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by

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Permit Me: Siting Solutions for Local Governments and Carriers

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I. INTRODUCTION -- IT'S A NEW WORLD WITH SMART CARRIERS

The Legal Context

The landmark legislation that set the stage for regulation of the telecommunications and wireless industries within which we now operate was the Telecommunications Act of 1996. This federal law ensures a significant measure of local control over the siting of wireless telecommunications facilities.

Section 704 of the Federal Telecommunications Act generally preserves local control regarding the placement, construction and modification of personal wireless telecommunications facilities subject to federal restrictions. Local communities must act on wireless applications within a reasonable period of time -- and cannot ban wireless facilities outright; cannot unreasonably discriminate among service providers; cannot make decisions on permit applications based on the environmental effects of radio-frequency emissions, to the extent that such facilities comply with FCC regulations concerning such emissions. Section 704 also states that a decision denying an application for a new wireless facility must be supported by substantial evidence contained in a written record.

We should not overlook that during the 1960s, Congress passed several landmark environmental protection laws. Two of these, the National Historic Preservation Act of 1966 and the National Environmental Policy Act of 1969 (NEPA), are key to understanding the framework within which the FCC is required to consider visual impacts to sensitive historic properties as well as cultural and natural landscapes. In passing NEPA, Congress stated that Americans should be assured of "safe, healthful, productive, and esthetically and culturally pleasing surroundings."

The Historical Context

There have been communications towers in North America since the turn of the 19th century when optical telegraphy was introduced to America's port cities.

In 1844, Samuel Morse built the first successful electrical telegraph line laying the groundwork for a network of 30-foot poles set on the edge of roads and railroad rights-of-way throughout the nation before the end of the century. Radio, which combined the technological achievements of telephones and wireless telegraphs, rapidly spread across the country during the 1920s, bringing with it taller radio towers in greater numbers.

The growth of the wireless industry means it is incumbent on wireless carriers to create strong relationships with those jurisdictions that regulate and influence the industry, as well as with those businesses and consumers that use the technology deployed.

One wireless carrier, T-Mobile USA, is already working on creating and maintaining solid relationships with local jurisdictions. In fact, it is our view that this is the way business should be done; it is **not** acceptable for confrontation to be the norm. This means that as a company, we encourage greater communication, transparency and more open discussions. We strive to view our business needs within the context of customer demand, technical excellence and community needs.

The wireless industry needs to focus on educating community members, regulatory and civic leaders, as well as communicate the technology needs for building and growing robust and reliable wireless networks. Closing coverage gaps and achieving higher capacity standards must be done in a positive and proactive manner.

As the use of mobile phones and handsets increases not only in urban and business centers but also neighborhoods and suburban communities across the country, local jurisdictions have become more engaged in the zoning of cell sites. All of this is happening at a time when carriers are facing significant challenges keeping up with consumer usage and demand, technological innovation and public interest in the zoning and siting process.

Meeting Customer Demand

America's wireless industry is working to respond to an unprecedented demand for mobile services. Services to customers are expanding from where they have historically used mobile phones -- while traveling and at their offices -- to where they are demanding more and more services: from their homes and in neighborhoods. To meet customer demand, wireless carriers are constantly improving their coverage areas and expanding their network capacity to handle the growing number of customer calls and data transmissions.

Almost 30 million new subscribers were added by the U.S. wireless industry from 2002 to 2004. An additional 25.7 million were added during 2005 according to

the Cellular Telecommunications & Internet Association. Currently, there are almost 233 million U.S. wireless subscribers.

Wireless phones and handsets, when used properly by consumers, are integral to public safety. By January 2007, approximately 291,000 wireless 9-1-1 calls were made every day in the United States. That number is growing as more people use their wireless phones to call for emergency help, to save lives, help fight crime and to be in touch with loved ones when it matters most. Infrastructure that supports a robust network of cell sites helps meet public safety needs -- and partnering with jurisdictions helps meet this critical need.

On August 27, 2007, The New York Times reported that 14 percent of U.S. adults live in households with **no** landlines -- and this number is increasing all the time. More than 50 percent of emergency 911 calls made in the United States are dialed by wireless callers -- not from landlines. Parents want their children to have mobile phones for personal safety -- forty-two percent of 13 year olds have cell phones, and seventy-five percent of 17 year olds have cell phones.

II. THE RISE OF COMMUNITY ACTIVISM

With the tremendous growth in the use of mobile phones and handsets by America's population, there is a parallel growth in community interest -- and activism. While it is often human nature to be opposed to change and progress -- it is also true that a majority of people are interested in owning and using mobile phones that are just as dependable, and clear, as legacy landlines and phone systems. Among this majority, many supporters of robust networks are ready and willing to speak out.

As wireless carriers move from networks that operate in the industrial and business sectors -- to networks that are used in suburban and residential communities (where people live, work and play) -- carriers must work cooperatively and collaboratively with jurisdictions.

When a new wireless facility is needed, a search area is defined and field visits are conducted to establish a list of technically feasible locations. Radio frequency engineers create a list of specific locations to meet network needs. In the process, wireless carriers need to adhere to local zoning and building codes.

In order to keep up with increasing consumer demand, significant dollars are spent each year to improve wireless network quality and provide the best possible coverage and service for customers. Coverage areas and network capacity must be expanded to handle the growing number of calls and wireless data usage. In this regard, it is essential to hold community meetings with key stakeholders to discuss the benefits of additional infrastructure and address the questions of community members.

With respect to the foregoing, it is very important to proactively educate and communicate with elected officials, zoning officials and neighbors. We have found it helpful to strive to bring transparency to all siting activities by developing diverse and scaleable communication tools. A key component of this is building relationships with local jurisdictions and communities. It has been very helpful to utilize brochures, identify, educate and mobilize supporters, send out direct mail literature and establish community outreach websites. Message cards, in-store signage and petitions can be made available within retail outlets.

It is also important to attempt to site wireless facilities on municipally-owned properties. Where necessary, taking people on site tours can help directly address interests with respect to RF emissions and property values. Updated property value appraisals provide support for the proposition that the location of wireless facilities does not diminish property values. What once began as a reactive and defensive mode has now shifted to a proactive approach.

III. WE'RE LEARNING: PARTNERSHIPS WORK

Municipal governments across the country are creating revenue streams through innovative lease partnerships with wireless carriers. As consumer demand for wireless communication services continues to increase and as homeland security needs mature, wireless carriers must identify and secure additional structures upon which to locate wireless antennas and equipment.

Local governments are finding locations that minimize community impact and provide significant additions to municipal revenues. Examples for locating infrastructure include police, fire and first aid sites, department of public works yards, libraries, water tanks, city/town hall buildings, maintenance facilities, schools, parks and other government-owned properties -- not to mention street lights and utility pole locations. The following are two compelling examples of successes in working with local governments.

In Houston, there was a need for the Fire Department to increase tower height on seven towers to continue or improve coverage for fire services. Through an agreement, existing facilities were increased in height up to approximately 120 feet which, in many instances, gave the Fire Department the height it required and also allowed T-Mobile to install its facilities. Due to the successful outcome which involved the professionalism of industry in siting, negotiating and building the sites, the City has extended its cooperation by opening the door to other sites such as water tanks, public works properties, libraries and the like. T-Mobile also notified other providers of co-location opportunities which can provide aesthetic solutions that benefit the City and its constituents as well as industry.

In Baytown, Texas, the City was looking for infrastructure to provide Wi-Fi services. T-Mobile and the City looked for mutually beneficial locations and identified six. T-Mobile then built the installations, and both T-Mobile and the City were able to achieve the desired heights. As an indicator of that success, the City now calls on T-Mobile when it is looking to locate or build another facility.

In addition to revenue streams, there are other municipal benefits to partnering, including local governments gaining more knowledge about wireless communications and providing benefits for municipal communications systems. With the assistance, insight and cooperation of City Staff and Council Member support, mutually beneficial results can be realized.

IV. FEATURES AND BENEFITS OF GOOD GOVERNMENT-CARRIER PARTNERSHIPS

There are numerous attributes and benefits of good government-carrier partnerships. Better coverage in communities and neighborhoods enable people to stay connected to family, friends, work and emergency services. Reliable wireless coverage makes it possible to stay in touch, call for emergency help, save lives and fight crime.

The wireless industry is committed to giving back in meaningful ways to the communities where its employees live and work. With tens of thousands of retail stores, wireless cell sites and call center locations nationwide, carriers should recognize their responsibility to be good corporate citizens and to act quickly when natural disasters strike.

Some of the other partnership benefits include utilization of best siting locations, working cooperatively with communities on areas of interest, and educating neighbors and municipalities to create better siting alternatives. Revenue streams from industry, as a result of lease negotiations, provide local governments with additional funds to meet public needs.

Working Cooperatively with Consumers/Constituents on Areas of Interest

Property Values

The greatest success comes from transparency -- working with communities to directly address the issues that matter to them. As carriers listen to the needs and issues involving siting in communities and share with local governments their desire to expand and improve service, mutually beneficial results can be obtained for local governments, their constituents, and carriers.

As would be expected, residents want to know whether wireless facilities will impact their property values. Studies by individual appraisers nationwide conclude, by a preponderance, that homes located near wireless antennas maintain their value and appreciate at a similar rate to homes not located near a wireless facility. As the demand for wireless service remains high, more and more home buyers recognize the benefits that wireless services provide and expect wireless coverage when buying or renting a home or apartment. When adequate wireless coverage does not exist, this can now be a determining factor in a person's decision not to buy or rent.

Visual Impacts

Industry providers seek to find locations in zones with priorities being given to industrial, commercial, multi-family and then residential neighborhoods for locations for wireless facilities. Carriers seek to implement co-location as a solution that benefits communities and carriers alike. With respect to aesthetic issues, industry has worked to screen wireless facilities and blend in with the environment and thus mitigate visual impact as much as is technically feasible.

Educating Neighbors and Municipalities to Create Better Siting Alternatives (New Ordinances and Re-Writes)

Another feature of good government-carrier partnerships is educating neighbors and municipalities in order to create better siting alternatives. By working together to rewrite wireless ordinances or draft new ones, carriers and local governments can find balanced solutions so that desired and needed services can be provided while locating facilities in surroundings that blend in with the environment. A proactive, positive and transparent approach in framing siting issues leads to fair and balanced solutions.

Personal and Public Safety, Enhanced 9-1-1

Public safety is of significant importance to local governments and wireless industry providers as well. In this regard, Enhanced 9-1-1 is a program which provides for better solutions in emergency situations.

Enhanced 9-1-1 is a federally-mandated program for wireless carriers that seek to improve the effectiveness and reliability of 911 service by providing emergency dispatchers with additional information on 911 calls. Enhanced 9-1-1 provides the phone number of the wireless device and information about the location of the person in need to the 911 dispatcher. Through a technical process called triangulation the caller can be located within 300 meters (or just under 1000 feet). Wireless phones are integral to public safety.

What are radio frequency emissions?

People take it for granted that their mobile phones will work seamlessly and reliably. What most people don't realize is that wireless technology involves radio frequency (RF) emissions.

Radio frequency makes mobile phones possible -- radio frequency emissions have been safely used in the United States for more than 160 years. Radio frequency energy is the same type of energy used for baby monitors, radio and television broadcasting, and cordless telephones at home. National and international studies on potential radio frequency health effects indicate that wireless antennas present no public health risk. Antennas are designed to always operate within federal safety guidelines established and enforced by the FCC. In spite of all this information, misinformation about radio waves and wireless communications continues in many areas of the country.

Is there a health risk for people who live near a wireless facility?

No. T-Mobile antennas operate well within national safety guidelines established by the federal government. Measurements made near typical T-Mobile installations, especially those with monopole or building mounted antennas, have shown that ground-level RF exposures are typically thousands of times less than the FCC's limits for safe exposure.

These safety limits were adopted by the FCC based on the recommendations of expert organizations and endorsed by agencies of the federal government responsible for health and safety. The wireless industry is closely regulated by the FCC -- which sets very conservative, science-based RF emission guidelines, ensuring that citizen health is protected.

There exists substantial data from numerous scientific studies that indicate wireless antennas are not dangerous to the public health. Thus, while people are encouraged to ask questions, the scientific community does not believe that wireless facilities constitute a potential health hazard to people who work or live nearby.

Excerpts from independent sources:

- "There is no convincing evidence that adverse effects can occur as a result of exposure within the current protection guidelines. The views of the National Radiological Protection Board (NRPB) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) form part of this consensus." source: NRPB 2000- Report No. NRPB-R321

- "The chance of health problems occurring among people living and working below base stations as a result of exposure to electromagnetic fields originating from the antennas is, in the committee's opinion, negligible…" source: Health Council of the Netherlands on GSM Base Stations, 2000

A number of scientifically reliable, statistically sound and replicable studies are accepted by the scientific community worldwide. Some of the reputable third-party and independent sources that have conducted studies are:

- The American National Standards Institute (ANSI)
- The Institute of Electrical and Electronics Engineers (IEEE)
- The Federal Communications Commission (FCC)
- The American Cancer Society
- The World Health Organization (WHO)

V. TESTIMONIALS FOR RELIABLE WIRELESS INFRASTRUCTURE

Testimonials have been received from people with emergency healthcare issues as well as those who use their phones for work-related matters. Two examples follow:

Islip, NY Testimonial -- *"I'm 75 years old, have a heart problem. Bypass surgery in '96, Pacemaker in '04. I depend on my cell phone for emergency calls to 9-1-1. Much of the time I must go into my front yard to get even one bar of power to make a call. I may not have the chance to do that if I'm having a heart problem. Having been an EMT for almost 30 years gave me a chance to see first hand how a working cell phone can save a life. Anything you can do to help this terrible situation would be greatly appreciated."*

Gladstone, MO Testimonial -- *"I have been a T-Mobile customer for 4 years now. I highly support T-Mobile and their plans for improving service to the Gladstone area. It seems like an awesome idea … I encourage you to approve T-Mobile's proposal!!! My wireless phone has become a necessary tool for my 2 jobs. I need it to keep in touch with my employer and personal customers throughout the day, as I travel a lot for both jobs throughout the Gladstone and Northland areas!!!"*

VI. CONCLUSION

The benefits of wireless communication have become an expectation on the part of customers and constituents -- across the country and around the globe. Wireless carriers are an integral part of the community and the telecommunications infrastructure. Indeed, wireless is the way of the world.

By working closely and openly, and on a proactive basis with local governments, mutually beneficial solutions can be found between wireless carriers and local jurisdictions.

VII. APPENDIX – RESOURCES, CITATIONS, AND REFERENCES

There are many kinds of industry-specific and consumer-focused resources available -- for your own purposes and for providing references in response to inquiries from the public. Here are some that may be helpful to you and to the community-at-large:

Independent Resources Regarding EMF and Health Effects

- American Cancer Society
  http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=WHO

- Federal Communications Commission (FCC)
  http://wireless.fcc.gov

- Food and Drug Administration
  www.fda.gov/cellphones

- International Commission on Non-Ionizing Radiation Protection
  www.icnirp.de

- Medical College of Wisconsin
  www.mcw.edu/gcrc/cop/cell-phone-health-FAQ/toc.html

- National Council on Radiation Protection and Measurements
  www.ncrponline.org

- World Health Organization
  www.who.int/peh-emf/en

Industry Resources

- T-Mobile
  www.t-mobile-takeaction.com

- Cellular Telecommunications & Internet Association (CTIA)
  www.ctia.org

- PCIA (formerly known as the Personal Cellular Industry Association)
  www.pcia.com

- GSM Association
  www.gsmworld.org

Legal Framework

The Telecommunications Act of 1996 ("TCA") was intended "to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition …" H.R. Conf. Rep. No. 104-458, at 206 (1996). Congress sought to strike "a deliberate compromise between two competing aims-to facilitate nationally the growth of wireless telephone service and to maintain substantial local control of siting of towers."

To achieve this goal, Congress preserved local zoning authority with respect to the siting of wireless facilities, but placed specific limitations on the local zoning authorities and made their decisions subject to review by federal courts. 47 U.S.C. § 332(c)(7).

The TCA establishes procedural requirements that local zoning boards must comply with. Specifically, the TCA requires that any decision denying an application for a permit be in writing and supported by substantial evidence. 47 U.S.C. § 332(c)(7)(B)(iii). In addition, the TCA imposes substantive limitations on local zoning boards. Decisions of local zoning boards may not "prohibit or have the effect of prohibiting the provision of personal wireless services." 47 U.S.C. § 332(c)(7)(B)(i)(II). In addition, decisions of local zoning boards may not "unreasonably discriminate among providers of functionally equivalent services …." 47 U.S.C. § 332 (c)(7)(B)(I).

Reference Information -- Facts About How Cellular Works

How does wireless technology work?

When a call is placed from a wireless phone, your voice is encoded into a low-energy digital radio signal transmitted by the handset to the nearest wireless facility (called an antenna site or cell site). At the facility, the signal is routed over a dedicated wired line, similar to a normal telephone line, to a central "switching" center. Then, the call is either connected over land lines to the telephone number dialed or routed to another switching facility to complete the call.

When a call is placed to a wireless phone, the call is routed from the source of the call through a switch onto the wireless network. The network can locate the handset and set up a digital radio communications channel between the handset and the nearest wireless facility.

Wireless technology reuses the same radio frequencies over and over again by dividing a service area into separate geographic zones called "cells." Cells can be as small as an individual building or city block, but they are typically one to two miles in length. Each cell is equipped with its own radios which translate data into voice or other digital communications. By controlling the frequency and direction of the digital radio signals transmitted from a facility, engineers are able to reuse the same radio frequencies over and over.

How does a cell site work and what is its function?

Each cell site must overlap with its neighboring site so that wireless users can move between locations and continue to use their wireless phone. This overlap of coverage areas allows a mobile phone to recognize a new cell site and establish a radio frequency communications channel with the new cell site before the phone loses contact with the previous cell site. This is called a "handover." If sufficient coverage overlap doesn't exist, the phone isn't able to complete the handoff between cell sites and the wireless device loses contact with the wireless network. This is referred to as a "dropped call."

To keep up with growing customer demand, carriers are constantly improving their coverage areas and expanding their network capacity to handle the growing number of customer calls and data transmissions.

People today use their cell phones for music, email, gaming, Internet and navigating -- not to mention talking, sending text messages, sharing pictures, videos, and downloading content. They rely on their cell phones much more today than in the past, and demand coverage where they work, live and play.

What is the difference between "PCS" and "cellular service"?

PCS or "Personal Communications Services" refers to digital wireless communications services that include voice, messaging and high-speed data transmission operating in the 1900 MHz frequency spectrum. PCS utilizes digital transmission signals.

"Cellular" refers to those wireless communications services (voice and data) operating in a different segment of the radio frequency spectrum, the 850MHz band. This cellular band can use either analog or digital signals. The different frequencies affect the speed and reach of the transmission.

PCS technology offers clearer voice quality, better security, and longer battery life. A PCS device is also smaller, lighter, and easier to use than devices that use cellular technology.

Wireless facilities need to be located where people use their wireless phones. Customers want a clear signal, including in residential neighborhoods, so they can take personal calls and business calls on their way to and from work. People want to check in with their children and reach and stay connected with a 911 operator in an emergency, regardless of their location. Wireless phones provide a stronger sense of security and a feeling that people are more connected.