

FEDERAL AND STATE JURISDICTION

A



Wireless Telecommunications Bureau

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Federal Guidelines for Local and State Government Authority over the Siting of Personal Wireless Service Facilities

Section 332(c)(7) of the Communications Act preserves state and local authority over zoning and land use decisions for personal wireless service facilities, but sets forth specific limitations on that authority. Specifically, a state or local government may not unreasonably discriminate among providers of functionally equivalent services, may not regulate in a manner that prohibits or has the effect of prohibiting the provision of personal wireless services, must act on applications within a reasonable period of time, and must make any denial of an application in writing supported by substantial evidence in a written record. The statute also preempts local decisions premised directly or indirectly on the environmental effects of radio frequency (RF) emissions, assuming that the provider is in compliance with the Commission's RF rules.

Allegations that a state or local government has acted inconsistently with Section 332(c)(7) are to be resolved exclusively by the courts (with the exception of cases involving regulation based on the health effects of RF emissions, which can be resolved by the courts or the Commission). Thus, other than RF emissions cases, the Commission's role in Section 332(c)(7) issues is primarily one of information and facilitation.

Moratoria

On August 5, 1998, the Commission's Local and State Government Advisory Committee, the Cellular Telecommunications Industry Association (CTIA), the Personal Communications Industry Association, and the American Mobile Telecommunications Association entered into an agreement addressing issues relating to moratoria on the siting of wireless telecommunications facilities. This agreement sets out recommended guidelines for local governments and carriers to follow in connection with moratoria, and it establishes a non-binding alternative dispute resolution procedure that either carriers or local governments may invoke. In addition, CTIA agreed to withdraw its pending Petition for Declaratory Ruling seeking preemption of certain local moratoria.

- [Kennard Statement](#)
- [Fellman Statement](#)
- [Agreement](#)

On February 20, 1997, FCC Chairman Hundt sent letters to various communities concerning moratoria that the communities had allegedly adopted to the siting of telecommunications facilities. Copies of the Chairman's letters are available below.

[The World of Wireless Communications](#)

Arizona	Paradise Valley
California	Buena Park , Cerritos , El Segundo , Healdsburg , Hercules , Irwindale , Lakewood , Palm Desert , Pico Rivera , Stockton , Thousand Oaks
Connecticut	Hamden
Florida	Palm Beach Garden
Massachusetts	Franklin , Wellfleet
Michigan	Farmington Hills , Milford , Romulus
Minnesota	Buffalo , Coon Rapids , Dayton , Hastings , Little Canada , Long Lake , Mendota Heights , New Hope , Savage , Shoreview
Missouri	Maryland Heights , St. Charles , St. Louis

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Siting Correspondence

- [Wireless Bureau Chief's Letter to Mr. Mike Loucy of Sprint, PCS](#)
- [Chairman's Letter to Mayor of San Diego](#)
- [Wireless Bureau Chief's Letter to Mayor of Bedford](#)
- [Letter from CTIA to Wireless Bureau and Response from Bureau](#)
- [Staff letter to Johnston County, Kansas](#)
- [Staff letter to Thousand Oaks, California](#)

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B



The FCC's Perspectives on Antenna and Tower Siting

Evan Baranoff
Staff Attorney
Federal Communications Commission
July 25, 2001



Federal Statutory Authority

- Section 332(c)(7) of the Communications Act of 1934, added by Section 704 of the Telecommunications Act of 1996
- Governs the powers of State and local governments with respect to the placement, construction, and modification of facilities used to provide cellular, broadband PCS, and other personal wireless services





No Prohibition of Service

- May not simply ban antennas or towers
- May not impose other restrictions (e.g., zoning or setbacks) if result is that service cannot be provided to desired areas
- Exactly what is permissible may depend upon layout, topography, etc.





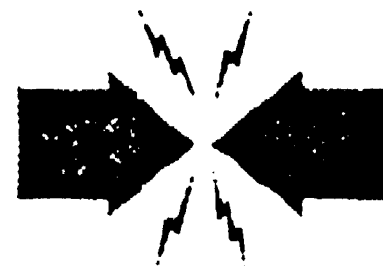
RF Emissions

- State and local governments may not set substantive standards or disallow sites based on RF concerns if emissions are within federal guidelines
- State and local governments have reasonable concern with ensuring that sites comply with federal guidelines
- Local Official's Guide



Collocation

- Popular means of reducing number of sites, but not always feasible or desirable
- May encourage, but do not force
- Use positive incentives



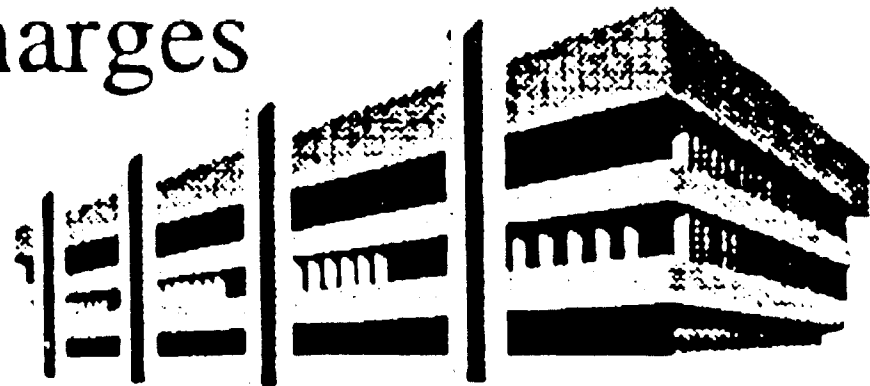
Other Specific Requirements

- Reasonable measures to protect community
- Use common sense



Use of Municipal Property

- Can be mutually beneficial
- May encourage, but do not force
- Reasonable charges



RADIO FREQUENCY EMISSIONS

A



FCC RF Safety Publications

- **OET BULLETIN 56:** *general information, FAQ's*
- **OET BULLETIN 65:** *guide for evaluating compliance with FCC RF exposure limits*
- **OET 65 SUPPLEMENTS:**
 - **A:** Broadcast
 - **B:** Amateur radio
 - **C:** Mobile & portable devices
- **LOCAL GOVERNMENT (LSGAC) GUIDE**
- **Others (Cellular/PCS factsheet, public notices, etc.)**



Ways To Control Exposure For Fixed Transmitting Stations

PUBLIC EXPOSURE:

- **Restrict access by fencing or other means**
- **Use warning/alerting signs in restricted areas**
- **Redesign antenna to selectively reduce RF levels**
- **Increase antenna height to reduce RF on ground**
- **Relocate to new site**

B

**ENGINEERING STATEMENT RELATIVE TO
WIRELESS COMMUNICATIONS SYSTEMS
FOR PRESENTATION TO
ZONING COMMISSION FOR THE DISTRICT OF COLUMBIA**

This engineering statement was prepared on behalf of the following wireless telecommunications service providers: AT&T Wireless, Cingular Communications, Nextel Communications, Sprint Wireless, Verizon Wireless and T-Mobile (formerly VoiceStream Wireless). The statement describes the basic elements of wireless telecommunications systems, their operating principles, and the magnitude of radio-frequency (RF) exposure from their operation.

Summarization:

RF exposure in the vicinity of antennas and base station equipment for wireless telecommunications systems is hundreds and more often thousands of times below the maximum exposure permitted under applicable Federal Communications Commission (FCC) rules. I have been intimately involved in the study of non-ionizing radiation for over twenty-five years, and considered an expert in the field. In my expert opinion, there is no risk of exposure to radio-frequency (RF) emissions from wireless telecommunications facilities that are properly installed and maintained in accordance with existing regulations.

With respect to the significant factors of RF emissions and tower heights employed, wireless communications systems must be distinguished from broadcast facilities whether those facilities may be television stations, FM, or AM broadcast stations. Whereas a television station may operate with peak radiated power of 5,000,000 watts, FM stations in the DC area may operate with peak radiated power of 50,000 watts, and an AM broadcast station with directional antenna may operate with peak radiated

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power in excess of 100,000 watts, wireless telecommunications systems rarely operate with peak radiated power in excess of 1,000 watts. Television stations in Zone I (the northeastern portion of the United States) usually employ tower heights of 1,000 to 1,200 feet in height, or as much as aeronautical hazard limits allow. FM broadcast stations often share towers with television stations but, if independent, generally seek to build towers in the order of 500 feet in height. AM broadcast tower heights vary with the operating frequency. At the low end of the broadcast spectrum, towers may be as tall as 450 feet. At the upper end of the AM broadcast spectrum, tower heights can be as low as 150 feet. Wireless telecommunications antennas in built-up areas are rarely placed higher than 100-125 feet above ground, and even in rural areas, 200 feet above ground is virtually never exceeded.

In other words, both the size of the support structure and the levels of RF emissions are dramatically different when one is discussing broadcast facilities and wireless telecommunications networks.

The regulatory scheme applied by the FCC is also substantially different for the wireless telecommunications systems as compared to broadcast systems. The FCC grants to the wireless carrier, the exclusive right to employ a particular band of frequencies to serve a designated area. Unlike broadcast stations that must obtain a construction permit for any facility to be constructed, and the application for construction permit must include a specific showing that the commission's RF exposure standards are not exceeded, wireless carriers are not required to file applications to construct particular base stations but must notify the FCC of such proposed construction. In recognition of the low power employed, showings of RF exposure need not be made except in rare instances of very low antenna heights and radiated power in excess of 1,000 watts.

Wireless telecommunications systems consist of fixed, interconnected base stations which both receive and transmit to mobile transmitting and receiving devices operated by subscribers. The systems not only communicate within themselves, but also interconnect with local wired telephone facilities. Each base station is designed to

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provide interference-free service within a portion of the entire designated area authorized by the FCC. Computing devices continuously monitor the strength of incoming communications from the mobile phones within the reach of the base station. When the signal strength from a mobile unit falls to a level that is less than the signal strength received at a nearby base station, that particular communication link is "handed off" to the nearby base station. The process is designed to be seamless with the subscriber unaware of having been transferred from one base station to another. When the system is completely developed with sufficient base stations to provide service within the total area assigned to the particular carrier, a subscriber should be able to originate and receive calls throughout the entire area without interruption.

To achieve the objective of seamless service within the designated area, an integrated system design is necessary. The antenna height, power, and antenna type for individual base stations cannot be selected without consideration of the system as a whole. Because of the limited bandwidth assigned by the FCC for the exclusive use of each carrier for transmission and reception, the same channels within the authorized band must be reused at multiple locations. The number of subscribers that can be accommodated by the wireless system is affected primarily by the number of base stations, or "cells." As the subscriber load grows, more cells are needed, each serving smaller areas than may have been used in the initial stages of operation. System design therefore balances the desirable extent of each service area against the avoidance of interference to other service cells using the same group of channels.

Propagation characteristics play an important role in the design. Consideration of both the natural terrain throughout the service area and man-made construction are essential. To the extent possible, line of sight must be achieved from transmitter to receiver if dropped calls are to be avoided. Sophisticated computer programs have been developed to aid in determining the area within which the base station must be located. The ultimate determination of whether a particular site is likely to be suitable usually requires the use of a test transmission and observation of signal strength throughout the cell area.

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Strictly applied restrictions on permissible base station locations and limiting of antenna heights creating signal blockage by nearby buildings, prevent the achievement of optimum, or near optimum, system configuration. The result is loss of universal service from the wireless systems upon which increasingly large numbers of people depend for communications and safety.

Base stations operate with low power. Input to the antenna is typically in the range from five to twenty-five watts per channel. Antennas employed concentrate energy toward the outer edge of the service area and minimize energy directed downward and toward nearby places. The result is very little exposure of the public to the emitted energy. In recognition of this fact, the FCC exempts wireless communications applicants from a requirement to make special showings of RF exposure except in a few cases of exceptionally low antenna heights.

Furthermore, the United States Congress acknowledged in the 1996 revision of the Communications Act the low potential of public exposure from wireless communications systems. The following provision is found in Section 704 of the Act:

"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."

Congress also required the FCC to complete the long-pending proceeding on adopting standards for RF exposure within 180 days after enactment of the Act.

Rules were adopted by the FCC after comments and reply comments were received from interested parties. Recommendations were solicited from agencies of the Federal Government charged with the protection of the public from health hazards. These agencies included the Environmental Protection Agency (EPA), the National Institute of Occupational Safety and Health (NIOSH), the Occupational Safety and Health Administration (OSHA), and the Food and Drug Administration (FDA).

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Complying with recommendations from those agencies, the adopted rules were based, primarily, on the criteria embodied in the National Council on Radiation Protection and Measurements (NCRP) Report No. 86 titled *Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields*. Some provisions of the rules were adopted from the 1991 RF exposure criteria incorporated in the Institute of Electrical and Electronics Engineers (IEEE) Standard C95.1. (In 1992, IEEE C95.1 was adopted by the American National Standards Institute (ANSI) without change.) In the portion of the spectrum of importance to wireless communications, the FCC criteria for maximum permitted exposure are virtually identical to the recently adopted standards of the European Union as developed by the International Committee on Non-ionizing Radiation Protection (ICNIRP).

NCRP is a private, non-profit organization chartered by Congress. Its services have been called upon often for the development of standards for both the ionizing and non-ionizing parts of the electromagnetic spectrum. (Ionizing relates to those frequencies above the ultra-violet, such as x-rays and gamma rays, where each photon carries enough energy to cause cell changes. Non-ionizing relates to all the remaining frequencies where photon energy is insufficient to produce cell changes. A photon is a very small parcel into which electromagnetic energy is subdivided.) The IEEE standard was developed by Standards Coordinating Committee 28 (SCC28), now the International Committee on Exposure Standards (ICES). SCC28 included a membership of approximately 175, mostly from academia, whose areas of expertise included medicine, biology, physiology, epidemiology, engineering and medical statistics.

Although the RF exposure in the vicinity of a base station is hundreds, and more often, thousands of times below the maximum exposure permitted by FCC rules, calculations are made of RF exposure to be expected from each base station. The calculations, specific for the characteristics of the particular base station, provide to local authorities the assurance that the facilities constructed will comply with FCC rules. The calculations are conservative. They assume maximum power that can be employed by the base station consistent with system design. Further, they assume that a nearby surface

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is reflecting the signal and that the reflection arrives at the point of study in phase with, thus adding to, the directly received signal. In fact, the reflected signal, if there at all, could arrive out of phase and subtract from the direct signal. As an additional conservative measure, the assumption is made that an absolutely clear path exists from the antenna to the point of interest, with no trees, walls, or terrain obstructions. In sum, the calculations assure that no location will experience any exposure in excess of that determined.

As indicated previously, antennas used in the wireless communications services are designed to limit energy directed downward and toward nearby areas where, because of their proximity, little energy is needed for satisfactory communications with mobile units. The result of this beam shaping may be slightly increased RF exposure while moving away from the antenna over a few hundred feet. As distance is increased further, the direct ray from antenna to point of interest originates from the antenna's main beam. Once this distance has been reached, the exposure level declines as the square of the distance, *i.e.* if the distance doubles, the RF exposure drops to one quarter of the exposure at the closer distance.

Wireless telecommunications facilities operate in their own exclusive bands and are not a source of interference to broadcast receivers or other electronic devices. They do not add to traffic in the vicinity and are neither a source of noise or pollution. RF exposure levels are far below domestic and worldwide exposure standards.

Jules Cohen, P.E.
DC Reg. No. 1131

October 14, 2002

Jules Cohen, P.E.
Consulting Engineer

PROFESSIONAL BACKGROUND OF JULES COHEN

Jules Cohen received the degree of Bachelor of Science in Electrical Engineering from the University of Washington (Seattle) in 1938. His first professional experience was with consulting engineering firms in the City of Seattle, then with the Bonneville Power Administration, a division of the U.S. Department of the Interior, where he served as a junior engineer and assistant engineer in the substation design section. He was commissioned in the Navy in May of 1942 and served for three and one-half years as a naval officer during World War II. His duties included training at Harvard, at MIT and at the Naval Air Technical Training Center in Corpus Christi. He was a project officer on radar beacons at the Radiation Laboratory at MIT, then at the Bureau of Ships. Under the Commander, Service Forces, Pacific Fleet, he was in responsible charge of the radar beacon program for the Pacific Fleet. His last duty station in the Navy was as Executive Officer of the Electronics Division, Commander Service Forces, Pacific Fleet.

Following release from the Navy, he entered the field of consulting engineering and has been so engaged for 56 years. During 50 of those 56 years, he has been either a sole principal, partner or officer in a consulting engineering firm. He has been licensed to practice as a professional engineer in the District of Columbia since 1952, and has been licensed to practice as a professional engineer in the Commonwealth of Virginia since 1954. During the period of his professional practice, he has provided professional engineering services in the field of broadcasting in particular, and communications in general. During the past 25 years of his practice, an important aspect of his work has been the analysis by calculations and measurements of radio-frequency exposure. On January 1, 1988, he retired from the presidency of Jules Cohen & Associates, P.C., but has continued providing professional consulting services to selected clients.

Over 10,000 projects of varying levels of complexity have been carried out by the engineering firm of which he was either sole member, partner or officer. Work performed has included radio-frequency propagation studies, interference studies, frequency allocation surveys, radiation hazard evaluations, standard broadcast directional antenna design and adjustment, AM, FM and TV field strength measurements, television picture quality assessment, satellite earth station studies, the planning and placement of cellular and other communications structures, studio and transmitting plant layouts for both radio and television, equipment evaluation, and extensive work involving the engineering aspects of changes in the rules of the Federal Communications Commission (FCC).

He was the author of Appendix C of the 1975 Cable Television Advisory Committee Panel II report to the FCC. That appendix dealt with the problem of echoes in television systems. He is also the author of the section on low power television in the 1986 edition of the McGraw-Hill Encyclopedia of Science and Technology. He was co-author of Section 2.9, Human Exposure to RF Radiation in the Eighth Edition of the National Association of Broadcasters Engineering Handbook. As chairman of the engineering committee concerned with interference to television broadcasting from noncommercial FM stations, he played a major role in the development of the rules adopted by the FCC governing the assignment of FM stations in the frequency band from 88.1 to 91.9 MHz. He represented television broadcast interests as co-chairman of the Technical Analysis Working Group of the Land Mobile Radio/UHF Television Technical Advisory Committee.

From the time of its inception in 1983 to 1996, Jules Cohen represented the members of the Association of Maximum Service Television, Inc. (MSTV) in subcommittees and technical groups of the Advanced Television Systems Committee (ATSC). From 1996 to September 1998, he represented the IEEE on the Executive Committee of the ATSC. He has participated as a member, co-chairman or vice chairman of a number of ATSC Technical Groups. As stated in its Charter, the purpose of the ATSC "[Is]

to explore the need for and, where appropriate, to coordinate development of voluntary national technical standards for Advanced Television Systems."

His participation in the work of the Advisory Committee on Advanced Television Service (ACATS) began in November 1987, the starting date set by the FCC, and continued until the completion of the Advisory Committee's work in November, 1995. He was a member of Working Parties 1 and 2 of the Systems Subcommittee (SS/WP-1 and 2), and Working Parties 3, 4 and 6 of the Planning Subcommittee (PS/WP-3, 4 and 6). Under SS/WP-2 he chaired the Field Testing Task Force. That Task Force completed field testing of the Grand Alliance Digital Television System in October, 1995. Mr. Cohen had a major role in preparing both the specifications for the field testing and preparation of the report following field testing. Under PS/WP-3, he chaired the Spectrum Analysis Working Group.

Clients have included: all five of the major television networks (ABC, CBS, NBC, Fox and PBS), the National Association of Broadcasters (NAB), MSTV, the Electronic Industry Association, major group owners of radio and television stations, individual radio and television stations, and Cellular System and Personal Communications System providers. He has also provided engineering services to community and citizen groups relative to the placement of broadcast and wireless communications facilities.

For more than twenty-five years, he has worked extensively in the field of nonionizing radiation effects. He has done research in the scientific literature devoted to the subject, participated in the Bioelectromagnetics Society Symposia held yearly from 1979 through 1995, as well as in 1998 through 2001, completed courses in Hazardous Electromagnetic Radiation offered by George Washington University, the Management of Electromagnetic Energy Hazards offered by Cook College, Rutgers University, and Electric and Magnetic Field Health Research: Assessing the Science, offered by the Harvard University School of Public Health, attended meetings of the Electromagnetic Radiation Management Advisory Council, participated in Michaelson Research Conferences in 1994, 1995, 1997, 1998, 1999, 2000 and 2001, moderated panels on the Biological Effects of Nonionizing Radiation at the 1979, 1983 and 1988 annual conventions of the NAB, delivered invited papers on the Biological Effects of Nonionizing Radiation in the 1979, 1984 and 1993 meetings of the Broadcast Technology Society of the IEEE, and, by invitation, provided a critique of the first and second 1979 drafts and the 1985 draft of a RF/Microwave Criteria document of the National Institute for Occupational Safety and Health (NIOSH).

He was a member of American National Standards Institute (ANSI) Committee C95 that developed the 1982 ANSI Standard C95.1-1982 Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. He is a member of the IEEE International Committee on Electromagnetic Safety (known also as SCC 28) and Subcommittee IV, which completed a revision to ANSI Standard C95.1-1982, now identified as IEEE C95.1-1999. Subcommittee IV is continuing evaluation of scientific literature for possible further updating of the standard. He is a member of SCC 28 Subcommittee I that developed IEEE Standard C95.3-1991, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave. (That standard is also in the process of revision.) He is a member of the IEEE Committee on Man and Radiation (COMAR). He is also a member of Committee 89-2 of the National Council on Radiation Protection and Measurements (NCRP). Committee 89-2 has prepared Report No. 119 A Practical Guide to the Determination of Human Exposure to Radiofrequency Fields. Under contract to the NAB, he prepared a suggested revision to FCC OST Bulletin No. 65, taking into account the ANSI/IEEE 1992 exposure guide.

He has made RF exposure measurements at both the World Trade Center and Empire State Building in New York City and at the John Hancock Building in Chicago. Over the past twenty years, he has also made RF exposure measurements at numerous locations on behalf of broadcast station licensees, cell phone operators, and a satellite station operator.

He has been qualified as an expert witness in Federal Courts, other courts, local boards and councils, and in hearings before the FCC and FAA. Most recently, his expert testimony was accepted in the United States District Court for the Southern District of Florida in the matter of CBS, Inc. *et al v.* PrimeTime 24 Joint Venture, C.A. No. 96-3650-CIV-Nesbitt.

He is a member of Tau Beta Pi, engineering scholastic honorary, a member of the National Society of Professional Engineers, a Life Fellow of the Institute of Electrical and Electronics Engineers (IEEE), a Life Fellow of the Society of Motion Picture and Television Engineers (SMPTE), a charter member of the Bioelectromagnetics Society, a past president of the Association of Federal Communications Engineers and former chairman of that association's Radiation Hazard Subcommittee. He was selected for the 1988 NAB Engineering Achievement Award, a 1990 Achievement Award of the Broadcast Pioneers Washington, DC chapter and a 1999 award from the IEEE Broadcast Technology Society for a lifetime of service to the broadcasting industry and to the Society. During the year 2000 convention of the NAB, he received a further award from the NAB engineers for his over fifty years of service to the broadcast community and a Pioneers award from the Broadcasters' Foundation.

October 4, 2002

**REGULATORY COMPARISON CHART
SURROUNDING JURISDICTIONS**

COMPARISON OF TOWER SITING REGULATIONS IN SURROUNDING JURISDICTIONS

	Montgomery County	Prince George's County	Washington, D.C. (Proposed Office of Planning Text Amendment)
Industrial Zones	Monopoles are allowed as a matter of right up to 199 feet in height, with a setback from the property lines of all adjacent residential and agricultural zoned properties of at least one foot for every foot of height.	The maximum height shall be two hundred fifty (250) feet. The minimum setback from adjoining land in any Residential Zone ... shall be one-half the height of the structure measured from the base to the property lines of such residentially zoned property; otherwise, it shall be set back a minimum of forty (40) feet from any street and twenty (20) feet from any yard.	§2600.2 - The construction of new towers of monopoles is considered incompatible with §2520.1 and shall be permitted as a matter of right in the M industrial zone. The current proposed regulations allow a tower to be built in the M zone with an increase of 30 feet over the height of the buildings.
Commercial Zones	Monopoles are allowed as a matter of right up to 150' in height with a setback of 1:1 from all adjacent residential and agricultural zoned properties. In certain specified zones a special exception would be required.	Towers and monopoles are permitted as a matter of right so long as they meet the following requirements: The maximum height shall be one hundred ninety nine (199) feet. The minimum setback from adjoining land in any Residential Zone ... shall be one half (1/2) of the height of the structure measured from the base to the property lines of such residentially zoned property; otherwise it shall be setback a minimum of forty (40) feet from any street and twenty (20) feet from any property line.	The construction of new towers and monopoles "shall be permitted ... only as a special exception in the C-2, C-3, C-4, CR, SP, W and other CM districts and may be approved only when no other mounting is available." The construction of new towers and monopoles in light commercial (C-1) zones is prohibited .

Residential Zones	A special exception is required in most instances.	Towers and monopoles in residential zones are permitted as a matter of right if they meet the following requirements: The maximum height shall be one hundred ninety-nine (199) feet when located on public property or one hundred (100) feet when located on all other properties. For privately owned land, the minimum setback from all adjoining land shall be equal to the height of the structure measured from its base; for publicly owned land, the minimum setback shall be one half (1/2) of the height of the structure measured from the base to the adjoining property lines. Towers and monopoles that do not meet these requirements must apply for special exceptions.	The construction of new towers and monopoles is prohibited in <u>all</u> residential zones
Rooftop Antenna Sites	Monopoles are allowed as a matter of right on any building that is 20' or greater in height in industrial, commercial or multi-family zones, and on any building that is greater than 50' in height in the one-family residential zones by not on any one-family residence.	Statute does not address monopoles located on rooftops.	The proposed text amendments do not address monopoles located on rooftops.

**CINGULAR PETITION TO FCC
REGARDING ANNE ARUNDEL ORDINANCE**



PUBLIC NOTICE
FEDERAL COMMUNICATIONS COMMISSION
445 TWELFTH STREET, S.W.
WASHINGTON, D.C. 20554

DA 02-1044

News media information 202/418-0500 Fax-On-Demand 202/418-2830 Internet: <http://www.fcc.gov>
<ftp.fcc.gov>

Released: May 7, 2002

WIRELESS TELECOMMUNICATIONS BUREAU SEEKS COMMENT ON PETITION FOR
DECLARATORY RULING THAT AMENDMENTS TO ANNE ARUNDEL COUNTY, MARYLAND ZONING
ORDINANCE ARE PREEMPTED AS IMPERMISSIBLE REGULATION OF RADIO FREQUENCY
INTERFERENCE RESERVED EXCLUSIVELY TO THE FEDERAL COMMUNICATIONS COMMISSION

Comment Date: June 10, 2002

Reply Comment Date: June 25, 2002

On April 23, 2002, Cingular Wireless LLC ("Cingular") filed a Petition for Declaratory Ruling ("Petition") requesting that the Commission, under the Communications Act of 1934, as amended ("the Act"),¹ issue a declaratory ruling preempting recent amendments to the Anne Arundel County, Maryland ("Anne Arundel") zoning ordinance.² On April 29, 2002, Cingular filed a supplement to its Petition.³ Cingular seeks a declaratory ruling that the amendments impermissibly condition the County's zoning approval of communications facilities on the County's satisfaction that the facilities will not degrade or interfere with the County's federally-licensed public safety communications system. Cingular states that, although the amendments purport to regulate land use through zoning, they are, in fact, intended to regulate and have the effect of regulating radio frequency interference ("RFI"). Cingular further states that Congress, under the Act, has established a "pervasive regulatory scheme" that grants the Commission exclusive jurisdiction to regulate RFI, and that the Anne Arundel amendments conflict with the Commission's rules regarding resolution of RFI. Cingular maintains that, in order to prevent significant delays in the provision of wireless services resulting from Anne Arundel's regulation of RFI, the Commission should determine that the amendments are preempted.

This matter shall be treated as a "permit but disclose" proceeding in accordance with the Commission's ex parte rules. 47 C.F.R. §§ 1.1200(a), 1.1206. Persons making oral ex parte presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. *See* 47 C.F.R. § 1.1206(b). Other rules pertaining to oral and written ex parte presentations in permit-but-disclose proceedings are set forth in Section 1.1206(b) of the Commission's rules. 47 C.F.R. § 1.1206(b).

Comments on the petition must be filed on or before June 7, 2002, and reply comments by June 24, 2002. All documents filed in this proceeding should indicate in the caption that this matter is before the Wireless Telecommunications Bureau, Commercial Wireless Division, Policy and Rules Branch and include the DA number of this Public Notice, DA 02-1044.

¹ 47 U.S.C. §§ 151, 301, 302, 303.

² *See* Petition for Declaratory Ruling filed by Cingular, dated April 23, 2002.

³ *See* Supplement to Petition for Declaratory Ruling filed by Cingular on April 29, 2002. The supplement contains a copy of Bill No. 93-01 amending Anne Arundel County's zoning ordinance and a copy of a letter from the Commercial Wireless Division addressing zoning regulations of a different county.

The Petition is available for public inspection and copying in the Commission's Reference Center, Room CY-A257, 445 12th Street, S.W., Washington, DC 20554. Copies of the Petition are also available from Qualex International, Portals II, 445 12th Street, SW, Room CY-B402, Washington, D.C. 20554, telephone (202) 863-2893, facsimile (202) 863-2898, or e-mail at qualexint@aol.com. Copies of the Petition also may be obtained via the Commission's Electronic Comment Filing System (ECFS), which is accessible at <http://www.fcc.gov/e-file/ecfs.html>, by entering the Docket Number of this proceeding, Docket No. WT 02-100.

Under the Commission's current procedures for the submission of filings and other documents,⁴ submissions in this matter may be filed electronically by ECFS or by hand delivery to the Commission's Massachusetts Avenue location.

- **If filed by ECFS,**⁵ comments shall be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply.
- **If filed by paper,** the original and four copies of each filing must be filed by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Vistrionix, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

One copy of each pleading must also be delivered electronically, by e-mail or facsimile, or if delivered as paper copy, by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (according to the procedures set forth above for paper filings) to: (1) the Commission's duplicating contractor, Qualex International, at qualexint@aol.com or (202) 863-2898 (facsimile); (2) Gary Oshinsky, Commercial Wireless Division, Wireless Telecommunications Bureau, at goshinsk@fcc.gov, or (202) 418-7447 (facsimile).

⁴ See *In the Matter of Implementation of Interim Electronic Filing Procedures for Certain Commission Filings*, Order, FCC 01-345 (rel. Nov. 29, 2001); see also FCC Announces a New Filing Location for Paper Documents and a New Fax Number for General Correspondence, *Public Notice*, DA 01-2919 (rel. Dec. 14, 2001).

⁵ See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24,121 (1998).

For further information contact: Gary Oshinsky, Commercial Wireless Division, Wireless Telecommunications Bureau, at (202) 418-7167.

- FCC -



PUBLIC NOTICE

FEDERAL COMMUNICATIONS COMMISSION

445 TWELFTH STREET, S.W.

WASHINGTON, D.C. 20554

News media information 202/418-0500 Fax-On-Demand 202/418-2830 Internet: <http://www.fcc.gov> <ftp.fcc.gov>

Released: May 8, 2002

**ERRATUM TO WIRELESS TELECOMMUNICATIONS BUREAU SEEKS COMMENT ON
PETITION FOR DECLARATORY RULING THAT AMENDMENTS TO ANNE ARUNDEL
COUNTY, MARYLAND ZONING ORDINANCE ARE PREEMPTED AS IMPERMISSIBLE
REGULATION OF RADIO FREQUENCY INTERFERENCE RESERVED EXCLUSIVELY TO
THE FEDERAL COMMUNICATIONS COMMISSION**

Released: May 8, 2002

By the Wireless Telecommunications Bureau:

This erratum amends the Public Notice, "Wireless Telecommunications Bureau Seeks Comment on Petition for Declaratory Ruling that Amendments to Anne Arundel County, Maryland Zoning Ordinance are Preempted as Impermissible Regulation of Radio Frequency Interference Reserved Exclusively to the Federal Communications Commission", DA 02-1044, released on May 7, 2002.¹ The Public Notice is amended to change the date for filing comments in paragraph 3 first sentence of the text, from June 7, 2002 to June 10, 2002, to reflect the same date for filing comments as listed at the top of the page. The date for filing reply comments of June 25, 2002 remains unchanged.

– FCC –

¹ Wireless Telecommunications Bureau Seeks Comment on Petition for Declaratory Ruling that Amendments to Anne Arundel County, Maryland Zoning Ordinance are Preempted as Impermissible Regulation of Radio Frequency Interference Reserved Exclusively to the Federal Communications Commission, *Public Notice*, DA 02-1044 (rel. May 7, 2002).

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

RECEIVED

APR 23 2002

In the Matter of

Federal Preemption of

Anne Arundel County Ordinance

Regulating Radio Frequency Interference

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02-100

File No. _____

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

To: The Commission

PETITION FOR DECLARATORY RULING

Pursuant to Section 1.2 of the Commission's Rules,¹ Cingular Wireless LLC ("Cingular") requests that the Commission issue a Declaratory Ruling preempting recent amendments to the Anne Arundel County zoning ordinance under the Communications Act of 1934, as amended ("the Act").² Specifically, the County recently amended Article 28 of its Code to include numerous provisions allowing land to be used for communications facilities only if the County is satisfied that no radio frequency interference ("RFI") will be caused to its own federally-licensed facilities.³ Thus, although Article 28 purports to regulate zoning, it is not a traditional zoning ordinance. Rather, these amendments are intended to, and have the effect of, regulating RFI. The Commission, however, has exclusive jurisdiction to regulate RFI and has fully occupied the field with respect to such regulation. Accordingly, Anne Arundel County has no jurisdiction in this area and its Ordinance should be preempted.

¹ 47 C.F.R. § 1.2.

² 47 U.S.C. § 101 *et seq.*

³ See Article 28, §§ 1-101(14B), 1-128(a), (c), and 10-125(j)(1)-(2) and (k)(1)-(2) of the Anne Arundel County Code ("Ordinance"). These amendments were adopted on January 22, 2002, and went into effect 45 days later, on March 8, 2002.

BACKGROUND

Traditional zoning ordinances regulate the use of land. In contrast, the amendments to Anne Arundel County's Ordinance are focused on the use of frequencies and the interference that such uses may cause. The preamble to the Bill amending the Ordinance indicates that it was adopted for the purpose of "requiring applicants for certificates of use for commercial telecommunications facilities to provide certification that their use will not degrade or interfere with the County's public safety radio systems."⁴

Specifically, the Ordinance requires owners and users of telecommunications facilities to obtain zoning certificates prior to using or altering any such facility.⁵ A telecommunications facility is defined broadly to include towers, antennas, microwave dishes, and even in-building wireless communications systems.⁶ Significantly, an alteration is defined broadly to include not just physical modifications, but also technical modifications, such as "*any change in configuration, transmit frequency, or power level.*"⁷ An owner or user of a telecommunications facility must apply for and receive a zoning certificate of use prior to changing its frequencies, even in circumstances where there is no modification to the land or associated structures.⁸

The Ordinance regulates on the basis of RFI as follows:

- Prior to receiving a zoning certificate, each applicant must obtain "certification from an independent consultant acceptable to the Director of the Department of Inspections and Permits that the facility or the applicant's use of the facility will not degrade or interfere with the County's public safety communications systems."⁹

⁴ Article 28, Preamble

⁵ Article 28 § 1-128(a).

⁶ Article 28 § 1-101(14B).

⁷ Article 28 § 1-128(a).

⁸ See Article 28 § 1-128(a).

⁹ Article 28 § 10-125(j)(1).

- After receiving a zoning certificate, each certificate holder must submit, on a annual basis, “a certification from an engineer acceptable to the Director of the Department of Inspections and Permits of the radio frequency radiation actually measured at the facility, that the measurements provided are accurate and that the measurements meet the applicable Federal Communications Commission standards and guidelines for those emissions.”¹⁰
- If at any time the facility or use of the facility degrades or interferes with the County’s public safety communication system, or if the carrier cannot make the above certifications, the certificate of use may be revoked.¹¹

Again, the express purpose of these amendments is to regulate radio frequency interference with the County’s public safety communications system.

I. THE COUNTY ORDINANCE IS PREEMPTED BECAUSE IT IMPEDES THE FCC’S OCCUPATION OF THE RADIO FREQUENCY INTERFERENCE FIELD

A. The Commission Has Exclusive Jurisdiction to Regulate RFI Under the Communications Act

Congress has granted the Commission exclusive jurisdiction to regulate RFI, and any attempt by a state or local government to infringe upon this authority is impermissible. Congress has the authority to preempt state and local law under the Supremacy Clause, which states that “the Laws of the United States . . . shall be the supreme Law of the Land . . . any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.”¹²

In general, there are three types of preemption: (1) express preemption, which occurs when the language of a federal statute reveals an express intent by Congress to preempt state law; (2) field preemption, which occurs when federal regulation is so pervasive as to evidence a Congressional intent to occupy the entire field, thereby leaving no room for the states to regulate; and (3) conflict preemption, which occurs when compliance with both federal and state law is

¹⁰ Article 28 § 10-125(k)(1).

¹¹ Article 28 §§ 10-125(j)(2), (k)(2).

impossible, or when state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.¹³

Title I of the Act created the FCC to “centralize authority” over “communications by wire and *radio*” for the purpose, among other things, “of promoting safety of life and property.”¹⁴ In Title III, Congress established a pervasive regulatory scheme for the FCC to occupy the entire field of RFI regulation. For example, Section 301 of the Act states that “[i]t is the purpose of this Act . . . to maintain the control of the United States over all the channels of radio transmission; and to provide for the use of such channels . . . under licenses granted by Federal authority.”¹⁵ Section 302 provides that the FCC has the power to “make reasonable regulations . . . governing the interference potential of devices which in their operation are capable of emitting radio frequency energy . . . in sufficient degree to cause harmful interference to radio communications.”¹⁶ Section 303 explicitly details the FCC’s responsibilities with respect to radio transmission, including assigning frequencies, determining station power, and, most significantly, “mak[ing] such regulations not inconsistent with law as it may deem necessary to prevent interference between stations and to carry out the provisions of this Act.”¹⁷

The breadth of these provisions results in complete federal control over radio transmissions. A review of the legislative history of these provisions when they were originally adopted as part of the Federal Radio Act of 1927 confirms that they were intended to assert such absolute control: “[T]he bill affirmatively asserts and assumes jurisdiction in the Federal

¹² U.S. Const. Art. VI, cl.2.

¹³ *Capital Cities Cable, Inc. v. Crisp*, 467 U.S. 691 (1984); *Southwestern Bell Wireless Inc. v. Johnson County Bd. of County Comm’rs*, 199 F.3d 1185 (10th Cir. 1999).

¹⁴ 47 U.S.C. § 151.

¹⁵ 47 U.S.C. § 301.

¹⁶ 47 U.S.C. § 302(a)(1).

Government over all phases of radio communication. . . . [I]t retains complete control in the Federal Government of all channels of radio communication.”¹⁸

Congress amended the Communications Act in 1982 by broadening Section 302 to specifically authorize the FCC to require that home electronic equipment meets minimum RFI rejection standards. There, it reconfirmed that the FCC had exclusive jurisdiction over RFI, and that state and local regulation of this area was preempted:

The Conference Substitute is further intended to clarify the reservation of exclusive jurisdiction to the Federal Communications Commission over matters involving RFI. Such matters shall not be regulated by local or state law, nor shall radio transmitting apparatus be subject to local or state regulation as part of any effort to resolve an RFI complaint [T]he Conferees intend that regulation of RFI phenomena shall be imposed only by the Commission.¹⁹

The Supreme Court has consistently interpreted the FCC’s jurisdiction “over technical matters,” such as the transmission of radio signals and RFI to be “clearly exhaustive.”²⁰ In fact, the Court has stated that Congress, in adopting the Act, “formulated a unified and comprehensive regulatory system for the industry,”²¹ and that the Commission has “comprehensive powers to promote and realize the vast potentials of radio.”²²

While the FCC has exclusive jurisdiction over technical matters such as RFI, Section 332(c)(7) of the Act preserves local authority over traditional zoning functions, such as the

¹⁷ See 47 U.S.C. § 303(c)-(f).

¹⁸ Statement of Herbert Hoover, Secretary of Commerce, to the House of Representatives, Committee on the Merchant Marine and Fisheries, regarding H.R. 5589 (Jan. 6, 1926).

¹⁹ H.R. Conf. Rep. No. 765, 97th Congress, 2d Sess. 33 (1982), *reprinted in* 1982 U.S.C.C.A.N. 2261, 2277 (*emphasis added*).

²⁰ *Head v. New Mexico Bd. of Exam’rs in Optometry*, 374 U.S. 424, 430 n.6 (1963).

²¹ *FCC v. Pottsville Broad. Co.*, 309 U.S. 134, 137 (1940).

²² *Nat’l Broad. Co. v. U.S.*, 319 U.S. 190, 217 (1943).

placement, construction, and modification of facilities.²³ The United States Court of Appeals for the Second Circuit recently confirmed that a locality may not regulate RFI under the guise of exercising its zoning authority: “Congress did preserve some local zoning authority over the placement of wireless services transmitters. . . . However, *we conclude that Congress did not intend by this provision to repeal the FCC’s exclusive jurisdiction over RF interference complaints.*”²⁴

As noted by the Second Circuit, the Act establishes a system for resolving interference disputes whereby a party – including a local authority which holds a license – may file a complaint with the FCC.²⁵ The Commission’s rules provide specific guidance regarding resolution of interference complaints, when licensees may make technical modifications to their systems, and what approvals and filings are required.²⁶ Of course, any complaint filing would have to allege a specific violation of the FCC’s operating and/or interference rules. The FCC recently adopted an *NPRM* to consider rule changes to remedy interference between CMRS and public safety systems.²⁷ That proceeding is the appropriate forum for the County to raise any generalized interference concerns it may want addressed. Thus, Anne Arundel County’s Ordinance regulating RFI is not only impermissible but unnecessary.²⁸

²³ 47 U.S.C. § 332(c)(7).

²⁴ *Freeman v. Burlington Broad., Inc.*, 204 F3d 311, 323 (2nd Cir. 2000)(emphasis added).

²⁵ See 47 U.S.C. § 208.

²⁶ See, e.g., 47 C.F.R. §§ 1.929, 1.947, 22.352, and 22.353. In this regard, Cingular notes that the FCC has significant resources available to resolve interference complaints, including FCC field offices that may provide on-site support and a 24-hour emergency contact.

²⁷ *Improving Public Safety Communications in the 800 MHz Band, Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels*, WT Docket No. 02-55, *Notice of Proposed Rule Making*, FCC 02-81 (rel. Mar. 15, 2002). The FCC notes that such interference “can occur even though all parties involved may be operating in compliance with the Commission’s rules.” *Id.* at ¶15.

²⁸ See, e.g., *Mobilecomm of New York*, 2 F.C.C.R. 5519 (CCB 1987) (preempting the zoning

B. The Anne Arundel County Ordinance Regulates RFI and Thus Must Be Preempted

The Anne Arundel Ordinance regulates RFI. The right to utilize towers and other communications equipment is predicated on the County's interference determination. In fact, at one point, the County has inserted itself into the Commission's exclusive province to regulate RFI – under the Commission's rules.²⁹ No other definition of harmful interference is even offered.

The FCC preempted a nearly identical ordinance in *Southwestern Bell Wireless Inc. v. Johnson County Board of County Commissioners*. There, the County enacted an ordinance that prohibited communications towers from operating in a manner that interfered with public safety communications. The ordinance also granted the zoning administrator authority to determine when interference existed and to force the carrier to cease operations. These provisions mirror Sections 10-125(j)(1)-(2) and (k)(1)-(2) of the Anne Arundel County Ordinance. After reviewing the ordinance, the FCC determined that the County's "effort to regulate . . . RFI [was] preempted by the Communications Act of 1934, as amended." The FCC went on to assert its exclusive jurisdiction over RFI matters.³⁰ The United States Court of Appeals for the Tenth Circuit agreed with the FCC's determination, stating that "Congress intended federal regulation of RFI issues to

ordinance at issue because it conflicted with the Commission's Part 22 rules); *In re 960 Radio*, FCC 85-578, 1985 WL 193883 (preempting a zoning ordinance because it conflicted with the Commission's broadcasting rules).

²⁹ See Article 28 § 10-125(k)(1).

³⁰ Letter from David L. Furth, Chief, Commercial Wireless Division, Wireless Telecommunications Bureau, to Roger Kroh, Director of Planning and Development, Johnson County Office of Planning, Development and Codes (July 2, 1997).

be so pervasive as to occupy the field. . . . RFI regulation is not a traditional local interest but a national interest preempted by federal legislation.”³¹

The Commission also declared an ordinance unlawful because it contained a notification provision similar to that contained in Section 1-128(a) of Anne Arundel County’s Ordinance. Specifically, Wilton, Connecticut enacted an ordinance that required carriers to notify the local zoning board before making any power and/or frequency changes. The FCC’s opinion noted that these notification provisions constituted an attempt to regulate interference and were, therefore, “null and void.”³²

CONCLUSION

The decisions discussed above and the statutory scheme itself make clear that the Anne Arundel County Ordinance is preempted because it usurps the Commission’s exclusive jurisdiction concerning RFI matters. Specifically, Article 28, Sections 1-101(14B), 1-128(a), (c), and 10-125(j)(1)-(2) and (k)(1)-(2) run afoul of the FCC’s occupation of the entire of field of RFI, and conflict with specific FCC rules regarding resolution of RFI. The Ordinance requires a certificate of use based on RFI showings prior to commencing operations or implementing changes to transmitter frequencies or power. Thus, the local zoning board is impermissibly

³¹ *Southwestern Bell Wireless, Inc. v. Johnson County Bd. of County Comm’rs*, 199 F3d 1185, 1193 & 1194 (10th Cir. 1999); *see also Freeman v. Burlington Broad., Inc.*, 204 F3d 311, 325 (2nd Cir. 2000) (“[A]llowing local zoning authorities to condition construction and use permits on any requirement to eliminate or remedy RF interference ‘stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.’”); *In re 960 Radio, Inc.*, FCC 85-578, 1985 WL 193883 (1985) (“[T]he issue is whether or not the Communications Act has preempted the role of state and local governments in resolving specific interference disputes involving federally licensed broadcasting stations. . . . [W]e conclude that state and local governments are preempted in that area.”)

³² *Mobilecomm of New York*, 2 F.C.C.R. 5519, 5520 (CCB 1987).

regulating RFI and causing significant delay in the provision of wireless service³³ – in direct contravention to the Commission's statutory mandate to encourage the rapid deployment of wireless services. Cingular urges the Commission to accept this petition and promptly issue a Declaratory Ruling preempting Anne Arundel County's zoning Ordinance.

Respectfully submitted,

CINGULAR WIRELESS LLC



By: L. Andrew Tollin
Catherine C. Butcher

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2300 N Street, N.W.
Washington, D.C. 20037
(202) 783-4141

Its Attorneys

Date: April 23, 2002

³³ Cingular already is experiencing delay and has been unable to modify certain cell sites within Anne Arundel County as a direct result of this Ordinance.

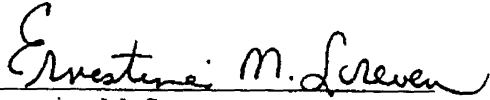
CERTIFICATE OF SERVICE

I, Ernestine M. Screven, a secretary with the law firm of Wilkinson Barker Knauer, LLP, hereby certify that on this 23rd day of April, 2002, I caused the foregoing "Petition for Declaratory Ruling" to be sent via first-class U.S. mail to the following:

The Honorable Janet Owens
County Executive
Anne Arundel County
P.O. Box 2700
Annapolis, MD 21401

Mr. John Brusnighan
Chief Administrative Officer
Anne Arundel County
P.O. Box 2700
Annapolis, MD 21401

Mr. Jay Cuccia
Communications Officer
Heritage Office Complex
2660 Riva Rd.
Third Floor
MS 9304
Annapolis, MD 21401


Ernestine M. Screven

ARTICLES

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1 of 1 DOCUMENT

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The Washington Post

June 21, 2002, Friday, Final Edition

SECTION: METRO; Pg. B04

LENGTH: 518 words

HEADLINE: Storm Incapacitates Most D.C. Fire Radios

BYLINE: David A. Fahrenthold, Washington Post Staff Writer

BODY:

D.C. fire department radios failed across several parts of the city Wednesday afternoon, forcing dispatchers to use cellular phones to contact firefighters and medics, officials said.

Problems began between 3 and 3:30 p.m., when the District's Public Safety Communications Center at 310 McMillan Dr. NW suffered lightning or other weather-related damage, said Linda Argo, a spokeswoman for the city's Office of the Chief Technology Officer.

The damage disrupted service at three of the four antenna towers that relay fire department radio traffic, Argo said. Two of the towers that were affected are in Northwest Washington, at Georgetown University Hospital and the 4th District police station on upper Georgia Avenue, and the other one is at St. Elizabeths Hospital in Southeast. The fourth tower is in the 5900 block of East Capitol Street, according to fire department spokesman Alan Etter.

He said radio problems for firefighters were worst downtown and in Upper Northwest, Anacostia and far Southeast.

Radio communications were restored about 1:30 a.m., officials said. The towers receive radio signals and send them to the communications center on a dedicated phone line.

The extent of the radio outage was unclear. Firefighters said that downtown and in other areas, they could not be heard by dispatchers and could hear only bits and pieces of what the dispatchers were saying. Argo said firefighters could hear the dispatchers clearly, but could not be heard in return.

Both sides said the radio problems forced dispatchers to begin contacting firefighters and medics via cellular phones.

It was a busy afternoon for the department, especially in Northwest. A suspicious package scare near two Federal Reserve buildings closed down streets

along the Mall and in the West End during rush hour. Earlier in the afternoon, there was another suspicious package alert inside a building at 1401 K St. NW. In addition, fires were reported at other buildings.

Etter said the radio problems didn't hamper the department's response to calls. But firefighters said yesterday that there were some difficulties.

For instance, members of one ladder truck company, who had not heard a dispatcher tell them about a fire in the 1800 block of 13th Street NW, became concerned after a fire truck blew by them with sirens blaring.

The company had to drive back to the fire station to receive the orders from a computer printout, according to a fire captain who spoke with the company.

The D.C. fire department has been using its 800 MHz digital radio system since January 2001. Firefighters have complained that, even with all four towers working, the radio system doesn't work in Metro stations, high-rise buildings and even in some fire stations.

Etter said he did not know of any previous outages similar to Wednesday's, in which firefighters standing in the open were unable to communicate with dispatchers.

Fire officials have conceded that four towers are not enough and that two to three times as many are needed. They have promised an upgrade.

LOAD-DATE: June 21, 2002

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Computer Dealer News

October 19, 2001

SECTION: No. 21, Vol. 17; Pg. 24 ; ISSN: 1184-2369

IAC-ACC-NO: 80207599

LENGTH: 544 words

HEADLINE: Wireless communication in the aftermath; of **September 11, 2001**
terrorist attacks

BYLINE: Greiner, Lynn

BODY:

After the attacks on **September 11**, wireless communications became more than a status symbol. As land lines failed and the cellular telephone networks faltered, it was e-mail that provided the necessary communications that eased troubled minds

Wireless communication has been a useful, but often expensive tool for several years now. Call phones, pagers (both one and two-way), and other devices have graced the pockets, purses and briefcases of users for all sorts of reasons. For some, they're a business necessity, while for others, they're toys or status symbols,

Then came the attacks on **September 11**.

Suddenly, the vulnerability of our communications networks was driven home, as telephone circuits overloaded and cellular networks staggered under the volume of calls.

Manhattan, the capital of commerce, was -- and still is -- partly crippled by the destruction of infrastructure in and around the World Trade Center.

Some colleagues and I were in the air over New York when the first plane hit.

We saw the gout of flame erupt from the side of the tower. By the time we left the airport, the second tower had been hit, and as we drove to our destination outside of the city, listening in horror to radio accounts of the tragedy, we tried to contact our office and our families by cell phone. We couldn't get through. When we arrived, we tried land lines, again with no success.

Finally, without great hope of success, I tapped out a two line e-mail to my

Computer Dealer News October 19, 2001

husband on my RIM BlackBerry.

Within minutes, I had a relieved reply, and a request from my office for a list of the members of our group, so their families could be reassured.

My message had been the first contact from any of us. And throughout the long two days until we got home, the BlackBerry was the most reliable method of communication.

Now, as cleanup goes on, some former Metricom employees have revived, and are maintaining, the defunct Ricochet high speed wireless Internet network for the use of the emergency workers in the city.

Ricochet couldn't cut it as a commercial product -- although users loved it, the limited subscriber base couldn't cover the huge infrastructure costs, but it is proving itself invaluable to those on the front lines (New York City is paying the operating costs for the emergency network).

Again, wireless is a hero in extraordinary circumstances.

It's the "ordinary" circumstances that will be the problem. As cellular phones have grown in popularity, the infrastructure sort of kept up, but usage is outstripping network capacity.

Anyone driving their car around the Greater Toronto Area on a bad weather day can testify to that!

Now the U.S. has seen a huge increase in handset purchases, fuelled by the stories from September 11 of doomed people calling their families from the hijacked planes and the World Trade Center, that will stretch overstressed networks beyond their limits.

The perception of wireless has changed - wireless devices are no longer being regarded as the toys of the affluent.

Soon a wireless device in the pocket will be as common as a laptop in the briefcase (and they may ultimately commune via Bluetooth), and we can only hope that the networks will be able to keep up.

IAC-CREATE-DATE: November 21, 2001

LOAD-DATE: November 22, 2001

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Sun-Sentinel (Fort Lauderdale, FL)

September 14, 2001 Friday Broward Metro Edition

SECTION: NATIONAL; Pg. 12A

LENGTH: 839 words

HEADLINE: CELL PHONES WERE A GODSEND AT CRUCIAL MOMENTS;
NETWORKS GAVE US GOOD AND BAD SERVICE AS EVENTS UNFOLDED.

BYLINE: Christine Winter Business Writer

BODY:

Wireless communications technology has played a dramatic role in the terrorist attacks on New York and Washington, D.C., and both the best and worst features of the still-emerging technologies have been on display for the world.

Cell phone users called from the hijacked planes, from underneath the rubble of the World Trade Center buildings and from all over the country in desperate attempts to reach loved ones whose fates were unknown.

The performance of the ubiquitous phones has both disappointed and impressed users, as systems sputtered under the weight of unprecedented traffic in the early hours of the tragedies, then performed beyond traditional capabilities in transmitting heart-wrenching calls from the hijacked planes.

Meanwhile, questions linger about whether "locator" technology, a long-delayed FCC requirement for mobile phones, might have aided rescuers in the search for buried victims calling for help.

In 1998, the Federal Communications Commission mandated the gradual phase-in of technology that would allow carriers to locate individual cell phones as an enhanced-911 feature. The requirements are finally set to go into effect Oct. 1, although many major carriers have requested delays. The systems would use either cellular-signal triangulation technology retrofitted into networks or global positioning systems chips, based on data from Department of Defense satellites, and considered more accurate, built into handsets.

Yet neither system would have been precise enough to locate survivors in the relatively small perimeter of ground zero of the collapsed towers.

"The GPS systems guarantee they will give the correct latitude and longitude of a phone within 50 meters, two-thirds of the time, and within 150 meters, 95 percent of the time," explained Michele Pinnau, a Nextel spokeswoman. "That's about a city block, so it probably wouldn't help much in a situation like this."

"It's an excellent technology for finding people whose cars break down on the highway," said Travis Larson, a spokesman for the Cellular Telecommunications

Sun-Sentinel (Fort Lauderdale, FL) September 14, 2001 Friday Broward Met

and Internet Association, a trade association. "It would not be that accurate when you are looking at 100 feet of rubble."

Though cellular phones are not yet sophisticated enough to pinpoint locations, they were omnipresent enough to play a significant role as Tuesday's tragic events unfolded.

At first glance, it appears the wireless industry let customers down, as networks were crippled by unprecedented traffic loads Tuesday morning. Yet service was quickly revived as carriers rushed portable cellular towers the size of refrigerators to the sites to expand capacity and replaced damaged equipment in New York that sat atop the World Trade Center.

And when one technology failed, sometimes another picked up the slack.

"I work at the Pentagon and was there when the plane hit the building," a Nextel phone customer e-mailed the company, which has phones that include a two-way radio "direct connect" feature as well as cellular functions.

"Once everyone was evacuated, cell phone calls flooded the system and 90 percent of all phones were not able to get service ... but I was able to get hold of my wife with the direct connect feature on your phones, and she was very relieved to hear from me, needless to say," he wrote.

Cellular phone use has grown exponentially from the first trial run of 2,000 users in Chicago in 1978. Today there are 120 million cell phones in the United States, according to CTIA. About four out of 10 Americans carry one of the devices.

"No telecom networks, even land lines, are designed for everybody to pick up the phone and use it at the same time," said Clay Owen, a spokesman for Cingular Wireless. "This is especially true of the cellular network, which was engineered to accommodate users on the move, handing off their calls from cell tower to cell tower so that each cell's limited frequencies can be reused."

Horizon Wireless reports that its equipment in New York logged 1 million calls between 9 and 11 a.m. before it stopped counting. In Washington, D.C., Horizon's call volume was twice as high as the previous busiest day.

Yet as frustrated as the early failures in service were to frantic callers, industry experts are astounded that the phones worked well enough to allow doomed passengers aboard the hijacked planes to call their loved ones. In normal circumstances, such calls are prohibited by FAA regulations, for fear the signals will interfere with airplane communications, but in fact, cellular networks are not designed for ground-to-air communications.

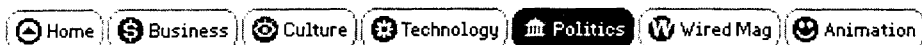
Not all cell towers are configured to beam upward or to catch signals from overhead, nor are they designed to hand off calls quickly enough to keep up with a jet flying at 550 mph, which would require transferring the call to a new tower every minute.

"Those calls were like gifts to the families who got a chance to say goodbye," said Larson.

Sun-Sentinel (Fort Lauderdale, FL) September 14, 2001 Friday Broward Met

Christine Winter can be reached at cwinter@sun-sentinel.com or 954-356-4664.

LOAD-DATE: September 14, 2001



Text Size: A A A A

U.S. Plans New Cellular System By Associated Press

Story location: <http://www.wired.com/news/politics/0,1283,47505,00.html>

02:05 PM Oct. 11, 2001 PDT

WASHINGTON -- The White House plans to give emergency crews and government officials priority on the nation's cellular telephone system in an effort to ensure service for authorities during a crisis.

Cellular phone use overwhelmed wireless networks in the hours after the Sept. 11 attacks in New York and Washington, and prevented some police and officials from making critical calls.

Richard Clarke, the president's cybersecurity adviser, said Thursday he does not want that to happen again.

"It is essential that we work with industry to deploy priority access service for use in crisis situations as soon as possible," Clarke said. When lines are congested, less than 5 percent of cellular calls sometimes go through, he said.

Cellular towers have a fixed number of wireless telephone lines. When those are full, the system puts new callers in line on a first-come, first-served basis.

The new system would let those with special priority access codes jump ahead. Government officials said some priority users would be ranked higher than others, allowing calls to 911 to get through.

The idea had languished for years with little federal support, but gained momentum after the attacks. Cellular companies decided at a meeting two weeks after the attacks that the industry could start setting up the priority system immediately.

"The wireless industry stands united in the support of our nation's security and public safety objectives," said Tom Wheeler, president of the Cellular Telecommunications and Internet Association trade group. "We look forward to the challenge ahead."

The plan calls for space for 500 priority users in two months and 50,000 by

The plan calls for space for 500 priority users in two months, and 50,000 by year's end.

No new phones are needed. Instead, users would punch in a special code followed by a personal identification number.

Taxpayers will cover the cost; no price has been mentioned.



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The Washington Post

October 12, 2001, Friday, Final Edition

SECTION: FINANCIAL; Pg. E11

LENGTH: 591 words

HEADLINE: Priority Wireless Access Urged for Rescuers During Crises

BYLINE: Robert O'Harrow Jr., Washington Post Staff Writer

BODY:

Emergency workers should have priority access to wireless communications during crises, in part because many authorities could not place wireless calls after the attacks on Sept. 11, the president's new cyberspace security adviser said yesterday.

"It is essential that we work with industry to deploy priority access service for use in crisis situations as soon as possible," said Richard Clarke, who was appointed to the post earlier this week.

The government has tried for years, without success, to ensure emergency wireless communications between officials during wartime and disasters. The problem was evident in the hours after the Sept. 11 attacks on the World Trade Center and the Pentagon. Wireless systems were swamped and in some cases useless, so some national security officials, firefighters and other officials could not communicate with one another.

Officials estimate that fewer than one in 20 calls connect during some crises. In New York, the Sept. 11 communications problem was exacerbated by the fact that some traditional telephone systems in the area around the World Trade Center were destroyed when the mammoth buildings collapsed.

The government wants a wireless system that would work in parallel with a priority access system already in place for traditional phone lines, giving certain predesignated officials the ability to move to first in line when trying to make cell-phone calls during emergencies.

The National Communications System -- an umbrella organization of government agencies established in the early 1960s -- has been urging the telecommunications industry to give authorities priority to their networks.

The Federal Communications Commission last year said it would allow, but not require, cell-phone providers to give priority access to federal, state and local emergency workers "to help meet the national security and emergency

The Washington Post, October 12, 2001

preparedness needs of the nation."

But the FCC's ruling, adopted in July 2000, hasn't led to a functioning system, which has frustrated officials from the FCC and the NCS, sources said.

"It was voluntary, so nothing happened," one official said. "Finally, people like Dick Clarke said let's make this happen. . . . It's really an urgent problem."

Officials from the wireless industry said they have been trying to develop a viable solution but expected to have several more years to implement one.

After the Sept. 11 attacks, the White House asked industry leaders what they could do in 60 days, according to Kimberly Kuo, a spokeswoman for the Cellular Telecommunications and Internet Association.

It's not easy to create such a system in the wireless world, industry officials said. Unlike traditional land-line networks, there is no dedicated link from a cell phone to a switching center. Cell phones must find one of a limited number of links available in a given area, making it more difficult for providers to give priority access to certain individuals.

Industry officials also worry that giving priority to some officials in a crisis may deprive regular wireless callers of access to 911 call centers.

"We're definitely working with them and have been," Kuo said. "As an industry, we have to ensure that this system works across many technologies and networks. That is a serious challenge that we will work as fast as possible to solve. But it's complicated."

Officials from the NCS said they will focus first on providing priority access in certain metropolitan areas and later across the United States.

LOAD-DATE: October 12, 2001

55 of 103 DOCUMENTS

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October 17, 2001, Wednesday, Final Edition

SECTION: METRO; Pg. B01

LENGTH: 699 words

HEADLINE: **Cell Phone Ban Eased At Some Schools; Montgomery Board Prodded by Md. Law**

BYLINE: Annie Gowen, Washington Post Staff Writer

BODY:

High school students in Montgomery County can now bring cellular **telephones** and pagers to school as long as the devices are turned off during the school day, the county Board of Education voted yesterday.

In a unanimous vote, the board approved a change in its policy that allows Montgomery County high school students to have turned-off **cell phones** at school but prohibits middle or elementary school students from carrying them without a waiver.

Montgomery County educators, along with those of several other school systems in the state -- including Calvert and Howard counties -- have moved to modify their policies on **cell phones** at school after the Maryland General Assembly this year repealed a law banning their use in most counties. The change went into effect Oct. 1.

Educators also hoped to pacify parents worried about their children's safety in the wake of the **Sept. 11** terrorist attacks, school officials said. Fairfax County also is reexamining its ban on **cell phone** use in the wake of the attacks, spokesman Paul Regnier said.

"It's gotten to be a much more emotional issue," said Montgomery board President Nancy J. King (Upcounty). "What I'm hearing from parents is that they need their students to have these phones for a feeling of security. If we can do something to make parents and children feel safe, we have to do that."

King, Patricia O'Neill (Bethesda-Chevy Chase) and other board members have long lobbied the General Assembly to change the 1989 law, which carries a fine of up to \$ 2,500 and six months of juvenile detention. Opponents said that the law was outdated and that it ignored the needs of busy parents juggling carpools and children with after-school activities.

Parents told the board's advisory committee that they were tired of guessing when their children would be finished at sports practices or school dances and that pay phones on school campuses are often broken.

The Washington Post, October 17, 2001

"The law was created to combat drug dealers, but the reality is that every mom now has a **cell phone**, and they want to give them to their children, too," O'Neill said.

The new regulation says high school students can carry "portable communication devices" -- pagers, hand-held radios, **cell phones** and "any new technology developed for similar purposes" -- as long as the devices are turned off during the school day. They also can use them on the bus to and from school but not on field trips.

Violators risk confiscation of the device or suspension for up to 10 days.

Middle school and elementary school children can carry phones only if their parents apply for a waiver through the school. This is similar to the policy in District schools, where students are forbidden to have phones on school premises unless they have permission from a principal for personal or family reasons.

Not surprisingly, Montgomery students responded favorably to the change.

"It's been a long time coming and is something that's been needed," said Dustin Jeter, the board's student representative and a senior at Seneca Valley High School.

Students said that in many high schools, principals had been operating on a don't ask, don't tell policy with **cell phones** for months.

At Richard Montgomery High School, senior Jonathan Sherman-Presser said, Principal Mark E. Kelsch got on the loudspeaker on the day of the terrorist attacks and told students who had **cell phones** that they could use them to call parents.

"It was amazing how many students were carrying around **cell phones**," Sherman-Presser said. "Everybody was standing out in the hallways . . . just trying to get in touch with their parents."

The suddenly appearing **cell phones** also struck a chord with administrators in Fairfax County, where **cell phones** are not allowed on school property, said Regnier, the spokesman.

"On the 11th, it turned out that lots of school kids had **cell phones**. The **cell phones** came out of the backpacks," Regnier said. "We said, 'Hey, we better take a look at this.' "

Regnier said the policy change was under discussion by staff.

In Virginia, state law allows school jurisdictions to draft policies governing **telephone** and pager use by students.

LOAD-DATE: October 17, 2001

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911 Operators Can Find the Deaf By Karen Solomon

Story location: <http://www.wired.com/news/technology/0,1282,41224.00.html>

02:00 AM Jan. 29, 2001 PDT

Hearing- and speech-impaired persons worldwide have so far been left out of the burgeoning world of mobile communications, but a contender out of Sweden could bring them into the fold.

The Mobile Textphone service, a product of Telesta now owned by Aspiro, uses a regular mobile phone and a personal digital assistant, or the all-in-one phone-and-text-ready Nokia Communicator, along with legacy land lines, to enable people with communicative disabilities to enjoy the mobility popular in Europe, Asia and North America.

Unlike the restrictions of short message service messages, the textphone service allows two users to type to one another in real time and simultaneously, without length limitations.

However, there are problems with worldwide acceptance of the technology -- including regulatory problems that may hamper its growth.

For instance, deployment in the United States has been curtailed because the Federal Communications Commission requires carriers to issue enhanced 911 services.

"Our phone is not a voice service, it's a data service, and data isn't defined for emergency calls (in the United States)," said Sverkere Abrahamsson, developer for Aspiro and inventor of the Mobile Textphone. He is frustrated by this technical glitch that will keep the phone out of the country. "Mobile operators have made it possible to use 911 for voice, but not for data. Only in the U.S. did this stop the service," he said.

"Digital systems typically have technology designed for voice transmission, the algorithm by which they sample and reconstruct voice sounds," said Jim Schlichting, deputy chief of the wireless telecommunications bureau at the FCC. "Some don't work with TTY devices that send out (text data) tones picked up on the other side."

Read the full story: <http://www.wired.com/news/technology/0,1282,41224.00.html>

But, adds Schlichting, "A mobile textphone that would enable deaf and hard-of-hearing persons to use mobile wireless is an area the commission is very interested in to make it easier for those consumers to use mobile phones." While no U.S. release date for the mobile textphone is scheduled, Abrahamsson says his company is working on adjusting the service's ability to transmit 911 calls by voice compression, rather than as data.

"In other countries, they will use it because it's better for a deaf person to have a chance to communicate than not at all. We will make another effort in the spring."

Like wired TTY devices, the textphone still requires a relay service to speak with users of hearing telephones. If users can't take a call, textmail will prompt the caller to leave a text message, just like a hearing caller would leave a voicemail.

Costs for the service in Sweden are about the same as they are for hearing persons, with exact costs dependent on the carrier. Pricing for the Nokia Communicator all-in-one devices runs around \$300.

While the company won't reveal how many of Sweden's 10,000 deaf, hard-of-hearing, and speech-impaired persons are already using the textphone, Aspiro hopes to target the world market of 70 million potential users, plus their friends, families and co-workers who could use the device to communicate with them.

Carriers Europolitan in Sweden and recently announced Telia Mobile in Denmark, are the only operators offering the service at this time.

There is talk with other operators in Australia, Norway, Finland and Germany, said Aspiro spokesman Ronnie Andersson.



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Copyright 2002 The Atlanta Journal-Constitution

The Atlanta Journal and Constitution

June 23, 2002 Sunday Home Edition

SECTION: Metro News; Pg. 2B; LANE RANGER

LENGTH: 564 words

HEADLINE: 911 system stalled on information highway

BYLINE: JOEY LEDFORD

SOURCE: AJC

BODY:

A car has left the freeway and tumbled down an embankment on I-75 north of Atlanta. Emergency 911 operators have begun to get calls from passing motorists.

Typically, said Jay Scott of the State University of New York, the calls made from cellular phones don't give operators the information they need.

"Unfortunately, many of the callers have no idea where they are," said Scott, project director for a demonstration project to set up a wireless 911 network for the state of New York.

Few motorists can identify the last mile marker they passed. Some can't even name the nearest exit. So 911 operators have to piece together the vital data they need with a lot of guesswork.

In the days when all telephones were wired, virtually all communities had effective 911 service. Operators taking a call had a callback number via Caller ID, and their equipment also revealed the address from which the call was made.

But in the wireless age, those tools are gone. Developing and implementing the technology to get authorities back to where they were is the goal of Enhanced Wireless 911, which Scott says should become a national priority.

"If we don't provide a wireless 911 system, the system we have will dry up and go away," Scott said, noting that 50 percent of all emergency calls are already made via cellphones. With many households replacing their land lines with cell service because of dropping costs, Scott believes 70 percent of 911 calls will be cellular by 2003.

"Are we ready to go back in time . . . to when recognition time was so long that sometimes people died?" Scott asked.

The Federal Communications Commission had mandated that 911 centers be equipped with automatic wireless number ID by April 2000 and with caller location by October 2001. The deadlines slipped by. Some communities can at

least identify numbers, but location technology isn't in place yet.

The location function requires cellphones to either have global positioning satellite chips or for operators to be able to "triangulate" calls by determining their distance from three surrounding cell towers.

Making the job even more difficult is the fact the caller isn't in a fixed location.

"The nature of the wireless call is that the caller is moving down the highway," said Lisa Dator, director of state government relations for Intrada, a private firm. That means the call might even be going to the wrong 911 center.

John Rocquemore, vice president of the Association of Emergency Medical Technicians, said the location problem can mean the difference between life and death.

His native Louisiana is dotted with roadside canals 10 to 15 feet deep. A car goes off the road into a canal and the calls come in.

"You get a call, 'I'm in a canal,' " he said. "Which canal? Where?"

Solutions are in the works. Bill Ball, vice president of public policy for OnStar, General Motors' mobile phone-based motorist aid service, said OnStar customers already get all the advantages of enhanced wireless 911. In the future, they'll get even more.

When an Onstar vehicle crashes, the system will automatically call in a report if the motorist is unable to. The system can transmit data that would tell 911 operators the severity of the crash, whether air bags deployed, whether the vehicle rolled over and even an estimation of the extent of the injuries.

traffic@ajc.com

LOAD-DATE: June 23, 2002

B

Tall and taller

Wireless pros say proposed regulations that lump big broadcast towers together with tiny cell phone antennas are dumb and dumber

BY SEAN MADIGAN, STAFF REPORTER

Before some Tenleytown residents halted construction of a 736-foot broadcast tower in their leafy Northwest neighborhood, wireless telephone companies had little problem building their District networks.

After all, cell phone antennas are small — just a few feet high — and affixed to rooftops 80 to 100 feet off the ground, whereas broadcast towers are huge — taller than the Washington Monument.

The scale was more than Tenleytown neighbors could take, and they got District officials to stop construction of American Tower's soaring broadcast tower when it was half-built. American Tower sued for \$250

million, lost, then vowed to appeal.

But wait, hold the phone ... back to cell phone service companies.

Somewhere in the middle of the Tenleytown tower tussle, the D.C. Council imposed a moratorium on telecom towers taller than 150 feet, and the D.C. Zoning Commission said it would take another look at existing regulations.

In June, the District's Planning Office showed the Zoning Office and the public a set of proposed rules the wireless industry says will hamstring its ability to improve service.

See REGULATION, next page

■ THE 4-1-1 ON WIRELESS COMPANY'S ANTENNAS

■ Telecom antennas need to be between 60 and 150 feet off the ground, or about eight to 10 stories depending on the area's topography.

■ Building owners are paid rent — about \$500 a month and up — to use space on their rooftops.

While the rents are monthly, the lease period is usually about 20 years.

■ Each rooftop site consists of three sets of three antennas arranged in a triangular pattern. Each set has one antenna that sends a signal, one that receives a signal and one

that both sends and receives signals.

■ Coverage depends on how many people are trying to use their phones at any given time. But there are more antenna sites in areas that are more densely populated. Sites might be spread out every

two or three miles in more rural areas, while a company might have an antenna site every half mile in a more urban area.

■ More than 66 percent of District residents are wireless subscribers.

■ Up to six wireless com-

panies can hold licenses to operate in each market since the Federal Communications Commission ended the duopoly system during the mid 1990s.

■ Those companies are: AT&T Wireless, Cingular, Nextel, Sprint, Verizon and VoiceStream.

Wireless industry representatives say they've been unfairly lumped into the zoning dispute, and that the 100-plus-foot tall broadcast towers and the three-foot cell phone antennas have no connection whatsoever.

"It's apples and bicycles," says Ed Donohue, a lawyer who's been representing AT&T Wireless and VoiceStream through the yearlong regulation rewrite process.

Chris Doherty, Nextel's senior director of public affairs, says nobody's complained about cell phone antennas on roofs and utility poles in the past. "If it ain't broke, why are we trying to fix it?" he says. "We really don't see why they're doing it."

The city could adopt the new regulations as early as this fall.

Donohue and Doherty represent three of the six wireless companies licensed to operate in the District. Verizon, Sprint and Cingular also have FCC licenses. While competition in the industry is cutthroat at best and it's hardly uncommon for businesses to complain about government regulations, the companies agree: The District's proposed regulations would do more harm than good.

Andy Altman, the city's planning director did not return calls for comment.

Across the Potomac, companies who want to put a telecom antenna on top of a building in Arlington County face different rules depending on what zone they are in. While it's usually a case-by-case determination, generally if a company wants to use a commercial building in a commercial zone the company probably could get its antenna approved administratively. That would take about 30 days, the county zoning office says. If the building is in a residential zone,

the company would likely need a special exception and therefore require a public hearing, taking at least 60 to 90 days.

MORE, MORE, MORE

As more people try to use their phones at the same time in the same area, wireless companies need to add capacity, and that means more antennas. Expanding coverage is a priority, especially in areas that already are underserved or are just being developed, such as the new convention center site.

At FedEx Field, adequate coverage means putting trucks with antennas in the parking lot to accommodate the thousands of Redskins fans who use their phones during the game.

Permanent additions to wireless networks mean a company has to file an application with the city; an approval often comes within 10 days. Almost all of the antennas are attached to rooftops and the building owner is paid a

monthly rent. But if there isn't a building tall enough — usually 80 to 130 feet — wireless companies will "co-locate" their antennas on the top of a utility pole, a water tower or sometimes even a flag pole.

Wireless companies will do everything they can to avoid building a tower, Doherty says. AT&T has 50 antenna sites throughout the city, but only two of them are on towers. Nextel, Doherty says, has 30 to 50 antenna sites throughout Washington and has managed to avoid building any towers.

"Wireless should be incentivised to go onto existing structures so they don't have to build," Doherty says.

LESS IS BETTER?

But Doherty and Donohue says the city's new regulations are anything but an incentive for colocation. Under the proposed standard, a public hearing would be required if the antennas are visible from the street. Public hearings can take a lot of time, stretching out the approval process from 10 days to upward of six months, Donohue says.

An antenna attached to a water tower is hard, if not impossible to conceal, since it has to be "seen" by other antennas to work. So the line of sight standard will leave almost all installations open to public hearings, which the companies say would dramatically slow down their ability to upgrade networks at a time when customers are clamoring for better coverage and fewer dropped calls.

"The last thing you want is the J.D. Power folks to come down and say your network is not up to speed," Donohue says. Donohue and Doherty say there is no reason to rush these new regulations, when they could take their time and hammer out rules they think would be more appropriate for wireless antennas.

Timothy Cooper also is advocating prudence.

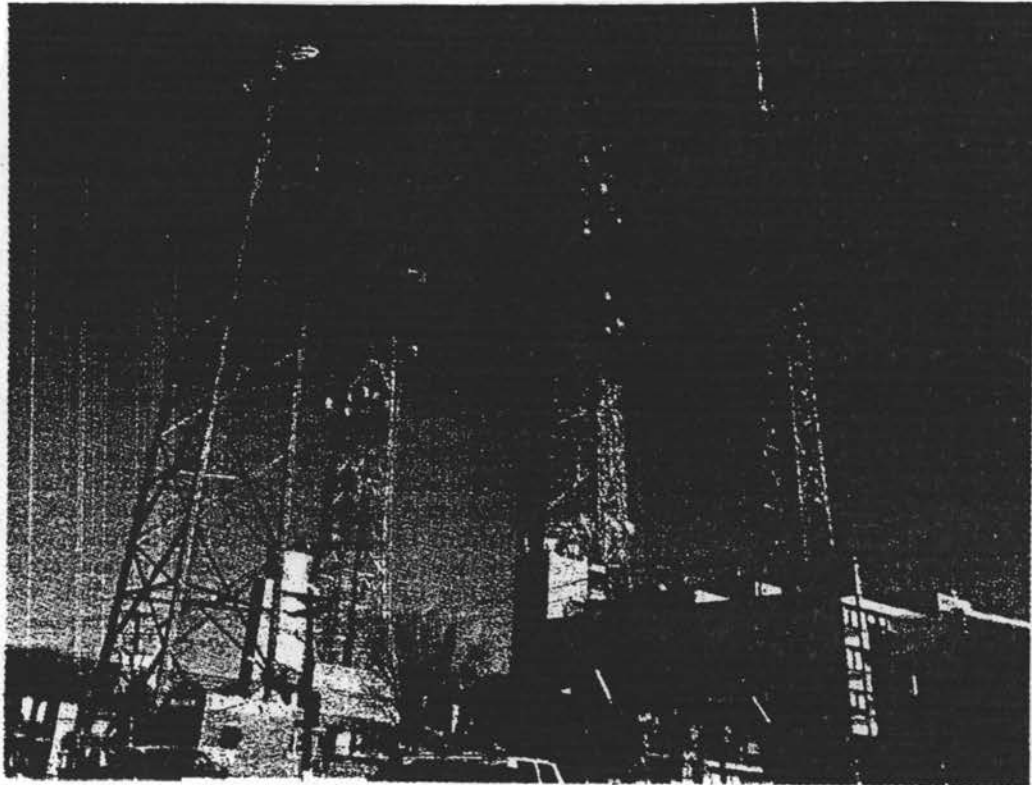
But for Cooper, president of the Stop the Tower Coalition (www.tenleytower.org), that means slowing things down while more information becomes available about the health effects of these antennas. His group mainly is concerned with Tenleytown broadcast towers, which he acknowledges are quite different from the wireless antennas.

But Cooper says it's not necessarily a bad idea for city officials to include wireless antennas in the new regulations.

"If it means a bit more caution ... I don't think that's a bad thing," he says. "Less is better until health concerns are better understood."

■ E-MAIL: SMADIGAN@BIZJOURNALS.COM PHONE: 703/816-0335

Action taken by Tenleytown residents to stop the construction of a 736-foot broadcast tower has led city officials to consider a new regulation on telecom towers that mobile phone companies say will severely hurt their efforts to improve their networks.



FILE PHOTO BY JOANNE S. LAWTON / STAFF

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The Washington Post

October 05, 2001, Friday, Final Edition

SECTION: FINANCIAL; Pg. E01

LENGTH: 875 words

HEADLINE: Capacity That Can't Handle Demand

BYLINE: Yuki Noguchi, Washington Post Staff Writer

BODY:

At 5 o'clock on a weeknight, getting through on a **cell phone** anywhere near North Glebe Road and Wilson Boulevard in Arlington is almost impossible.

Ditto if you live in a new suburb out in Loudoun County, or if you're driving through Rock Creek Park. You get no signal, or a busy signal.

Washington is one of the most technologically savvy metropolises and is served by all six major wireless carriers. So why is making a simple **cell-phone** call so tough?

In a nutshell, it's because the number of **cell-phone** subscribers is growing faster than the carriers are upgrading their systems. The wireless companies cannot -- or as is sometimes the case these days, are choosing not to -- invest in the expensive equipment necessary to handle the growing number of calls.

In and around Washington especially, many parks departments and suburban zoning boards have prohibited the construction of **cell-phone** towers they consider unsightly. In urban areas, the Federal Communications Commission has put a cap on the amount of spectrum a company can control, limiting any one firm to 45 megahertz of capacity. Another increasingly important brake on expansion is the economy: For **cell-phone** companies, keeping capital spending down has become paramount, especially because the Sept. 11 attacks have made a recession seem imminent.

Even though wireless companies are considered the most stable investments in the telecommunications sector, they've still taken huge hits, pushing their stock prices as much as 80 percent off of their 52-week highs.

That's not to say they aren't spending any money. But the lanes of traffic are getting crammed with new users -- between 1 million and 4 million a month. Also, many of the 120 million existing **cell-phone** customers are now spending more time on their **cell phones**, as the price of calls comes down and more companies offer flat-rate deals for hundreds of minutes of use per month.

The Washington Post, October 05, 2001

The number of subscribers in the United States will reach nearly 135 million by the end of this year, according to projections from the Strategis Group, a market research firm in Washington. At the same time, the minutes in use per subscriber are increasing by about 22 percent each year.

Under normal circumstances, that kind of growth would inspire a lot more spending on the networks, analysts say. But Verizon Communications Inc., the largest U.S. cell-phone company, will spend the same as it did last year -- about \$ 4 billion this year on network equipment like switches, antennas and base stations. Reston-based Nextel Communications Inc. announced yesterday it will install software that will double its voice capacity in 2003. But in the meantime, Nextel, the fifth-largest carrier, plans to spend \$ 2.5 billion on its network this year, down from \$ 3 billion last year.

"Capital is so constrained at the moment, it's the worst I've ever seen it," said Frank Dzubeck, president of Communications Network Architects Inc., a telecommunications consulting firm in Washington. "The wireless guys we've talked to are talking about flat or slightly [reduced] expenditures," which ultimately means less network capacity, he said.

Meanwhile, cell-phone companies are investing in 3G (short for "third-generation") services, which will bring high-speed Internet access to cell phones. To make that happen, companies need to spend billions of dollars to buy spectrum licenses and develop new technologies.

The rollout of 3G is still a couple of years away, but some companies, such as AT&T Wireless, Verizon and Cingular, are already starting to deploy intermediate technologies, said Naqi Jaffrey, an analyst with the Strategis Group. "Its primary purpose has been that they wanted to increase the capacity of the network," not just for Internet and data traffic but also to handle regular voice calls, he said.

The network overload experienced in Manhattan on Sept. 11 right after the terrorist attacks highlighted the need for more capacity, and carriers are now starting to address that issue, said Alex Rygiel, an analyst with Friedman, Billings, Ramsey & Co. in Arlington.

"Over the last 12 months, the wireless carriers have redirected their expenditures from opening up new markets to existing markets," Rygiel said, calling that a defensive move to keep existing customers happy with their service. On average, carriers lose about a third of their customers to other carriers every year, at least in part because of service-quality problems, he said.

On the other hand, as the U.S. economy shifts into what market analysts predict will be a recession, cell-phone companies may be among the handful of companies that stand to benefit.

The attacks showcased the safety and security features of cell phones and other wireless devices, which worked when land lines didn't.

That has led some analysts to revise their subscriber numbers upward.

"More people are talking on cell phones since September 11," said Thomas C.

The Washington Post, October 05, 2001

Faulders III, chairman and chief executive of LCC International Inc., a company that designs wireless networks. And more use, in turn, means companies are likely to have to spend more money to keep up with the demand for capacity, he said.

LOAD-DATE: October 05, 2001

1 of 1 DOCUMENT

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Business Wire

June 10, 2002, Monday

DISTRIBUTION: Business/Technology Editors

LENGTH: 541 words

HEADLINE: Verizon Wireless Leads the Way as Wireless Continues to Displace Traditional Telephone Service, According to Solomon-Wolff Survey

DATELINE: MOUNTAIN LAKES, N.J., June 10, 2002

BODY:

Research data suggests that the move to wireless phone service is accelerating, according to a recent study by Solomon-Wolff Associates, a New Jersey-based market research firm.

Currently, almost six out of 10 U.S. households use wireless phones, with projections expected to increase to almost 80 percent by 2007. In addition, the average household using wireless phones, is using 1.84 wireless phones, up from 1.5 phones three years ago.

"The displacement of traditional phone services is seen when you examine data on spending levels," says Joey Wolff, partner, Solomon Wolff Associates. "Wireless customers now spend an average of \$61 a month for their wireless service. For comparison, they spend \$41 for traditional (wired) local phone service, and \$34 for long distance. Over the past three years, spending for wireless service has increased by \$9 a month, while spending for traditional local phone service declined by \$7 a month and long distance has declined by \$22 a month."

According to Wolff, spending for wireless service varies little from company to company, which shows that the trends are broad and not the result of specific price plans. Customers of Verizon wireless, AT&T wireless, Cingular, and Sprint PCS, the largest wireless companies, on average spend between \$61 and \$67 a month. Together, these four companies account for almost three fourths of wireless customers.

Almost one in five consumers (19 percent) report that they use wireless for "most" of their calling, and one in 10 use wireless for all of their long distance calling. A similar trend is beginning to occur in local phone calling. Currently one in ten consumers report that they use wireless for "most" local calling and three percent make all their local calls using wireless.

"The attractive wireless pricing plans, those letting customers call to distant locations for the same price as local calls, have been an important factor in shifting calling away from traditional long distance companies,"

explained Ms. Wolff, "Another trend that is impacting on the major long distance companies is the aggressive pricing offered by new long distance companies. The major companies have to reduce their prices to remain competitive. This means even lower revenues for the leading long distance companies."

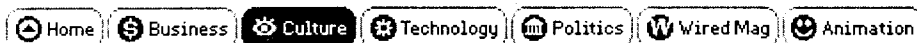
The new data is taken from the semi-annual personal communications survey, conducted through Solomon-Wolff's Web site, consumerviews.com, in January, 2002. A random sample of more than 7,200 participants from Solomon-Wolff's online database of more than 250,000 Internet users completed the survey. The sample of Internet users was asked questions related to usage, spending and satisfaction of wireless phone service, local and long distance telephone service, cable/satellite TV, paging, ISPs, and computer and Internet usage.

For detailed information on Solomon-Wolff's report or study results, contact Joey Wolff at (973) 263-1409 or e-mail at SJWolff7@aol.com. Located in Mountain Lakes, New Jersey, Solomon-Wolff is a 19-year-old research company specializing in high tech and communications issues.

CONTACT: Solomon-Wolff
Joey Wolff, 973/263-1409

URL: <http://www.businesswire.com>

LOAD-DATE: June 13, 2002



Text Size: A A A A

Instant Messaging Grows Up By Katie Dean

Story location: <http://www.wired.com/news/culture/0,1284,33736,00.html>

03:00 AM Jan. 25, 2000 PDT

When people think of instant messaging, most conjure up the image of teenagers gossiping, flirting, and wasting time.

Millions of adults are now flocking to IM. They use it for business negotiations, real-time reminders, medical emergencies, or any time email isn't fast enough. And the new craze will only keep spreading, as IM becomes available on pagers, televisions, and handhelds.

IM has been a boon for hearing impaired students at Gallaudet University. Michael Kaika, director of media relations at the school, estimates that 70 percent of the students and faculty use it on a regular basis.

Kaika, who himself is deaf, calls it a "godsend."

"In my line of work, using IM is the best thing since sliced bread," Kaika said in an interview conducted via IM. "Years ago, I had to rely on an interpreter to chat with media people. But now, rarely do I need to do that."

Students often use instant messaging instead of teletype machines (TTYs) connected to telephones to communicate with friends and relatives. "I am comfortable in saying that deaf people now rely on IM more than [on] TTYs," wrote Kaika.

IBM started using instant messaging in a big way internally a few years ago, and last year released its own product for business users. Lotus SameTime encrypts instant communications and works behind a firewall.

"It's gone from an experiment to a mission-critical operation," said John Patrick, vice president of Internet technology at IBM. "It's become a way of life -- a way of doing business."

Patrick said that IBM employees send over 1 million instant messages a day to each other. Instant messaging has significantly reduced the amount of email. Instead of quick inquiries cluttering in-boxes, co-workers can communicate while a question is still fresh. They don't have to cross their

communicate while a question is still fresh. They don't have to cross their fingers and wonder if or when the person on the other end will answer.

It's also created what Patrick calls a "backchannel."

IM has also become a critical negotiating tool. Attorneys use it to pass one another private messages at the bargaining table. And during phone interviews, employees can remind one another to discuss a certain topic.

IBM has begun testing a real-time language translation feature for SameTime. For example, when an English speaker types a message to a French speaker, the message appears in French, and vice-versa.

Eventually, it will all combine to create a "real-time multilingual intercom," Patrick said.

Instant messaging is also being used by doctors and their patients in clinical trials.

PHT has developed LogPad, a patient-specific software that runs on handheld devices.

LogPad is customized to send vital information from angina, diabetes, and asthma patients directly to their doctors. When patients have an emergency, it pages their physician.

"When you put the full set of information over the Web -- automatically, electronically, and instantaneously -- the doctor has a much better picture of how the patient is doing," said Jim Becker, president of PHT. "It forges a much stronger link between the patient and the doctor."

Becker estimated that LogPad will be on the market in another 12 to 18 months.

IM is not without its drawbacks. Constant accessibility can be annoying.

"There are times when I don't have a lot of time to chat via IM," wrote Kaika of Gallaudet. "I could put a block on it and prevent them from calling, but [I'd] rather not do that. [I] don't want to offend people, so I just tell them I am short on time and can't chat right now."

Jupiter Communications analyst David Card said that as the technology spreads to devices like television, it may become more of a nuisance than a benefit.

People may not want to watch TV with a computer on their lap, Card said. And instant messages that appear when more than one person is watching a show may be intrusive to other people.

Nancy Clare Morgan, a publicity manager for Doubleday Books Division of Random House in New York, has IM turned on all day at work. But she doesn't see it as a problem since she knows she can always turn it off.

"Time away from technology is an option we should always have," Morgan said.



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Of Frantic Calls and Rigid Rules By Elisa Batista

Story location: <http://www.wired.com/news/wireless/0,1382,46595,00.html>

02:00 AM Sep. 13, 2001 PDT

The dramatic, surreptitious calls made by passengers aboard Tuesday's hijacked commercial planes were illegal and under "normal circumstances" technically impossible to make.

However, because the planes were close to the ground and the calls were kept brief, the calls went through, a major cell phone carrier said.

Two federal agencies restrict the use of cell phones aboard flights, however, carriers back the Federal Communications Commission's ban because the signals of cell phones at 33,000 feet in the air could occupy multiple towers on the ground and cause for the phones to shut down.

However, the phones of the beleaguered passengers in the hijackings functioned normally because their planes, about to crash, were close to the ground and occupied fewer towers, a representative from a major cell phone carrier told Wired News. The passengers' calls were also kept brief, which means they were experiencing a lot of dropped calls or the crash cut them off.

"Those were a series of circumstances that made those calls go through, which would not be repeated under normal circumstances," the carrier's spokeswoman said.

The Federal Aviation Administration, which oversees the airlines, bans the use of cell phones aboard flights because their signals could interfere with crucial onboard instruments like the altimeter.

But the fact such calls are illegal, obviously didn't stop frantic passengers from calling their loved ones.

Seconds before his plane crashed in Pennsylvania on Tuesday, Thomas Burnett called his wife four times on his cell phone to tell her the flight was going down and that he loved her.

Jeremy Glick, a sales executive for a San Francisco airport who perished in

week and had their phones ring a melodic tune of the theme song to Pearl & Dean, the country's biggest cinema advertising firm.

A spokesman for the Guinness Book of World Records told British media that a world record had been set, but that no previous attempt had ever been made so it wasn't a particularly difficult record to beat.

Teen breaks silence: In another blatant publicity stunt, 19-year-old Brett Banfe, of Haddonfield, New Jersey, spoke his first words after 371 days of silence.

The college freshman took a vow of silence last year in order to become a better listener. Banfe, who became known as "Silent Brett," communicated with his family, friends and professors via e-mail and the Motorola Talkabout T900 two-way messaging device. Motorola donated eight of the devices to his family and friends.

I-mode does WAP: In a move that "bridges the gap between i-mode and WAP phones," Access, which makes the micro-browsers for Japan's i-mode phones, is now supporting the next-generation WAP browsers.

Wireless application protocol, or WAP -- which gives users in Europe and the United States Internet access on their phones -- was criticized for being too slow and holding too few lines of text. WAP 2.0, which was approved by the WAP Forum last month, will support full-color graphics, pop-up menus and increased speeds to deliver data.

Meanwhile, NTT DoCoMo plans to raise the transmission speed of its popular i-mode mobile Internet service from 9.6 Kbps to 28.8 Kbps next year. The price to download content with the new speed will remain unchanged. However, handsets won't be available until spring 2002, company officials said.

Capsized kayaker calls home: A British kayaker who capsized off southern England was rescued after calling his father, 3,500 miles away in Dubai.

Mark Ashton-Smith, a lecturer at Cambridge University, told rescuers he knew his life was in danger when he clung to his capsized kayak in treacherous seas off the Isle of Wight. But he didn't think to call nearby emergency services, the spokesman said.

Ashton-Smith's father, Alan Pimm-Smith, was instructing army troops in Dubai when he received the phone call and raised the alarm with the British Coast Guard -- based less than a mile away from where his son was in the water.

Dialing around: Nextel (NXTL) subscribers can now store, view, and send e-mail and print and fax files from their mobile phones, using a service by My Docs Online.... France's telecoms regulator, the L'Autorite de Regulation des Telecommunications (ART), is in talks to allow 3G infrastructure sharing between telcos, the French newspaper *La Tribune* reported.... Menzi Insurance, a Philippine insurance company, has been forced to stop offering stolen cell phone coverage after a surge in claims.... A study by the Strategis Group found 87 percent of U.S. 12- to 19-year-olds think wireless phones are "in," yet only a third of them own one.



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EXHIBIT

July 30, 2002

Carol Mitten, Chair
D.C. Zoning Commission
441 4th Street, NW
Suite 210 South
Washington, DC 20001

Re: Proposed zoning text amendments regarding Antennas, Antenna
towers and Monopoles

Dear Chairman Mitten:

The undersigned counsel to District of Columbia's wireless telecommunications service providers (AT&T Wireless, Cingular Communications, Nextel, Sprint Wireless, Verizon Wireless and VoiceStream Wireless, collectively the "providers") wish to enter into the record of this proceeding their response to the Zoning Text Amendments proposed by the Office of Planning ("OP"), which was set down for hearing at the June 10, 2002 Zoning Commission Regular Meeting.

While the wireless providers commend the OP staff for its diligent efforts on this issue and supports the objectives of the OP to harmonize the wireless zoning regulations into one section, we take exception to overly burdensome and costly regulations recommended in the OP's Preliminary Report. Further, it is clear from the discussion at the June 10th meeting that the Commission has a desire to attempt to regulate in areas that are preempted by federal law, including the 1996 Telecommunications Act.

As noted in the Prehearing Report, the wireless providers participated in the Antenna Regulations Review Group, which was formed and coordinated by the Office of Planning. The Review Group was comprised of the OP representative, five citizen representatives and the providers' representatives. Over the course of the Review Group's many meetings, the providers endeavored to explain their antenna siting needs and policies, their technologies and the limitations of those technologies. Further, the wireless providers provided an assessment of the many ways that the current zoning requirements are working in a positive fashion. Throughout the process, the wireless providers did their best to respond to questions by the citizen participants and to OP's questions.

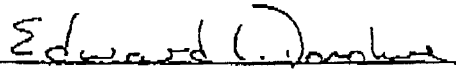
The Review Group spent an inordinate amount of time addressing questions and concerns about alleged "health effects" from wireless base stations. The Review Group had the benefit of an extensive briefing from the Federal Communications Commission's Office of Engineering and Technology. Many, many hours were spent explaining the nature of the devices in use today, comparing the levels associated with wireless phones and antennas as compared with broadcast and transmissions facilities, and the protections already in place because of federal regulations. Moreover, the representatives cautioned staff and the Group about the prohibitions contained the Telecommunications Act. This information was not reflected in the OP report and was apparently not communicated to the Commission.

Throughout, we remained hopeful that the end result would be a proposal for revised local antenna siting policies and regulations that would reflect a balancing of the community's concerns over aesthetics and safety with the needs of providers trying to respond to an escalating public demand for ubiquitous, reliable wireless communication services throughout the District of Columbia and its neighboring metropolitan areas. The wireless providers worked cooperatively with the Antenna Review Group in hopes that the process could lead to a consensus regulatory approach in keeping with the charge handed to OP last year by the Zoning Commission.

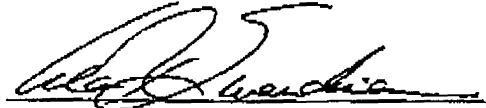
Instead, the process has resulted in two documents — the Preliminary Report and the Proposed Text Amendments — neither of which, we feel, reflects the providers' substantive input on wireless technology and business practices and in fact are contrary to the directions given by the Zoning Commission at the initial roundtables. As acknowledged in the Preliminary Report, these documents do not reflect a consensus viewpoint. The providers view many of OP's proposals as unnecessarily burdensome, unreasonably restrictive and of questionable enforceability given the provisions of the federal Telecommunications Act of 1996.

Moreover, these proposals run counter to OP's first stated goal in its Report to the Commission—"the purpose of the regulations is to... [a]ccommodate the growing demand for telecommunications facilities and antennas." Most importantly, by inhibiting wireless carriers' ability to provide adequate coverage and capacity, the recommended proposals could have a lasting detrimental impact on the quality of wireless service utilized by the District's residents, businesses, visitors, and emergency service personnel.

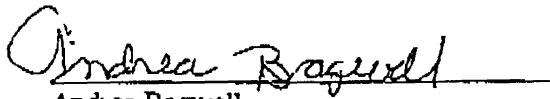
The wireless providers will continue to be a resource to the Office of Planning and the Zoning Commission. We remain hopeful that the Office of Planning will revise its recommendations so that the Commission has the benefit of a more balanced and workable approach to the zoning regulation of wireless antennas, towers, and monopoles based upon technology, business practices, and the needs of the community—including those who use wireless technology in their everyday business and personal lives. We look forward to appearing before the Commission on this issue.



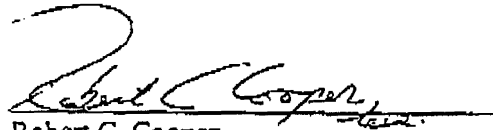
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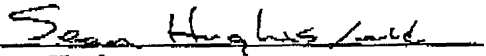
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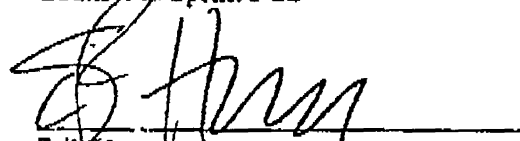
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