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Re: Security and Cybersecurity Issues Relating to Wireless Communication

Dear Members of the Carlsbad HOA:

I am writing as a former member of the New Hampshire Commission, a formal State Commission that was convened to answer questions regarding the impacts and safety of cell towers and wireless radiation. The Commission was created through bipartisan legislation that was passed by both houses of the legislature and was signed by the Governor. To ensure that the findings of the Commission would be credible, its membership was comprised of independent subject matter experts, and I was asked to serve on the Commission because of my background in Biomedical and Radiofrequency Engineering. During my service on the Commission, I was also the Chair of the Department of Electrical & Computer Engineering at the University of New Hampshire. In my many years professionally in the field I have performed research for over twenty-five sponsors, including the Department of Justice and the National Science Foundation. Most of my research has involved the modeling and measurement of electromagnetic fields which included the siting of communications and navigation antennas. I should note that on June 5th of this year, I sent a letter to your Mayor, Project Manager, City Planner, City Manager, and City Council regarding the proposed tower. In my letter, I advised against locating towers near schools or places where people spend much of their time, and that suggestion was based on health considerations. This letter to you addresses security and cybersecurity issues relating to wireless communications.

I will not go into detail about the activities of the Commission except to say that we completed a year-long in depth investigation into the impacts of cell towers and wireless radiation and we published our final report that is provided here. The work of the Commission and my work in sharing its findings since, is relevant to the proposed cell tower that you are now considering. In addition to the Commission's findings, I am including my own findings regarding security issues, which I've learned in my career experiences which include electronic warfare work for the Air Force to my work for the Department of Justice as is referenced below.

One argument that is raised to support the siting of cell towers is that they might be needed to provide communications in the event of an emergency. Without going into too much detail here, there are many reasons why cellphone communication may not be

the best option in emergency situations. In my own work with the Department of Justice, I was asked to look at alternative means for providing communications in emergencies because cell towers have been known to fail during times of high usage.

Another cybersecurity issue relating to wireless connections is that they are far more easily hacked than wired connections. The primary reason that they are more vulnerable is that wireless signals can be received over a large region around the wireless device, making people's transmissions available to hackers. By having access to those transmissions, the encoding being used to secure the signal can be decoded over time. While all wireless communication is vulnerable to hacking, 5G networks are particularly vulnerable.

One more aspect of wireless communication that is not well known is that they can all be easily jammed. While jamming signals is not legal, devices that can jam those communications are relatively inexpensive and are readily available. These devices can not only be used to stop cellphones from working but can also be used to stop all wireless security devices (e.g., cameras and window, door and motion sensors) from functioning, enabling burglars to ply their trade undetected. The only way to achieve robust security is to install wired devices.

I should note that the telecommunications industry is actively citing towers where they are not needed. One example of this is in places like LaCosta Oaks, where no proven gap of service has been demonstrated to exist and where Verizon's own online coverage maps are showing good service. There are other safer and better solutions which are not being pursued due to Verizon's own business plan to expand and become a one stop for home internet products, for their own profit. When cell towers are placed in areas like LaCosta Oaks, it is the local residents who bear the burden of increased security issues, reduced property values and biological and environmental harms.

It is important to note that in the case of LaCosta Oaks, the area for the proposed cell tower is not in an area zoned for a cell tower and thus relies on a zoning variance for a placement to be allowable. There are other more appropriately zoned locations in the community for this tower that are more reasonable in terms of health impacts and in preserving property values.

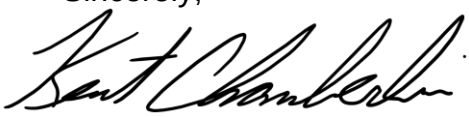
Also important and worth mentioning is that cell tower lease agreements and contracts are typically multi-year (often 30 years or more) and legally binding for the duration of the contract. This remains true regardless of what more we learn between now and the end of the contract about the impacts of the Radio Frequency Radiation emitted from the cell tower.

In this letter, I have focused on the security issues relating to wireless communication, and those issues alone should provide a great incentive to seek other means of communication. If you consider the known negative health effects of wireless radiation on top of the security issues, the incentive for other solutions becomes even greater. Fortunately, there is a far superior substitute for wireless communication with fiber optics. It is far more secure, faster, energy efficient, and does not expose people to excessive wireless radiation. A number of municipalities, such as Chattanooga, Tennessee, have implemented fiber optics and have achieved highly successful results.

It is the job and charge of the LaCosta HOA to protect its residents, their wellbeing, quality of life and property values and citing a cell tower within this area, compromises each of these things

I hope that you find the above information useful, and I would be happy to meet with you to go over questions that you might have about it.

Sincerely,



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