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www.emfsafetynetwork.org

To: Sebastopol Planning Commission
7120 Bodega Ave
Sebastopol, CA, 95472

Request denial of Verizon's "small cell" towers application

Sebastopol Planning Commissioners,

Verizon has requested a major use permit to install "small cell" towers in Sebastopol in two locations. One is near 6985 Hutchins at S. Gravenstein and another at McFarlane and Woodland. This application would begin to lay the groundwork for 5G, which requires a dense network of cell towers. The proposed towers would add unsightly equipment, overload poles, devalue property, and increase radio frequency radiation (RFR) in our neighborhoods. Peer-reviewed published science shows RFR can cause a wide range of health problems: sleep problems, heart arrhythmias, anxiety, headaches, ringing in the ears, cancer and more. Peer-reviewed published science shows RFR is harmful to the environment. Children, the elderly, and those already ill are more vulnerable.

EMF Safety Network¹ requests the Planning Commission deny Verizon's application and uphold Sebastopol's General Plan, Community Health and Wellness Goals, to minimize community exposure to unsafe EMF radiation. We support the city to prioritize wired over wireless for the health, safety, and welfare of our community.

Recently we presented Sebastopol with a letter from attorney Gail Karish of Best Best and Krieger (BBK)² which outlines the legal reasons a California city can deny "small cell" towers in

¹EMF Safety Network (EMFSN) is a Sebastopol based non-profit project founded in 2009. Our mission is to educate and empower people by providing science and solutions to reduce EMFs, achieve public policy change, and obtain environmental justice. We have participated in EMF issues at the local, state and federal level. www.emfsafetynetwork.org

² <http://emfsafetynetwork.org/wp-content/uploads/2018/04/April-24-2018-Letter-to-EMF-Safety-Network-re-Wireless-c1.pdf>



the public rights-of-way. In general, cities still have some control over cell towers, including visual impacts and aesthetics, lack of a significant coverage gap, public utilities code protections, land use, and process rights.

“Small cell” is a junkyard on a pole.

“Small cell” towers are not small, they are many feet taller than other telephone poles and loaded with electrical equipment. These photos to the left are of “small cell” towers on Link Lane and Sebastopol Road in Santa Rosa, California.

Overloading poles can cause a tower to fall or spark a fire like what happened in Malibu in 2007. *“When Santa Ana winds swept through the canyon on Oct. 21, 2007, three utility poles next to Malibu Canyon Road toppled and ignited the fire. The blaze burned 3,836 acres and destroyed or damaged dozens of structures and vehicles. The poles were jointly owned by SoCal Edison, AT&T Mobility, Verizon Wireless and NextG Networks of California.”*³ (Note the Sebastopol Rd. tower in the photo on the left is newly installed and already leaning.)



³ <http://articles.latimes.com/2013/may/20/local/la-me-ln-edison-admits-errors-in-malibu-fire-settles-now-top-60-million-20130520>

Loss of property value: Home or business owners risk property value loss where a cell tower is installed in the neighborhood. A survey by the National Institute for Science, Law & Public Policy found that 94 percent of homebuyers are “less interested and would pay less” for a property located near a cell tower or antenna.⁴

Public Utilities Code Section 7901 provides that use of the roads by telephone companies cannot “*incommode the public use of the road...*” The phrase “incommode the public use” in Section 7901 means “*to unreasonably subject the public use to inconvenience or discomfort; to unreasonably trouble, annoy, molest, embarrass, inconvenience; to unreasonably hinder, impede, or obstruct the public use.*”⁵ If ever there was a situation that caused discomfort, or unreasonably troubled residents, it is the case of cell towers near homes. Cell towers emit RFR and peer-reviewed published science shows RFR harms public health and the environment. The International Agency for Research on Cancer at the World Health Organization classifies RFR as a 2B (possible) carcinogen.⁶

Why we cannot rely on the Federal Communications Commission: FCC proceedings 13-84 and 03-137 were initiated to determine whether their RFR exposure limits and policies created in 1996 need to be reassessed. These proceedings which were filed in 2013 remain incomplete. The federal government has taken sole responsibility for the radiation safety of personal wireless service deployment⁷, however, no federal agency is acting responsibly, or being accountable for protecting the public and the environment from the health effects of RFR. The science has evolved greatly since 1996 meanwhile wireless devices have been widely adopted, as well as forced upon the public, for example: cell towers, wireless in schools, and smart meters. This

⁴ <https://www.businesswire.com/news/home/20140703005726/en/Survey-National-Institute-Science-Law-Public-Policy#.VNRBPp3F-So>

⁵ BBK letter page 2 paragraph 2: <http://emfsafetynetwork.org/wp-content/uploads/2018/04/April-24-2018-Letter-to-EMF-Safety-Network-re-Wireless-c1.pdf>

⁶ IARC/WHO <https://goo.gl/BrkpG8>

⁷ 47 U.S.C. § 332(c)(7); 47 C.F.R. 1.1307(b) and 1.1310, which are based on perceived harm of overheating of human tissues by RFR.

rampant explosion is set to get much worse with 5G, Internet of Things, Smart Cities, radar in cars and more.

The FCC is a regulatory captured agency: Investigative journalist Norm Alster

wrote: Captured Agency: How the Federal Communications Commission is dominated by the industries it presumably regulates.⁸ published by Harvard University. Alster calls on the FCC to acknowledge there may be wireless health risks, to back off wi-fi promotion, to acknowledge children and pregnant women may be especially vulnerable, and more. He writes, *“Personally, I don’t believe that just because something can be done it should heedlessly be allowed. Murder, rape and Ponzi schemes are all doable but subject to prohibition and regulation. Government regulators have the responsibility to examine the consequences of new technologies and act to at least contain some of the worst. Beyond legislators and regulators, public outrage and the courts can also play a role but these can be muffled indefinitely by misinformation and bullying.”*

Peer-reviewed published science shows wireless radiation harms public health.

The BioInitiative Reports reference more than 3800 peer-reviewed published studies. Summary of key scientific evidence includes:

- Evidence for Damage to Sperm and Reproduction
- Evidence that Children are More Vulnerable
- Evidence for Effects on Autism (Autism Spectrum Disorders)
- Evidence for Electrohypersensitivity
- Evidence for Effects from Cell Tower-Level RFR Exposure
- Evidence for Effects on the Blood-brain Barrier
- Evidence for Effects on Brain Tumors
- Evidence for Effects on Genes (Genotoxicity)
- Evidence for Effects on the Nervous System (Neurotoxicity)
- Evidence for Effects on Cancer (Childhood Leukemia, Adult Cancers)
- Melatonin, Breast Cancer and Alzheimer’s Disease
- Stress, Stress Proteins and DNA as a Fractal Antenna

⁸ http://ethics.harvard.edu/files/center-for-ethics/files/capturedagency_alster.pdf

“There is now much more evidence of risks to health affecting billions of people world-wide. The status quo is not acceptable in light of the evidence for harm.” David O. Carpenter, MD, co-editor Bioinitiative Report. The authors conclude, “EMF and RFR are preventable toxic exposures. We have the knowledge and means to save global populations from multi-generational adverse health consequences by reducing both ELF and RFR exposures. Proactive and immediate measures to reduce unnecessary EMF exposures will lower disease burden and rates of premature death.”^{9,10}

The National Toxicology Program published a 25 million dollar study which is one of the largest and most comprehensive studies on cell phone radiation and cancer in the United States. Results showed that rats exposed to cell phone radiation developed two types of cancers: glioma, a brain tumor, and schwannoma, a heart tumor.¹¹ *A recent Italian study produced similar results.¹²*

International scientists are calling for immediate measures to reduce RFR. The International EMF Scientist Appeal¹³ signed by 235 scientists from 41 nations warn: *“We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF EMF).” “Effects include increased*

⁹ BioInitiative Reports <http://www.sciencedirect.com/science/journal/09284680/16/2-3> and www.bioinitiative.org

¹⁰ http://www.bioinitiative.org/report/wp-content/uploads/pdfs/section_1_table_1_2012.pdf

¹¹ NTP cell phone study, general info <http://ntp.niehs.nih.gov/results/areas/cellphones/index.html> Results of 3/2018 peer review: https://ntp.niehs.nih.gov/ntp/about_ntp/trpanel/2018/march/actions20180328_508.pdf

¹² Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radio frequency field representative of a 1.8GHz GSM base station environmental emission
<https://www.sciencedirect.com/science/article/pii/S0013935118300367>

¹³ EMF Scientist appeal <https://www.emfscientist.org/index.php/emf-scientist-appeal>

cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans.”

The following are quotes from science experts who signed the The International EMF Scientist Appeal.¹⁴

- *“Based upon epidemiological studies there is consistent evidence of increased risk for brain tumors (glioma and acoustic neuroma) associated with use of wireless phones.”* Lennart Hardell, MD, PhD University Hospital, Orebro, Sweden
- *“The harmful effects of electromagnetic fields, regardless of their frequencies, are now scientifically settled. Pregnant women (the fetus) and children and adolescents are particularly vulnerable.”*- Dominique Belpomme, MD, MPH, Paris V Descartes University, European Cancer & Environment Research Institute.
- *“U.S. regulatory standards and international guidelines only control for short-term heating of tissue. The standards do not protect us from the low-intensity, chronic exposures to electromagnetic fields (EMF) that are common today. The scientists who signed the Appeal request that the UN and member nations protect the global human population, and animal and plant life from EMF exposures. There has been strong support from the international scientific community for the Appeal, even among those who believe that scientists should not take public policy positions. Some have taken personal risks to sign the Appeal because this is a public health issue that affects everyone now, as well as future generations.”* Joel Moskowitz, Ph.D., Director of the Center for Family and Community Health, School of Public Health, University of California, Berkeley, USA

Proximity to RFR antennas is harmful

The following peer-reviewed, published studies examine the adverse effects of wireless radiation in relation to antenna location.

- Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays *“Both anecdotal reports and some epidemiology studies have*

¹⁴ <https://www.emfscientist.org/index.php/science-policy/expert-emf-scientist-quotations>

found headaches, skin rashes, sleep disturbances, depression, decreased libido, increased rates of suicide, concentration problems, dizziness, memory changes, increased risk of cancer, tremors, and other neurophysiological effects in populations near base stations.”¹⁵

- Neurobehavioral effects among inhabitants around mobile phone base stations *“The prevalence of neuropsychiatric complaints as headache (23.5%), memory changes (28.2%), dizziness (18.8%), tremors (9.4%), depressive symptoms (21.7%), and sleep disturbance (23.5%) were significantly higher among exposed inhabitants than controls...”¹⁶*
- Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations *“We found that eight of the 10 studies reported increased prevalence of adverse neurobehavioral symptoms or cancer in populations living at distances < 500 meters from base stations.”¹⁷*

Peer-reviewed, published science shows RFR harms nature

The US Department of the Interior states RFR threatens birds, and criticizes the FCC’s radiation guidelines, stating, *“the electromagnetic radiation standards used by the Federal Communications Commission (FCC) continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today.”* Two hundred forty-one bird species suffer mortality risk from both tower collisions and from exposure to the radiation towers emit. This includes birds that are endangered or threatened, Birds of Conservation Concern, migratory birds, and eagles. Studies of radiation impacts on wild birds documented nest abandonment, plumage deterioration and death. Birds studied included House Sparrows, White Storks, Collared Doves, and other species. Studies in laboratories of chick embryos documented heart attacks and death.¹⁸

Scientists in Germany studied tree damage in relation to wireless radiation from 2006-2015. They monitored, observed and photographed unusual or unexplainable tree damage, and

¹⁵<http://www.nrcresearchpress.com/doi/pdf/10.1139/A10-018?src=recsys&>

¹⁶ Neurobehavioral effects among inhabitants around mobile phone base stations <https://www.ncbi.nlm.nih.gov/pubmed/16962663>

¹⁷ Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations <https://goo.gl/Zz6dhk>

¹⁸ US Department of Interior letter and background: http://www.ntia.doc.gov/files/ntia/us_doi_comments.pdf

measured the radiation which the trees were exposed. *“The aim of this study was to verify whether there is a connection between unusual (generally unilateral) tree damage and radio frequency exposure.”* They found significant differences between the damaged side of a tree facing a phone mast and the opposite side, as well as differences between the exposed side of damaged trees and all other groups of trees in both sides. The scientists concluded, *“Statistical analysis demonstrated that electromagnetic radiation from mobile phone masts is harmful for trees.”*¹⁹ The following studies show insects are harmed by radiation:

- Food collection and response to pheromones in an ant species exposed to electromagnetic radiation found exposure to radiation caused colony deterioration and affected social insects’ behavior and physiology.²⁰
- Oxidative and genotoxic effects of 900 MHz electromagnetic fields in the earthworm concluded radiation caused genotoxic effects and DNA damage in earthworms²¹.
- Mobile Phone Induced Honey Bee Worker Piping. The study abstract states, *“The worldwide maintenance of the honeybee has major ecological, economic, and political implications.”* Cell phone RFR was tested for potential effects on honeybee behavior. Handsets were placed in the close vicinity of honeybees and the sound made by the bees was recorded and analyzed. The information revealed that active cell phone handsets induced the bees worker piping signal. *“In natural conditions, worker piping either announces the swarming process of the bee colony or is a signal of a disturbed bee colony.”*²²

The following are observations by International scientists of RFR effects on nature²³ :

- *“Migratory birds -- incredibly important to the global economy and for the ecological services they provide -- now appear to be negatively affected by non-ionizing radiation.”* Dr. Albert

¹⁹ Radiofrequency radiation injures trees around mobile phone base stations. <https://www.ncbi.nlm.nih.gov/pubmed/27552133?dopt=Abstract#>

²⁰ Food collection and response to pheromones in an ant species exposed to electromagnetic radiation <https://www.ncbi.nlm.nih.gov/pubmed/23320633>

²¹ Oxidative and genotoxic effects of 900 MHz electromagnetic fields in the earthworm *Eisenia fetida*. <https://www.ncbi.nlm.nih.gov/pubmed/?term=23352129>

²² <https://link.springer.com/article/10.1007/s13592-011-0016-x>

²³ <https://www.emfscientist.org/index.php/science-policy/expert-emf-scientist-quotations>

Manville, Adjunct Professor, Johns Hopkins University; Senior Wildlife Biologist, U.S. Fish & Wildlife Service (FWS), Emeritus/Retired

- *“Man-made electromagnetic fields impact all living organisms, acting first on the unit membrane. We must reduce our dependence on 'wireless' technologies, reduce the numbers of masts (i.e., cell towers), of Wi-Fi apparatus, of cordless phones and so on, and clearly indicate, in public spaces, the intensity of the ambient electromagnetic field.”* Prof. Marie-Claire Cammaerts, PhD., Free University of Brussels, Faculty of Science, Belgium.

5G millimeter waves are harmful

The desired future of the telecommunications industry is 5G which incorporates millimeter waves. A 5G deployment would require many cell towers close together throughout communities. Peer-reviewed published science shows millimeter waves penetrate the skin and affect human health.²⁴ A meta-analysis of studies on millimeter waves (MMWs) “State of knowledge on biological effects at 40–60 GHz”²⁵ states, *“At the cellular level, it stands out from the literature that skin nerve endings are probably the main targets of MMWs and the possible starting point of numerous biological effects.”* Effects reviewed include effects on capillaries and nerve endings, protein insults, epigenetic regulation, and the risk of homeostasis disruption, which would have dramatic consequences. In addition, millimeter wave technology has been developed as a crowd control weapon which causes acute burning pain, as if the body is on fire.²⁶

International independent scientists have called for a moratorium on the deployment of 5G²⁷. They state, *“We the undersigned, more than 180 scientists and doctors from 35 countries, recommend a moratorium on the roll-out of the fifth generation, 5G, for telecommunication until potential hazards for human health and the environment have been fully investigated by scientists independent from industry.”*

²⁴ State of knowledge on biological effects at 40–60 GHz <https://goo.gl/gbBKHL>

²⁵ C. R. Physique 14 (2013) 402–411

²⁶ US Military Active Denial System <http://jnlwp.defense.gov/About/Frequently-Asked-Questions/Active-Denial-System-FAQs/>

²⁷ <http://emfsafetynetwork.org/wp-content/uploads/2017/11/Scientist-5G-appeal.pdf>

Conclusion

The telecommunication industry's unbounded profit motive should never outweigh the safety and well being of the public and our environment! Communications are safer using wired and corded connections. ***Please deny Verizon's cell tower application.***

Respectfully submitted on May 29, 2018:

/s/
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