Arizona VHP: Vertical, Horizontal & Power

THE RESERVE TO A SECOND SECOND

Telecom & Broadband Solutions for Chandler, AZ

Protective, Local Laws that Deliver Public Safety
Dec 16, 2020

Key Points to Remember

- Dec 2019/Oct 2020: FCC NEPA Attorney Erica Rosenberg: Since Aug 9, 2019, every Wireless Telecommunications Facility (WTF) of any size and any "G" must undergo NEPA review (link)
- Excessive Effective Radiated Power (ERP) is essentially excessive noise that is often way beyond what is needed for telecommunications service, i.e. the ability to make an outdoor wireless phone call (-85 dBm or $0.002 \,\mu W/m^2$)
- This NOISE (inaudible, yet extremely chaotic electromagnetic power through the air) ruins residents' quiet enjoyment of streets
- VHP | Vertical Horizontal Power, the three amigos of Wireless antennas; if your town does not regulate all three, then it has achieved nothing.

Wireless Companies Are Manufacturing . . . Electromagnetic power through-the-air

- Antennas = Factories . . . heavy-polluting industrial
 equipment installed throughout residential neighborhoods
- Inputs . . . factories mush together a stream of data from fiber optic cables with a boatload of electricity to spray . . .
- Output . . . Electromagnetic Power through-the-air, which goes by many names (ERP, RF-EMR, dBm, V/m, μW/m², electrosmog, neurotoxin, deadly pollution and more . . .)
- 25 million times more RF-EMR than is needed for 5-bars on a cell phone – this is like placing toxic dumps next to homes.

Pulse-Modulated Microwave Radiation from 4G/5G Grid:

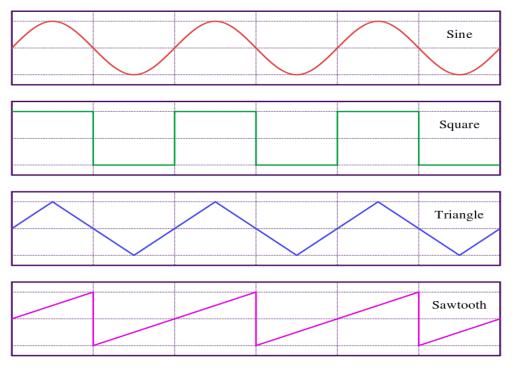
Frequencies in = Megahertz (MHz) | Wavelengths in inches (")

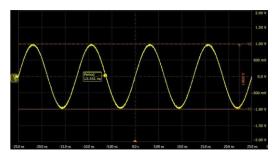
- **5G**: 600 MHz | ~**20"**
- 4G: 700 MHz | ~17"
- 3G/4G: 800 MHz | ~15"
- 3G/4G: 900 MHz | ~13"
- 3G/4G: 1,800 MHz | ~6.5"
- 3G/4G: 2,100 MHz | ~5.5"
- Wi-Fi: 2,450 MHz | ~5"
- **5G**: 3,100 to 3,550 MHz | ~**3.8 to 3.3**"
- **5G**: 3,550 to 3,700 MHz | ~**3.3 to 3.2"**
- **5G**: 3,700 to 4,200 MHz | ~**3.2 to 2.8**"
- **5G**: 4200 to 4,900 MHz | ~**2.8 to 2.4"**
- Wi-Fi: 5800 MHz | ~2"

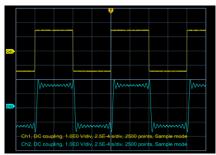
- Millimeter wave territory (30,000+ MHz)
- **5G**: 24,250 to 24,450 MHz | ~**0.5**"
- **5G**: 25,050 to 25,250 MHz | ~**0.5**"
- **5G**: 25,250 to 27,500 MHz | ~**0.4**"
- **5G**: 27,500 to 29,500 MHz | ~**0.4**"
- **5G**: 31,800 to 33,400 MHz | ~**0.4**"
- **5G**: 37,000 to 40,000 MHz | ~**0.3**"
- **5G**: 42,000 to 42,500 MHz | ~**0.3**"
- **5G**: 64,000 to 71,000 MHz | ~**0.2**"
- **5G**: 71,000 to 76,000 MHz | ~**0.2**"
- **5G**: 81,000 to 86,000 MHz | ~**0.1**"

Source: US Senate Bill 19, The Mobile Now Act

RF Electromagnetic Radiation Waves

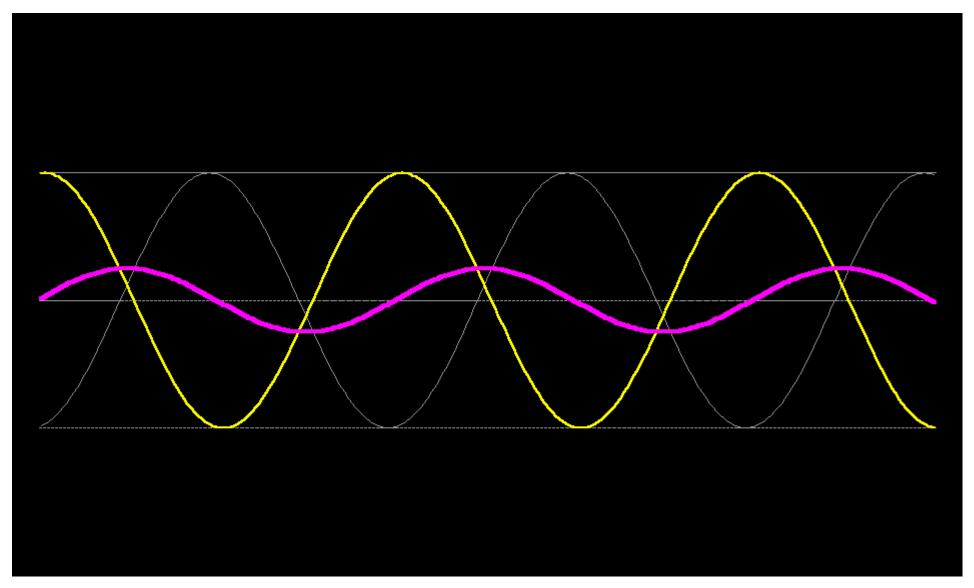








Resonance



Not Just Aesthetics Problems

• Solution: Drastically reduce Power output and size of equipment





Evidence: 4G/5G WTFs Are Already Harming Residents

Sacramento, CA: 60 feet from home | San Francisco, CA: 12 feet from home | Santa Rosa, CA: 25 feet from home







After one month, children in Sacramento **sickened**; and family spent \$10,000+ to shield home; after three months, woman in San Francisco was diagnosed with **brain tumor** (removed Mar 2, 2020); after two months, woman in Santa Rosa **moved and sold her home** at 23% below market value.

So-Called "small" Wireless Telecommunications Facilities (sWTFs) are falsely branded.

sWTFs: 25 million times more ERP than than Macro Cell Towers, once one considers the metric that matters — the intensities of the toxic pollutant (RF/MW radiation) that reaches second- and third-story bedrooms: 50,000 μW/m² from a so-called "small" cell is 25 million times more powerful than 0.002 μW/m² (-85 dBm) from a Macro cell

What Really Matters: Excessive Effective Radiated Power (ERP) That Results in RF Microwave Radiation Intensities in 2nd-Story+ Bedrooms

Cell Tower	Vertical Distance Off Ground	Horizontal Distance Away	Power in bedroom (2nd-story+)
small cell	35 feet	60 feet	50,000 avg. radiation units
Macro cell	200 feet	2,500 feet	0.002 avg. radiation units

Note: -85 dBm provides 5 Bars of telecom service (source: link to The Truth About 4G/5G in Sacramento)

This is Happening Everywhere . . .



- Excessive Effective Radiated Power:
 - 25 million times more than needed for "5 bars" wireless telecom service
- Loss of privacy:

 24/7 surveillance,
 mwWaves "see" through clothes, bounce off skin
- 20-30% loss in values for homes within 500 feet of Wireless Telecom Facilities

What's the Biggest Problem?

Inside the Box Thinking





Best Ways to Fix Problems

COVID-19 is a National Emergency

President Trump's proclamation states:

- "NOW, THEREFORE, I, DONALD J. TRUMP, President of the United States, by the authority vested in me by the Constitution and the laws of the United States of America. . . do hereby find and proclaim that the COVID-19 outbreak in the United States constitutes a national emergency, beginning March 1, 2020."
- Local Health Order: "For purposes of this Order, individuals may leave their residence to provide any services or perform any work necessary to the operations and maintenance of "Essential Infrastructure," including, a number of activities relating to water, sewer, gas, transportation and a single mention of internet, and telecommunications systems"

No Need to Get Bamboozled & Bullied . . .

- What the Federal Govt. Tells Cities: 47 U.S. Code § 324 "In all circumstances . . . all [licensed] radio . . . shall use the minimum amount of power necessary to carry out the communication desired."
- FCC Order 18-111: ¶ 157. "in the case of a natural disaster or other comparable emergency* an express or de facto moratoria that violates section 253(a) may nonetheless be "necessary" to "protect the public safety and welfare". . . emergency moratoria are legally permissible under 47 USC § 253."

*COVID-19 is such an emergency!





Arizona-VHP Asks:

Right now, the building of **NEW** TELECOM INFRASTUCTURE is **NOT** essential:

- Please Stop Processing/Building New Telecom infrastructure until the following has occurred:
 - 1. COVID-19: National Emergency has been declared ENDED
 - 2. Chandler passes new ordinance to limit Effective Radiated Power from Wireless Telecommunications Facilities (WTFs) in public rights-of-way to a minimum level that provide telecommunications service.
 - 3. Chandler develops a broadband plan, balancing needs for Big Data (Internet) via fiber optic and small data (wireless calls) via Cell Towers

WE-WANT-IT: Invite the Public to the Table

- Work with the public on New Broadband Plan that balances the needs of Natural Persons (residents) and Unnatural persons (Billion Dollar Telecom Cos.)
- Create New ERP Policing Plan to generate revenue by locally regulating Vertical, Horizontal and Power for Wireless Telecom Facilities (WTFs), consistent with <u>47 U.S. Code § 324</u>
- Create New Equipment Standards that respect residents' constitutional and inalienable rights to safety and privacy

WE-WANT-IT: Written Evidence – Wireless Antenna Need Test – In Telecommunications

- Link to sample language
- Every six months: a Comprehensive Wireless Signal Strength Test by an independent RF Engineer, who will
- Log, second-by-second, the Wireless signal-strength levels in dBm (decibel-milliWatts) of every carrier-specific licensed and unlicensed wireless frequency that is being transmitted to the streets of Chandler.
- The full data file for each WE-WANT-IT test will be placed in the public record for anyone to view, analyze and verify

WE-WANT-IT: Written Evidence – Wireless Antenna Need Test – In Telecommunications

- Data will serve as the basis for local decisions, regarding:
 - the need for any additional Wireless infrastructure; and
 - the placement, construction, modification and operations of WTFs of Any G within the authority's borders.

Force Applicants to Provide Insurance Coverage

Self-Insurance is a <u>Bait-and-Switch</u>; Current General Liability Insurance has <u>RF-EMR Pollution Exclusion</u>



Privacy is Gone in Front Yards (and in homes) . . .

- Loss of privacy:
 24/7 surveillance, just like in airports, mwWaves "see" thru clothes & bounce off skin
- VentureBeat: body scanners show nearly nude images of people trying to board flights; OSI's Rapiscan Systems moving to other government agencies.



Millimeter-Wave Body scanners allow routine <u>digital strip searches</u> of individuals who are not suspected of any crime. For more info, see <u>EPIC: Radiation Risks lawsuft</u> and <u>EPIOF ATIR lawsuit</u> and <u>EPIC: Suspension of Body Scanner Program</u>

Negative Health Consequences From RF-EMR Exposures

- Direct Neurological, Cardiovascular, Reproductive and Blood Harms
- Leading Scientists: pushing IARC to re-classify RF-EMR exposures from Group 2b (possible) to Group 1 (definite) Human Carcinogen
- RF-EMR exposures **Suppresses melatonin** and immune systems
- This is Involuntary 24/7/365 RF-EMR exposures -- unconstitutional

Thousands of Peer-Reviewed Scientific Studies can be found at <u>BioInitiative.org</u>, <u>Physicians for Safe Technology</u>, UC Berkeley Professor Joel Moskowitz's <u>SaferEMR</u>, <u>Scientists for Wired Technology</u> and <u>Zory's Archive</u>.

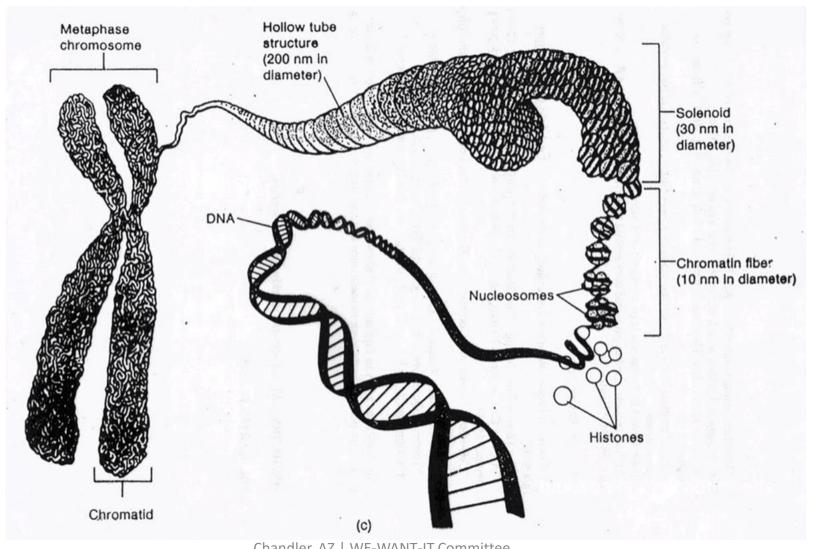
Radiofrequency Electromagnetic Microwave Radiation Exposures

We are constantly bombarded with pulsed, data-modulated, Radiofrequency Electromagnetic Microwave Radiation (RF-EMR) exposures due to the proliferation of cellular wireless, radio and television signals. The emergence of densified 4G/5G will exponentially increase these RF-EMR exposures, resulting in scientifically-established melatonin-suppression, immuno-suppression, immediate and direct neurological damages and acceleration of the growth of cancerous tumors. (In the table, below, $\mu W/m^2$ is millionths of a Watt spread over a one-square-meter area and x is a multiplier).

Power Output Scale	Consequences on Human Health (based on thousands of published studies)	μW/m²
0.0005x	EEG altered in humans; alters brain waves	0.000001
1	FIVE BARS ON CELL PHONE	0.002
15,000x	Sleep disorders, weakness, fatigue, pain	30
50,000x	Human sensation	100
500,000x	Decreased cell growth, humans	1,000
600,000x	Childhood leukemia	1,200
1,250,000x	Impaired motor function, reaction time, memory, attention	2,500
3,750,000x	Altered white blood cells, humans	7,500
5,000,000x	Headache, dizziness, fatigue, weakness, insomnia, humans	10,000
15,000,000x	Microwave hearing	30,000
25,000,000x	Leukemia, skin, melanoma, bladder cancer	50,000
50,000,000x	Impaired memory, visual reaction time, humans	100,000
5,000,000,000x	FCC Maximum Permissible RF-EMR Exposure Guidelines, General Pop.	10,000,000

Conclusion: The measurements above explain why close proximity to the proposed million + of microwave cell towers for the U.S. would be 23 hazardous to the health of U.S. citizens. We need only 0.002 µW/M² (-85 dBm) of RF microwave radiation for wireless telecommunications service.

DNA Strand Breaks Established (link)





How Much Power Is Needed?

47 U.S. Code §324 – Use of minimum power

"In all circumstances, except in case of radio communications or signals relating to vessels in distress, all radio stations, including those owned and operated by the United States, shall use the minimum amount of power necessary to carry out the communication desired." (link)

Conflict in Chandler's Duties & Obligations

TO PROTECT VS. TO PROVIDE

- Public Safety
- Property Values
- Sustainability
- Quiet Enjoyment of Streets

Advanced Telecom Services*

*47 U.S.C. § 153 (1) Advanced communications services:

VoIP service | Electronic messaging service | Video conferencing service

i.e. **TELECOMMUNICATION** services **NOT** Broadband/**INTERNET** services

Workable V•H•P Recipe for WTFs

- Vertical: antenna is 200 feet from ground
- Horizontal: antenna is 2,500+ feet from homes/schools
- Power: 50,000 Watts of Effective Radiated Power
- Result: 0.002 RF radiation units in your bedroom provides 5-bars on a cell phone (<u>link</u>), full Telecommunications Service

Disastrous V•H•P Recipe for sWTFs

- Vertical: antenna is 25-50 feet from ground
- Horizontal: antenna is 10-50 feet from homes/schools
- Power: ~10,000 of Watts of Effective Radiated Power
- Result: 50,000 RF radiation units in one's bedroom (link)
- Compare: 50,000 to 0.002: it is 25,000,000 times more!

Workable V•H•P Recipe for sWTFs

- Vertical: antenna is 25-50 feet from ground
- Horizontal: antenna is 50+ feet from homes/schools
- Power: 0.1 Watt of Effective Radiated Power
- Result: 0.002 RF radiation units in your bedroom still provides 3-bars on a cell phone (link), but 5-bars outside

The Beauty of 0.1 Watt sWTF ERP Limit

- Much smaller antenna & power supply
 (think size of Wi-Fi Router) https://scientists4wiredtech.com/vhp
- Signal goes down the street ½ a mile
- Provides 5 Bars on a cell phone
- Everyone (over 3,000 people at same time) can make a call
- . . . and is **compliant** with FCC RF-EMR Exposure guidelines
- What's not to like?

Add to Chandler Wireless Ordinance . . .

- Ordinance M: just like Easton, CT (CT, like IL, has a Small Cell bill)
 pass a moratorium on processing any Wireless Telecom Facility
 (WTFs) applications until our national emergency (COVID-19) is
 declared over.
- Ordinance VHP: For any WTF that is installed in the public rights-of-way, or attached to any building, or has antennas installed at a height that is lower than 100 feet off the ground, the applicant must install only antennas, radios and other supporting eqpt. that have no chance of exceeding a total of X Watts of effective radiated power (ERP) from the face of the antenna shroud." (link)

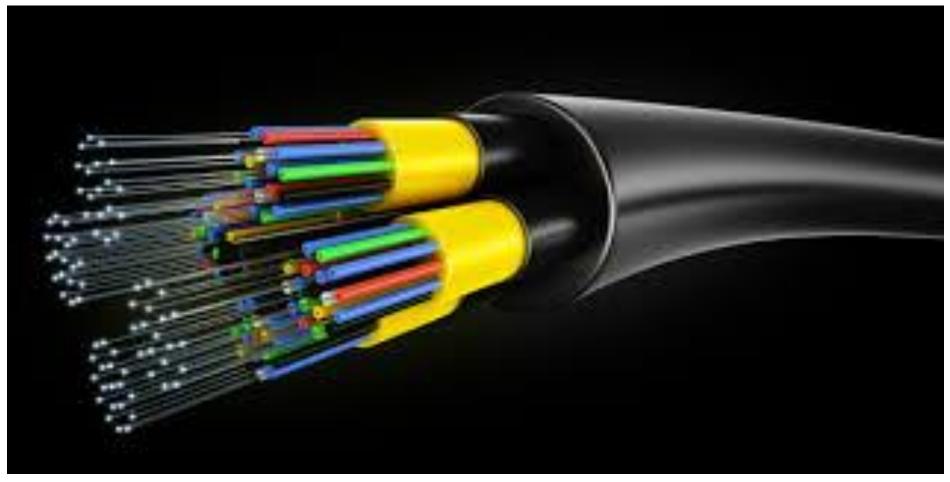
A Friendly \$5 Fuse can Generate Much-Needed Revenue for Chandler, AZ

Cap Effective Radiated
Power at
0.1 Watt of ERP



Fiber Optic Broadband and Wireless Broadband are NOT Functionally Equivalent Services

https://ourtownourchoice.org/leg/local/glen-ellyn-ordinances/improved-ordinance/#fttp



Solution: BIG DATA by Fiber, small data by Wireless



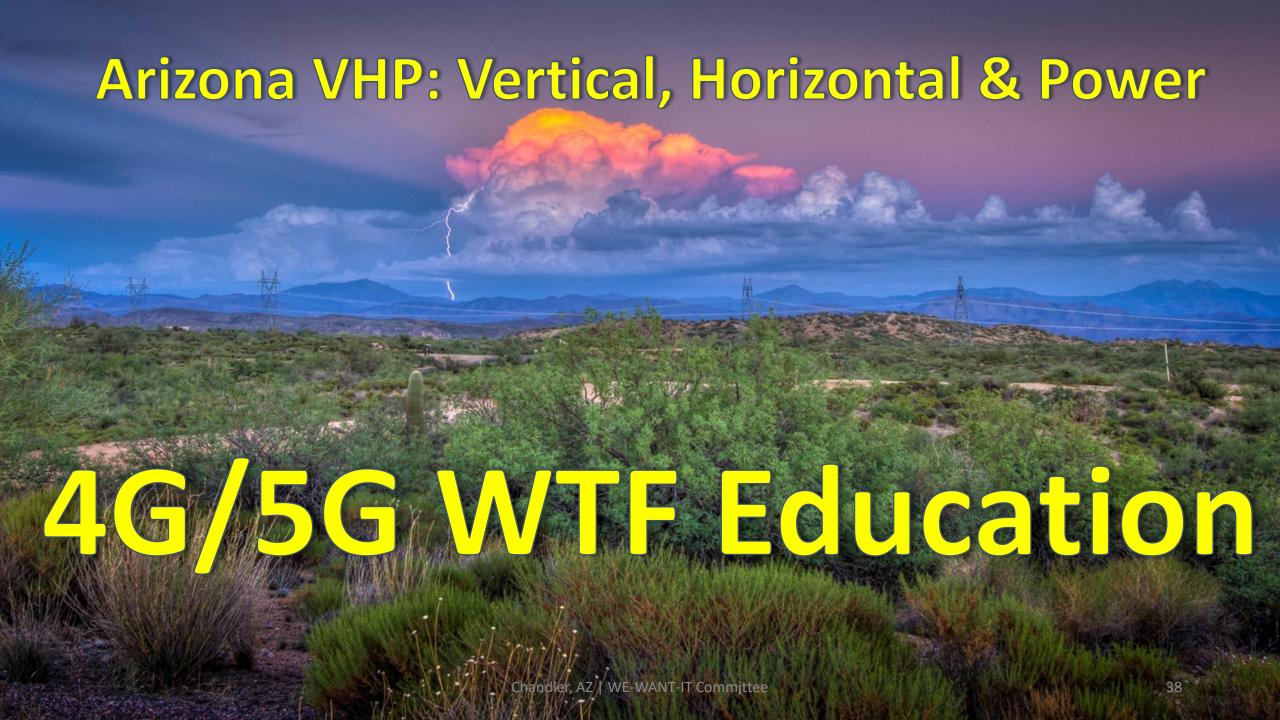




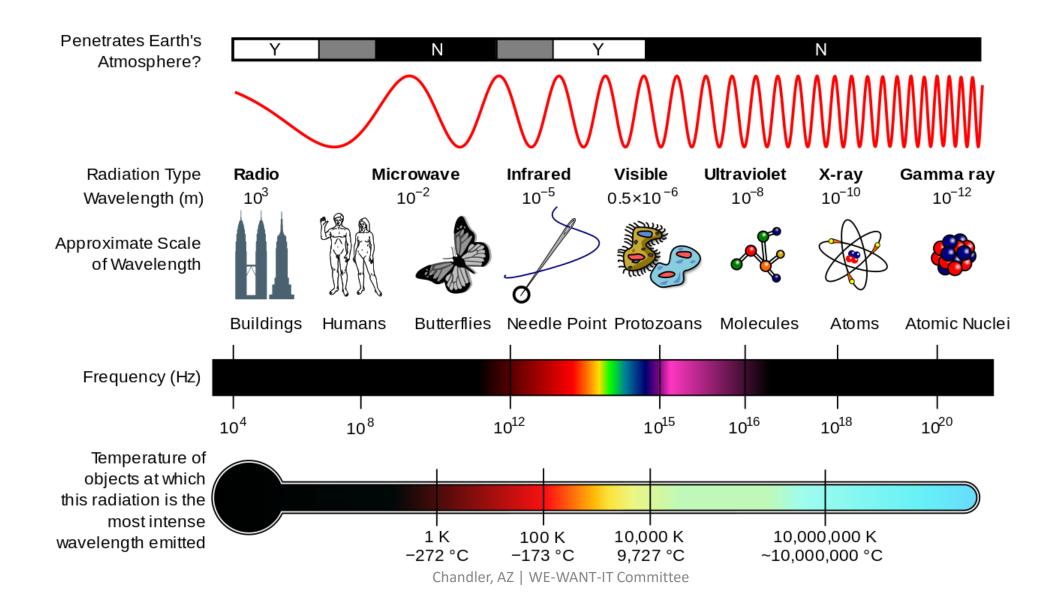
FCC RF-EMR Exposure Guidelines Emperor has no Clothes







Electromagnetic Spectrum



• Surgeons never used to wash their hands.





Asbestos was thought to be harmless:





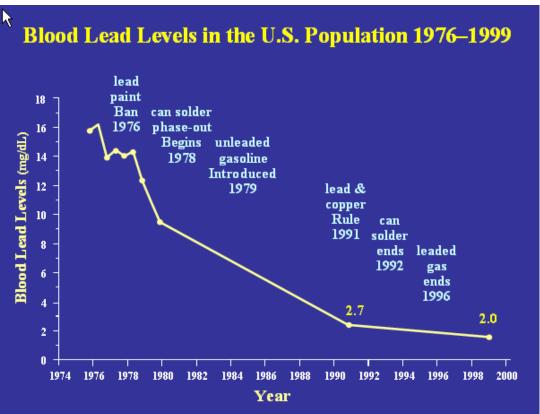
• Cigarettes:



McLaren, who had a pack-and-a-half a day smoking habit, was diagnosed with lung cancer at age 49. Despite chemotherapy, the removal of one lung, and radiation treatments, the cancer eventually spread to his brain and killed him.

• Lead in gasoline:





We are wrong, once again . . .

 Wireless carriers, have they earned our trust?





"Believe in 5G."

"See how 5G Home Internet has transformed these customers' experiences."

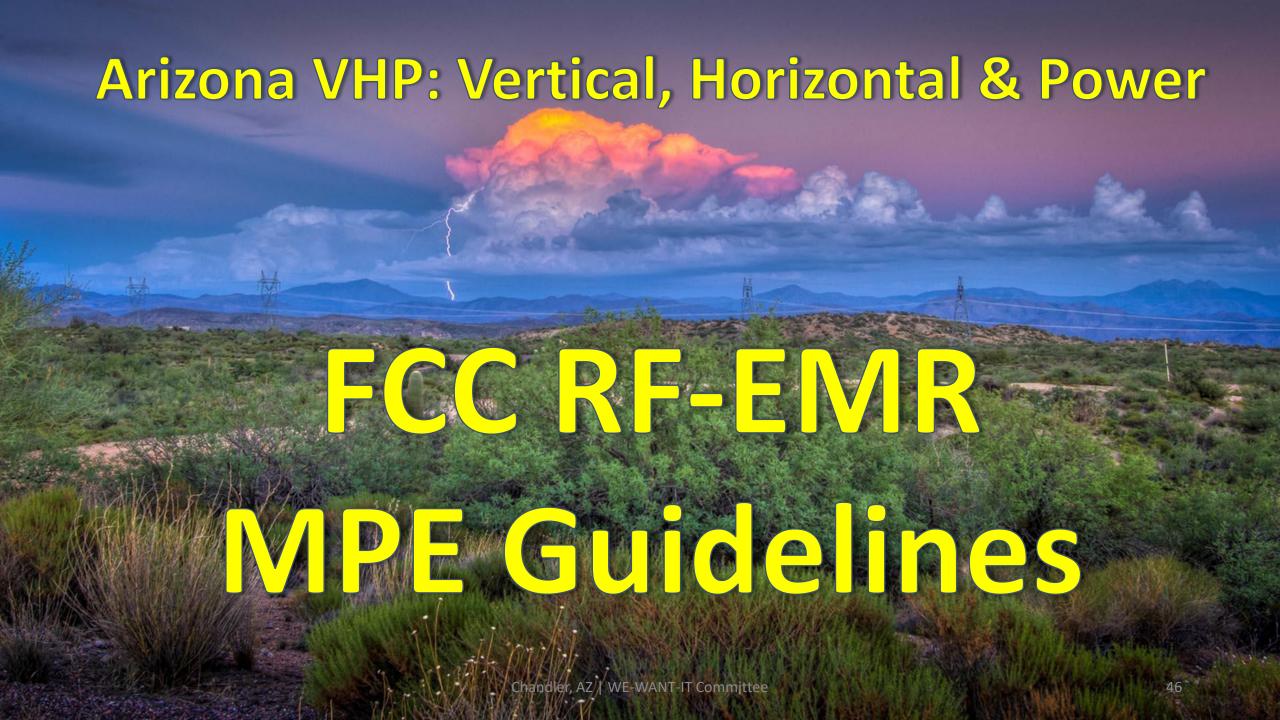


Watch the video to hear why scientific consensus says we have nothing to worry about.

If "Nothing To Worry About", Why These Signs?

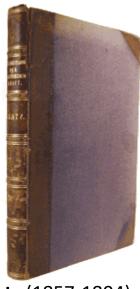






History of Radiation: Premature Deaths

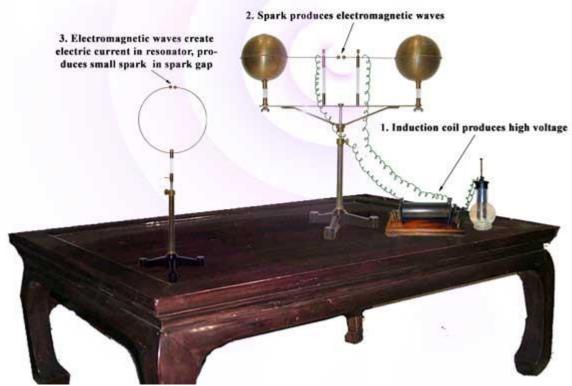




Link to Heinrich Hertz (1857-1894)

Died at 36 from exposures to Microwave Radiation from studies in his lab from 1886 to 1894 (8 years)

He died of granulomatosis with polyangiitis (microwave radiation sickness) believed to have been contracted from his long-term exposure to non-ionizing radiation.



Hertz: "It's of no use whatsoever . . . this is just an experiment that proves Maestro Maxwell was right—we just have these mysterious electromagnetic waves that we cannot see with the naked eye. But they are there."

Asked about the applications of his discoveries, Hertz replied, "Nothing, I guess."

Hertz's proof of the existence of airborne electromagnetic waves led to an explosion of experimentation with this new form of electromagnetic radiation, which was called "Hertzian waves" until around 1910 when the term "radio waves" became current.

The SI unit hertz (Hz) was established in 1930 for **frequency**, an expression of the number of times that a **repeated event occurs per second**.



<u>Link to</u> Marie Curie (1867-1934)

Died at 66 from exposures to Nuclear Radiation from studies in her lab from 1897 to 1934 (**37 years**).

She died of aplastic anemia believed to have been contracted from her long-term exposure to ionizing radiation.

Hermann P. Schwann, 1915-2005

He proposed the Schwan RF-EMR exposure "guesstimate" in 1953



Schwan was a <u>Nazi engineer</u>, who was recruited to work for the US Navy via **Operation Paperclip** in 1947; the Navy continued to fund his research at Penn through the 1980's.



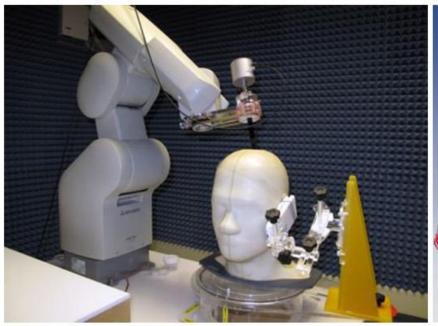
1963: Schwan with model of human body used for RF-EMR dosimetric studies. The model is filled with tissue equivalent liquids and exposed to RF energy in a microwave anechoic chamber that Schwan had constructed in his laboratory.



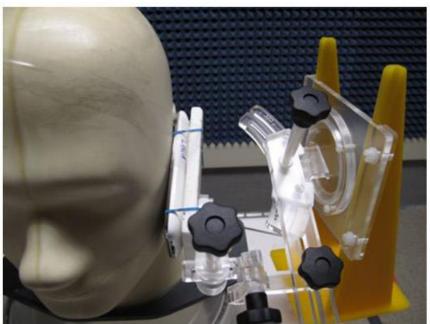
Schwan retired from Penn in 1983, but published another 60 papers from 1983 to 2005.

Specific Absorption Rate ("SAR")

Andrew Marino, PhD, JD: "I was there when SAR was invented. Richard Phillips, Don Justesen, Saul Michaelson, Herman Schwann, these were men who created SAR... they were interested in developing microwave ovens and in understanding how to cook meat... SAR works for dead muscle. It has just no applicability in my opinion for live brain. SAR can produce a lot of data. The calculations of SAR can produce beautiful pictures but the pictures are arbitrary and the measurements are meaningless."







FCC RF-EMR Exposure Guidelines

(Based on Average, **NOT** Peak RF-EMR exposures, which are 100x to 1,000 x higher)

Table 1—Limits for RF-EMR Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (μW/m²)	Averaging time (minutes)
Limits for General Population Exposure				
0.3-1.34	614	1.63	1,000,000,000	< 30
1.34-30	824/f	2.19/f	(180/f²) × 10,000,000*	< 30
30-300	27.5	0.073	2,000,000	< 30
300-1,500			(f/1500) × 10,000,000*	< 30
1,500-100,000			10,000,000	<30

f = frequency in MHz * = Plane-wave equivalent power density; <30 minutes was added in June 1, 2020 amendment



CA Constitution, Article I

• **SECTION 1.** "All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, acquiring, possessing, and protecting property, and pursuing and obtaining safety, happiness, and privacy."

CA Constitution, Article I

- Section 2. (a) "Every person may freely speak, write and publish his or her sentiments on all subjects. . . A law may not restrain or abridge liberty of speech or press."
- **Section 3.** (a) "The people have the right to . . . petition government for redress of grievances, and assemble freely to consult for the common good."
- Section 3.(b)(3): Nothing in this subdivision supersedes or modifies the right of privacy guaranteed by Section 1

US Supreme Court: "Congress ultimately rejected the national approach and substituted a system based on cooperative federalism." (link)

The regulation of the operations of Wireless Telecom Facilities was never preempted from local zoning authority.

This page is one of three legs of the stool that establishes local control over the operations of Wireless Telecom Facilities (WTFs); the other two are the US House/Senate Conference Report for the 1996
Telecommunications Act ("1996-Act") and the stated purpose of the 1996-Act: to promote the safety of life and property.

Oct 19, 2020 comment by Garnet Hanly

Division Chief of the Competition & Infrastructure Policy Division, FCC Wireless Telecommunications Bureau (link):

"The FCC when it modified its rules [Title 47, <u>C.F.R.</u> § 1.1312(e) by its October 2019 <u>Order</u> that became effective on <u>Dec 5</u>, <u>2019</u>], after the DC Circuit issued its mandate [in its Ruling of Case No. <u>18-1129</u>, *Keetoowah v FCC*] we [the FCC] took the position that we were **reviewing Small Wireless Facilities as undertakings and major Federal actions**, pursuant to the DC Circuit decision and that is what we've been doing."

1996 H. R. Conf. Report No. 104-458

"The conferees also intend that the phrase "unreasonably discriminate among providers of functionally equivalent services" will provide localities with the flexibility to treat facilities that create different visual, aesthetic, or safety concerns differently to the extent permitted under **generally applicable zoning requirements** even if those facilities provide functionally equivalent services. For example, the conferees do not intend that if a State or local government grants a permit in a commercial district, it must also grant a permit for a competitor's 50-foot tower in a residential district."

1996 H. R. Conf. Report No. 104-458

"If a request for placement of a personal wireless service facility involves a zoning variance or a public hearing or comment process, the **time period for rendering a decision** will be the usual period under such circumstances. It is **not the intent** of this provision **to give preferential treatment to the personal wireless service industry** in the processing of requests, or to subject their requests to any but the **generally applicable time frames** for zoning decision."

2019-2020 DC Circuit Rulings

August 9, 2019: "Every new wireless telecommunications facility ("WTF") must undergo NEPA review

October 1, 2019: FCC willingly surrendered its Title II regulation of "telecommunications service" (Broadband Internet/Video/Gaming), assigning it to unregulated Title I "information service" -- it no longer qualifies for 1996-TCA preemption. The only service the FCC regulates now as Title II is wireless phone calls.

March 13, 2020: FCC applied fraudulent accounting methods for 20 years, allowing \$Billions of Illicit Cross-Subsidies from State Wireline Utilities to Private Wireless Companies. States can now correct this.

2020 Ninth Circuit Ruling

- August 12, 2020: Ninth Circuit Court of Appeals <u>Case No. 18-72689</u>
 City of Portland et al. v FCC re: repeal of FCC Orders <u>18-111</u> and <u>18-133</u>.
- "We therefore hold that the FCC's requirement in the Small Cell Order that aesthetic regulations be "no more burdensome" than regulations applied to other infrastructure deployment is contrary to the controlling statutory provision. See 47 U.S.C. § 332(c)(7)(B)(i)(II).
- "We also hold that the FCC's requirement that all local aesthetic regulations be 'objective' is not adequately explained and is therefore arbitrary and capricious."
- We therefore:
 - GRANT the petitions as to those requirements,
 - VACATE those portions of the rule and
 - **REMAND** them to the FCC.

2020 Ninth Circuit Ruling

Andrew Campanelli, Esq.: "FCC 18-133 is ineffective, since it

- Cannot take away the powers preserved to towns by Congress,
- Cannot wipe out twenty years of Federal judges' interpretations,
- Cannot strip local governments of 20 years of local zoning regs."
- "The closest thing I have to a decision on this, so far, is one Federal judge in New York said and I'll quote him: (<u>link</u>)
 - 'It is not up to the FCC to put words in the 1996 Telecommunications Act that aren't there.' "

2020 Ninth Circuit Ruling

• FCC Order 18-133: (Sept 2018), the Streamline Small Cell Deployment Order is only an interpretive order; it is not a self-enforcing order. (link)

- This presumptive order is **only a statement of preferences** and it cannot wipe out Ninth Circuit case law.
 - 2008 Sprint v San Diego (<u>link</u>)
 - 2005 Metro-PCS vs. San Francisco (link)

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