

RE: Opposed to House Bill 6151, claiming to "Authorize municipalities to regulate wireless service for zoning and public safety"

April 9, 2021

Dear Members of the House Innovation, Internet and Technology Committee,

I am writing in opposition to House Bill 6151, claiming to "Authorize municipalities to regulate wireless service for zoning and public safety."

I KNOW people whose health has already been effected by 4G EMF exposure, so this issue raises many questions in my mind.

How will my friends be effected by 5G installation in their neighborhoods?

How safe is 5G for the rest of us? And, if so, at what distance?

Where is the data to support the safety of deployment?

Consider these facts:

- 4G operates at a maximum frequency of of 2.5 GHz.
- 5G operates at frequencies of about 28 GHz and 39GHz (more than 10 times 4G).
- The natural frequency of a human-standing body is about 7.5 Hz.
- 5G's frequency of 28 GHz converts to 28 billion Hz.

What does all this mean?

Are municipalities willing to take responsibility for health outcomes among residents who adversely effected?

Are legislators willing to take responsibility?

Thank you for considering my questions.

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The Dangers Of 5G – 11 Reasons To Be Concerned

The USA is currently leading the way on 5G. At the June 2016 press conference where the Federal Communications Commission's (FCC) head Tom Wheeler announced the opening up of low, mid and high spectrum's. There was no mention of health effects whatsoever. But the dangers are real.

Thousands of studies link low-level wireless radio frequency radiation exposures to a long list of adverse biological effects, including:

- DNA single and double strand breaks
- oxidative damage
- disruption of cell metabolism
- increased [blood brain barrier permeability](#).
- melatonin reduction
- disruption to brain glucose metabolism
- generation of stress proteins

Let's not also forget that in 2011 the [World Health Organization](#) (WHO) classified radio frequency radiation as a possible 2B carcinogen.

More recently the \$25 million National Toxicology Program concluded that radio frequency radiation of the type currently used by cell phones can cause [cancer](#).

But where does 5G fit into all this? Given that 5G is set to utilize frequencies above and below existing frequency bands 5G sits in the middle of all this. But the tendency (it varies from country to country) is for 5G to utilize the higher frequency bands. Which brings it's own particular concerns. **Here is my review of the studies done to date – 11 reasons to be concerned.**

#1 – A DENSER SOUP OF ELECTROSMOG

We're going to be bombarded by really high frequencies at low, short-range intensities creating a yet more complicated denser soup of electrosmog – as this diagram shows.



Coverage Layer:

600 MHz, 700 MHz, 800 MHz, 900 MHz, 1.5 GHz, 2.1 GHz, 2.3 GHz and 2.6 GHz

Capacity Layer:

Europe: 3400 – 3800 MHz (awarding trial licenses)

China: 3300 – 3600 MHz (ongoing trial), 4400 – 4500 MHz, 4800 – 4990 MHz

USA: 3100 – 3550 MHz (and 3700 – 4200 MHz)

Japan: 3600 – 4200 MHz and 4400 – 4900 MHz

High Throughput Layer: (mast-mast and also very locally in dense user locations)

Europe: 24.25 – 27.5 GHz for commercial deployments from 2020

China: Focusing on 24.25 – 27.5 GHz and 37 – 43.5 GHz studies

USA: 27.5 – 28.35 GHz and 37 – 40 GHz pre-commercial deployments in 2018

Japan: 27.5 – 28.28 GHz trials planned from 20

Source: Latest on 5G Spectrum – EMFields Ltd.

To work with the higher range MMW in 5G, the antennas required are smaller. Some experts are talking about as small as 3mm by 3mm. The low intensity is for efficiency and to deal with signal disruption from natural and man-made obstacles.

#2 – EFFECTS ON THE SKIN

The biggest concern is how these new wavelengths will affect the skin. The human body has between two million to four million sweat ducts. Dr. Ben-Ishai of Hebrew University, Israel explains that our sweat ducts act like *"an array of helical antennas when exposed to these wavelengths,"* meaning that we become more conductive. A recent New York study which experimented with 60GHz waves stated that *"the analyses of penetration depth show that more than 90% of the transmitted power is absorbed in the epidermis and dermis layer."*

The effects of MMWs as studied by [Dr. Yael Stein](#) of Hebrew University is said to also cause humans physical pain as our nociceptors flare up in recognition of the wave as a damaging stimuli. So we're looking at possibilities of many skin diseases and cancer as well as physical pain to our skin.

#3 – EFFECTS ON THE EYES

A 1994 study found that low level millimeter microwave radiation produced lens opacity in rats, which is linked to the production of cataracts.

An experiment conducted by the Medical Research Institute of Kanazawa Medical University found that 60GHz *"millimeter-wave antennas can cause thermal injuries of varying types of levels. The thermal effects induced by millimeterwaves can apparently penetrate below the surface of the eye."*

A 2003 Chinese study has also found damage to the lens epithelial cells of rabbits after 8 hours of exposure to microwave radiation and a 2009 study conducted by the College of Physicians and Surgeons in Pakistan conclude that EMFs emitted by a mobile phone cause derangement of chicken embryo retinal differentiation.

#4 – EFFECTS ON THE HEART

A 1992 Russian study found that frequencies in the range 53-78GHz (that which 5G proposes to use) impacted the heart rate variability (an indicator of stress) in rats. Another Russian study on frogs who's skin was exposed to MMWs found heart rate changes (arrhythmias).

#5 – IMMUNE SYSTEM EFFECTS

A 2002 Russian study examined the effects of 42HGz microwave radiation exposure on the blood of healthy mice. It was concluded that *"the whole-body exposure of healthy mice to low-intensity EHF EMR has a profound effect on the indices of nonspecific immunity"*.

#6 – EFFECTS ON CELL GROWTH RATES

A 2016 Armenian study observed MMWs at low intensity, mirroring the future environment brought about by 5G. Their study conducted on E-coli and other bacteria stated that the waves had depressed their growth as well as *"changing properties and activity"* of the cells. The concern is that it would do the same to human cells.

#7 – EFFECTS ON BACTERIA RESISTANCE

The very same Armenian study also suggested that MMWs effects are mainly on water, cell plasma membrane and genome too. They had found that MMW's interaction with bacteria altered their sensitivity to *"different biologically active chemicals, including antibiotics."* More specifically, the combination of MMW and antibiotics showed that it may be leading to antibiotic resistance in bacteria.

This groundbreaking finding could have a magnum effect on the health of human beings as the bandwidth is rolled out nationwide. The concern is that we develop a lower resistance to bacteria as our cells become more vulnerable – and we become more vulnerable.

#8 – EFFECTS ON PLANT HEALTH

One of the features of 5G is that the MMW is particularly susceptible to being absorbed by plants and rain. Humans and animals alike consume plants as a food source. The effects MMW has on plants could leave us with food that's not safe to consume.

Think GMOs on steroids. The water that falls from the sky onto these plants will also be irradiated. A 2010 study on aspen seedlings showed that the exposure to radio frequencies led to the leaves showing necrosis symptoms.



Source: <https://www.hindawi.com/journals/ijfr/2010/83627>

Another [Armenian study](#) found that MMWs of low intensity "*invoke(s) peroxidase isoenzyme spectrum changes of wheat shoots.*" Peroxidase is a stress protein existing in plants. Indications are that 5G will be particularly harmful to plants – perhaps more so than to humans.

#9 – EFFECTS ON THE ATMOSPHERE AND DEPLETION OF FOSSIL FUELS

Implementation of the 5G global wireless network requires the launching of rockets to deploy satellites for 5G. These satellites have a short lifespan which would require a lot more deployment than what we're currently seeing. A new type of hydrocarbon rocket engine expected to power a fleet of suborbital rockets would emit black carbon which "*could cause potentially significant changes in the global atmospheric circulation and distributions of ozone and temperature*" according to a 2010 [Californian study](#). Solid state rocket exhaust contains chlorine which also destroys the ozone.

The effects on the ozone are thought to be worse than current day CFC exposure.

Google's Project Loon is said to bring Internet to rural and hard-to-access areas by using helium balloons. But these balloons only have a 10-month lifespan. We're looking at a lot of helium being used here, more than what we can possibly have on Earth?

#10 – DISRUPTION OF THE NATURAL ECOSYSTEM

Since the year 2000, there have been reports of birds abandoning their nests as well as health issues like "*plumage deterioration, locomotion problems, reduced survivorship and death,*" says researcher Alfonso Balmori. Bird species that are affected by these low levels, non-ionizing microwave radiation are the House Sparrows, Rock Doves, White Storks, Collared Doves and Magpies, among others.

But it's not just the birds. The declining bee population is also said to be linked to this non-ionizing EMF radiation. It reduces the egg-laying abilities of the queen leading to a decline in colony strength.