To: Federal Communications Commission (FCC)

Re: Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment. WT Docket No. 17-84

Date: June 15, 2017

Dear FCC Members:

Regarding your FCC proposal -Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment Docket 17-84-

As a physician involved in the public health aspects of wireless technology I am opposed to this proposal and strongly urge you to halt the expedited roll out of 5G with associated widespread 4G “small cell” antenna placement as this measure would allow. While increasing broadband is a worthy goal, this can be done with fiberoptic technology which is much safer and provides better security and privacy.

Maintaining copper legacy landlines is critical for emergency services, rural residents and for those who are electrosensitive.

Streamlining pole attachment requests removes important local authority and self -determination of communities. Any shortening of timeframes would make it onerous for cities to properly assess antenna placement variables.

Your proposal for increasing cell antennae placement and density is without any regard to emerging research and observation showing biologic, neurologic, reproductive and genotoxic harm from this 4G microwave radiation that already is making people ill. It appears irrational that now you wish to accelerate this for the promise of more technology that is inappropriately and inadequately regulated. Thoughtful discussion of health and environmental protections along with regulation and monitoring of radiation levels should be the subject of this proposal instead. The health, wellbeing, privacy and security of the citizens of the United States is at risk.

KEEP OUR LANDLINES:

Removing legacy landlines as you propose is shortsighted and misguided. This incredible sophisticated system of communication, which was developed from the early 1900’s, has served all of us well in emergencies and daily life. You are proposing its demise along with industry which has led legislation removing critical landlines in many states already with residents not being aware of this until after the fact.

Landlines which do not require battery backup, are critical in emergencies. Plain old telephone service through copper wires has been and continues to be the safest, most private, most reliable, and cheapest way to keep us all connected at home, internationally, and in emergencies. Americans have previously enjoyed universal access to traditional telephone service at an affordable rate with the elderly easily and safely connecting with emergency medical devices. It is vital and a priority to find a way for copper landlines to remain and be maintained in cities and rural areas, even if AT and T does not wish to keep them. Landlines are a common good for the people of the United States.

SAFETY OF 4G and 5G SMALL CELLS:

Safety should be of utmost concern for wireless communications. It is critical for you to invite an independent scientific body to evaluate the long term adverse non-thermal health effects of new 5G higher frequency technology along with the already deployed 4G lower frequency microwave radiation that surrounds us. More people are reporting symptoms of microwave illness (electrosensitivity) as described in NASA, EPA and WHO reports 40 years ago. Electrosensitivity and long term health effects will only increase with more 4G “small cell” antenna placement.

You are circumventing important safety considerations for all of us including your families. In forcing this upon cities you are also removing local control of antennae placement and disrespecting the democratic process. Instead of removing barriers to accelerate this rollout you should be hitting the brakes and consider that current safety limits are obsolete. Non-thermal biological, human and environmental harm from this technology cannot be ignored any longer.

There is no rush to adopt this technology throughout our cities and neighborhoods which will be accompanied by constant bombardment of biologically active intense high frequency pulsed radiation in our yards and through our windows.

The Telecommunications Act of 1996 currently does not allow for consideration of environmental or health effects in the placement, refusal or removal of cell towers or wireless antennas. There will be no recourse to remove this infrastructure for citizens who find there are adverse health effects from this technology and they will be forced to move.

Why not study 5G first before deployment? There are many independent biologists, biochemical researchers, cellular researchers, zoologists, botanists and physicians with integrity you could enlist in this effort.

UNANSWERED QUESTIONS:

While there are some potentially valuable uses for this technology and it is rather enticing to have rapid streaming of movies everywhere, there remain many unanswered questions about health and safety as well as privacy and security of this technology. Current safety standards for microwave EMF radiation are outdated and inadequate to protect public health. They are based on thermal heating and do not take into account an enlarging body of scientific evidence along with observation, that points to biologic harm to humans, insects, plants and bacteria from wireless radiation. It is not clear what the safety standards will be for 5G technology.

BIOLOGICAL EFFECTS OF NON THERMAL EFFECTS NOT CONSIDERED:

Radiating the total environment by adding another layer of high frequencies without proper long term safety testing and without input from scientists and health practitioners shows a lack of understanding of physiology, disregard for basic public health policy and denial of the reality that this technology has the potential to harm the very consumers you hope to attract.

Science has shown us that low power microwave radiation from our current 2G,3G, 4G and Wi-Fi wireless devices has non-thermal adverse impacts on cellular biology with much more complex mechanisms than technology can boast. Microwave radiation is considered to be the fourth largest source of pollution after air, water and noise as it induces many biological effects. (1) Oxidation is increased, cell membranes are disrupted, mitochondria are effected, sperm are damaged, DNA is altered, regulation mechanisms are decommissioned.

NEUROLOGIC EFFECTS FROM MICROWAVE RADIATION:

With regards to serious effects on our brain tissue from microwave frequencies we are commonly exposed to, researchers in 2015 conclude “Research from our group and from others has demonstrated that microwave radiation damages hippocampal structures in rats, impairs long-term potentiation, decreases neurotransmitter concentrations, reduces synaptic vesicles in number and results in memory impairment. Thus, the brain is generally accepted as the most sensitive target organ for MW radiation.” (1)

GAPS IN SCIENCE:

Considering the current science and data gaps in the science of bio-electromagnetics, the addition of more complex electromagnetic frequencies to the telecommunications system with exposure to the entire human population, wildlife and insects, is expected to have significant adverse effects on our health, well-being and sustainability. This may not be readily observed until effects are significant and irreversible.

ROLLOUT PREMATURE:

This 5G rollout is premature as proper safeguards are not in place to protect the public or the environment, including trees and important pollinators such as bees who because of their size would be especially vulnerable to millimeter wave affects. Studies show special concern for the eye, skin, immune system and nervous system. Vulnerable populations that will be exposed and require additional protections are pregnant women, children, those with chronic illness and the elderly.

HALT 5 G UNTIL APPROPRIATE HEALTH AND ENVIRONMENTAL SAFETY TESTING IS COMPLETED:

It is important to have full testing of the frequencies to be used on all living organisms and consider non-thermal affects. Studies have shown a small variation in frequency or modulation in addition to length of exposure can have profound differences in biological effects that are not thermal in nature. Thermal effects also need to be properly tested of course.

This issue needs to be addressed with a formal independent commission with all stakeholders involved including scientists, public health officials, physicians, toxicologists and biologists with complete transparency and inclusion of all scientific data. Please halt this push to accelerate the 5 G rollout including the Mobile Act Now S. 19 and the Digital Act S.88 until we can be assured of the safety of the cell towers and multitude of devices that we are becoming increasingly dependent on and with evidence of harm in many areas.

5G DEPLOYMENT PROMISE

Your promise to consumers and businesses… “The ubiquitous connection of smart digital devices, particularly machine-to-machine connections such as sensors, wireless utility meters, industrial systems, home automation devices and appliances, connected cars, consumer electronics, and smart medical devices, and immersive entertainment (greatly enhanced resolution and virtual reality).” ……….And while the Commission “has repeatedly recognized the extraordinarily promising benefits of such 5G services and has acknowledged the need for deployment of small wireless facilities….” it has failed to acknowledge older studies pointing to non-thermal effects of 5G millimeter technology and failed to provide updated transparent and independent studies regarding short or long term adverse effects on humans and the environment before setting in motion another large involuntary experiment on the population. Environmental effects on trees, bees, birds and other wildlife necessary to a sustainable human existence are not being considered.

A brief survey of some of the research states that 5G millimeter wavelengths don’t penetrate deeply in the skin but do have the potential to cause pathology on dermal structures as well as cataracts and other ocular abnormalities as these are the target organ systems. There is in addition some research that points to millimeter wavelengths affecting the whole biology of an organism by mechanisms not fully understood but possibly due to neural epidermal junctions that send signals that travel through the nervous system of the body. (13-32)

This rapid deployment of 5G wavelengths may serve the needs of businesses but I have not heard convincing arguments that this is an emergency situation and in the best interests of the public. I believe the public would rather have appropriate safety testing prior to deployment. The public would likely also wish to have a greater part in the discussions if they understood their health and wellbeing are at stake.

**Public health, safety and environmental sustainability are a matter of statewide and nationwide concern.**

Respectfully submitted,

Cindy Russell, MD

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