IL SB.1451

Small Wireless Facilities Deployment Act

Scheduled for Repeal

on June 1, 2021

2020-2021 Illinois Neighborhood Survival Guide

By Glen Ellyn V•H•P

July 21, 2020

Agenda for Presentation/Discussion

- **Every single Wireless Telecommunications Facility (WTF) must undergo NEPA review;** yet, none of the current WTF applications in VGE have substantial written evidence of NEPA review. The City is **still** treating them as if they were complete applications. This means that both the Wireless applicants and City Staff are not respecting the **environmental protections** afforded to VGE.

- **Excessive Effective Radiated Power** is essentially **excessive noise** that is way beyond what is needed for telecommunications service, i.e. the ability to make an outdoor wireless phone call. Such noise (**inaudible electromagnetic power through the air**) negatively impacts the VGE environment and ruins residents' quiet enjoyment of streets. ©

- **VHP | Vertical, Horizontal Power |** are the three amigos of Wireless antennas; if we do not sufficiently regulate all three, as a set, then we have achieved nothing.

- **VGE has police powers** to protect public safety and the quiet enjoyment of streets; both can be protected by capping ERP to that which can provide telecommunications service -- and no higher.

- **Wireline** Broadband and **Wireless** Broadband **are not functionally equivalent services**, so under the 1996 Telecommunications Act, Wireless Broadband (**Information services**) qualifies for **none** of the preemption benefits that accrue to Wireless Phone calls (**Telecommunications services**),

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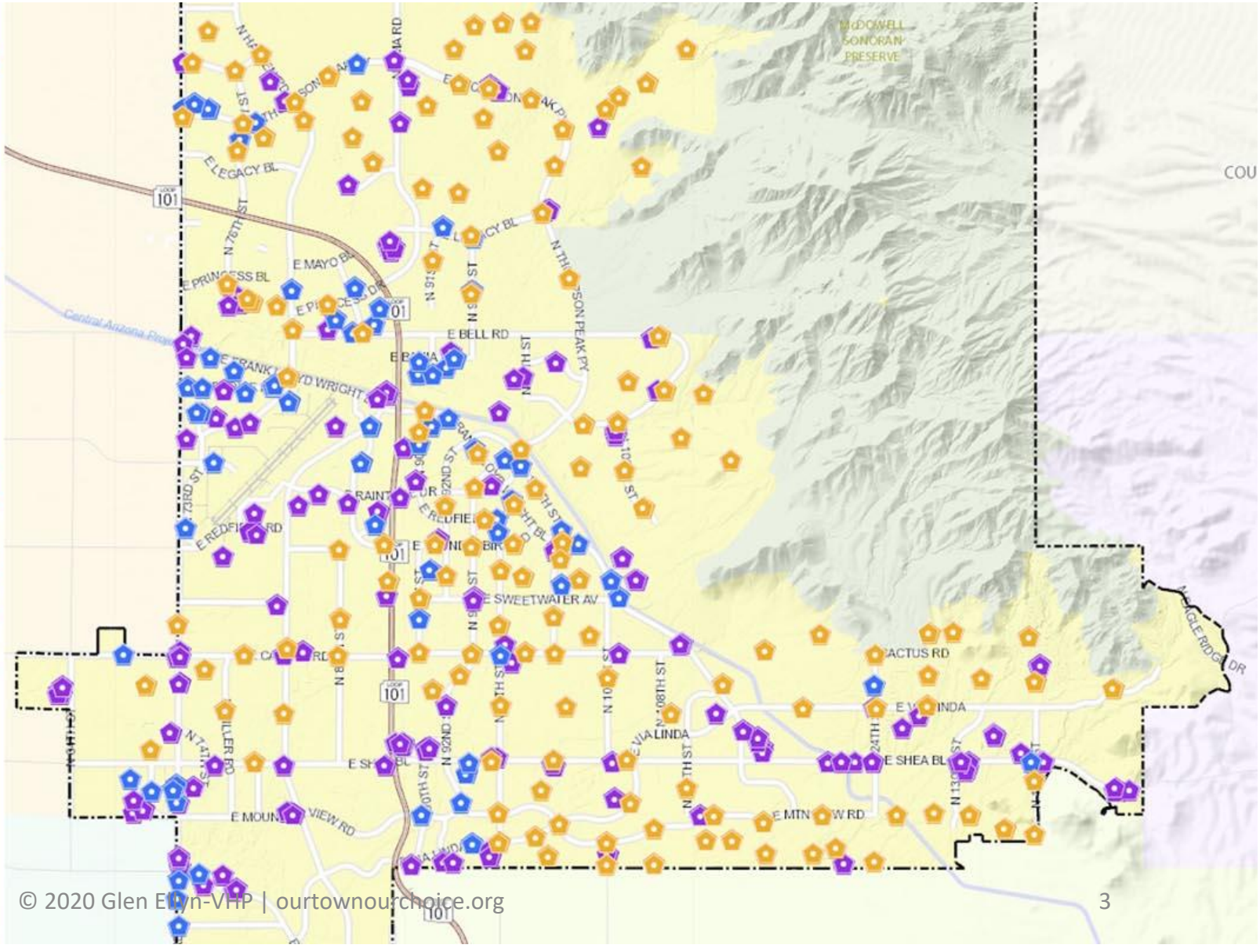
Let's NOT End Up Like Scottsdale, AZ



To prevent fires hazards, should be NO Wireless Antennas above ~ 12,000-Volt High-Voltage Lines . . .

https://youtu.be/xDLKLnVdlWE?t=74 | https://youtu.be/38Z8eYdVY48

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We agree with CA: there should be NO Wireless Antennas above ~ 12,000-Volt High-Voltage Lines . . .

https://www.dir.ca.gov/Title8/2946.html

Cal/OSHA §2946. *Preventing Accidents Due to Proximity to Overhead Lines.*

"(b) **Clearances or Safeguards Required.** *Except where overhead electrical distribution and transmission lines have been de-energized and visibly grounded, the following provisions shall be met:*

(1) **Over Lines.** *The operation, erection, or handling of tools, machinery, apparatus, supplies, or materials, or any part thereof, over energized overhead high-voltage lines shall be prohibited."*

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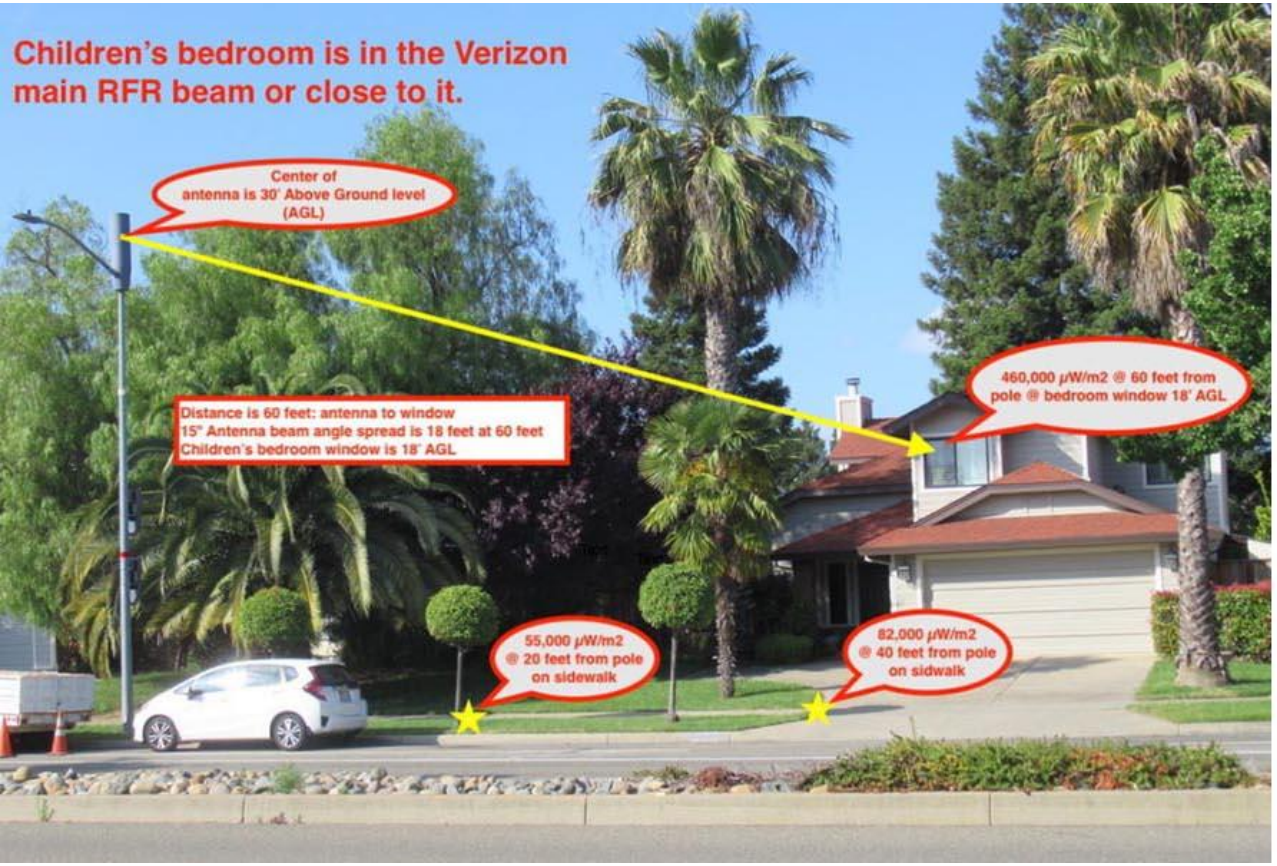
2017-2020: Strong Resistance to Dense 4G/5G WTFs in CA

Sacramento, CA: 40 feet from home | San Francisco, CA: 10 feet from home | Santa Rosa, CA: 20 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 comps.*

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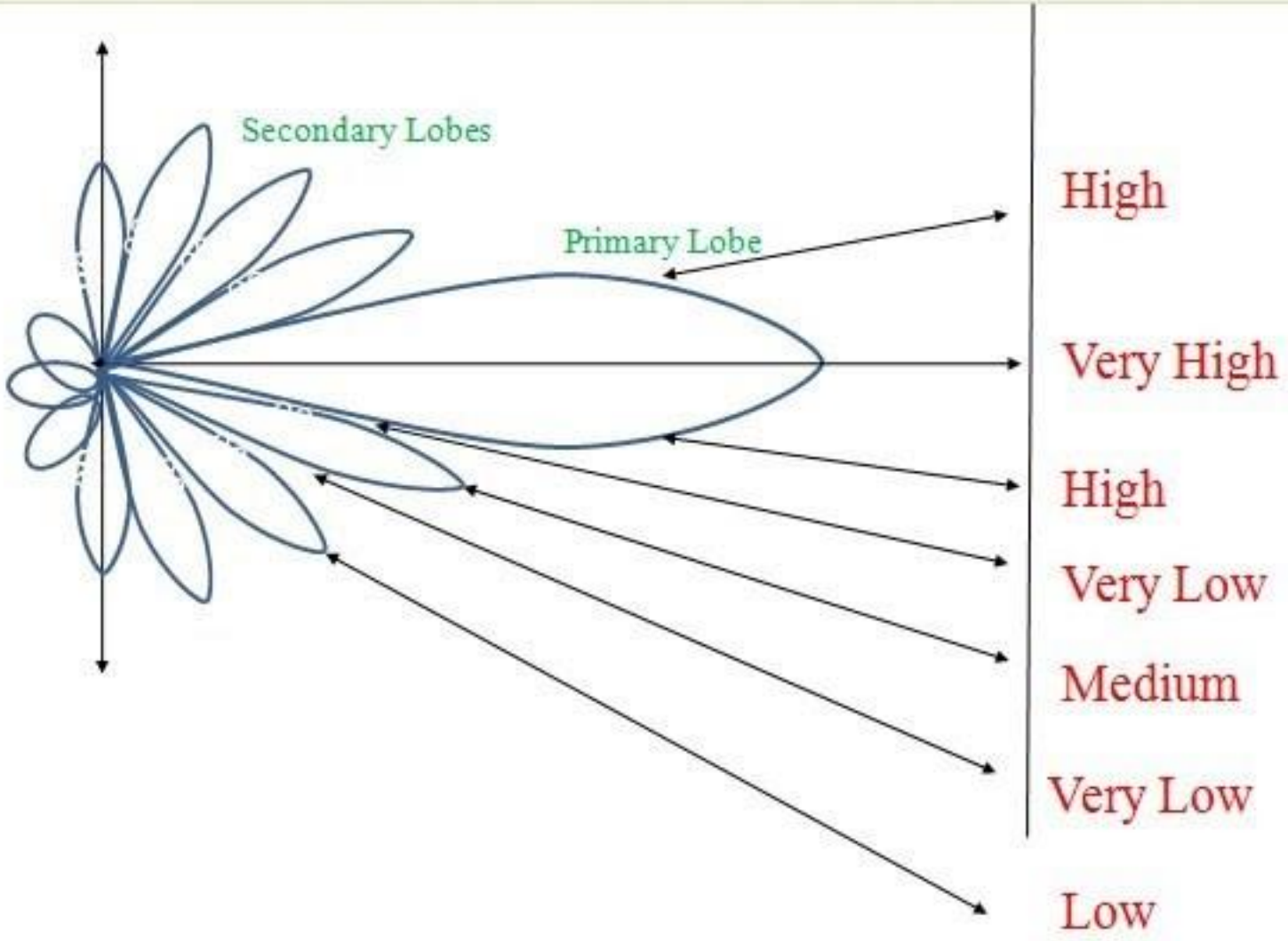
Radiation Pattern of a Cell Tower Antenna



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Glen Ellyn-VHP Asks

- **WE-WANT-IT Ordinance:**
  a **W**ritten **E**vidence — **W**ireless **A**ntenna **N**eed **T**est **I**n **T**elecommunications Ordinance for a comprehensive Wireless Signal Strength Test to be conducted every six months by an independent RF Engineer at **no cost to the Village of Glen Ellyn**

- Street-by-street Signal Strength (dBm) data in public record

- Provides **objective data** to establish if there is a **significant gap** in telecommunications service and forces the applicant to us the **least intrusive** means to close any **proven gap** (link)

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Glen Ellyn-VHP Asks

- **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 (*gives us time for **IL SB.1451 to self-repeal***)

- **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 0.1 Watt** of effective radiated power from the face of the antenna shroud.“ (link)

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NEPA

National Environmental Policy Act: protects quality of the human environment

FCC “Small” Cell Foundation is Crumbling

- **Aug 9, 2019:** DC Circuit Ruling in Case No. 18-1129
  Keetowah et al. v FCC re: Attempted sWTF NEPA Exemption – ***Was Vacated***

- *“We rule that the Order’s deregulation of small cells is arbitrary and capricious because its public-interest analysis did not meet the standard of reasoned decision-making.”*

- **Oct 1, 2019:** DC Circuit Ruling in Case No. 18-1051
  Mozilla et al. v FCC re: ***Rescinded*** *Net Neutrality &* ***State Preemption***

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DC Circ. Case No. 18-1129 Keetowah v FCC

- **Congress enacted NEPA to** "encourage productive and enjoyable harmony between man and his environment" and "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man," among other purposes.

- **All "major Federal actions** significantly affecting the quality of the human environment" trigger environmental review under NEPA, just as federal "undertakings" trigger historic preservation review under the NHPA. 42 U.S.C. § 4332(C) . . . if an action may significantly affect the environment, applicants must conduct a preliminary Environmental Assessment to help the Commission determine whether "the proposal will have a significant **environmental impact upon the quality of the human environment**,"

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Aug 8, 2019 DC Circuit Ruling

- **The FCC failed** to address that it was speeding densification "**without completing its investigation of . . . health effects** of low-intensity radiofrequency [microwave] radiation".
- The FCC did not adequately address the harms of deregulation.
- The FCC's characterization of the Order as consistent with its longstanding policy was **not "logical and rational."** . . . because
  - FCC mischaracterized the size, scale and footprint of the anticipated nationwide deployment of 800,000-unit network of sWTFs.
  - "It is impossible on this record to credit the claim that [sWTF] deregulation will 'leave little to no environmental footprint.'".
  - The FCC fails to justify its conclusion that sWTFs "as a class" and by their "nature" are "inherently unlikely" to trigger potential significant environmental impacts. (link)

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Three distinct steps in the NEPA process

- **NEPA Review:** Applicant writes a self-policed letter (with or without analysis) citing NEPA-exemption and adds the letter to the file

- **Environmental Assessment:** The public can challenge that the letter with evidence (showing controversy in the community) and open up a case at the FCC to get a determination from the FCC if an EA is required.

- **Environmental Impact Statement:** If the EA uncovers even more problems, then an EIS may be required. (link)

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The Politics of

Electromagnetic power through the air . . .

Why so many terms? . . . to bamboozle all

- **Pulsed, data-modulated, Radio-frequency Electromagnetic Microwave Radiation (RF-EMR) . . .** Volts per meter (V/m), Millionths of Watt over a square meter ($\mu W/m^2$), a power flux denisity

- **Effective Radiated Power (ERP):** total power in Watts radiated by an antenna to transmit the same $\mu W/m^2$ as the that from a source antenna to a distant receiver located in the antenna's strongest beam (main lobe) . . . . i.e. **the sum of each port's maximum input power multiplied by the antenna gain for that frequency**.

- **Signal Strength: dBm** (decibel-milliwatts) is an abbreviation for the power ratio in decibels (dB) of the measured power referenced to one milliwatt (1 mW = 1/1,000 of a Watt). (link)

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All you need to know . . .

- **RF-EMR . . .** is complexity city and is fully gamed by the FCC; deals with exposures in 3D space so every answer from an RF-Engineer is “it depends”

- **ERP . . .** is simplicity, power **at the antenna** only, requiring just third grade math, the sum of (A x B = C)

- **dBm** (decibel-milliwatts) is the savior . . . it is easy to measure, communicate and adopt as an objective local standard for **Wireless Antenna Need Tests (WANTs)**

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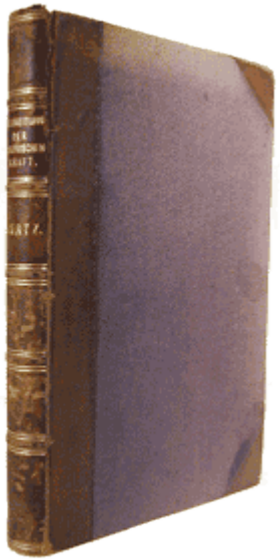
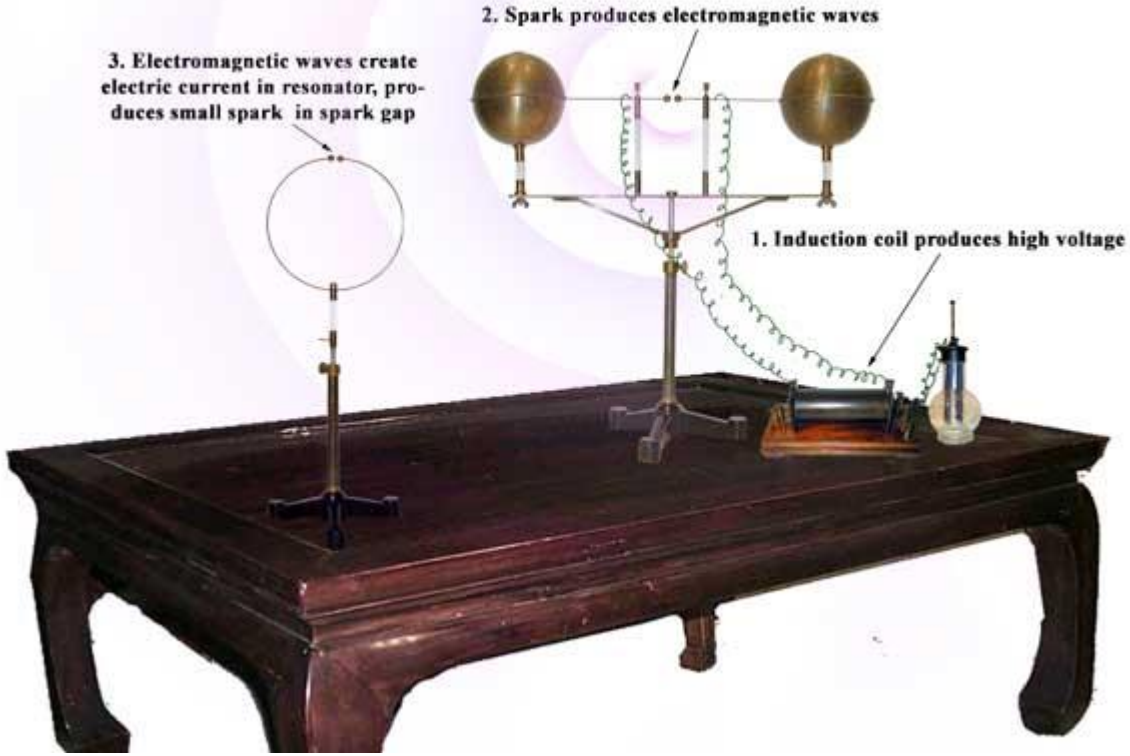
History of Radiation: Premature Deaths



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.

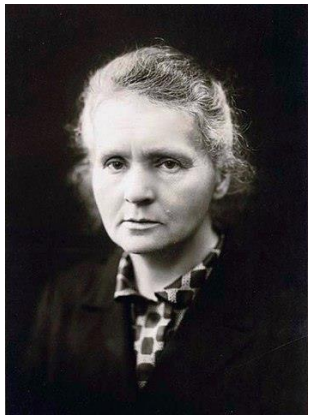


Hertz: "It's of no use whatsoever . . . this is just an experiment that proves Maestro Maxwell was right—we just have these mysterious electromagnetic waves that we cannot see with the naked eye. But they are there."

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**.



Link to **Marie Curie** (1867-1934)

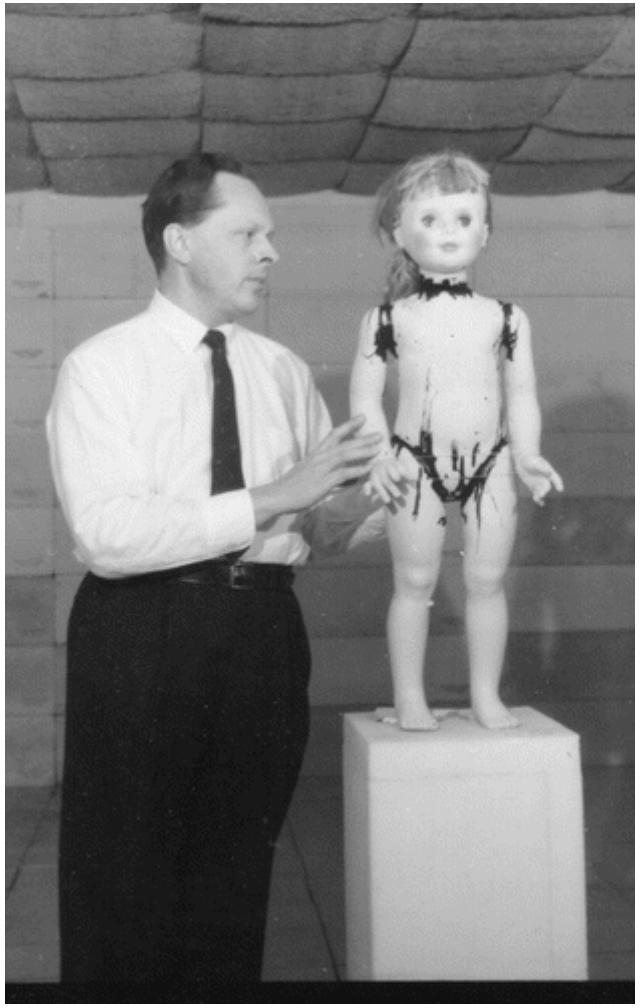
Died at 66 from exposures to Nuclear Radiation from studies in her lab from 1897 to 1934 (**37 years**).

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 Nazi engineer, 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.

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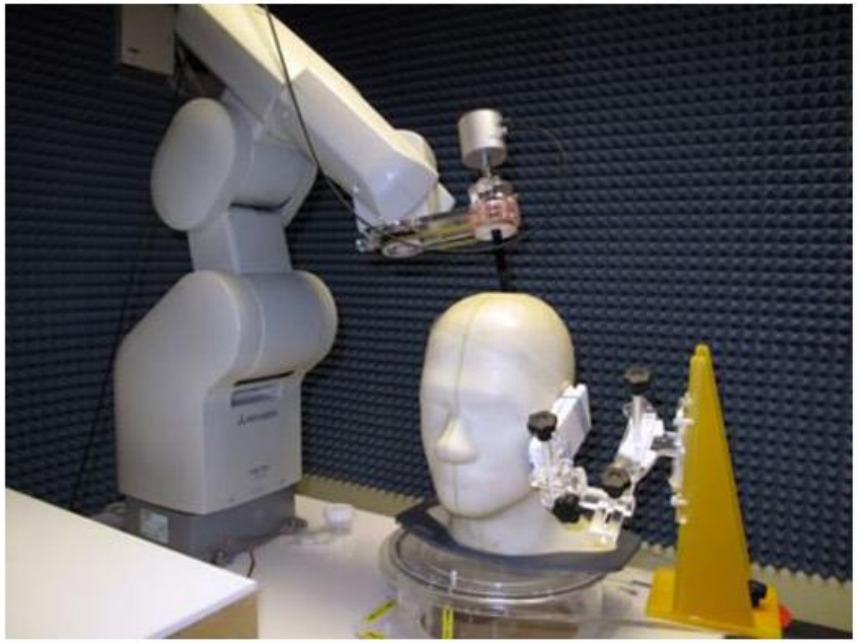
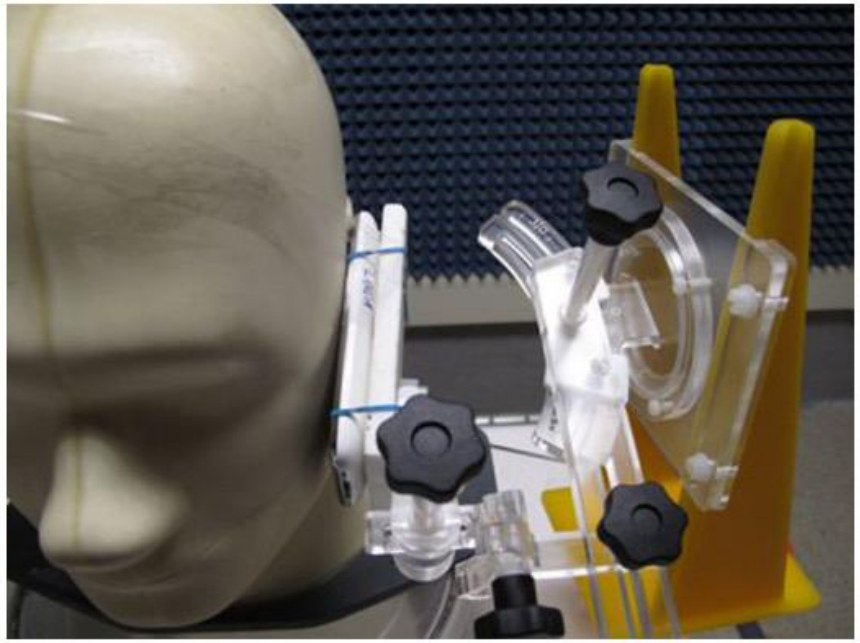
Specific Absorption Rate ("SAR")

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**."





Barrie Trower

*"You really have no protection **against** the electric and magnetic vectors"*

- "Between 1949 and 1962, **everything we needed to know about microwaves was known and published . . .** the brain at that time had been studied for brainwaves and microwaves could be used to penetrate the brain and cause behavioral changes."
- "A statement was made in 1962 by the governments that birth defects, organs, whole organisms, cells, brain function, emotions, moods could be altered, changed and destroyed [by microwave exposures]."
- **"Microwaves then, as now, were used as stealth weapons**, before they became cell phones [and Wi-Fi]."
- "By 1965, the military used cell phones, I had one. In 1965, they adopted an old 1953 thermal-effects based level by an engineer by the name of Schwan — **a non-scientific "deemed safe" rule** . . ."
- "They totally ignored the electromagnetic vectors of the microwaves and the harms that the electromagnetic vectors which interfere with the electrical conductivity of the cells, the neurons, the brain. They interfere with everything. **This non-scientific RF-EMR exposure guideline is in force today for 40% of the planet."**

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Basis for SAR & RF-EMR Exposure Guidelines

Comparison of Power Density and SAR Thresholds for Behavioral Disruption

This, unbelievably, is the basis for our National RF-EMR Exposure Guidelines

Species & Conditions	CW 225 MHz	Pulsed 1,300 MHz	CW 2,450 MHz	Pulsed 5,800 MHz
NR – PFD	n/a	100,000,000 µW/m²	280,000,000 µW/m²	200,000,000 µW/m²
NR – SAR	n/a	2.5 W/kg	5.0 W/kg	4.9 W/kg
SM – PFD	n/a	n/a	450,000,000 µW/m²	400,000,000 µW/m²
SM – SAR	n/a	n/a	4.5 W/kg	7.2 W/kg
RM – PFD	80,000,000 µW/m²	570,000,000 µW/m²	670,000,000 µW/m²	1,400,000,000 µW/m²
RM SAR	3.2 W/kg	4.5 W/kg	4.7 W/kg	8.4 W/kg

Legend: CW = Continuous Wave | PFD = Power Flux Density | SAR = Specific Absorption Rate

NR = Norwegian Rat | **SM** = Squirrel Monkey | **RM** = Rhesus Monkey

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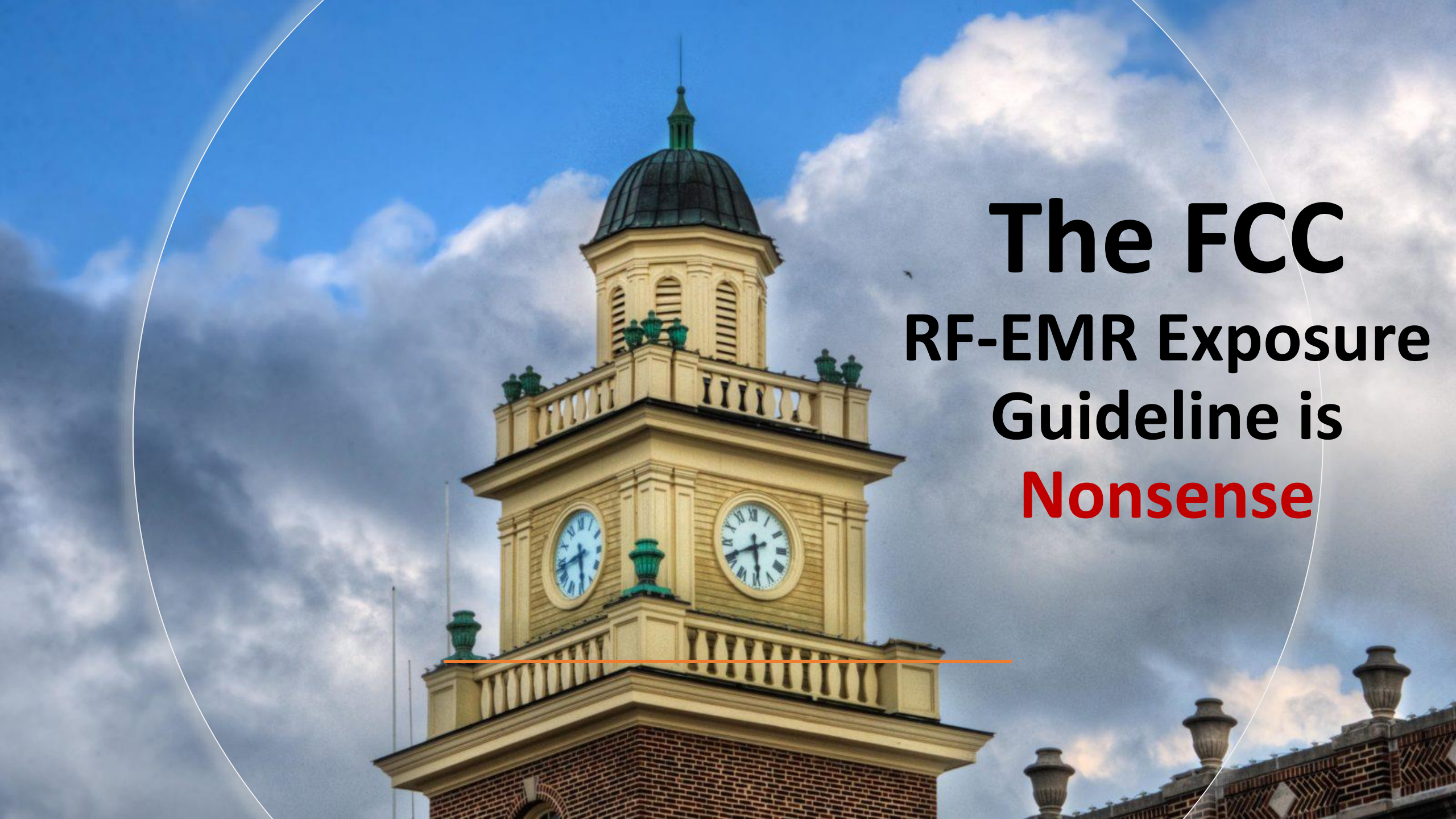

The FCC

RF-EMR Exposure Guideline is Nonsense

FCC RF-EMR Guideline is Nonsense

Let's count the many ways . . .

- The FCC's 1996 selection of a hybrid guideline (combining the 1965 ANSI, 1991 IEEE and 1986 NCRP "guidelines") was a scam from day one (link) . . .
- This 1986 NCRP Paper has a final chapter, Chapter 17, that contradicted the first 16 chapters . . . it was written by the "govt.-guy" who had a job to "hit the already existing number."
- A majority of the "expert" panel that edited the 1986 NCRP Paper worked for the CIA
- The FCC RF-EMR Guideline considers **only** instantaneous heating power and NOT the Total RF-EMR exposure over time. (link)

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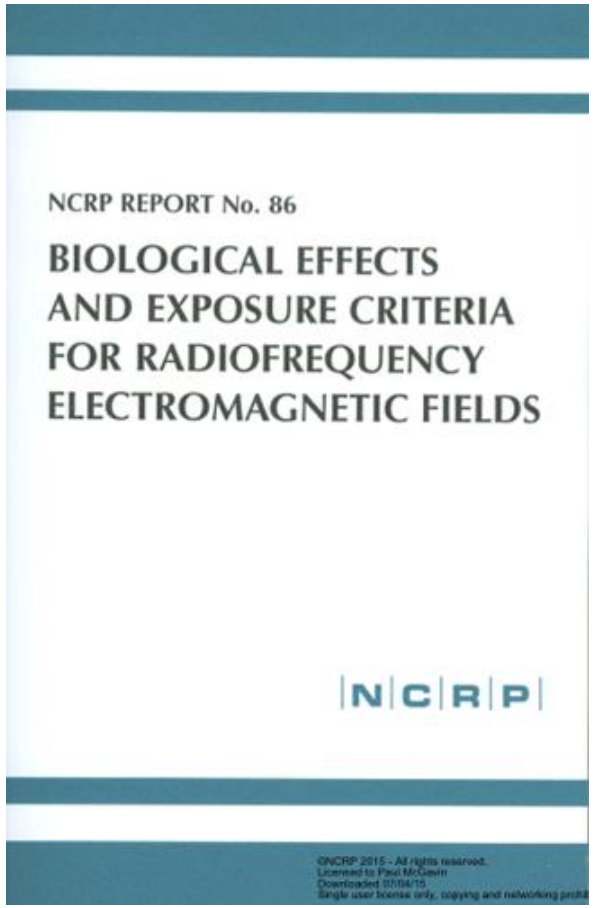
NCPR Report No. 86, Chap 17



NCRP REPORT No. 86

Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields

Recommendations of the
NATIONAL COUNCIL ON RADIATION
PROTECTION AND MEASUREMENTS

Issued April 2, 1986
Second Reprinting February 15, 1995

National Council on Radiation Protection and Measurements
7910 WOODMONT AVENUE / BETHESDA, MD. 20814

The Truth . . .

- **Lots of disruption happens on the way to heating**: cell membranes leak, proteins vibrate/distort and more — leading to all kinds of protein-making and DNA/RNA transcription errors.
- Tens of thousands of peer-reviewed scientific studies (not funded by the Wireless industry) **established science** concludes biologicial effects at levels at **millions of times lower** than the FCC RF-EMR exposure Guideline
- In short, **compliance** with FCC RF-EMR exposure Guideline **does not and cannot confer public safety**

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We are Sitting Ducks . . .

Working hard to save our lives & neighborhoods until . . .

IL SB.1451
self-repeals

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Public Health Service Act 90-602

By 1968, RF Emissions were established as a hazard

Public Law 90-602, October 18, 1968

AN ACT to amend the Public Health Service Act to provide for the protection of the public health from radiation emissions from electronic products.

"Subpart 3 -- Electronic Product Radiation Control

"DECLARATION OF PURPOSE

"Sec. 354. The Congress hereby declares that the public health and safety must be protected from the dangers of electronic product radiation."

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The U.S. Govt. Agencies Knew All Along . . .

Environmental Protection Agency Knew There Were RF Radiation Hazards

- Quote from **Norbert Hankin**, PhD, Environmental Scientist, EPA, 1994:

  "This . . . should not be overlooked . . . **impact by wireless communications technology on a child's educational process, i.e. by affecting learning ability**. [It] stems from recent studies involving short-term exposures that demonstrated subtle **effects on brain functions, produced by low-intensity, pulse-modulated radiofrequency radiation** . . . even a slight degree of impairment of learning ability over years of exposure . . . may negatively affect the quality of life that could be achieved by these individuals when adults."

- Quote from FCC Docket ET 93-62, November 9, 1993: "The FCC's exposure standards are seriously flawed. **FCC rules do not address the issues of long-term, chronic exposure to radiofrequency radiation**."

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Negative Health Consequences From RF-EMR Exposures (link)

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

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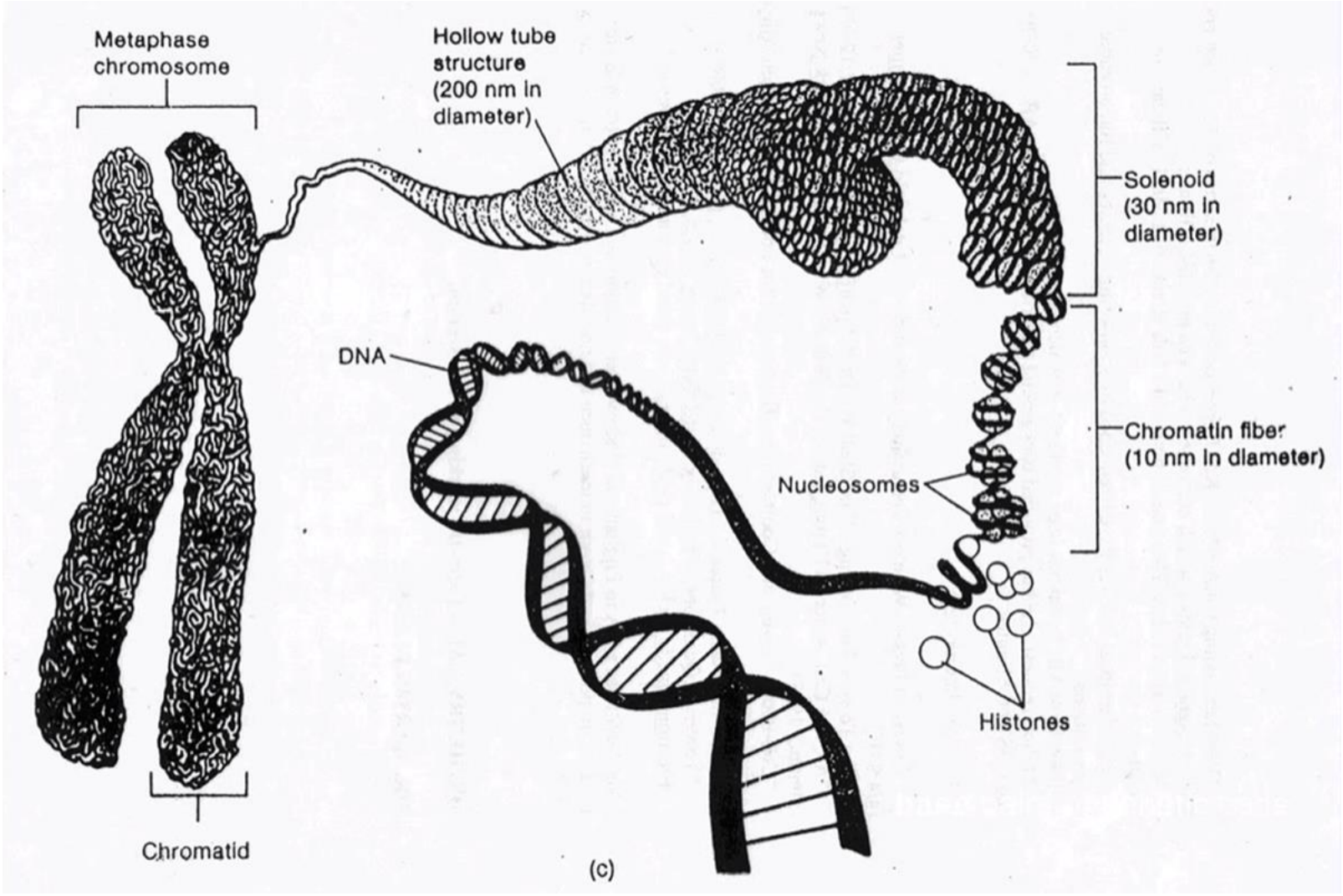
DNA Strand Breaks Established (link)



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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 ($\mu W/m^2$)	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	$(180/f^2) \times 10{,}000{,}000^*$	<30
30-300	27.5	0.073	2,000,000	<30
300-1,500			$(f/1500) \times 10{,}000{,}000^*$	<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

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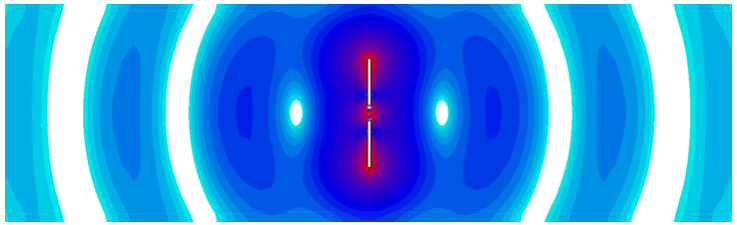
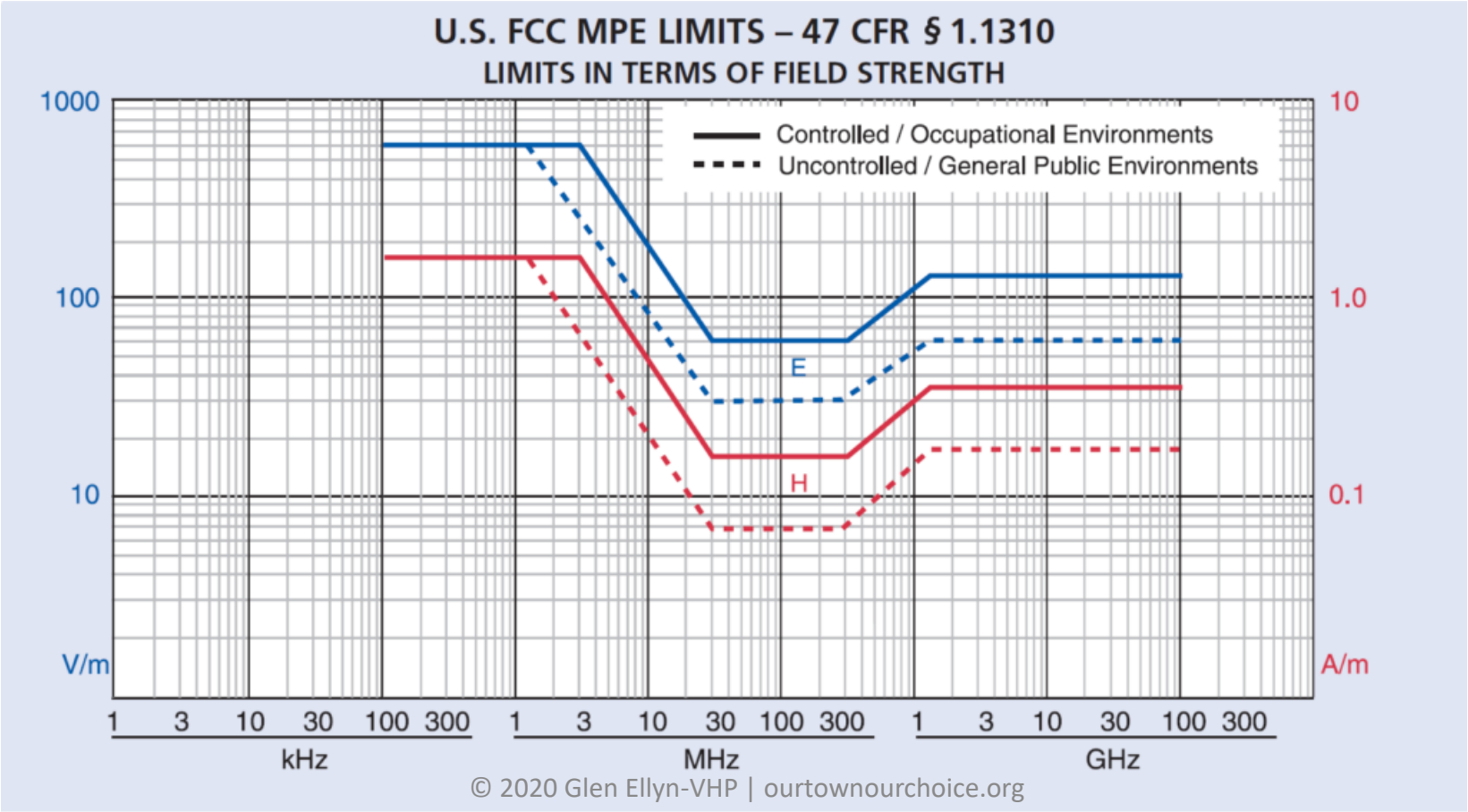
FCC RF-EMR Exposure Guidelines

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

30 MHz, wavelengths are 10 m. (33 ft.) … 30 V/m = 238,725 µW/m²
300 MHz, wavelengths are 1.0 m. (3.3 ft.) … 30 V/m = 238,725 µW/m²
600 MHz, wavelengths are 0.5 m. (1.6 ft.) … 40 V/m = 4,244,030 µW/m²
*(**Electric field** animation at right is in . . . super . . . slow . . . motion . . .)*





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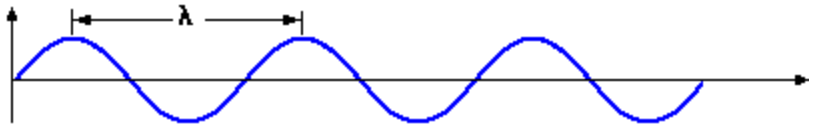
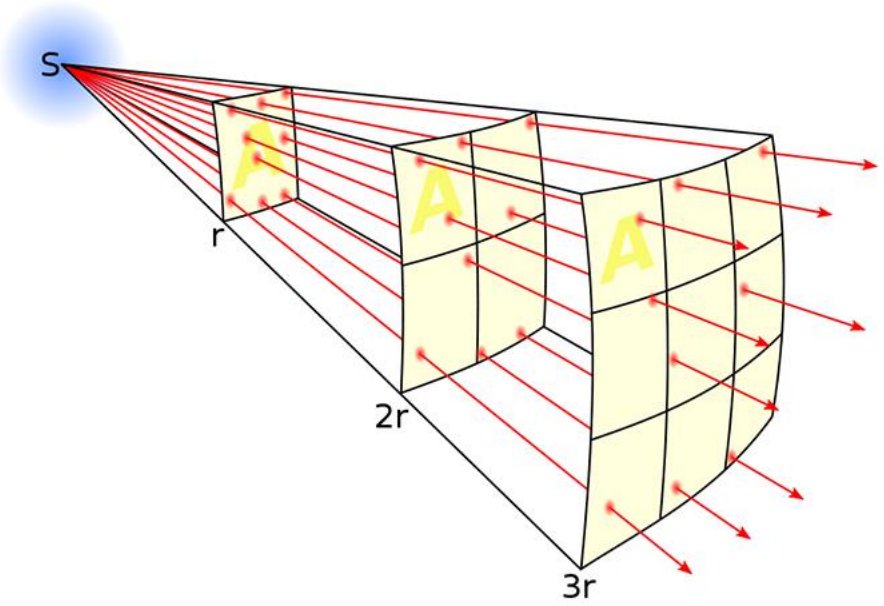
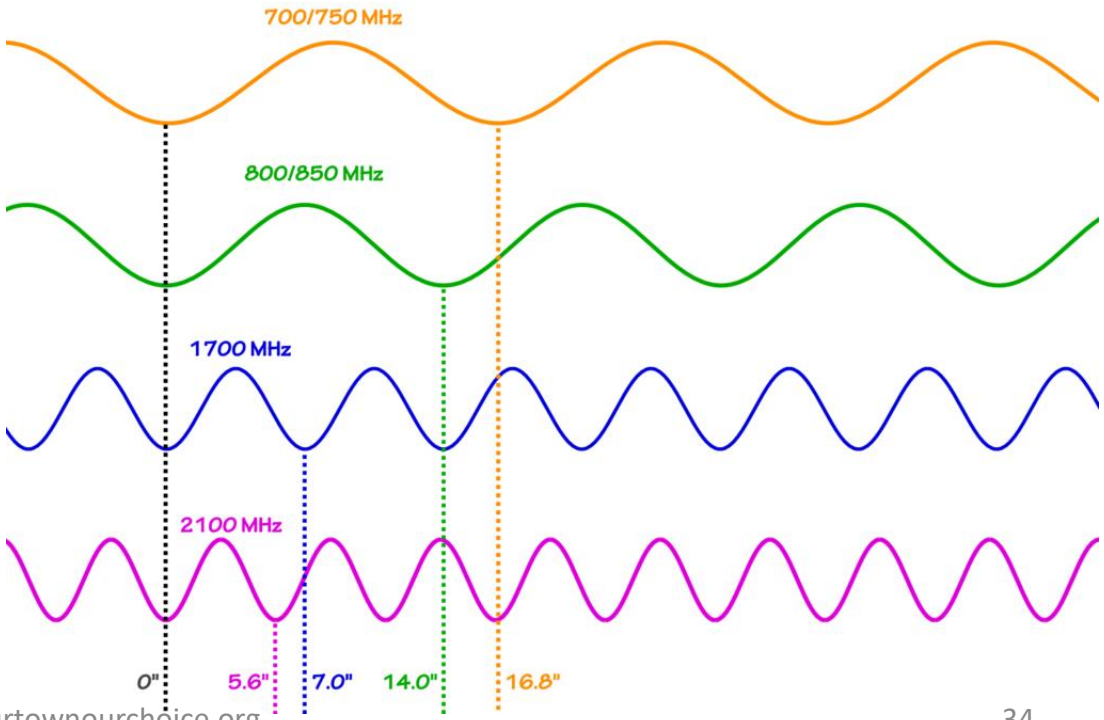
Wavelengths Approaching Body-Part Size

Electromagnetic Resonance:

Small periodic forces near a resonant frequency that **produce large amplitude oscillations** in the system due to the storage of vibrational energy.







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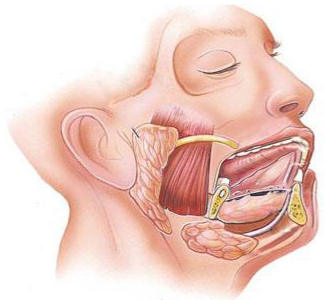
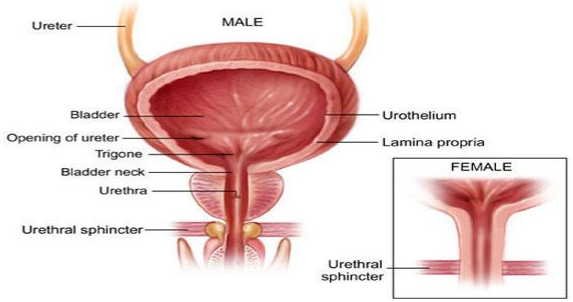
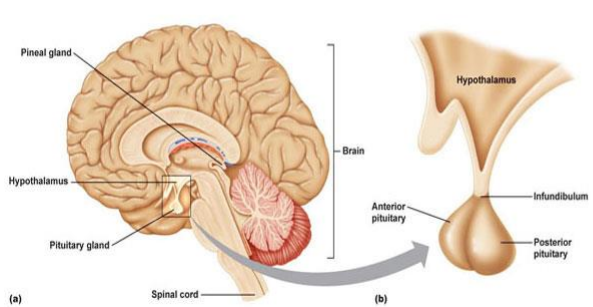
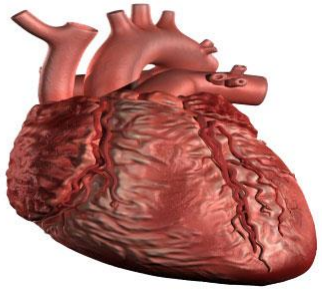
RF-EMR Resonance

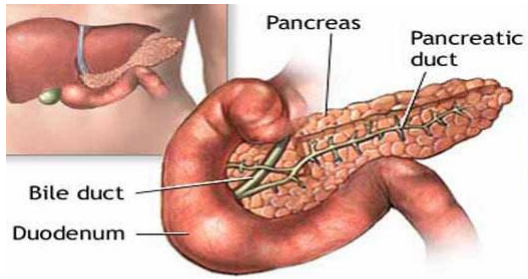
As a **wavelengths approaches body-part size**, the absorption in that body part **increases exponentially**. A wavelength approximating body-part size, especially at **½ x to 2x** of organ-size, **produces maximum absorption, approaching resonance**. At this point, the body part functions as an antenna. This an **exponential phenomenon**, meaning that even minimal intensities will produce disproportionate bioeffects. Living tissues' water content makes biological organisms function as sponges for 2-12 in. wavelengths, which can be **easily demonstrated** with a Wireless RF-EMR source, an RF-meter and a human body.

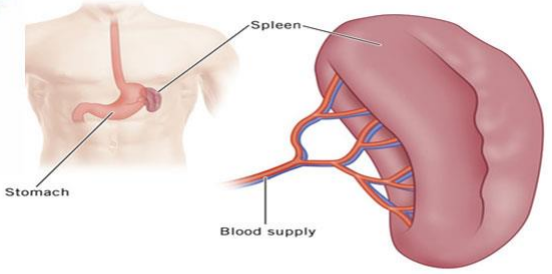


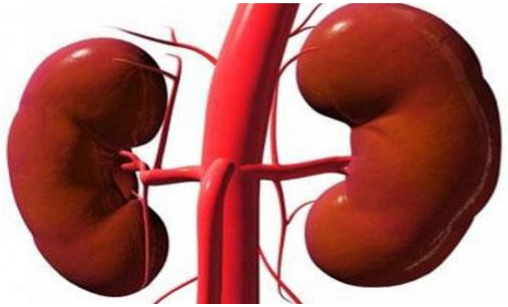


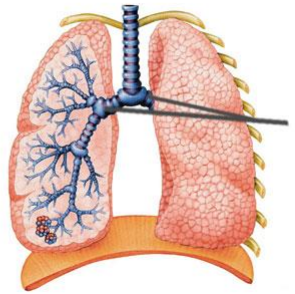












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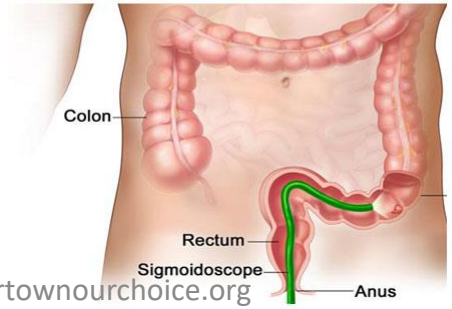

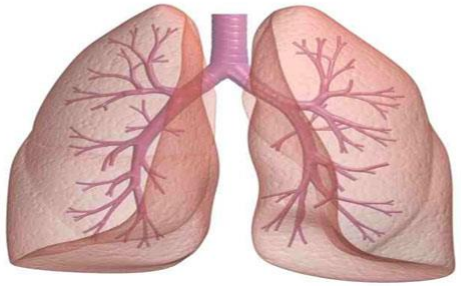

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Pulse-Modulated Microwave Radiation in the US:

How Many Overlapping Waves Are Too Many?

"MHz" = Megahertz "dm" = decimeter "cm" = centimeter "mm" = millimeter

Note: This first 5G wavelength is the height of a baby up to 1 month old.

- **5G**: 600 MHz = dm microwaves of 5 dm ≈ 20"
- 4G: 700 MHz = dm microwaves of ~4.3 dm ≈ 17"
- 3G/4G: 800 MHz = cm microwaves of 37.5 cm ≈ 15"
- 3G/4G: 900 MHz = cm microwaves of ~33.3 cm ≈ 13"
- 3G/4G: 1800 MHz = cm microwaves of ~16.7 cm ≈ 6.6"
- 3G/4G: 2100 MHz = cm microwaves of ~14.3 cm ≈ 5.6"
- Wi-Fi: 2450 MHz = cm microwaves of ~12 cm ≈ 5"
- **5G**: 3100 MHz to 3550 MHz = ~9.7 to ~8.5 cm ≈ 3.8 to 3.3"
- **5G**: 3550 MHz to 3700 MHz = ~8.5 to ~8.1 cm ≈ 3.3 to 3.2"
- **5G**: 3700 MHz to 4200 MHz = ~8.1 to ~7 cm ≈ 3.2 to 2.8"
- **5G**: 4200 to 4900 MHz = ~7 to ~6 cm ≈ 2.8 to 2.4"
- Wi-Fi: 5800 MHz = ~5 cm microwaves of ~2"
- **5G**: 24,250 to 24,450 MHz = cm microwaves of ~12mm ≈ **0.5"**
- **5G**: 25,050 to 25,250 MHz = cm microwaves of ~12mm ≈ **0.5"**
- **5G**: 25,250 to 27,500 MHz = cm microwaves of ~11mm ≈ **0.4"**
- **5G**: 27,500 to 29,500 MHz = **mm** microwaves of ~10mm ≈ **0.4"**
- **5G**: 31,800 to 33,400 MHz = **mm** microwaves of ~9mm ≈ **0.4"**
- **5G**: 37,000 to 40,000 MHz = **mm** microwaves of ~8mm ≈ **0.3"**
- **5G**: 42,000 to 42,500 MHz = **mm** microwaves of ~7mm ≈ **0.3"**
- **5G**: 64,000 to 71,000 MHz = **mm** microwaves of ~5mm ≈ **0.2"**
- **5G**: 71,000 to 76,000 MHz = **mm** microwaves of ~4mm ≈ **0.2"**
- **5G**: 81,000 to 86,000 MHz = **mm** microwaves of ~3.6mm ≈ **0.1"**

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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
- **Involuntary** 24/7/365 RF-EMR exposures is the problem

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What is Really Going On . . .

- **Densified 4G/5G sWTFs** are for 24/7, crowd control and unjust/unreasonable taking from public -- see NY Times Best-Sellter Surveillance Capitalism*;* The FCC and FDA ***are dominated*** *by the industries they presumably regulate. See Captured Agency*

- Wireless Industry **spends $2.4 Billion annually** on Ads/Lobbying to "convince" us to go along with an **unconstitutional taking** of our safety, privacy and property values to enrich this industry

- **60% of U.S. Population** has one or more Chronic Illnesses

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V·H·P

Vertical
Horizontal
Power:
if Illinois has not regulated ALL 3, it has achieved nothing

Glen Ellyn Can Adopt Workable V·H·P Recipes

1996 Telecommunications Act (TCA) Conference Report:

*"[T]he 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**."* (link)

Workable V•H•P Recipe, for years

- **Vertical:** **antenna is about 200 feet** from ground
- **Horizontal:** **antenna is 2,500+ feet** from homes/schools
- **Power:** **locally unregulated** maximum Effective Radiated Power
- **Result:** **0.002** RF radiation units in your bedroom **still provides 5-bars on a cell phone** (link)

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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:** **Thousands of Watts** of Effective Radiated Power
- **Result:** **460,000** RF radiation units in one's bedroom (link)
- **Compare:** **460,000 to 0.002**: it is **10,000,000 times more!**

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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:** **0.0002** RF radiation units in your bedroom **still provides 3-bars on a cell phone** (link), but 5-bars outside

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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?**

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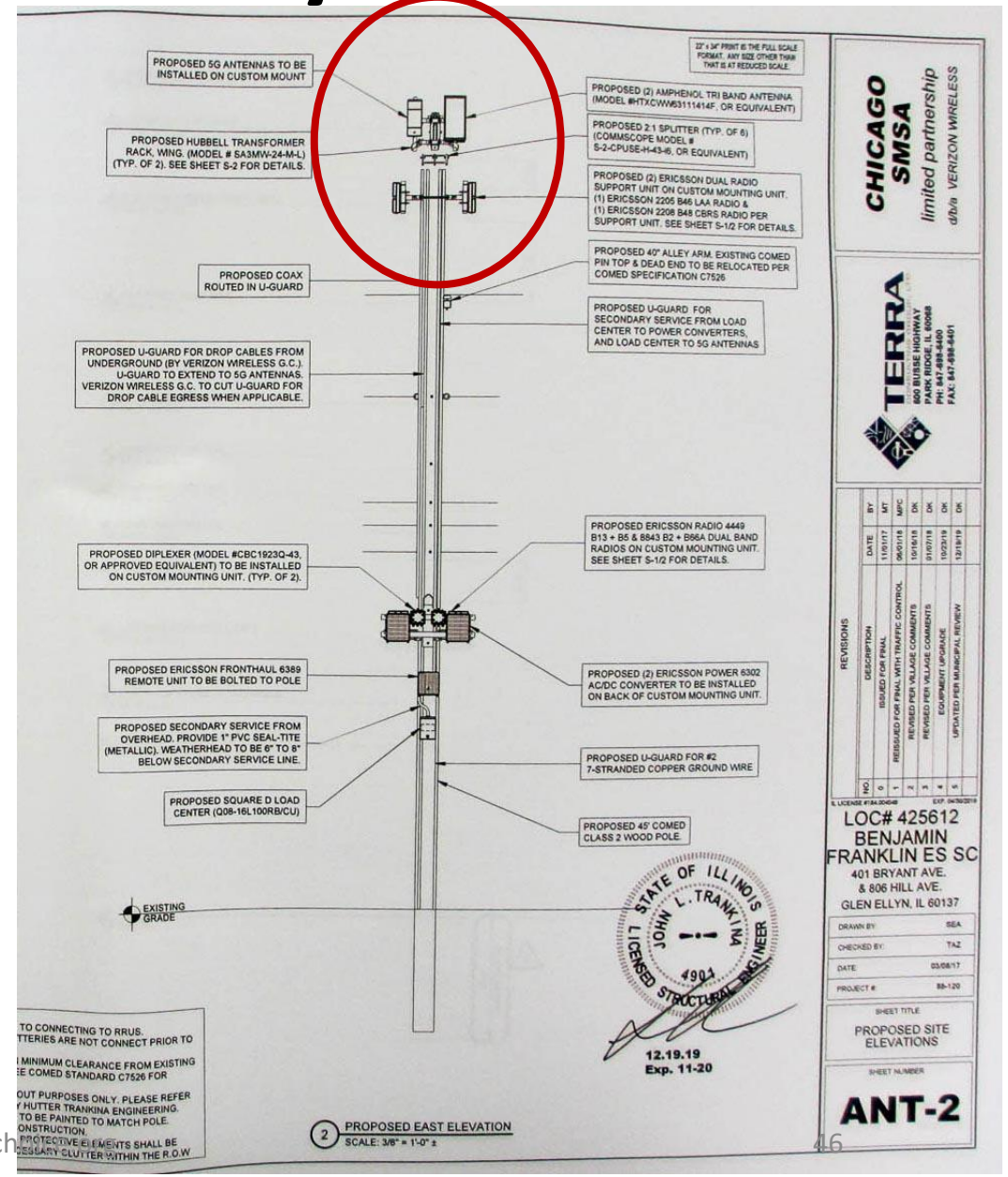
V·H·P

for Glen Ellyn, IL

What is the plan for Glen Ellyn, IL?

Based on June 17 inspection of actual plans for utility poles in Glen Ellyn, IL



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Folks, This is a Macro Tower:

Eight (8) 4G + 5G Antennas & Eight (8) Radios (amplifiers)

Added Antennas

700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	QTY
YES		YES		YES	YES	AMPHENOL	HTXCWW63111414F000	37.5	38.5	0(D1),180(D2),	false	false	PHYSICAL	2
						ERICSSON	KRE_101_2251	33.8	34.1	180(D2),0(D1)	false	false	PHYSICAL	2
						ERICSSON	KRE_105_259	33.8	34.1	180(D2),0(D1)	false	false	PHYSICAL	2
						ERICSSON	VZ-AIR6701_TB	37.5	38.4	180(0002),0(0001)	false	false	PHYSICAL	2

Added Non Antennas

Equipment Type	700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Location	Make	Model	Cable Length	Cable Size	Inst. Type	Quantity
RRU							Tower	Ericsson	2205			PHYSICAL	2
RRU							Tower	Ericsson	2208			PHYSICAL	2
RRU	YES		YES				Tower	Ericsson	4449			PHYSICAL	1
RRU					YES	YES	Tower	Ericsson	8843			PHYSICAL	1
RRU							Tower	Ericsson	AIR 6701			PHYSICAL	2
Splitter							Tower	Commscope	(S-2-CPUSE-H-43-i6			PHYSICAL	6
Diplexer							Tower	Commscope	CBC1923Q-43			PHYSICAL	1

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Two(2) Amphenol 4G Antennas

6-Port Panel Antenna

(1x) 696-960 | (2x) 1710-2170 MHz

65°	23.2 in	FIXED TILT

Link to Amphenol HTXCWW63111414Fxy0 Antenna Specs

Maximum Effective Radiated Power (ERP) Output

Frequencies	Max. Power × Gain	ERP	x 2
696-806	500 W × 10.5 =	5,250 Watts	10,500 Watts
806-960	500 W × 11.0 =	5,500 Watts	11,000 Watts
1710-1880	300 W × 13.5 =	4,050 Watts	8,100 Watts
1850-1990	300 W × 14.0 =	4,200 Watts	8,400 Watts
1850-1990	300 W × 14.0 =	4,200 Watts	8,400 Watts
1900-2170	300 W × 14.0 =	4,200 Watts	8,400 Watts
Total ERP	N/A	27,400 Watts	**54,800 Watts**

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Glen Ellyn, IL has duty & obligation to regulate the operations of WTFS

Congress Changed Regulatory Foundation of the 1996-TCA Before Voting

- Changes from . . . **HR.1555** (Oct 1995) to . . . **S.652** (Feb 1996)

- **HR.1555**: "**The FCC** shall prescribe and make effective a policy regarding State and local regulation of the **placement, construction, modification, or operation** of facilities for the provision of commercial mobile services."

- **S.652**: "**Nothing in this Act shall limit or affect the authority of a State or local government** or instrumentality thereof over decisions regarding the **placement, construction, and modification** of personal wireless service facilities . . . [defined as] commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services."

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1996-TCA Set Up As Cooperative Federalism

- US Supreme Court Ruling in Case No. 03-1601: CITY OF RANCHO PALOS VERDES et al. v. ABRAMS (2005)
- Justices Breyer, O'Connor, Souter and Ginsburg, concur:
  - **"Congress initially considered a single national solution**, namely a FCC wireless tower siting policy that would pre-empt state and local authority.; see H. R. Conf. Report No. 104-458, p. 207 (1996)."
  - "But Congress ultimately rejected the national approach and **substituted a system based on cooperative federalism**. Id., at 207-208."
  - **"State and local authorities would remain free to make siting decisions** They would do so, however, subject to minimum federal standards — both substantive and procedural — as well as federal judicial review."

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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**."*

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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."*

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1996 IL SB.1451 (6/1/2018) is Not in Accordance with Congressional Intent of 1996-TCA

Section 15 (d)(4). *“an authority may not limit the placement of small wireless facilities mounted on a utility pole or a wireless support structure by minimum horizontal separation distances.“*

Section 15 (d)(6)(G). *"the wireless provider [must] comply with the applicable codes and local code provisions or regulations that concern public safety“*

Section 20. Local authority*. "Nothing in this Act authorizes the State or any political subdivision, including an authority, to . . . regulate wireless services."*

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1996 IL SB.1451 (6/1/2018) is Not in Accordance with Congressional Intent of 1996-TCA

Section 34. Insurance. *"A wireless provider may self-insure all or a portion of the insurance coverage and limit requirements required by an authority. A wireless provider that self-insures is not required, to the extent of the self-insurance, to comply with the requirement for the naming of additional insureds under this Section."*

Section 40. Home rule. *"A home rule unit may not regulate small wireless facilities in a manner inconsistent with this Act."*

Section 90. Repeal. *"This Act is repealed on June 1, 2021"*

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Glen Ellyn-VHP Asks

- **WE-WANT-IT Ordinance:**
  a **W**ritten **E**vidence — **W**ireless **A**ntenna **N**eed **T**est **I**n **T**elecommunications Ordinance for a comprehensive Wireless Signal Strength Test to be conducted every six months by an independent RF Engineer at **no cost to the Village of Glen Ellyn**

- Full Signal Strength (dBm) data placed in public record

- Provides **objective data** to establish if there is a **significant gap** in telecommunications service and forces the applicant to us the **least intrusive** means to close any **proven gap** (link)

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Glen Ellyn-VHP Asks

- **Ordinance M**: just like Easton, CT (CT is state with an ALEC Small Cell bill) pass a **moratorium** on processing any Wireless Telecom Facility (WTFs) applications until our national emergency (COVID-19) is declared over (*gives us time for **IL SB.1451 to self-repeal***)

- **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 0.1 Watt** of effective radiated power from the face of the antenna shroud.“ (link)

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The Best Broadband Plan?

Fiber Optic to the Premises (FTTP) for BIG DATA (Title I Information Services) with ONLY ENOUGH Wireless for small data, wireless phone calls (Title II Telecom Services)

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