

## FREQUENTLY ASKED QUESTIONS ABOUT WIRELESS TELECOMMUNICATIONS FACILITIES (CELL SITES)

### WHAT ARE "RADIOFREQUENCY" AND MICROWAVE RADIATION?

Electromagnetic radiation consists of waves of electric and magnetic energy moving together (*i.e.*, radiating) through space at the speed of light. Radio waves and microwaves emitted by transmitting antennas are one form of electromagnetic energy. They are collectively referred to as "radiofrequency" or "RF" energy or radiation.

The RF waves emanating from an antenna are generated by the movement of electrical charges in the antenna. Electromagnetic waves can be characterized by a wavelength and a frequency. The wavelength is the distance covered by one complete cycle of the electromagnetic wave, while the frequency is the number of electromagnetic waves passing a given point in one second. The frequency of an RF signal is usually expressed in terms of a unit called the "hertz" (abbreviated "Hz"). One Hz equals one cycle per second. One megahertz MHz equals one million cycles per second.

### Breakdown of one type of Cell Site on a wood pole owned by the Joint Pole Association (JPA)



Primary Electricity Distribution

Electrical Transformer

Secondary Electrical Zone

Streetlight Operated by SCE

Communications Zone

Typically features cable used for landline telephone, Cable TV, and other fiber-optic cable providers

Transmitting & Receiving Antenna

Typically mounted on a sidearm extension (as shown), or an extension arm directly above the top of the pole

Equipment Enclosures

Cabinets or radio relay units which provide signal processing, and route power and signals through cable to the antenna(s). These enclosures do not transmit radio-frequency energy into the air around them.

Disconnect Switch

Smaller enclosure allowing line workers, wireless carrier, or emergency responders to shut down power to antenna

Also Typically Included: **Electrical Meter** (on or near the pole) which allows SCE to monitor and bill wireless carrier for electricity usage.

### **CAN RF EMISSIONS CAUSE HEALTH PROBLEMS?**

Some studies have also examined the possibility of health problems caused by RF exposure. Results to date have been inconclusive. While some experimental data have suggested a possible link between exposure and tumor formation in animals exposed under certain specific conditions, the results have not been independently replicated. Many other studies have failed to find evidence for a link to cancer or any related condition.

### **ARE WIRELESS TELECOMMUNICATIONS FACILITIES (WTF) AND OTHER RADIO TOWERS LOCATED NEAR HOMES OR SCHOOLS SAFE FOR RESIDENTS AND STUDENTS?**

RF emissions from antennas used for cellular and PCS transmissions result in exposure levels on the ground that are typically thousands of times below safety limits. These safety limits were adopted by the Federal Communications Commission (FCC) based on the recommendations of expert organizations and endorsed by Federal health and safety agencies. Therefore, there is no reason to believe that such towers could constitute a potential health hazard to nearby residents or students.

### **CAN PEOPLE BE EXPOSED TO LEVELS OF RF EMISSIONS THAT COULD BE HARMFUL?**

Studies have shown that environmental levels of RF energy routinely encountered by the general public are typically far below levels necessary to produce significant heating and increased body temperature.

### **DOES THE FCC ROUTINELY MONITOR RF EMISSIONS FROM ANTENNAS?**

The FCC does not have the resources or the personnel to routinely monitor the exposure levels due at all of the thousands of transmitters that are subject to FCC jurisdiction. However, while there are large variations in exposure levels in the environment of fixed transmitting antennas, it is exceedingly rare for exposure levels to approach FCC public exposure limits in accessible locations. In addition, the FCC does not routinely perform RF exposure investigations unless there is a reasonable expectation that the FCC exposure limits may be exceeded.

### **CAN LOCAL AND STATE GOVERNMENTAL BODIES ESTABLISH LIMITS FOR RF EXPOSURE?**

The Federal Telecommunications Act of 1996 contained provisions relating to federal jurisdiction to regulate human exposure to RF emissions from certain transmitting devices. In particular, Section 704 of the Act states that, "No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions."

**WHAT IS THE JOINT POLE ASSOCIATION (JPA)?**

An association of utility companies and governments agencies who own and manage the majority of wood poles within the City.

**CAN THE CITY OF RANCHO PALOS VERDES SIMPLY REFUSE TO ALLOW ANY OF THESE FACILITIES WITHIN THE PUBLIC RIGHT-OF-WAY?**

No. The City cannot prohibit the placement of personal wireless telecommunications facilities in the public right-of-way. As regulated by the California Public Utilities Commission, the companies have the right to place their facilities in the right-of-way, subject to the City's reasonable time, place and manner rules (See City Municipal Code Chapter 12.18). Additionally, the Federal Telecommunications Act of 1996 prohibits the City from discriminating against wireless telecommunications providers or prohibiting such providers from providing wireless services within the City.

**IS THE CITY CONSIDERING THE ADOPTION OF A COMPREHENSIVE ORDINANCE REGULATING WIRELESS TELECOMMUNICATIONS FACILITIES?**

Yes. The City has already adopted an Ordinance regarding Wireless Telecommunications Facilities. The first public reading was held on March 1, 2016 and the Ordinance was adopted and approved on March 15, 2016. For your reference, you can find the Ordinance in Title 12, Chapter 12.18.

**IS THERE A PERMIT REQUIRED FROM THE CITY?**

Yes. The Department of Public Works, in coordination with the City Planning Division, issues permits for wireless facilities in the public right-of-way. The Wireless Ordinance and Application can be found on the City's website. The direct link is: [www.rpvca.gov/916/Cell-Sites](http://www.rpvca.gov/916/Cell-Sites)

**HOW MANY WIRELESS FACILITIES ARE THERE IN RANCHO PALOS VERDES?**

As of February 2016, there are over 140 existing wireless facilities in the public right-of-way.

**DO THE ANTENNAS GENERATE NOISE OR LIGHT?**

Some, but not all wireless facilities feature cooling fans within the equipment cabinets, in order to regulate the temperature for the computers inside. To date, no Wireless Facilities installations have lights, however, should that occur, City Ordinance regulates noise and lighting.

**HOW DOES THE RADIO-FREQUENCY (RF) EXPOSURE FROM THESE ANTENNAS COMPARE TO THE RF OUTPUT FROM A MOBILE PHONE, BABY MONITOR, OR WI-FI ROUTER IN A PERSON'S HOME?**

RF exposure is highly dependent on factors like distance and orientation from the antenna (so being below or behind these antennas generates significantly lower RF exposure). Generally, any person within their home (even if on an upper story dwelling unit at the same level as the antenna), or at ground level would be subject to higher RF exposure levels from a cell phone in their hand (if they own one) than the RF exposure typically seen from these antennas.

This is due to the distance between the antenna and any publicly accessible areas, as well as the orientation of the antennas. The antennas on steel poles are directional (meaning they have a specific beam pattern) so the RF exposure at a dwelling right behind the antenna is significantly lower than being directly in front of the antenna.

**CAN I PROTEST THE INSTALLATION OF A WIRELESS FACILITY ON MY BLOCK?**

Yes. If you have received notice that a wireless facility has been proposed to be installed on your block it means the Department of Public Works has reviewed the application. It could also mean that the Planning Department is processing the permit. While you may protest the issuance of the permit, you must do so in the time set forth in the notice. Public Works and Planning will not consider an untimely protest.

**WHICH COMPANIES ARE PROPOSING TO ADD WIRELESS ANTENNAS?**

Various carriers are currently proposing facilities. The proposals would include systems operated by Crown Castle, Verizon Wireless, T-Mobile, and smart meters operated by Southern California Gas.



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## WHERE CAN I OBTAIN MORE INFORMATION ON POTENTIAL HEALTH EFFECTS OF RF ENERGY?

**FDA:** The Food and Drug Administration's Cell phone website :

- <http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/>  
Topics include: Wireless medical devices, General Electronic Product Radiation Control, FDA regulations that apply to manufacturers of electronic products

**EPA:** The Environmental Protection Agency's overview of power-line emissions:

- <http://www.epa.gov/radtown/power-lines.html>  
Topics include: Power lines and Cell phone safety

**NIOSH:** The National Institute for Occupational Safety and Health

- Research on protecting workers from proven and possible EMF (electric and magnetic fields) health risks focusing on RF (radiofrequencies), ELF (extremely low frequencies) and Static magnetic fields:  
<http://www.cdc.gov/niosh/topics/emf>

**NCI:** The National Cancer Institute's Fact sheets on potential risks from exposure to:

- Magnetic fields:  
<http://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/magnetic-fields-fact-sheet>
- Cell phones:  
<http://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/cell-phones-fact-sheet>

**NIEHS:** The National Institute of Environmental Health Sciences

- Electric and magnetic fields and potential health effects:  
<http://www.niehs.nih.gov/health/topics/agents/emf/index.cfm>

**NTP:** The National Toxicology Program

- Test the biological effects of cellphones (GSM):  
<http://ntp.niehs.nih.gov/testing/status/agents/ts-08013.html>
- Test the biological effects of cellphones (CDMA):  
<http://ntp.niehs.nih.gov/testing/status/agents/ts-08015.html>

**FCC:** Federal Communications Commission

- General information on RF exposure is found on the FCC's Office of Engineering and Technology (OET) web page at:  
<https://www.fcc.gov/general/radio-frequency-safety-0>
- General information on cellular telephones can be found at:  
<https://www.fcc.gov/general/telephone-guides>.
- Information specific to fixed antenna structures can be found on the  
<https://www.fcc.gov/general/tower-and-antenna-siting>