April 3, 2019

**To: Sen. Dianne Feinstein (D-Calif)**

 **Sen. Kamala Harris (D-Calif)**

**U.S. Representative Mike Levin (D-CA 49th District)**

 **State Sen. Pat Bates (R-Laguna Niguel)**

 **Assemblyman William Brough, 73rd Assembly District**

**Lisa Bartlet, 5th District County Supervisor**

**Colby Cataldi, Deputy Director, OC Public Works**

**Bea Bea Jimenez, Manager of Current and Environmental Planning Section, OC Public Works**

 **Rancho Mission Viejo, L.L.C.**

**Rancho Mission Viejo Master Maintenance Corporation**

**RMV Telecom, LLC**

**Kristen Vital, Superintendent, Capistrano Unified School District**

**Capistrano Unified School District Board Members**

**Josh Wellikson, Principal, Esencia K-8 School**

**Tamara Lew Kim, Director, Montessori on the Ranch**

**Verizon Wireless**

**Corporation Service Company (as registered agent for RMV)**

**The Corporation Trust Company (as registered agent for Verizon)**

**From: Concerned Rancho Mission Viejo Residents**

**Summary of Issue**

The health and property of Rancho Mission Viejo (“RMV”) residents are at unprecedented risk from the installation of seven new 5G-ready cell towers dangerously close to homes and schools throughout the Village of Esencia (“Esencia”). **RMV residents implore the Rancho Mission Viejo Corporation, including all of its related entities (collectively, “RMVC”), and Verizon to move all cell towers in Esencia to a safe distance and not activate the 5G network because: (a) it is an untested and unproven technology; (b) it was not properly disclosed to residents in the initial disclosures when they purchased their homes; (c) it will lower property value; and (d) residents were never given an opportunity to ask questions and express concerns about this new short-burst microwave technology at a public hearing.**

**Lack of Transparency**

After receiving vague disclosures at the time of purchase with only a list of possible electromagnetic radiofrequency (“RF”) sites, and no disclosure of technology or carriers, many residents were surprised to learn RMV was installing seven 5G-ready towers throughout Esencia. After numerous requests the past few weeks for information from the Rancho Mission Viejo Master Maintenance Corporation (the “HOA”), the HOA provided yesterday contact information for a lawyer at Verizon and a generic and oversimplified FAQ document (the “FAQ”) that did nothing but attempt to dismiss any concerns regarding safety and aesthetics, citing the wireless industry’s own trade association and paid experts, along with the outdated FCC guidelines discussed below. RMV residents are frustrated and concerned about the new 5G-ready cell towers installed at the Canyon House Farm (the “Farm”), just 149 feet from homes, 577 feet from the Montessori on the Ranch preschool, 325 feet from the Canyon House Art Room for YMCA events, and 350 feet from the Farm’s produce and plants. In addition to this tower, there will be six more within a one-mile radius that are also within close proximity to homes and as close as 1,000 feet from the neighborhood K-8 school (depending on the exact antenna placement at the Hilltop Club), which may affect enrollment at the school.

To add to the confusion, the HOA previously indicated in writing that the new cell tower was not 5G, but after speaking with Verizon technicians at the Farm site, known internally at RMV as ESN-300 (the “Farm Tower”), it was confirmed that the antennas were indeed 5G-ready. Regardless of the specific network technology, close proximity cell towers would be devastating to our family-oriented ‘agrihood’ community.

RMV residents are upset about the surprise of these new 5G-ready cell towers and have collected nearly 1000 signatures and over 100 comments in seven days. See <https://www.ipetitions.com/petition/safe-distance-rmv-cell-towers-away-from-homes> for specific resident comments.

**RF Health Effects: Distance is Critical**

Historically, cell towers were sited away from residential zones to minimize exposure to wireless radiation. It is well known that the amount of energy decreases as the distance from the antenna increase, so it made sense to place cell towers a reasonably safe distance.

In a study commissioned after the German Federal Agency for Radiation Protection called on the medical and scientific communities to estimate the risks from cell phone towers, the authors found that the proportion of newly developing cancer cases was significantly higher among those patients who had lived during the past ten years at a distance of up to 400 meters from the cellular transmitter site located in Naila, Germany. See “The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer,” by Horst Eger, et al.
<http://www.kiirgusinfo.ee/wp-content/uploads/2018/07/eger_naila_2004.pdf>

Similarly, a study was conducted by researchers at the University of Tel Aviv to determine whether the incidence of cancer cases among individuals exposed to a cell-phone transmitter station in Netanya, Israel was different from those who lived in a nearby area. The study indicated that those that lived within 350 meters of the cell phone transmitter unit had 4.15 times more cancer cases than the general population.
<https://pdfs.semanticscholar.org/ee87/d78a4b9c12983b0cbeff1df69e535a6a6f6a.pdf>

In the adjoining community of Ladera Ranch (also developed by RMVC), most of the cell towers are in commercial complexes and a safe distance away from homes. In fact, when Verizon submitted an application to place a cell tower near the Ladera Ranch subdivision of Covenant Hills, Verizon later withdrew it and did not complete the tower installation after the residents expressed health risk concerns at the public hearing on February 18, 2016.

Unfortunately, it is a dramatically different situation in Esencia, where residents in the new development were never given the opportunity for an in-person public hearing, only a vague list of potential sites with no frequency or technology information and no information regarding the size and design of the towers. This lack of detail is especially alarming since the Farm Tower’s final approval was obtained in 2016 and the permit applications, which were just obtained from Orange County Public Works yesterday, show that RMVC had significantly more detail to share (including precise location schematics and renderings of the proposed tower designs). RMVC simply *chose* not to provide these details because they did not want to disrupt the sale of homes. And unlike Ladera Ranch, where residents are given due notice and cell towers are installed in business complexes, RMVC put the Farm Tower as close as 149 feet from homes, 577 feet from a Montessori school, directly above the Farm produce and plants, and six others being proposed within an approximate one-mile radius are also dangerously close to homes. See [www.rmvcelltowers.com](http://www.rmvcelltowers.com) and Exhibit A for a map of proposed towers and associated distances.

**Harm to Biological Systems and Health**

Adverse health effects from RF exposure have been scientifically established for decades:

* + There are more than 1,000 scientific studies conducted by independent researchers from around the world concerning the biological effects of RF radiation. The most recent can be found at[*https://www.telecompowergrab.org/science.html*](https://www.telecompowergrab.org/science.html)
	+ A 10-year $25 million U.S government funded National Toxicology Program (NTP) study published in 2018 confirmed that long-term exposure to wireless radiation cause a variety of cancers. The NTP study is, to date, the most comprehensive, carefully done research performed on the long-term effects of RF radiation from wireless devices such as cell phones. The study was peer reviewed on March 26-28, 2018. The animal research looked at long-term non-thermal exposure to RF radiation. The series of studies demonstrated conclusive, positive findings (adverse effects) as follows:
		- An increase in tumors of the heart (schwannomas), brain (malignant gliomas) and adrenal gland (pheochromocytomas).
		- Increases in other organ tumors compared to controls (not statistically significant but noteworthy) for pancreas, prostate, pituitary, liver and lung.
		- DNA damage in rodents.
		- Cardiomyopathy similar to aging.
		- Adverse perinatal effects in some groups.

Even the American Cancer Society, which the HOA cites to in the FAQ as a source for the premise that there are “no health issues” associated with RF exposure, recognized the significance of the NTP study when Otis W. Brawley, M.D., the then-current Chief Medical Officer, stated:

*For years, the understanding of the potential risk of radiation from cell phones has been hampered by a lack of good science. This report from the National Toxicology Program (NTP) is good science. The NTP report linking radiofrequency radiation (RFR) to two types of cancer marks a paradigm shift in our understanding of radiation and cancer risk. The findings are unexpected; we wouldn’t reasonably expect non-ionizing radiation to cause these tumors. This is a striking example of why serious study is so important in evaluating cancer risk. It’s interesting to note that early studies on the link between lung cancer and smoking had similar resistance, since theoretical arguments at the time suggested that there could not be a link.* <https://acspressroom.wordpress.com/2016/05/27/ntpcellphones/>

* + Shortly after the NTP findings were released, the Ramazzini Institute in Italy announced that a large-scale lifetime [study](https://www.sciencedirect.com/science/article/pii/S0013935118300367?via%3Dihub) of lab animals exposed to environmental levels of cell tower radiation developed cancer. The Ramazzini study exposed thousands of rats from prenatal life until their natural death to “environmental” cell tower radiation for 19 hours per day (1.8 GHz GSM radiofrequency radiation (RFR) of 5, 25 and 50 V/m). The exposures used in this study mimicked base station emissions like those from cell tower antennas, and exposure levels were far less than those used in the NTP studies of cell phone radiation. Both the Ramazzini and NTP studies found statistically significant increases in the development of the same type of very rare and highly malignant tumor in the heart of male rats—schwannomas.
	<https://ehtrust.org/worlds-largest-animal-study-on-cell-tower-radiation-confirms-cancer-link/>
	+ The World Health Organization (WHO) classified RF-EMF (radiofrequency electromagnetic fields) as a Class 2B Possible Human Carcinogen in 2011 based on credible evidence that linked long-term wireless exposure to brain cancer. <https://www.iarc.fr/wp-content/uploads/2018/07/pr208_E.pdf>
	+ The [BioInitiative Reports of 2012](http://www.bioinitiative.org/report/wp-content/uploads/pdfs/section_1_table_1_2012.pdf) reference thousands of 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.

**Outdated FCC Guidelines**

The current FCC guideline for cell tower transmitters is a “recommended maximum permissible exposure level to the general public of approximately 580 microwatts per square centimeter.” This guideline is based on a primary elevated antenna cell site tower “typically 50-200 feet high.” See <https://www.fcc.gov/consumers/guides/human-exposure-radio-frequency-fields-guidelines-cellular-and-pcs-sites>.

As a comparison, the radiation exposure limit in Switzerland, Russia, and China is 10 microwatts per square centimeter, meaning the United States is comfortable subjecting its citizens to 58 times more radiation exposure. 580 microwatts per square centimeter is so high that it’s unlikely any human being would ever be exposed to this level unless they are an RF technician standing directly in front of an antenna. <https://www.who.int/peh-emf/meetings/day2Varna_Foster.pdf>

Furthermore, the FCC guidelines were adopted in 1996 (at a time when we had 1G and 2G, with wireless communications limited to text and voice) and have never been updated to take into account 3G, 4G & 5G equipment. FCC exposure guidelines are also based on the assumption that wireless signals directed at a human body are from only one transmitter source. In the 21st century, we are not exposed to only one wireless antenna or device. An average home today, including those in RMV, has multiple Wi-Fi routers, carrier-provided signal boosters, Wi-Fi-transmitting laptops, mobile phones, wireless printers, smart meters, Wi-Fi based streaming music devices and smart TVs.

FCC cell site guidelines are the equivalent of a blank check for the wireless companies to transmit virtually unlimited quantities. The only real boundary they are not allowed to cross is based on thermal heating, which is an outdated view that ignores scientific proof of cell damage from non-ionizing radiation.

**5G is Unproven & Requires Proximity**

RMVC and Verizon are attempting to roll out 5G infrastructure in RMV without proper notice to its residents (all neighboring communities have 4G LTE). 5G requires a vast number of small antennas broadcasting at higher frequencies than 4G. Instead of relying on large towers placed far apart, the new short-burst microwave signals will come from smaller equipment placed an average of 500 feet apart. These shorter range towers, as well as mini-cell sites, will need to be installed outside homes, schools and offices to work effectively.

The FCC has not issued guidelines for 5G equipment, nor have there been any studies related to 5G.

At the Senate Commerce, Science and Transportation hearing on February 7, 2019, in response to direct questions from Senator Blumenthal, wireless carriers confirmed that they are not aware of any independent studies to date assessing the potential health risks of 5G technology and they did not commit to fund any new studies in the future. At the end of the discussion, Senator Blumenthal bleakly summarized the current state of affairs as follows: “So there really is no research ongoing. We’re kind of flying blind here, as far as health and safety is concerned.” You can watch the relevant portion of the hearing at <https://www.youtube.com/watch?v=hsil3VQE5K4> or view Senator Blumenthal’s summary at <https://www.blumenthal.senate.gov/newsroom/press/release/at-senate-commerce-hearing-blumenthal-raises-concerns-on-5g-wireless-technologys-potential-health-risks>.

Indeed, the issues surrounding 5G are being debated throughout the country as we speak. In a WIRED article published this week, “Why 5G Makes Me Reconsider the Health Effects of Cell Phones,” Susan Crawford, Harvard Law professor, highlights the outdated guidelines developed by the FCC, a government agency with some inherent conflicts of interest:

*But what if the FCC is measuring public health effects against a decades-old standard that (a) measures the wrong thing and (b) was based on the*[*work*](https://secure-web.cisco.com/1sIDF-jlXvxIHfE8BCJ-WaOe2r3iy948e1TEtukMX6NyPn-Xni4fPhFTlTgjL18SoaKV8HmnO_ZbJrnWu8qCxgq18uqQzvdViq3JSTfW643xA3wRIdsZlHbi91aRoj_zv-xYRTikZ4q29c2ElUQuBea9TaF0Fn-D5Q6k_9nljYXS9CNguRFm8yNMJt7qu2EIMlowwoKWYSSclH33gXjw_cuvRW1as_dI89Zd469kP5aNB1VPAguwGgDvUxgyzSJ1A67oUtXXtrgzkALWNA5WMAsXGg0oZL4dbFRG1MSOOxLcclVWdazF37thH6IhU7jMA6DItZl2ed1P4z2zDpgenDNGTDu8FY06NR9vjy_RY1f9iPqSSepBwPjfceRe3uqjx/https%3A//www.spandidos-publications.com/ijo/51/2/405)[*of an insular, private group*](https://www.investigate-europe.eu/publications/how-much-is-safe/)*, half of whose*[*initial funding came from the power and telecom industries*](https://microwavenews.com/news-center/repacholi-half-who-emf-project-funding-came-industry)*and that elects its own members? I am bothered enough to suggest that we need better, more neutral standards based on widely accepted science.*

See <https://www.wired.com/story/why-5g-makes-reconsider-health-effects-cellphones/>

While the FCC cannot source independent studies to prove 5G is safe, there is compelling evidence that non-thermal microwave frequencies, including 5G in particular, cause harm to the human body. See Dr. Martin Pall’s publication, dated May 17, 2018, “5G: Great risk for EU, U.S. and International Health! Compelling Evidence for Eight Distinct Types of Great Harm Caused by Electromagnetic Field (EMF) Exposures and the Mechanism that Causes Them,” for a staggering list of health issues associated with short-burst 5G microwave frequencies. (<https://peaceinspace.blogs.com/files/5g-emf-hazards--dr-martin-l.-pall--eu-emf2018-6-11us3.pdf>)

Other communities within California have also protested the installation of 5G technology near their homes, and Governor Jerry Brown recently vetoed a bill that would have restricted city and county officials from setting limits on where the equipment for new 5G cellular service would be placed, which Governor Brown said in his veto message was a problem. <https://www.latimes.com/politics/essential/la-pol-ca-essential-politics-updates-gov-jerry-brown-sides-with-local-1508137569-htmlstory.html>

**Depreciation of Property Values**

In addition to the scientifically-proven potential health risks, the property value of RMV residents is in jeopardy. Studies clearly show property values drop when in close proximity to cell towers. A peer-reviewed study published in the 2005 Appraisal Journal indicated that property values were likely to decline by 20% based on respondents’ feedback when they were surveyed on the possibility of harmful health effects, stigma effect, effect on property value and aesthetics related to cell towers. A subsequent analysis of actual sales in the neighborhood confirmed the preliminary analysis and showed a 21% decline in sales price after a cell tower was installed.
<http://electromagnetichealth.org/wp-content/uploads/2014/06/TAJSummer05p256-277.pdf>

The National Association of Realtors reported in 2014 that 79% of their survey participants said that, “under no circumstances would they ever purchase or rent a property within a few blocks of a cell tower or antennas, and almost 90 percent said they were concerned about the increasing number of cell towers and antennas in their residential neighborhood.” <https://magazine.realtor/daily-news/2014/07/25/cell-towers-antennas-problematic-for-buyers>

RMV residents only received a list of potential tower locations in their disclosures when they purchased their home without any indication of the technologies or frequencies to be utilized (information RMVC knew at the time). In addition, there was no mention of the dimensions or scale of the towers (additional information that RMVC also knew at the time). Most residents were shocked by the size of the Farm Tower and did not realize it would be seen towering throughout Esencia similar to that of a large smoke stack. The Farm Tower is an eye sore in the community and will alert new buyers as they enter the village and likely dissuade them from purchasing homes in close proximity. See Exhibit B for pictures of the Farm Tower.

**Conclusion**

The RMVC disclosures were purposely vague, intentionally did not list frequencies and technologies to be used, and did not provide a description of the physical features or scale of the towers in each location. Like other communities, cell tower infrastructures should be installed before the homes are built or clearly described in the home buying documents so that homeowners can make an informed decision. Instead, RMVC deliberately waited to install the first tower only after every home in the vicinity of the tower was sold. The planned installation schedule for the remaining towers appears to follow the same trend, with the final tower to be installed in the center of the village, at the pool and community center, and in dangerous proximity to the neighborhood K-8 school serving the community, conveniently when the majority of the development in Esencia is already built out.

The exact distances from homes and schools, the exact frequencies and technologies, as well as a physical description of the tower should have been listed in the developer disclosure documents, providing residents with full disclosure before purchasing their home. This is especially critical since we were not provided with the opportunity for a public hearing with the carrier to ask questions, get information and voice concerns like other established communities in our area. Why should new development homebuyers be penalized and not offered the same rights and services as other communities?

The wireless industry keeps telling us RF is safe, and is attempting to roll out seven 5G enabled cell towers within our community, without demonstrating proof of safety. There are no government standards in place for RF exposure, only the arbitrary guidelines (not a true standard) developed 22 years ago. The claim that a device “meets government standards” or that radiation levels are “FCC compliant” gives a false impression of safety. In addition, the guidelines are based only on thermal, not biological effects. Indeed, the FAQ provided by the HOA makes reference to staying within the “limits” set by the FCC. However, this is patently misleading as there is, to this day, only the 22 year old “guideline” set forth by the FCC and that guideline ignores the biological effects discussed above.

All radiofrequencies have the potential to create significant biological harm, but 5G infrastructure will create even more biological harm, through functional necessity to place equipment every 500 feet and in residential areas. Also, before the 5G microwave frequencies are activated, the 5G equipment may transmit 4G frequencies which travel much farther than 5G frequencies and cause even more harmful exposure to residents because the 5G antennas are in closer range than usual 4G antennas. We should not be exposed to 4G RF at 5G close range.

**Call for Action**

**RMV residents implore RMVC and Verizon to:**

1. **Communicate with RMV residents the frequencies and technology being used in the Farm Tower, as well as exact distances and specifics related to all subsequent towers (i.e., provide revised disclosures).**

1. **Move the Farm Tower (as well as subsequent planned towers) in Esencia to a safe distance (outside 400 meters) and not dangerously close to homes risking the residents’ health and property value.**
2. **Not activate the unproven and untested 5G microwave network, until Verizon can provide residents with independent research or studies that demonstrate 5G is not harmful to humans within 500 feet.**

**RMV residents also implore city and government officials to:**

1. Reevaluate how carriers obtain a permit and install a cell tower infrastructure in a new development.
2. Require developers to submit proper disclosures to home buyers related to cell tower infrastructure, including specific distances from home and schools, frequencies and technologies used, and dimensions and descriptions of the said towers so residents are aware and receive the same notification as established communities.
3. Lobby for RMV residents, as well as Orange County residents generally, to stop the activation of unproven 5G microwave technology until the FCC can provide independent safety studies.

**Exhibit A**

**Cell Tower Map & Distances**





**Exhibit B**

**Farm Tower Pictures**

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