

12 September 2017

All School Board Members
Hempfield School District

Dear Sirs/Madams:

I am a public health physician who has been involved in issues related to electromagnetic fields (EMFs) for several decades. I served as the Executive Secretary for the New York Powerline Project in the 1980s, a program of research that showed that children living in homes with elevated magnetic fields coming from powerlines suffered from an elevated risk of developing leukemia. After that project was completed I served as the spokesperson for New York State on issues related to both power line and radiofrequency EMFs. I served as Director of the Wadsworth Laboratory of the New York State Department of Health, as well as Dean of the School of Public Health at the University at Albany/SUNY. I have edited two books on effects of EMFs, ranging from low frequency fields to radiofrequency/ microwave radiation, or the kind emitted by WiFi routers, cell phones, neighborhood antennas or cell towers and wireless computer equipment. I served as the co-editor of the BioInitiative Report 2012 (Bioinitiative.org), a comprehensive review of the literature showing biological effects at non-thermal levels of exposure, much of which has since been published in the peer-reviewed journal, *Pathophysiology* (attached). Also, I served on the President's Cancer Panel that examined radiation exposures as they relate to cancer risk, in 2009. Thus, this is a subject which I know well, and one on which I take a public health approach rooted in the fundamental principle of the need to protect against risk of disease, even when one may not have all the information that would be desirable.

There is clear and strong evidence that intensive use of cell phones increases the risk of brain cancer, tumors of the auditory nerve and cancer of the parotid gland, the salivary gland in the cheek by the ear. The WHO's International Agency for Research on Cancer has classified the radiation from both cell phones and cell towers as a Class 2B "Possible Carcinogen" in 2011. Cell towers use similar radiofrequency radiation as cell phones (in the 1.8 to 5.0 GHz range). The difference between a cell phone and a cell tower environment, however, is that while the cell phone is used only intermittently, and at higher power, a cell tower environment is continuous, serving many people at the same time. Cell towers direct their beam in all directions, such that anyone nearby is continuously exposed to radiofrequency radiation. While the intensity is much less than one would receive holding a cell phone to your head, the emissions from a cell tower are continuous. Thus the aggregate exposure over time coming from being close to a cell tower can be very significant. A child in a school with a nearby cell tower will be exposed every moment he or she is at school. Thus there is a particular concern when a cell tower is placed near to a school.

The latency for development of cancer after exposure to radiofrequency radiation is long, often up to 20 years for brain cancer. Thus the effects of exposing children will not be seen immediately but they will be elevated risk of cancer for many years to come.

Unfortunately cancer is not the only disease of concern. Radiofrequency electromagnetic fields are well documented to reduce male fertility. The last thing one wants for boys in an elementary school is to have them grow up and not be able to reproduce. Furthermore and more immediately there is increasing recognition of the fact that some people, including children, are exceptionally sensitive to electromagnetic fields, and show the syndrome of electro-hypersensitivity. This is characterized by headache, 'brain fog' and reduced ability to learn, often accompanied by nausea and gastrointestinal and cardiovascular symptoms. This is certainly not something that one wants to have occur, even if only in some students, in a school where they come to learn.

Placement of cell towers should be as far as possible from any place where humans are present. Certainly having a cell tower near to an elementary school is dangerous to the health of every child attending the school.

Yours sincerely,

A handwritten signature in blue ink that reads "David O. Carpenter". The signature is fluid and cursive, with a long horizontal stroke at the end.

David O. Carpenter, M.D.
Director, Institute for Health and the Environment
University at Albany