associated with any exposure to electromagnetic energy. Many people feel uneasy about new or unfamiliar technology and often want absolute proof that something is safe. Such absolute guarantees are not possible since it is virtually impossible to prove that something does not exist. However, sound judgments can be made as to the safety of a physical agent based on the weight of the pertinent scientific evidence. This is exactly how safety guidelines are developed.

The overwhelming weight of scientific evidence unequivocally indicates that biological effects associated with exposure to RF energy are threshold effects, i.e., unless the exposure level is sufficiently high the effect will not occur regardless of exposure duration. (Unlike ionizing radiation, e.g., X-rays and nuclear radiation, repeated exposures to low level RF radiation, or nonionizing radiation, are not cumulative.) Thus, it is relatively straightforward to derive safety limits. By adding safety factors to the threshold level at which the most sensitive effect occurs, conservative exposure guidelines have been developed to ensure safety.

At present, there are more than 10,000 reports in the scientific literature which address the subject of RF bioeffects. These reports, most of which describe the results of epidemiology studies, animal and cell-culture studies, have been critically reviewed by leading researchers in the field and all

### Cellular Radio Site 741: Town of Greenburgh, NY - 6

new studies are continuously being reviewed by various groups and organizations whose interest is developing health standards. These include the U.S. Environmental Protection Agency, the National Institute for Occupational Safety and Health, the National Council on Radiation Protection and Measurements, the standards committees sponsored by the Institute of Electrical and Electronics Engineers, the International Radiation Protection Association under the sponsorship of the World Health Organization, and the National Radiological Protection Board of the UK. All of these groups have recently either reaffirmed existing health standards, developed and adopted new health standards, or proposed health standards for exposure to RF energy.

For example, in 1986, the National Council on Radiation Protection and Measurements (NCRP) published recommended limits for occupational and public exposure[5]. These recommendations were based on the results of an extensive critical review of the scientific literature by a committee of the leading researchers in the field of bioelectromagnetics. The literature selected included many controversial studies reporting effects at low levels. The results of all studies were weighed, analyzed and a consensus obtained establishing a conservative threshold upon which safety guidelines should be based. This threshold corresponds to the level at which the most sensitive, reproducible effects that could be related to human health were reported in the scientific literature. Safety factors were incorporated to ensure that the resulting guidelines would be at least ten to fifty times lower than the established threshold, even under worst-case exposure conditions. The NCRP recommended that continuous occupational exposure or exposure of the public should not exceed approximately those values indicated in Table 3. Although the State of New York does not have a regulatory program for the RF portion of the electromagnetic spectrum, the New York State Department of Health compares potential exposure levels with the recommendations of the NCRP to assess public safety. (Table 3 also includes a summary of the corresponding safety criteria recommended by various organizations throughout the world.)

In July of 1986, the Environmental Protection Agency published a notice in the Federal Register, calling for public comment on recommended guidance for exposure of the public[6]. Three different limits were proposed. In 1987 the EPA abandoned its efforts and failed to adopt official federal exposure guidelines. However, in 1993 and 1996 the EPA, in its comments on the FCC's Notice of Proposed Rule Making to adopt safety guidelines[7], recommended adoption of the 1986 NCRP limits[5].

In September 1991, the RF safety standard developed by Subcommittee 4 of the Institute of Electrical and Electronics Engineers (IEEE) Standards Coordinating Committee SCC-28 was approved by the IEEE Standards Board[8]. (Until 1988 IEEE SCC-28 was known as the American National Standards Institute (ANSI) C95 Committee—established in 1959.) In November 1992, the ANSI Board of Standards Review approved the IEEE standard for use as an American National Standard. The limits of this standard are identical to the 1982 ANSI RFPGs[9] for occupational exposure and approximately one-fifth of these values for exposure of the general public at the frequencies of interest. Like those of the NCRP, these limits resulted from an extensive critical review of the scientific literature by a large committee of preeminently qualified scientists, most of whom were from academia and from research laboratories of federal public health agencies.

The panels of scientists from the World Health Organization's International Commission on Non-Ionizing Radiation Protection (ICNIRP)[10] and the National Radiological Protection Board in the United Kingdom[11] independently developed and in 1993 published guidelines similar to those of ANSI/IEEE. In 1997, after another critical review of the latest scientific evidence, ICNIRP reaffirmed the limits published in 1993[12]. Also, what was formerly the USSR, which traditionally had the lowest exposure guides, twice has revised upward its limits for public exposure. Thus, there is a converging consensus of the world's scientific community as to what constitutes safe levels of exposure.

Finally, in implementing the National Environmental Policy Act regarding potentially hazardous RF radiation from radio services regulated by the FCC, the Commission's Rules require that licensees filing applications after January 1, 1997<sup>1</sup> ensure that their facilities will comply with the 1996 FCC MPE limits outlined in 47 CFR  $$1.1310[3]^2$ . (Under the terms of the Telecommunications Act of 1996, no local government may regulate the placement of wireless facilities based on RF emissions to the extent that these emissions comply with the FCC regulations [1].)

With respect to the proposed antennas, be assured that the actual exposure levels in the vicinity of the Town of Greenburgh, NY installation will be below any health standard used anywhere in the world and literally thousands of times below any level reported to be associated with any verifiable functional change in humans or laboratory animals. This holds true even when all transmitters operate *simultaneously and continuously at their highest power*. Power density levels of this magnitude are not even a subject of speculation with regard to an association with adverse health effects.

### 6. For Further Information

Anyone interested can obtain additional information about the environmental impact of cellular radio communications from:

Dr. Robert Cleveland, Jr. Federal Communications Commission Office of Engineering and Technology Room 7002 2000 M Street NW Washington, DC 20554 (202) 418-2422 William J. Condon, CHP State of New York, Department of Health Bureau of Environmental Radiation Protection 2 University Place Albany, New York 12203 (518) 458-6495

<sup>1.</sup> The FCC extended the transition period to October 15, 1997. Second Memorandum Opinion and Order and Notice of Proposed Rulemaking, ET Docket 93-62, FCC 97-303, adopted August 25, 1997. Prior to this date the FCC required most licensees to comply with 1982 ANSI C95.1 limits.

<sup>2.</sup> Although all FCC licensees will be required to comply with 47 CFR §1.1310 limits, the FCC will continue to exclude certain land mobile services from proving compliance with these limits 47 CFR §1.1307. Previously, although licensees had to comply with the 1982 ANSI C95.1 limits, the FCC categorically excluded land mobile services, including paging, cellular, SMR and two-way radio, from hazard analyses because "individually or cumulatively they do not have a significant effect on the quality of the human environment"[13]. The FCC pointed out that there was no evidence of excessive exposure to RF radiation during routine normal operation of these radio services.

#### 7. Conclusion

This report is an analysis of the radiofrequency (RF) environment surrounding the AT&T Wireless Services cellular radio facility proposed for installation in the Town of Greenburgh, NY. The analysis utilizes engineering data provided by AT&T Wireless together with well-established analytical techniques for calculating the RF fields associated with cellular radio antennas. Worstcase assumptions were used to ensure safe-side estimates, i.e., the actual values will be significantly lower than the corresponding analytical values.

The results of this analysis indicate that the maximum level of RF energy to which the public may be exposed is below all applicable health and safety limits. Specifically, in all normally accessible areas surrounding the installation, the maximum level of RF energy associated with *simultaneous* and continuous operation of all proposed transmitters will be less than 0.3% of the safety criteria adopted by the Federal Communications Commission as mandated by the Telecommunications Act of 1996. The Telecommunications Act of 1996 is the applicable Federal law with respect to consideration of the environmental effects of RF emissions in the siting of personal wireless facilities.

The maximum level of RF energy will also be less than 0.3% of the exposure limits of ANSI, IEEE, NCRP, the limits used by the State of New York Department of Health and the limits used by all states that regulate RF exposure. In actual operation, many of the cellular radio transmitters will operate intermittently and, hence, the real time-averaged levels will be an even small percentage of the safety guidelines.

### 8. References

- [1] Telecommunications Act of 1996, Title VII, Section 704, Facilities Siting; Radio Frequency Emissions Standards
- [2] Federal Communications Commission Office of Engineering & Technology. Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Radiation, OET Bulletin No. 65, Edition 97-01. (August 1997)
- [3] Federal Communication Commission 47 CFR Parts 1, 2, 15, 24 and 97. "Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation." (August 6, 1996)
- [4] Petersen, R.C., and Testagrossa, P.A., "Radiofrequency Fields Associated with Cellular-Radio Cell-Site Antennas," *Bioelectromagnetics*, Vol. 13, No. 6. (1992)
- [5] Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields, NCRP Report No. 86, National Council on Radiation Protection and Measurements, Bethesda, MD. (1986)
- [6] Federal Register, Vol. 51, No. 146, Wednesday, July 30, 1986.
- [7] Notice of Proposed Rule Making In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, August 13, 1993. ET Docket No. 93-62
- [8] IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz, ANSI/IEEE C95.1-1992, Institute of Electrical and Electronics Engineers, Piscataway, NJ. (1991)
- [9] American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz, ANSI C95.1-1982, American National Standards Institute, New York, NY. (1982)
- [10] Electromagnetic Fields (300 Hz to 300 GHz), Environmental Health Criteria 137, World Health Organization, Geneva, Switzerland. (1993)
- [11] Board Statement on Restrictions on Human Exposure to Static and Time Varying Electromagnetic Fields and Radiation, Documents of the NRPB, Vol. 4, No. 5, National Radiological Protection Board, Chilton, Didcot, Oxon, United Kingdom. (1993)
- [12] "Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz) - ICNIRP Guidelines," *Health Physics*, Vol. 74, No. 4, pp. 494-522. (1998)
- [13] Action by the Commission February 12, 1987, by Second Report and Order (FCC 87-63), and Third Notice of Proposed Rulemaking (FCC 87-64). General Docket No. 79-144.

	·····	
Site Specifications	AT&T Wireless	
maximum ERP per channel <sup>†</sup>	25 watts	
maximum radiated power per channel	1.6 watts	
actual total radiated power per sector	24 watts	
number of transmit antennas	1 per sector	
number of receive antennas	2 per sector	
maximum number of transmitters	15 per sector	
antenna centerline height above grade	80 ft	
number of sectors configured	3	
antenna manufacturer	Allgon	
model number	7143.23	
gain	13.15 dBi	
type	directional	
downtilt	0°	

 Table 1

 Engineering Specifications for the Proposed Cellular Radio System

 Town of Greenburgh, NY

† Effective Radiated Power - ERP is a measure of how well an antenna concentrates RF energy; it is not the actual power radiated from the antenna. To illustrate the difference, compare the brightness of an ordinary 100 watt light bulb with that from a 100 watt spotlight. Even though both are 100 watts, the spot-light appears brighter because it concentrates the light in one direction. In this direction, the spot-light effectively appears to be emitting more than 100 watts. In other directions, there is almost no light emitted by the spot-light and it effectively appears to be much less than 100 watts.

Table 2
Calculated Maximal Levels and the Levels as a Percentage of 1996 FCC MPEs*
for the Proposed Cellular Radio Antennas, Town of Greenburgh, NY

	Power Density (µW/cm <sup>2</sup> )		% of	MPEs*
Provider	6 ft AMGL†	16 ft AMGL†	6 ft AMGL†	16 ft AMGL†
AT&T Wireless	< 1.16	< 1.55	0.22%	0.29%

\* MPE: The FCC limits for maximum permissible exposure (same as 1986 NCRP limits at the frequencies of interest)

† AMGL: above mean grade level

Table 3	3
---------	---

### Summary of International, Federal, State and Consensus Safety Criteria for Exposure to Radiofrequency Energy at Frequencies Used for Cellular Radio Communication Systems

	Exposure	Power Density	
Organization/Government Agency	Population	(µW/cm²)	
International Safety Criteria/Recommend	lations		
International Commission on Non-Ionizing Radiation Protection (1997)	Occupational	2062	
(Health Physics 74:4, 494-522. (1998) <sup>1</sup>	Public	412	
National Radiological Protection Board (United Kingdom)	Occupational	5000	
(NRPB, 1993)	Public	2790	
Federal Requirements			
Federal Communications Commission (47 CFR §1.1310)	Occupational	2750	
	Public	550	
Consensus Standards and Recommenda	tions		
American National Standards Institute (ANSI C95.1 - 1982)	Occupational	2750	
	Public	2750	
Institute of Electrical and Electronics Engineers	Occupational	2750	
(ANSI/IEEE C95.1-1999 Edition) <sup>2</sup>	Public	550	
National Council on Radiation Protection & Measurements	Occupational	2750	
(NCRP Report 86, 1986)	Public	550	
State Codes			
New Jersey (NJAC 7:28-42)	Public	2750	
Massachusetts (Department of Health 105 CMR 122)	Public	550	
New York State <sup>3</sup>	Public	550	

NOTES:

1. Reaffirmed in 1997 and published, with modification, in 1998.

2. Incorporating IEEE Standard C95.1-1991 and IEEE Standard C95.1a-1998.

3. State of New York Department of Health follows NCRP Report 86.

Enclosure: Figure - Electromagnetic Spectrum

# ELECTROMAGNETIC SPECTRUM

Non-Ionizing Radiation

**Ionizing Radiation** 



3

•

3

3

•

•

•

•

**3** 

3

.