



PO Box 1016 Sebastopol CA 95473
707-827-0109



PO Box 1047, Bolinas, CA 94924
415-868-1900

Assembly Member Miguel Santiago
Chair of the Communications and Conveyance Committee
P.O. Box 942849
Sacramento, CA 94249-0053
RE: SB 649 Wireless and Small Cell Telecommunications Facilities (amended 7/3/2017)
Strongly oppose

Dear Assembly Member Miguel Santiago,

EMF Safety Network¹ and Ecological Options Network² strongly oppose SB 649 regarding telecommunications facilities. SB 649 eliminates local zoning authority, conflicts with federal and other laws, and increases harmful radio frequency radiation (RFR). International independent scientists are calling for reducing RFR based on peer reviewed published science showing RFR harms the public and nature, and children are especially vulnerable.

SB 649 abandons the public to trust the telecom industry to certify safety and RFR compliance with federal laws.

1) SB 649 eliminates local authority

SB 649 will allow a ministerial permit for antenna siting for the majority of local governments. This over the counter permit will gift multiple companies unlimited access to deploy unlimited antennas in our neighborhoods and countrysides. Local authority is

¹ EMF Safety Network (EMFSN) was 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 proceedings at the California Public Utilities Commission since 2010. www.emfsafetynetwork.org

² Ecological Options Network(EON) was founded in 2003, is a 501 (c) (3) organization that networks with utility customers and organizations to empower policy protecting health, environment and consumer rights. <http://www.eon3.net/>

needed to ensure community safety and welfare³, and compliance with federal laws⁴. SB 649 would overturn a recent California court case where San Francisco won the right to determine antenna placement. The court discussed in detail and ruled Public Utilities Codes 7901 and 7901.1 did not limit a city's right to design review.⁵ SB 649 conflicts with California Public Utilities Commission (CPUC) no and low cost EMF avoidance policy⁶ adopted in 1993. In 2006 the CPUC upheld the policy, which included RFR.⁷

2). SB 649 conflicts with federal laws

The Federal Telecommunications Act of 1996 preserves local zoning authority, and requires compliance with environmental laws and RFR safety rules. An over the counter permit would conflict with RFR compliance required by federal Law.

According to the Federal Communications Commission(FCC) website⁸:

- *“Building a new tower or collocating an antenna on an existing structure requires compliance with the Commission’s rules for environmental review. These rules ensure that licensees and registrants take appropriate measures to protect environmental and historic resources, and that the agency meets its obligations under the National Environmental Policy Act (NEPA) to consider the potential environmental impact of its actions, as well as under other environmental statutes such as the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA).”*
- “NEPA requires agencies to consider and disclose the environmental effects of its actions to improve decision-making and encourage transparency, public participation, and accountability. Effects are defined broadly to include ecological, aesthetic, historic, social, and cumulative and indirect effects.”

³ Cal. Const., art. XI, §7 “A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws.”

⁴ FCC Tower and Antenna Siting: <https://www.fcc.gov/general/tower-and-antenna-siting>

⁵ T-Mobile West vs City and County of San Francisco (Appeal denied): <http://www.gmsr.com/wp-content/uploads/2017/02/scw-A144252M.pdf>

⁶ CPUC actions regarding EMFs <http://www.cpuc.ca.gov/environment/emf/actions.htm>

⁷ CPUC D.06-01-042.

⁸ FCC Tower and Antenna Siting: <https://www.fcc.gov/general/tower-and-antenna-siting>

- “Collocations, including Distributed Antenna Systems (DAS) and Small Cells, may also require compliance with these same processes.”
- “Section 332(c)(7) of the Communications Act preserves state and local authority over zoning and land use decisions for personal wireless service facilities, but sets forth specific limitations on that authority.” ...”The statute also preempts local decisions premised directly or indirectly on the environmental effects of radio frequency (RF) emissions, assuming that the provider is in compliance with the Commission’s RF rules.”

The fact that these antennas are called “small cell” does not mean they comply with the FCC rules quoted above. The FCC calculates RFR by what the public’s exposure levels are, including frequencies, radiated power, and distance.

For example:

- *What frequencies will be used?*
- *What is the radiated power at the source?*
- *How many antennas are in one enclosure?*
- *What is the exposure level at ground level? at 20 feet? at 100 feet?*
- *What is the existing cumulative RFR exposure level at ground level? at 20 feet? at 100 feet?*
- *Is the ground flat or falling? If not, what are the exposure levels at what height and distance?*
- *What is the future collocation RFR exposure?*

SB 649 also conflicts with federal law (Section 6409) which exempts cities from antenna modifications on city property.⁹

3) California Environmental Quality Act (CEQA) laws apply

The deployment of a denser “small cell” antenna system is a major change to the environment, not a minor one, and therefore subject to CEQA laws. There is no substantial evidence to support SB649’s determination that the deployment fits the CEQA exemption. There is substantial evidence in support of a fair argument that the

⁹ Best Best and Kreiger FCC’s Wireless Facility Rules Implementing Section 6409(a) pdf p.15 2015 http://sananselmo-ca.granicus.com/DocumentViewer.php?file=sananselmo-ca_8397b41675b5de650a27df9d779ecbd7.pdf

project may create environmental impacts. Whenever it can be fairly argued on the basis of substantial evidence that there is a reasonable possibility that a project may have a significant effect on the environment, an exemption is not proper.

4) Telecoms' interests should not outweigh city and county jurisdiction

"Telecoms want customers... Wireless service has become essential... for better quality of life." These claims were part of the supporters testimony at the Local Government Committee hearing on June 28, 2017. Not all Californians want their homes, neighborhoods, towns, and rural country-sides to be polluted with RFR. Telecom deployment serves the unbounded profit motive of telecom corporations. What is in the best public interest is to avoid unnecessary RFR exposures. There is a growing movement of educated Americans who are aware of cancer and other health impacts associated with RFR. In California tens of thousands of utility customers have refused, or opted out of smart meters. Significant percentages of people, those already sickened, and those trying to avoid being injured, adamantly oppose being involuntarily exposed to more radiation for benefit of telecommunications profits. Access to the internet is safer using wired connections. Wireless is not an essential public service.

5) The FCC historically honors local control

On July 14, 2016 FCC Commissioner Jessica Rosenworcel stated during her approval of 5G millimeter wave deployment, "***By law and tradition we honor local control in this country.***"¹⁰ SB 649 should be opposed because it will dishonor and impede local control and deliberately thwart public participation. We support the comments of The League of California Cities who state SB 649, "*unnecessarily and unconstitutionally strips local authority over public property and shuts out public input and local discretion by eliminating consideration of the aesthetic and environmental impacts of "small cells."*

6) SB 649 increases harmful RFR exposure to humans and nature.

International independent scientists are calling for immediate measures to reduce RFR. Peer reviewed, published science shows RFR poses serious health and safety impacts

¹⁰ At 19: 27 <https://www.fcc.gov/news-events/events/2016/07/july-2016-open-commission-meeting>

to the public and nature. Children are more vulnerable.

- 224 scientists have signed the International EMF Scientist Appeal: *“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 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.”*¹¹ Scientists quotes:
 - *“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.
 - *“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 Manville, Adjunct Professor, Johns Hopkins University; Senior Wildlife Biologist, U.S. Fish & Wildlife Service (FWS), Emeritus/Retired
- 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

¹¹ EMF Scientist appeal <https://www.emfscientist.org/index.php/emf-scientist-appeal>

the study the rats exposed to cell phone radiation developed two types of cancers, glioma, a brain tumor, and schwannoma, a tumor in the heart. The summary includes, “Given the widespread global usage of mobile communications among users of all ages, even a very small increase in the incidence of disease resulting from exposure to RFR could have broad implications for public health.”¹²

- The BioInitiative Report updated in 2012, prepared by 29 authors from ten countries, reviewed 1800 studies and 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.”¹³
- The International Agency for Research on Cancer at the World Health Organization classifies RFR as a 2B (possible) carcinogen.¹⁴

7) Peer reviewed published studies show proximity to antennas is hazardous.

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...”¹⁵

- 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.”¹⁶

¹² NTP cell phone study <http://ntp.niehs.nih.gov/results/areas/cellphones/index.html>

¹³ Bioinitiative Report <http://www.sciencedirect.com/science/journal/09284680/16/2-3>

¹⁴ IARC/WHO <https://goo.gl/BrkpG8>

¹⁵ Neurobehavioral effects among inhabitants around mobile phone base stations <https://www.ncbi.nlm.nih.gov/pubmed/16962663>

¹⁶ Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations <https://goo.gl/Zz6dhk>

8) Future cell tower plans are for 5G which emits millimeter waves. Peer reviewed published science shows millimeter waves penetrate the skin and affect human health.¹⁷ Millimeter wave technology has been developed as a crowd control weapon which causes acute burning pain, as if the body is on fire.¹⁸

- An analysis of studies on millimeter waves (MMWs) “State of knowledge on biological effects at 40–60 GHz”¹⁹ 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.

9) Peer reviewed published studies show RFR exposure harms nature.

- The US Department of the Interior states RFR threatens birds, and they criticize the FCC’s radiation safety 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 are at 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.²⁰
- Scientists in Germany studied tree damage in relation to electromagnetic radiation from 2006-2015. They monitored, observed and photographed unusual or unexplainable tree damage, and measured the radiation the trees were exposed too. *“The aim of this study was to verify whether there is a connection between*

¹⁷ State of knowledge on biological effects at 40–60 GHz <https://goo.gl/gbBKHL>

¹⁸ US Military Active Denial System <http://jnlp.defense.gov/About/Frequently-Asked-Questions/Active-Denial-System-FAQs/>

¹⁹ C. R. Physique 14 (2013) 402–411

²⁰ US Department of Interior letter and background: http://www.ntia.doc.gov/files/ntia/us_doi_comments.pdf

unusual (generally unilateral) tree damage and radiofrequency 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. They found no tree damage in low radiation areas. The scientists concluded, *“Statistical analysis demonstrated that electromagnetic radiation from mobile phone masts is harmful for trees.”*²¹

- 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.²² Oxidative and genotoxic effects of 900 MHz electromagnetic fields in the earthworm concluded radiation caused genotoxic effects and DNA damage in earthworms²³.
- 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.”*

²¹ Radiofrequency radiation injures trees around mobile phone base stations. <https://www.ncbi.nlm.nih.gov/pubmed/27552133?dopt=Abstract#>

²² Food collection and response to pheromones in an ant species exposed to electromagnetic radiation <https://www.ncbi.nlm.nih.gov/pubmed/23320633>

²³ Oxidative and genotoxic effects of 900 MHz electromagnetic fields in the earthworm *Eisenia fetida*. <https://www.ncbi.nlm.nih.gov/pubmed/?term=23352129>

SB 649 is an unnecessary gift to the telecom industry.

Respectfully submitted on July 6, 2017:

/s/
Sandi Maurer, Director
EMF Safety Network
PO Box 1016
Sebastopol CA 95473

/s/
Mary Beth Brangan, Co-Director
Ecological Options Network
PO Box 1047
Bollinas CA 94924