

Katherine Douglas

Public Comment

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From: Kent Chamberlin <Kent.Chamberlin@unh.edu>
Sent: Monday, February 3, 2025 11:59 AM
To: sbcob; Laura Capps; Roy Lee; Joan Hartmann; Supervisor Nelson; Steve Lavagnino; Cory Bantilan
Subject: Input from New Hampshire Commission Relating to Updates to Wireless Ordinance
Attachments: Santa Barbara CA County Board of Supervisors Feb 2025.pdf

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Dear Board of Supervisors Members:

Please see my attached letter that is relevant to the ordinances you are now considering.

Best wishes,

Kent Chamberlin, PhD
Professor & Chair Emeritus
Dept. of Electrical & Computer Engineering



Fulbright Distinguished Chair
President, Environmental Health Trust



College of Engineering and Physical Sciences
Department of Electrical and Computer Engineering

Kingsbury Hall
33 Academic Way
Durham, NH 03824-2619

V: 603.862.1357
F: 603.862.1832
TTY: 7.1.1 (Relay NH)

www.ceps.unh.edu/ece ece.dept@unh.edu

February 3, 2025

Re: Input from New Hampshire Commission Relating to Updates to Wireless Ordinance

Dear Santa Barbara County Board of Supervisors,

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 formed 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 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](#). I will say that the work of the Commission and my work in sharing its findings since, is relevant to the updates in your wireless ordinance that you are now considering.

My understanding is that the ordinance updates would be more permissible and would allow for small cells near/in residential areas and close to schools; much closer than the 1,640' setback recommended by the New Hampshire Commission. As someone who has been involved in the siting of wireless systems throughout my career, it can be safely stated that there are other engineering solutions and more appropriate siting locations available to address any network needs that do not involve updating ordinances to allow siting small cells and cell towers in the vicinity of where people live and where children learn.

I have found while serving on the Commission and in my work since then that the industry is significantly increasing its attempts to site cell towers close to residential areas and schools which the Commission has advised against. This practice is largely based on a business plan and not in fact on true established coverage needs. It is to be noted that telecom is a multi-trillion dollar industry with a business plan and a vested interest in building out their network. This will allow them to expand into new markets, and in doing so they will make communities more vulnerable to security, hacking and other issues. Additionally, there are over 600 [industry lobbyists](#) in Washington DC securing industry business objectives. Their activities include creating and preempting laws that streamline their deployment goals and take away your local control in regulating wireless facilities in your own community. This is a big business landscape and one that

should be considered as you make your decisions about your ordinances and cellular placements in your community. Cell towers, because of their many impacts, should be based on the establishment of true need and not on big business objectives.

One argument that is often raised to support the need to site additional 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 cell phone 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 demand.

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 cell phones 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. We are currently seeing this playing out around the country as some of the transnational gangs target neighborhoods for robbery employing this [methodology](#). This could also be a significant concern in a school emergency situation. The only way to achieve robust security is to install wired devices. These are some of the reasons that fiber to our homes and schools is far superior, secure and safer in residential areas.

There is an additional concern with regards to safety, namely that [cell towers can collapse, catch fire](#) and have debris fall which makes them further unsafe and unsuitable for residential and school areas. This is especially significant in areas like yours that are prone to fire disasters and to which telecommunications equipment, including cell towers and ancillary equipment have been the cause, in whole or in part, of devastating wildfires. Stated very clearly, more cell towers, small cells and associated infrastructure increases this fire risk and unfortunately the State of California has many examples of telecommunication infrastructure being the cause of fires.

I should also note that the telecommunications industry is actively siting small cells and cell towers where they are not needed, often where no proven gap of service has been demonstrated to exist and where their own online coverage maps are showing good service. There are other safer and better engineering solutions which are not being pursued due to the industry's business plan to expand and become a one stop for home internet products. When cellular infrastructure is placed in residential areas it is the industry that profits while the local residents and community bear the burden of increased

security issues, fire risks, reduced property values, impacts to aesthetics and biological and environmental harms.

As you can see, there are many issues to consider, including significant [declines in property values](#). This trend will likely become more pronounced as more people become aware of the impact of living near a cell tower or a small cell. Also to be considered is the dynamic of putting big business interests over the interest of the residential community and the kind of community climate this creates.

Another consideration is that residential areas are not usually zoned for cell towers or small cells and often rely on Conditional or Special Use Permits to be permissible. This takes us back to the core intent of our zoning ordinances and guidelines which is to protect the residents of our community. There are other more appropriately zoned locations in communities for cellular infrastructure that are far more reasonable in terms of security/biological/environmental impacts and in preserving community character, aesthetic and property values.

And while your legal right to make decisions upon cellular infrastructure in the community based on biological and environmental health and safety effects of cellular infrastructure and wireless radiation has been preempted by the US Congress as a result of the efforts of the telecommunications industry, you are allowed to be aware of these harmful effects and to know that they do in fact exist. A discussion on this can also be found within the [New Hampshire Commission's findings](#).

Also important and worth mentioning is that cellular 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 biological and environmental impacts of the Radio Frequency Radiation emitted from this infrastructure.

It is noteworthy that telecom industry representatives will often tell communities that they do not have legal rights to regulate cellular infrastructure, and they will claim that there are no placements or engineering solutions other than the ones they propose that will satisfy networking needs. You may also be told that cell towers are needed for first responders, public or school safety or to be current with federal laws and that if you don't approve, they can sue. All of these claims are largely untrue or are misleading. Although I am not a lawyer, I can assure you that you do have rights to regulate and to have protective ordinances and I have seen many communities successfully exercise those rights and options. I have also seen firsthand how difficult and confusing these industry statements can be for communities who are trying in earnest to make accurate and informed decisions on this important issue.

In this letter, I have focused on security and other significant community impact issues relating to cellular infrastructure and wireless communication which I hope will provide you with more awareness and greater incentive for other available solutions with regards to your ordinance and cellular infrastructure. Fortunately, we have the option of fiber optics which is a superior substitute for wireless communication. It is far safer, more secure, faster, energy efficient, and does not expose people and the natural environment to excessive wireless radiation. A number of municipalities, such as

Chattanooga, Tennessee, have implemented fiber optics and have achieved highly successful results. Fiber systems are the way of the future, and they align with our best practice, public and environmental safety and future proof sustainability. All this should be taken into serious consideration by communities as they look towards their ordinances and the placement of their cellular infrastructures.

With this in mind, I would very highly recommend that you do not approve the updates to your wireless ordinance and that you familiarize yourselves and utilize other more appropriate options that will not allow placements of cellular infrastructure in very close proximity to residential areas and schools.

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. I am also happy to provide a formal presentation on the New Hampshire Commission's findings as a public service as it relates to the above-mentioned considerations prior to your making a binding decision on this very important issue.

Sincerely,

A handwritten signature in black ink that reads "Kent Chamberlin". The signature is written in a cursive, flowing style.

Kent Chamberlin, Ph.D.
Fulbright Distinguished Chair
Professor & Chair Emeritus
President, Environmental Health Trust