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Re: Input from New Hampshire Commission Relating to Future Cellular Infrastructure on Proposed Power Lines for Averybrook Road

Dear Charlemont Select Board,

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 cellular infrastructure that has been discussed for the proposed new power lines that you are now discussing.

My understanding is that the proposed power lines that would accommodate the future cellular infrastructure on Averybrook Road would be located within 15 feet or less from people's homes, which is 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 citing locations available to address any network needs that do not involve installing cellular infrastructure in the immediate vicinity of where people live.

I have found while serving on the Commission and in my work since then that the industry is significantly increasing its attempts to cite cell towers close to residential areas which the Commission has advised against. This practice is largely based on a business plan and not in fact on truly established coverage needs. It is to be noted that telecom is a multi-trillion-dollar industry with a business plan and a vested interest to build 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 cellular placements in your community. Cellular placements, 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 siting of cellular infrastructure is that it 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 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 cell phones from working but can also be used to stop all wireless security devices (e.g., cameras, 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. The only way to achieve robust security is to install wired devices. These are some of the reasons that fiber to the home is far superior, secure and safer in residential areas.

I should also note that the telecommunications industry is actively citing cellular infrastructure where it is 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, 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 impacts of living near cellular infrastructure. Also to be considered is the dynamic of putting big business interests over the interest of the residents and the kind of community climate this creates.

Additionally residential areas are not usually zoned for cellular infrastructure and thus rely on special zoning permits and variances for a placement to be allowable. There are other more appropriately zoned locations in the community for cellular infrastructure that are more far 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 any found 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 harms 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 infrastructure leases 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 being proposed that will satisfy networking needs. You may also be told that cellular infrastructure is needed for first responders, public or school safety, 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 I have seen many communities successfully exercise those rights. 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 the 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 this infrastructure. Fortunately, the fiber you currently have is a superior substitute for wireless communication. It is far safer, secure, faster, energy efficient, and does not expose people and the natural environment to excessive wireless radiation. Like your community, a number of other 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 the placement of their cellular infrastructures.

With this in mind, should you approve the new power lines on Averybrook Road, I would very highly recommend that you do so with the provision that they will not be used for the placement of cellular infrastructure due to their proximity to a residential area.

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.

Sincerely,

Kent Chamberlin, PhD
Professor & Chair Emeritus
Fulbright Distinguished Chair
President, Environmental Health Trust